The Impact of Educational Social Networking Sites on Students' Academic Performance in Kuwait

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Submitted to Norwich Business School, University of East Anglia, for the Degree of Doctor of Philosophy in Management Research

March 2026

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Abstract

Educational social networking sites (SNSs) have transformed learning and teaching practices in higher education institutions (HEIs). However, the impact of SNSs on students' academic performance has been insufficiently examined, especially in non-Western contexts. This thesis is based on two complementary empirical studies that used partial least squares structural equation modelling (PLS-SEM) to explore the factors related to the use of educational SNSs (specifically, the myU application) and their influence on students' academic performance in Kuwaiti HEIs, integrating the perspectives of both students and teachers. The first study explored students' perspectives by enriching the updated DeLone and McLean Model of Information Systems Success with relevant concepts from constructivist learning theory. Interaction with peers and teachers, collaborative learning, student engagement, system quality, information quality, system use, and student satisfaction all significantly influenced academic performance. Specifically, student engagement, myU application use, and student satisfaction together explained 54.4% of the variance in student academic performance. However, information quality did not significantly affect student satisfaction, and service quality had no significant effect on either system use or satisfaction. The second study focused on the perspectives of teachers, expanding the unified theory of acceptance and use of technology 2 (UTAUT2) model to include perceived technology efficacy, perceived compatibility, and teachers' perceptions of student academic performance as the dependent variable. Habit, effort expectancy, hedonic motivation, behavioural intention, and actual use behaviour significantly affected teachers' perceptions of students' academic performance, with actual use behaviour accounting for 55.6% of the variance. In contrast, performance expectancy and social influence did not significantly predict behavioural intention. This thesis contributes to theory by integrating models of information systems success and learning in the context of Kuwaiti HEIs. It likewise provides practical insights for educators, policymakers, and system designers aiming to enhance academic performance through the effective use of educational SNSs.

Keywords: educational SNSs, students' academic performance (SAP), D&M IS Success Model, UTAUT2, student perspective, teacher perspective, Kuwait

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Acknowledgements

First and foremost, I thank God for providing me with the strength, patience, and opportunity to complete this thesis. It would not have been possible without the guidance, encouragement, and support of many individuals. I sincerely thank everyone who contributed to completing this work.

I would like to express my deepest gratitude to my supervisory team: Brad McKenna, my primary supervisor, for his invaluable guidance, encouragement, and insightful feedback throughout this research journey; Adrian Benfell, my second supervisor, for his constructive comments and support; and Sara Connolly, my external team member, for her valuable advice and contributions. Their expertise, patience, and ongoing encouragement have played a vital role in the successful completion of this thesis. I would also like to express my sincere appreciation to the members of Norwich Business School and to the academic experts in the field in Kuwait who supported this research and provided valuable insights that helped shape this study.

My heartfelt thanks go to my wonderful mother for her boundless love, prayers, patience, and support throughout every stage of my life. I also wish to dedicate this work with deep gratitude and love to the soul of my father. I sincerely wish he were here with us to see this work completed. He was always, and will always remain, my greatest support system in life. Although he passed away during my academic journey, his encouragement, belief in me, and the values he instilled continue to guide and inspire me every day. I am truly thankful to my dear sisters and beloved brother for their unwavering support and encouragement, which greatly aided me during this project. I also thank my best friends for their ongoing encouragement and support throughout this journey.

I am deeply grateful to my amazing husband, Khaled Almalabi, for his constant support, patience, encouragement, and understanding through the toughest times of this journey. Thank you for always being by my side. Finally, I wish to express my deepest love and gratitude to my beautiful children, Sarah, Waleed, Abdullah, and Ayah. Your patience, love, and understanding have inspired me with the motivation

and strength to complete this journey. I love you all and thank you for your patience and support.

To everyone who has supported me in any way during this journey, I sincerely thank you.

List of Abbreviations

Abbreviation	Full term
Actual use/myU	System use
AVE	Average variance extracted
BI	Behavioural intention
CB-SEM	Covariance-based SEM
CL	Collaborative learning
CMV	Common method variance
Cook's D	Cook's distance
CR	Composite reliability
D&M IS Model	DeLone and McLean Model of Information Systems Success
EE	Effort expectancy
f^2	Effect size
GCC	Gulf Cooperation Council
H_0	Null hypothesis
HEIs	Higher education institutions
HM	Hedonic motivation
HTMT	Heterotrait-monotrait ratio of correlations
IBM SPSS 29.0	Statistical Package for Social Science Software
ICT	Information and communication technology
IQ	Information quality
IS	Information systems
IT	Information technology
IWP	Interaction with peers
IWT	Interaction with teachers
LMS	Learning management system
Mahalanobis D2	Mahalanobis distance
MoE	Ministry of Education of the State of Kuwait
PAAET	Public Authority for Applied Education and Training
PC	Perceived compatibility
PE	Performance expectancy
PLS-SEM	Partial least squares structural equation modelling
PTE	Perceived technology efficacy
R^2	Coefficient of determination
SAP	Student academic performance
SE	Student engagement
SEM	Structural equation modelling

Abbreviation	Full term
SERV	Service quality
SI	Social influence
SNSs	Social networking sites
SQ	System quality
SS	User (student) satisfaction
TAM	Technology acceptance model
TPB	Theory of planned behaviour
TRA	Theory of reasoned action
UB	Use behaviour
UTAUT	Unified theory of acceptance and use of technology
UTAUT2	Extended unified theory of acceptance and use of technology
VIF	Variance inflation factor
α	Cronbach's alpha
β	Standardised beta

1 Introduction

1.1 Research Background

In the 21st century, advanced technology, of which social networking sites (SNSs) offer a primer example, creates innumerable opportunities for expanding and improving educational systems worldwide, thanks to the functionalities of Web 2.0 technologies. Web 2.0 refers to the second generation of websites on the World Wide Web. In this setting, users play a crucial role in the creation of content for websites (O'Reilly, 2007). In contrast, in the first generation of World Wide Web content (Web 1.0), websites can be thought of as read-only platforms (Aghaei et al., 2012). Initially, Web 1.0 served as an information hub for businesses to broadcast their messages to the public. It offered limited user interaction and only allowed users to search for and read information (Aghaei et al., 2012). Unlike Web 1.0, Web 2.0 emphasises social interaction, enabling people to participate actively in content creation, share information, and collaboratively generate knowledge online (Aghaei et al., 2012; Arif et al., 2022). SNSs such as Facebook and LinkedIn are notable examples of Web 2.0 websites (Ajjan and Hartshorne, 2008; Alaslani and Alandejani, 2020; Boyd and Ellison, 2007).

SNSs are defined as "web-based services that allow individuals to create a public or semi-public profile within a bounded system, articulate a list of other users with whom they share a connection, and view and traverse their connections as well as those made by others within the system" (Boyd and Ellison, 2007, p. 211). With the advancement of mobile internet technology and the increasing popularity of smartphones, SNSs have become an integral part of modern communication. According to Internet World Stats (2023), there are currently 5.18 billion internet users worldwide, representing 64.6% of the global population (Statista, 2023). Among them, 4.8 billion, or 59.9% of the world's population, are active social media users (Statista, 2023). Facebook remains the most popular SNS, with over 2.9 billion monthly active users, accounting for more than half of all internet users globally (Statista, 2023). The remarkable growth in SNS use has transformed communication methods and has spread into domains as diverse as politics, commerce, sports, education, and culture (Chugh and Ruhi, 2018; Zhao, 2021).

Higher education institutions (HEIs) increasingly recognise the potential of SNSs such as Facebook and LinkedIn to serve as a shared platform that, when used effectively for educational purposes, fosters cooperation and engagement among educational stakeholders, including students, teachers, and institutions (Hosen et al., 2021). This perspective aligns with the claims of Alaslani and Alandejani (2020), Palla and Sheikh (2021), and Wakefield and Frawley (2020), who have argued that SNSs can function as educational tools, referring specifically to *educational SNSs*. According to Palla and Sheikh (2021), the rise in the use of SNSs in education and learning environments can be attributed to several factors. These factors include the availability of free interactive services, affordability, ease of access, and widespread availability. Furthermore, Palla and Sheikh (2021) noted that the extensive reach of SNSs, known as *connectivity*, ensures that any shared content can quickly reach a large audience of users, regardless of their age, status, geographical location, or time.

As SNSs continue to expand their user base, particularly among younger groups such as college students, many educators are excited about integrating SNSs into the higher education environment as a form of educational technology (Al-Maatouk et al., 2020; Al-Rahmi et al., 2018; Alismaiel et al., 2022). Various SNSs, including Facebook, LinkedIn, and Ning, are regarded as effective tools for promoting active and collaborative learning experiences among students (Wakefield and Frawley, 2020). These educational SNSs offer excellent opportunities for students to access course content, resources, and materials, as well as to interact with peers and teachers and to develop customised student communities (Al-Maatouk et al., 2020). This perspective aligns with the findings of Ansari and Khan (2020), who reported that educational SNSs enable students to create, edit, and share course content in text, video, or audio formats.

Technological innovations have also had an impact on the way people learn. For instance, they have led to the emergence of new learning cultures characterised by collective exploration and interaction. Likewise, Hosen et al. (2021) reported that students are increasingly eager to use educational SNSs to solve problems, facilitate discussions with peers and teachers, and complete assignments. The use of SNSs for these activities is the direct result of the features offered by SNSs (Dzogbenuku et al., 2022). Consequently, educational SNSs have become valuable tools for enhancing learning systems and fostering virtual classroom experiences. Students from around

the world can join in simultaneously to learn and exchange ideas (Alaslani and Alandejani, 2020).

The Covid-19 pandemic also showcased the virtues of SNSs. Educational SNSs emerged as one of the most widely used resources in HEIs during the Covid-19 pandemic (Alenezi and Brinthaupt, 2022; Zhao, 2021). Many educational researchers agree that the pandemic underscored the crucial role of educational SNSs in promoting collaborative learning and engagement while improving communication between teachers and students in response to the emergency lockdowns of HEIs (Alismaiel et al., 2022; Prasetyo et al., 2021).

1.2 Research Rationale

Recent research in higher education has shown a high level of acceptance and integration of SNSs into pedagogy (Al-Rahmi and Shamsuddin, 2020; Khan et al., 2021; Wakefield and Frawley, 2020). Researchers in this area suggest that SNSs can be effectively aligned with learning methods such as collaborative learning, which may enhance students' academic performance (Al-Rahmi and Shamsuddin, 2020; Khan et al., 2021). Academic performance generally refers to how students engage with their studies and how they perform on various tasks assigned by their teachers (Al-Adwan et al., 2021). Student academic performance (SAP) is a key indicator for evaluating the effectiveness and success of educational institutions, teaching methods, and decisions by administrators (Rasheed et al., 2022). The role of SAP aligns with Al-Adwan et al.'s (2022) argument that assessing this performance is essential for re-evaluating the role of HEIs as knowledge providers in the community. Additionally, it is vital for implementing new educational tools and pedagogical methods, such information and communication technologies (ICTs), in the learning process.

Research conducted in developing countries supports the argument that the use of SNSs in higher education significantly contributes to SAP and student satisfaction (Ansari and Khan, 2020; Hosen et al., 2021). This use of SNSs creates opportunities for students to enhance social learning and communication both inside and outside the classroom, ultimately leading to better adaptability in work settings (Ansari and Khan, 2020; Hosen et al., 2021). After examining Chinese medical students' knowledge and learning outcomes achieved through SNSs, Ashraf et al. (2021) concluded that SNSs

enable students to collaborate, interact with peers and educators, and access the latest information, all of which can enhance academic performance.

Understanding the role of educational SNSs is crucial not just for individual institutions but also for achieving broader national development goals. In Kuwait, the New Kuwait 2035 vision emphasises the need for a knowledge-based economy, the enhancement of human capital, and the integration of digital technologies across public sectors, including education (New Kuwait, 2023). In this context, HEIs are increasingly encouraged to adopt innovative technological solutions that improve learning experiences and prepare graduates for participation in a digitally driven society (Alenezi and Brinthaupt, 2022).

As one of the largest public HEIs in Kuwait, the Public Authority for Applied Education and Training (PAAET) plays a crucial role in developing the country's technical and professional workforce (PAAET, 2023). It is essential to understand how educational SNSs can enhance student learning and academic performance in this context. This understanding is vital not only for improving educational practices but also for supporting broader national objectives related to workforce development, educational quality, and digital transformation.

Considering this context, researching the role of educational SNSs in enhancing academic performance is a vital and timely area of study. This research can offer valuable insights for students, teachers, institutions, and policymakers aiming to maximise the educational advantages of digital technologies in higher education.

1.3 Problem Statement

The use of SNSs in higher education has grown significantly over the last decade, particularly with the rise of digital learning environments and the widespread adoption of Web 2.0 technologies (Khan et al., 2021). Educational SNSs are increasingly utilised to enhance communication, facilitate information sharing, promote collaborative learning, and boost student engagement (Aljuboori et al., 2020; Al-Rahmi et al., 2021). As a result, these platforms have become a vital part of modern teaching and learning practices (Al-Rahmi et al., 2021; Palla and Sheikh, 2021). Additionally, the Covid-19 pandemic accelerated the integration of SNS-based platforms into higher education, reinforcing their role in fostering interaction between

students and teachers beyond the traditional classroom setting (Alenezi and Brinthaupt, 2022; Zhao, 2021).

Despite the widespread use of SNSs, there is still uncertainty about their educational value and their impact on student academic performance (Ashraf et al., 2021; Junco et al., 2011). While a significant amount of research has investigated the relationship between SNS usage and academic outcomes, the findings are inconsistent (Kabilan et al., 2010; Khaola et al., 2022). Some studies indicate that educational SNSs positively affect learning outcomes, engagement, collaboration, and academic performance (Al-Rahmi et al., 2021; Kabilan et al., 2010). Conversely, other studies point to negative effects, suggesting that SNS usage can distract students from their academic activities and hinder performance (Giunchiglia et al., 2020; Junco, 2012; Kirschner and Karpinski, 2010; Paul et al., 2012). Additionally, some researchers have found no significant relationship between SNS use and academic performance (Alwagait et al., 2015; Rashid and Asghar, 2016). As a result, the literature does not provide a clear consensus on whether, how, or under what conditions educational SNSs enhance academic performance (Cao and Tian, 2022; Wakefield and Frawley, 2020).

This inconsistency may be partly explained by the different ways in which student academic performance has been conceptualised and measured in prior research. Existing studies utilise a variety of indicators, including grade point average, examination scores, student engagement, and self-reported academic success (Huang, 2018; Wakefield and Frawley, 2020). The lack of a standardised approach for conceptualising and measuring student academic performance makes it difficult to compare findings across studies, leading to confusion in the literature. Furthermore, results often differ across educational settings, indicating that the relationship between educational use of SNSs and student academic performance may be affected by contextual, cultural, and institutional factors (Wakefield and Frawley, 2020).

The inconsistent findings reported in previous studies raise questions about how widely conclusions can be generalised across different educational settings (Cao and Tian, 20220). Educational technologies are integrated into specific institutional, cultural, and pedagogical environments, indicating a need for more context-sensitive investigations into the relationship between the use of educational SNSs and student academic performance (Wakefield and Frawley, 2020). As a result, evidence obtained from one higher education context may not necessarily apply to another, especially

when cultural norms, educational practices, and patterns of technology use vary significantly.

A further limitation in the existing literature is the predominant focus on students. Most studies have explored educational SNSs from the perspective of students, emphasising their perceptions, attitudes, and experiences with technology use (Doleck and Lajoie, 2018; Zachos et al., 2018). In contrast, there has been relatively little attention paid to teachers' viewpoints, especially concerning how they perceive the impact of educational SNSs on students' academic performance, engagement, interaction, and collaborative learning (Alshehri, 2019; Van den Beemt et al., 2020). This imbalance is significant because teachers play a crucial role in designing learning activities, facilitating interaction, guiding technology use, and evaluating student performance. Therefore, a focus primarily on students provides only a partial understanding of how educational SNSs affect student academic outcomes.

Rather than assuming that educational SNSs inherently enhance student academic performance, this thesis critically examines the existing literature, questioning the conditions under which SNS use contributes to learning outcomes. Conflicting findings in previous studies indicate that the relationship between SNS use and student academic performance is more complex than often assumed. This complexity may depend on various factors, including how student academic performance is defined, how SNS use is measured, the perspectives of different stakeholders, and the educational context in which the technology is utilised. As a result, this thesis focuses not only on whether educational SNSs affect student academic performance but also on how this relationship is shaped by technological, social, behavioural, and contextual factors.

The issues discussed are especially pertinent in the context of higher education in Kuwait. As part of the New Kuwait 2035 vision, the country aims to enhance human capital development, facilitate the transition to a knowledge-based economy, and promote the effective use of digital technologies in education (New Kuwait, 2023). Higher education institutions are increasingly encouraged to implement technological solutions that improve communication, engagement, and learning outcomes. However, communication between students and teachers in Kuwaiti higher education remains affected by various contextual factors, including rising student enrolment, large class sizes, heavy teaching workloads, and a persistent reliance on face-to-face interaction (Al-Anzi, 2021; Al-Nouh et al., 2015). These circumstances create a significant

context in which to explore whether educational SNSs can effectively enhance student learning and academic performance.

Although educational SNSs are increasingly used within Kuwaiti higher education institutions, there is limited empirical evidence regarding their impact on student academic performance (Alenezi and Brinthaupt, 2022). Furthermore, there is a lack of context-specific evidence that explains how educational SNSs affect student academic performance in Arab higher education environments, where cultural norms, institutional structures, and communication practices may differ from those found in Western and East Asian contexts (Al-Rahmi et al., 2021). Additionally, most existing studies in the region have primarily focused on students and have overlooked the perspectives of teachers (Alshehri, 2019; Van den Beemt et al., 2020). As a result, there is insufficient understanding of how technological, pedagogical, social, and behavioural factors interact to influence student academic performance in educational SNS environments within the context of Kuwaiti higher education. These issues are discussed in detail in Chapter 3

1.4 Research Aim, Questions, and Scope

This thesis aims to investigate how the use of educational SNSs influences students' academic performance in Kuwaiti HEIs. Specifically, the thesis seeks to develop a more comprehensive understanding of the technological, pedagogical, social, and behavioural factors associated with the use of educational SNSs, and how these factors relate to students' academic performance.

This aim is addressed through a dual-perspective research design that considers both students' experiences and teachers' perceptions. This approach is adopted because previous research has primarily focused on students, while comparatively little attention has been given to teachers' viewpoints on how educational SNSs affect students' academic performance. By examining both groups, the current research aims to provide a more comprehensive understanding of the phenomenon. It explores not only how students experience educational SNSs but also how teachers perceive their influence on learning outcomes and students' academic achievement.

To achieve this aim, the thesis addresses the following research questions:

- **Study 1: Student Perspective**

Research Question 1: What technological, pedagogical, and social factors influence student academic performance through the use of educational SNSs?

- **Study 2: Teacher Perspective**

  Research Question 2: What behavioural and technology-related factors influence teachers' perceptions of student academic performance through the use of educational SNSs?

Both studies explore the relationship between educational SNSs use and students' academic performance, but they focus on different aspects of this relationship. Therefore, they complement each other rather than being directly comparable. Study 1 examines students' experiences with educational SNS use, looking at how system quality, interactions, and learning-related factors affect their academic performance. In contrast, Study 2 investigates teachers' perceptions, focusing on how behavioural factors and technology acceptance influence their evaluations of students' academic performance. Together, these two studies offer a more comprehensive understanding of educational SNS use than could be achieved by viewing it from the perspective of only one group of stakeholders.

This thesis is situated within the field of information systems, with a focus on the use of digital technologies in education. It is limited to the use of educational SNSs within PAAET in Kuwait. The thesis exclusively examines the perspectives of students and teachers, without involving other stakeholders such as institutional managers, system developers, or policymakers. Additionally, the thesis explores perceived academic performance rather than relying on objective academic records, which reflects both the research's theoretical emphasis and standard practices in educational technology and information systems research.

1.5 Research Contributions and Significance

This thesis contributes to the growing body of knowledge on the use of SNSs in education and their impact on students' academic performance in higher education. This research offers contextually relevant evidence about the use of educational SNSs in Kuwaiti higher education. Additionally, it explores this phenomenon from the viewpoints of both students and teachers.

The first contribution is empirical. Although educational SNSs have been extensively studied in Western and East Asian contexts, there is comparatively little evidence on their educational use in Arab higher education settings (Al-Rahmi et al., 2021). This thesis addresses this gap by providing evidence from the PAAET, thereby enhancing our understanding of educational SNS use in Kuwait and the broader Gulf region (Alenezi and Brinthaupt, 2022). In doing so, the research responds to the need for more context-sensitive investigations into educational technologies and their impact on students' academic outcomes (Wakefield and Frawley, 2020).

The second contribution is theoretical. Study 1 applies and validates the DeLone and McLean Model of Information Systems Success (DeLone and McLean, 2003), commonly known as the D&M IS Success Model, in conjunction with constructivist learning principles. This study examines the technological, social, and pedagogical factors that influence students' academic performance. Study 2 builds on this by extending the application of the UTAUT2 model (Venkatesh et al., 2012) within the context of educational SNSs. It incorporates perceived technology efficacy and perceived compatibility and explores teachers' perceptions of students' academic performance. Together, these studies highlight the value of established theoretical frameworks for understanding the use of educational SNSs in higher education settings in Kuwait.

The third contribution adopts a dual-perspective approach that considers both student experiences and teacher perceptions. Many existing studies focus on a single group, typically students. By adopting this dual perspective, the research offers a more comprehensive understanding of how educational SNSs are used and provides insights into how different stakeholders view the relationship between SNS use and student academic performance.

The thesis also has practical contributions for key educational stakeholders. For students, it clarifies the behavioural and engagement factors that enhance academic performance through the effective use of SNSs. For teachers, it sheds light on how students' digital behaviours and usage patterns can lead to observable performance improvements. At the institutional and policy levels, the thesis is designed to inform strategies for digital transformation, focusing on system usability, pedagogical alignment, and sustainable engagement rather than the merely superficial adoption of technology. In the context of Kuwait's higher education reform efforts, these insights are expected to provide evidence-based guidance for integrating educational SNSs in

ways that support both academic quality and long-term digital development, aligning with the broader objectives of New Kuwait 2035 and the development of a knowledge-based economy. The detailed theoretical and practical contributions of this research are elaborated on and empirically substantiated in Chapter 8, where the findings are critically interpreted in relation to the existing literature and context.

1.6 Research Outline

This thesis consists of nine chapters and accompanying appendices.

- **Chapter 1: Introduction**

  The present chapter provides an overview of the thesis, including its background and rationale. It first presents the problem statement and then defines the research aim, research questions, and scope. Next, it summarises the contributions and implications of the thesis. Finally, it outlines the overall structure of the thesis.

- **Chapter 2: Research Context (Kuwait)**

  This chapter outlines the context of the study and its defining characteristics to give readers an understanding of the environment in which the research was conducted. The purpose of this chapter is to provide background information on Kuwait, including its population, culture, higher education system, and use of technology, specifically SNSs in Kuwaiti HEIs.

- **Chapter 3: Literature Review**

  This chapter reviews the relevant literature. It focuses on e-learning in higher education, social media technologies, and SNSs in this context. The chapter also explores the impact of educational SNSs on SAP from both student and teacher perspectives, highlighting the gaps that the thesis addresses.

- **Chapter 4: Theoretical and Conceptual Framework**

  This chapter lays the theoretical and conceptual foundations of this thesis. It reviews relevant and learning theories that explain the adoption, use, and educational impact of SNS systems in higher education. Then, it identifies and defines the key constructs that underpin the two empirical studies on

which this thesis is based, concluding by presenting the conceptual framework that guides the overall research.

- **Chapter 5: Research Model and Hypothesis Development**

  This chapter describes the research model and explicitly states the hypotheses tested in the two empirical studies underpinning this thesis. From the perspectives of students, Study 1 investigates the factors related to the use of educational SNSs and their influence on SAP in Kuwaiti HEIs by integrating the D&M IS Success Model with constructivist learning theory. Study 2 examines these factors from the perspectives of teachers using the UTAUT2 model. This chapter also justifies and summarises the hypotheses tested in each study.

- **Chapter 6: Research Methodology**

  This chapter outlines the research methodology used in this thesis. It begins by explaining the research paradigm of positivism and the quantitative design adopted for the two empirical studies that underpin the thesis. It then describes the population, sampling approach, sample size, and data collection methods. Additionally, it discusses the research instruments and pretesting procedures. Finally, the chapter concludes by presenting the data analysis techniques underpinning the thesis.

- **Chapter 7: Data Analysis**

  This chapter details the data analysis procedures and results for both studies and tests the proposed research hypotheses. It begins with a description of the data preparation and preliminary analyses, followed by descriptive statistics. It then presents the results of the measurement and structural models for each study, obtained using SPSS and SmartPLS software.

- **Chapter 8: Discussion**

  This chapter interprets the results through social, technological, educational, and contextual lenses, incorporating insights from both students and teachers. Drawing on two complementary empirical studies, the chapter explains how educational SNSs influence SAP from the perspectives of both students and teachers. It also outlines the theoretical and practical contributions and implications of the thesis.

- **Chapter 9: Conclusion**

This chapter concludes by synthesising the overall results. It summarises the main outcomes from the two empirical studies and discusses the main limitations of the study. Finally, it suggests directions for future research.

1.7 Chapter Summary

The present chapter provides an introduction to this thesis, outlining the research background, rationale, and problem statement. It also clarifies the research aim, research questions, scope, contributions, and implications of the thesis. Additionally, it outlines the structure of the current document, briefly describing each chapter. The next chapter focuses on the research context, specifically Kuwait. It offers insights into Kuwait's demographics in terms of population, culture, higher education system, and use of technology, particularly SNSs, in Kuwaiti HEIs.

2 Research Context (Kuwait)

2.1 Introduction

This chapter provides the contextual background for the thesis and outlines the educational, technological, and institutional environment in which the research is conducted. It explores Kuwait's socioeconomic context, the Kuwait Vision 2035 initiative and the national development agenda. Additionally, it examines the education system and the country's e-learning strategy. The focus then shifts to higher education in Kuwait, with particular emphasis on PAAET, which serves as the empirical setting for the research. Finally, the chapter discusses the adoption of ICT and educational SNSs within PAAET, explaining why this context is significant for investigating the relationship between the use of educational SNSs and student academic performance.

2.2 About Kuwait

Kuwait is situated in the Middle East, along the northwestern coast of the Arabian Gulf. It shares borders with Iraq to the north and Saudi Arabia to the south (see Figure 1). Covering a relatively small land area of 17,818 square kilometres (Al-Aidarous, 2002), Kuwait is primarily characterised by a desert climate with long, hot summers and mild winters (Crystal, 2016).

Figure 1: Location of the State of Kuwait

Note. Source: Kuwait Government Online (2023).

According to the latest official statistics, Kuwait has a population of approximately 4.88 million people. About one-third of these individuals are Kuwaiti nationals, while the remaining two-thirds are expatriates (Central Statistical Bureau, 2026). The country boasts a relatively young and digitally connected population, which highlights the growing significance of digital technologies and online communication in both education and daily life. Arabic is the official language, but English is also widely used in educational and professional environments (Kuwait Government Online, 2023).

Kuwait is a constitutional monarchy with an elected parliament, providing a relatively stable political environment (Al-Diwan Al-Amiri, 2023). This stability has facilitated ongoing investment in education, digital transformation, and national development initiatives. While these geographical, demographic, and political factors offer a useful background, they alone do not fully explain the educational issues addressed in this thesis. Instead, they establish the broader national context in which educational reform, digital transformation, and the integration of educational technologies have become increasingly important. The next section will focus on the socioeconomic and educational developments that underpin the need to investigate educational SNSs in Kuwaiti higher education.

2.3 The Kuwaiti Socioeconomic Context

Kuwait is classified as a high-income country, with an economy historically dominated by the oil sector. The country holds approximately 102 billion barrels of proven crude oil reserves, which account for more than 6% of global reserves. Oil revenues continue to make up between 80% and 90% of the government's income (BTI, 2026). Despite having a high GDP per capita, Kuwait remains heavily reliant on hydrocarbons and is actively pursuing economic diversification to lessen this dependence (Abdalla and Al-Homoud, 2012; BTI, 2026).

Kuwait's oil wealth has financed significant investments in education, healthcare, and public services, resulting in a very high level of human development (United Nations Development Programme, 2026). However, the country still faces several structural challenges, including a lack of economic diversification, a heavy reliance on public-sector employment, and the need to cultivate a more productive, knowledge-based economy (IMF, 2022). These challenges have heightened the importance of

higher education in equipping graduates with the digital skills, collaborative abilities, and innovative capabilities essential for future economic growth.

In response, the Kuwaiti government has prioritised education and human capital development as central to its national development strategy. HEIs are expected to play a crucial role in preparing graduates who not only possess disciplinary knowledge but also have the technological, communication, and problem-solving skills necessary for success in digitally enabled workplaces (Alhashem and Alhouti, 2021). As a result, educational technologies, including educational SNSs, have become increasingly important for supporting teaching, learning, collaboration, and student engagement in higher education.

These national priorities establish the broader context for the current research. As Kuwait aims to enhance its knowledge economy through educational reform and digital transformation, it is essential to understand how educational SNSs contribute to students' academic performance. This policy direction is outlined in Kuwait Vision 2035 and the Kuwait National Development Plan (New Kuwait), which will be discussed in the following section.

2.4 Kuwait Vision 2035 and the Kuwait National Development Plan (New Kuwait)

In 2017, the Kuwaiti government launched Kuwait Vision 2035 and the Kuwait National Development Plan, collectively known as New Kuwait, to guide the country's long-term economic and social development (New Kuwait, 2023). This vision aims to transform Kuwait into a regional financial, commercial, and cultural centre by promoting sustainable economic growth, strengthening public institutions, and developing human capital. New Kuwait is structured around seven strategic pillars (see Figure 2), which collectively support national development across economic, social, and institutional sectors.

Figure 2: Kuwait National Development Plan (New Kuwait)

Note. Source: New Kuwait (2023).

Although all seven pillars contribute to Kuwait's long-term development, this research primarily focuses on Pillar 6 (Human Capital), which emphasises educational reform, digital transformation, and the development of a knowledge-based economy. These priorities recognise education as a crucial driver of economic diversification and position HEIs as key contributors to preparing graduates with the knowledge, digital competencies, and transferable skills needed for future labour markets (Alhashem and Alhouti, 2021; New Kuwait, 2023).

To support these objectives, the Ministry of Education (MoE) has implemented strategies to integrate information and communication technology (ICT) into education, enhance the quality of teaching, modernise curricula, and promote learner-centred approaches to teaching and learning (MOE, 2023). These initiatives are designed to improve students' communication, collaboration, engagement, and digital skills, preparing graduates to effectively participate in a knowledge-based economy (Alhashem and Alhouti, 2021). As a result, digital technologies are increasingly regarded as essential pedagogical tools rather than merely technological resources.

The focus on education, human capital development, and digital transformation in Kuwait Vision 2035 establishes a solid foundation for the current research. HEIs are increasingly expected to contribute to national development by incorporating technology-enhanced learning. As a result, there is a growing interest in understanding

how educational technologies support student learning and academic success (Al-Saffar, 2019). In this context, educational SNSs are one of several technologies that can enhance communication, collaboration, knowledge sharing, and student engagement (Mesbah and Alfailakawi, 2023). Investigating the relationship between the use of educational SNS and student academic performance not only sheds light on technology-enhanced learning in higher education but also aligns with broader national objectives concerning educational reform, human capital development, and the shift towards a knowledge-based economy.

2.5 Education in Kuwait

According to Article 40 of the Constitution of the State of Kuwait, the right to education for Kuwaiti citizens is guaranteed and provided free of charge (MOE, 2023). Through the Ministry of Education, the government is dedicated to supplying all necessary human and material resources for education.

The education system in Kuwait is structured into two levels, both overseen by the MoE. The first level is general education, whereas the second level encompasses higher education. Higher education includes institutions such as Kuwait University, the Public Authority for Applied Education and Training (PAAET), the Institute of Arts, the Institute of Music Studies, and various private universities (MOE, 2023).

General education in Kuwait is categorised into three sectors: public education, qualitative education (for individuals with disabilities), and private education. Public education consists of four basic stages: the kindergarten stage lasting two years, the primary stage lasting five years, the intermediate stage lasting four years, and the secondary stage lasting three years (MOE, 2023). The total duration of education across these stages amounts to 14 years (MOE, 2023). According to Kuwait's Compulsory Education Law of 1965, the primary and intermediate stages are mandatory for all citizens, whereas the secondary and university education stages are not compulsory (MOE, 2023). Kuwait has made significant progress in developing its education system by ensuring that education is general and obligatory for all Kuwaiti citizens (MOE, 2023).

Historically, the education sector in Kuwait has relied on traditional teaching and learning methods (Al-Fadhli and Khalfan, 2009). This approach places a strong emphasis on adhering to a fixed curriculum, with curricular activities heavily based on

textbooks. Teachers typically adopt a didactic style, delivering information to students, who are expected to provide correct answers to demonstrate their learning. Moreover, students primarily work independently (Al-Fadhli and Khalfan, 2009). However, the Kuwaiti government has recently increased its educational expenditure, which now accounts for 12.2% of the national budget (United Nations, 2023a). Additionally, the government has implemented advanced ICT tools and strategies, particularly in e-learning (United Nations, 2023a).

These changes have spurred a shift from traditional learning methods to modern ones based on constructivist theories. Under a constructivist framework, learning occurs when students create knowledge built on their existing understanding (Al-Fadhli and Khalfan, 2009). As a result, educational institutions at various levels have been able to develop substantially, allowing them to adapt to today's requirements.

2.5.1 The Kuwaiti e-Learning Strategy

In the field of education, it is crucial to develop effective strategies to enhance learning and keep pace with the rapid advancements in ICT. One of the most important strategies is the e-learning strategy, which is generally defined as any form of learning that uses a computer or communication network for delivery, interaction, or facilitation (Cheng, 2011).

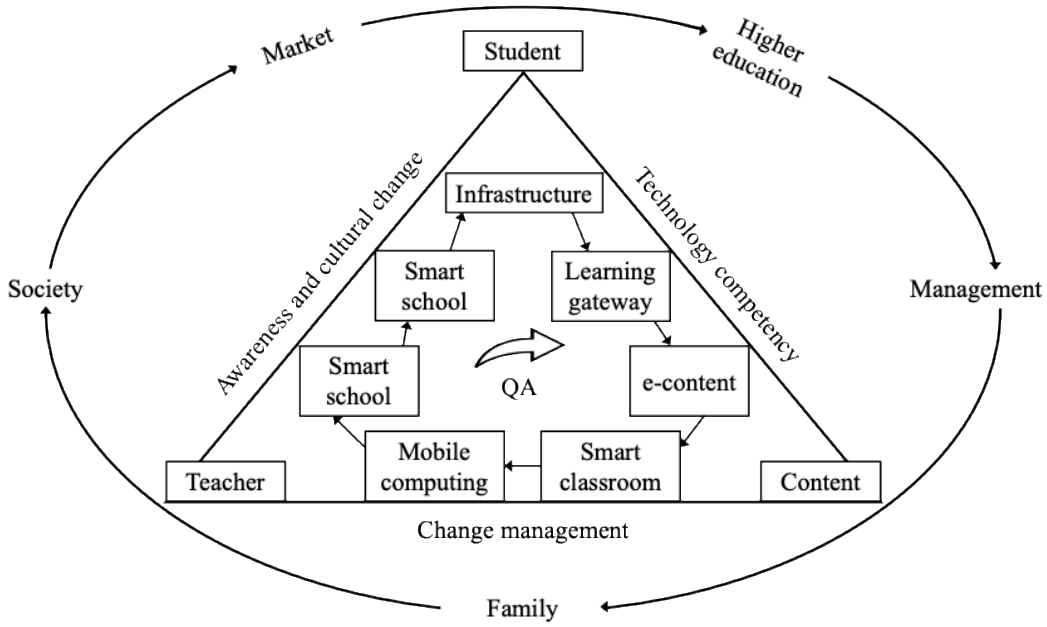
As part of its strategy, the MoE has undertaken ambitious projects to integrate e-learning into educational institutions (Al-Sharhan, 2018). One of the primary goals of these e-learning initiatives is to create an interactive learning environment within the new educational framework. Such an environment involves fostering interactive approaches between students, teachers, and textbooks (Al-Sharhan, 2018). Additionally, it allows students to access learning materials aligned with their abilities, drawing on a variety of sources and employing modern methods (Al-Fadhli and Khalfan, 2009). In this new approach, the role of the teacher shifts to that of a facilitator rather than a traditional instructor (MOE, 2023).

Another initiative is to build a comprehensive and up-to-date database that contains diverse educational resources, aimed at enhancing teaching effectiveness (Al-Sharhan, 2018). This initiative also facilitates a learning process that can occur anytime and anywhere, preparing a more innovative and well-educated generation. Importantly, it

encourages students to engage in non-traditional interactive activities, steering them away from rote learning (MOE, 2023).

Kuwait announced its e-learning strategy in 2008, based on a well-researched framework (MOE, 2023). A team from the MoE, Kuwait University, PAAET, Gulf University for Science and Technology (a private HEI in Kuwait), and the Regional Centre for Development of Educational Software (ReDSOFT) collaborated on its development (MOE, 2023). The team recognised that a successful e-learning system requires the integration of various technological, pedagogical, cultural, and social components. This integration can present real challenges during implementation (Al-Sharhan, 2018). Key components include an efficient infrastructure, smart classroom technologies, a robust learning management system (LMS), online digital content development, change management, teacher preparedness, and social awareness (Al-Hunaiyyan et al., 2012; Al-Sharhan, 2018). Furthermore, Al-Sharhan (2018) emphasised that any e-learning adoption must align with students' expectations to keep them motivated and engaged with the system. Both students and teachers should have effective tools for knowledge presentation, information searching, and retention to enhance the quality of education. Consequently, the e-learning strategy team concentrated on developing a scientific model of the e-learning system in Kuwait, along with an integrated framework for implementing this project (Al-Sharhan, 2018). The model for Kuwait's e-learning strategy is illustrated in Figure 3.

Figure 3: The MoE's Proposed e-Learning Model for Kuwait



Note. Source: Al-Sharhan (2018).

The proposed model addresses various factors that affect the conventional educational system actors, namely students, teachers, and curricula, and transforms them into a 21st-century learning framework (Al-Sharhan, 2018). These factors can be categorised into those related to the internal and external environments necessary for effective e-learning implementation. The internal environment refers to the educational institution itself and its e-learning components (Al-Hunaiyyan et al., 2012). In contrast, the external environment encompasses all factors that directly influence the institution's e-learning environment, including educational management, social influences, family dynamics, higher education, and labour market conditions (Al-Hunaiyyan et al., 2012). The model also includes key variables to ensure successful implementation, namely change management, teacher readiness, awareness, and cultural transformation (Al-Sharhan, 2018). To put the e-learning strategy model into practice, the MoE launched the Integrated Education Reform Programme (IERP) in two phases: 2010 to 2014 and 2015 to 2019. This programme entailed collaboration between the National Centre for Education Development (NCED) and the World Bank (Alhashem and Alhouti, 2021).

In 2010, the MoE announced its focus on introducing technology in schools and promoting interactive e-learning experiences more extensively than before (MOE, 2023). The goal of this initiative was to ensure that the country kept pace with modern educational practices and that students stayed informed about global scientific advancements. This initiative aimed to enhance the creative capabilities of students, develop the teaching skills of educators, and promote innovative learning methods (Al-Sharhan, 2018). Consequently, every school affiliated with the MoE has incorporated computer laboratories for educational purposes (MOE, 2023). Additionally, the MoE requires teachers to attain a minimum level of computer and internet skills. This requirement has been met by emphasising the importance for teachers to gain experience and certification in ICT. Examples of such certificates include the widely recognised International Computer Driving License (ICDL), which is endorsed by UNESCO to promote effective computer use (MOE, 2023).

To implement e-learning across all Kuwaiti educational institutions in 2012 and 2013, the MoE digitised all textbooks (Alhouti, 2020). The MoE appointed the Regional Centre for Development of Educational Software (ReDSOFT) to develop applications that enable students and parents to download school textbooks for all

grades and store them on their tablets (MOE, 2023). The MoE also created a YouTube channel to broadcast its school curriculum as learning-outside-the-classroom support for students (Alhouti, 2020).

In 2015, the MoE launched one of the largest e-learning initiatives in Kuwait as part of its Computer for Every Individual strategy (Al-Hunaiyyan et al., 2018). The initiative aimed to enhance the use of ICT as a learning tool by distributing approximately 80,000 tablets to students and teachers. This initiative cost the MoE around 26 million Kuwaiti Dinars, approximately 84.5 million USD (United Nations, 2023a). The goal was to integrate online learning into the classroom and provide students with access to various learning platforms during their daily classes (Alhouti, 2020). This effort was intended to increase student engagement and equip them with the essential digital skills needed in modern workplaces.

In the same year, the MOE launched its online platform: the electronic gate. This platform includes several key components: school infrastructure, smart classrooms, learning portals, learning systems, and electronic content, which features an interactive curriculum (MOE, 2023). The MoE has implemented this project by creating its own e-learning portal, Kuwait Educational Portals, which connects all schools across the country (MOE, 2023). The goal of this project is to provide all participants in the learning process (schools, teachers, parents, and students) with access to important information such as decisions, regulations, accurate statistics, and updates from the MoE, as well as teacher and student details (Alhashem and Alhouti, 2021; Alhouti, 2020). Additionally, students can benefit from interactive study materials and test questions from the electronic library. They can also access their results and schoolbooks through the electronic portal (Alhashem and Alhouti, 2021; Alhouti, 2020).

The principles of Kuwait's e-learning strategy go beyond simply adopting technology. They emphasise the importance of learner engagement, interaction, collaboration, creativity, and active participation in the learning process (MOE, 2023). These principles align closely with the educational functions of educational SNSs, which offer opportunities for communication, knowledge sharing, collaborative learning, and ongoing interaction between students and teachers (Al-Anzi, 2021). As educational SNSs increasingly become part of modern digital learning environments, they offer a means to effectively implement the goals of Kuwait's e-learning strategy. Therefore, studying the educational use of SNSs provides a chance to explore how

these broader educational objectives are reflected in student engagement, interaction, collaborative learning, and ultimately, students' academic performance in higher education.

Through these national-level initiatives to incorporate ICT into education, the MoE has demonstrated its ongoing commitment to reforming, developing, and modernising the educational system. This commitment includes improving educational quality through curriculum development, teacher training, school leadership enhancement, and the integration of digital learning technologies into teaching and learning practices (Alhashem and Alhouti, 2021). Collectively, these efforts provide an important foundation for understanding the growing role of technology-enhanced learning environments, including educational SNSs, in supporting student learning and academic performance within Kuwaiti higher education.

2.6 Kuwaiti Higher Education

Kuwait was among the first Arabian Gulf nations to establish a higher education system overseen by its MoE (Kuwait Government online, 2023). The country has two major public HEIs. First, Kuwait University opened in 1966 and became the first university in Kuwait to offer a wide range of subjects (Kuwait University, 2023). The second public HEI is the Public Authority for Applied Education and Training (PAAET), which was established in 1982 and serves as the HEI context for this thesis (PAAET, 2023).

In 2002, the MoE passed a law allowing the establishment of private universities. Since that time, five private universities have opened, joining Kuwait University and PAAET as HEIs. These private universities are the Gulf University for Science and Technology, the American University of Kuwait, the Arab Open University, the American University of the Middle East, and the Kuwait International Law School (Kuwait Government Online, 2023). Additionally, the Kuwaiti government offers scholarships for Kuwaiti students to pursue undergraduate and postgraduate studies abroad. Crucially, public HEIs are available only to Kuwaiti nationals. Non-Kuwaiti students may attend these institutions under strict conditions. Otherwise, non-Kuwaiti students must enrol in private universities (MOE, 2023).

2.6.1 The Public Authority of Applied Education and Training (PAAET)

PAAET was established in Kuwait on 28 December 1982 under Kuwaiti Law 63 (PAAET, 2023). This government-regulated educational institution oversees technical and vocational training. The primary aim of PAAET is to develop the national technical workforce and address Kuwait's human resource needs (PAAET, 2023). Although PAAET predominantly grants diplomas, it also offers some bachelor's degrees. PAAET comprises 13 colleges and institutes, along with various general services and work centres (PAAET, 2023).

Some of these institutes were established independently in the 1950s and 1960s to prepare the workforce for the oil industry (PAAET, 2023). However, the state recognised the need to create a centralised organisation to oversee and coordinate the activities of these institutes. In 1972, the Technical and Vocational Education Department was founded to manage technical and vocational education, and the Central Training Department was created to supervise training centres (PAAET, 2023). Over time, the technical and vocational education institutes and training centres developed under these two departments have become the foundation of the PAAET colleges and institutes (PAAET, 2023). PAAET consists of two sectors: applied education and training. The applied education sector consists of five colleges that offer a variety of subjects (PAAET, 2023).

- College of Basic Education
- College of Business Studies
- College of Technological Studies
- College of Health Sciences
- College of Nursing.

In addition to these five colleges, several training institutes mainly grant diplomas.

- Higher Institute of Telecommunication and Navigation
- Higher Institute of Energy
- Secretary and Office Administration Institute
- Tourism, Beautification, and Fashion Institute
- Industrial Training Institute
- Construction Training Institute

- Nursing Institute
- Courses of Special Purposes.

PAAET provides an important context for exploring the educational use of SNSs in Kuwaiti higher education. As one of the largest public higher education institutions in Kuwait, PAAET plays a crucial role in supporting national human capital development and preparing graduates for participation in a knowledge-based economy (PAAET, 2023). The institution serves a large and diverse student population across various disciplines and has actively invested in digital technologies to enhance teaching, learning, and administration (PAAET, 2023). However, PAAET also faces challenges common in higher education systems, including rising student enrolment, substantial teaching workloads, and the need to balance traditional face-to-face educational practices with emerging digital learning approaches (Alqabas, 2022). These factors make PAAET an appropriate context for examining how educational SNSs affect student academic performance. Additionally, access to both student and teacher participants enables the implementation of a dual-perspective research design in this thesis.

2.6.2 ICT at PAAET

HEIs in Kuwait are committed to the New Kuwait plan aimed at transforming Kuwait into a vibrant and effective knowledge-based economy and society (Alhashem and Alhouti, 2021). According to Al-Saffar (2019), Kuwaiti HEIs in general, and PAAET in particular, have recognised the central role of ICT tools and services in these development efforts. ICT tools and services create opportunities for knowledge creation and exchange, education and training, and the nurturing of imagination, creativity, innovation, critical thinking, cultural growth, and intercultural dialogue. Consequently, PAAET actively implements various ICT programmes and supports the widespread integration of ICT tools and services across all areas of the organisation, including administrative, financial, and academic functions (Buarki, 2015).

PAAET offers a wide range of ICT resources and services for faculty members, academic support staff, employees, and students through its website (PAAET, 2023). These resources include various integrated systems such as email, Microsoft 365, e-learning platforms in the form of LMSs, TRACK e-training, library information

resources, a faculty portal, academic staff evaluations, an employee self-service system, password management, student admissions, and a student portal, which is also referred to as the student registration or student information system (PAAET, 2023).

The Information and Computer Centre at PAAET uses Moodle as an LMS to enhance the learning experience (PAAET, 2023). According to Gamage et al. (2022), Moodle is a global platform designed to create an interactive learning environment, manage academic content, and assess educational outcomes. The PAAET Information and Computer Centre's goal is to establish a robust e-learning environment at PAAET. Moodle facilitates effective communication not only between students and teachers but also among the students themselves (PAAET, 2023). Through Moodle, students can access educational materials shared by their teachers, such as lecture notes. They can also submit assignments and communicate with teachers regarding questions and queries (PAAET, 2023). Additionally, Moodle allows for the creation of question banks, automated testing, and a variety of other services (Gamage et al., 2022).

Despite the substantial investment in ICT tools, services, systems, and resources at PAAET, their formal use by both students and teachers remains limited (Alhouti, 2020; Buarki, 2015). For instance, students primarily use ICT tools to register for courses at the start of each semester, and teachers mainly use these tools to input students' grades at the end of the semester. According to Al-Saffar (2019), one reason for this limited or infrequent use of ICT tools is a lack of awareness regarding their availability, as well as insufficient knowledge and training. This observation aligns with Buarki's (2015) finding that both students and teachers at PAAET require training in the use of ICT tools.

There is also a noticeable disparity in ICT usage, which stems from varying levels of skills and experience among students and teachers across PAAET's colleges (Buarki, 2015). Additionally, the limited use of ICT can be attributed to the PAAET management's lack of clear policies and guidelines on how students and teachers should use ICT tools such as LMS more broadly (Al-Hunaiyyan et al., 2018). Interestingly, college and university students exhibit a high level of acceptance of SNSs within the educational process (Al-Anzi, 2021). In 2022, the internet penetration rate reached approximately 98.3%, and the number of SNS users was 4.44 million in Kuwait, representing 87.9% of the total population (Mesbah and Alfailakawi, 2023; Statista, 2023), indicating a readiness to adopt new educational technologies.

The experience of PAAET reflects broader trends observed in HEIs worldwide. Substantial investments in digital technologies do not always ensure their effective use in education (Alhouti, 2020). Similar challenges regarding user awareness, training, and technology integration have been reported in both Western and East Asian higher education settings. However, the PAAET context is also influenced by local institutional and cultural factors, including large student populations, varying levels of digital readiness, and a continued emphasis on interpersonal communication in the educational process (Alqabas, 2022; Buarki, 2015; PAAET, 2023). These characteristics indicate that findings from other educational contexts may not be directly applicable to the Kuwaiti higher education environment. This reinforces the importance of examining how the use of educational SNSs relates to students' academic performance within this specific institutional and cultural setting.

2.6.3 SNSs at PAAET

SNSs have introduced new ways of communicating and sharing ideas and information among all parties involved in the educational process, particularly among university students and teachers (Mesbah and Alfailakawi, 2023). In this regard, Alenezi and Brinthaupt (2022) found that a significant number of students and teachers in Kuwait engage in the voluntary use of SNS platforms for e-learning and create groups on these platforms to support academic interests. This trend became particularly evident during the Covid-19 pandemic, when HEIs in Kuwait faced emergency closures. During this time, teachers made great efforts to ensure the continuity of education by fully utilising various SNS applications (Alhouti, 2020).

The trend of adoption and acceptance of SNSs for educational purposes at PAAET has provided a new medium that enhances learning and facilitates communication between students and teachers (Al-Anzi, 2021). For example, Al-Hunaiyyan et al. (2018), Mansour (2015), Mesbah and Alfailakawi (2023), and Sulaiman and Dashti (2018) have reported that both students and teachers at PAAET have widely embraced SNSs for educational uses such as communication and sharing information, beyond just socialisation and entertainment. These studies also reveal that both students and teachers hold positive views regarding the use of SNSs in education, believing that they enhance the learning process. Furthermore, Alenezi and Brinthaupt (2022) found that most students feel that SNSs improve their interactions with peers and teachers,

increase engagement, foster collaborative learning, and enhance their academic performance. Overall, the level of adoption and acceptance of SNSs among both students and teachers indicates that introducing and using ICT in the educational process is effective (Alfailakawi, 2022).

As SNSs have increasingly been used for academic purposes, myU has emerged as one of the most popular SNS applications in the Middle East, particularly Kuwait, as well as countries such as Saudi Arabia and Bahrain. This is supported by insights obtained from an interview conducted by resercher with Bader Alessa, the founder of the myU application. What sets the myU app apart is its design, which is specifically focused on education and learning. It offers a variety of features that enhance users' knowledge and learning potential, especially for student users (Alfailakawi, 2022). Moreover, the myU app creates a safe environment for students and teachers to communicate and manage their relationships through multiple media formats, including text, images, audio, video, and links (myU, 2023).

The increasing use of myU demonstrates how educational SNSs have become integrated into teaching and learning practices in Kuwaiti higher education (myU, 2023). Unlike general-purpose SNSs, myU was specifically designed to support educational communication, knowledge sharing, and interaction between students and teachers (Alfailakawi, 2022). Its widespread adoption in institutions such as PAAET provides an important context for examining how the use of educational SNSs relates to student academic performance. Recognising its educational potential, Kuwaiti HEIs have organised training workshops to promote effective use of the platform among academic staff. For instance, the College of Basic Education at PAAET has conducted workshops to familiarise teachers with the functionalities of myU and its application in educational settings (Al-Saffar, 2019). Given its popularity and focus on education, myU serves as the primary educational SNS discussed in this thesis and will be explored in greater detail in the following chapter.

2.7 Chapter Summary

This chapter provides an overview of the broader context in which the research is situated by examining Kuwait's socioeconomic environment, national development agenda, education system, and e-learning strategy. It highlights that education, digital transformation, and human capital development play a central role in Kuwait's long-

term development plans. Additionally, the chapter underscores the increasing importance of ICT and SNSs in higher education, particularly at PAAET. Digital technologies are being utilised more frequently to support communication, collaboration, and learning activities among students and teachers. Together, these contextual factors underscore the importance of examining the relationship between educational SNSs and students' academic performance in Kuwaiti higher education. The next chapter reviews the literature on educational SNSs and their impact on students' academic performance.

3 Literature Review

3.1 Introduction

This chapter reviews the literature on the use of SNSs for educational purposes and the relationship of educational SNS use with SAP. This review aims to situate educational SNSs within the broader context of e-learning and Web 2.0, while synthesising current scholarly views on the benefits and risks of SNSs in teaching and learning. The chapter is divided into several sections. It begins with an overview of e-learning and its evolution in HEI settings. Next, it examines Web 2.0 technologies and their pedagogical benefits, leading to a detailed discussion of SNSs and their applications in higher education. Subsequent sections address academic performance, exploring evidence on the relationship between SNS use and SAP from both student and teacher perspectives. Finally, the chapter concludes with a summary of the gaps in the literature, highlighting research-related, theoretical, methodological, and contextual issues that justify the need for this study.

3.2 e-Learning in Higher Education

E-learning has become central to modern higher education, revolutionising learning processes, teaching methods, and interactions between students and educators. The term e-learning has been defined in various ways in the literature, with the definition evolving to reflect its development alongside technological advancements. A commonly referenced definition describes e-learning as the use of ICTs to enable access to online learning and teaching resources (Jami Pour et al., 2022). In an earlier foundational work, Moore et al. (2011) conceptualised e-learning as the delivery of instruction through digital technologies, allowing for learning to occur either synchronously or asynchronously and supported by communication tools and multimedia resources. Other definitions also emphasise its pedagogical aspects, defining e-learning as a technology-enhanced learning process that fosters flexibility, personalisation, and learner autonomy (Ellis and Bliuc, 2019; Garrison, 2016; Jami Pour et al., 2022).

E-learning began to appear in formal education in the early 1990s, coinciding with the rise of the internet and the advent of multimedia computing. The term gained academic recognition in the late 1990s as universities began integrating web-based courses into their programmes (Ruiz et al., 2006). The early 2000s marked a turning point, as HEIs adopted virtual learning environments and transitioned from traditional face-to-face instruction to blended and fully online models (Guri-Rosenblit, 2005). During this period, strong arguments in favour of incorporating e-learning into higher education highlighted its ability to enhance interaction among students and between students and teachers (Garrison, 2016). Interaction is widely recognised as a crucial factor in successful learning, particularly in online and blended courses. E-learning environments support various forms of interaction, namely learner-to-content, learner-to-learner, and learner-to-instructor, each contributing to greater engagement and better academic outcomes (Moore, 1989). The rapid development of Web 2.0 technologies, cloud-based applications, and mobile learning has further expanded the definition and scope of e-learning, making it an essential component of modern pedagogical practices (Ellis and Bliuc, 2019; Jami Pour et al., 2022).

Globally, e-learning has progressed rapidly and broadly. However, its integration into Kuwait's higher education sector has followed a unique path influenced by national educational priorities, investments in infrastructure, and institutional policies. As detailed in Chapter 2, Kuwait has implemented several national strategies aimed at enhancing digital transformation in academic institutions (New Kuwait, 2023). They include expanding the use of digital learning platforms, strengthening ICT infrastructure, and promoting technology-supported teaching (MOE, 2023). These strategies align with broader regional trends in the Gulf Cooperation Council (GCC) countries, where governments have emphasised the importance of e-learning in improving the quality, flexibility, and competitiveness of education (Al-Hunaiyyan et al., 2021).

E-learning tools refer to a variety of digital platforms and resources designed to enhance teaching and learning experiences. One of the earliest and most well-established categories of tools corresponds to LMSs. Platforms such as Blackboard, Moodle, Canvas, and Desire2Learn provide hubs for course materials, assessments, communication, and student tracking. These LMSs provide structured environments that enable teachers to effectively manage content delivery, monitor student participation, and assess learning outcomes (Watson and Watson, 2007). Another

category of tools comprises edutainment tools, which are interactive multimedia applications that combine educational content with entertainment elements to enhance motivation and engagement. Examples include gamified apps, simulation tools, and interactive modules. Research indicates that edutainment can enhance student motivation and improve conceptual understanding, especially in technology-oriented fields (Tüzün et al., 2009).

Web 2.0 tools such as blogs, wikis, podcasts, and collaborative platforms have significantly enriched the e-learning landscape by facilitating user-generated content and participatory learning environments. These tools align with constructivist teaching approaches by enabling students to co-create knowledge, share ideas, and engage in collaborative projects (Mcloughlin and Lee, 2010). Social media platforms have become among the most widely used e-learning tools. Their interactive and user-driven features facilitate communication, knowledge sharing, peer support, and community building (Cao et al., 2013). Platforms such as Facebook, WhatsApp, Instagram, X (formerly Twitter), and specialised academic networking tools are increasingly being integrated into learning processes. This integration allows for immediate and continuous interaction, informal learning, and collaborative knowledge creation (Dabbagh and Kitsantas, 2012). Given their educational potential and rising use in higher education settings, Section 3.3 provides an in-depth discussion of SNSs and their role as advanced and transformative e-learning tools.

3.3 Social Media Technologies

The concept of social media is best understood as a collection of digital platforms and practices that enable users to create, share, and interact with user-generated content in networked environments. According to the literature, definitions focus on two complementary aspects: (1) the technological capabilities for content creation, curation, and distribution and (2) the social practices surrounding interaction, reputation, and network formation. Kaplan and Haenlein (2010, p. 61) defined social media as “a group of Internet-based applications that build on the ideological and technological foundations of Web 2.0, and that allow the creation and exchange of User Generated Content”. Similarly, van Dijck (2013) emphasised the sociotechnical nature of social media, arguing that social media platforms mediate not only communication but also social relationships, norms, and values. Alshuaibi et al. (2018)

supported this view by noting that the term social media consists of two key components: *social* and *media*. This combination reflects the inherent human desire to connect with others in various ways through different media. In summary, social media are both platforms and participatory practices. They encompass technical architectures and social ecosystems that shape user interactions and behaviours (Kaplan and Haenlein, 2010; van Dijck, 2013).

Social media has a relatively short yet impactful history. The roots of social media can be traced back to pre-web electronic communication methods, such as bulletin board systems and Usenet. However, the era commonly referred to as the social media age began with the advent of Web 2.0 in the early to mid-2000s. This shift marked a transition from static content delivery to interactive, user-generated platforms (O'Reilly, 2007). Early social media platforms had different objectives. For instance, some, such as SixDegrees, which launched in 1997, aimed to map personal networks and foster online connections. Meanwhile, others, including blogs and early forums, centred on individual publishing and conversations. The literature explains that social media are characterised by the rapid evolution of communication technologies (Ashraf et al., 2021; Boyd and Ellison, 2007; Kaplan and Haenlein, 2010). As a result, social media can take various forms, each catering to different content types and communication styles (Boyd and Ellison, 2007). In general, social media can be classified into the following types:

- **Social networking sites (SNSs)** are web-based services that enable individuals and communities to connect with friends and acquaintances online. Users can interact through status updates, comments, media sharing, and messages. Examples include Facebook and LinkedIn (Boyd and Ellison, 2007).
- **Blogs** refer to journal-like websites where users contribute textual and multimedia content, arranged in reverse chronological order. Blogs are generally maintained by individuals or communities. Examples include WordPress.com, Medium, Tumblr, and Blogger (Kaplan and Haenlein, 2010).
- **Status-update services** are also known as micro-blogging services. These platforms, such as X (formerly Twitter), allow people to share short updates about themselves or events and to view updates from others (Kaplan and Haenlein, 2010).

- **Media-sharing sites** host video, image, and audio content, enabling rich media distribution and discussion. Examples include YouTube, Vimeo, Instagram, Pinterest, and SoundCloud (Kaplan and Haenlein, 2010).
- **Social bookmarking services** allow users to bookmark web content for storage, organisation, and sharing. Examples include Delicious, StumbleUpon, and Digg (Ajjan and Hartshorne, 2008).
- **Wikis** are collaborative editing environments that allow multiple users to create and edit web pages. Examples include Wikipedia and Google Docs (Ajjan and Hartshorne, 2008).

Studies in this field have found that SNSs are the most widely used type of social media application (Alaslani and Alandejani, 2020; Ashraf et al., 2021; Boyd and Ellison, 2007). Section 3.4 discusses SNSs in further detail.

3.4 Social Networking Sites (SNSs)

SNSs are a unique category of social media platforms designed to allow users to create individual profiles, establish social connections, and interact within digitally mediated networks. The most frequently cited definition comes from Boyd and Ellison (2007), who defined SNSs as web-based services that enable users to create a public or semi-public profile, list their connections, and view and navigate these connections within a defined system. Ajjan and Hartshorne (2008) further highlighted that SNSs enable users to create personal profiles and establish various networks that link them with family, friends, and colleagues. Subsequent research has emphasised the sociotechnical nature of SNSs. They are not just technological tools but also social infrastructures that mediate communication, collaboration, and community building (Ellison and Boyd, 2013; Papacharissi, 2011). Therefore, SNSs function as both communication platforms and social environments, influencing how individuals interact, present themselves, and access information (Zhao, 2021).

Although online communities existed before the Web 2.0 era, SNSs in their current form began to emerge in the late 1990s. SixDegrees, launched in 1997, is often recognised as the first major SNS because it combined user profiles, friend lists, and visible social networks (Boyd and Ellison, 2007). Its goal was to leverage the concept of six degrees of separation to map real-world social connections online. After

SixDegrees shut down in 2001, platforms such as Friendster (2002), LinkedIn (2003), MySpace (2003), and Facebook (2004) introduced improved social features, increased interactivity, and personalised communication (Kaplan and Haenlein, 2010). Whereas early SNSs were mainly designed for social connections and personal identity expression, they quickly evolved to enable professional networking, entertainment, information sharing, and organisational communication (Papacharissi, 2011; van Dijck, 2013).

According to Internet World Stats (2023), there are approximately 5.18 billion internet users worldwide, which constitutes 64.6% of the global population (Statista, 2023). Among these users, 4.8 billion people, or 59.9% of the world's population, are active social media users (Statista, 2023). Facebook remains the most popular SNS, boasting over 2.9 billion monthly active users, which represents more than half of all internet users worldwide (Statista, 2023). SNSs have grown rapidly, transforming interpersonal communication in various realms, including politics, commerce, sports, education, and social and cultural activities (Boyd and Ellison, 2007; Bugulah, 2022; Chugh and Ruhi, 2018; Zhao, 2021). SNSs provide platforms for users to communicate with peers and even anonymous individuals in a computer-generated social environment (Taprial and Kanwar, 2012). These features of SNSs align with the findings of Palla and Sheikh (2021), who noted that the increase in the use of SNS services across various sectors can be attributed to multiple factors. The affordability of interactive services (often even for free), their ease of access, and their widespread availability all play a role. Palla and Sheikh (2021) also noted that the extensive reach of SNSs, known as connectivity, ensures that any shared content can quickly reach a large number of users, regardless of their age, status, geographical location, or time zone. However, there are concerns about the spread of false information on SNSs, especially among younger users, the most active demographic on SNSs, according to Internet World Stats (2023). Additionally, these platforms carry risks such as cyberbullying, privacy invasion, and addiction. Users often spend considerable amounts of time on SNSs, which can distract them and lead to a loss of focus on specific tasks (Khechine et al., 2020; Wakefield and Frawley, 2020).

These features of SNSs explain why they play such a significant role in online communication. They offer a wide range of uses, including professional interactions, personal connections, entertainment, and the dissemination of knowledge (Bugulah, 2022; Chugh and Ruhi, 2018; Zhao, 2021).

3.4.1 SNSs in Higher Education

In educational contexts, scholars have refined the definition of SNSs such as Facebook and LinkedIn to highlight pedagogical intentions. Such SNSs are referred to as *educational SNSs* (Wakefield and Frawley, 2020). Educational SNSs are platforms that add social networking features to the learning process, facilitating communication, collaboration, resource sharing, and community building (Hung and Yuen, 2010). Educational SNSs also enable the sharing of text, visual, and audio content between students and teachers for teaching and learning activities (Al-Rahmi et al., 2021). Recent research has shown that educational SNSs offer not only social tools adapted for learning but also dynamic learning environments where interaction and engagement facilitate knowledge construction (Al-Qaysi et al., 2023; Perez et al., 2023). Ngai et al. (2015) also argued that SNSs are a fundamental part of the broader Web 2.0 ecosystem, incorporating participatory, user-generated content into educational practices.

In recent years, the integration of SNSs into higher education has become a strong trend, particularly because these platforms resonate with the digital behaviours of today's young adult learners (Al-Qaysi et al., 2023; Awotunde et al., 2021). Educational SNSs are crafted to foster an engaging digital learning environment that enhances connections among students and facilitates meaningful interactions with educators. Educational SNSs thus significantly enrich the overall learning experience (Alaslani and Alandejani, 2020). There is growing acknowledgement in the educational literature that SNSs not only complement but also expand the pedagogical advantages offered by traditional educational technologies such as LMSs. Unlike traditional LMSs, which often support a one-way flow of information from teachers to students and frequently lack the social presence, personalisation, and collaborative networking functionalities of social media, SNSs create vibrant communities that support collaborative learning (Brady et al., 2010; Gharrah and Aljaafreh, 2021; Rueda et al., 2017). Despite the widespread adoption of SNSs in higher education, their effectiveness for educational purposes remains uncertain. Many institutions have successfully integrated SNSs into teaching and learning activities; however, there is no consensus on whether this integration consistently improves learning outcomes and student academic performance (Cao and Tian, 2022). As a result, the primary challenge for researchers is no longer determining whether students and teachers adopt and use

SNSs but identifying the conditions under which SNS-supported learning leads to meaningful educational outcomes (Palla and Sheikh, 2021).

Educational SNSs promote dynamic and reciprocal interactions among users. For instance, teachers can create course-related groups where students participate in discussions, respond to prompts, and engage in conversations with peers. These dynamics encourage ongoing knowledge exchange beyond the limitations of classroom time (Awotunde et al., 2021). Educational SNSs also provide shared digital spaces where both learners and educators can upload, distribute, and comment on course materials, including reading material, multimedia resources, and external links. This feature supports collaborative meaning making both inside and outside the classroom (Gharrah and Aljaafreh, 2021). Moreover, SNSs simplify various academic processes. For instance, teachers can post assignments, track attendance, and monitor students' progress. At the same time, students can submit coursework and communicate directly with both teachers and peers (Ajjan and Hartshorne, 2008; Brady et al., 2010).

Scholars have emphasised that the pedagogical value of SNSs goes beyond just sharing resources. Educational SNSs also promote collaborative learning, discussed in more detail in Section 3.4.4, by allowing users to create virtual communities based on shared interests, subjects, or course activities (Ajjan and Hartshorne, 2008). However, the literature warns that integrating SNSs into education does not automatically yield advantages. Potential drawbacks include distractions for students, privacy issues, unclear boundaries between personal and academic identities, and the varying levels of technological proficiency among instructors (Kirschner and Karpinski, 2010; Manca and Ranieri, 2016). Therefore, the effective use of SNSs in higher education depends on thoughtful instructional planning and a clear pedagogical strategy.

The use of SNSs in Kuwait reflects global trends while highlighting unique local characteristics influenced by national digital strategies and government-led digital transformation initiatives. As discussed in Chapter 2, educational institutions in Kuwait have increasingly adopted digital platforms to enhance communication, streamline administrative processes, and promote student engagement. Empirical studies conducted in Kuwait show that SNSs play a significant role in improving communication, increasing student engagement, and providing better access to academic information (Alhashem and Alhouti, 2021). These findings are consistent with the broader international-oriented literature, reinforcing the idea that the

educational value of SNSs is determined not by the platform itself but by the effectiveness of its integration into teaching practices (Gharrah and Aljaafreh, 2021; Rueda et al., 2017).

3.4.2 Types of SNSs in Education

A variety of SNSs are used in education. Each provides unique features that facilitate interaction, content sharing, and collaborative learning. Although these SNSs might have initially been designed for social or professional networking, many have been adapted for educational purposes. The most commonly used SNSs in higher education include Facebook, LinkedIn, and Ning. Each addresses different educational needs and offers varying degrees of structure, accessibility, and engagement.

3.4.2.1 Facebook

Facebook is one of the earliest and most influential SNSs to be used for educational purposes. Launched in 2004 by Mark Zuckerberg, it was initially designed to connect university students but quickly expanded into a global social network (Boyd and Ellison, 2007; Facebook, 2023). Its key features include personal profiles, groups, real-time messaging, multimedia sharing, live streaming, and discussion threads. As of 2023, Facebook has one of the largest user bases of any SNS, with over 2.9 billion monthly active users worldwide (Statista, 2023).

In higher education, Facebook groups are frequently used as informal learning spaces where students and teachers exchange information, share course materials, engage in discussions, and support peer collaboration (Manca, 2020). Scholars argue that the familiarity and ease of use of Facebook make it particularly effective for enhancing communication and fostering a sense of community (van Dijck, 2013; Bugulah, 2022). However, critics have raised concerns about privacy issues and potential distractions (Manca and Ranieri, 2016). Therefore, although Facebook provides flexible opportunities for collaborative learning, its effectiveness relies on clear pedagogical guidelines and thoughtful integration.

3.4.2.2 LinkedIn

LinkedIn, launched in 2003, was originally designed as a professional networking platform rather than a social tool for personal interactions. Its key features include digital CVs, professional profiles, job postings, interest-based groups, industry news feeds, and opportunities for skill endorsements and career-related networking (LinkedIn, 2023). As of 2023, LinkedIn has over 930 million users worldwide, reflecting its key role in professional development and labour market networking (LinkedIn, 2023).

In the education sector, LinkedIn serves a unique purpose with respect to other SNSs. Its primary value lies in bridging academic learning with employability skills. Universities increasingly encourage students to create LinkedIn profiles to enhance their digital identities, build professional networks, and access internships or job opportunities (Al-Qaysi et al., 2023). LinkedIn Learning, an integrated educational platform, further expands this SNS's usefulness by offering short online courses, certification pathways, and personalised skill recommendations. Research indicates that incorporating LinkedIn into coursework can enhance students' career readiness, reflective learning, and engagement with industry communities (Rueda et al., 2017). However, some critics argue that the benefits of LinkedIn tend to favour students with higher levels of digital literacy or clearer career goals, raising concerns about inequality in professional networking opportunities (Manca, 2020).

3.4.2.3 Ning

Launched in 2005, Ning enables institutions, educators, and interest groups to create private or public social networks tailored to specific communities such as university courses, departments, or alumni groups. Unlike global SNSs with open membership, Ning gives network creators administrative control over membership, privacy settings, and content features (Ning, 2025). Typical Ning features include user profiles, discussion forums, blogs, groups, photo and video sharing, event pages, private messaging, and access controls. These features provide a customised, community-based learning environment (Ning, 2025).

Ning enables the creation of closed, purpose-driven networks, offering more control over privacy, access, and community boundaries than with mainstream social platforms. This level of control is particularly beneficial in educational settings, where

institutions are interested in managing access, tracking participation, and maintaining a safe and academically focused environment (Brady et al., 2010). Research on Ning and similar community-based platforms shows that they can enhance collaborative learning, increase student engagement, and facilitate peer-to-peer interaction, all while minimising the risks associated with mixing the personal and academic social spheres (Al-Azawei, 2019; Brady et al., 2010). However, research has highlighted some limitations, including the need for digital literacy, uneven participation among students, and challenges in maintaining engagement over time (Manca, 2020). Nevertheless, Ning remains a prime example of an education-oriented SNS that has influenced how digital platforms can be adapted for teaching and learning.

3.4.2.4 myU

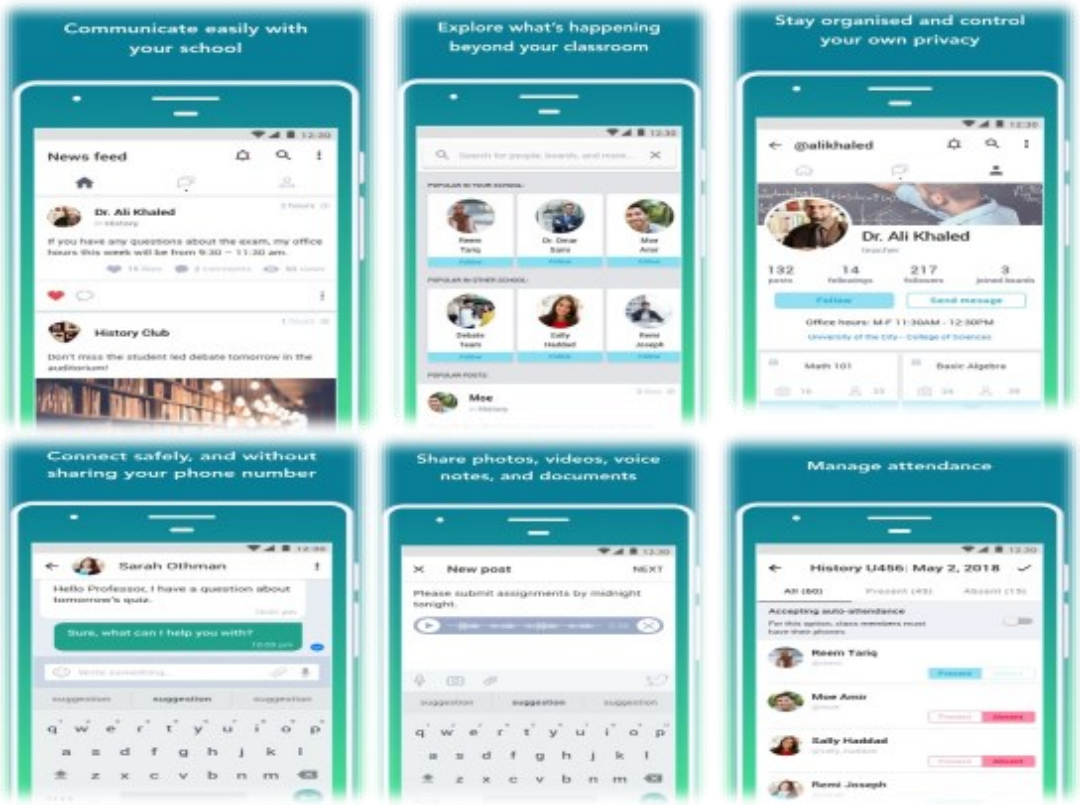
The higher education system in Kuwait tends to favour locally supported platforms for course communication over well-known global SNSs such as Facebook. A prominent example is the myU app, which is among the most popular educational SNSs in the Arabian Gulf region. Its popularity extends to countries such as Saudi Arabia and Bahrain, but it is of particular relevance to the current thesis in the context of Kuwait (myU, 2023). In this thesis, the myU app is used as an example of SNSs in the Kuwaiti higher education system.

Bader Alessa founded the myU app in Kuwait, creating the initial design concept in May 2012. The app was launched on the Apple App Store in December 2013 and Google Play (Android) in April 2014. The application aims to create a fast social and educational network, essentially a hybrid platform that combines LMS features with social networking capabilities. This design ensures quick and effective interaction and communication between students and teachers within a secure digital environment (myU, 2023). The platform offers several features, including course-based discussion spaces, messaging, announcements, assignment submissions, attendance tracking, timetable access, and grade viewing (myU, 2023). These functions resemble those of mainstream SNSs but are tailored to meet local language preferences, privacy requirements, and administrative workflows, facilitating structured interaction between students and teachers (Alfailakawi, 2022).

As indicated by insights from an interview conducted with Bader Alessa, the founder of the myU application, students and teachers in many contexts in Kuwait tend

to rely more on myU and similar institutional tools than on Facebook when such platforms are available. Consequently, myU has been widely adopted across schools and HEIs throughout Kuwait and the Arabian Gulf region, boasting tens of thousands of registered users (myU, 2023). This widespread adoption reflects a regional preference for platforms that align with national digital strategies and cultural expectations for formal academic interaction. However, despite the extensive use of myU, there is limited empirical research examining its impact and that of similar educational SNSs on SAP, particularly from the perspectives of both students and teachers in Kuwait. This lack of empirical research highlights the importance in the present thesis of investigating myU as a representative educational SNS that reflects local practices while embodying broader theoretical principles associated with SNS-supported learning. The user interface of a fictional account on the myU application is displayed in Figure 4.

Figure 4: User Interface of the myU Application



Note. Source: myU (2023) from a fictional account.

In sum, different SNSs offer different advantages. Mainstream SNSs such as Facebook are effective for building informal peer networks and reaching a wide audience.

LinkedIn is particularly strong for establishing a professional identity and enhancing employability. Education-specific platforms such as Ning and myU offer stronger governance and pedagogical controls. Each SNS presents trade-offs regarding scale, privacy, and pedagogical alignment. Therefore, the selection of an SNS should be driven by instructional needs rather than the latest technological trends (Al-Qaysi et al., 2023).

3.4.3 SNSs as a Communication Tool in Higher Education

SNSs play a crucial role in enhancing communication between teachers and students. Educational SNSs such as Facebook and Ning provide channels for teachers to quickly clarify instructions, offer feedback, and share supplementary materials (Gopinathan et al., 2022; Lin et al., 2023). These functionalities align with Selwyn's (2009) argument that teachers can use these platforms as innovative methods in the classroom, particularly in HEIs, to encourage students to engage in effective activities outside the realms of traditional teaching approaches. In support of this assertion, Cao et al. (2013) found that educational SNSs improve teaching methodologies, fostering interactive and participatory learning experiences. However, although educational SNSs are valuable resources, they must be used with full digital awareness to create an effective learning environment.

In educational settings, communication facilitated by SNSs goes beyond simple social interactions. It often involves sharing academic information, providing feedback, coordinating learning activities, discussing course content, clarifying assessment requirements, and maintaining ongoing communication between students and teachers (Hosen et al., 2021). These forms of academic interaction are particularly important because they directly support the learning process, unlike purely social exchanges, which may increase communication frequency without necessarily enhancing educational outcomes (Manca, 2020).

Despite the benefits of educational SNSs, Brady et al. (2010) noted that some higher education students reported a preference for face-to-face communication in their learning process rather than using SNSs. This preference may stem from the fact that, at the time of that study, SNSs were a new experience for these students, who possessed only basic skills in using SNSs. As a result, they may have lacked adequate knowledge about how to use SNSs effectively and what potential educational benefits they could

offer. Accordingly, although students' experience and familiarity with SNSs are crucial for enhancing learning, additional training is necessary. Such training could help both teachers and students achieve their educational goals more quickly, easily, and effectively (Al-Qaysi et al., 2023; Manca, 2020).

In Kuwait, communication in higher education is still influenced by cultural norms that prioritise direct, face-to-face interaction between students and teachers. However, the use of SNSs and digital platforms for academic communication has increased, especially since the Covid-19 pandemic (Soleimani et al., 2024). Additionally, the adoption of SNSs in higher education closely aligns with Kuwait's national development and digital transformation plans, which focus on modernising education, integrating technology, and promoting digital learning environments, as discussed in Chapter 2. As a result, local SNSs, such as myU, are used in Kuwaiti HEIs to facilitate academic communication. These platforms are used for announcements, coordination, and interaction between teachers and students outside of classroom hours, rather than other less specific platforms such as Facebook. This approach reflects a deliberate effort to balance technological innovation with traditional face-to-face communication, ensuring that SNSs serve as complementary tools that help Kuwait meet its national educational objectives.

3.4.4 SNSs and Collaborative Learning

Collaborative learning has long been recognised as a foundational pedagogical approach in which learners work together towards a shared goal, building knowledge through interaction rather than passive reception (Kreijns et al., 2003). Collaborative learning is grounded in constructivist learning theory, discussed in more detail in Chapter 4. This theory posits that cognition develops through dialogue, negotiation of meaning, and socially shared problem solving (Piaget, 1954; Vygotsky, 1978). In digital contexts, collaborative learning has proven to play a significant role in enhancing student engagement, deepening understanding, and improving overall learning quality, especially in technology-mediated learning environments. Research has shown that, when students collaborate on tasks, co-regulate their learning, and share cognitive responsibilities, they experience higher levels of motivation, satisfaction, and learning outcomes (Blasco-Arcas et al., 2013; Sharma et al., 2024). Recent studies also indicate that collaborative tasks encourage students to coordinate

not only their cognitive strategies but also their emotional responses during group work. When learners jointly monitor, plan, and regulate their progress (a process known as socially shared regulation of learning), they tend to remain more engaged and achieve deeper learning. Such learner engagement is essential for productive learning in online and blended environments (Nguyen et al., 2023).

In this context, educational SNSs create an ideal environment for supporting collaborative learning processes. Features such as messaging, group spaces, commenting, and content sharing facilitate interaction, feedback exchange, and the collective construction of knowledge (Boruzie et al., 2024; Gopinathan et al., 2022; Manca, 2020). By enabling continuous communication and encouraging active participation, SNSs can also help overcome common challenges in collaborative learning such as limited interaction and weak group cohesion (Cao et al., 2013).

The educational value of collaborative learning in SNSs environments relies not just on the quantity of user activity, but also on the quality and intention behind learner participation. Educational research indicates that meaningful collaboration occurs when learners are actively involved in knowledge construction, critical discussion, resource sharing, and collective problem-solving to achieve common academic goals (Manca, 2020). In contrast, participation that is primarily social, recreational, or not directly related to learning may increase online activity without necessarily enhancing educational outcomes. Therefore, when assessing the effectiveness of SNS-supported learning environments, it is crucial to focus on the nature of learner engagement rather than assuming that higher levels of platform use automatically result in stronger collaborative learning or improved student academic performance (Al-Rahmi et al., 2022; Wakefield and Frawley, 2020).

The connection between SNS use and collaborative learning is particularly important when considering its impact on students' academic outcomes. Numerous studies indicate that using SNSs for collaborative purposes enhances student engagement, facilitates peer support, and improves learning performance. For example, research has shown that interactions on these platforms can predict students' perceived learning, satisfaction, and academic achievement (Al-Rahmi et al., 2022; Cao et al., 2013; Cao and Tian, 2022). This improvement in academic outcomes results from SNSs' ability to enable students to clarify misunderstandings and extend their learning beyond the classroom. The most significant benefits have been observed in studies where collaborative learning mediates the relationship between SNS use and

SAP. These findings suggest that the advantages of SNSs arise not only from access to information but also from active collaboration among peers (Al-Rahmi et al., 2015; Al-Rahmi et al., 2018). Supporting this idea, Boruzie et al. (2024), Wakefield and Frawley (2020), and Wu et al. (2022) have noted that collaborative environments facilitated by SNSs encourage positive engagement patterns such as increased participation, peer interaction, and sustained attention. These factors ultimately contribute to higher levels of learning performance and academic success.

In sum, the educational value of SNSs comes not from the platforms themselves but from the collaborative learning practices they support. When students engage in shared problem solving, joint discussions, and reflective dialogue on SNSs, they are more likely to achieve meaningful learning and better academic outcomes (Al-Rahmi et al., 2022; Wakefield and Frawley, 2020). However, the literature also warns that effective collaborative learning through SNSs requires careful design, teacher facilitation, and a focus on the quality of interactions. Poorly structured collaborations can lead to superficial participation or distractions (Kreijns et al., 2003; Manca, 2020). Thus, SNSs can only serve as effective collaborative spaces when integrated within intentional pedagogical frameworks.

The use of SNSs is relevant to the current educational context in Kuwait. The Kuwaiti higher education sector is transitioning towards modern, student-centred learning methods. This transition emphasises collaboration and active participation (Al-Hunaiyyan et al., 2021). This policy shift aligns closely with global evidence on the advantages of collaborative learning, particularly when supported by SNSs. Alenezi and Brinthaupt (2022) noted that SNSs are increasingly recognised in Kuwait as effective learning tools that promote communication and collaborative interactions. As digital platforms become more integrated into higher education in Kuwait, it is crucial to understand how collaborative learning takes place within educational SNSs. This understanding will aid both policy formulation and practical implementation. A more detailed explanation of collaborative learning is provided in Chapter 4.

3.4.5 SNSs and Covid-19

Although this thesis focuses on a post-Covid-19 context, the transformative role of SNSs during the Covid-19 pandemic remains relevant today. Globally, SNSs became essential for communication and learning during lockdown, helping deal with the

sudden shift to remote education and alleviating the breakdown of traditional interaction channels. Research shows that SNSs helped maintain communication between teachers and students, reduced feelings of isolation, and ensured continuity in instructional delivery when traditional systems were suspended (Alawamleh et al., 2022; Cavus et al., 2021). Additionally, collaboration through SNSs kept students academically engaged, as digital interaction tools encouraged participation and supported peer-to-peer learning during lockdown (Gopinathan et al., 2022; Khan et al., 2021). At the same time, evidence suggests that the prolonged reliance on digital platforms prompted institutions and educators to re-evaluate their long-term digital teaching strategies, with many teachers expressing a willingness to continue using online platforms even after restrictions eased (Khong et al., 2023).

In Kuwait, the pandemic accelerated the national shift towards technology-enhanced and hybrid learning models. SNSs were used alongside LMSs, providing additional spaces for interaction that traditional institutional platforms often lacked. According to Al-Enzi et al. (2024) and Soleimani et al. (2024), SNSs and related digital tools facilitated students' access to learning materials, promoted communication during the absence of face-to-face teaching, and contributed to early institutional efforts to evaluate and improve online learning systems. As Kuwaiti HEIs continue to integrate digital and hybrid approaches, the pandemic experience has shown that SNSs are no longer peripheral tools but essential components of resilient, socially connected learning ecosystems.

3.5 Academic Performance

In its broadest sense, performance refers to the extent to which individuals or organisations achieve their desired goals or expected outcomes within a specific context (Lebas, 1995). In education, academic performance is viewed as a measure of outcomes achieved by students, teachers, or institutions relative to their educational objectives (Alalwan et al., 2019). The literature presents academic performance as a multidimensional concept that can be understood at different levels: teacher, institutional, or student (York et al., 2015).

Teacher academic performance typically refers to the effectiveness of teachers in delivering high-quality teaching, fostering student engagement, and facilitating meaningful learning experiences. It is often assessed through teaching evaluations,

indicators of instructional quality, and evidence of student achievement, reflecting the direct impact of teachers on learning processes and outcomes (Stronge, 2018). In contrast, institutional academic performance indicates how effectively an HEI fulfils its academic mission. It is often measured through indicators such as graduation and retention rates, accreditation outcomes, research productivity, and student satisfaction metrics. These measures collectively reflect an institution's ability to support learning and maintain academic quality (Hill et al., 2003).

Finally, student academic performance (SAP) is the most widely studied dimension of academic performance. It is of particular relevance to this thesis. This thesis aims to investigate the factors related to the use of educational SNSs and their influence on SAP. Section 3.5.1 focuses on this concept by providing a clear definition, explaining how and why it is measured, and discussing its importance to various stakeholders, including teachers, HEIs, policymakers, and educational technology providers.

3.5.1 Student Academic Performance (SAP)

SAP is the dependent variable in the studies that underpin this thesis. It has long been a key concept in educational research and has evolved to keep pace with changes in teaching methods and learning technologies. Early definitions of SAP were based on general performance theory, which viewed performance as the extent to which individuals meet expected outcomes or goals regarding a specific task or role (Sonnentag and Frese, 2002). In education, this understanding was traditionally measured by observable outputs such as test scores, grades, and course completion, reflecting a primarily outcome-oriented perspective of learning (Bartels et al., 2000; Rovai, 2000). As educational systems have expanded and diversified, researchers have increasingly recognised that SAP is not a fixed or singular concept. Rather, it develops over time and is influenced by teaching methods, learner characteristics, and contextual factors (Alalwan et al., 2019).

Despite its widespread use, SAP or academic achievement is consistently reported in the literature as lacking a universally accepted definition. Instead, it is defined and measured in ways that align with the dominant learning paradigms being studied (Chikileva et al., 2023; Wakefield and Frawley, 2020). Generally, definitions of SAP can be categorised into those based on traditional learning environments and those based on e-learning and technology-enhanced contexts. Traditional learning is

typically characterised by face-to-face instruction, teacher-centred pedagogy, fixed curricula, and summative assessment practices, with instructors acting as the primary gatekeepers of knowledge (Al-Qahtani and Higgins, 2013; Bartels et al., 2000). In this context, SAP is often defined narrowly, focusing on grades, examination results, and standardised assessments. These measures primarily capture cognitive achievement but frequently overlook process-oriented learning outcomes (Rovai, 2000; Vallée et al., 2020). The absence of a universally accepted definition of SAP has significant implications for research in educational technology. Differences in how SAP is conceptualised and measured create challenges in comparing findings across various studies. This inconsistency may partly explain the inconsistent evidence concerning the educational impact of SNSs and other digital learning technologies (Chikileva et al., 2023). Therefore, it is crucial to understand how SAP is defined and operationalised when evaluating the relationship between the use of educational SNSs and SAP.

As digital technologies have become increasingly integral to education, researchers have started to re-evaluate traditional definitions of SAP. E-learning environments, defined as learning contexts that use digital platforms, online resources, and interactive technologies, transform students into active participants in the learning process, while teachers play the role of facilitators rather than just transmitters of knowledge (Al-Adwan et al., 2021; Isaac et al., 2019). In these environments, learning goes beyond mere content acquisition, also encompassing collaboration, engagement, self-regulation, and knowledge construction through interactions with peers, teachers, and technological tools (Al-Rahmi et al., 2021; Ansari and Khan, 2020). As a result, several studies suggest that defining SAP solely by grades is inadequate in e-learning contexts. This narrow focus overlooks the broader educational value created by digital learning experiences (Chikileva et al., 2023; Rasheed et al., 2022).

Therefore, in recent research, SAP in e-learning has been conceptualised as a multidimensional construct spanning not only measurable academic outcomes but also perceived learning gains, competence development, efficiency, and knowledge acquisition (Isaac et al., 2019; Sabah and Altalbe, 2022). Empirical studies have also shown that SAP is influenced more by how effectively digital tools facilitate interaction, collaboration, and task–technology fit than by content delivery alone (Al-Rahmi et al., 2021; Alalwan et al., 2019; Cao et al., 2013). In this context, educational SNSs form a specific subset of e-learning technologies that emphasise social

interaction, user-generated content, and collaborative knowledge sharing. These technologies have, in turn, been linked to improved learning outcomes when used appropriately (Ainin et al., 2015; Cao and Tian, 2022; Khaola et al., 2022).

Considering the varied concepts related to SAP and the specific focus of this thesis on educational SNSs, the e-learning definition that encompasses technology-enhanced and socially mediated learning is deemed most suitable. Accordingly, SAP is measured in this thesis from two complementary angles in order to respond to the research questions. From the students' perspective, SAP is defined as the extent to which educational SNSs influence student performance based on knowledge acquisition, resource savings, and skill development (Alamri et al., 2020; Hosen et al., 2021). From the teachers' perspective, teacher perceptions of student academic performance (TPSAP) refers to the degree to which teachers perceive students' ability to carry out academic tasks when using educational SNSs. TPSAP is assessed based on predicted grades and patterns of achievement such as new skill acquisition and perseverance (Sabah and Altalbe, 2022). Noting that the actual student grades were not used as the primary outcome measure for several reasons. First, obtaining individual academic records would have required access to confidential institutional data and additional ethical approvals. Second, academic performance is influenced by numerous factors beyond the use of educational SNSs, including prior ability, course difficulty, assessment design, and personal circumstances. Third, the theoretical models underpinning both studies focus on perceptions, experiences, and behavioural processes rather than objective academic outcomes. Consequently, perceived student academic performance and teachers' perceptions of student academic performance were considered more conceptually consistent with the constructs examined in this thesis. This is because they offer valuable insights into users' assessments of learning effectiveness, skill development, and academic success in technology-mediated environments (Sabah and Altalbe, 2022).

Understanding SAP is crucial in both traditional education and e-learning contexts because it offers a benchmark for evaluating the effectiveness of instructional strategies, learning technologies, institutional policies, and student support mechanisms (Alalwan et al., 2019; Sonnentag and Frese, 2002). In technology-enhanced and online learning environments, SAP is especially relevant because it provides empirical evidence of whether digital approaches such as educational SNSs lead to meaningful learning outcomes rather than simply greater participation or usage

(Chikileva et al., 2023; Rasheed et al., 2022). Studies have consistently used SAP as a key outcome variable to assess the success of e-learning, blended learning, and social media-supported instruction, emphasising its role in measuring both cognitive improvements and overall learning effectiveness (Al-Adwan et al., 2021; Al-Qahtani and Higgins, 2013; Vallée et al., 2020).

Moreover, SAP is vital for informing the decisions of various educational stakeholders. Teachers use students' outcomes to evaluate how effective their teaching methods are and to enhance instructional design in both in-person and online environments (Rovai, 2000; Stansfield et al., 2004). HEIs analyse SAP indicators to assess programme quality, institutional effectiveness, and the return on investment for educational technologies (Al-Rahmi et al., 2021; Isaac et al., 2019). At the policy level, data on SAP are often used to justify educational reforms, govern funding allocations, and support national initiatives for digital transformation in education (Chikileva et al., 2023; Rasheed et al., 2022). Additionally, technology and service providers rely on performance-related evidence to enhance the design, usability, and educational alignment of digital learning platforms, including educational SNSs (Cao et al., 2013; Sabah and Altalbe, 2022). Thus, examining SAP as a dependent variable is crucial for understanding the educational value and impact of educational SNSs in HEIs. It is particularly important for evaluating whether educational SNSs contribute to improved learning outcomes instead of merely fostering superficial engagement (Ainin et al., 2015; Cao and Tian, 2022).

3.6 SNS Use and SAP

Although educational SNSs are now widely used in higher education, their educational value is still debated. As a result, the central issue in the literature has shifted from whether students and teachers adopt SNSs to whether their use contributes to meaningful SAP. Existing research presents inconsistent findings regarding the relationship between SNS use and SAP, creating uncertainty about the conditions under which SNSs support, hinder, or have negligible effects on SAP (Cao and Tian, 2022; Palla and Sheikh, 2021). These inconsistencies indicate that the effects of SNSs depend not only on their usage but also on how they are integrated into educational practices, the nature of the interactions they facilitate, and the broader learning context in which they are used (Al-Qaysi et al., 2023). Therefore, this thesis aims to investigate

the relationship between educational SNS use and SAP from both student and teacher perspectives, providing a more comprehensive understanding of the mechanisms through which SNSs may influence SAP.

3.6.1 SNS Use and SAP from a Student Perspective (Study 1)

The relationship between students' use of SNSs and SAP has been the subject of ongoing debate, with researchers presenting a variety of often conflicting findings. Early critical studies raised concerns over students' ability to use SNSs effectively without compromising their academic focus. These studies reported that engaging with SNSs increases distraction, impairs attention, and reduces study time (Junco, 2012; Kirschner and Karpinski, 2010; Paul et al., 2012). Accordingly, SAP would suffer because SNSs encourage multitasking behaviours that overburden students' cognitive capacities, especially when academic tasks are combined with continuous social interaction (Jacobsen and Forste, 2011).

Recent evidence indicates that students' engagement with SNSs is often influenced by psychosocial factors such as loneliness, stress, and a lack of offline social support. These factors can lead to increased use without necessarily enhancing learning or academic performance, ultimately undermining students' academic focus and emotional well-being (Astatke et al., 2023). When students face academic challenges, distractions, or emotional strain, negative feelings such as stress and frustration may further diminish their ability to use SNSs effectively. Such situations may even result in intentions to discontinue their use of SNSs altogether (Luqman et al., 2017; Malik et al., 2021).

These findings support the argument that mentoring and structured support are crucial to help students use SNSs productively and in educationally meaningful ways, while minimising the potentially adverse effects (Arslan, 2018). Whereas some researchers emphasise the recreational nature of SNS use among students and its negative implications for SAP in HEIs (Astatke et al., 2023), others focus on emerging pedagogical approaches such as mobile learning that aim to integrate SNSs more effectively into the learning process. This difference in approaches contributes to ongoing uncertainty about how student engagement with SNSs translates into performance outcomes (Hosen et al., 2021; Wu et al., 2022).

A growing body of literature highlights the potential of SNSs for knowledge exchange, peer interaction, and network building in higher education. For example, Khan (2021) and Sabah (2023) have suggested that when students engage collectively on SNSs, it enhances positive peer influence, creating academic knowledge networks that promote collaborative learning, shared understanding, and mutual motivation. This type of peer interaction has been shown to improve student engagement, motivation, and learning outcomes, especially when SNSs are used to support communication and group-based learning activities (Alismaiel et al., 2022). In this context, collaborative learning has gained increasing attention as a key mechanism through which SNSs contribute to improved academic performance. For instance, Al-Rahmi et al. (2014) and Al-Rahmi and Zeki (2017) have shown that SNSs can enhance students' academic outcomes when integrated into learning environments that encourage peer interaction, collective problem solving, and shared academic goals. These findings align with constructivist learning theories, which emphasise the social nature of knowledge construction and the importance of interaction in meaningful learning.

Importantly, the educational benefits associated with SNSs are generally linked to academic interactions rather than to social activity alone. In higher education settings, these interactions typically involve exchanging academic information, seeking feedback, coordinating learning tasks, and participating in educational discussions (Al-Maatouk et al., 2020; Hosen et al., 2021). As a result, the positive effects reported in the literature are more closely associated with purposeful academic engagement through SNSs rather than the frequency of SNS use itself. Furthermore, collaborative learning within educational SNS environments should be differentiated from general social participation. Collaborative learning, which will be discussed in more detail in Chapter 4, consists of structured academic activities in which students work together to construct knowledge, share resources, solve problems, and support each other's learning objectives (Boruzie et al., 2024; Gopinathan et al., 2022). This approach is distinct from informal social interaction, which may increase platform activity but does not necessarily contribute to learning outcomes (Manca, 2020). It is essential to distinguish between these forms of engagement when evaluating the educational impact of SNSs on SAP.

At the same time, some scholars have challenged the deficit-oriented views of SNS use, arguing that multitasking and social interaction via digital platforms do not

necessarily undermine academic engagement. For example, Karpinski et al. (2013) suggested that students' ability to manage multiple digital activities may reflect adaptive skills developed in technology-rich environments rather than indicating cognitive limitations. Similarly, Ainin et al. (2015) emphasised the socialisation function of SNSs, noting that informal peer interactions can create academic support networks that indirectly benefit learning. However, evidence from various regional contexts presents a less consistent picture. Alwagait et al. (2015) and Rashid and Asghar (2016) found that SNS use affects SAP, although the direction and intensity of this influence appear to vary across different contexts and use patterns. These findings highlight the context-sensitive nature of the effects of SNSs and suggest that SNS use alone cannot explain academic outcomes. Instead, it is essential to consider how, why, and for what purposes students engage with SNSs.

More recent research has highlighted the importance of students' perceptions, digital behaviours, and learning motivations in determining the educational value of SNSs. Studies conducted in various regional and international contexts imply that students are more likely to experience academic benefits from SNS use when they are integrated into pedagogical practices to promote communication, collaboration, and engagement (Alawamleh et al., 2022; Cao and Tian, 2022). From a student's perspective, SNS-supported learning environments provide flexibility, quick access to learning materials, and enhanced peer support networks, all of which can indirectly improve SAP. However, Sabah and Altalbe (2022) warned that these advantages are not universal. Factors such as differences in digital competence, perceived usefulness, intrinsic motivation, and readiness to engage with technology-enhanced learning can limit the effectiveness of SNS-based educational practices for some students. Consequently, even in environments with well-established digital infrastructures, individual differences among students significantly influence whether SNSs are effective, neutral, or distracting as learning tools. Research indicates that the beneficial use of SNSs in education does not happen automatically. Rather, it relies on suitable guidance, supportive learning environments, and positive relationships between students and teachers. These factors can help reduce problematic behaviours and encourage meaningful engagement (Arslan, 2018).

In Kuwait, research on the use of SNSs among university students paints a complex picture. Many students report being well acquainted with SNSs applications. However, they often face challenges in using these platforms effectively for academic purposes.

Alenezi and Brinthaupt (2022) reported that frequently checking SNSs can interfere with study habits, time management, and overall academic responsibilities. Conversely, research conducted at Kuwait University revealed that students recognise the academic benefits of SNSs in extending learning beyond the classroom (Al-Shammari, 2022). These mixed student attitudes are further complicated by concerns from non-users, who view SNSs as socially and psychologically risky and worry about students' ability to maintain a balanced social life (Al-Hunaiyyan et al., 2018). Such concerns, along with wider social issues related to online information sharing, may influence the perceptions and attitudes of both users and non-users regarding the use of educational SNSs. Despite these challenges, recent studies suggest that SNSs have become increasingly important for improving the accessibility and visibility of higher education programmes in Kuwait (Al-Anzi, 2021; Al-Hunaiyyan et al., 2021).

In general, scholars have noted that research on Kuwait's context is limited and yields inconclusive findings. This is particularly important in Kuwait, where educational communication has traditionally depended on direct student-teacher interaction and face-to-face engagement. The introduction of educational SNSs introduces new dynamics to communication, yet their effects on learning and SAP remain poorly understood. This gap in the existing literature underscores the need for further research to better understand the cultural and educational nuances of SNS use in the Kuwaiti higher education sector (Al-Olayan, 2020; Alajmi and Alotaibi, 2020).

In conclusion, the literature shows a lack of agreement on the effects of SNSs on SAP. Many studies indicate that using SNSs for educational, collaborative, and interactive purposes can have positive effects (Al-Rahmi et al., 2021; Ainin et al., 2015; Kabilan et al., 2010). However, others highlight negative impacts, including distraction, multitasking, and time displacement (Giunchiglia et al., 2020; Junco, 2012; Kirschner and Karpinski, 2010). Additionally, other studies suggest that SNSs lack significant effects, concluding that they are inherently neither beneficial nor harmful. Instead, their impact relies on how they are used, the learning context, and how effectively they are integrated into instruction (Alwagait et al., 2015; Rashid and Asghar, 2016). Overall, these mixed findings underscore the need for more detailed research that considers students' perspectives and focuses on key factors such as engagement, interaction, and collaboration.

3.6.2 SNS Use and SAP from a Teacher Perspective (Study 2)

Research on how teachers perceive the factors influencing SAP, particularly digital tools and SNSs, is limited compared with the abundance of studies from a student perspective. Early foundational research shows that teachers play a crucial role in shaping the learning environment through not only their instructional strategies but also the relational and regulatory structures they establish. For example, Aspelin (2012) reported that the teacher–student relationship is a key social-psychological factor in student success, indicating that teachers' interpretations of interpersonal dynamics directly affect learning outcomes. This perspective suggests that teachers' beliefs and expectations serve as filters that shape both learning processes and SAP.

Building on this foundational work, scholars have begun to explore how teachers' pedagogical choices and perceptions intersect with technology-enhanced learning. Early empirical studies portrayed teachers as gatekeepers, indicating that their willingness or hesitation to adopt digital tools could significantly affect SAP (Ajjan and Hartshorne, 2008). This idea aligns with the findings of recent reviews. For instance, Akram et al. (2022) and Alshehri (2019) explained how teachers' views on the effectiveness of technology, their workload, and their desire for classroom control influence whether technology results in meaningful learning gains. Zachos et al. (2018) found that although higher education teachers recognise the communicative potential of SNSs, they are often cautious about SNSs' instructional value, frequently citing concerns about distraction, professionalism, and the varying levels of digital literacy among students. Similarly, in their comprehensive review of SNSs use in classrooms, Van Den Beemt et al. (2020) concluded that teachers often struggle to develop pedagogically sound methods for integrating SNSs, even when they acknowledge their relevance to students' lives. Together, these foundational studies illustrate that teachers' perceptions, shaped by their professional identity, instructional experience, and institutional norms, are crucial in determining whether SNSs positively affect student performance.

Recent research has highlighted the complexity of teachers' attitudes towards SNSs and educational technologies. Many teachers express scepticism about the academic value of SNSs, arguing that, without proper structure and guidance, students may misuse these platforms in ways that hinder their learning. For instance, Iqbal and Bhatti (2020) found that teachers often doubt whether the use of SNSs improves students'

academic outcomes, citing concerns such as students' lack of discipline, off-task behaviour, and superficial engagement with content. This scepticism aligns with the findings of Akram et al. (2022), who reported that teachers tend to stress the importance of strong regulatory mechanisms to ensure that students use digital tools productively and responsibly.

Other studies have emphasised teachers' experiences and readiness to adopt digital learning tools. For instance, Alshehri (2019) found that, although many higher education teachers use SNSs tools, their perceptions of usefulness and ease of integration vary widely. Khong et al. (2023) reported that teachers' intentions to engage in online teaching after Covid-19 were significantly influenced by their experiences and their technological self-efficacy. In the context of Kuwait, Al-Enzi et al. (2024) and Alazemi (2022) found that faculty members recognise the potential of digital and hybrid learning to enhance academic performance but often cite limited training as a barrier to effective implementation. These findings align with those of Al-Adwan et al. (2021) and Rokhman et al. (2022), who employed structural equation modelling (SEM) to demonstrate that teacher-related factors such as instructional quality, perceived system support, and facilitating conditions significantly affect students' academic success in e-learning environments.

Perhaps surprisingly, limited research has simultaneously examined the perspectives of both students and teachers, despite the crucial role of teacher-related factors in shaping academic outcomes (Bond et al., 2021). For example, Ukut and Krairit (2019) found significant differences in how students and teachers explain academic performance, with teachers emphasising social influence, instructional clarity, and their responsibility in structuring learning activities. Similarly, Gharrah and Aljaafreh (2021) showed that teachers view their pedagogical guidance and instructional choices as essential for directing students' educational use of SNSs, particularly in culturally specific educational contexts. Collectively, these findings suggest that, although teachers recognise the communicative and collaborative potential of SNSs, they remain cautious about their academic value without adequate pedagogical frameworks, technical support, and institutional policies. Crucially, research explicitly investigating teachers' perceptions of how SNS-related factors influence SAP is still scarce. However, the existing evidence consistently indicates that teachers' beliefs, instructional practices, and contextual constraints significantly affect whether SNS use leads to meaningful improvements in SAP (Bond et al., 2021). This

gap is particularly noticeable in Arab higher education settings, such as Kuwait, where teacher perspectives are often underrepresented, despite their crucial role in designing learning activities, facilitating academic interactions, and shaping the pedagogical conditions through which educational SNSs may influence SAP.

3.7 Research Gaps

Despite the widespread use of SNSs in higher education, there is still uncertainty about their educational value and impact on SAP. The existing literature on educational SNSs and SAP can be broadly characterised as bimodal. One perspective portrays SNS as beneficial educational tools that foster communication, engagement, collaborative learning, knowledge sharing, and ultimately enhance students' academic achievement (Al-Rahmi et al., 2018; Al-Rahmi et al., 2022; Kabilan et al., 2010). Conversely, the second perspective points out the potential drawbacks of SNS usage, such as distractions, excessive socialising, multitasking, and diminished academic focus, which can negatively impact students' academic performance (Giunchiglia et al., 2020; Junco, 2012; Kirschner and Karpinski, 2010; Paul et al., 2012). Additionally, a third group of studies finds no significant relationship between SNS usage and SAP (Alwagait et al., 2015; Rashid and Asghar, 2016). As a result, even with the prevalent use of SNSs in education, substantial uncertainty persists regarding whether, how, and under what conditions SNS use affects SAP (Cao and Tian, 2022). Additionally, these competing streams of research often operate independently and offer limited explanations for why SNSs use appears beneficial in some contexts but detrimental or insignificant in others (Wakefield and Frawley, 2020).

One important explanation for these inconsistent findings in existing research is the conceptual ambiguity surrounding SAP itself. Studies have utilised a wide range of definitions and measurement approaches, including grade point average (GPA), examination results, self-reported learning outcomes, perceived academic gains, and behavioural indicators of learning (Oguguo et al., 2020; Youssef and Dahmani, 2008). Consequently, it is often challenging to compare findings across different studies and educational contexts. Additionally, many studies have used the broad term "*social media"* as an umbrella term for SNSs. Such studies fail to distinguish SNSs from other types of digital platforms, even though SNSs are the most widely used and socially interactive category of social media among students (Manca, 2020; Hosen et al., 2021).

This conceptual ambiguity limits the accuracy of assessing the educational impact of SNSs.

The inconsistencies in the literature highlight a broader theoretical challenge. Research has typically examined educational SNSs from either a technological or a pedagogical perspective, with little integration between the two. Information systems models often focus on system characteristics, user behaviour, and technology use, while educational theories primarily emphasise engagement, interaction, collaboration, and knowledge construction (Al-Qaysi et al., 2020; Kapoor et al., 2018). As a result, the literature remains fragmented, limiting understanding of how technological, social, and pedagogical factors interact to influence SAP. This thesis adopts a problematisation perspective by examining the assumption that the use of educational SNSs results in either universally positive or negative educational outcomes. Instead of viewing SNS use as inherently beneficial or detrimental to SAP, the thesis explores the technological, pedagogical, social, and behavioural conditions that shape how educational SNSs can impact SAP

Another limitation of the literature is that existing evidence tends to be concentrated in specific contexts. Much of the existing empirical evidence comes from Western higher education systems, with few studies of Arab contexts, especially Kuwait (Al-Rahmi et al., 2018; Al-Shammari, 2022). Research conducted in Kuwait has primarily focused on general e-learning readiness, mobile learning adoption, English language learning, and hybrid learning models. There has been little focus on the use of educational SNSs in general and their impact on SAP (Al-Enzi et al., 2024; Al-Shammari, 2022; Alenezi and Brinthaupt, 2022). Furthermore, many of these studies were conducted in the context of the Covid-19 pandemic, focusing on emergency remote teaching instead of educational practices in a post-pandemic context. As a result, there is a lack of empirical evidence on how SNSs serve as learning tools in Kuwaiti HEIs post-Covid-19, where institutional strategies, digital maturity, and user behaviours have evolved significantly.

Another important gap relates to the perspective of non-student stakeholders, particularly teachers, in the context of educational SNSs. Although SNSs have gained widespread acceptance in HEIs for facilitating communication between students and teachers, most empirical studies primarily focus on students' viewpoints (Doleck and Lajoie, 2018; Zachos et al., 2018). Research explicitly examining the impact of educational SNSs on SAP from the perspective of teachers is limited, especially within

the Kuwaiti higher education context (Alshehri, 2019; Van den Beemt et al., 2020). Moreover, when teachers' views are considered, the emphasis tends to be on their intentions to adopt these technologies, their perceived usefulness, or their general attitudes towards technology integration. There is often little exploration of how teachers perceive SNSs as a way of influencing SAP, engagement, interaction, and collaboration (Akram et al., 2022; Khong et al., 2023). This imbalance is significant because teachers are crucial in shaping learning activities, facilitating academic interactions through SNSs, and establishing the pedagogical conditions that enable the use of educational SNSs, all of which may impact SAP.

In addition to these theoretical, conceptual, and contextual gaps, research on SNSs in education also faces methodological limitations due to its reliance on basic analytical techniques. Many studies primarily use descriptive statistics, correlation analyses, or simple regression models, which do not adequately capture the complex, multidimensional relationships between SNS use, engagement, interaction, collaboration, and academic performance (Wakefield and Frawley, 2020). Although SEM is widely recognised as an effective method for testing complex theoretical models, its application in studies of educational SNSs, particularly in the Arabian Gulf region, remains limited (Al-Adwan et al., 2021; Al-Rahmi et al., 2021). This underuse of SEM hinders researchers' ability to simultaneously evaluate direct and indirect effects, mediating relationships, and latent constructs that are crucial for understanding how SNSs affect SAP in HEIs.

Therefore, this thesis addresses several interconnected gaps in the literature. First, it responds to the inconsistent and often contradictory evidence regarding the relationship between the use of educational SNSs and SAP. Second, it clarifies the conceptual ambiguity surrounding the definition and measurement of SAP. Third, it integrates both technological and pedagogical perspectives to offer a more comprehensive explanation of how educational SNSs influence SAP. Fourth, it provides context-sensitive evidence from Kuwaiti higher education, an area that remains underrepresented in existing research. Finally, it adopts a dual-perspective approach by examining both student and teacher viewpoints, thereby addressing the stakeholder imbalance that characterises much of the current literature. By applying Structural Equation Modelling (SEM) along with two complementary theoretical models, this thesis aims to deliver a more nuanced understanding of the conditions under which educational SNSs support SAP in higher education.

3.8 Chapter Summary

This chapter reviews the literature on the use of SNSs in higher education and their relationship with SAP. The discussion places educational SNSs within the broader context of e-learning and Web 2.0 technologies, highlighting both their pedagogical potential and the challenges they present. Key themes in this chapter include the role of SNSs as communication tools in HEIs to foster interaction, collaboration, and engagement and the mixed empirical evidence on the effects of SNS use on SAP from both student and teacher perspectives. The chapter identifies major theoretical, contextual, methodological, and stakeholder-related gaps in the literature, which underscore the need for the present thesis. Building on this review, Chapter 4 outlines the theoretical framework that underpins the thesis and supports the underlying empirical investigation.

4 Theoretical and Conceptual Framework

4.1 Introduction

This chapter presents the theoretical and conceptual foundations that underpin this thesis. It begins by exploring relevant information systems theories and models, which shed light on the adoption, use, and impact of technological systems in educational settings. Next, the chapter reviews major learning theories, especially those that explain the pedagogical use of educational SNSs in learning environments. Then, the chapter introduces and defines the key theoretical concepts and constructs that underpin the design of the two studies and enable them to achieve their objectives. Finally, the chapter concludes with the presentation of the conceptual framework for this thesis.

4.2 Information Systems (IS) Theories and Models

A theory is defined as a set of interrelated constructs (or concepts), definitions, and propositions that provide a systematic perspective on phenomena. A theory outlines the relationships among concepts to explain and predict these phenomena (Kerlinger, 1966). Sekaran and Bougie (2019) explained that a solid model should be grounded in a well-founded theory that justifies the relationships among the variables included in the model. Consequently, models in the field of information systems have evolved over recent years thanks to scholars' continued efforts to validate and enhance them.

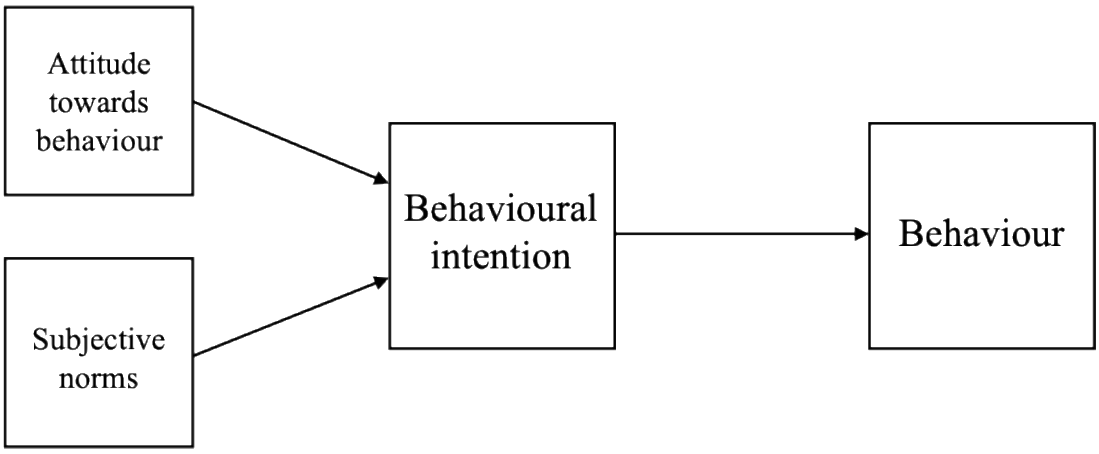
This thesis aims to investigate the factors related to the use of educational SNSs and their influence on SAP from the perspectives of both students and teachers. Therefore, it is essential to understand the most prominent theories in educational technology. This section reviews key theories in the information systems domain. These theories include the theory of reasoned action (TRA), theory of planned behaviour (TPB), technology acceptance model (TAM), and extensions of the TAM, which are commonly applied to address technology acceptance, adoption, use, and impact at the

individual level in this context (Granić, 2022; Perez et al., 2023). The unified theory of the acceptance and use of technology (UTAUT), its extended version (UTAUT2), and the DeLone and McLean Model of Information Systems Success (D&M IS Success Model) are also reviewed. The following sections illustrate the information systems models used in the two studies underpinning this thesis.

4.2.1 The Theory of Reasoned Action (TRA)

Fishbein and Ajzen (1975) developed the TRA based on psychological principles. The TRA is a powerful framework for predicting an individual's behaviour in specific situations. It has become a key model for understanding the factors that influence human behaviour regarding the acceptance or rejection of technology in general (Granić, 2022). The TRA is founded on the assumption that individuals are generally rational and will systematically and efficiently use the information available to them before taking action (Ajzen and Fishbein, 1980; Fishbein and Ajzen, 1975). According to the TRA, a person's behaviour is directly influenced by the intention to adopt or reject a specific behaviour (Fishbein and Ajzen, 1975). In other words, the TRA posits that an individual's behaviour can be predicted by the intention to perform a specific task, which is considered the main predictor of behaviour (Ajzen and Madden, 1986). Behavioural intention is evaluated through two key components: the individual's attitude towards the behaviour and the subjective norms surrounding that behaviour (Ajzen and Madden, 1986). Figure 5 illustrates the TRA, and Table 1 defines the key terms used in the TRA.

Figure 5: Theory of Reasoned Action (TRA)



Note. Source: Fishbein and Ajzen (1975).

Table 1: Definition of Key Terms in the Theory of Reasoned Action (TRA)

Variable	Definition
Behavioural intention	"The degree to which a person has formulated conscious plans to perform or not perform the behaviour"
Attitude towards the behaviour	"A person's overall positive or negative evaluation of performing the behaviour"
Subjective norms	"The perceived social pressure to perform or not to perform the behaviour"

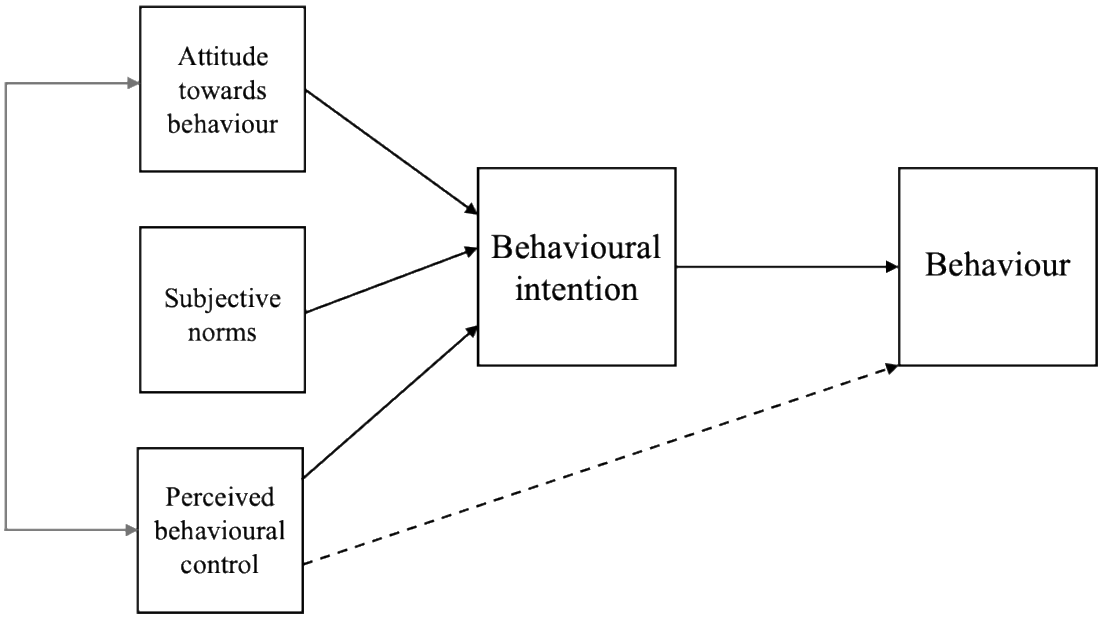
Note. Source: Fishbein and Ajzen (1975).

Although the TRA is widely accepted and forms an important foundation for several prominent technology acceptance models, which will be discussed in the following sections, it has limitations (Taherdoost, 2018). According to Ajzen and Madden (1986), the main limitation of the TRA is its assumption that behaviour is under volitional control. Hence, the TRA only applies to behaviours that are consciously planned in advance. Habitual actions or behaviours that are not actively pondered cannot be adequately explained by the TRA (Ajzen and Madden, 1986). This limitation aligns with Khan et al.'s (2021) observation that the TRA is ill suited to capturing habitual behaviour or routines (Khan et al., 2021). Additionally, the TRA may not serve as a comprehensive theoretical model in all contexts. For example, Yadegari et al. (2024) noted that the TRA was developed within the realm of psychology, making it less applicable as a broad theoretical model in information systems contexts concerning technology acceptance or adoption. The TRA overlooks technological factors that are relevant to a system, reinforcing Al-Nuaimi et al.'s (2021) argument that the TRA is insufficiently robust to function independently as a theoretical framework in educational technology acceptance research. Instead, much of the educational technology research tends to borrow specific constructs from the TRA and incorporate them into expanded information systems frameworks (Al-Nuaimi et al., 2021). These limitations suggest that alternative models may provide a more comprehensive explanation for studies of information systems in general and educational technology in particular. In sum, the TRA does not effectively address the aim and questions of the current thesis.

4.2.2 The Theory of Planned Behaviour (TPB)

The TPB was developed by Ajzen (1991) as an extension of the TRA. The TPB aims to enhance the predictive power of the TRA by adding the construct of perceived behavioural control, which accounts for behaviours that are not entirely under an individual's volitional control (Ajzen, 1991). Ajzen (1991) demonstrated that perceived behavioural control, along with subjective norms and attitudes towards a behaviour, is significantly correlated with intentions and can predict actual consumer behaviour. Additionally, perceived behavioural control is believed to influence both behaviour and intention, affecting behaviour either directly or indirectly (Ajzen, 1991). Ajzen (1991) categorised three types of beliefs within the TPB framework: (1) behavioural beliefs, which affect both behaviour and attitude; (2) normative beliefs, which are derived from an individual's subjective norms; and (3) control beliefs, which form the basis for perceptions of behavioural control. Figure 6 illustrates the TPB, and Table 2 defines its key terms.

Figure 6: Theory of Planned Behaviour (TPB)



Note. Source: Ajzen (1991).

Table 2: Definition of Key Terms in the Theory of Planned Behaviour (TPB)

Variable	Definition
Attitude towards the behaviour	"The degree to which a person has a favourable or unfavourable evaluation or appraisal of the behaviour in question"
Subjective norms	"The perceived social pressure to perform or not to perform the behaviour"
Perceived behavioural control	"The perceived ease or difficulty of performing the behaviour, and it is assumed to reflect past experience as well as anticipated impediments and obstacles"
Behavioural intention	"An indication of a person's readiness to perform a given behaviour, and it is considered to be the immediate antecedent of behaviour"
Behaviour	"The observable response in a given situation with respect to a given target"

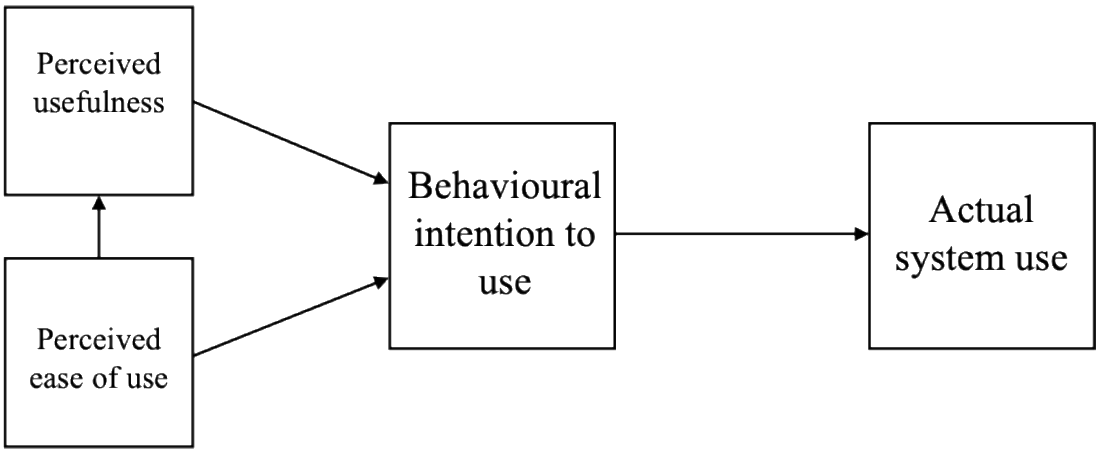
Note. Source: Ajzen (1991).

The TPB has been widely applied to explain human behavioural intentions and actions across various domains (Al-Qaysi et al., 2023; Taherdoost, 2018). However, several limitations hinder its effectiveness. Primarily, the TPB does not explicitly consider emotional influences, habitual behaviours, or impulsive actions, all of which can significantly affect behaviour and intention (Ajzen and Madden, 1986). Khan et al. (2021) noted that the TPB is often viewed as a remedy for the volitional control limitation of the TRA, which posits that behaviours are both planned and intentional. However, the TPB falls short in detailing how individuals plan and the relationship between planning and behaviour (Khan et al., 2021). In the contexts of information systems and educational technology, the TPB has further limitations. For instance, the TPB overlooks key system-related variables, which are crucial determinants of technology acceptance and adoption (Perez et al., 2023). Furthermore, its static and individual-focused approach makes it unsuitable for dynamic, learning-oriented environments (Ajzen, 1991; Cooper et al., 2016), where use behaviour tends to be iterative, collaborative, and context-dependent rather than linear. As a result, the TPB may not be the best fit for the current thesis.

4.2.3 The Technology Acceptance Model (TAM)

Davis (1989) introduced the TAM as a framework to understand users' information systems acceptance and use. It is one of the most widely used models in the field of information systems to explain acceptance and technology adoption (Al-Qaysi et al., 2023). The TAM is derived from the psychology-based TRA (Ajzen and Madden, 1986). The TAM rests on two main concepts: perceived usefulness and perceived ease of use, which are key determinants of users' attitudes towards intention and actual use (Davis, 1989). In later developments, the final version of the TAM omitted attitudes because empirical findings showed that they have limited predictive power and do not fully mediate the effects of perceived ease of use and perceived usefulness on intention (Al-Nuaimi et al., 2021; Khan et al., 2021; Weerasinghe and Hindagolla, 2018). As a result, the final TAM has a streamlined structure comprising only two determinants: perceived usefulness and perceived ease of use (Davis, 1989). Figure 7 depicts the TAM, and Table 3 defines its key terms.

Figure 7: Technology Acceptance Model (TAM)



Note. Source: Davis (1989).

Table 3: Definition of Key Terms in the Technology Acceptance Model (TAM)

Variable	Definition
Perceived usefulness	"The degree to which a person believes that using a particular system would enhance their job performance"
Perceived ease of use	"The degree to which a person believes that using the system would be free of effort"

Note. Source: Davis (1989).

The TAM has received extensive empirical support over the years across various fields (Benbasat and Barki, 2007; Granić and Marangunić, 2019). According to Al-Qaysi et al. (2023), the TAM is mainly used to examine the acceptance of technology because of its soundness, adaptability, and simplicity. This empirical support is a key strength of the TAM, making it one of the most widely accepted frameworks in IT research (Khan et al., 2021). In the education sector, research has shown that the TAM is the most powerful and valid model for predicting and explaining use behaviour regarding the acceptance and adoption of educational technology (Granić and Marangunić, 2019; Granić, 2023). Numerous recent studies on educational technology acceptance have provided empirical evidence supporting the predictive validity of the TAM across e-learning, mobile learning, massive open online courses (MOOCs), LMSs, and social media platforms (Granić and Marangunić, 2019; Granić, 2023; Perez et al., 2023).

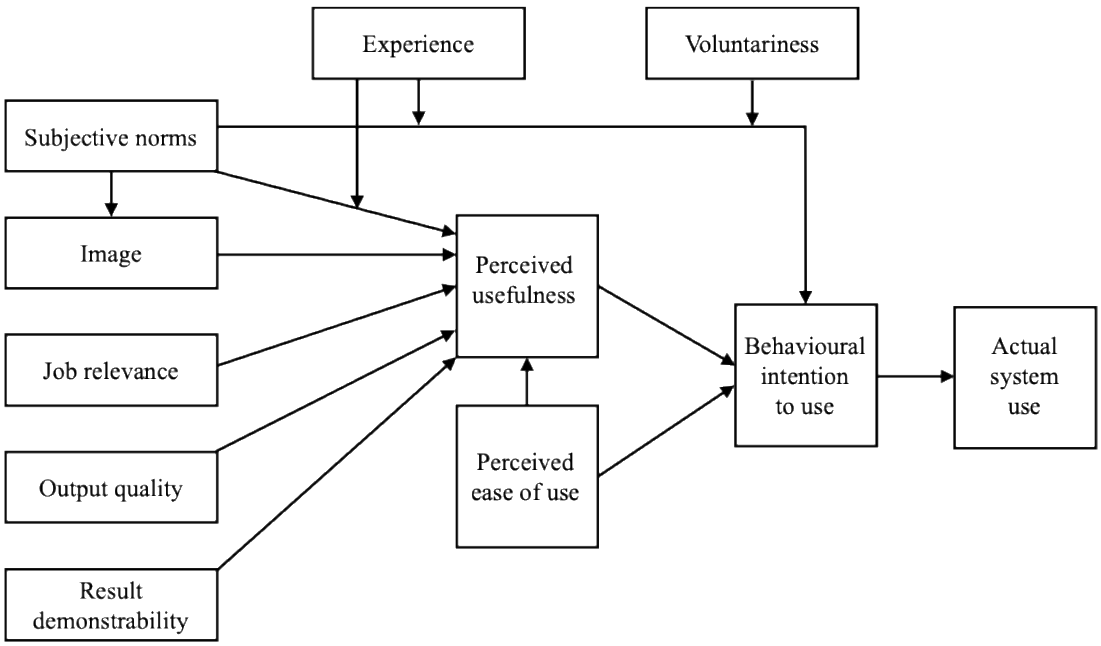
Although the TAM is recognised as one of the most influential theoretical frameworks for understanding information systems adoption, it has limitations. First, the TAM focuses on two determinants (perceived usefulness and perceived ease of use) to predict use behaviour (Khan et al., 2021). This narrow focus overlooks social, organisational, and contextual factors that can significantly influence technology acceptance. As a result, the model may be less effective when applied outside workplace scenarios (Khan et al., 2021). Second, additional external variables are required to enhance the TAM's predictive accuracy regarding system use. Venkatesh and Bala (2008) noted that the TAM explains only about 40% of technology acceptance. To improve its explanatory power, many researchers have sought to extend the model by incorporating new variables (Al-Qaysi et al, 2020; Venkatesh and Bala, 2008). Lastly, the TAM has been criticised for being a linear, unidirectional, and strictly behavioural model. It lacks feedback loops, which means that it cannot effectively measure reciprocal effects among user-motivational factors or evaluate the outcomes of information systems use (Al-Nuaimi et al., 2021). These limitations have led to attempts to develop and extend the TAM by integrating additional variables. The next section discusses these extensions of the TAM. Given the scope of this thesis, the original TAM was not deemed suitable.

4.2.4 Extensions of the TAM

4.2.4.1 The TAM2

To address the limitations of the TAM, Venkatesh and Davis (2000) proposed an extension known as the TAM2. This extension focuses on the antecedents of perceived usefulness and behavioural intention. To enhance the original TAM, the TAM2 introduces two groups of constructs: (1) social influence concepts, which include subjective norms and voluntariness, and (2) cognitive instrumental concepts, such as perceived ease of use, job relevance, and output quality. According to Venkatesh and Davis (2000), the TAM2 aims to improve the predictive power of perceived usefulness. In this model, the variables influencing perceived usefulness include perceived ease of use, job relevance, subjective norms, image, result demonstrability, and output quality. Additionally, experience and voluntariness are posited as moderators in the model. The TAM2 suggests that perceived ease of use, usefulness, and subjective norms are significant factors affecting use intentions (Venkatesh and Davis, 2000). Figure 8 illustrates the TAM2, and Table 4 defines its key terms.

Figure 8: Extension of the Technology Acceptance Model (TAM2)



Note. Source: Venkatesh and Davis (2000).

Table 4: Definition of Key Terms in the Extension of the Technology Acceptance Model (TAM2)

Variable	Definition
Subjective norms	"A person's perception that most people who are important to him think he should or should not perform the behaviour in question." Originally from Fishbein and Ajzen (1975)
Image	"The degree to which use of an innovation is perceived to enhance one's image or status in one's social system"
Job relevance	"An individual's perception regarding the degree to which the target system is applicable to his or her job"
Output quality	"The degree to which an individual believes that the system performs tasks well"
Result demonstrability	"Tangibility of the results of using the innovation"
Voluntariness	"The extent to which potential adopters perceive the adoption decision to be non-mandatory"
Experience	"The direct effect of subjective norm on intentions may subside over time with increased system experience"

Note. Source: Venkatesh and Davis (2000).

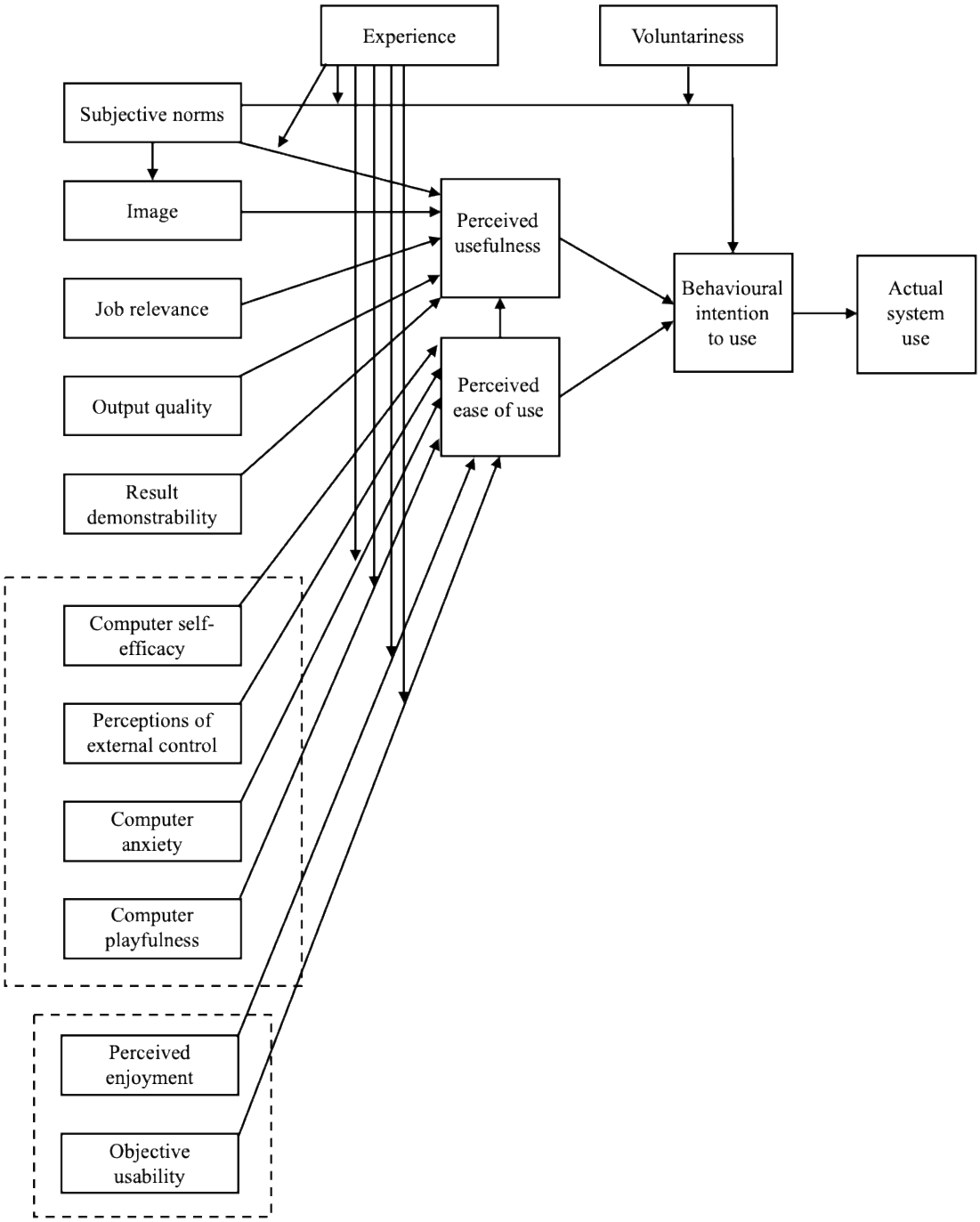
Although the TAM2 was created to address the limitations of the original TAM, it still has some drawbacks. The literature criticises the TAM2 for being incomplete because it does not identify the factors that influence perceived ease of use (Venkatesh and Bala, 2008). Benbasat and Barki (2007) also noted that the TAM2 does not thoroughly explore the concept of perceived usefulness. As a result, its explanatory power is considered weak. Khan et al. (2021) reported that the TAM2 explains only 10% to 20% more variance in behavioural intention than the original TAM (Khan et al., 2021). Consequently, these limitations led to the development of a new model called the TAM3. Given the scope of this thesis, the TAM2 was also discarded as a potential theoretical basis.

4.2.4.2 The TAM3

Venkatesh and Bala (2008) enhanced the TAM and TAM2 by creating an integrated and comprehensive framework known as TAM3. This new model merges the constructs of perceived usefulness from the TAM2 with perceived ease of use, as outlined by Venkatesh and Davis (2000). Although the TAM3 is similar to the TAM2, it includes additional external variables in two categories, namely anchoring and adjustment, to better explain perceived ease of use (Venkatesh and Bala, 2008). The anchor category in the TAM3 includes factors such as computer self-efficacy,

perceptions of external control, computer playfulness, and computer anxiety. The adjustment category encompasses objective usability and perceived enjoyment (Venkatesh and Bala, 2008). Moreover, the model posits that experience acts as a moderating factor between two anchor variables, namely computer anxiety and computer playfulness, as well as two adjustment variables, namely objective usability and perceived enjoyment (Venkatesh and Bala, 2008). According to the literature, the TAM3 provides a unified perspective on how both perceived usefulness and perceived ease of use develop and how they affect behavioural intentions and actual use. Hence, the TAM3 is particularly valuable for studies that require a more detailed understanding of technology adoption in both voluntary and mandatory settings (Venkatesh and Bala, 2008; Khan et al., 2021; Taherdoost, 2018). Figure 9 illustrates the model, and Table 5 defines its key terms.

Figure 9: Further Extension of the Technology Acceptance Model (TAM3)



Note. Source: Venkatesh and Bala (2008).

Table 5: Definition of Key Terms in the Extension of the Technology Acceptance Model (TAM3)

Variable	Definition
Computer self-efficacy	"The degree to which an individual believes that he or she has the ability to perform a specific task/job using the computer"
Perception of external control	"The degree to which an individual believes that organisational and technical resources exist to support the use of the system"
Computer anxiety	"The degree of an individual's apprehension, or even fear, when she/he is faced with the possibility of using computers"
Computer playfulness	"The degree of cognitive spontaneity in microcomputer interactions"
Perceived enjoyment	"The extent to which the activity of using a specific system is perceived to be enjoyable in its own right, aside from any performance consequences resulting from system use"
Objective usability	"Comparison of systems based on the actual level (rather than perceptions) of effort required to completing specific tasks"

Note. Source: Venkatesh and Bala (2008).

Although the TAM3 is an enhanced version of the previous versions of the TAM, it has some drawbacks. The numerous constructs in the TAM3 reduce its simplicity and ease of application (Venkatesh and Bala, 2008). This limitation is relevant given the findings of Benbasat and Barki (2007), who reported that complex models do not necessarily provide better explanatory power. Consequently, the lengthy and complex nature of the TAM3 may hinder its practical use. Additionally, Khan et al. (2021) noted that the TAM3 is relatively new and lacks sufficient research validation, particularly in the field of education.

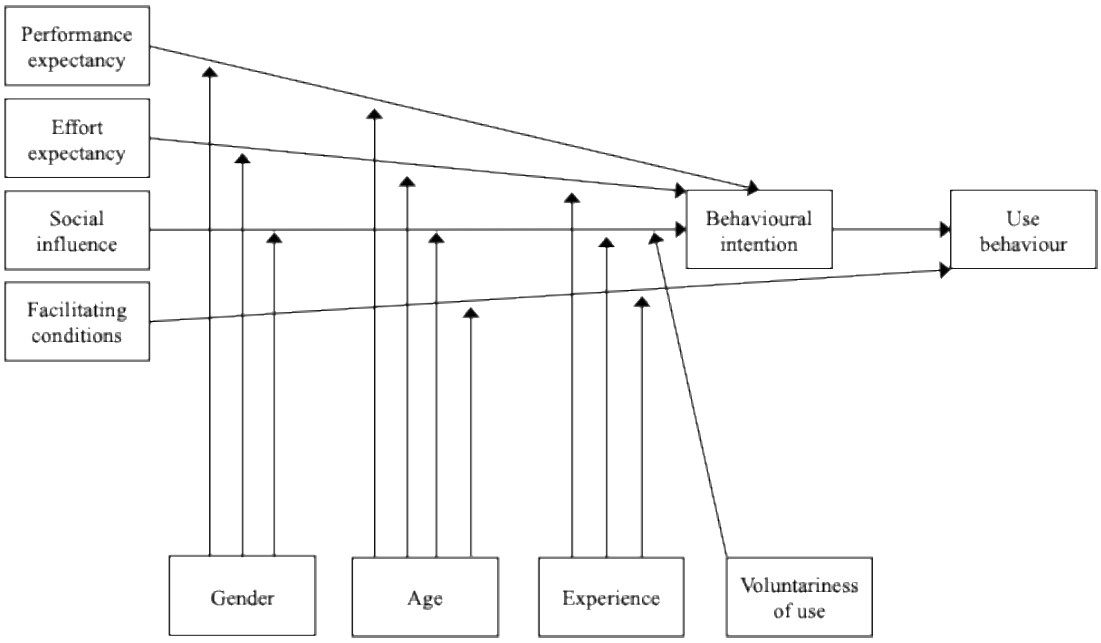
After evaluating the merits and drawbacks of the TAM, this model seems not to be the most suitable choice for the current thesis. Although the TAM has made significant contributions and is one of the most influential theories in the information systems field, intense scholarly focus on the TAM has exhausted its potential (Al-Nuaimi et al., 2021). For instance, Benbasat and Barki (2007) noted that multiple independent attempts by researchers to expand the TAM to adapt it to ever-changing information systems environments have resulted in theoretical chaos and confusion. In fact, it is often unclear which version of the numerous iterations of the TAM is the accepted one (Benbasat and Barki, 2007). Additionally, the TAM is perceived as static, failing to account for changes in use behaviour or iterative use patterns, which are common in educational SNSs (Khan et al., 2021). Critics argue that the TAM oversimplifies use behaviour by focusing on two variables (perceived use and perceived ease of use) while neglecting other important factors, such as social, emotional, cultural, and

contextual elements (Benbasat and Barki, 2007). Moreover, researchers recommend adopting more modern models that have emerged since the TAM, which tend to reflect richer and more comprehensive theories of information systems adoption. These newer models, which are discussed in subsequent sections, take into account the continuously changing information systems landscape and provide researchers with greater flexibility to adapt theory to new applications that are not yet apparent (Al-Nuaimi et al., 2021; Benbasat and Barki, 2007). Therefore, in sum, neither the TAM nor any of its extensions was selected for this thesis.

4.2.5 The Unified Theory of Acceptance and Use of Technology (UTAUT)

Venkatesh et al. (2003) introduced the UTAUT as an extension of the TAM. The UTAUT model has been extensively adopted by researchers aiming to understand users' technology adoption behaviour (Venkatesh et al., 2003). It is based on a comprehensive review and synthesis of eight major theoretical models, namely the TAM, the TRA, the TPB, diffusion of innovations, social cognitive theory, the PC utilisation model, the motivational model (MM), and a combination of the TAM and the TPB (Venkatesh et al., 2003). The UTAUT model proposes that three main constructs directly influence behavioural intention: performance expectancy, effort expectancy, and social influences. Additionally, behavioural intention and facilitating conditions are seen as predictors of actual behaviour (use). The model also includes four moderating factors, namely age, gender, experience, and voluntariness, which affect use behaviour (Venkatesh et al., 2003). Figure 10 illustrates the UTAUT model, and Table 6 provides the definitions of the key UTAUT terms.

Figure 10: UTAUT Model



Note. Source: Venkatesh et al. (2003).

Table 6: Definition of Key Terms in the UTAUT

Variable	Definition
Performance expectancy (PE)	"The degree to which an individual believes that using the system will help him or her to attain gains in job performance"
Effort expectancy (EE)	"The degree of ease associated with the use of the system"
Social influence (SI)	"The degree to which an individual perceives that important others believe he or she should use the new system"
Facilitating conditions (FC)	"The degree to which an individual believes that an organisational and technical infrastructure exists to support the use of the system"
Behavioural intention (BI)	"An indication of a person's readiness to perform a given behaviour, and it is considered to be the immediate antecedent of behaviour"
Use behaviour (UB)	"The observable response in a given situation with respect to a given target"

Note. Source: Venkatesh et al. (2003).

The UTAUT model provides a comprehensive understanding of technology acceptance and is widely used in the field of ICT acceptance (Yadegari et al., 2024). Numerous researchers have recognised that the UTAUT offers a better understanding of individual technology adoption behaviour than other similar models and theories (Venkatesh et al., 2003; Venkatesh and Bala, 2008; Yildiz Durak, 2019). This view aligns with the findings of Venkatesh et al. (2003), who demonstrated that the UTAUT

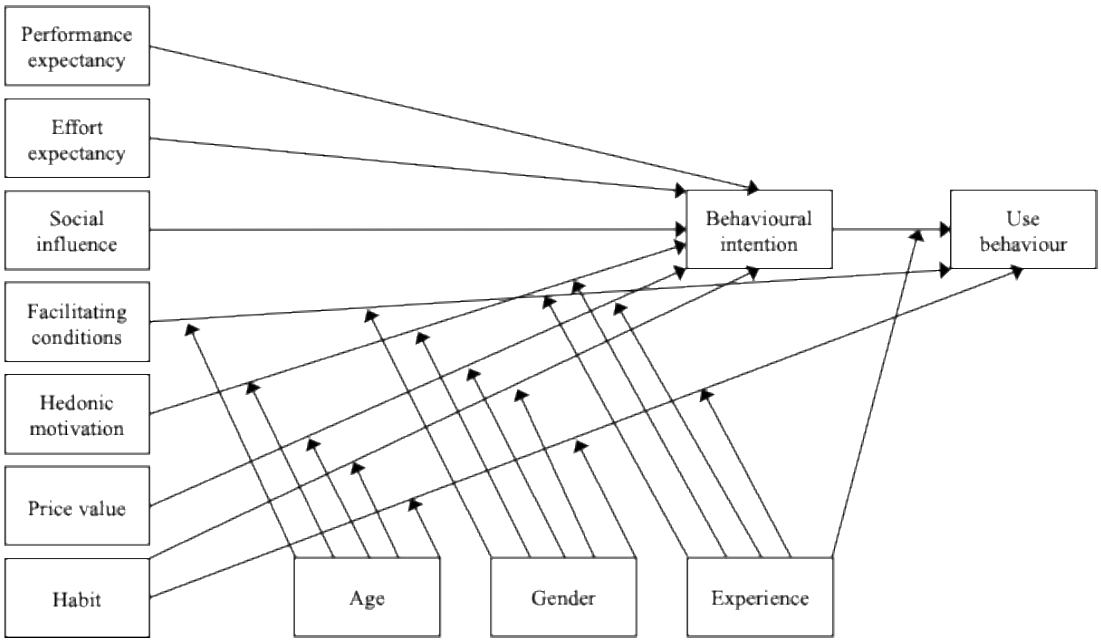
explains approximately 70% of the variance in intention to use and use behaviour, thereby outperforming other models. Furthermore, various studies have validated the UTAUT across different environments, including education, banking, organisations, tourism, healthcare, and government services (Khan et al., 2021; Salahshour Rad et al., 2018; Venkatesh et al., 2016).

However, it has several limitations. Most notably, it lacks individual variables such as self-motivation and perceived playfulness, which could provide deeper insights into IS acceptance and use (Khan et al., 2021). This observation aligns with the systematic review by Dwivedi et al. (2019), which indicated that nearly 75% of the studies using the UTAUT model introduced new constructs. As a result, the model may require adaptation to certain contexts such as consumer contexts, including voluntary and personal use. Consequently, Venkatesh et al. (2012) extended the UTAUT, creating the UTAUT2.

4.2.6 The Extended Unified Theory of Acceptance and Use of Technology (UTAUT2)

Venkatesh et al. (2012) revised and updated the original UTAUT model to better suit consumer contexts. This updated or extended UTAUT model is known as the UTAUT2 (Venkatesh et al., 2012). Figure 11 illustrates the UTAUT2 model. It retains all concepts and relationships found in the original UTAUT but adds three new independent variables: price value, habit, and hedonic motivation. Table 7 provides definitions for these newly introduced terms (Venkatesh et al., 2012). Additionally, whereas the original UTAUT was developed for organisational contexts, focusing on mandatory systems, the UTAUT2 was designed to explain technology adoption in consumer contexts, making it applicable to both mandatory and voluntary systems (Venkatesh et al., 2012). As a result, as Figure 11 shows, the moderating variable of voluntariness, which, in the UTAUT, moderates the relationship between social influence and behavioural intention, is omitted from the UTAUT2 model (Venkatesh et al., 2012).

Figure 11: UTAUT2 Model



Note. Source: Venkatesh et al. (2012).

Table 7: Definition of Key Terms Added to the UTAUT2

Variable	Definition
Hedonic motivation	"The fun or pleasure derived from using a technology"
Price value	"Consumers' cognitive trade-off between the perceived benefits of the applications and the monetary cost for using them"
Habit	"The extent to which people tend to perform behaviours automatically because of learning"

Note. Source: Venkatesh et al. (2012).

The UTAUT2 model is regarded as one of the most recent, influential, and widely used frameworks in information systems and technology adoption research. It is a synthetic model resulting from an evaluation of the strengths and weaknesses of frequently used models and theories such as those already discussed (Khan et al., 2021). However, the UTAUT2 model has faced criticism for including too many independent constructs that predict intentions and behaviours. For example, Granić (2023) noted that adding new constructs and moderators increases model complexity, which can lead to challenges in measurement and analysis, particularly with small samples or inexperienced researchers.

Conversely, it has been shown that the UTAUT2 model offers a rich explanation of behavioural intention and technology use thanks to the inclusion of the three new constructs. In other words, the UTAUT2 model can explain approximately 74% of the

variation in the intention to use a given technology and about 52% of the variance in technology use (Venkatesh et al., 2012). These values indicate that the UTAUT2 explains a greater percentage of variance in both behavioural intention and use than the original UTAUT. Furthermore, the UTAUT2 has been empirically validated in hundreds of studies across various domains, including education (e-learning, m-learning, and educational platforms), healthcare (patient portals and telemedicine), e-commerce, banking, and public services. This extensive use and successful replication increase its robustness and validation, while its flexibility and adaptability ensure that it remains highly relevant today (Tamilmani et al., 2021).

In the field of education, the UTAUT2 model has garnered significant attention in research on educational technology. It has been used to explore the factors that influence students' acceptance and use of technology (Khan et al., 2021). Several studies have adapted the UTAUT2 to examine students' behavioural intentions and explore how the use of educational technologies, which include LMSs, mobile learning, and SNSs, affect students' performance (Granić, 2023; Perez et al., 2023). Table 8 summarises some studies that have applied the UTAUT2 in the education context.

Table 8: Summary of Studies Using the UTAUT2 Model in Education

Author (year)	Title	Context	Key findings
Zacharis and Nikolopoulou (2022)	Students' intention to use e-learning post-COVID-19: An extension of UTAUT2 with Learning Value	Greek higher education students, post-pandemic e-learning	Performance expectancy, social influence, hedonic motivation, learning value, and habit significantly affected students' intention to use e-learning platforms to learn. Facilitating conditions and learning value directly affected actual use.
Devisakti and Muftahu (2023)	Digitalisation in higher education: does personal innovativeness matter in digital learning?	Malaysian university students to investigate students' adoption of digital learning platforms, using the UTAUT2 with an added focus on personal innovativeness	Performance expectancy, effort expectancy, social influence, facilitating conditions, hedonic motivation, and personal innovativeness significantly influenced students' behavioural intention to use digital learning systems. The study reinforced the applicability of the UTAUT2 in digital higher education settings.
Arain et al. (2019)	Extending UTAUT2 towards acceptance of mobile learning in the context of higher education	The adoption of mobile learning (m-learning) technologies among university students in Pakistan using the UTAUT2 framework	Performance expectancy, effort expectancy, facilitating conditions, hedonic motivation, and habit significantly influenced behavioural intention to use mobile learning.
Pham and Dau (2022)	Online learning readiness and online learning system success in Vietnamese higher education	Vietnam university students, integrating the UTAUT2 with readiness constructs	Performance expectancy, effort expectancy, social influence, and students' readiness significantly predicted online learning success. The study highlighted the value of combining UTAUT2 with learner readiness to explain system use, learner satisfaction, and learner performance in a developing higher education context.
Gharrah and Aljaafreh (2021)	Why Students Use Social Networks for Education: Extension of UTAUT2	Students in a higher education context in Jordan to examine the use of social networks for educational purposes using an extended UTAUT2 model	Performance expectancy, effort expectancy, social influence, hedonic motivation, and habit significantly influenced students' behavioural intention to use social networks for education. The study also highlighted the relevance of extending the UTAUT2 with constructs suited to social media in learning environments.

Note. Source: Author's own work.

The studies in Table 8 collectively highlight the robustness and adaptability of the UTAUT2 model across various educational settings. These findings reinforce its effectiveness in explaining student engagement and performance in relation to different educational technologies. This conclusion aligns with the findings of Al-Qaysi et al. (2020), who explored SNS acceptance from the perspective of educational and information systems theories and models. They recommended further research to investigate students' tendencies to adopt educational SNSs and the impact on SAP,

using the UTAUT2 model. Their findings further support the relevance and adaptability of the UTAUT2 model within the dynamic educational environment (Al-Qaysi et al., 2020). The relevance and adaptability of the UTAUT2 are particularly due to its inclusion of user-centred constructs such as hedonic motivation and habit, which are crucial for understanding SAP improvement thanks to technology-enhanced learning tools, especially in the context of educational SNSs. Consequently, the UTAUT2 model was selected for the current thesis, specifically for Study 2.

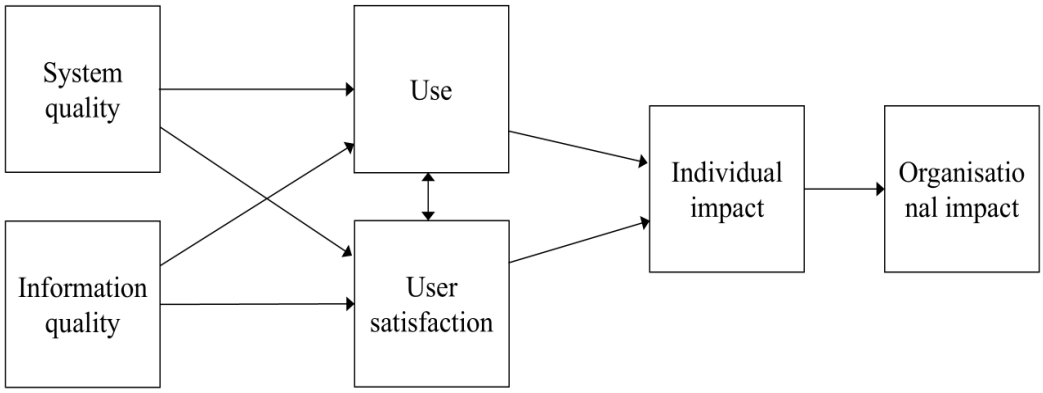
Study 2 aimed to explore the factors related to the use of educational SNSs and their effect on SAP from the perspective of teachers. Accordingly, the UTAUT2 model offered a strong theoretical foundation. Educational SNSs represent user-driven, informal learning environments that are increasingly integrated into teaching and learning practices (Al-Qaysi et al., 2023). As facilitators of these environments, teachers are crucial in influencing how students engage with and benefit from these platforms (Alazemi and Almutairi, 2024). Therefore, understanding teachers' perceptions is essential for identifying the technological, social, and motivational factors that may indirectly affect SAP, with the UTAUT2 model offering an effective tool to do so (Alazemi and Almutairi, 2024; Ifenthaler and Yau, 2020). Additionally, the UTAUT2 is flexible and allows for the inclusion of context-specific constructs, making it adaptable to the educational SNS setting (Al-Qaysi et al., 2020). This approach aligns with the recommendations of Doleck and Lajoie (2018) and Venkatesh et al. (2012) for future studies to extend the model to investigate the impact of IT implementation on performance in general. Given the voluntary nature of educational SNS use and the dynamic interactions between teachers and students on SNSs, the comprehensive scope of the UTAUT2 model makes it especially relevant for examining the behavioural and contextual factors that influence SAP from a teacher perspective (Alazemi and Almutairi, 2024; Ifenthaler and Yau, 2020). Thus, selecting the UTAUT2 as the theoretical framework for Study 2 aligned well with the research aim and questions. In sum, the UTAUT2 provided a validated, multidimensional approach to explore the drivers of SAP in technology-mediated learning environments.

4.2.7 The Delone and McLean Model of Information Systems Success (1992–2003)

The DeLone and McLean Model of Information Systems Success (D&M IS Success Model), introduced in 1992, offers a foundational framework for assessing IS success. It comprises six interrelated dimensions: system quality, information quality, use, user satisfaction, individual impact, and organisational impact (DeLone and McLean, 1992). According to DeLone and McLean (1992), IS success is not a single result. Rather, it is a multidimensional construct influenced by a system's technical performance, the quality of the information it generates, and its effects on both users and organisations. Figure 12 illustrates the D&M IS Success Model, and

Table 9 provides definitions of its key terms.

Figure 12: D&M IS Success Model



Note. Source: DeLone and McLean (1992).

Table 9: Definition of Key Terms in the D&M IS Success Model

Variable	Definition
System quality	Measures of the information processing system itself, including ease of use, reliability, and functionality
Information quality	Measures of information system output (e.g. accuracy, timeliness, relevance, and completeness of information)
Use	The degree and manner in which staff and customers utilise the capabilities of an information system
User satisfaction	The recipient's response to the use of the output of an information system
Individual impact	The effect of information on the behaviour of the recipient
Organisational impact	The effect of information on organisational performance, including productivity, cost savings, etc.

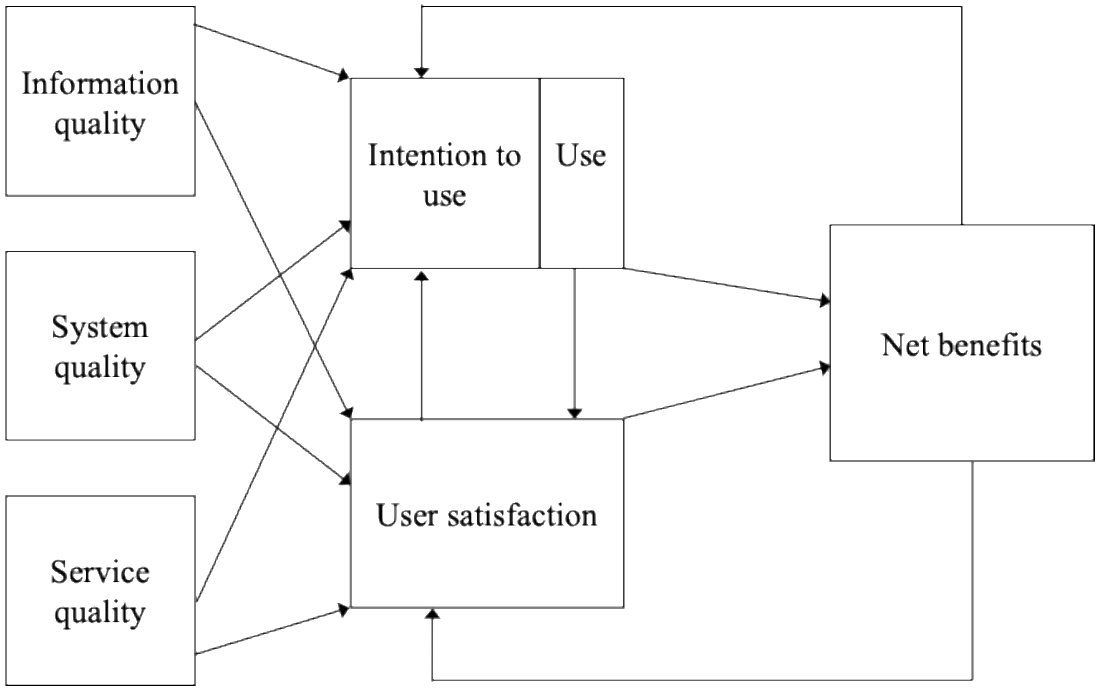
Note. Source: DeLone and McLean (1992).

One of the key advantages of the D&M IS Success Model is its holistic approach, which integrates both technical and user-oriented criteria, making it applicable across a wide range of IS contexts (Seddon, 1997). Additionally, the D&M IS Success Model has inspired extensive empirical research and serves as a foundation for evaluating both traditional and emerging information systems. Despite its inherent strengths, many researchers have attempted to extend or revise the original model. Some claim that the D&M IS Success Model is incomplete, suggesting that it should include more dimensions or proposing alternative success models (Al-Nuaimi and Al-Emran, 2021; Seddon, 1997). Other researchers have focused on applying and validating the D&M IS Success Model (Rai et al., 2002). This ongoing discourse led DeLone and McLean to revise their model in 2003.

Based on feedback and empirical testing spanning over a decade, DeLone and McLean (2003) proposed an updated IS success model. This updated D&M IS Success Model provides a comprehensive framework for evaluating IS success by integrating multiple dimensions that reflect both technical performance and user outcomes. In contrast to the original model from 1992, the 2003 version introduces service quality as a distinct factor, acknowledging the increasing importance of support services such as help desks and technical support in IS environments (Delone and Mclean, 2003). The updated D&M IS Success Model also differentiates between the intention to use a system (before adoption) and actual use (after implementation), recognising the significance of both behavioural and attitudinal components in technology acceptance (DeLone and McLean, 2003). Additionally, net benefits supersede the separate constructs of individual impact and organisational impact, consolidating results into a broader, outcome-oriented perspective (DeLone and McLean, 2003).

The updated D&M IS Success Model can be interpreted as follows: a system can be evaluated based on information quality, system quality, and service quality, and these characteristics influence subsequent use or intention to use and user satisfaction. The benefits gained from using the system will (positively or negatively) affect user satisfaction and future IS use. Figure 13 illustrates the updated D&M IS Success Model, and Table 10 provides definitions of its key terms.

Figure 13: The Updated D&M IS Success Model



Note. Source: DeLone and McLean (2003).

Table 10: Definition of Key Terms in the Updated D&M IS Success Model

Variable	Definition
Information quality	The desirable characteristics of the system outputs (i.e. information), including accuracy, timeliness, completeness, relevance, and consistency
System quality	The desirable characteristics of an information system, measuring the system's performance in terms of usability, availability, reliability, adaptability, and response time
Service quality	The overall support delivered by the service provider (e.g. IT department or vendor), reflecting responsiveness, assurance, empathy, and support quality
Use	The degree and manner in which an information system is utilised by its users, including frequency, nature, and appropriateness of use
Intention to use	Users' intention or plan to use the system in the future.
User satisfaction	Users' level of satisfaction with reports, websites, or overall system use
Net benefits	The extent to which the IS contributes to the success of individuals, groups, organisations, industries, and nations, encompassing both positive and negative impacts

Note. Source: DeLone and McLean (2003).

The updated D&M IS Success Model is recognised in the literature for its holistic approach, capturing the various dimensions of IS success across different contexts

such as e-learning, e-commerce, e-health, and web-based systems (Petter et al., 2008; Pham and Dau, 2022). One of the model's key advantages is its widespread application in assessing system and information design attributes and their relationship with technology use (Salam and Farooq, 2020). This advantage aligns with Delone and McLean's (2003) assertion that the D&M IS Success Model can be used for both mandatory and voluntary systems. Additionally, the D&M IS Success Model's adaptability allows researchers to modify its constructs to fit specific organisational or technological contexts, thereby enhancing its applicability in complex environments such as government-to-citizen (G2C) e-government systems and portals. However, the D&M IS Success Model has limitations. For instance, measuring abstract constructs such as net benefits can be challenging because of their broad and subjective nature (Al-Nuaimi and Al-Emran, 2021; DeLone and McLean, 2004). Despite these challenges, the D&M IS Success Model remains a foundational and widely endorsed tool in IS evaluation research.

The updated D&M IS Success Model has been widely used to assess the success of systems employed in the education sector, including e-learning, LMSs, and portals (Pham and Dau, 2022). According to the literature, this model is considered particularly effective in explaining factors that may influence SAP and students' use of ICT tools in education from a student perspective (Pham and Dau, 2022; Salam and Farooq, 2020). Accordingly, there is a growing body of research supporting the D&M IS Success Model as an effective framework for assessing educational technologies in various contexts. Table 11 presents some studies that have used this model in an educational context.

Table 11: Summary of Studies Using the D&M IS Success Model in Education Research

Author (year)	Title	Context	Key findings
Aldholay et al. (2018)	An extension of Delone and McLean IS success model with self-efficacy: Online learning usage in Yemen	Students who used online learning in Yemeni public universities	Self-efficacy was added to the model. System, information, and service quality significantly influenced user satisfaction and usage, leading to improved performance.
Alfaki (2021)	DeLone and McLean Information Systems Success Model in a Blended Learning Context	Higher education students in the UAE to investigate the effectiveness of blended learning systems in UAE higher education using the updated D&M IS Success Model	System quality, information quality, and service quality had significant positive effects on user satisfaction and intention to use. Blended learning success was highly dependent on both technical and content-related system factors.
Rokhman et al. (2022)	E-learning evaluation during the COVID-19 pandemic era based on the updated DeLone and McLean Information Systems Success Model	Indonesian students at higher education institutions to evaluate e-learning systems during the Covid-19 pandemic using the D&M IS Success Model	System quality, information quality, and service quality significantly influenced user satisfaction and intention to use. The model effectively captured the dynamics of e-learning success in crisis-driven remote learning environments.
Al-shargab et al. (2021)	The adoption of an e-learning system using Information Systems Success Model: A case study of Jazan University	Students at Jazan University, Saudi Arabia to examine the adoption and success of an e-learning system using the D&M IS Success Model	System quality, information quality, and service quality had significant effects on user satisfaction and intention to use. The model effectively explained the success of the e-learning system during the period considered.
Alduaij et al. (2024)	Using the DeLone and McLean Success Model to Evaluate Moodle's Information System Success	Students at PAAET in Kuwait to evaluate the Moodle LMS during and after emergency remote learning using the D&M IS Success Model	System quality, information quality, and service quality significantly influenced user satisfaction and perceived net benefits. Instructor interaction and institutional support were important contextual factors in determining system success.
Salam and Farooq (2020)	Does sociability quality of web-based collaborative learning information system influence students' satisfaction and system usage?	Malaysian students in higher education to examine web-based collaborative learning systems using an extended D&M IS Success Model	The study extended the D&M IS Success Model by adding sociability quality as a new construct. Sociability quality, along with system, information, and service quality, significantly influenced user satisfaction and system usage. These findings highlighted the importance of social interaction features in educational information systems.
Mater et al. (2024)	Developing a Success Model of a Social Student Relationship Management System	Students at a Jordanian private university, applying the D&M IS Success Model to evaluate a social student relationship management system (SSRM), a type of educational social networking system	System quality, information quality, service quality, and trust significantly influenced user satisfaction and actual use. Extending the D&M IS Success Model with trust improved its explanatory power in social media-based educational environments.

Note. Source: Author's own work.

The studies in Table 11 collectively demonstrate the model's flexibility and relevance in evaluating system quality, user satisfaction, and educational outcomes in the global higher education context. As a result, the D&M IS Success Model was chosen for the current thesis, specifically for Study 1. Study 1 aimed to explore the factors related to the use of educational SNSs and their effect on SAP from a student perspective. Therefore, the D&M IS Success Model is particularly suitable. This model can be used to comprehensively examine both the systemic quality of educational technologies and their impact on student outcomes, which is crucial when evaluating educational SNSs (Al-Nuaimi et al., 2021). As mentioned by Alazemi et al. (2024), dimensions of the D&M IS Success Model provide a robust framework for assessing how SNSs support academic activities and ultimately influence SAP. Applying this model in Study 1 enabled a systematic evaluation of how the quality of educational SNSs, specifically their reliability, content relevance, and support infrastructure, affects students' use behaviours, satisfaction, and, consequently, SAP.

4.3 Major Learning Theories

Just as information systems theories are essential for understanding technology adoption and the success of systems, learning theories are equally important in educational contexts. Learning theories provide insights into how individuals acquire, process, and apply knowledge, which is crucial in environments where technologies such as educational SNSs are used to support teaching and learning (Ertmer and Newby, 2013). This section reviews the most commonly used learning theories in the context of educational technologies, namely behaviourism learning theory, cognitive learning theory, and constructivism, which is the learning theory used to underpin the current thesis.

4.3.1 Behaviourist Learning Theory

Behaviourism was initially developed in the 1920s and reached its peak in the 1950s. It defines learning as a series of stimulus and response actions within observable cause-and-effect relationships (Schunk, 2012). According to the literature, behaviourism is influenced by the work of John B. Watson, Ivan Pavlov, and B. F. Skinner (Zhou and Brown, 2015). It views the learner's mind as a black box, focusing primarily on

observable changes in behaviour (Picciano, 2021; Schunk, 2012). Hammad et al. (2020) explained that in behaviourism, learning occurs through classical conditioning, which refers to natural reflexes in response to various stimuli, as proposed by Pavlov, or operant conditioning, which involves reinforcing responses through extrinsic rewards or punishments. Accordingly, the likelihood of such responses in the future is modified, in keeping with Skinner's viewpoint, which is the dominant perspective in behaviourism (Hammad et al., 2020).

In this framework, the role of the teacher is to control and dispense knowledge by providing clear instructions and consistent reinforcement to shape desired behaviours. Conversely, the learner is seen as passive, responding to environmental cues with little emphasis on internal cognition or self-regulation (Ertmer and Newby, 2013). The advantages of behaviourism include its structured approach, ease of implementation, and effectiveness in teaching basic skills and behaviours through repetition and reinforcement (Anderson and Elloumi, 2004; Hammad et al., 2020). However, it has major limitations. For instance, behaviourism disregards learners' cognitive and emotional engagement, underestimates the complexity of human learning, and is ill suited for fostering higher-order thinking skills, problem solving, or social interaction (Anderson and Elloumi, 2004; Hammad et al., 2020). Consequently, behaviourism became unsuitable for the needs of more recent research, causing the focus to shift towards cognitive learning theory.

4.3.2 Cognitive Learning Theory

The shortcomings of behaviourism in explaining various learning processes led to the emergence of cognitive learning theory, often referred to as the cognitivist revolution. Cognitive learning theory replaced behaviourism as the dominant paradigm in the 1960s (Picciano, 2021). According to Schunk (2012), cognitive learning theory emphasises the internal mental processes involved in learning, including memory, attention, perception, and problem solving. This theory is rooted in the work of thinkers such as Jean Piaget, Jerome Bruner, and Robert Gagné (Zhou and Brown, 2015). Under this theory, learners are viewed as active processors of information who construct meaning by understanding and organising knowledge (Schunk, 2012). Unlike behaviourism, cognitive-centred theories highlight how learners interpret and mentally represent information. In cognitive learning theory, the teacher's role is to

design learning experiences that promote comprehension, facilitate mental organisation, and support critical thinking through strategies such as concept mapping and guided discovery (Ertmer and Newby, 2013). The learner is viewed as an active participant who uses prior knowledge to construct new understanding (Ertmer and Newby, 2013).

This approach to learning is beneficial because it fosters deep understanding, encourages the transfer of learning to new contexts, and supports independent problem solving (Ertmer and Newby, 2013). However, cognitive learning theory may not fully account for the social and contextual dimensions of learning, especially in environments where interaction and collaboration are crucial, such as group-based online learning (Hammad et al., 2020). In other words, its individualistic orientation and limited emphasis on social interaction may not fully capture the collaborative and participatory nature of SNS-based learning (Marougkas et al., 2023). Furthermore, cognitivism's perspective on knowledge aligns with an objectivist view, suggesting that knowledge is absolute, corresponds to reality, and exists independently of individuals' beliefs (Hammad et al., 2020). This perspective does not apply to all types of knowledge. Therefore, cognitive learning theory may be inadequate for the current thesis.

4.3.3 Constructivist Learning Theory

Constructivism is a prominent learning theory that differs from behaviourism and cognitivism by positing that learners actively construct their own understanding and knowledge of the world through experiences and social interactions rather than passively receiving information. It is rooted in the works of influential theorists such as Jean Piaget, who emphasised cognitive development through stages, and Lev Vygotsky, who introduced the social constructivist perspective. In short, constructivists assert that knowledge is constructed by the learner rather than transmitted from teacher to student (Piaget, 1954; Vygotsky, 1978).

According to Anderson and Elloumi (2004), the principles of constructivism revolve around active learning, prior knowledge, context-based tasks, and the importance of social interaction. In this theory, teachers shift from being transmitters of knowledge to facilitators or guides. This shift allows learners to explore, inquire, and reflect actively. Consequently, learners act in a self-directed way, engaging with

content, peers, teachers, and real-world problems (Fosnot, 2013). As mentioned in Chapter 3, Picciano (2021) noted that one of the most widely recognised instructional strategies emerging from constructivist theory is collaborative learning. This approach emphasises the co-construction of knowledge through peer dialogue, mutual support, and problem-solving groups. Interactions both among peers and between students and teachers, as well as learner engagement, are fundamental to constructivist classrooms, especially in digital and technology-enhanced environments (Anderson and Elloumi, 2004; Picciano, 2021).

Constructivist learning theory has garnered much attention in educational technology because of its focus on active, contextualised, and social learning experiences (Picciano, 2021). One of its main strengths is its ability to foster deep understanding and critical thinking, with learners being encouraged to construct knowledge through inquiry, reflection, and interactions with real-world problems (Chuang, 2021; Jonassen and Rohrer-Murphy, 1999). This approach contrasts sharply with rote memorisation, with the traditional rote-learning model often failing to promote long-term retention or transferability. By engaging learners in authentic tasks such as case-based learning, simulations, and collaborative projects, constructivist environments support the development of transferable problem-solving skills (Chuang, 2021). For instance, in a study of international medical students taught using a combined flipped classroom and case-based learning approach in an online pathophysiology course, Yang et al. (2024) found notable improvements in active learning, critical thinking, student satisfaction, and performance with respect to traditional instruction.

Constructivism also highlights the crucial role of social interaction in the knowledge construction process, emphasising how learners co-construct understanding through peer or teacher dialogue, collaborative learning, and scaffolded support (Vygotsky, 1978). This focus aligns closely with recent research linking learner interaction with positive educational outcomes in digital environments. For example, a study of Chinese tertiary-level students learning English as a foreign language found that classroom interaction, with both peers and teachers, was positively correlated with student satisfaction, perceived learning performance, and effectiveness in online settings (Lin and Wang, 2024). Similarly, a study of medical undergraduates revealed that strong peer relationships helped mitigate the negative effects of remote

learning, maintaining student satisfaction and engagement, even during the shift to online education (Wissing et al., 2022).

Although constructivism has greatly influenced modern educational practices, particularly in technology-enhanced learning, it too has limitations. One major drawback is its applicability to novice learners, who may lack the necessary knowledge and metacognitive skills to succeed in self-directed and exploratory learning environments (Hammad et al., 2020). The open-ended nature of constructivist tasks can lead to cognitive overload and misconceptions among students who are unfamiliar with the content or the digital platforms they are expected to use (Hammad et al., 2020). Additionally, effectively implementing a constructivist pedagogy requires a high level of teacher competence. Teachers must be skilled in designing authentic inquiry-based tasks, facilitating meaningful dialogue, and scaffolding student learning without dominating the process (Jonassen and Rohrer-Murphy, 1999). The implementation of constructivism can be particularly challenging in educational systems where teacher-centred instruction is still the standard.

Despite its limitations, constructivism remains one of the most widely adopted learning theories in the field of educational technology, particularly in relation to educational SNSs. Its popularity is largely due to its emphasis on active and meaningful learning (Al-Qaysi et al., 2020). As noted in previous sections, scholars often argue that SNSs align conceptually with educational philosophies such as constructivism, which promote student interaction, engagement, performance, and the co-construction of knowledge (Perez et al., 2023). Recent empirical research supports this argument. For instance, in a study conducted across five Malaysian universities, Alismaiel et al. (2022) found that the integration of SNSs enhanced student satisfaction and SAP by facilitating collaborative learning and ease of use. Additionally, a study by Sabah (2023) involving university students in Palestine revealed that SNSs-based collaborative learning environments such as Facebook groups significantly improved student satisfaction, perceived academic performance, and overall learning outcomes. The study indicated a strong positive relationship between SNS use, collaboration, and academic achievement.

These findings align with the drive for HEIs in Kuwait to enhance the learning process by encouraging the use of ICT tools such as educational SNSs to improve communication between students and teachers and boost SAP (Ministry of Education, 2023). As discussed in Chapter 2, one of the key initiatives of New Kuwait is the

integration of ICT in the educational process. This initiative has helped institutions and teachers move away from traditional learning methods and implement modern approaches based on constructivist learning theory (MOE, 2023; United Nations, 2023a). Given this theoretical alignment and empirical support, constructivism provides a suitable and robust pedagogical framework for the current thesis.

4.4 Key Theoretical Concepts for Study 1

Building on the previous discussion of information systems and learning theories, this section defines the key theoretical concepts and variables for Study 1. It then operationalises each construct and clarifies how it was measured. Study 1 addressed the following research question: From a student perspective, what factors affect SAP through the use of educational SNSs in Kuwaiti HEIs? Study 1 adopts an integrative approach. This approach rests on combining the updated D&M IS Success Model with constructivist learning theory, focusing on all aspects of constructivism, including interaction, engagement, and collaboration for learning. The integration of these theories is detailed in Chapter 5. In the following sections, all constructs are examined from the perspective of students, who represent the users of the educational SNS considered in Study 1.

4.4.1 Student Interaction

The concept of student interaction has developed theoretically and practically over the years, evolving alongside changes in pedagogical approaches and technological advancements. Initially rooted in behaviourist and cognitivist learning theories during the mid-20th century, interaction was primarily viewed as a stimulus-response mechanism whereby learners react to teacher instructions or structured content with limited social engagement (Harasim, 2017). As educational paradigms shifted towards more constructivist perspectives, interaction began to be seen not just as communication but as a vital process through which knowledge is co-constructed (Vygotsky, 1978). Vygotsky's constructivism emphasised the centrality of interaction in learning, suggesting that learners develop understanding through dialogue and shared activities within their "zone of proximal development" (Vygotsky, 1978, p. 86).

Advanced technologies have transformed the way students interact in educational settings, making interactions more participatory and peer driven. Scholars have found that meaningful interaction, particularly with peers and teachers, enhances engagement, satisfaction, and academic performance in e-learning environments (Al-Rahmi et al., 2018; Lin et al., 2023). These findings align with the existing literature, which emphasises the importance of student interaction in educational settings, especially in technology-enhanced environments (Alamri et al., 2020; Alaslani and Alandejani, 2020). From a constructivist perspective, learning is inherently social. Students construct knowledge through collaboration, discussion, and shared meaning making (Blasco-Arcas et al., 2013; Moore, 1989). This social aspect of learning is particularly relevant in e-learning and educational SNSs, where interaction serves not only as a pedagogical tool but also as a learning medium (Al-Rahmi et al., 2020).

In the context of the present thesis, HEIs in Kuwait are committed to improving communication between students and teachers by encouraging the use of ICT tools to enhance the learning process (New Kuwait, 2023). In this thesis, student interaction is defined in two ways: interaction with peers and interaction with teachers. Interaction with peers refers to the extent of dialogue, discussion, and information exchange between students and their peers through educational SNSs (Blasco-Arcas et al., 2013). Interaction with teachers refers to how educational SNSs facilitate interaction between students and teachers through dialogue, discussion, and information exchange (Blasco-Arcas et al., 2013).

In this study, the interaction constructs are framed as pedagogical rather than purely social processes. They encompass academically focused communication facilitated through educational SNSs. This includes discussing course content, sharing learning resources, seeking clarification, providing academic support, receiving feedback, and engaging in meaningful dialogue that enhances learning (Hosen et al., 2021). Consequently, these constructs do not measure the frequency of online activity or the number of messages exchanged. Instead, they assess how effectively educational SNSs promote learning-oriented interactions between students and teachers.

4.4.2 Collaborative Learning

Collaborative learning has evolved theoretically and practically from a pedagogical technique based on learning theories to a vital aspect of 21st-century digital education.

The roots of collaborative learning can be traced back to Vygotsky's (1978) sociocultural theory, which emphasises the social context of learning and the importance of interaction with more knowledgeable individuals to develop higher-order thinking skills. Collaborative learning laid the foundation for understanding how peer interaction can enable individuals to learn beyond what they could achieve on their own (Ajjan and Hartshorne, 2008). In the 1980s and 1990s, collaborative learning was promoted under constructivist perspectives, emphasising the importance of interdependence, shared goals, and peer engagement (Johnson and Johnson, 1994). Harasim (2017) noted that the rise of digital technologies in the 2000s significantly transformed collaborative learning. These technologies extended interactions beyond physical classrooms and facilitated both asynchronous and synchronous communication on e-learning platforms and other educational resources.

As discussed in Chapter 3, collaborative learning has become closely linked with online and blended learning environments. A particularly clear example is the integration of collaborative platforms such as educational SNSs (Al-Rahmi et al., 2018). Research indicates that these platforms foster peer interaction, facilitate group assignments, and encourage the generation of student-led content. These platforms are thus consistent with the social-constructivist principles underlying collaborative learning (Blasco-Arcas et al., 2013). Furthermore, the literature suggests that collaborative learning plays a crucial role in enhancing student engagement and academic development. It promotes critical thinking, active involvement, problem-solving skills, and a deeper understanding through student interaction and collective knowledge construction (Al-Rahmi et al., 2020; Sarwar et al., 2019). The impact of these collaborative learning processes is particularly significant when technology, such as educational SNSs, is used in remote or hybrid learning contexts (Sarwar et al., 2019; Wakefield and Frawley, 2020).

In Kuwait, collaborative learning is particularly important because of the growing shift towards digital education and the increasing use of SNSs in higher education. According to Alenezi and Brinthaupt (2022), the cultural emphasis on social connectedness in Kuwait makes collaborative learning a good fit for learners' preferences for group-based tasks and interactive learning formats. In line with these preferences, incorporating collaborative learning into educational SNSs in Kuwait not only enhances student engagement but also helps develop the 21st-century skills necessary for a digital knowledge economy. In Study 1, collaborative learning refers

to the extent to which a group of learners works together through educational SNSs to solve a particular problem, finish a task, improve skills, evaluate one another's ideas, or produce a new product (Sarwar et al., 2019).

Collaborative learning in Study 1 is defined as a pedagogical process where students actively build knowledge by working together to achieve common learning goals. This process includes collaborative problem-solving, peer feedback, discussions of academic content, knowledge sharing, and joint completion of learning activities supported by educational SNSs (Manca, 2020). Therefore, collaborative learning is focused on intentional educational collaboration, distinguishing it from casual social interaction or participation in general online social activities.

4.4.3 Student Engagement

Interest in the concept of student engagement began over 70 years ago, evolving considerably since then. Initially, it focused on behavioural indicators of participation, later becoming a more complex, multidimensional construct. Early understandings in the 1980s were rooted in time-on-task theories, emphasising observable behaviours such as attendance and assignment completion (Kahu, 2013). In the 1990s, the National Survey of Student Engagement (NSSE) expanded the concept by providing a tool designed to assess student engagement in various educational activities (Kahu, 2013). The NSSE and similar tools have been used in numerous studies linking student engagement to positive outcomes such as higher grades, retention, persistence, and graduation rates (Manu et al., 2021). These findings further highlight the importance of student engagement as a critical factor in the higher education teaching process.

Despite the attention student engagement has received, its conceptualisation still has limitations. In some cases, there is overlap, duplication, and a lack of differentiation between student engagement and other concepts (Fredricks et al., 2004; Manu et al., 2021). Recently, authors have acknowledged the multifaceted nature of student engagement. For example, Fredricks et al. (2004) defined three dimensions of student engagement: behavioural, emotional, and cognitive. Behavioural engagement refers to students' participation in academic activities, out-of-class educational experiences, and overall efforts, attendance, and involvement in class. Emotional engagement pertains to students' emotional responses to learning, with indicators including students' attitudes towards learning, interests, values, and sense of belonging

to the learning community. Lastly, cognitive engagement refers to the extent to which students are involved in learning and the mental effort they exert to understand and master content (Fredricks et al., 2004).

This definition of student engagement has gained wide acceptance in educational research. Each of the three dimensions of Fredricks et al.'s (2004) definition of student engagement plays a role in how students connect with their academic experiences. Emotional engagement has proven particularly vital in technology-mediated learning environments (Alamri et al., 2020). Emotional engagement fosters motivation, resilience, and persistence, especially in contexts where learning is self-directed and social, such as when using educational SNSs (Al-Rahmi et al., 2018; Al-Rahmi et al., 2020; Gunuc and Kuzu, 2015). Given that this thesis examines the relationship of SAP with educational SNSs use, the focus on emotional engagement is justified. The emotional connection that students develop can greatly influence their participation in and perceptions of these platforms, ultimately affecting their SAP. Thus, understanding emotional engagement can offer valuable insights into the affective mechanisms through which educational SNSs affect SAP (Alazemi et al., 2024). In Study 1, student engagement refers to students' emotional responses to their use of educational SNSs, including their relationships, attitudes, and interest towards peers, teachers, and studies (Gunuc and Kuzu, 2015).

4.4.4 Information Quality

The concept of information quality has evolved since the early days of information systems research (see

Table 9 and Table 10). In the 1970s and 1980s, information quality was primarily associated with the accuracy and timeliness of data stored in management information systems (Bailey and Pearson, 1983). During this period, the focus centred on objective data attributes such as completeness, correctness, and consistency, mainly from a system-oriented perspective (DeLone and McLean, 2003). However, as information systems became more user centred in the 1990s, researchers began to acknowledge information quality's multidimensional and context-dependent nature, influenced by user perceptions and task relevance (Wang and Strong, 1996). This recognition led to the development of user-centred information quality frameworks that emphasise

dimensions such as relevance, understandability, and usefulness (DeLone and McLean, 2003).

With the emergence of web-based and social information systems in the 2000s, the concept of information quality expanded to include dynamic and subjective elements such as credibility, format, and accessibility. These factors reflect users' real-time interactions with digital platforms (Lee et al., 2002). In educational technology, information quality refers to more than just factual accuracy. It also includes how effectively information supports learning objectives, facilitates interaction, and is tailored to the needs of learners (Al-Fraihat et al., 2020). For example, Almaiah et al. (2022) reported that timely, relevant, and reliable information directly influences learning outcomes. High information quality enhances user satisfaction, facilitates efficient learning, and supports SAP by ensuring that learners and educators can access trustworthy and comprehensible content. In the context of educational SNSs, information quality is even more crucial given the unstructured, user-generated nature of content. Poor information, characterised by inaccuracy, irrelevance, or outdatedness, can lead to confusion, misinformation, and low engagement, particularly among students relying on SNSs for academic collaboration and support (Al-Rahmi et al., 2021). Therefore, information quality is a critical determinant of the effectiveness of information systems, where timely, relevant, and reliable information directly influences learning outcomes.

In Kuwait, where SNSs have increasingly been integrated into higher education, information quality plays a vital role in sustaining the credibility and effectiveness of these SNSs. As students at Kuwaiti HEIs increasingly rely on SNSs to communicate with peers and teachers, share resources, and access academic materials, the quality of the information available on these SNSs shapes their learning experiences, use, and satisfaction (Alduaij et al., 2024). Therefore, in this research, information quality is treated as a core construct affecting SAP because it influences both students' use of and satisfaction with educational SNSs, as well as the learning interactions they facilitate (Salam and Farooq, 2020). In Study 1, information quality refers to the degree to which system users (i.e. students) think that the information on educational SNSs is up to date, accurate, relevant, and easy to understand (Isaac et al., 2019; Salam and Farooq, 2020).

4.4.5 System Quality

The concept of system quality has developed significantly in information systems research, much like the concept of information quality. Initially, system quality was defined narrowly, focusing on technical performance factors such as system reliability, response time, and ease of access (DeLone and McLean, 1992). With the introduction of the D&M IS Success Model in 1992, system quality was officially recognised as a fundamental dimension of information systems success, representing both information systems technical soundness and design quality (DeLone and McLean, 1992). Over time, the definition of system quality has broadened to encompass additional attributes such as usability, user interface design, integration capability, and security. This evolution reflects a more comprehensive understanding of user experience and system interaction, as detailed in
Table 9 and Table 10 (DeLone and McLean, 2003).

In the field of education, system quality has emerged as a crucial factor influencing learner satisfaction, use, and SAP. For example, poor system performance, characterised by frequent errors, downtime, or slow loading times, can impede students' ability to engage meaningfully with content, peers, and teachers (Al-Rahmi et al., 2021). Consequently, educational technology research has cited system quality not only as a technical concern but also as a key determinant of user satisfaction and educational success (Al-Fraihat et al., 2020; Almaiah et al., 2022). In Kuwait, ensuring high system quality is vital for the sustainable adoption and effective use of educational SNSs (United Nations, 2023a). In Study 1, system quality is defined as the degree to which students believe that educational SNSs are easy to use, flexible, and understandable (Isaac et al., 2019; Salam and Farooq, 2020).

4.4.6 Service Quality

The concept of service quality originated in marketing and operations research. It was initially defined as the gap between customer expectations and perceptions of service performance (Lutfi et al., 2022; Pitt et al., 1995). The foundational service quality model created by Parasuraman et al. (1988) contained five dimensions of service quality: tangibles, reliability, responsiveness, assurance, and empathy (Pitt et al., 1995). This model has been widely used across various service sectors, including education and information systems. In the field of information systems, DeLone and

McLean (2003) included service quality as a dimension of their updated D&M IS Success Model (see Table 10). They acknowledged that the quality of support services such as technical help, user assistance, and administrative support plays a crucial role in influencing user satisfaction and overall information systems effectiveness (DeLone and McLean, 2003).

As digital platforms and online learning environments have become more prominent, particularly with the rise of e-learning and educational platforms, the understanding of service quality has evolved. This concept now encompasses 24/7 support availability, the responsiveness of technical teams, personalisation, and user-centred communication (Salam and Farooq, 2020). Scholars have increasingly emphasised the importance of continuous service, proactive issue resolution, and emotional support in promoting effective technology use in educational settings (Al-Adwan et al., 2022; Al-Fraihat et al., 2020). Recent studies have shown that service quality is essential not only for user satisfaction but also for fostering trust, adoption intention, and actual use, especially in contexts where users rely heavily on system support for their learning success (Al-Adwan et al., 2022; Lutfi et al., 2022). In Kuwaiti HEIs, service quality has become substantially more important due to the increased reliance on online systems such as SNSs. Timely support and effective service delivery are crucial for maintaining educational continuity and enhancing SAP (Alduaij et al., 2024). Consequently, in Study 1, service quality is defined as the quality of professional support provided by educational SNS administrators and developers. It is assessed through timeliness, responsiveness, and empathy (Al-Adwan et al., 2022; Salam and Farooq, 2020).

4.4.7 System Use (Actual Use of myU)

The concept of system use, also known as actual use, has long been a key indicator in evaluating the success and effectiveness of information systems. Early definitions of system use emerged during the 1970s and 1980s, commonly emphasising measures such as frequency, duration, and functionality of use to assess how individuals interact with information systems (Lucas, 1978). Over time, however, scholars began to criticise this narrow, utilitarian perspective. They advocated a broader understanding of system use, considering aspects such as frequency of use, nature and duration of use, and users' perceptions of information systems usefulness and effectiveness in

meeting their needs (Urbach and Ahlemann, 2010). Consequently, DeLone and McLean (2016) defined actual use as the degree and manner in which employees and customers utilise information systems capabilities. It includes the amount of use, frequency of use, nature of use, appropriateness of use, extent of use, and purpose of use (see

Table 9 and Table 10).

In the foundational D&M IS Success Model from 1992, system use was identified as a core construct that connects system quality and information quality to user satisfaction and net benefits (DeLone and McLean, 1992). This approach aligns with the findings of DeLone and McLean (2016), who reported that one of the most important aspects of technology use is the need to assess the impact of system use on information systems success factors such as performance. Studies have shown a significant relationship between actual use and both satisfaction and performance in educational settings (Al-Fraihat et al., 2020; Al-Rahmi et al., 2021; Isaac et al., 2019). This relationship is particularly relevant because it shows that simply having access to systems is not enough. Instead, the quality, frequency, duration, and purpose of use are the central indicators of success (Al-Adwan et al., 2022). In the context of Kuwaiti HEIs, students now use educational SNSs not only for communication but also for collaboration, interaction with peers and teachers, and academic support. As a result, system use has become a key variable in evaluating the effectiveness of educational technologies. The term actual use refers to the degree to which a student utilises the capabilities of educational SNSs in terms of frequency and duration of use, in this case of the myU application (Isaac et al., 2019).

4.4.8 User (Student) Satisfaction

The concept of user satisfaction has been fundamental in information systems research since the 1970s. It emerged as a proxy of system success, particularly when objective performance metrics were unavailable (Bailey and Pearson, 1983). Early models defined user satisfaction as a subjective attitude, influenced by users' perceptions of system usefulness, ease of use, and output quality (DeLone and McLean, 1992). With the introduction of the D&M IS Success Model in 1992, user satisfaction became a central information systems construct, linking system, information, and service quality with system use and net benefits (DeLone and McLean, 1992).

As the field of information systems evolved, scholars began to question static and generalised approaches to understanding user satisfaction. Earlier research by Seddon

(1997) highlighted the distinction between satisfaction as a psychological response to system use and its role as a predictor of future use. Building on this perspective, later studies began to suggest that satisfaction should be viewed as contextual, dynamic, and contingent upon specific tasks (Petter et al., 2008; Urbach and Ahlemann, 2010). This distinction led to refinements in how satisfaction is measured and interpreted. According to DeLone and McLean (2003), satisfaction arises after the system is used, with system use serving as an antecedent of both satisfaction and success (see

Table 9 and Table 10). Moreover, satisfaction can lead to ongoing use (Lutfi et al., 2022). For instance, students may feel satisfied when they use ICT tools such as LMSs and educational SNSs to support their studies. As a result of this satisfaction, students may be more inclined to continue using these ICT tools (Cavus et al., 2021; Lutfi et al., 2022). Research has shown that, when satisfaction with an e-learning system is enhanced, users are more likely to continue using it, thereby reaping the associated benefits (Al-Adwan et al., 2022; Al-Fraihat et al., 2020).

Therefore, as the digital transformation in higher education has accelerated, user satisfaction has become an essential factor in promoting technology acceptance, enhancing academic engagement, and improving overall learning outcomes (Alenezi and Brinthaupt, 2022). Because students use educational SNSs for collaboration, interaction, and content sharing, their satisfaction reflects not only the technical functionality of these platforms but also their social and pedagogical benefits (Al-Rahmi et al., 2021). Thus, in Study 1, student satisfaction is defined as the extent to which students believe that educational SNSs meet their educational requirements in terms of overall satisfaction (Cavus et al., 2021).

4.5 Key Theoretical Concepts for Study 2

This section outlines the research variables and key theoretical concepts in Study 2, which addressed the second research question: From a teacher perspective, what factors influence SAP when using educational SNSs in Kuwaiti HEIs? For Study 2, the UTAUT2 was enriched with additional constructs to provide the underlying theoretical framework. This section presents the UTAUT2 constructs that are pertinent to the research context, providing operational definitions and explaining how each variable was measured. The integration of the UTAUT2 model with additional

constructs is detailed in Chapter 5. Crucially, all constructs in Study 2 were assessed from the perspective of teachers.

4.5.1 Perceived Technology Efficacy

The concept of perceived technology efficacy has evolved over the years. This concept is often discussed alongside related ideas, such as computer self-efficacy and technology self-efficacy (Hsu and Chiu, 2004). Perceived technology efficacy is rooted in Bandura's (1986) theory of self-efficacy, which defines it as an individual's belief in having the ability to successfully perform tasks (Hsu and Chiu, 2004). The psychological framework of the theory of self-efficacy was subsequently applied to the use of technology in both educational and organisational settings. In the early 1990s, Compeau and Higgins (1995) defined computer self-efficacy as a person's confidence in using computers to accomplish specific tasks. This definition became central to studies of technology adoption and use. Over the years, the concept of perceived technology efficacy has broadened in response to the emergence of various digital tools, mobile applications, and online platforms (Eastin and LaRose, 2000). Researchers began to investigate efficacy beliefs related to the internet, mobile technologies, and educational technologies, including e-learning systems and SNSs. As a result, perceived technology efficacy has evolved from referring solely to desktop computing to encompass a wider range of digital competencies across different platforms and devices (Al-Nuaimi et al., 2021; Hsu and Chiu, 2004).

In higher education, the concept of perceived technology efficacy has become increasingly important due to the integration of digital learning platforms, online assessments, and collaborative tools in this domain. Research indicates that both students' and teachers' beliefs in their technological abilities significantly affect their engagement with technology, acceptance and use of digital tools, and ultimately learning outcomes (Al-Qaysi et al., 2023; Sabah, 2023). The rise of SNSs for educational purposes has further emphasised the need to understand perceived technology efficacy, as comfort and confidence with these tools have become essential for achieving meaningful academic performance (Almaiah et al., 2019). Moreover, perceived technology efficacy plays a crucial role in shaping how students interact with educational technologies, especially from the perspective of teachers, who act as facilitators in digital learning environments (Teo, 2009). According to the literature,

teachers' perceptions of students' technology efficacy often influence their expectations, instructional strategies, and the integration of technology into learning processes (Sabah, 2023; Teo, 2009). When teachers believe that students are confident and capable of using educational platforms, including SNSs, they are more likely to assign tasks that foster independent exploration, collaboration, and interaction through these tools. Conversely, if teachers perceive low perceived technology efficacy among students, they may restrict the use of SNSs, limiting opportunities for digital engagement and deeper learning (Sabah, 2023; Teo, 2009).

In Kuwait, understanding perceived technology efficacy from a teacher perspective is particularly important. Teachers at HEIs have noticed that students' comfort with SNSs significantly influences their participation and academic success in hybrid and online learning environments (Alenezi and Brinthaupt, 2022). For example, when students exhibit a strong belief in their ability to use SNSs for academic purposes such as participating in discussions, submitting assignments, or collaborating on projects, teachers are more inclined to create learner-centred activities involving SNSs (Sabah, 2023). Additionally, in educational cultures such as Kuwait's, teachers' beliefs and expectations are crucial in motivating students to use technology effectively (Al-Olayan, 2020). Therefore, examining perceived technology efficacy from the perspective of teachers not only reveals students' readiness but also helps identify the pedagogical and institutional support needed to improve SAP through educational SNSs. In Study 2, perceived technology efficacy is defined as teachers' perceptions of students' ability to use educational SNSs for learning (Hsu and Chiu, 2004).

4.5.2 Perceived Compatibility

The concept of perceived compatibility originated from Rogers's (1995) diffusions of innovation theory. It is defined as the extent to which an innovation aligns with users' existing values, experiences, and needs (Rogers, 1995). In early studies of technology adoption, perceived compatibility was identified as a key factor influencing whether individuals or institutions would embrace new technology (Rogers, 1995). Over time, perceived compatibility has evolved and has been integrated into the literature on information systems and technology acceptance in models such as diffusion of innovations, extensions of the TAM, and UTAUT-based frameworks. It now not only encompasses value congruence but also covers how well a new system aligns with

users' work practices, learning habits, and expectations (Islam, 2016; Moore and Benbasat, 1991).

In the field of educational technology, perceived compatibility has become increasingly important as learning environments have become more digitally mediated. Researchers have started to assess whether educational platforms and tools align with students' learning preferences, curricula, and social communication styles (Alazemi, 2022; Rokhman et al., 2022). This approach aligns with observations by Al-Qaysi et al. (2023), who noted that, with the rise of SNSs in education, perceived compatibility also encompasses how well SNSs integrate with students' everyday digital practices and communication norms. From a teacher perspective, perceived compatibility is a crucial factor in determining how students use and benefit from educational technologies such as SNSs (Alshehri, 2019). When teachers perceive SNSs to be compatible with students' communication styles, learning expectations, and learning behaviours, they are more likely to incorporate them into their teaching practices and promote student engagement and performance (Islam, 2016; Zachos et al., 2018). This incorporation of SNSs can, in turn, indirectly enhance SAP (Alazemi, 2022). In Study 2, perceived compatibility refers to teachers' perceptions of the extent to which educational SNSs are consistent with the utility values, needs, and experiences of students (Islam, 2016).

4.5.3 Performance Expectancy

Performance expectancy was first formally introduced in Venkatesh et al.'s (2003) UTAUT model (see Table 6). It was adapted from similar concepts such as perceived usefulness, used in the TAM (Davis, 1989), and relative advantage, used in diffusion of innovations theory (Rogers, 1995). Over the years, performance expectancy has remained a key predictor of behavioural intention in various extensions of the UTAUT, including the UTAUT2 (Venkatesh et al., 2012), and is particularly relevant in contexts involving voluntary and consumer-based technology use. Performance expectancy has also evolved beyond traditional workplace productivity and now covers perceived academic, social, and psychological benefits in the context of educational technology (Dwivedi et al., 2019).

From a teacher perspective, evaluating performance expectancy for students is essential for determining whether educational SNSs are worth adopting for teaching.

Teachers at HEIs in Kuwait, for example, are unlikely to adopt SNSs unless they believe that SNSs will lead to tangible improvements in SAP, such as increased engagement, better comprehension, or enhanced academic results (Alajmi and Alotaibi, 2020). In other words, if teachers view educational SNSs as effective in helping students achieve academic outcomes, they are more likely to recommend, encourage, or formally adopt SNSs (Ukut and Krairit, 2019). Furthermore, studies have found that teachers who believe that SNSs contribute to learning motivation and academic performance are significantly more inclined to integrate them into their teaching practices (Al-Rahmi et al., 2022; Alazemi, 2022). In this regard, performance expectancy is not just about student learning in isolation. Rather, it reflects teachers' expectations of technology's pedagogical impact. In Study 2, performance expectancy is defined as teachers' expectations of the usefulness of educational SNSs for students (Venkatesh et al., 2012).

4.5.4 Effort Expectancy

Effort expectancy plays a crucial role in technology adoption research (Table 6). Like performance expectancy, effort expectancy has its theoretical foundations in several key concepts from models in the information systems field, including perceived ease of use from the TAM, complexity from diffusion of innovations theory, and ease of use from the motivational model and the PC utilisation model. The term effort expectancy was formally established in the UTAUT by Venkatesh et al. (2003) and later incorporated into the UTAUT2 (Venkatesh et al., 2012). It continues to be a key determinant of behavioural intention, particularly in the initial stages of technology use.

Evaluating the effort expectancy of educational SNSs from a teacher perspective is crucial for understanding whether these platforms are accessible and user friendly enough to promote extensive student engagement and meaningful learning outcomes. As with performance expectancy, teachers are more likely to endorse and integrate educational SNSs if they believe that students will find them easy to navigate, require minimal training, and not feel discouraged by technological complexities (Alajmi and Alotaibi, 2020). For instance, teachers in HEIs often act as gatekeepers, evaluating whether the effort required from students to use a particular tool is justifiable when weighed against the expected learning outcome (Yildiz Durak, 2019). If SNSs are

perceived as overly complex or cognitively demanding, teachers may be reluctant to recommend them due to concerns about cognitive overload and the potential for student frustration (Devisakti and Muftahu, 2023). Thus, effort expectancy from a teacher perspective refers to teachers' point of view regarding students' ability to use educational SNSs with little effort. In sum, it describes the degree of simplicity and ease of use of educational SNSs (Venkatesh et al., 2012).

4.5.5 Social Influence

Social influence has been an essential element in information systems and technology acceptance models for several decades (see Table 6). Its origins can be traced back to subjective norms in the TRA (Fishbein and Ajzen, 1975) and TPB (Ajzen, 1991). Social influence was introduced as a factor influencing perceived usefulness and behavioural intention in the TAM2 (Venkatesh and Davis, 2000). It was later refined and included in the UTAUT (Venkatesh et al., 2003) and UTAUT2 (Venkatesh et al., 2012), where it remains crucial for understanding user adoption in both organisational and educational contexts. Over time, social influence has evolved to encompass aspects such as peer pressure, teacher encouragement, institutional culture, and social expectations that affect individuals' technology use. Social influence refers to the impact of not only formal authority figures, such as supervisors or teachers, but also informal networks, such as peers or respected community members (Alajmi and Alotaibi, 2020).

In educational settings, understanding the social influence affecting students is crucial for predicting how likely students are to adopt and engage meaningfully with educational SNSs. Teachers are often viewed as influential figures who can affect students' behavioural intentions by endorsing or incorporating technology into learning activities (Awotunde et al., 2021). Additionally, in collectivist societies such as Kuwait, where social norms and community approval hold significant cultural sway, the influence of authority figures, such as teachers, becomes even more pronounced (Al-Hunaiyyan et al., 2018). Consequently, social influence not only serves as a predictor of students' technology use but also provides insight into institutional change and digital transformation. In Study 2, social influence is defined as the degree to which a teacher perceives that people important to the student (e.g. teachers,

colleagues, and friends) believe that the student should use educational SNSs (Venkatesh et al., 2012).

4.5.6 Hedonic Motivation

Early models of technology adoption, such as the TAM and UTAUT, primarily focused on utilitarian or productivity-related factors. However, researchers soon recognised that emotional and affective dimensions significantly influence use behaviour, especially in voluntary and consumer-oriented contexts. The concept of perceived enjoyment first appeared in the extended TAM literature (Venkatesh and Bala, 2008) and was later formalised as hedonic motivation in the UTAUT2 model (see Table 7). It was identified as a key predictor of behavioural intention, particularly in situations where technology use is discretionary and driven by the user (Venkatesh et al., 2012). Recently, hedonic motivation has gained attention in the field of educational technology, especially in studies of e-learning, mobile learning, and educational SNSs (Devisakti and Muftahu, 2023). As students increasingly use SNSs in learning environments, their emotional engagement and enjoyment become critical factors influencing sustained use and deeper academic involvement (Almaiah et al., 2019). For example, when students find educational technology enjoyable, they are more likely to participate actively, collaborate with peers, and engage with course content beyond minimum requirements (Arain et al., 2019).

Understanding the role of hedonic motivation is essential for facilitating effective student engagement with educational SNSs. Teachers are not just content deliverers but also designers of the learning environment (Almaiah et al., 2019). By structuring digital tasks that promote enjoyment and intrinsic motivation, teachers can enhance student participation. For instance, gamified discussions or interactive quizzes designed by teachers within SNSs can boost students' enjoyment, leading to increased participation and thereby indirectly improving academic performance (Al-Maatouk et al., 2020; Al-Qaysi et al., 2023). In sum, if teachers recognise that hedonic motivation significantly contributes to students' academic engagement and SAP, they are more likely to recommend or incorporate SNSs in their instructional strategies. In Study 2, hedonic motivation is defined as the fun or pleasure derived from using educational SNSs (Venkatesh et al., 2012).

4.5.7 Habit

In the context of information systems and technology acceptance, the concept of habit stems from psychological and behavioural learning theories, where habit formation has been linked to stimulus-response patterns and routine behaviours (Limayem et al., 2007). In the field of information systems, habit was historically underexplored until researchers recognised that past behaviours are strong predictors of future technology use, particularly as systems become integrated into users' routines. Habit was formally introduced as a core construct in the UTAUT2, as shown in Table 7 (Venkatesh et al., 2012). Venkatesh et al. (2012) went further, distinguishing between habit and previous experience. Experience is defined as the opportunity to use a new technology, which typically develops gradually from a user's initial interaction with the technology. Conversely, habit refers to the automatic behaviours that develop through learning. In other words, experience is linked to a chronological progression, which leads to the formation of varying levels of habit (Venkatesh et al., 2012).

Over the past decade, habit has gained prominence in educational technology research, especially as students increasingly engage with LMSs, mobile apps, and SNSs. For instance, Gharrah and Aljaafreh (2021) reported that with educational SNSs, habitual use can positively influence engagement, collaboration, and learning outcomes. With habitual use, students no longer require cognitive effort or external motivation to use a given SNS because they do so out of routine. In Kuwaiti HEIs, where the use of mobile devices and SNSs among youth is exceptionally high (CITRA, 2025), the opportunity to leverage students' digital habits for academic purposes can provide a strategic advantage. For instance, if students are already accustomed to using SNSs on a daily basis, teachers can align learning activities with these platforms to take advantage of this behavioural momentum. Furthermore, habit can create stability, ensuring that, even in the absence of external pressures or incentives, students continue to engage with learning resources. In Study 2, habit is defined as teachers' perceptions of the extent to which students perform behaviours automatically as a result of learning (Venkatesh et al., 2012).

4.5.8 Behavioural Intention and Use Behaviour

The concepts of behavioural intention and use behaviour have evolved significantly across disciplines, including psychology, information systems, and educational

technology. Behavioural intention gained prominence through the TPB (Ajzen, 1991), which suggests that an individual's intention to perform a behaviour is the most immediate predictor of that behaviour. In the realm of technology acceptance, the TAM (Davis, 1989) built on this idea by positing that the intention to use a system is influenced by perceived usefulness and perceived ease of use, which in turn predict actual system use (i.e. use behaviour). As the digital landscape has progressed, both constructs have been further developed in the UTAUT (Venkatesh et al., 2003) and UTAUT2 (Venkatesh et al., 2012). These models recognise more nuanced, user-centred motivations for technology adoption, as discussed earlier in this chapter. In the field of educational technology, researchers have increasingly used behavioural intention and use behaviour to analyse not only system adoption but also engagement, satisfaction, and learning outcomes (Al-Rahmi, 2022; Alamri et al., 2020). This tendency has led scholars to move away from static acceptance models to more dynamic, context-specific frameworks that consider emotional and social influences, particularly in online and social learning environments (Al-Rahmi et al., 2021; Lutfi et al., 2022).

Students' use behaviour, which refers to their actual use of educational technologies such as SNSs, is crucial for assessing the effectiveness of technology-enabled learning. Teachers are often concerned not only with whether students plan to use educational SNSs but also with how consistently and meaningfully they engage with them. Research has shown that students' patterns of active use of SNSs, including activities such as posting, discussing, sharing resources, and collaborating in groups, are associated with better academic outcomes, especially when supported by constructive teacher facilitation (Ain et al., 2016; Lutfi et al., 2022). From this perspective, use behaviour reflects the success of the learning environment, highlighting the importance of teachers evaluating whether SNSs are being used effectively. In Study 2, behavioural intention is defined as teachers' perceptions of students' intention to use educational SNSs to achieve their educational goals (Cavus et al., 2021). Meanwhile, use behaviour is defined as teachers' perceptions of the degree to which a student utilises the capabilities of educational SNSs in terms of nature, extent, quality, and appropriateness of use (Ain et al., 2016; Alamri et al., 2020).

4.6 The Conceptual Framework

Based on the discussions in this and previous chapters, the conceptual framework visually synthesises the key concepts underpinning the current thesis. It reflects the integration of theoretical perspectives from both information systems and educational domains, designed to meet the research aim and account for the relevant contextual considerations. The conceptual framework not only delineates the relationships among the identified variables but also provides a structured basis for understanding how these variables are expected to interact in the context of the use of educational SNSs (myU) at PAAET (a Kuwaiti HEI).

Figure 14 illustrates the conceptual framework developed in this thesis. It reflects the central argument that understanding the educational value of SNSs requires examining both technological and pedagogical processes, as well as the perspectives of various stakeholders. While educational SNSs operate within a broader digital learning environment, their impact on students' academic performance cannot be explained solely by technology adoption or system use. Instead, academic outcomes, such as SAP, arise from a combination of system characteristics, user behaviours, interaction patterns, and learning processes. Therefore, this framework integrates concepts from both information systems and educational research to offer a comprehensive understanding of the use of educational SNSs in higher education.

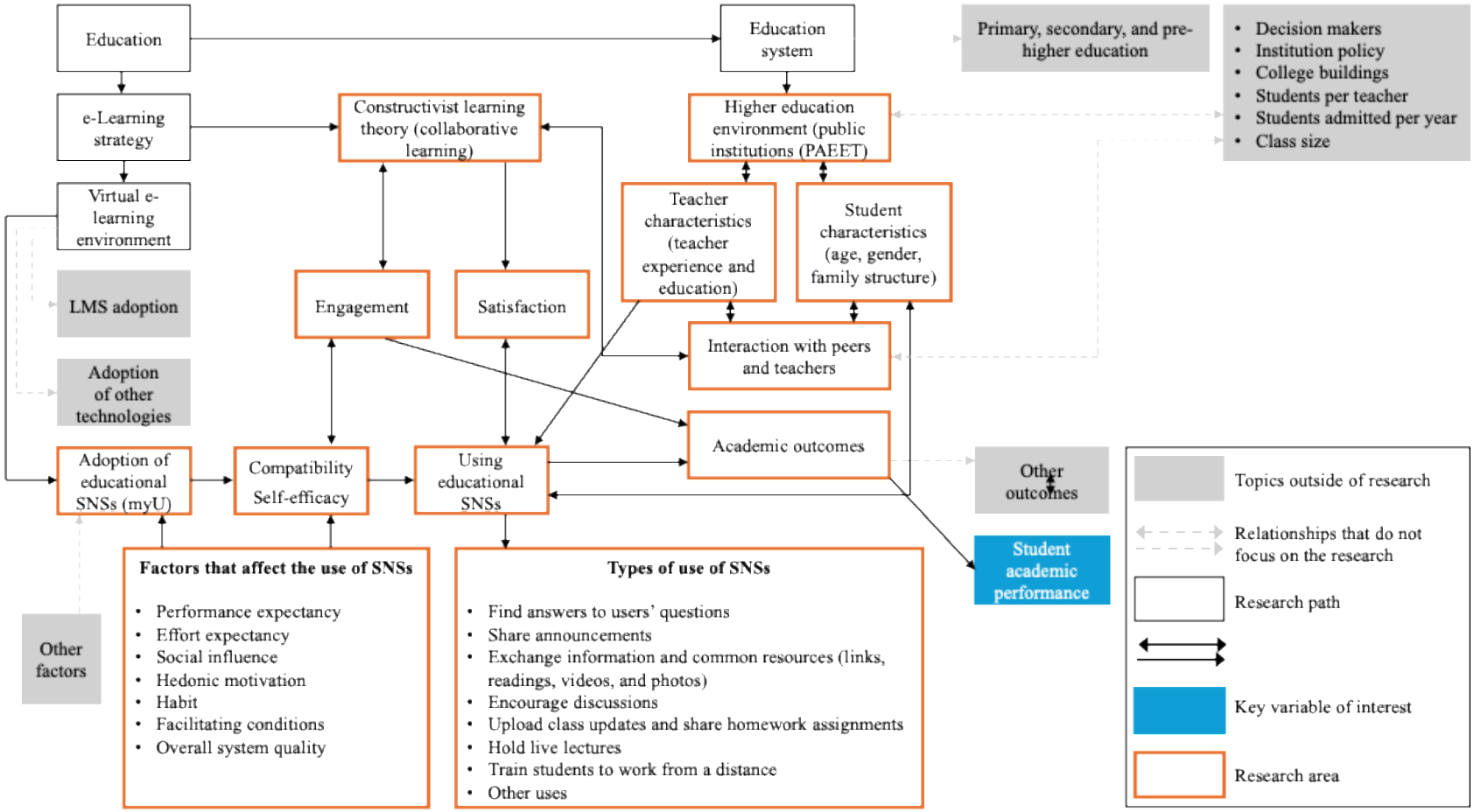
The conceptual framework (see Figure 14) supports the dual-study design implemented in this thesis. Students and teachers use and experience educational SNSs differently, as each plays a distinct role in the educational process. As highlighted in the research design literature, which will be discussed in detail in Chapter 6, examining multiple stakeholder perspectives provides a more comprehensive understanding of complex social and organisational phenomena than relying on a single perspective (Miles et al., 2014).

Study 1 focuses on students and investigates how educational SNSs influence SAP. To achieve this, the study combines the D&M IS Success Model with Constructivist Learning Theory. The D&M model captures the technological aspects of educational SNS use, including system quality, information quality, service quality, system use, and user satisfaction. Constructivist Learning Theory, on the other hand, explains how students' interactions, collaborative learning, and engagement contribute to knowledge construction and SAP. In contrast, Study 2 examines teachers' perceptions of the use

of educational SNSs and their impact on SAP. For this study, the UTAUT2 model was selected as it provides a robust framework for exploring factors such as behavioural intention, use behaviour, habit, hedonic motivation, performance expectancy, effort expectancy, social influence, efficacy, and compatibility in technology-mediated learning environments.

Although the two studies utilise different theoretical frameworks, they aim to address distinct research questions and stakeholder perspectives. Therefore, these studies should be viewed as complementary rather than directly comparable, together offering a richer understanding of the use of educational SNSs and SAP in Kuwaiti higher education.

Figure 14: Conceptual Framework



Note. Source: Author's own work.

This thesis is primarily based on an information systems perspective, while also incorporating relevant educational theories to explain the learning processes associated with the use of educational SNSs and their impact on SAP in Kuwaiti HEIs, specifically (PAAET) (see the orange squares in Figure 14). Although other important areas and perspectives exist, such as those related to different HEIs and educational decision-makers, these aspects are outside the scope of this thesis.

4.7 Chapter Summary

This chapter lays out the theoretical and conceptual foundations of the thesis by reviewing relevant information systems and learning theories related to the use of educational SNSs in higher education. It explains the choice of the D&M IS Success Model and constructivist learning theory for Study 1, as well as the UTAUT2 framework for Study 2. While these two studies utilise different theoretical models, they offer complementary insights into the factors influencing educational SNS use and SAP. Additionally, the chapter introduces the key constructs that underpin both studies and presents the overall conceptual framework. The next chapter will present the research model and develop the research hypotheses based on the theoretical foundations discussed.

5 Research Model and Hypothesis Development

5.1 Introduction

This chapter outlines the research models and hypotheses developed for two empirical studies that serve as the foundation of this thesis. Building on the theoretical and conceptual frameworks established in Chapter 4, this chapter presents two complementary research models that investigate the relationship between the use of educational SNSs and SAP from different stakeholder perspectives. Study 1 explores the factors influencing SAP from the student perspective by integrating the D&M IS Success Model with Constructivist Learning Theory. Conversely, Study 2 examines the same phenomenon from teachers' perspective, utilising an expanded UTAUT2 framework. Together, these two studies offer a comprehensive understanding of how educational SNSs relate to SAP in higher education. The chapter also provides the rationale for each hypothesis and summarises the proposed hypotheses for both studies.

5.2 Research Model and Hypothesis Development for Study 1

5.2.1 The Updated DeLone and McLean Model of Information System Success

Chapter 4 explains the decision to adopt the updated D&M IS Success Model as the foundational theory for Study 1. This model provides a visual framework that outlines the factors related to educational SNS use and their influence on SAP from a student perspective. This model was chosen for its empirical robustness and alignment with the objective of Study 1. In particular, it was chosen for its ability to evaluate system-related, informational, and user-level impacts in technology-supported environments such as educational SNSs (Salam and Farooq, 2020). The original version of the model

developed to assess IS success in organisational settings (DeLone and McLean, 1992) was revised and updated in 2003 to better reflect the dynamics of modern, interactive web-based systems. As mentioned in Chapter 4, the updated model consists of six interrelated dimensions. Together, these dimensions provide a comprehensive model of how systems can influence both individual and organisational performance. In the context of this thesis, the model's flexibility and broad applicability make it especially relevant for evaluating students' experiences with educational SNSs that combine social and learning functionalities.

The D&M IS Success Model provides a more comprehensive framework than other information systems models, such as the TAM and the task–technology fit model for evaluating not only use intentions and system fit but also the qualitative dimensions of user interaction such as satisfaction and outcome-based impacts such as SAP (Petter et al., 2008). The TAM focuses mainly on perceived usefulness and perceived ease of use (Davis, 1989), omitting constructs related to content quality and post-use impact, both of which are essential for examining educational outcomes (Khan et al., 2021). Similarly, whereas the task–technology fit model is valuable in scenarios where alignment between tasks and technology is fundamental, it fails to adequately address user satisfaction or service-related factors, which are critical when investigating educational SNSs (Goodhue and Thompson, 1995). Therefore, the D&M IS Success Model is considered more appropriate for this thesis because it effectively connects system use to learning outcomes through both technical and perceptual variables.

Many studies have used the D&M IS Success Model to assess SAP in educational settings, particularly in e-learning and SNS-mediated learning. Table 12 summarises notable research employing the updated D&M IS Success Model to investigate SAP.

Table 12: Summary of Studies Using the Updated D&M IS Success Model to Examine SAP

Author (year)	Title	Context	Key findings
Al-Azawei (2019)	What Drives Successful Social Media in Education and E-Learning? A Comparative Study on Facebook and Moodle	Public university undergraduate students in Iraq	The study compared Facebook and Moodle using the D&M IS Success Model. System quality, information quality, and service quality significantly influenced user satisfaction and actual use, which in turn affected perceived learning outcomes. Facebook showed stronger hedonic engagement, whereas Moodle had more structured usability.
Al-Fraihat et al. (2020)	Evaluating E-learning Systems Success: An Empirical Study	Students engaged with an e-learning system at the University of Warwick in the UK	System quality, information quality, and service quality significantly influenced system use and student satisfaction. Student satisfaction was the strongest predictor of perceived academic performance, whereas service quality showed weaker and indirect effects, highlighting contextual differences in IS success outcomes.
Sabah (2023)	The Impact of social media-Based Collaborative Learning Environments on Students' Use Outcomes in Higher Education	Undergraduate students from a state college in Palestine, SNS-based collaborative learning	Using an integrated framework based on the D&M IS Success Model, the study found that system quality, information quality, and collaborative learning significantly influenced system use, satisfaction, and perceived learning outcomes, reinforcing the applicability of the D&M IS Success model to educational SNSs.
Yang and Lee (2021)	The Critical Factors of Student Performance in MOOCs for Sustainable Education: A Case of Chinese Universities	Chinese students/MOOCs in universities	The study extended the D&M IS Success Model and showed that system quality, information quality, and learner satisfaction significantly influenced learning performance and sustainable education outcomes in MOOC environments.
Al-Rahmi et al. (2021)	The influence of information system success and technology acceptance model on social media factors in education	Public university undergraduate students in Malaysia	The study integrated the D&M IS Success Model with the TAM to examine the role of social media in education. System quality, information quality, and service quality significantly affected perceived usefulness, perceived ease of use, and SAP.
Al-Adwan et al. (2021)	Developing a Holistic Success Model for Sustainable E-learning: A Structural Equation Modeling Approach	Students in private universities in Jordan	The study integrated the D&M IS Success Model with additional constructs to evaluate sustainable e-learning. Information, system, and service quality were key predictors of student satisfaction, student use, and SAP.
Wei et al. (2022)	Developing and validating a business simulation systems success model in the context of management education	Higher education students in Taiwan	The study extended the D&M IS Success Model by incorporating constructs such as flow experience and learning motivation. System quality, information quality, and service quality significantly influenced use and user satisfaction, which in turn positively affected learning performance, highlighting the model's explanatory power in educational settings.

Note. Source: Author's own work.

The studies in Table 12 validate the model's effectiveness in measuring educational outcomes in Asian or Middle Eastern contexts, making it suitable for the Kuwaiti higher education environment examined in this thesis. However, the D&M IS Success Model, when considered on its own, does not completely capture the dual focus of this thesis, which explores the use of SNSs in education and their influence on SAP. Although the model has been widely used to assess information systems in various fields, including education, it primarily follows a system-oriented approach. Hence, it tends to emphasise elements such as information quality, system quality, and service quality (Al-Nuaimi and Al-Emran, 2021). In contrast, it fails to adequately address important aspects such as pedagogical dynamics, learner-centred processes, and social interaction factors, which are crucial when studying the use of SNSs in educational settings (Perez et al., 2023). This limitation aligns with the work of educational technology scholars, who argue that information systems models often fall short when applied to learning environments, unless they incorporate learning theories and educational constructs (Al-Nuaimi and Al-Emran, 2021; Yadegari et al., 2024).

As educational technology continues to evolve and embrace social and participatory platforms, there is a growing consensus on the need for further empirical research, particularly studies grounded in both information systems and learning theories (Perez et al., 2023). Therefore, to achieve the aim of this thesis, a new integrated conceptual model is developed. The following section offers a detailed discussion of how information systems and learning theories are theoretically integrated into this conceptual model and how this integration informs the conceptual framework for the current thesis.

5.2.2 Merging Information Systems Theories and Learning Theories

The increasing use of educational technologies, particularly SNSs, in higher education has highlighted the need for theories that extend beyond information systems to fully understand the complex pedagogical dynamics of digital learning environments (Perez et al., 2023). Historically, information systems theories such as the updated D&M IS Success Model were designed to evaluate the effectiveness of enterprise systems. These models focused on factors such as system quality, information quality, service quality, user satisfaction, system use, and net benefits (Delone and Mclean, 2003).

However, with the rise of e-learning platforms and SNSs in education, models must also consider how students learn, interact, engage, and construct knowledge in online settings (Al-Nuaimi and Al-Emran, 2021; Perez et al., 2023).

Scholars have therefore increasingly advocated the integration of information systems models with established learning theories to achieve a more comprehensive understanding of technology's role in education. For example, researchers have combined the TAM with constructivist and cognitive learning theories to explain student engagement and learning outcomes (Al-Rahmi et al., 2018; Alamri et al., 2020; Ashraf et al., 2021). Similarly, the UTAUT model has been adapted in conjunction with the TAM, task–technology fit model, and social constructivism to explore how educational quality and actual social media use affect student satisfaction and performance (Al-Rahmi et al., 2022; Sabah and Altalbe, 2022). This theoretical integration is not about honing the model but is, in fact, essential to ensure a full understanding of the underlying phenomena. As Yadegari et al. (2024) have noted, understanding the educational impact of ICT requires theoretical frameworks that incorporate both technological and pedagogical dimensions. Therefore, combining information systems and learning theories creates a stronger foundation and elevates the explanatory and predictive power of models for exploring technology-enhanced learning, especially in research focused on digital engagement and SAP (Al-Nuaimi and Al-Emran, 2021).

In Study 1, the updated D&M IS Success Model is combined with constructivist learning theory to create a more comprehensive framework for evaluating the use of educational SNSs and their impact on SAP. This integration is essential because educational SNSs function as both technological systems and learning environments. The D&M IS Success Model is particularly effective for examining the technological aspects of SNS usage by assessing the quality of the system, information, and services provided, as well as patterns of use and user satisfaction. However, educational SNSs serve purposes beyond merely accessing information or executing technical functions. Their educational value also hinges on how well they promote meaningful interaction, collaborative learning, engagement, and knowledge construction among learners (Al-Nuaimi and Al-Emran, 2021; Perez et al., 2023). These pedagogical processes are fundamental to constructivist learning theory but are not explicitly addressed in the D&M IS Success Model. Therefore, combining these two perspectives offers a more

comprehensive understanding of how technological features and learning processes together influence SAP in educational SNS environments.

The D&M IS Success Model offers a framework for evaluating system quality, information quality, service quality, system usage, and user satisfaction, which facilitates an understanding of the effectiveness of SNS platforms. Complementing this information systems model, constructivist learning theory introduces an important pedagogical perspective that highlights the importance of active student interaction, student engagement, collaboration, reflection, and knowledge co-construction (Jonassen and Rohrer-Murphy, 1999; Vygotsky, 1978). The value of this theoretical integration lies in its ability to overcome the limitations of isolated frameworks. For example, whereas system quality may ensure ease of use and accessibility, it is through constructivist engagement that students can transform accessible content into meaningful knowledge (Tam, 2000). Similarly, whereas the D&M IS Success Model assesses user satisfaction, constructivism explains how collaborative interactions within SNSs can enhance deep cognitive processing and facilitate shared meaning making (Alismaiel et al., 2022).

Some empirical studies support the need for a more integrated approach to understand success in educational settings. Al-Rahmi et al. (2021) investigated the combined effects of the D&M IS Success Model and social learning factors in SNS-based learning. They concluded that this integration significantly enhances the ability to predict student engagement and academic achievement. Similarly, Al-Adwan et al. (2021) developed a comprehensive success model that integrated system-related constructs with educational elements, including motivation and self-regulation. They emphasised the importance of aligning theoretical frameworks from information systems and learning disciplines. In the context of Kuwait, Soleimani et al. (2024) found that technological and pedagogical factors interact to influence e-learning success, particularly in blended and remote learning environments. Therefore, integrating the D&M IS Success Model and Constructivist Learning Theory creates a coherent theoretical framework for Study 1. The D&M IS Success Model focuses on the technological and system-related aspects of using educational SNS, while Constructivist Learning Theory explains the pedagogical processes that drive students' interaction, collaboration, and engagement, leading to improved SAP. This combined perspective enables Study 1 to assess not only whether educational SNSs are viewed as effective systems but also how SNS-facilitated learning experiences contribute to

SAP. This integrated approach addresses the theoretical fragmentation highlighted in Chapter 3 and responds to the need for greater integration between information systems and educational research in the study of technology-enhanced learning environments.

5.2.3 The Proposed Research Model for Study 1

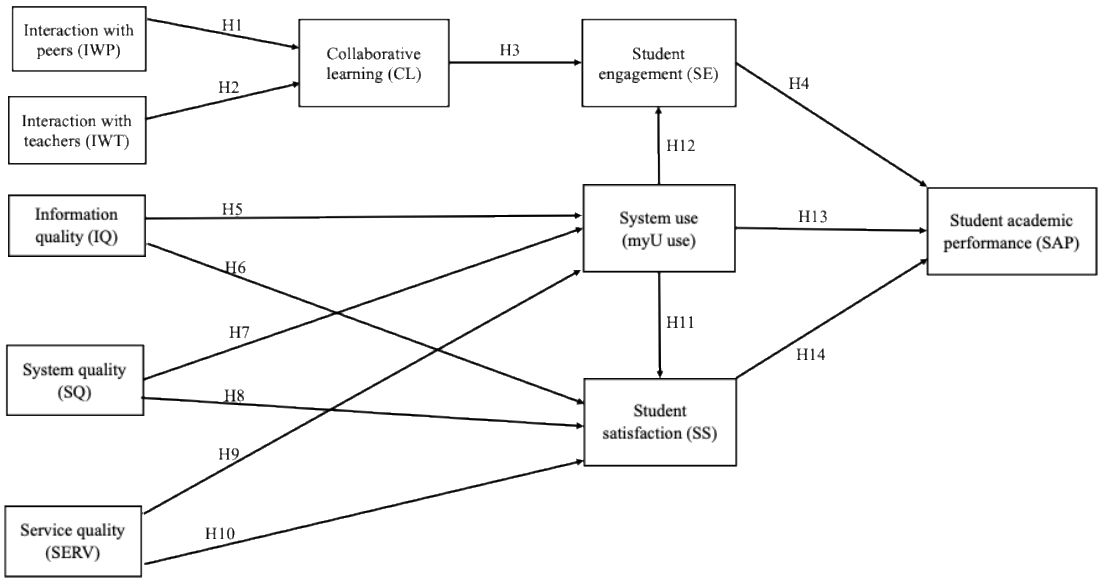
Based on the research gaps identified in Chapters 3 and 4, a research model for Study 1 is proposed in Figure 15 to examine the factors influencing SAP through the use of educational SNSs at PAAET in Kuwait based on data from a student perspective. Although research has demonstrated the value of SNSs in enhancing student interaction, collaboration, and engagement, a theoretical gap still exists in understanding how these platforms lead to measurable academic improvements (Al-Rahmi et al., 2015; Ajjan and Hartshorne, 2008). Study 1 addresses this gap by developing an integrated model that combines constructs from both information systems and learning theories. Instead of assuming that the use of educational SNSs automatically results in either positive or negative SAP, this model examines the mechanisms by which technological, social, and pedagogical factors interact to influence SAP. This approach aligns with the problematisation perspective adopted throughout the thesis, which aims to clarify the conditions under which educational SNSs contribute to academic success.

The proposed model depicts two interconnected pathways. The first is the information systems pathway, which begins with the system-related constructs (i.e. system quality, information quality, and service quality). These factors influence both satisfaction and system use. This pathway aligns with the D&M IS Success Model's premise that successful systems must have high technical quality and provide positive user experiences to be effectively adopted. The second pathway is the constructivist pathway, which includes interaction with peers, interaction with teachers, collaborative learning, and engagement. These dimensions represent active, student-centred learning processes that are essential in SNS-based environments, where learning often occurs informally, socially, and through digital interactions.

Together, these pathways converge on the dependent variable (SAP). The model suggests that high-quality systems and constructivist-oriented learning experiences facilitated by SNSs jointly influence SAP. This integrated approach not only addresses

the limitations of previous single-theory models but also aligns with recent scholarly calls for the combination of information systems and pedagogical theories to better explain learning in technology-enhanced contexts (Al-Nuaimi and Al-Emran, 2021; Perez et al., 2023). Figure 15 illustrates the proposed research model for Study 1. Importantly, the model distinguishes between the use of SNSs as a technological activity and the pedagogical processes enabled through the use of SNSs. It acknowledges that academic benefits are more likely to result from meaningful interactions, collaborative learning, and active engagement rather than from mere participation or the frequency of activity on the platform.

Figure 15: Proposed Research Model for Study 1



Note. Source: Author's own work.

5.3 Hypothesis Development for Study 1

Building on the previously discussed conceptual overview, 14 hypotheses are developed to describe the causal links outlined in the proposed model. The following sub-sections present the hypotheses tested in Study 1.

5.3.1 Interaction with Peers, Interaction with Teachers, and Collaborative Learning

Interaction with peers refers to communication, cooperation, and knowledge sharing among students within educational settings. A growing body of research indicates that such interactions greatly enhance collaborative learning. For instance, Qureshi et al. (2023) found that peer interaction on online learning platforms improves students' problem-solving skills and ability to co-construct knowledge. Similarly, Alamri et al. (2020) reported that students who frequently interact with peers through educational SNSs engage more deeply in group-based learning, which, in turn, enhances their academic collaboration and performance. Lin et al. (2023) demonstrated a strong positive relationship between peer interaction and collaborative behaviour in flipped classrooms, particularly in higher education settings where students rely on peer input to synthesise content outside of formal instruction. Al-Rahmi et al. (2018) further noted that peer learning communities in higher education promote a sense of shared responsibility for learning, which is fundamental to collaboration. These studies confirm that peer interaction is not only a motivating force but also an essential part of the collaborative learning process.

However, some scholars are more cautious with their claims about peer interaction. For example, Al-Samarraie and Saeed (2018) argued that the quality of peer interactions, rather than just the frequency, is crucial for successful collaboration. They observed that, without adequate facilitation, peer exchanges can become unfocused and detract from learning outcomes. Wu et al. (2022) also found that high volumes of peer messaging do not necessarily translate into deeper collaborative engagement, suggesting that quality is more important than quantity.

Interaction with teachers, also referred to as learner–instructor interaction, is crucial to facilitate collaborative learning, especially in digital environments. Teachers play a vital role in guiding group dynamics and promoting knowledge sharing by giving feedback, asking questions, modelling behaviours, and facilitating discussions (Blasco-Arcas et al., 2013). For instance, Al-Rahmi et al. (2018) found that instructor support within e-learning systems significantly increases university students' intentions to collaborate. Similarly, Qureshi et al. (2023) reported that teacher participation in online discussions leads to more cohesive and productive group work. In their integrated model of SNSs in education, Alamri et al. (2020) highlighted that

interaction with teachers positively influences students' willingness to collaborate by shaping expectations around engagement. This idea aligns with social presence theory, which suggests that teacher visibility creates a sense of belonging and shared responsibility among learners (Al-Adwan et al., 2021).

Nevertheless, some studies indicate that teacher interaction can have a non-significant or even negative effect on collaborative learning when it is either overly controlling or insufficient. For example, Wang and Liu (2020) found that, whereas a structured teaching presence enhances students' planning and reflection, direct instruction significantly reduces students' negotiation and knowledge-testing behaviours, thereby weakening collaborative construction of understanding. Similarly, Le et al. (2018) suggested that excessive direction from teachers might inadvertently limit learner–instructor interaction, which is crucial for collaboration to thrive.

When examined together, interactions between peers and teachers are generally shown to enhance collaborative learning. This complementary effect is especially important in educational settings that include SNSs, where the informal and social aspects of peer communication can be directed towards academic objectives with suitable guidance from teachers (Al-Rahmi et al., 2015). Based on this evidence, the following hypotheses are proposed:

> H1 (alternative hypothesis): Interaction with peers has a positive effect on collaborative learning.
>
> $H_0$1 (null hypothesis): Interaction with peers has no positive effect on collaborative learning.
>
> H2: Interaction with teachers has a positive effect on collaborative learning.
>
> $H_0$2: Interaction with teachers has no positive effect on collaborative learning.

5.3.2 Collaborative Learning and Student Engagement

Collaborative learning is widely recognised as a pedagogical strategy that boosts student engagement by encouraging social interaction, shared responsibility, and active participation in knowledge construction (Vygotsky, 1978). Theoretically, constructivist principles suggest that engagement occurs when learners actively

participate in co-constructing meaning through collaboration with peers, especially in technology-enhanced environments where interactions can extend beyond the traditional classroom setting.

In the educational technology literature, numerous empirical studies have shown a positive and significant relationship between collaborative learning and student engagement. For instance, Al-Rahmi et al. (2018) found that collaboration through SNSs significantly enhanced student engagement in Malaysian higher education, with engagement mediating the relationship between collaboration and learning performance. Similarly, Qureshi et al. (2023) demonstrated that collaborative learning activities in higher education have a strongly positive impact on various dimensions of student engagement, ultimately leading to improved learning outcomes. Blasco-Arcas et al. (2013) observed that active collaborative learning, supported by interactive tools such as smartphones, increases engagement by fostering active involvement and class participation. Alamri et al. (2020) reported that collaborative learning processes in social media-integrated higher education environments significantly improve engagement, resulting in more meaningful and sustained academic participation.

However, the relationship between collaborative learning and student engagement is not always positive. Under certain conditions, collaborative tasks can fail to engage learners or even reduce their engagement. In a study of online learning, Hollister et al. (2022) found that group work did not consistently promote higher engagement, especially when student participation was unequal or task structures were unclear. Similarly, in a Middle Eastern higher education context, Fazza and Mahgoub (2021) reported that collaborative learning in blended and online formats sometimes led to decreased engagement because of technological challenges, mismatched expectations, or a lack of effective facilitation that hindered meaningful interaction. These findings suggest that, although collaborative learning often enhances student engagement, its success relies on the quality of facilitation, technological readiness, and equitable participation. Based on this evidence, the following hypothesis is proposed:

> H3: Collaborative learning has a positive effect on student engagement.
>
> $H_0$3: Collaborative learning has no positive effect on student engagement.

5.3.3 Student Engagement and SAP

Student engagement is widely recognised as crucial for academic success (Alazemi et al., 2024; Fredricks et al., 2004). In the contexts of educational technology and SNSs, student engagement is often measured by students' continuous involvement with peers, teachers, and learning materials. This sustained engagement is believed to enhance SAP by promoting motivation, persistence, and higher-order thinking skills (Al-Rahmi and Shamsuddin, 2020).

Research has shown a strong, positive relationship between student engagement and SAP. For instance, Manu et al. (2021) discovered that student engagement, facilitated by SNS platforms, significantly enhanced SAP in Ghanaian public universities. Similarly, Ansari and Khan (2020) reported that collaborative learning through SNSs improves engagement, which, in turn, positively influences SAP. Qureshi et al. (2023) demonstrated that engagement mediates the relationship between collaborative learning and learning performance, confirming its crucial role in academic success. Alamri et al. (2020) showed that SNS applications that boost student engagement directly contribute to higher achievement levels. Likewise, Ashraf et al. (2021) found that the use of SNS platforms among international medical students in China increased engagement, which was associated with improved SAP.

Although engagement in academic activities is typically seen as beneficial, some scholars suggest that its relationship with SAP is not always positive. Studies have raised concerns that increased engagement, especially through SNSs, does not always result in better SAP. For instance, Kolhar et al. (2021) discovered that excessive SNSs use, even with a rise in online activity and perceived engagement, is linked to reduced study time and poorer SAP. Similarly, Lee et al. (2021) explained that certain types of engagement, such as superficial interactions that are irrelevant to the task, may not lead to meaningful learning gains and could even hinder SAP. These findings indicate that, although student engagement is generally advantageous, the quality, focus, and alignment of that engagement with learning objectives determine whether it positively or negatively affects SAP. Therefore, the following hypothesis is proposed:

> H4: Student engagement has a positive effect on student academic performance.
>
> $H_0$4: Student engagement has no positive effect on student academic performance.

5.3.4 Information Quality, System Use (myU Application Use), and Student Satisfaction

Information quality has long been recognised as a key factor influencing technology adoption and user outcomes in the D&M IS Success Model, as discussed in Chapter 4. In the context of education, information quality is especially relevant of learning platforms and educational SNSs as students depend on them for up-to-date, reliable, and well-organised information to support their studies. Thus, information quality significantly affects both the use of educational systems and student satisfaction with those systems (Al-Fraihat et al., 2020).

Extensive positive empirical evidence supports the link between information quality and system use in educational contexts. For instance, Al-Rahmi et al. (2021) discovered that high-quality content on SNS-based learning platforms significantly enhances students' frequency of use and depth of engagement. Similarly, Al-Shargabi et al. (2021) reported that, within an e-learning system at Jazan University, information quality greatly influenced actual use patterns, with students preferring systems that provided relevant and up-to-date information. In Jordanian universities, Al-Adwan et al. (2021) demonstrated that information quality was critical for the sustainable adoption of e-learning because students relied heavily on credible and comprehensive course materials. Extending these findings, Çelik and Ayaz (2022) validated information quality as a primary driver of student information systems use, emphasising that well-organised and accurate information increases student engagement with the system. Additional evidence from Isaac et al. (2019) and Marjanovic et al. (2018) in online and social learning environments supports the idea that higher information quality promotes more active and consistent use because students feel more confident about the system's value (Isaac et al., 2019; Marjanovic et al., 2018).

Regarding student satisfaction, research has consistently shown a strong positive relationship with information quality. Al-Shargabi et al. (2021) found that providing accurate and relevant content significantly enhances learners' satisfaction with educational systems. In their study of e-learning during the Covid-19 pandemic, Rokhman et al. (2022) identified information quality as the most significant predictor of student satisfaction in Indonesian higher education, highlighting the importance of continuity and quality in remote learning. Isaac et al. (2019) confirmed that in Yemen,

information quality played a significant role in student satisfaction, especially when combined with learners' self-efficacy. Marjanovic et al. (2018) demonstrated that high-quality content on university SNSs elevates student satisfaction by creating a trustworthy learning environment. Moreover, Lutfi et al. (2022) observed that, during periods of social distancing, mobile learning platforms with high information quality sustained student satisfaction and engagement. Similarly, both Al-Fraihat et al. (2020) and Alduaij et al. (2024) highlighted information quality as a critical factor influencing student satisfaction with LMSs such as Moodle.

However, the evidence of negative or non-significant relationships indicates that the link between information quality, system use, and student satisfaction is not always strong. For system use, Rokhman et al. (2022) discovered that, although higher information quality improves user perceptions, it does not always lead to increased system use when other barriers, such as technical limitations or a lack of digital literacy, are present. Similarly, Alfaki (2021), in a blended learning study, and Salam and Farooq (2020), in the context of collaborative learning information systems, found evidence that high information quality alone is insufficient to encourage sustained use without adequate system interactivity and support. Hsu (2021) noted that, despite strong information quality, learners' actual use of MOOCs is influenced more by motivational and personal factors than by information quality. Doleck et al. (2019) examined the relationship between SNSs and SAP from a net benefits perspective, finding that the availability of high-quality information on SNSs does not necessarily result in increased system use if students perceive those SNSs as not engaging enough or irrelevant to their immediate academic needs.

Regarding the relationship between information quality and student satisfaction, Çelik and Ayaz (2022) found that student satisfaction with a student information system is influenced more by service quality than by information quality. Similarly, Alfaki (2021) identified a weak relationship between information quality and student satisfaction in blended learning environments, particularly when controlling for system quality and support services. Hsu (2021) noted that although learners appreciate accurate and relevant content in MOOCs, their satisfaction levels are more closely related to course structure and engagement features. Likewise, Salam and Farooq (2020) and Yakubu and Dasuki (2018) reported non-significant relationships, suggesting that even high-quality content cannot fully compensate for ineffective instructional design or a lack of interactivity. In this research, information quality is

hypothesised to influence system use (operationalised as actual use of the myU application) and student satisfaction in the context of educational SNSs. Given the variability in previous findings, the following hypotheses are proposed:

H5: Information quality has a positive effect on myU application use.

$H_0$5: Information quality has no positive effect on myU application use.

H6: Information quality has a positive effect on student satisfaction.

$H_0$6: Information quality has no positive effect on student satisfaction.

5.3.5 System Quality, System Use (myU Application Use), and Student Satisfaction

As discussed in Chapter 4, system quality is a fundamental aspect of the updated D&M IS Success Model. It captures the desirable characteristics of information systems, including usability and technical performance (Petter et al., 2008). In the context of educational SNSs and institutional platforms, system quality influences both the level of system use and the degree of user satisfaction. High-quality systems are more likely to promote frequent use and create positive perceptions among students, whereas poorly designed systems can hinder use and decrease satisfaction (Al-Adwan et al., 2021).

Numerous studies have found a significant positive association between system quality and system use in educational contexts. For instance, Al-Rahmi et al. (2021) observed that high-quality system features in SNS-based learning platforms encouraged active adoption among students in Saudi higher education. Similarly, Al-Azawei and Al-Azawi (2021) found that the functional quality of Facebook significantly predicted user engagement and usage among Iraqi university students. Doleck et al. (2019) demonstrated that reliable and well-structured SNSs facilitate student usage, ultimately influencing SAP. More recent evidence from Çelik and Ayaz (2022) validated the DeLone and McLean model in a student information systems context, confirming system quality's direct effect on use. Additionally, Hsu (2021) found that high system quality in MOOCs positively influences learners' system use, highlighting the importance of ease of access, stable connectivity, and navigational

simplicity. Al-Adwan et al. (2021), Al-Adwan et al. (2022), Al-Shargabi et al. (2021), and Rokhman et al. (2022) have also claimed that, when systems are technically robust and user friendly, students are more inclined to engage with them regularly.

Although many studies seem to confirm the importance of system quality, some have found no significant effect of system quality on system use. Al-Fraihat et al. (2020) reported that, in certain blended learning contexts, content and service quality are more influential than system quality in shaping use patterns. Similarly, Marjanovic et al. (2018) found that, even with strong system quality, low perceived usefulness and weak motivation could hinder system use. Alfaki (2021) noted that system quality does not significantly enhance system use in blended learning environments where learners face external constraints such as connectivity issues. Likewise, Salam and Farooq (2020) observed that the sociability aspects of the platform are more influential than system quality in predicting system use.

Conversely, research indicates that service quality is significant in determining student satisfaction in both e-learning and educational SNSs contexts. Alduaij et al. (2024) confirmed that, in Moodle-based environments in Kuwait, high system quality positively influenced learners' satisfaction with the system. Similarly, Al-Adwan et al. (2021) found that elements of system quality such as ease of use greatly enhance satisfaction levels in sustainable e-learning models. Lutfi et al. (2022) and Yang and Lee (2021) both argued that system quality directly contributes to perceived satisfaction by reducing user frustration and improving learning efficiency. In a study of a student social relationship management system, Mater et al. (2024) discovered that responsiveness and usability are particularly important predictors of satisfaction.

However, some studies indicate that system quality may have a non-significant effect on student satisfaction, even though it is generally considered a key driver of that satisfaction. For instance, Yakubu and Dasuki (2018) found no significant relationship between system quality and satisfaction in Nigerian e-learning systems, suggesting that content relevance may be more important in certain contexts. Similarly, Çelik and Ayaz (2022) reported a limited impact of system quality on student satisfaction with student information systems, where information quality appears to play a more critical role. Based on this discussion, the following hypotheses are proposed:

H7: System quality has a positive effect on myU application use.

H_07: System quality has no positive effect on myU application use.

H8: System quality has a positive effect on student satisfaction.

H_08: System quality has no positive effect on student satisfaction.

5.3.6 Service Quality, System Use (myU Application Use), and Student Satisfaction

Service quality plays a crucial role in influencing system use and student satisfaction with higher education learning technologies (see Chapter 4). In the context of educational SNSs, service quality encompasses not only the timeliness and competence of IT support but also the provider's commitment to ensuring a seamless and responsive user experience.

Ample research has established a positive and significant link between service quality and actual system use. For instance, Al-Azawei and Al-Azawi (2021) found that, in the context of Facebook use in higher education in Iraq, high levels of responsiveness and support services significantly increased student adoption rates. Similarly, Çelik and Ayaz (2022) demonstrated that improved service responsiveness and accessibility in student information systems can enhance the frequency of platform usage. Alfaki (2021) observed that, in blended learning environments, service quality directly contributes to the sustained use of e-learning platforms. Likewise, Al-Shargabi et al. (2021) and Al-Adwan et al. (2021) confirmed that institutions' provision of rapid technical support and effective problem resolution encourages greater platform use. This finding aligns with those of Alajmi and Alotaibi (2020), who reported that service quality mediates the relationship between user trust and platform use in digital library environments. Lutfi et al. (2022) reported similar trends in the adoption of mobile learning during the Covid-19 pandemic.

Although some studies show a positive relationship between service quality and platform use, not all findings are consistent. Yakubu and Dasuki (2018) discovered no statistically significant association between service quality and use in the Nigerian e-learning context, attributing this finding to a lack of awareness about available support channels. Doleck et al. (2019) argued that even high levels of service quality do not necessarily lead to increased platform use if students perceive the content quality or usefulness as low. Hsu (2021) and Rokhman et al. (2022) made similar observations,

suggesting that service quality affects use only in conjunction with high system and information quality. Additionally, Salam and Farooq (2020) noted that students often prefer to seek support from peers over institutional technical services, which diminishes the direct impact of service quality on use.

Service quality has also been linked to student satisfaction in various studies of information systems success. Lutfi et al. (2022) found that, in mobile learning systems, quick problem resolution and user-centred support significantly enhance satisfaction levels. Similarly, Al-Azawei and Al-Azawi (2021) reported that, in Facebook-based learning, service quality positively influences user satisfaction by fostering trust and reducing frustration. Al-Azawei et al. (2023) identified service quality as a key driver of perceived system success in online learning. Doleck et al. (2019) demonstrated that service quality contributes to a positive overall experience on SNS platforms used for academic purposes. Furthermore, Al-Fraihat et al. (2020) emphasised that service quality supports satisfaction indirectly by improving perceptions of system and information quality. Al-Shargabi et al. (2021) found further evidence of the direct role of service quality in maintaining student satisfaction. Additionally, Al-Adwan et al. (2021, 2022), Mater et al. (2024), and Yang and Lee (2021) consistently identified service quality as a determinant of satisfaction across diverse e-learning and MOOC environments.

Nonetheless, negative or non-significant relationships have also been documented. Hsu (2021) found that, in the context of MOOCs, perceived service quality was less influential than content and interactivity in driving student satisfaction. Alduaij et al. (2024) observed that improvements in service quality of Moodle systems in Kuwait had a limited effect on satisfaction when usability issues persisted. Similarly, Çelik and Ayaz (2022) found that the impact of service quality is minimal compared to system and information quality in predicting satisfaction. Meanwhile, Rokhman et al. (2022) suggested that service quality might only enhance satisfaction when it aligns with student expectations regarding autonomy and learning outcomes. In a business simulation context, Wei et al. (2022) further emphasised that service quality is not a strong driver of satisfaction if there is a misalignment between system complexity, learning goals, and user need.

Overall, although service quality plays an important role in promoting both system use and satisfaction, the effectiveness of high-quality support services in encouraging the adoption of educational SNSs and enhancing student satisfaction may diminish if

there are issues with system usability, content quality, or learning relevance. Based on this discussion, the following hypotheses are proposed:

H9: Service quality has a positive effect on myU application use.

$H_0$9: Service quality has no positive effect on myU application use.

H10: Service quality has a positive effect on student satisfaction.

$H_0$10: Service quality has no positive effect on student satisfaction.

5.3.7 System Use (myU Application Use), Student Satisfaction, Student Engagement, and SAP

System use is a key component of the D&M IS Success Model, representing how actively users engage with a system in real-life situations (see Chapter 4). In an educational setting, using systems effectively and meaningfully is expected to enhance student satisfaction, student engagement, and, ultimately, SAP. However, research both supports and contradicts these relationships, highlighting their complexity.

5.3.7.1 System Use (myU Application Use) and Student Satisfaction

A central principle of the D&M IS Success Model is that system use significantly drives user satisfaction. Empirical research generally supports this idea, indicating that the effective use of learning technologies enhances student satisfaction by improving efficiency, accessibility, and learning outcomes. For instance, Al-Azawei and Al-Azawi (2021) found that actively using Facebook as a learning support tool in Iraq positively affected student satisfaction, underscoring the importance of system use in creating successful digital learning environments. Similarly, in the context of higher education in Yemen (Aldholay et al., 2018), system use considerably improved satisfaction, particularly when mediated by self-efficacy. Al-Rahmi et al. (2021) confirmed this relationship within the TAM–IS success integration framework, observing that system use had a positive influence on both satisfaction and learning outcomes in Malaysian higher education. Using a comprehensive e-learning model, Al-Adwan et al. (2021) reported that system use significantly predicts satisfaction, highlighting the importance of sustainable use.

More recently, Salam and Farooq (2020) confirmed that the use of systems, particularly when enhanced by strong sociability and interactivity features, directly contributes to satisfaction in collaborative web-based learning environments. Similarly, Alamri et al. (2020) demonstrated that students' active use of SNS applications leads to higher levels of satisfaction and improved SAP. Further evidence from Sabah (2023) implies that SNS-based collaborative learning environments significantly enhance satisfaction outcomes when system use is effective. In Vietnam, Pham and Dau (2022) found that readiness for online learning mediates the relationship between system use and satisfaction, indicating that effective use directly contributes to satisfaction when learners are adequately prepared. Lastly, Sabah and Altalbe (2022) illustrated that task–technology fit moderates the impact of system use on satisfaction, confirming that meaningful engagement with SNS tools fosters positive satisfaction outcomes.

Despite the considerable evidence of a positive link between system use and student satisfaction, this relationship may not always be significant. For example, in validating the D&M IS Success Model, Çelik and Ayaz (2022) found that simply using a system is insufficient to ensure higher satisfaction when system quality issues arise. Similarly, Rokhman et al. (2022) observed that, although e-learning platforms were used more frequently during the Covid-19 pandemic, this more frequent use did not necessarily lead to greater satisfaction. Students often faced technical and pedagogical challenges that hindered their experiences. Al-Azawei (2019) compared Facebook and Moodle, showing that system use alone does not guarantee satisfaction. Rather, satisfaction depends on system features, user expectations, and the academic context. Additionally, Hollister et al. (2022) reported that, when the transition to online learning is abrupt, spending more time on online systems does not consistently correlate with higher satisfaction. In fact, in some cases, excessive reliance on system use appears to lead to disengagement and fatigue. These findings imply that, although system use is important, it does not automatically ensure satisfaction unless the system is supported by quality, relevance, and user-centred design. Based on this discussion, the following hypotheses are proposed:

> H11: myU application use has a positive effect on student satisfaction.

$H_0$11: myU application use has no positive effect on student satisfaction.

5.3.7.2 System Use (myU Application Use) and Student Engagement

System use is crucial for student engagement, which encompasses students' affective involvement, enthusiasm, and motivation with academic activities. According to the D&M IS Success Model, regular and purposeful use of educational technology can enhance collaborative learning, communication, and interaction, which in turn fosters a stronger emotional connection between students and their studies (Al-Rahmi et al., 2018).

Several studies provide strong evidence of a positive significant relationship between system use and student engagement. For instance, Al-Rahmi et al. (2018) found that SNSs use in higher education improves students' performance by promoting both collaboration and engagement. Similarly, following a systematic review, Nkomo et al. (2021) concluded that using digital technologies significantly enhances students' motivation, participation, and engagement. Bouchrika et al. (2021) demonstrated that using gamification elements in e-learning platforms increases students' involvement. Teng and Wang (2021) reported that educational technology tools improved learners' enthusiasm and active participation in Chinese English-as-a-foreign-language courses. Collectively, these studies suggest that consistent use of educational systems enhances learning environments in ways that sustain and deepen engagement.

However, there is also evidence of non-significant or inconsistent relationships between system use and student engagement. Dahleez et al. (2021) found that system usability and teacher behaviour have a greater impact on engagement than system use alone. This finding indicates that technology platforms cannot drive involvement without supportive instructional practices. Similarly, Hollister et al. (2022) observed that, even with high levels of online system use during Covid-19, students' engagement varied widely. This variability was often undermined by digital fatigue and reduced interpersonal interaction. Furthermore, Malik et al. (2018) found that new pedagogical approaches have a more significant influence on sustaining engagement than system use. This finding suggests that technology use alone does not guarantee commitment. These findings suggest that student engagement depends not only on the access to and

use of technology but also on contextual factors such as pedagogy, usability, and social interaction. Therefore, the following hypothesis is proposed:

> H12: myU application use has a positive effect on student engagement.
>
> $H_0$12: myU application use has no positive effect on student engagement.

5.3.7.3 System Use (myU Application Use) and SAP

System use is often identified as a driver of SAP in e-learning and SNS-based educational contexts. Research indicates that the active and purposeful use of learning systems supports SAP by providing access to resources, enhancing collaboration, and promoting engagement. For example, Al-Azawei and Al-Azawi (2021) found that the use of SNSs in higher education significantly improves academic outcomes through better knowledge sharing and communication. Similarly, Alamri et al. (2020) showed that SNS applications positively affect SAP when they are pedagogically integrated into teaching practices.

Previous studies have demonstrated that the use of educational systems can positively influence SAP. For instance, Sabah (2023) found that digital learning systems support learning activities and enhance SAP. Similarly, Al-Rahmi et al. (2021) reported that students' active use of educational systems improves learning efficiency and contributes to SAP. Supporting these findings, Al-Adwan et al. (2021) identified system use as a significant predictor of sustainable learning performance. Furthermore, Sabah and Altalbe (2022) indicated that effective use of these systems can positively influence SAP in technology-enhanced learning environments.

Despite these positive findings, other studies indicate that the relationship between system use and SAP may not always be significant. In the context of student information systems, Çelik and Ayaz (2022) found that system use does not exert a strong direct effect on SAP. This finding suggests that other factors such as content quality and learner characteristics may have a stronger influence. Similarly, in their study of e-learning during the Covid-19 pandemic, Rokhman et al. (2022) discovered that system use had only a marginal or non-significant impact on learning outcomes, indicating that the emergency-driven nature of its adoption limited its effectiveness. Pham and Dau (2022) argued that online learning readiness and learner motivation

mediate the effect of system use, finding that system use alone did not guarantee better performance in Vietnamese HEIs. Drawing on the dominant evidence, the following hypotheses are proposed:

> H13: myU application use has a positive effect on student academic performance.
>
> $H_0$13: myU application use has no positive effect on student academic performance.

5.3.8 Student Satisfaction and SAP

Student satisfaction is a key concept in the D&M IS Success Model and has been widely studied in the context of e-learning and educational technologies. As discussed in Chapter 4, student satisfaction reflects learners' perceptions of the usefulness, effectiveness, and overall quality of their learning experiences. These perceptions often influence learners' motivation, engagement, and academic outcomes. The literature indicates that the relationship between student satisfaction and e-learning success in the D&M IS Success Model is strong, with a high level of student satisfaction frequently linked to improved learning outcomes and SAP (Jami Pour et al., 2022).

Al-Rahmi et al. (2021) confirmed that student satisfaction with SNS applications in education significantly enhances learning performance. Similarly, Alamri et al. (2020) and Al-Adwan et al. (2021) emphasised that student satisfaction plays a crucial role in supporting students' academic achievements through technology-mediated learning. Pham and Dau (2022) also demonstrated that students' readiness for online learning and overall satisfaction positively influenced learning outcomes in Vietnamese HEIs. More recently, Hsu (2021) and Boruzie et al. (2024) highlighted the importance of student satisfaction as a key factor in academic success in technology-supported learning environments.

Other studies provide further support for this relationship. For example, Al-Adwan et al. (2022) demonstrated that student satisfaction is crucial for the sustainable adoption of e-learning systems, which ultimately enhances academic outcomes. Similarly, Aldholay et al. (2018) found that satisfaction significantly mediates the relationship between information quality, system use, and SAP in online learning environments. Additionally, Al-Azawei and Al-Azawi (2021) observed that student

satisfaction with the use of Facebook in HEIs is directly linked to improvements in SAP. Together, these findings imply that student satisfaction is not only a key outcome of IS success but also a key predictor of SAP.

Despite strong support for a positive relationship between student satisfaction and SAP, some studies have reported a negative or non-significant association. For example, Alduaij et al. (2024) found that, although students reported being satisfied with Moodle's usability, this satisfaction did not consistently lead to measurable improvements in SAP. Similarly, Çelik and Ayaz (2022) noted that, although student satisfaction was relatively high in a given example of student information systems, its impact on SAP was weak and statistically non-significant. These findings suggest that, although student satisfaction may enhance students' perceptions of their learning environments, it does not necessarily ensure better SAP. Other factors, such as learning strategies, cognitive load, and self-discipline, may play a more significant role in determining SAP. Based on this discussion, the following hypothesis is proposed:

> H14: Student satisfaction has a positive effect on student academic performance.
>
> $H_0$14: Student satisfaction has no positive effect on student academic performance.

5.4 Summary of Research Hypotheses for Study 1

Building on the literature review and the discussions presented thus far, this chapter presents the research hypotheses designed to examine the relationships among the key constructs in the present research model. Grounded in the D&M IS Success Model and its extensions in the educational technology context, 14 hypotheses are formulated to guide the empirical investigation in Study 1. Table 13 lists these hypotheses.

Table 13: Summary of Hypotheses for Study 1

No.	Hypothesis statement
H1	Interaction with peers has a positive effect on collaborative learning.
H2	Interaction with teachers has a positive effect on collaborative learning.
H3	Collaborative learning has a positive effect on student engagement.
H4	Student engagement has a positive effect on student academic performance.
H5	Information quality has a positive effect on myU application use.

H6	Information quality has a positive effect on student satisfaction.
H7	System quality has a positive effect on myU application use.
H8	System quality has a positive effect on student satisfaction.
H9	Service quality has a positive effect on myU application use.
H10	Service quality has a positive effect on student satisfaction.
H11	myU application use has a positive effect on student satisfaction.
H12	myU application use has a positive effect on student engagement.
H13	myU application use has a positive effect on student academic performance.
H14	Student satisfaction has a positive effect on student academic performance.

Note. Source: Author's own work.

5.5 Research Model and Hypothesis Development for Study 2

5.5.1 The Extended Unified Theory of Acceptance and Use of Technology (UTAUT2)

In Chapter 4, the UTAUT2 model was discussed as the theoretical foundation for Study 2. This model offers a strong framework for understanding technology acceptance and use, especially in voluntary settings such as education, where teachers and students may adopt systems to varying degrees (Venkatesh et al., 2012). Compared with earlier models such as the TAM and TPB, the UTAUT2 includes additional constructs, including hedonic motivation, habit, and price value. These additional constructs significantly enhance the model's explanatory power (Khan and Qudrat-Ullah, 2021; Venkatesh et al., 2012). Consequently, the UTAUT2 model is more suitable than previous models for understanding complex technology-related behaviours in educational contexts.

The selection of UTAUT2 highlights the distinct objective of Study 2 compared to Study 1. While Study 1 focuses on understanding how technological and pedagogical factors influence SAP from students' perspectives, Study 2 examines how teachers perceive the behavioural and contextual factors that affect the use of educational SNSs and their relationship to SAP. As a result, the two studies address different but complementary theoretical questions. The use of different theoretical frameworks reflects the varying stakeholder perspectives and research aims, rather than an attempt to replicate the same model across both studies. Together, these two studies offer a

more comprehensive understanding of educational SNS use than a single theoretical lens could provide.

Scholars have confirmed that the UTAUT2 framework has greater explanatory power than previous frameworks thanks to its inclusion of additional contextual factors (Almaiah et al., 2019; Granić, 2022, 2023). In their foundational work, Venkatesh et al. (2012) stressed the benefits of the extensions included in the UTAUT2 framework. They argued that these extensions are crucial for broadening the understanding of technology acceptance and for improving the model's applicability across various contexts. Building on these extensions, subsequent research has often introduced external variables as additional predictors, adapting the UTAUT2 model to different environments (Blut et al., 2021; Khan and Qudrat-Ullah, 2021). Two of the most common extensions are self-efficacy and perceived compatibility, which have consistently proven to be significant external variables that enhance the UTAUT2 model's predictive validity (Almaiah et al., 2019; Blut et al., 2021). Evidence indicates that these constructs rank among the top five UTAUT2 extensions influencing individuals' behavioural intentions and technology usage (Tamilmani et al., 2021). Tamilmani et al. (2021) and Venkatesh et al. (2003) have suggested that future research should also extend the model to explore how IT adoption affects individual and organisational performance. This recommendation aligns closely with the objectives of Study 2, which aims to investigate SAP from the perspective of teachers.

UTAUT2 is particularly suitable for Study 2 because it focuses on behavioural intention, usage behaviour, habit, social influence, effort expectancy, performance expectancy, and hedonic motivation (Venkatesh et al., 2012). These elements are all important for understanding how teachers assess the adoption and educational use of SNSs. In contrast to the D&M IS Success Model used in Study 1, UTAUT2 is specifically designed to explain technology acceptance and usage behaviour (Venkatesh et al., 2012). This focus makes it well-suited for examining teachers' perceptions of technology-mediated learning.

Thus, in accordance with scholarly recommendations, Study 2 extends the UTAUT2 framework by introducing two additional constructs: perceived technology efficacy and perceived compatibility. Both constructs are modelled as independent variables that influence use behaviour. From a teacher perspective, perceived technology efficacy reflects not only students' confidence in using educational technologies but also teachers' assessments of students' ability to use these tools

effectively for learning (Sabah, 2023). Teachers often observe whether students can navigate, apply, and benefit from digital platforms. This observation significantly influences their evaluation of technology use in the classroom (Teo, 2009).

For its part, perceived compatibility refers to the degree to which technologies align with students' learning needs, goals, and study habits (Rogers, 1995). When teachers believe that digital systems are compatible with students' academic requirements and pedagogical context, they are more likely to associate technology use with positive academic outcomes (Islam, 2016; Zachos et al., 2018). Study 2 uses teachers' perceptions of SAP (TPSAP) as the dependent variable within the enhanced UTAUT2 framework. The dependent variables in traditional UTAUT2 frameworks are behavioural intention and technology use. However, the goal of educational technology is to enhance student achievement (Tamilmani et al., 2021). Therefore, by considering TPSAP, the current research model highlights how educators link technology use and adoption with measurable learning outcomes. This approach emphasises that teachers' evaluations are crucial for understanding whether technology use leads to improved SAP (Alazemi and Almutairi, 2024). In sum, this study examines SAP from a teacher perspective, integrating key theoretical extensions to provide a more comprehensive understanding of SAP in technology-enhanced learning environments.

Studies have used the UTAUT2 model to evaluate SAP. These studies have enhanced the UTAUT2 model by incorporating additional constructs or by combining it with other theories. These enhancements aim to account for the contextual, psychological, and technological factors that also affect academic outcomes. Table 14 summarises studies that have employed the UTAUT2 model to investigate SAP.

Table 14: Studies Using the UTAUT2 to Investigate Student Academic Performance

Author (year)	Title	Context	Key findings
Al-Rahmi et al. (2022)	Social media use in higher education: Building a structural equation model for student satisfaction and performance	Malaysia, university students	Applying an extended UTAUT2 model with social media factors, the study found that system use and social interaction improved student satisfaction, which significantly influenced performance.
Pham and Dau (2022)	Online learning readiness and online learning system success in Vietnamese higher education	Vietnam, higher education	The study integrated the UTAUT2 with readiness constructs. Readiness, effort expectancy, and facilitating conditions predicted student satisfaction and performance.
Ukut and Krairit (2019)	Justifying students' performance: A comparative study of both ICT students' and instructors' perspectives	Nigeria, ICT education	The study extended the UTAUT2 by comparing student and instructor perspectives. Performance expectancy strongly predicted SAP.
Krasodomska and Godawska (2021)	E-learning in accounting education: The influence of students' characteristics on their engagement and performance	Europe, accounting education	Merging the UTAUT2 with student characteristics, the study showed that behavioural intention and engagement mediated the relationship between technology use and performance.
Al-Rahmi et al. (2020)	UTAUT Theory: The factors affecting students' academic performance in higher education	Malaysia, higher education	The study applied the UTAUT2 to measure performance. Performance expectancy, effort expectancy, and social influence were significant predictors of academic success.
Lv and Li (2024)	The effects of blended learning environment on college students' learning effectiveness: exploring the role of behavioural intentions and self-efficacy through the UTAUT2 model	China, blended learning	Extending the UTAUT2 with self-efficacy, the study found that behavioural intentions and self-efficacy significantly enhanced learning effectiveness and performance in blended settings.

Note. Source: Author's own work.

Table 14 demonstrates that the UTAUT2 model offers a strong theoretical framework for understanding technology use in educational settings and its impact on SAP. However, the studies listed in Table 14 highlight the importance of extending the model with context-specific variables such as self-efficacy, social interaction,

compatibility, and readiness to address the full range of complexities in learning environments. These findings are consistent across various regions, including Malaysia, Europe, China, and Vietnam. However, research on this topic in the Arabian Gulf region, particularly Kuwait, is limited (Alenezi and Brinthaupt, 2022). Given Kuwait's increasing reliance on educational technologies in HEIs (see Chapter 2), applying and extending the UTAUT2 in this context could provide valuable insights into how teachers perceive the factors that influence SAP and thus bridge a significant gap highlighted in Chapter 3.

5.5.2 The Proposed Research Model for Study 2

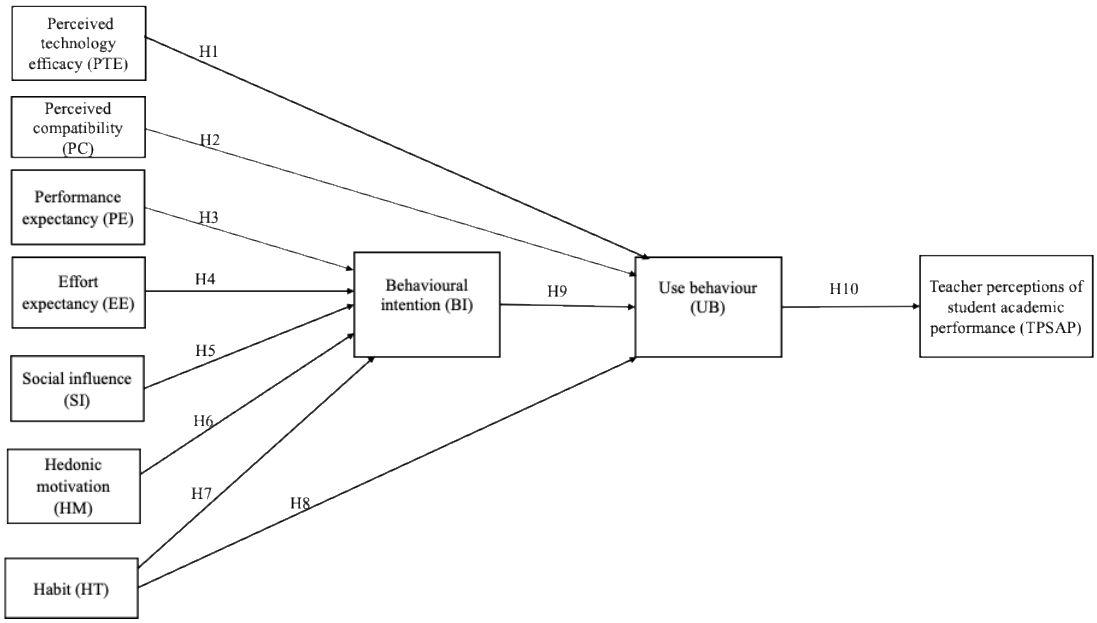
Building on the research gaps identified in Chapter 3, a framework was developed to explore the factors influencing SAP through educational SNSs from the perspective of teachers (see Figure 16). Previous studies have primarily focused on students' adoption of SNSs. However, there has been limited research on teachers' evaluations of how SNSs affect academic outcomes (Akram et al., 2022; Perez et al., 2023). Because teachers play a crucial role in guiding learning activities and assessing SAP, understanding their perspective is essential for gaining a comprehensive view of the educational value of SNSs. Study 2 was therefore designed to complement rather than replicate Study 1. While Study 1 explores, from students' perspectives, the mechanisms by which educational SNSs may influence SAP, Study 2 focuses on teachers' perceptions of the factors that contribute to technology-mediated learning and SAP. This dual-perspective approach aligns with recommendations that complex educational phenomena should be examined from multiple stakeholders' viewpoints to develop a richer, more comprehensive understanding of the issues under investigation (Miles et al., 2014).

To address this gap, the present study uses the UTAUT2 model as its theoretical foundation. To enhance its explanatory power regarding SNSs in HEIs, two additional independent variables are added to the model, namely perceived technology efficacy and perceived compatibility. As mentioned earlier, there is strong support for the view that these factors complement the constructs of the UTAUT2 model by capturing essential aspects of pedagogical alignment and user capability that are particularly relevant in relation to the use of SNSs in HEIs. Figure 16 presents the proposed model for Study 2. This model posits that established UTAUT2 factors (performance

expectancy, effort expectancy, social influence, hedonic motivation, and habit) affect the behavioural intention to use educational SNSs. In this model, behavioural intention and habit, along with newly added variables (perceived technology efficacy and perceived compatibility), are predicted to drive use behaviour, which ultimately influences the dependent variable, namely teachers' perceptions of SAP (TPSAP).

Crucially, some constructs from the original UTAUT2 framework are omitted from this study for theoretical and empirical reasons. First, price value is not considered because educational SNSs are freely available to users, eliminating the need for cost-related evaluations (Venkatesh et al., 2012). Second, the facilitating conditions construct is omitted based on the results of the pilot study (see Chapter 6, Section 6.9.2). The results of the pilot study indicated that these factors were not statistically significant in influencing behavioural intention. Finally, the moderating variables of gender, age, and experience are not applicable. All participants belonged to the same professional group (HEI teachers), making differences across these moderators negligible and unlikely to provide meaningful insights (Dwivedi et al., 2019). These omissions ensured that the model remained concise while maintaining its explanatory rigour. In sum, this approach is in line with recommendations in technology adoption research that advocate adapting theoretical frameworks to context-specific factors (Venkatesh et al., 2016).

Figure 16: Proposed Research Model for Study 2



Note. Source: Author's own work.

Conceptually, the model posits that teachers view SNSs as beneficial for SAP when these SNSs align with existing pedagogical practices and when both teachers and students feel confident in their technological skills (Al-Qaysi et al., 2023). Additionally, the inclusion of habit, hedonic motivation, and social influence reflects the idea that ensuring the effective use of SNSs entails not only usefulness but also pleasure, routines, and peer support (Khan and Qudrat-Ullah, 2021). By integrating key constructs from the UTAUT2 framework with perceived compatibility and perceived technology efficacy and deliberately excluding non-applicable factors, this framework provides a thorough and context-specific model of how technology use relates to SAP. This context-specific adaptation improves the explanatory power of the UTAUT2 model in higher education and addresses the lack of focus on teacher perspectives in current research on educational SNSs. As a result, the model enhances both theoretical understanding and practical application by identifying the technological, behavioural, and pedagogical factors that can support better SAP through the use of educational SNSs

5.6 Hypothesis Development for Study 2

Based on the discussion thus far, 10 hypotheses were proposed to explain the causal relationships illustrated in the proposed model (see Figure 16). The following subsections detail the hypotheses developed for Study 2.

5.6.1 Perceived Technology Efficacy and myU Application Use Behaviour

Perceived technology efficacy is often understood as users' self-efficacy in using technology, computer self-efficacy, or internet self-efficacy, as discussed in Chapter 4. It is a critical factor in determining technology adoption and actual use behaviour. According to the literature, self-efficacy has a significant influence on individuals' confidence in engaging with technology, which in turn shapes their behavioural intentions and outcomes (Bandura, 1986). Several empirical studies in education and related fields have demonstrated a significant positive relationship between perceived technology efficacy (or self-efficacy) and use behaviour. For instance, Almaiah et al. (2019) found that students with higher self-efficacy are more likely to use mobile

learning systems effectively, supporting the idea that technological confidence enhances adoption in HEIs. Similarly, Sabah (2023) showed that self-efficacy plays a crucial role in determining learners' engagement and use outcomes in SNS-based collaborative learning environments, highlighting its importance in modern digital learning ecosystems. In the school sector, a study of teachers' implementation of blended learning found that ICT self-efficacy is positively and directly related to teachers' use of blended learning, with attitudes partially mediating this relationship (Ye et al., 2022).

Earlier foundational studies support these findings. Kim et al. (2007) demonstrated that self-efficacy influences internet acceptance and actual use in Korea. Similarly, Isaac et al. (2019) expanded the D&M IS Success Model, showing that self-efficacy significantly enhances online learning usage. More recent research, such as Al-Rahmi et al. (2022), has confirmed that self-efficacy continues to be a significant driver of technology use. Latip et al. (2022) reported that self-efficacy moderates students' acceptance of e-learning, thereby increasing the likelihood of active system use. Similarly, Lozoya et al. (2022) found that, even among older adults, higher technology self-efficacy is strongly associated with greater adoption and sustained technology use. These findings further illustrate the robustness of this relationship across different contexts. Collectively, these studies provide consistent empirical support for the idea that individuals with higher perceived technology efficacy are more confident, motivated, and capable of using educational technologies effectively. In educational settings, this higher perceived technology efficacy translates into higher engagement with learning platforms, reinforcing the critical role of perceived technology efficacy as a direct predictor of use behaviour.

Nonetheless, some studies indicate that this relationship is not always significant or direct, particularly when contextual factors override individual self-efficacy. For instance, Buchanan et al. (2014) concluded that internet self-efficacy does not predict students' actual use of internet-mediated educational technologies. The implication is that self-efficacy alone might not be enough to drive behaviour when access or system design plays a more central role. Similarly, Goh (2011) reported no significant relationship between self-efficacy and the use of a mobile library search system, indicating that demographic factors such as gender differences may have a greater influence on adoption than confidence. More recently, Barz et al. (2024) expanded the TAM by incorporating self-regulated learning and self-efficacy. They observed that

self-efficacy is not a significant predictor of technology acceptance and use among students. Their findings imply that other psychological constructs, such as motivation and self-regulated learning, may be more predictive of actual use behaviour.

These findings emphasise that, although self-efficacy is theoretically important for adopting new behaviours, its impact depends heavily on context. In mandatory or highly structured environments or when technical and organisational barriers exist, merely having confidence in using technology may not lead to actual use. As a result, these studies highlight the need to consider additional factors such as system quality, social influence, and motivation when evaluating the relationship between perceived technology efficacy and use behaviour in educational settings. Based on this literature, the following hypothesis is proposed:

> H1: Perceived technology efficacy has a positive effect on myU application use behaviour.
>
> $H_0$1: Perceived technology efficacy has no positive effect on myU application use behaviour.

5.6.2 Perceived Compatibility and myU Application Use Behaviour

Perceived compatibility is widely recognised as a key factor in technology adoption (Rogers, 1995), as explained in Chapter 4. Research has consistently shown that perceived compatibility positively influences users' perceptions, behavioural intentions, and actual use of educational information systems. For instance, Almaiah et al. (2019) demonstrated that perceived compatibility is a significant factor in students' acceptance of mobile learning systems, directly affecting their use of these systems. Similarly, Cheng (2011) found that educational perceived compatibility, along with technological expectancy, significantly predicts e-learning acceptance and use, underscoring its importance in digital education contexts.

Several studies in higher education contexts provide further backing for this positive relationship. Isaac et al. (2019) showed that perceived compatibility and task–technology fit mediate the adoption of online learning systems. Their findings indicate that, when there is a perceived alignment between tasks and technology, users are more likely to use the system. Similarly, Aldholay et al. (2020) expanded the D&M IS

Success Model and found that perceived compatibility significantly affects students' perceptions of online learning effectiveness, which in turn influences their use of the system. The significance of perceived compatibility has also been reported in relation to the adoption of SNSs. Alamri et al. (2020) reported that perceived compatibility is a critical factor for the sustainable use of SNSs in HEIs.

Further supporting evidence emphasises the importance of compatibility during challenging times, such as the Covid-19 pandemic. Sahin and Sahin (2021) found that compatibility, along with enjoyment and anxiety, significantly influenced students' acceptance and use of e-learning platforms. In another context, Abubakari et al. (2024) noted that perceived compatibility was a strong predictor of students' use of digital technologies in Islamic education institutions. These findings align with the arguments of Alturki and Aldraiweesh (2024), who suggested that aligning educational technologies with students' needs for learning engagement enhances both use behaviour and the effectiveness of learning outcomes.

Conversely, some research also indicates that the influence of perceived compatibility on actual use behaviour is not always direct or significant. For example, Rokhman et al. (2022) used an updated version of the D&M IS Success Model, observing that perceived compatibility does not significantly predict the success of e-learning systems. This finding suggests that other dimensions such as information quality and system quality may play a more prominent role in determining use outcomes. Additionally, Alajmi (2014) studied the adoption of digital library systems at PAAET and found that perceived compatibility was not a significant predictor of system use. This finding further indicates that contextual or organisational factors can diminish the predictive power of perceived compatibility. Finally, Al-Bashayreh et al. (2022) noted that, although perceived compatibility is considered when evaluating mobile learning application adoption, it is not a dominant predictor of acceptance. Instead, factors such as perceived usefulness, motivation, and interface design appear to have greater influence on students' use decisions.

These findings suggest that, although perceived compatibility can play an essential role in shaping users' perceptions of use, its direct impact on actual system use depends on context. Therefore, the following hypothesis is proposed:

> H2: Perceived compatibility has a positive effect on myU application use behaviour.

$H_0$2: Perceived compatibility has no positive effect on myU application use behaviour.

5.6.3 Performance Expectancy and Behavioural Intention to Use the myU Application

Performance expectancy is a fundamental component of the UTAUT2 model and is widely recognised as a significant determinant of behavioural intention (Venkatesh et al., 2012), as explained in Chapter 4. In educational contexts, performance expectancy reflects both student and teacher perceptions of how a system enhances learning, teaching, or academic outcomes. These perceptions greatly influence students' and teachers' willingness to adopt and use such technologies (Khechine et al., 2020).

A growing body of empirical research confirms the positive relationship between performance expectancy and behavioural intention in higher education. Almaiah et al. (2019) found that performance expectancy is one of the strongest predictors of students' acceptance of mobile learning systems, demonstrating its relevance in technology adoption decisions. Similarly, Zacharis and Nikolopoulou (2022) employed the UTAUT2 model to demonstrate that performance expectancy had a significant influence on students' intentions to adopt e-learning platforms in post-pandemic education. Additionally, Lv and Li (2024) highlighted that performance expectancy has both direct and indirect effects on behavioural intention in blended learning environments, emphasising its role in fostering student engagement and enhancing learning effectiveness.

Studies focusing on educators have demonstrated the predictive strength of performance expectancy. For instance, Taamneh et al. (2023) found that university lecturers' intention to use Moodle during Covid-19 was largely influenced by their perception of its performance benefits. Similarly, Alajmi and Alotaibi (2020) reconceptualised system use in the context of digital libraries and discovered that performance expectancy significantly affects both librarians' and users' intentions, demonstrating its importance across different user groups. In the realm of emerging technologies, Grassini et al. (2024) showed that performance expectancy plays a significant role in shaping students' acceptance of ChatGPT in higher education, underscoring the ongoing significance of performance expectancy in promoting the adoption of both established and new systems.

The predictive power of performance expectancy has also been confirmed for various types of technologies, including SNSs, discussion forums, and immersive learning technologies. Mishra et al. (2022) reported that performance expectancy significantly influences students' intentions to use SNSs for educational purposes. Similarly, Wut et al. (2022) found that performance expectancy plays a crucial role in predicting behavioural intention towards online discussion forums. Additionally, Alkhwaldi (2024) discovered that learners' intentions to adopt the metaverse for higher education are primarily driven by performance expectancy, highlighting its relevance in innovative learning environments. Together, these studies demonstrate that users' confidence in a system's ability to enhance learning and teaching outcomes is one of the most influential factors shaping their behavioural intention.

Despite its solid theoretical foundation, performance expectancy is not always applicable as a predictor of behavioural intention. Some studies suggest that performance expectancy may have either weakly significant or non-significant links with behavioural intention. Khechine et al. (2020), for example, found that performance expectancy is not a significant predictor of students' intention to adopt a social learning system. This finding suggests that intrinsic motivation and enjoyment may exert a stronger influence on students' use intention than performance expectancy. Similarly, García de Blanes Sebastián et al. (2025) reported that, although performance expectancy is commonly theorised as central to technology acceptance, it did not emerge as a key predictor of mobile learning adoption in their study of university students. This finding implies that satisfaction and other factors from the UTAUT2 model such as effort expectancy and hedonic motivation may play a more significant role in shaping students' intentions.

Research on emerging technologies supports these conclusions. Kalınkara and Özdemir (2024) found that, in metaverse-based anatomy education, performance expectancy had a weaker impact than other factors such as facilitating conditions and social influence. This finding suggests that novel technologies may need additional elements beyond performance expectancy to achieve acceptance. Likewise, Wut et al. (2022) noted that online learning behaviour is more strongly influenced by interaction factors and facilitating conditions than by performance expectancy. These findings suggest that the impact of performance expectancy may diminish in situations where technology use is mandatory, expectations for digital tools are already high, or other motivational and environmental factors are more influential in driving adoption

decisions. Building on the substantial body of research that confirms the significance of performance expectancy despite the mixed findings in some contexts, the following hypothesis is proposed:

> H3: Performance expectancy has a positive effect on the behavioural intention to use the myU application.
>
> $H_0$3: Performance expectancy has no positive effect on the behavioural intention to use the myU application.

5.6.4 Effort Expectancy and Behavioural Intention to Use the myU Application

Unlike performance expectancy, which focuses on the anticipated benefits of using a technology, effort expectancy emphasises usability and the cognitive effort required to operate a system effectively, as discussed in Chapter 4. In educational settings, effort expectancy is crucial during the adoption process because systems that are simple, intuitive, and user friendly lower barriers to engagement. These lower barriers, in turn, encourage both students and teachers to incorporate technology into their learning and teaching practices (Khechine et al., 2020).

Multiple studies have shown that effort expectancy is a key predictor of behavioural intention to adopt educational technologies. Yeboah and Nyagorme (2022) found that students in sub-Saharan Africa are strongly influenced by their perceptions of ease of use when using WhatsApp for distance learning. This finding suggests that the intuitiveness and familiarity of platforms are factors that enhance the likelihood of adoption. Similarly, Gunasinghe et al. (2020) demonstrated that effort expectancy significantly affects lecturers' adoption of e-learning systems, highlighting the importance of usability in motivating educators. Additionally, in blended learning environments, Lv and Li (2024) confirmed that effort expectancy significantly influences students' intentions to use blended learning platforms. They found that simplicity and reduced effort directly contribute to stronger engagement.

Other studies have emphasised the importance of effort expectancy in relation to mobile and social learning platforms. Al-Rahmi et al. (2020) reported that effort expectancy, along with performance expectancy and other UTAUT2 constructs, plays a crucial role in enhancing technology adoption. This enhanced adoption in turn leads

to improved SAP in HEIs. In a similar vein, Chao (2019) found that effort expectancy significantly affects students' behavioural intention to adopt mobile learning, underscoring that low-effort interaction is essential for promoting engagement in mobile-based education. Furthermore, Dhume-Shinkre et al. (2025) demonstrated that effort expectancy was a significant predictor of behavioural intention when using SNSs for educational purposes in Indian higher education, highlighting its relevance across various platforms and cultural contexts. Collectively, these findings illustrate that effort expectancy is a key driver of behavioural intention, particularly for tools that are new or highly interactive. This conclusion holds especially for educators and learners seeking efficient and user-friendly platforms.

However, other research indicates that the predictive strength of effort expectancy can diminish over time or in contexts where users are highly familiar with a technology. In a meta-analysis of the UTAUT2, Jadil et al. (2021) even reported a negative effect of effort expectancy on behavioural intention, suggesting that perceptions of ease of use may be less influential when systems are already embedded in users' routines. Similarly, Arain et al. (2019) found that effort expectancy is not significant in predicting behavioural intention for mobile learning adoption, suggesting that other factors such as performance expectancy or social influence may be more influential.

Other studies in higher education support this pattern. Wut et al. (2022) reported that interaction quality and facilitating conditions outweigh effort expectancy in explaining online learning behaviour. Similarly, Taamneh et al. (2023) found that effort expectancy did not significantly affect lecturers' intentions to adopt Moodle, concluding that training and experience can lessen the importance of effort expectancy. Additionally, Zacharis and Nikolopoulou (2022) discovered that effort expectancy played a weaker role in predicting behavioural intention to use e-learning platforms after the pandemic because students had already gained familiarity and confidence in using these tools. These findings suggest that, although effort expectancy is crucial for initial adoption, its influence may diminish for mature technologies, where ease of use is already taken for granted. Based on empirical evidence of the importance of effort expectancy for technology adoption, the following hypothesises is proposed:

> H4: Effort expectancy has a positive effect on behavioural intention to use the myU application.

$H_0$4: Effort expectancy has no positive effect on behavioural intention to use the myU application.

5.6.5 Social Influence and Behavioural Intention to Use the myU Application

In the UTAUT2 framework and similar models, social influence encompasses social norms, expectations, and peer pressure, which can significantly affect technology acceptance. This influence holds especially in educational environments, where collaboration and peer recommendations are vital for adopting new systems. In these settings, social influence can validate the importance of a platform and motivate users to incorporate it into their daily academic routine, ultimately enhancing their behavioural intention to use the technology (Blut et al., 2021).

Research has consistently highlighted social influence as a significant determinant of behavioural intention in the adoption of educational technology. Yeboah and Nyagorme (2022) found social influence to be a crucial factor affecting students' acceptance of WhatsApp as a teaching tool in distance learning. They emphasised that social approval and peer influence drive adoption decisions in collaborative settings. Similarly, Dhume-Shinkre et al. (2025) reported that effort expectancy significantly predicts the behavioural intention to use SNSs for learning purposes, reinforcing the role of social dynamics in shaping adoption. Arif et al. (2022) further supported this perspective by demonstrating that positive social dynamics on SNSs platforms encourage knowledge sharing and foster student creativity, thus promoting technology adoption.

In a teacher-focused context, Yildiz Durak (2019) emphasised that preservice teachers' behavioural intention to use SNSs is significantly affected by social influence. This finding illustrates the vital role that professional communities play in shaping attitudes towards educational tools. Similarly, Sabah (2023) discovered that social influence is a significant predictor of students' use of collaborative learning environments, highlighting the importance of peer endorsement in integrating technology into academic workflows. Expanding on this idea, Awotunde et al. (2021) confirmed the predictive strength of social influence in university students' adoption of SNSs for learning. Additionally, García de Blanes Sebastián et al. (2025) demonstrated that social influence is a key factor in the adoption of mobile learning

and user satisfaction. Collectively, these studies confirm that social influence plays a crucial role in driving behavioural intention. This role is particularly prominent in higher education contexts, where community engagement and educator encouragement are essential in shaping technology adoption decisions.

Conversely, some studies suggest that the impact of social influence is not universally strong and may weaken under certain conditions. Almaiah et al. (2019) found that social influence has a limited effect on students' behavioural intention to adopt mobile learning. They indicated that students often prioritise their personal perceptions of a system's usefulness over social approval. Similarly, Cavus et al. (2021) reported that, during the Covid-19 pandemic, social influence was not a significant factor in determining students' intention to use LMSs, as considerations of accessibility and system design became more critical.

Research on emerging technologies has revealed some noteworthy patterns. Alkhwaldi (2024) found a weak connection between social influence and students' intention to adopt metaverse technologies in higher education. This finding suggests that early adopters of advanced tools often make independent choices. Similarly, Grassini et al. (2024) discovered that social influence is not a significant factor in students' adoption of ChatGPT, indicating that perceived utility is more influential than social pressure. In the context of digital library usage, Alajmi and Alotaibi (2020) concluded that social influence has a minimal impact on behavioural intention towards system engagement. They discovered that academic faculty members seem to be scarcely affected by recommendations and suggestions from their social systems when deciding whether to use the system.

According to Venkatesh et al. (2003), if users have a positive experience with technology, they are less likely to be concerned about support from their social networks. Khechine et al. (2020) reported a non-significant relationship between social influence and behavioural intention in the context of the use of social learning systems such as educational SNSs. Their findings align with Venkatesh et al.'s (2003) assertion that the role of social influence in technology acceptance is complex and varies across contexts. For instance, reliance on others' opinions is particularly relevant in mandatory environments. Mandatory users tend to attach more importance to the opinions of others due to their frequent use of the system, whereas voluntary users such as students using SNSs are less inclined to focus on the opinions of others.

Further research by Arain et al. (2019), Gunasinghe et al. (2020), and Lutfi et al. (2022) supports the idea that, in mature technology environments, user autonomy, ease of use, and perceptions of personal value can reduce the role of social influence. Overall, these findings suggest that the impact of social influence is highly context dependent. It tends to have a stronger effect during the initial stages of technology adoption or in peer-driven learning environments. However, its significance often diminishes as technologies become well established and widely accepted. Given the evidence underlining the role of social influence in facilitating technology adoption, the following hypothesis is proposed:

> H5: Social influence has a positive effect on behavioural intention to use the myU application.
>
> $H_0$5: Social influence has no positive effect on behavioural intention to use the myU application.

5.6.6 Hedonic Motivation and Behavioural Intention to Use the myU Application

In the UTAUT2 framework, hedonic motivation is presented as a crucial psychological factor driving technology adoption (see Chapter 4). It reflects the importance of positive emotions and user engagement in enhancing behavioural intention. In educational technology, hedonic motivation is especially relevant for systems that promote interaction, creativity, and collaboration because enjoyable experiences tend to encourage more consistent use of these systems (Blut et al., 2021; Venkatesh et al., 2012).

Numerous studies have confirmed that hedonic motivation plays a significant role in influencing behavioural intention regarding the adoption of technology in higher education. Arain et al. (2019) reported that hedonic motivation is a strong determinant of students' acceptance of mobile learning systems. Their findings suggest that systems that provide enjoyable experiences encourage adoption beyond mere functional utility. Similarly, Gunasinghe et al. (2020) identified hedonic motivation as a key factor in lecturers' willingness to adopt e-learning platforms, indicating that even academic professionals are motivated by engaging and user-friendly systems. In the context of SNSs for learning, Arif et al. (2022) found that positive emotional experiences and

enjoyable interactions on SNS platforms enhance knowledge sharing and creativity, thereby strengthening behavioural intention.

Studies of e-learning acceptance have confirmed these findings. Latip et al. (2022) reported that students' willingness to engage with e-learning platforms is significantly influenced by enjoyment and perceived ease of use. This finding illustrates that positive emotional engagement enhances technical usability. Similarly, Al-Maatouk et al. (2020) identified hedonic motivation as a key predictor of technology adoption in academia, emphasising that perceived enjoyment greatly increases the intention to use SNSs for educational purposes. Huang et al. (2025) provided further support for these assertions, demonstrating that hedonic motivation has a significant impact on behavioural intention to use digital education platforms, especially when these platforms offer features that promote interaction and collaboration. Chang et al. (2022) reached a similar conclusion, noting that SNSs that are integrated into teaching are widely adopted when students perceive them as enjoyable and stimulating. Overall, these findings underscore the idea that hedonic motivation is a crucial psychological factor in promoting the adoption of technologies such as educational SNSs, which integrate communication, collaboration, and learning in an engaging and user-friendly environment.

Despite strong evidence supporting the relevant role of hedonic motivation, some studies suggest that its influence on behavioural intention may be limited. For example, Gharrah and Aljaafreh (2021) found that hedonic motivation does not significantly affect students' willingness to adopt SNSs for educational purposes, indicating that users prioritise functional value over enjoyment. Similarly, Devisakti and Muftahu (2023) reported a limited effect of hedonic motivation on behavioural intention to use digital learning platforms, noting that factors such as personal innovativeness and technological confidence are more influential than intrinsic enjoyment.

Similar findings have emerged from e-learning studies. Mehta et al. (2019) observed that values and perceived usefulness are more influential than hedonic motivation in shaping adoption decisions, especially when platforms are used for formal academic purposes rather than entertainment. Tseng et al. (2022) reported that experienced educators are minimally influenced by hedonic motivation in their adoption of MOOCs, indicating that teachers often prioritise pedagogical effectiveness over enjoyment when making such decisions.

These findings imply that the impact of hedonic motivation is context sensitive. Although enjoyment can enhance behavioural intention with voluntary tools, it becomes less relevant in structured academic settings, where performance and functional outcomes are prioritised. Based on the evidence of the role of hedonic motivation as a driver of behavioural intention, the following hypothesis is proposed:

> H6: Hedonic motivation has a positive effect on behavioural intention to use the myU application.
>
> $H_0$6: Hedonic motivation has no positive effect on behavioural intention to use the myU application.

5.6.7 Habit, Behavioural Intention, and myU Application Use Behaviour

Habit captures the extent to which the use of technology becomes a routine or ingrained behaviour. When such a habit forms, it reduces cognitive effort and enhances users' behavioural intention, as well as their actual system use or use behaviour. Venkatesh et al. (2012) identified habit as a significant predictor of technology use, showing that repeated exposure and positive reinforcement contribute to sustained adoption.

Empirical studies have consistently demonstrated the significant impact of habit on behavioural intention, particularly in relation to the use of educational technology. García de Blanes Sebastián et al. (2025) identified habit as one of the most important predictors of mobile learning adoption and user satisfaction. Their research shows that repeated interaction with educational technologies encourages a continued intention to use them. Likewise, Mehta et al. (2019) reported that regular engagement with e-learning platforms enhances users' perceptions of value, further promoting their behavioural intention. Yu et al. (2021) reported comparable findings in the context of mobile health education platforms, where habitual use notably influences users' willingness to keep engaging. This finding underscores the relevance of habitual use across domains.

In their research on emerging educational technologies, Bahadur et al. (2024) found that students' habitual use of ChatGPT strongly predicts their intention to use it. This finding indicates that familiarity and repeated exposure play a significant role in the

adoption of educational tools powered by artificial intelligence (AI). Similarly, Ciftci et al. (2023) demonstrated that medical educators' regular engagement with distance learning platforms significantly influences their behavioural intention to use these tools, highlighting the importance of habit in promoting continued use in challenging situations. These findings suggest that habit is a crucial driver of behavioural intention to use educational SNSs, which are intended for frequent academic use.

Some studies suggest that the influence of habit on behavioural intention may be minimal. Ain et al. (2016) found that, although habit contributes to the use of LMSs, its impact on behavioural intention is less significant than that of other factors, such as performance expectancy and perceived learning value. Similarly, Rudhumbu (2022) reported that habit is not a strong determinant of behavioural intention to adopt blended learning. This finding indicates that other motivational and contextual factors may play a greater role than habit in influencing students' decisions. Furthermore, Ramadhanti and Abidin (2024) provided support for this view, demonstrating that habit has limited predictive power in the adoption of web-based learning platforms, particularly in settings where system use is mandatory or influenced by external factors.

Empirical evidence supports the idea that habit significantly predicts use behaviour or actual use, as well as behavioural intention. Chang et al. (2022) found that students' habitual engagement with SNSs significantly predicts their actual use in academic contexts, demonstrating that routine behaviours lead to consistent platform use. Similarly, Rashid (2025) noted that habit is a key predictor of both use behaviour and the behavioural intention to use AI tools in higher education, highlighting the importance of habit in maintaining adoption beyond initial acceptance.

Gharrah and Aljaafreh (2021) also reported that students' regular dependence on SNSs for educational purposes significantly influences their continued use of these platforms. This finding emphasises the impact of habitual behaviour in informal and self-directed learning. Gunasinghe et al. (2020) echoed this finding. In their study of faculty members, they found that frequent interaction with e-learning platforms plays a crucial role in promoting ongoing use among academics. Together, these studies illustrate that habit serves as a behavioural link between behavioural intention and use behaviour, fostering repeated engagement with ICT tools designed for regular academic and communication tasks.

Conversely, some research indicates that habit may have a negative influence on use behaviour or may not significantly affect it at all. Grassini et al. (2024) observed

that, although students are open to experimenting with AI tools such as ChatGPT, habit is not a strong predictor of use. This finding could be attributed to the novelty of the technology and the absence of established use patterns. This observation aligns with the findings of Kalınkara and Özdemir, (2024), who reported a weak relationship between habit and use behaviour in students' adoption of metaverse platforms. They noted that, when tools are relatively new or use patterns are not yet established, other factors such as performance expectations and perceived learning value take precedence. Zacharis and Nikolopoulou (2022) also found that habit played a limited role in predicting students' ongoing use of e-learning platforms after the Covid-19 pandemic. In this case, mandatory use and high familiarity with systems shifted the levers of students' adoption decisions towards factors such as perceived usefulness and institutional requirements.

These findings suggest that, although habit is a strong driver of use intention and technology use in established systems, its predictive power may be weaker in emerging contexts, situations where use is mandatory, and cases where routine use has not yet developed fully. Thus, the following hypotheses are proposed:

> H7: Habit has a positive effect on behavioural intention to use the myU application.
>
> $H_0$7: Habit has no positive effect on behavioural intention to use the myU application.
>
> H8: Habit has a positive effect on myU application use behaviour.
>
> $H_0$8: Habit has no positive effect on myU application use behaviour.

5.6.8 Behavioural Intention and myU Application Use Behaviour

Behavioural intention is widely recognised as the strongest predictor of actual system use behaviour in technology adoption research. When users clearly intend to adopt a system, this motivational readiness typically leads to consistent behavioural engagement. As a result, behavioural intention is a core concept in studies based on the UTAUT model (Venkatesh et al., 2003). In higher education, this relationship is particularly important because the intentions of students and educators to adopt digital platforms are expected to significantly influence their actual use in academic settings.

Extensive empirical evidence has consistently shown that behavioural intention is a strong predictor of use behaviour across various educational and technological contexts. Venkatesh et al. (2003) were among the first to confirm the central role of behavioural intention in predicting actual use in organisational technology adoption, and these findings have been widely replicated in educational settings. For example, Al-Rahmi et al. (2021) demonstrated that students' intentions to use SNS platforms for educational purposes significantly influence their use behaviour, highlighting the predictive strength of behavioural intention in shaping use behaviour. Similarly, Prasetyo et al. (2021) found that, during the Covid-19 pandemic, students' behavioural intention towards e-learning platforms strongly affected their actual use, emphasising the importance of intention in driving adoption under challenging circumstances. Additionally, Lutfi et al. (2022) reported that students' behavioural intention had a direct effect on the actual use of mobile learning technologies during social distancing, further validating this relationship in higher education settings.

More recently, Huang et al. (2025) demonstrated that behavioural intention is a significant factor in predicting the actual use of digital education platforms, providing further evidence of its importance in the context of emerging technologies. Similarly, Al-Rahmi et al. (2020) cited behavioural intention as a key determinant of use behaviour in higher education, indicating that strong intentions lead to improved technology adoption and ultimately better academic outcomes. In parallel, Al-Azawei et al. (2023) confirmed that learners' behavioural intention is a crucial predictor of online learning success and actual engagement, highlighting the importance of this concept in the digital education environment. Additional evidence from studies focusing on instructors supports this relationship. Tseng et al. (2022) found that teachers' behavioural intention significantly influences their actual adoption of MOOCs, demonstrating that the relationship between behavioural intention and use behaviour applies not only to students but also to educators. Together, these studies confirm that behavioural intention consistently translates into use behaviour, underscoring its relevance for educational SNSs intended for seamless integration into academic practice.

Despite strong evidence linking behavioural intention to use behaviour, some studies indicate that behavioural intention does not always directly translate into use behaviour. For instance, Zacharis and Nikolopoulou (2022) found that, among post-pandemic students, behavioural intention did not consistently predict their use

behaviour of e-learning platforms. Instead, external pressures and familiarity with the system played more significant roles. Similarly, Rashid (2025) observed that, even if students express a strong intention to use AI tools in education, this intention does not always result in actual use, highlighting a gap between intention and action. Research on emerging technologies further underscores this variability. Dietrich and Grassini (2025) discovered that behavioural intention is not a strong predictor of use behaviour of ChatGPT in education, suggesting that intentions driven by novelty may not lead to use behaviour. Additionally, Khechine et al. (2020) reported that, when adopting an SNS system, intrinsic value and facilitating conditions take precedence over behavioural intention in explaining actual use. These studies indicate that, although behavioural intention is generally a strong predictor of use behaviour, its influence may be weaker in certain contexts. Therefore, the following hypothesis is proposed:

> H9: Behavioural intention to use the myU application has a positive effect on myU application use behaviour.
>
> $H_0$9: Behavioural intention to use the myU application has no positive effect on myU application use behaviour.

5.6.9 myU Application Use Behaviour and Teachers' Perceptions of Student Academic Performance (TPSAP)

The way teachers perceive SAP can be influenced by how students actually use educational SNSs (i.e. students' use behaviour). Research shows that frequent and meaningful engagement with SNSs can lead to improved learning outcomes, collaboration, and knowledge sharing, ultimately enhancing SAP. For instance, Al-Rahmi et al. (2022) found that students' active use of SNSs in higher education significantly contributes to their satisfaction and overall performance. Thus, use behaviour plays a vital role in promoting effective learning. Similarly, Lv and Li (2024) reported that using blended learning environments is strongly linked to better student learning effectiveness, highlighting that actual technology use leads to improved academic outcomes when supported by behavioural intention.

Further support is provided by Alamri et al. (2020), who demonstrated that compatibility and task–technology fit are critical enablers of the use of SNSs, thereby enhancing student learning sustainability in higher education. In addition, Alturki and

Aldraiweesh (2024) revealed that SNSs use positively influences students' affective engagement, which in turn improves their SAP. This finding underscores the importance of actual technology use for learning. Furthermore, Chaka and Govender (2020) showed that using SNS platforms such as Facebook promotes academic benefits through active student participation, particularly by increasing interaction and knowledge exchange. These studies indicate that students' regular use of educational technologies can have a positive effect on their SAP.

Despite these positive findings, other studies have reported negative or non-significant effects of SNSs use on SAP, indicating that the relationship is not always straightforward. For example, Azizi et al. (2019) noted that excessive use of SNSs can be linked to lower academic performance due to addictive behaviours. This finding suggests that high levels of SNSs use do not always lead to positive learning outcomes. Similarly, Cuong et al. (2025) found that the motivations behind SNSs use and the amount of time spent on these platforms can have an adverse effect on students' GPA. The implication is that extended use for non-academic purposes often diverts attention away from learning.

Al-Rahmi et al. (2022) emphasised that merely using e-learning systems does not guarantee improved outcomes without supportive learning conditions. This finding suggests that the success of these systems relies on various factors, including self-efficacy. Although use behaviour can positively enhance learning outcomes, unstructured or excessive use may adversely affect SAP. Study 2 examines these dynamics from a teacher perspective, recognising that teachers may observe both the positive and negative impacts of educational SNSs on SAP. Based on this discussion, the following hypothesis is proposed:

> H10: myU application use behaviour has a positive effect on teachers' perceptions of student academic performance.
>
> $H_0$10: myU application use behaviour has no positive effect on teachers' perceptions of student academic performance.

5.7 Summary of Research Hypotheses for Study 2

Drawing on these discussions, a set of research hypotheses is proposed to examine the interrelationships among the core constructs in the research model for Study 2. Based

on the UTAUT2 framework enhanced by the addition of three new constructs (perceived technology efficacy, perceived compatibility, and TPSAP), 10 hypotheses are developed to guide the empirical analysis for this study. These hypotheses are summarised in Table 15.

Table 15: Summary of Hypotheses for Study 2

No.	Hypothesis statement
H1	Perceived technology efficacy has a positive effect on myU application use behaviour.
H2	Perceived compatibility has a positive effect on myU application use behaviour.
H3	Performance expectancy has a positive effect on behavioural intention to use the myU application.
H4	Effort expectancy has a positive effect on behavioural intention to use the myU application.
H5	Social influence has a positive effect on behavioural intention to use the myU application.
H6	Hedonic motivation has a positive effect on behavioural intention to use the myU application.
H7	Habit has a positive effect on behavioural intention to use the myU application.
H8	Habit has a positive effect on myU application use behaviour.
H9	Behavioural intention to use myU application has a positive effect on myU application use behaviour.
H10	myU application use behaviour has a positive effect on teachers' perceptions of student academic performance.

Note. Source: Author's own work.

5.8 Chapter Summary

This chapter discusses the research models and hypothesis development for the two studies conducted in this thesis. Study 1 focused on the factors influencing SAP from the student perspective, using an integrated framework that combines the D&M IS Success Model with Constructivist Learning Theory. In contrast, Study 2 explored SAP from the teacher's perspective by employing an extended version of the UTAUT2 framework, which includes perceived technology efficacy, perceived compatibility, and teachers' perceptions of SAP. The use of these two complementary models reflects the distinct objectives and perspectives of the stakeholders involved in each study, providing a more comprehensive understanding of the relationship between educational SNSs and SAP in higher education. Based on these theoretical foundations, 14 hypotheses were formulated for Study 1 and 10 hypotheses for Study 2. The next chapter will outline the research methodology, including the research paradigm, research design, sampling strategy, data collection procedures, and data analysis methods.

6 Methodology

6.1 Introduction

This chapter outlines the methodological framework used to investigate the factors influencing SAP through the use of educational SNSs, considering perspectives from both students and teachers. Aligned with the research objectives and theoretical foundations discussed in previous chapters, the study adopts a positivist research paradigm and employs a quantitative research design. The chapter then details the target population, sampling strategy, data collection procedures, and the process of developing the questionnaire and measurement instruments utilised in both studies. It also describes the pretesting and pilot testing procedures undertaken to establish the validity and reliability of the research instruments. Finally, the chapter presents the data analysis procedures, including the application of PLS-SEM to evaluate both the measurement and structural models.

6.2 Research Paradigm

A research paradigm represents a set of commonly held beliefs and assumptions within a research community regarding the ontological (the nature of reality), epistemological (the constitution of knowledge in a field of study), axiological (the role of values), and methodological concerns that provide guidance throughout the research process (Guba and Lincoln, 1994; Kuhn, 1970). According to the literature, a research paradigm signifies a comprehensive system of thinking that helps researchers determine which questions should be asked, which research approaches should be employed, which types of data should be collected, and which techniques should be applied for data interpretation (Creswell and Creswell, 2017; Sekaran and Bougie, 2019). The literature explains that positivism and interpretivism (or constructivism) are the most common research paradigms in social science research (Creswell and Creswell, 2017; Sekaran and Bougie, 2019).

Positivism is defined as “the philosophical stance of the natural scientist entailing working with an observable social reality to produce law-like generalisations. The

emphasis is on highly structured methodology to facilitate replication" (Saunders et al., 2019, p. 724). From a positivist ontological perspective, reality is viewed as singular and objective, and knowledge can be explained and generalised using a theory (Guba and Lincoln, 1994; Sekaran and Bougie, 2019). Creswell and Creswell (2017) explained that, within the positivist paradigm, researchers seek to identify causal factors that explain phenomena or outcomes. Accordingly, positivism-based research primarily uses existing theories to understand the nature of reality (Creswell and Plano Clark, 2017).

The positivist paradigm is underpinned by a value-free principle whereby a researcher is detached, neutral, and independent of the subject being studied, thereby maintaining an objective stance (Creswell and Plano Clark, 2017; Saunders et al., 2019). Research under this paradigm is conducted objectively based on empirical evidence. Consequently, positivist research follows a deductive approach. This top-down method involves using existing theories to outline hypotheses and collecting data to confirm or refute those theories (Creswell and Plano Clark, 2017). According to Saunders et al. (2019), this approach typically aims to produce explanatory theories to understand social phenomena. The positivist paradigm also aligns with quantitative research designs, discussed later, which employ statistical analysis to interpret empirical observations gathered through surveys and experiments (Leavy, 2017; Saunders et al., 2019).

In contrast, the interpretivist paradigm developed as a response to criticisms of positivism. The interpretivist paradigm (also known as constructivism) is based on the idea that human beings differ from physical phenomena because they create meaning. Interpretivists study meaning to create new, richer understandings of organisational realities (Saunders et al., 2019). The literature affirms that the positivist paradigm is inappropriate when dealing with humans because different people interpret the same situation in different ways (Greener and Martelli, 2018; Saunders et al., 2019; Sekaran and Bougie, 2019). Therefore, interpretivists understand reality differently from positivists, maintaining that reality is subjective and multiple (Teddlie and Tashakkori, 2009).

Interpretivists believe that ontology is subjective and socially constructed, and its access to reality is through language, shared meaning, and consciousness. Accordingly, every person has a reality, and multiple realities exist (Guba and Lincoln, 1994; Leavy, 2017). This idea aligns with the writings of Saunders et al. (2019), who explained that

interpretivism reflects the view that the world consists of multiple meaningful realities that are experienced and constructed through social interactions. Hence, the interpretivist's role is to explore how people build and perceive their experience within a specific context (Sekaran and Bougie, 2019).

In studies that adopt an interpretive epistemology, a phenomenon is explored and understood by interpreting the commonly shared meanings that people assigned to it (Creswell and Creswell, 2017). According to Sekaran and Bougie (2019), understanding is essential to explain social phenomena and involves identifying the beliefs and meanings that guide human behaviours and actions. Therefore, it requires a researcher to consider the complex range of opinions gathered from participants regarding the phenomena of interest. Often, this meaning is revealed by observing social and historical aspects (Creswell and Creswell, 2017).

Interpretivist research is based on a value-bound principle whereby researchers are inextricably involved in the data collection process as they talk to respondents to gain meaningful insight (Saunders et al., 2019). Interpretivist research is conducted under an inductive logic. It is a bottom-up approach where researchers observe specific phenomena and thus arrive at general conclusions (Creswell and Plano Clark, 2017). Accordingly, data are first collected, and a theory is then developed based on the analysis of those data (Saunders et al., 2019). Consequently, interpretivism generally entails a qualitative research design, discussed later. This approach often involves conducting personal interviews and focus groups to gather data from respondents (Leavy, 2017; Sekaran and Bougie, 2019). Table 16 compares the positivist and interpretivist paradigms.

While positivism is often linked to quantitative methods and interpretivism is typically associated with qualitative approaches, the connection between research paradigms and methods isn't rigid. Researchers can use qualitative methods in post-positivist designs or quantitative methods in constructivist frameworks, depending on their research objectives and analytical strategies (Creswell and Creswell, 2017; Teddlie and Tashakkori, 2009). Thus, the choice of research paradigm should be guided primarily by the nature of the research problem, the research questions, and the type of knowledge sought, rather than solely by methodological preferences.

Table 16: Comparison Between the Positivist and Interpretivist Paradigms

Paradigm assumptions	Positivism	Interpretivism
Ontology (nature of reality)	Single objective reality	Coexistence of multiple subjective realities Complex and rich Socially constructed through culture and language, with multiple meanings and interpretations
Epistemology (what constitutes acceptable knowledge)	Scientific method Observable and measurable facts Law-like generalisations Numbers Causal explanation and prediction as a contribution	Theories and concepts are too simplistic Focus on narratives, stories, perceptions, and interpretations New understandings as a contribution
Axiology (role of values)	Value-free research The researcher is detached, neutral, and independent of what is researched The researcher maintains an objective stance	Value-bound research Researchers are part of what is researched Subjective researcher interpretations are central to the contribution
Methodology	Typically deductive Highly structured Large samples Measurement Quantitative analysis methods	Typically inductive Small samples, in-depth investigations Qualitative analysis methods

Note. Source: Saunders et al. (2019).

The positivist paradigm was chosen for this thesis because it aligns well with the research aims, questions, and overall design. As stated in Chapter 1, this thesis aims to investigate the factors associated with the use of educational SNSs and their impact on SAP in Kuwaiti HEIs from the perspectives of both students and teachers. This study is explanatory in nature, as it seeks to examine the relationships between theoretically derived constructs and evaluate the extent to which these relationships account for variations in SAP. Explanatory research aligns with a positivist orientation because it focuses on testing theoretically specified relationships and identifying patterns that can be generalised beyond individual cases (Creswell and Creswell, 2017; Saunders et al., 2019).

This philosophical stance is also evident in the deductive approach used in both studies. Study 1 utilises the D&M IS Success Model and Constructivist Learning Theory, while Study 2 is based on an extended UTAUT2 framework. In both studies,

hypotheses were formulated from established theories and then tested using empirical data. This method of deriving hypotheses from theory and subjecting them to statistical testing is characteristic of positivist research (Creswell and Creswell, 2017).

It is important to note that the constructs examined in this thesis are based on perceptions and subjective evaluations, including satisfaction, engagement, collaborative learning, behavioural intention, and teachers' perceptions of SAP. Despite this subjectivity, a positivist approach remains appropriate. Positivist research does not require phenomena to be directly observable; instead, it requires that they can be systematically measured using valid and reliable indicators (Hair et al., 2022). As a result, latent constructs were operationalised using established measurement scales adapted from previous research and analysed using statistical techniques designed to assess relationships between theoretical variables (Sekaran and Bougie, 2016).

In line with this philosophical perspective, the thesis utilises a survey methodology and structural equation modelling (SEM), which will be elaborated upon later in this chapter. The survey approach allows for the collection of standardised data from a relatively large number of respondents, while SEM provides a rigorous method for assessing measurement validity and testing hypothesised relationships among latent constructs (Leavy, 2017; Saunders et al., 2019). These methods are particularly suitable for theory testing, as they enable the examination of complex causal models and the evaluation of the explanatory power of competing theoretical relationships (Hair et al., 2022).

Finally, the positivist paradigm is especially relevant in the context of higher education in Kuwait, where educational policies and institutional decision-making increasingly depend on empirical evidence and quantitative evaluations. This thesis aims to provide evidence-based insights into the educational use of SNSs and their impact on SAP. By employing a structured research design, using validated measurement instruments, and conducting rigorous statistical analyses, the findings of this research can contribute to both theoretical advancements and practical decision-making regarding the integration of digital technologies in higher education (CAIT, 2025; New Kuwait, 2023).

6.3 Research Design

A research design serves as a blueprint that helps a researcher plan the data collection process and analysis techniques to respond to the research questions (Sekaran and Bougie, 2019). In social science research, quantitative and qualitative research designs are among the most common and widely employed (Leavy, 2017; Stockemer, 2019; Wilkins et al., 2019).

Qualitative and quantitative approaches differ fundamentally in several respects. Quantitative research design entails gathering, analysing, interpreting, and presenting numerical information (Teddlie and Tashakkori, 2009). According to Teddlie and Tashakkori (2009), a quantitative design is more closely aligned with the positivist paradigm, which emphasises theory testing to explain how a phenomenon occurs. The literature indicates that quantitative research design is characterised by the deductive approaches mentioned earlier and is aimed at proving, disproving, or lending credence to existing theories (Leavy, 2017; Saunders et al., 2019; Stockemer, 2019). In sum, a quantitative research design involves measuring variables and testing relationships between them to uncover patterns, correlations, or causal relationships (Leavy, 2017; Saunders et al., 2019).

According to Sekaran and Bougie (2019), for researchers to meet their research objectives and answer their research questions, they often use data collection methods, which are also called research strategies. In quantitative research, researchers habitually use data collection methods such as surveys and experiments and analysis methods that result in statistical data (Creswell and Creswell, 2017). The values underlying quantitative research include neutrality, objectivity, and the acquisition of a broad scope of knowledge, for example a statistical overview from a large sample (Leavy, 2017). A quantitative approach is generally appropriate when the primary research purpose is to explain or evaluate (Saunders et al., 2019).

However, quantitative research has several limitations. While it is effective for measuring variables and testing relationships, it may not fully capture the richness and complexity of participants' experiences and interpretations (Neuman, 2014). Its focus on standardised measurement can sometimes overlook contextual factors that influence behaviour and decision-making (Creswell and Creswell, 2017). However, these limitations are less significant in studies that prioritise theory testing and the investigation of relationships among predefined constructs (Queirós et al., 2017).

In contrast, a qualitative research design is aligned with the interpretivist paradigm and is associated with the gathering, analysis, interpretation, and presentation of narrative information (Teddlie and Tashakkori, 2009). Qualitative research design is generally characterised by inductive approaches to knowledge building aimed at generating meaning (Teddlie and Tashakkori, 2009), which is the overall aim of producing or developing theories (Saunders et al., 2019). According to Leavy (2017), researchers use qualitative designs to explore, investigate, and learn about social phenomena. Their overarching aim is to uncover the meanings people ascribe to activities, situations, and events, as well as building a deep understanding of certain dimensions of social life.

In contrast to quantitative research design, qualitative research emphasises people's subjective experiences and meaning making processes and focuses on acquiring a deep understanding based on detailed information from a small sample (Creswell and Creswell, 2017; Leavy, 2017). Therefore, qualitative research uses techniques such as in-depth interviews and focus groups to collect data. Usually, a qualitative research design is appropriate when the primary purpose of the research is to explore or describe (Saunders et al., 2019).

Qualitative research designs, like quantitative ones, also have several limitations. The findings are often based on smaller samples and context-specific interpretations, which can limit their applicability to other settings (Creswell and Creswell, 2017). Additionally, the processes of data collection and analysis can be time-consuming and may be influenced by the researcher's interpretation (Queirós et al., 2017). Despite these limitations, qualitative research is valuable for gaining an in-depth understanding of participants' experiences and meanings (Creswell and Creswell, 2017; Saunders et al., 2019).

In alignment with the positivist paradigm adopted in this thesis, a quantitative research design was used. The aim of the research was not to develop new theories or to explore participants' lived experiences in depth. Instead, it focused on testing theoretically derived relationships among predefined constructs related to educational SNS use and SAP. A quantitative approach was deemed appropriate because it enabled measurement of latent variables, hypothesis testing, and evaluation of relationships among constructs using statistical techniques (Creswell and Creswell, 2017).

The research design included two complementary studies. Study 1 explored the factors influencing SAP from the students' perspectives by integrating the D&M IS

Success Model with Constructivist Learning Theory. Study 2 investigated the same phenomenon from the teachers' perspectives using an extended UTAUT2 framework. The purpose of conducting both studies was not to replicate findings but to analyse the phenomenon from different stakeholder viewpoints. Educational SNSs function within intricate socio-technical learning environments that involve various stakeholders, including both students and teachers. By examining both student and teacher perspectives, this research provides a more comprehensive understanding of technology-mediated learning than relying on a single viewpoint (Miles et al., 2014).

A survey strategy was employed in both studies because the constructs being examined were inherently perceptual (Sekaran and Bougie, 2019). Variables such as information quality, system quality, collaborative learning, engagement, satisfaction, behavioural intention, and teachers' perceptions of educational SNSs represent subjective evaluations best captured through self-reported measures (Saunders et al., 2019). Therefore, the objective of the research was not to assess actual academic grades but to explore how students and teachers perceive the role of educational SNSs in supporting SAP and learning outcomes. Additionally, obtaining students' official academic records would have raised significant ethical, administrative, and privacy concerns. More importantly, the concepts explored in this thesis focus on students' perceptions of satisfaction, engagement, technology use, and SAP. Therefore, using perceptual measures is more suitable than relying on objective grade data to address the research questions.

The quantitative survey design facilitated the collection of data from a sizable sample of students and teachers at PAAET. This data was then analysed using SEM, which enabled simultaneous evaluation of measurement quality and the structural relationships among constructs. The data analysis techniques are detailed in Section 6.10. This approach ensured methodological consistency with the thesis's explanatory objectives and provided a robust foundation for testing the proposed theoretical models.

6.4 Research Population and Sampling

6.4.1 Target Population

The population consists of all the units that a researcher wishes to investigate (Sekaran and Bougie, 2019). These units can be people, customers, institutions, events, or concepts of interest about which a researcher wishes to make inferences. Saunders et al. (2019) defined a population as the set of units from which a sample is taken. This thesis was conducted within the context of PAAET colleges, which have a total student population of 86,760 students for Study 1 and a total teacher population of 1,947 teachers for Study 2 (Central Statistical Bureau, 2026). Given the research questions, the target population was restricted to students and teachers who use the myU application, an educational SNS, at PAAET colleges. The total target population of students using educational SNSs was 23,380 students for Study 1. The total target population of teachers using educational SNSs was 538 teachers for Study 2 (myU, 2023).

PAAET was chosen as the research setting for several key reasons. First, it is one of the largest public HEIs in Kuwait and plays a significant role in the country's higher education sector. Second, the myU application is widely used across PAAET colleges, comprising over 50% of all myU users (myU, 2023). Third, the researcher had access to the target population, facilitating data collection while ensuring that the study took place within a relevant educational environment. Finally, there has been limited research on the educational use of SNSs and their relationship to SAP in Kuwaiti higher education (Al-Anzi, 2021).

6.4.2 Sample Size

A sample is a subset of the target population that the researcher uses to gather data (Stockemer, 2019). Different sample sizes are required for different research models and statistical procedures (Sekaran and Bougie, 2016). A good sample reflects the characteristics of the population, so that researchers can draw meaningful conclusions about the population (Stockemer, 2019; Hair et al., 2022). Although large samples are generally reported to have higher probabilities of producing reliable inferences, researchers often encounter challenges in collecting data from large samples (Hair et al., 2022; Sekaran and Bougie, 2019). Therefore, statisticians have proposed several

approaches to find a balance between a sample size that produces reliable results and one that is feasible and practical (Hair et al., 2022; Sekaran and Bougie, 2019).

According to Hair, Black et al. (2019), researchers should consider several criteria before determining the sample size. For example, the complexity of the research model, expectations regarding missing or unusable data, and data collection procedures are all relevant factors. Researchers have noted that any sample size (as a minimum) above 200 is considered sufficient to enhance the precision of parameter estimates and minimise sampling error when estimating unknown population parameters (Hair, Black et al., 2019; Sekaran and Bougie, 2019). Other researchers have argued that the minimum sample size should correspond to 10 to 20 participants (or cases) for each variable (Hair, Black et al., 2019; Hair et al., 2022). Some scholars have proposed the 10-times rule when deciding the minimum sample size (Hair et al., 2022). Based on this rule, the sample size should be 10 times the maximum number of arrows pointing to a construct (or variable) in a research model (Hair et al., 2017, 2022). However, these proposals have been criticised for causing inaccurate estimates, especially when the research model is highly complex (Hair et al., 2017, 2022; Sekaran and Bougie, 2019).

Alternatively, the sample size can be determined using the power analysis method (Cohen, 1992). Statistical power refers to the probability of correctly rejecting the null hypothesis (H_0) when it is false. It is represented as $(1 - \beta)$, where β is the probability of a Type II error, which refers to the probability of not rejecting the null hypothesis (H_0) when it is false (Hair, Black et al., 2019). In simpler terms, statistical power is the probability of obtaining a statistically significant result that supports the alternative hypothesis (Hair, Black et al., 2019). By using a power analysis estimator, researchers can estimate the necessary sample size based on the model and the characteristics of its constructs (Creswell and Creswell, 2017). In sum, power analysis is deemed the most stable estimate of the required minimum sample size because it considers the probability that a hypothesis is tested correctly (Faul et al., 2009; Hair et al., 2017).

This method is highly recommended when testing a complex model (Faul et al., 2009; Hair et al., 2022). An a priori power analysis is used to calculate the required sample size based on the power analysis level $(1 - \beta)$, significance level (α), and effect size (Cohen, 1988). The significance level is also called Type I error, or the probability of incorrectly rejecting the null hypothesis (H_0) when it is actually true. The effect size generally refers to assessing whether the observed relationship is meaningful, as

discussed later in this chapter. Several studies have shown that prior power analysis is one of the most fundamental and effective methods for controlling statistical power before conducting a study (Faul et al., 2009; Gefen et al., 2011; Green, 1991; Hair et al., 2017). According to the established guidelines, a minimum power (1 – β) of 0.80 and an effect size of 0.15 are required when using a priori power analysis in most social sciences studies (Faul et al., 2009; Gefen et al., 2011).

G*Power 3 software was used to determine the minimum sample size for both Study 1 and Study 2. G*Power is a stand-alone power analysis programme commonly used in computer and social research for statistical tests (Faul et al., 2009). For these two studies, the F-test was conducted using G*Power. To determine the minimum sample size, the power analysis was set for multiple regression comprising four predictors for Study 1 and five predictors for Study 2 (based on the number of predictors in this case as the maximum number of arrowheads pointing at a latent variable in the model). The test used an alpha (α) of 0.05, a power (1 – β) of 0.80, and a medium effect size of ($f^2 = 0.15$).

Because 80% is considered the minimum acceptable power in most social science studies (Gefen et al., 2011), the desired minimum sample size was set to 85 for Study 1 and 92 for Study 2. The notion of a minimum sample size is also supported by Green's (1991) sample-sizing guidelines. As explained in Table 17, in Study 1, the number of predictors was four, so the minimum sample size for a medium effect size was 84. The number of predictors was five for study 2, so the minimum sample size for a medium effect size was 91 (Green, 1991). Hence, sample sizes of 85 for Study 1 and 92 for Study 2 were needed, based on criteria of 4 predictors for Study 1 and 5 for Study 2, an effect size of 0.15, and a significance level of $\alpha = 0.05$.

Table 17: Sample Size Guidelines

Number of predictors	Sample sizes based on power analysis		
	Effect size		
	Small (0.02)	Medium (0.15)	Large (0.35)
1	390	53	24
2	481	66	30
3	547	76	35
4	599	84	39
5	645	91	42
6	686	97	46
7	726	102	48
8	757	108	51
9	788	113	54
10	844	117	56
15	952	138	67
20	1066	156	77
30	1247	187	94
40	1407	213	110

Note. Source: Green (1991).

Accordingly, the minimum sample size for Study 1 and Study 2 was determined by combining the sample size requirements from different perspectives. First, Hair, Black et al. (2019) concluded that a sample larger than 200 is considered large enough for statistical analysis (Hair, Black et al., 2019). Second, Faul et al.'s (2009) power analysis indicated that a minimum sample size of 85 for Study 1 and 92 for Study 2 was needed based on the model characteristics. A total of 1,203 questionnaires were distributed to respondents in Study 1 (i.e. students who use the myU application in colleges of PAAET), and 317 questionnaires were distributed to respondents in Study 2 (i.e. teachers who use the myU application in colleges of PAAET). Both samples were greater than the required minimum, in anticipation of errors during questionnaire completion in the form of omissions, missing values, inconsistent responses, and non-responses.

6.4.3 Sampling Procedure

The sampling procedure refers to the series of processes by which a researcher selects cases from a population (Leavy, 2017; Sarstedt and Mooi, 2019). In other words,

sampling involves finding the right sample or respondents for a study (Sekaran and Bougie, 2019). A researcher must identify the right properties of the sample from a defined population to enhance the accuracy of results (Sarstedt et al., 2018). Two different types of sampling approaches are typically used, namely probability and non-probability sampling (Sarstedt and Mooi, 2019; Saunders et al., 2019).

Probability sampling assigns every case in the population a non-zero chance of being included in the sample (Sarstedt and Mooi, 2019). This approach is typically implemented when using an accurate sampling frame, which means that the researcher has a complete list of cases, and each case is randomly selected (Sarstedt and Mooi, 2019; Sekaran and Bougie, 2019). Probability sampling is considered ideal because a probability sample represents the broader population from which it is drawn (Rowley, 2014). In other words, the sample reflects the characteristics of the target population. Consequently, statistical generalisations or sampling generalisations allow researchers to extrapolate findings from the sample to the larger population based on analysis of the sample data (Calder et al., 1981). However, probability sampling has faced criticism for its complexity and high costs (Sarstedt et al., 2018; Sekaran and Bougie, 2019). Additionally, compiling a complete sampling frame can be challenging because there may only be various partial lists of population members. This difficulty arises because some individuals may be unlocatable, unavailable, or unwilling to participate (Krause, 2019; Rowley, 2014). Non-probability sampling can be employed to address these challenges.

Non-probability sampling is used when the probability of selecting each case is unknown. Unlike probability sampling, it does not assign each case in the population an equal chance of being included in the sample (Sarstedt et al., 2018; Sarstedt and Mooi, 2019). Non-probability sampling is often preferred because it is easier to implement and is typically less expensive than probability sampling (Sarstedt and Mooi, 2019). In contrast to probability sampling, non-probability sampling focuses on theory generalisation. It involves extending findings from specific cases or studies to broader theoretical concepts or framework samples (Sarstedt and Mooi, 2019). The goal is not necessarily to generalise findings to a population but to contribute to or refine existing theories (Calder et al., 1981). Therefore, samples are generally less representative with non-probability sampling (Sekaran and Bougie, 2019).

Non-probability sampling has faced criticism for yielding results that do not fully reflect the characteristics of the entire population, making it challenging to generalise

findings (Hulland et al., 2018). However, Sarstedt et al. (2018) argued that valid and beneficial results can still be obtained through non-probability sampling, provided that the researcher applies the method thoughtfully. This view aligns with the idea that much of the research focused on theory testing is more concerned with theory generalisation than with sampling generalisation (Hulland et al., 2018; Sarstedt et al., 2018). Additionally, non-probability sampling is commonly used in social science research because researchers often lack a complete list of potential respondents. In such cases, the unavailability of a sampling frame makes it impractical to implement probability sampling (Rowley, 2014; Sarstedt et al., 2018).

According to the literature, the effectiveness of both sampling techniques in representing a population depends heavily on a researcher's understanding of the factors that influence the effect being studied. Additionally, the suitability of the sampling technique must align with the research aim and questions (Sarstedt and Mooi, 2019; Sekaran and Bougie, 2019). Given the context of this research, non-probability sampling was used due to the unavailability of a complete sampling frame and because the primary aim of the thesis was to test theories rather than to make statistical generalisations about the broader population.

Although non-probability sampling limits the ability to make statistical generalisations about the entire population, this limitation is less concerning in research that focuses primarily on theory testing and development (Sarstedt et al., 2018). The objective of this thesis is to examine and validate relationships among constructs that are derived from theory, rather than to estimate population parameters. Consistent with recommendations in social science research, the findings should be interpreted as evidence supporting the proposed theoretical relationships within the context of this study (Rowley, 2014). However, caution should be exercised when attempting to extend these findings beyond similar higher education settings. Future research that employs probability sampling across multiple institutions would further strengthen the generalisability of the results (Hulland et al., 2018; Sarstedt et al., 2018).

There are four main non-probability sampling approaches: convenience sampling, purposive or judgemental sampling, quota sampling, and snowball sampling (Sarstedt and Mooi, 2019; Saunders et al., 2019). According to Sekaran and Bougie (2019), convenience sampling enables a researcher to collect a sample in the most convenient way. Quota sampling ensures that cases are selected based on set criteria (e.g. age or income group) to ensure that the sample has a spread of cases in different categories,

even though some of those categories might be small (Rowley, 2014). Purposive sampling, also known as judgemental sampling, involves researchers' discretion in selecting the cases that best fit the research objectives (Saunders et al., 2019). In snowball sampling, initial respondents provide useful information for the selection of subsequent respondents (Saunders et al., 2019). Table 18 lists the strengths and weaknesses of each type of non-probability sampling.

Table 18: Strengths and Weaknesses of Non-Probability Sampling techniques

Non-probability sampling technique	**Cost/control**	**Advantages**	**Disadvantages**
Convenience	Low cost/easy to conduct	No need for the list of elements within the population (sampling frame)	Data may be prone to bias because the researcher can quickly obtain the data
Purposive/judgemental	Reasonable cost/reasonable control over sample contents	Selected sample is based on the research objective Minimised risk of sampling frame error	Findings may not be generalisable to the full population because the sample is selected based on several criteria
Quota	Moderate cost/relatively high control over sample contents	Very useful in selecting a sample that has the same characteristics as the population Sample selected based on prespecified characteristics Population sub-groups adequately included	Not easily generalisable because the sample may not be fully representative of the population
Snowball	Low cost/low control over sample contents	Very useful when the researcher faces difficulty in identifying the sample	High bias because the sample unit is suggested by previous respondents

Note. Source: Saunders et al. (2019) and Sekaran and Bougie (2019).

Purposive (judgemental) sampling was employed for both studies given the absence of a sampling frame (i.e. no complete list of all teacher and student users of educational SNS users at PAAET). This approach aligns with the positivist and theory-testing orientation of this thesis. As the main goal was not to achieve statistical representativeness, but rather to gather data from respondents who have direct experience using the myU application and are therefore well-positioned to provide informed assessments of the constructs being investigated. Consequently, judgemental

sampling was used in this research, with respondents selected based on specific criteria to ensure they fulfilled the study's requirements. The criteria were that respondents must be:

- students (for Study 1) and teachers (for Study 2)
- from PAAET colleges
- users of the myU application (an educational SNS).

To ensure that selected respondents met these requirements, the selection criteria were outlined in the cover letter of the questionnaires, discussed later in this chapter. The purpose of establishing these criteria was to guarantee that the sample would provide relevant information for the study while minimising sampling errors. Sampling error refers to the extent to which the results derived from a sample differ from those derived from the entire population (Saunders et al., 2019; Stockemer, 2019). Therefore, in this thesis, the unit of analysis was the individual: PAAET college students in Study 1 and teachers in Study 2. This approach was deemed suitable to understand the factors related to the use of educational SNSs and their influence on SAP.

6.5 Data Collection Methods

Generally, research data can be primary or secondary. Primary data are original data gathered by a researcher for a specific purpose (Sarstedt and Mooi, 2019). Secondary data are existing data that are often stored in databases (Sekaran and Bougie, 2016). In response to the research questions presented in Chapter 1, the main data source for this thesis was primary data.

Methods of primary data collection in the social sciences include experiments, surveys, observations, interviews, and case studies (Sarstedt and Mooi, 2019). Sekaran and Bougie (2016) explained that each method has advantages and disadvantages, and there is no simple answer to the question of which method is best. Therefore, a researcher's choice of data collection method depends on the purpose of the research, its questions, the study timeframe, and the costs and resources associated with and available for data gathering (Sekaran and Bougie, 2016). In Study 1 and Study 2, the primary data were collected using the survey method.

A survey is a system for collecting data from or about people to describe, compare, or explain their knowledge, attitudes, and behaviour (Sekaran and Bougie, 2016). This

method is usually associated with quantitative (i.e. deductive) research designs and is one of the most popular methods in social science research (Saunders et al., 2019). Many studies have shown that survey methods are often cost effective and provide quick responses (Leavy, 2017; Stockemer, 2019).

Over the years, surveys have been used by numerous social science researchers to provide data for examining associations between constructs or variables with high validity and transparency. These survey data ultimately allow theories to be tested objectively (Leavy, 2017; Teddlie and Tashakkori, 2009). In addition, the survey method is perceived as authoritative and is comparatively easy to explain and understand (Saunders et al., 2019). Therefore, many studies in various contexts have used the survey method as a primary data collection procedure (Sekaran and Bougie, 2016). For instance, surveys have often been used to gather data on the subject of consumer decision making, customer satisfaction, job satisfaction, academic performance, the use of health services, management information systems, and the like (Sarstedt and Mooi, 2019; Sekaran and Bougie, 2016). Accordingly, the survey method chosen in this thesis is widely supported by many scholars.

Furthermore, it was particularly suitable for this research because the constructs being examined were primarily perceptual and attitudinal. Study 1 explored students' perceptions of information quality, system quality, service quality, interaction, collaborative learning, engagement, satisfaction, and academic performance, while Study 2 focused on teachers' perceptions of technology use and its influence on student academic performance. These constructs cannot be directly observed and are therefore best measured through self-reported assessments (Saunders et al., 2019). Consequently, the aim of this study, as discussed in chapters 3, was not to measure actual academic grades but to understand how students and teachers perceive the educational value of SNSs use and its relationship with SAP.

The time horizon of a survey refers to cross-sectional versus longitudinal data collection and analysis (Stockemer, 2019). A cross-sectional survey is where data are gathered just once over a set period of days, weeks, or months to answer a given research question (Sekaran and Bougie, 2016). When data are collected at multiple time points, a study is considered longitudinal (Sekaran and Bougie, 2016). According to Saunders et al. (2019), longitudinal studies are recommended when there is a need to describe changes or stability (at the individual level). Additionally, they can be used to establish a temporal order of events. In contrast, cross-sectional studies only reveal

correlation among variables. Longitudinal studies can also establish developmental and historical effects (Saunders et al., 2019).

The most distinctive features of cross-sectional designs are that they have no time dimension, only differences between groups rather than change are measured, they inform about differences rather than changes following an intervention, and they do not allow for differences to emerge over time (Sarstedt and Mooi, 2019; Stockemer, 2019). In this thesis, both studies used cross-sectional surveys, where data were collected at one time from samples to determine relationships between variables at the time of the study. Despite the limitations of this type of study, a longitudinal study would lie beyond the timeframe of this research project. Moreover, conducting a longitudinal study in academic research typically requires years, which would make it infeasible for this thesis.

6.5.1 Survey Techniques

Various techniques can be used to conduct surveys, including interviews, questionnaires, and observations (Saunders et al., 2019). A questionnaire survey was used in this thesis. McDaniel and Gates (2013) defined a questionnaire survey as a data collection technique that consists of a set of predesigned questions that can collect evidence to meet the research objectives. A questionnaire survey was chosen because it is an appropriate and commonly used technique for collecting data (Saunders et al., 2019). It also generally measures the variables of interest in the sample efficiently and accurately, and is less expensive and time consuming than interviews and observation (Sekaran and Bougie, 2016).

When administering a questionnaire, a researcher must specify the mode, clarifying whether it is face-to-face, telephone, mail, or online (Saunders et al., 2019). Each approach has its advantages and disadvantages, and the selection of the most appropriate approach depends on the cost, available time, participant characteristics, and researcher's expertise (Sarstedt and Mooi, 2019). In this thesis, an online questionnaire was employed.

Online questionnaires are often used to understand participants' opinions and preferences. A major advantage of online questionnaires is that they leverage the internet's ability to access groups and individuals who would be difficult, if not impossible, to reach through other channels (Sekaran and Bougie, 2016). Virtual

communities flourish online, and hundreds of thousands of people regularly participate in discussions about a wide range of issues and interests (Leavy, 2017). Another advantage of online questionnaires is that they allow surveys to cover a wide geographical area (Sarstedt and Mooi, 2019). A link to the questionnaire is sent to respondents, who can complete it at their convenience and at their own pace (Sekaran and Bougie, 2016). Thus, it helps researchers overcome the spatial and temporal limitations of data collection. Additionally, the automated processing of questionnaire data saves time, energy, and costs (Sekaran and Bougie, 2016). Therefore, online questionnaires were used to collect data in Study 1 and Study 2.

However, online questionnaires have disadvantages. The key criticism of online questionnaires is whether respondents represent the target population (Sekaran and Bougie, 2016). To ensure the representativeness of the respondents in this research, filtering questions were included alongside the demographic questions to ensure that the questionnaire collected accurate, complete data and reached the target sample. This procedure is discussed later in Section 6.9.

In this thesis, an online questionnaire was created using SurveyMonkey. This platform was chosen for several reasons. First, SurveyMonkey is free and offers questionnaires in both English and Arabic, enabling effective communication with the diverse audience for this thesis (SurveyMonkey, 2024). Second, it is mobile friendly, meaning that all questionnaires are optimised for smartphones and tablets. SurveyMonkey questionnaires are therefore easy for respondents to complete on various devices. Additionally, the interface is user friendly, which simplifies the process for participants. Third, respondents in Kuwait can easily access SurveyMonkey, ensuring that they can open and complete the questionnaire without any technical issues. Fourth, the survey data can be exported in multiple formats, including Excel, CSV, SPSS, and PDF, thereby facilitating advanced analysis and reporting (SurveyMonkey, 2024). Finally, SurveyMonkey is a reliable online questionnaire service provider, frequently recommended by experts and universities for academic research (Sekaran and Bougie, 2016).

The procedures to reach participants in both studies were similar. In Study 1, teachers at PAAET colleges using the myU application were sent a direct message via myU to inform their students about the study and request their voluntary participation. Next, a link to the online questionnaire created with SurveyMonkey was sent to the teachers, who forwarded it to their students, inviting them to participate. The same

procedure was followed to reach participants in Study 2. Teachers using myU at PAAET colleges received a direct message via myU informing them of the study and requesting their voluntary participation. Then, they were sent an online questionnaire link to participate. From 18 May to 30 July 2023, a total of 1,203 questionnaires in Study 1 and 317 questionnaires in Study 2 were distributed to the target respondents. Chapter 7 explains this process in detail.

6.6 Questionnaire Design

A cover letter was included on the first page of the questionnaire for both studies. This cover letter explained the purpose of the study, addressed ethical considerations, and provided the researcher's contact details. The cover letter also emphasised the importance of the study and assured respondents that their data would be treated confidentially, as explained in more detail in Section 6.14 on ethical considerations. In both cases, once respondents had agreed to participate in the study, they provided their answers to the items in the remaining sections of the questionnaire.

The questionnaire for each study was organised into two blocks. The first block (six items) collected demographic information from respondents. The second block contained measurement items for the constructs (variables) in the models. In Study 1, this block comprised 34 questions assessing factors that influence SAP from a student perspective.

In Study 2, this block consisted of 33 items focusing on factors affecting SAP in the use of educational SNSs from a teacher perspective (see Appendix A). All items in both blocks were closed-ended questions, offering respondents a set of choices. This design helped reduce the burden on respondents, who could easily select the most relevant option (Sarstedt and Mooi, 2019). This approach has also been shown to improve response rates and simplify the data analysis process (Cooper and Schindler, 2008; Saunders et al., 2019). On average, each respondent took approximately seven minutes to complete the questionnaire in each study.

It was important to choose the correct type of measurement scale in both studies, in which all items were closed-ended questions. According to Hair et al. (2017), a measurement scale is a tool with a predetermined set of closed-ended response options designed to answer specific questions. In both studies, the demographic questions in the first block were assessed using a nominal scale. A nominal scale assigns numbers

for the purpose of identifying and classifying objects, in this case, demographic factors such as gender, occupation, college, and year of study. This type of scale is also known as a categorical scale (Hair et al., 2017).

The items in the second block in both studies used an ordinal scale to measure the constructs (variables). An ordinal scale allows researchers to rank or classify objects meaningfully, commonly on a Likert scale (Hair et al., 2017). Likert scales measure a respondent's level of agreement or disagreement with a series of statements related to a specific topic of interest, discussed in Section 6.7 (Teddlie and Tashakkori, 2009). Crucially, the intervals between levels in this type of measurement scale are not necessarily equal (Sekaran and Bougie, 2016). For instance, the difference between *Agree* and *Strongly Agree* may not be the same as the difference between *Neutral* and *Agree*.

In practice, researchers often treat ordinal scales such as Likert scales as if they were interval scales, assuming that the distances between points are roughly equal (Hair, Black et al., 2019; Sekaran and Bougie, 2016). Interval scales provide a consistent unit of measurement, ensuring that the distance between scale points is equal (Hair et al., 2022). This structure allows researchers to obtain more precise information regarding ranks and interpret the magnitude of differences directly (Hair, Black et al., 2019). Additionally, some statistical techniques such as SEM, discussed in Section 6.11, require interval data (Sekaran and Bougie, 2016). In line with standard practices in information systems and social science research, the Likert-type measures used in this study were treated as approximately interval-level data for the purposes of SEM and multivariate statistical analysis (Hair et al., 2022; Sekaran & Bougie, 2016).

The questionnaires used in both studies were carefully designed to ensure that respondents could easily understand the questions. MacKenzie and Podsakoff (2012) emphasised the importance of keeping questions simple, easy to read, and direct. They recommended using straightforward language that avoids complexity. Furthermore, they highlighted the need to prevent ambiguity, confusion, and vagueness, as well as the use of double-barrelled questions by ensuring that each question focuses on a single topic (Lietz, 2010; MacKenzie and Podsakoff, 2012). These recommendations align with the observations of Sekaran and Bougie (2016) regarding the need to use questionnaire language that matches respondents' level of understanding. Therefore, the questionnaires in both studies were back-translated because respondents were Arabic speakers. Section 6.8 explains this process in detail. Additionally, vagueness

was minimised by providing clear examples, simplifying complex or compound questions, and employing straightforward language. Regarding the layout of the questionnaires, key components such as a well-crafted introduction, clear instructions, and the logical ordering of questions were incorporated into the design.

To prevent incorrect completion of the questionnaire, the technical design of the online survey in both studies prevented participants from skipping any questions, thereby preventing missing values in the data set. Additionally, filter questions were included at the beginning of the questionnaire's demographic section to enhance the flow of the questionnaire. These filter questions identified respondents for whom subsequent questions may not be applicable, allowing them to skip those questions (Saunders et al., 2019). This approach aligns with Lietz's (2010) assertion that filtering questions are essential for accurately collecting the required data from respondents. Appendix A presents the questionnaires for Studies 1 and 2 in English and Arabic.

6.7 Research Instruments

The research instrument is another important part of the overall research design. It refers to the measurement of the constructs (variables) in the research model for both studies discussed in Chapter 5. Measurement is the process of assigning numbers to a variable based on a set of rules (Hair et al., 2022). These rules are used to assign numbers to the variable in a way that accurately represents the variable in order to achieve the research aim and respond to the research questions (Sekaran and Bougie, 2016). According to the literature, some variables are easy to measure, for example distance and length (Hair et al., 2022; Stockemer, 2019). In contrast, other variables such as those in the research model for both studies are more difficult to measure because these variables are abstract, complex, and not directly observable or measurable (Hair et al., 2022; Stockemer, 2019).

These variables can be made measurable by operationalisation. This process refers to the translation of abstract and subjective concepts into concrete measures (Sekaran and Bougie, 2016). In other words, when concepts are difficult to measure, one approach is to measure them indirectly using a set of directly observable and measurable items called indicators or instruments (Hair et al., 2022). These items or instruments are represented in questionnaire items distributed to respondents during data collection (Creswell and Creswell, 2017). These items are used in measurement

models to assess the latent variables, discussed in subsequent sections (Hair et al., 2022).

Researchers can use three methods to achieve a valid item or instrument for their study. They can develop their own, modify or adapt existing items from reputable academic studies, or fully adopt items from prior research. According to Saunders et al. (2019), modifying or adapting items involves finding existing items and modifying them to fit the specific context of the study. However, if suitable items are not found in the literature, researchers have the option of creating new items. This process can be more challenging and time consuming than adapting existing items because it requires undergoing a series of validity and reliability tests before the items can be applied in the empirical study (Hair, Black et al., 2019; Saunders et al., 2019).

In this thesis, the items used for both studies were adapted from existing validated literature to the context of educational SNSs. Social science research recognises this approach as productive when the study focuses on theory testing (Hardy and Ford, 2014; Hulland et al., 2018). The following criteria can be used to evaluate the quality of instruments: (1) Are the items currently used in contemporary research studies? (2) Are the items widely cited by others? (3) Have the items achieved an acceptable level of reliability and validity? (4) Are the items appropriate for research questions or hypotheses? (5) Do the items have accepted scales? (Hair, Black et al., 2019; Hardy and Ford, 2014; Hulland et al., 2018). Based on these criteria, the most appropriate measurement items for each variable were selected in both studies. Additionally, a pretest and pilot test, discussed in Section 6.9, were conducted to assess the validity of all measures for both studies. Table 19 presents the measurement items for the variables in Study 1.

Table 20 illustrates the measurement items for the variables in Study 2. All constructs operationalised in the following tables were clarified, and their measurement methods are discussed in Chapter 4.

Table 19: Measurement Items for Variables in Study 1

Latent variable (construct)		Measurement items	Source adapted from
Interaction with peers (IWP): The extent of interaction, dialogue, discussion, and information exchange between students and peers through educational SNSs (Blasco-Arcas et al., 2013)	IWP1	myU gives me the opportunity to interact with my peers about course content and homework.	Blasco-Arcas et al. (2013)
	IWP2	myU facilitates dialogue with my peers.	
	IWP3	myU facilitates course discussions (such as exchange of information and ideas) with my peers.	
Interaction with teachers (IWT): The extent to which educational SNSs facilitate the interaction of students with their teachers in terms of dialogue, discussion, and information exchange (Blasco-Arcas et al., 2013)	IWT1	myU gives me the opportunity to interact with teachers about course content and homework.	Blasco-Arcas et al. (2013)
	IWT2	myU facilitates dialogue with teachers.	
	IWT3	myU facilitates course discussions (such as exchange of information, ideas, and feedback) with teachers.	
Collaborative learning (CL): The extent to which a group of learners work together through educational SNSs to solve a particular problem, finish a task, improve skills, evaluate one another's ideas, or produce a new product (Sarwar, 2019)	CL1	Using myU, I was able to improve my learning abilities through peer collaboration.	Sarwar (2019)
	CL2	Using myU, I was able to gain new skills from my peers.	
	CL3	Using myU, I was able to improve my understanding of topics through group discussion.	
Student engagement (SE): Students' emotional reactions through their use of educational SNSs, including their relationships with peers and teachers, as well as their attitudes, and interests in their study (Gunuc and Kuzu, 2015)	SE1	Using myU, I like to communicate with my peers to discuss homework, lessons, and talk about the day's events	Gunuc and Kuzu (2015)
	SE2	Using myU, I like to communicate with teachers to discuss the topics explained in class, assessments, and study problems, if any.	
	SE3	Using myU, I consider it important to study together with my peers.	
	SE4	Using myU, I feel that teachers are near me when I need them.	
Information quality (IQ): The degree to which system users (students) think that educational SNSs provide up-to-date, accurate, relevant, and easy to	IQ1	The course content in myU is up to date.	Isaac et al. (2019) Salam and Farooq (2020)
	IQ2	The content in myU is accurate for the course.	
	IQ3	The information provided by myU is relevant to the course content.	

Latent variable (construct)		Measurement items	Source adapted from
understand information (Isaac et al., 2019; Salam and Farooq, 2020)	IQ4	The information provided by myU is easy to understand.	
System quality (SQ): The degree to which the system users (students) believe that educational SNSs are easy to use, flexible, and understandable (Isaac et al., 2019; Salam and Farooq, 2020)	SQ1	myU is easy to use.	Isaac et al. (2019) Salam and Farooq (2020)
	SQ2	myU provides flexible features to interact with.	
	SQ3	I find myU features are understandable.	
Service quality (SERV): The quality of professional support provided by educational SNS administrators and developers, assessed through timeliness, responsiveness, and empathy (Al-Adwan et al., 2022; Salam and Farooq, 2020)	SERV1	The technical staff provide me with quick assistance in case of any difficulty in using myU.	Al-Adwan et al. (2022) Salam and Farooq (2020)
	SERV2	Technical staff are available to provide help with using myU.	
	SERV3	myU technical staff understand my specific needs.	
Actual use (myU use): The degree to which a student uses the capabilities of educational SNSs in terms of frequency and duration of use (Isaac et al., 2019)	myU1	On average, how frequently do you use myU? □ Once a month or less □ Once a week □ Several times a week □ Once a day □ Several times a day	Isaac et al. (2019)
	myU2	On average, how much time do you spend each time you use myU? □ Less than 10 minutes □ 10–20 minutes □ 21–30 minutes □ 31–40 minutes □ More than 40 minutes	
Student satisfaction (SS). The extent to which students believe that educational SNSs meet their educational requirements in terms of overall satisfaction (Cavus et al., 2021)	SS1	I am satisfied that myU meets my requirements.	Cavus et al. (2021) Hsu (2023)
	SS2	I am satisfied with the information provided by myU.	
	SS3	Overall, I am satisfied with myU.	
Student academic performance (SAP): The extent to which educational SNSs influence student performances based on knowledge acquisition, resource savings, and development of skills (Alamri et al., 2020; Hosen et al., 2021)	SAP1	myU helps me accomplish my tasks (such as homework, reports, and projects) on time.	Isaac et al. (2019) Alamri et al. (2020) Hosen et al. (2021)
	SAP2	myU saves my learning time.	
	SAP3	myU improves my comprehension of the concepts studied.	
	SAP4	Using myU helps me review and identify my mistakes in my studies.	
	SAP5	myU helps me acquire useful information.	
	SAP6	myU helps me acquire new communication skills.	

Note. Source: Author's own work

Table 20: Measurement Items for Variables in Study 2

Latent variable (construct)		Measurement items	Source adapted from
Perceived technology efficacy (PTE): Teachers' perceptions of students' ability to use educational SNSs for learning (Hsu and Chiu, 2004)	PTE1	I find that my students are able to use myU to find course content information.	Hsu and Chiu (2004)
	PTE2	I find that my students are able to use myU to send and receive messages.	
	PTE3	I find that my students are able to use myU to download and upload files.	
Perceived compatibility (PC): Teachers' perceptions of the degree to which educational SNSs are perceived as being consistent with the utility values, needs, and experiences of students (Islam, 2016)	PC1	I believe myU fits with most aspects of students' study (such as interacting with peers and faculty members, downloading course content, and uploading assignments).	Islam (2016)
	PC2	I believe myU fits with students' lifestyles.	
	PC3	I believe myU fits with the way students like to study.	
Performance expectancy (PE): Teachers' expectations of the usefulness of educational SNSs for students (Venkatesh et al., 2012; Wut et al., 2022)	PE1	I expect that my students would find myU useful to them in their studies.	Venkatesh et al. (2012) Wut et al. (2022)
	PE2	I expect that using myU would allow my students to accomplish more in their studies.	
	PE3	I expect that using myU in the educational process would help my students increase their ability to get useful information.	
Effort expectancy (EE): Teachers' point of view regarding students' chances of using educational SNSs with little effort, reflecting the degree of simplicity and ease of use of educational SNSs (Gharrah and Aljaafreh, 2021; Venkatesh et al., 2012)	EE1	I believe that my students find myU easy to use.	Gharrah and Aljaafreh (2021) Venkatesh et al. (2012)
	EE2	I believe that my students find using myU simple.	
	EE3	I believe that my students learn how to use myU quickly.	
Social influence (SI): The degree to which a teacher perceives that people important to the student (such as teachers, colleagues, and friends) believe the student should use educational SNSs (Farooq et al., 2017; Venkatesh et al., 2012)	SI1	When I use myU, my students find it useful.	Farooq et al. (2017) Venkatesh et al. (2012)
	SI2	I find that my students use myU when encouraged by their friends.	
	SI3	I find that my students use myU when encouraged by other colleagues (teachers).	
	SI4	I am able to influence my students to use myU.	
	HM1	I believe that my students find myU interesting to use.	Farooq et al. (2017) Venkatesh et al. (2012)
	HM2	When my students use myU, I believe that they find it an exciting way to learn.	

Latent variable (construct)		Measurement items	Source adapted from
Hedonic motivation (HM): The fun or pleasure derived from using educational SNSs (Farooq et al., 2017; Venkatesh et al., 2012)	HM3	I believe my students enjoy communicating with each other when using myU.	
Habit (HT): Teachers' perceptions of the extent to which students tend to perform behaviours automatically because of learning (Gharrah and Aljaafreh, 2021; Venkatesh et al., 2012).	HT1	I find that my students regularly use myU.	Gharrah and Aljaafreh (2021) Venkatesh et al. (2012)
	HT2	I find that it is natural for my students to use myU any time.	
	HT3	I find that using myU is something that students do without hesitation.	
Behavioural intention (BI): Teachers' perceptions of students' intention to use educational SNSs to achieve their educational goals (Cavus et al., 2021)	BI1	I think that my students are willing to use myU for the whole year.	Prasetyo et al. (2021) Venkatesh et al. (2012) Cavus et al. (2021)
	BI2	I think that my students have positive perceptions about myU.	
	BI3	I think that my students are motivated to use myU.	
	BI5	I think that my students may use myU in their future modules.	
Use behaviour (UB): Teachers' point of view on the degree to which a student uses the capabilities of an educational SNSs in terms of nature, extent, quality, and appropriateness of use (Ain et al., 2016; Alamri et al., 2020)	UB2	I think that my students use myU for interacting with teachers.	Ain et al. (2016) Alamri et al. (2020)
	UB3	I think that my students use a variety of different functions in myU (comments, direct messages, downloading course contents, uploading assignments, etc.).	
	UB4	I believe that my students use myU instead of meeting teachers face to face.	
Teachers' perceptions of student academic performance (TPSAP): Teachers' perceptions of students' ability to carry out academic tasks when using educational SNSs, measured in terms of the anticipated grade and achievement such as acquiring new skills and bolstering perseverance (Sabah and Altalbe, 2022)	TPSAP1	I expect my students to get new skills when they use myU.	Sabah and Altalbe (2022)
	TPSAP2	I expect my students to perform better academically when using myU.	
	TPSAP3	I anticipate that my students have good grades when using myU in courses.	
	TPSAP4	I expect that my students have better grades when using myU in courses.	

Note. Source: Author's own work.

As shown in Table 19 and
Table 20, all measurement items were adapted from prior validated scales, and no single item was used to measure any construct (variable) in the proposed research model. Scholars have criticised the use of single-item scales, citing several concerns, including a lack of sufficient correlation with the attribute being measured, challenges in operational validation, reduced measurement quality, and the potential risk these issues pose to the study (Hair, Black et al., 2019; Hair et al., 2022; Hulland et al., 2018). Consequently, multiple items were used for each variable (or construct) in both studies.

Using multiple items allows researchers to elicit specific responses. Rather than relying on a single response, this approach examines the average or typical response from a set of related items (Hair, Black et al., 2019). Furthermore, employing multiple items ensures that the construct is thoroughly represented, which enhances both reliability and validity (Gefen et al., 2011; Hulland et al., 2018). Best practice recommends using a minimum of three items per construct to ensure adequate identification of the construct (Hair, Black et al., 2019). As a result, multiple-item measures have become common for assessing constructs in social science research (Hair et al., 2022; Hulland et al., 2018).

All measurement items for the variables in the proposed research model for both studies (Table 19 and

Table 20) used a 5-point Likert scale ranging from 1 (*Strongly Disagree*) to 5 (*Strongly Agree*). As explained earlier, the second block of the questionnaire in both studies includes these items, and the Likert scales were treated as interval scales. There were several reasons for choosing a 5-point Likert scale. It is the most frequently used type of scale in information systems research. It is also a straightforward, practical scale for researchers to use when collecting data (Lietz, 2010; Sekaran and Bougie, 2016). Research suggests that a 5-point scale provides an accurate measure of respondents' evaluations, and exceeding five points on a rating scale does not enhance the reliability of the ratings (Dawes, 2008; Lietz, 2010). For these reasons, a 5-point Likert scale was deemed most suitable for use in both studies, particularly given the questionnaire distribution procedure.

6.8 Back-Translation

Back-translation is a common procedure in cross-cultural surveys to evaluate the accuracy of translations (Brislin, 1970). The research instrument, which included a valid set of items for both studies, was translated from English to Arabic by an accredited bilingual translation centre in Kuwait. The Arabic version was then reviewed by professional translators at the centre who were fluent in both English and Arabic. After a satisfactory review, the Arabic version was back-translated into English by the same accredited bilingual translation centre. The final version was compared with the original to verify the validity of the translation process and to ensure that the vocabulary used in both versions had equivalent meanings. Although there were minor variations, they did not affect the overall meaning of the text. Once the translation was completed, a pretest and a pilot study were conducted to ensure that participants in both studies understood all questions clearly. Appendix B includes the details of the back-translation process carried out by the accredited bilingual translation centre in Kuwait for both studies.

6.9 Pretest and Pilot Test

Both the pretest and the pilot test are key steps in studies such as these. Even though the author had numerous guidelines on designing and formulating questionnaire items, it is often infeasible to anticipate all the potential issues that may arise when administering a survey (Hulland et al., 2018). Therefore, pretesting and pilot tests are recommended to identify mistakes and weaknesses of the instruments from expert and respondent perspectives before distributing the questionnaire extensively to respondents (Sarstedt and Mooi, 2019). Although the pretest and the pilot test are both conducted before data collection, each serves a different purpose.

6.9.1 Pretesting

Pretesting is crucial to help researchers refine their questions and minimise measurement errors, which refer to the difference between the true value of a variable and the actually measured value (Hair et al., 2022). Pretesting ensures that each statement is clear and understandable (Hulland et al., 2018). According to Hunt et al.

(1982), issues with comprehension resulting from poorly formulated questionnaire items can be identified and addressed through a pretest procedure. This view aligns with the literature, which emphasises pretesting as a vital step in ensuring that questionnaire items are well developed. Pretesting has five primary purposes: (1) to ensure that the wording of statements is correct; (2) to verify the sequence of items; (3) to make sure respondents will understand all statements; (4) to check that instructions are explained clearly; and (5) to identify any need for additional items or the removal of irrelevant items based on expert feedback (Hulland et al., 2018; Saunders et al., 2019).

Pretesting is conducted with experts in the field, which may include scholars or individuals with relevant experience. The pretest requires a small sample of three to six experts and does not involve any statistical analysis. Instead, the researcher focuses on the validity of items through discussions with experts (Sarstedt and Mooi, 2019). In summary, pretesting assesses the questionnaire for content validity, which is the judgment of experts in the area on whether the measure is valid (Leavy, 2017).

In both studies, a pretest was conducted for the Arabic and English versions of the questionnaire, with feedback provided by three experts. These experts specialised in (1) information systems at the College of Business Administration and (2) education at the College of Education at Kuwait University. Expert evaluations of the questionnaires for both studies can be found in Appendix C. Each expert was asked to assess the questionnaire items collectively, focusing on several aspects, including the appropriateness of the scale, the clarity of instructions, the definition of constructs, and the representation of items. They were also invited to offer further suggestions, criticisms, and comments regarding the questionnaire items.

The experts generally indicated that all questionnaire items for both studies were clear and easy to understand (see Appendix C). However, the experts recommended some minor modifications and suggestions, which were taken into consideration. For example, the experts suggested writing “faculty members” instead of “teachers” in the questionnaires for both studies. This term is more appropriate in the case of Kuwait, where “teachers” typically refers to educators in schools, whereas educators in HEIs are known as “faculty members”. Therefore, this term was modified in the questionnaires to ensure greater clarity for respondents. Moreover, the experts suggested including a *fishing question* among the questionnaire items (see Appendices A and C). This concept refers to the deliberate inclusion of a specific instruction or

statement within the survey designed to identify respondents who may not be carefully reading or paying attention to the questions (Hair et al., 2017). Finally, changes were made to the questionnaire based on the expert feedback before starting the pilot test.

6.9.2 Pilot Test

Upon completion of pretesting, a pilot test of the questionnaires was conducted for both studies. The purpose of a pilot test is to conduct a preliminary analysis to assess the adequacy of the questions and evaluate whether the research design is applicable (Saunders et al., 2019). Practically, a pilot test can be conducted using a small group of individuals from the target sample to check the construct's reliability (Creswell and Creswell, 2017). The pilot test for both main studies was conducted in the Management Department of the College of Business Studies at PAAET. The pilot study lasted five days (16 April 2023 to 20 April 2023). For pilot tests, researchers recommend different sample sizes. In general, the larger the sample, the more accurate the results are. A sample of 10 to 30 individuals is usually recommended (Johanson and Brooks, 2010).

For the pilot study for Study 1, a 34-item questionnaire was distributed online via SurveyMonkey to students using the myU application, which took them approximately seven minutes to complete. To reach these respondents, teachers using the myU application were sent a direct message via the myU application to inform their students about the questionnaire and request their voluntary participation. Next, the link to the online SurveyMonkey questionnaire was sent to teachers, who forwarded it to their students, requesting their participation. Out of the 172 responses administered to the participants, 84 were valid. All respondents were required to have experience in using myU. This requirement was emphasised in the questionnaire by asking respondents to answer some confirmatory questions (see Appendices C and D). The sample used for the pilot study was not included in the main sample.

The 84 responses in this pilot test underwent reliability analyses. Reliability is the assessment of an instrument's consistency in measuring the concept it intends to measure (Creswell and Creswell, 2017). Indicator reliability (factor loadings) and internal consistency reliability (Cronbach's alpha) were used to check reliability in IBM SPSS 29.0 (IBM SPSS, 2023). According to Sekaran and Bougie (2019), the SPSS data management and analysis programme is designed to perform statistical data analysis, including descriptive statistics such as plots, frequencies, charts, and lists, as

well as sophisticated inferential and multivariate statistical procedures, as discussed in the following sections. IBM SPSS 29.0 is simply referred to as SPSS in the remainder of this thesis.

Appendix D shows the results for the pilot test for Study 1. Factor loadings were calculated for the sample of 84 responses to assess the extent to which the indicators were consistent with what they intended to measure (Urbach and Ahlemann, 2010). Factor loadings should be greater than 0.4. Any indicator with a factor loading value of less than 0.4 should be dropped from the main study. The results showed that all items met the suggested outer loadings (see Appendix D). Cronbach's alpha was calculated to assess the internal consistency of the construct and ensure that the instruments (items) were reliable. Hair, Black et al. (2019) reported that a cut-off point of 0.7 is required to consider a research item reliable with valid internal consistency. Any value of less than 0.7 is considered poor and unacceptable. A value greater than 0.8 is excellent, and a value greater than 0.9 is considered perfect (Hair, Black et al., 2019). Overall, the results showed a sufficient level of reliability of the scale, with Cronbach's alpha values greater than 0.7. Hence, the scale was considered suitable for data collection for Study 1 (see Appendix D).

For the pilot study for Study 2, a 38-item questionnaire was distributed online to participants (teachers using myU application) via SurveyMonkey. The questionnaire took approximately seven minutes to answer. Teachers were contacted through myU (by direct message via myU application) to inform them about the questionnaire and request their voluntary participation. Next, the questionnaire was sent to potential respondents for their participation. Of the 66 questionnaires that administered to participants, 37 were valid. These valid questionnaires were not included in the main data set for Study 2.

As in the pilot study for Study 1, the 36 valid responses in the pilot study for Study 2 were subjected to reliability analyses in SPSS. Appendix D shows the results from the pilot study. In the first run of the data, all items had factor loadings greater than 0.4 except for five items: Item 4 of behavioural intention (BI4: I think that my students recommend using myU); Item 1 of use behaviour (UB1: I think that my students use myU for interacting with peers); Item 1 of SNSs conditions (SNSsC1: I consider that my students have the resources necessary such as internet and devices to use myU); Item 2 of SNSs conditions (SNSsC2: I consider that my students have the knowledge necessary to use myU); Item 3 of SNSs conditions (SNSsC3: I consider that the

technical staff is available for assistance with any difficulties students may encounter in using myU). These items had factor loading below the accepted minimum value of 0.40 (see Appendix D).

The reason for these low values is that these specific items or indicators may not be sufficiently representative of the underlying construct. Experts also anticipated this situation in the pretest and before the pilot test. Because the study participants in Study 2 were teachers, they may not know whether students have the necessary resources to use educational SNSs such as the internet and devices (regarding SNSs conditions). There is also a plausible explanation for why the factor loadings fall below the accepted minimum value of 0.40 for items BI4 and UB4. Teachers do not know whether students recommend using educational SNSs (regarding BI4), nor do they know whether students use educational SNSs for interacting with peers (regarding UB1). Consequently, these items were eliminated, and modification was required in the second run. Appendix D shows the results after the second run, where all items exceeded the accepted minimum value for factor loadings.

Cronbach's alpha was calculated for the sample of 36 participants to assess the internal consistency of the constructs and ensure that the instruments (items) were reliable. A cut-off point of 0.7 is required to consider a research item reliable with valid internal consistency (Hair, Black et al., 2019). Overall, the results showed a sufficient level of reliability of the scale (Cronbach's alpha > 0.7), indicating that the scale was suitable for data collection in Study 2 (see Appendix D). Lastly, the questionnaires in both studies were revised based on the results of the pretesting and pilot test before actual data collection.

6.10 Data Analysis

After outlining the research design and data collection procedure, the data analysis is now described. Data analysis enables researchers to understand how each predictor influences the outcome variable (Cooley, 1978). The data analysis process for both studies consisted of two stages (see

Figure 17). The first stage was data preparation, and the second stage was statistical analysis. A variety of statistical software are available for data analysis. In both studies, SPSS was used, followed by partial least squares structural equation modelling (PLS-SEM) in SmartPLS 4 to test the measurement and structural models. Each stage of the data analysis process is outlined in the following sections.

6.10.1 Data Preparation

Before evaluating the research model (see

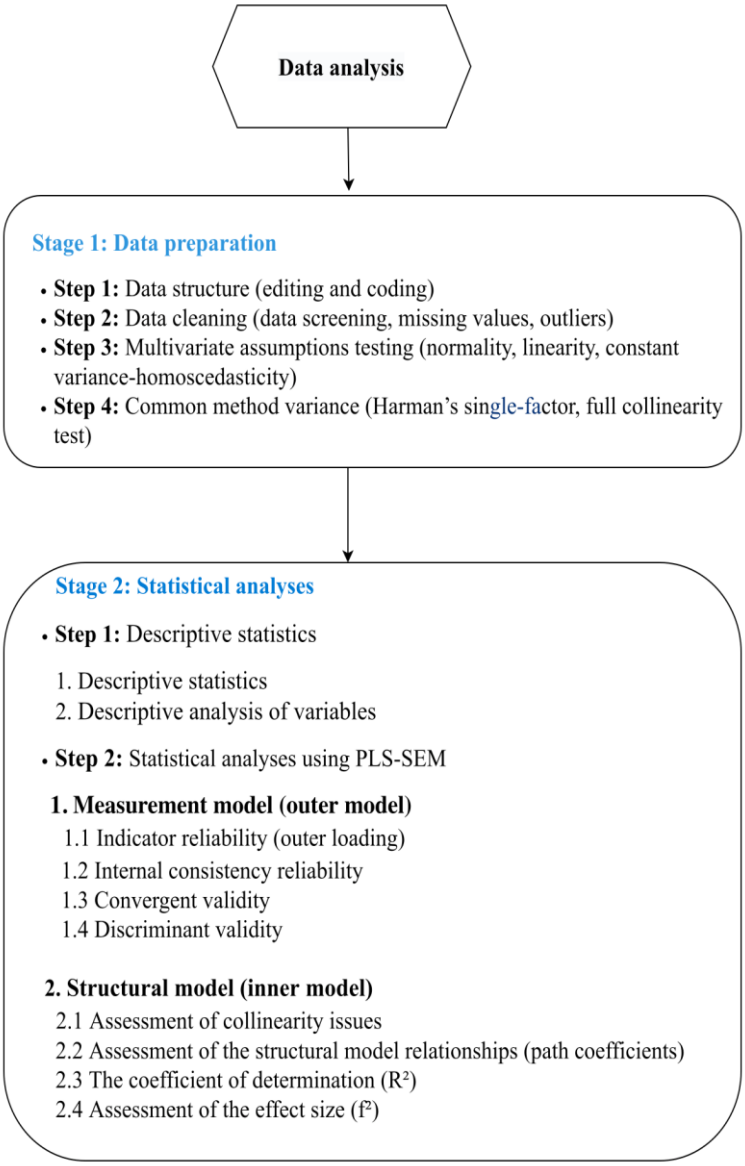
Figure 17), the first stage of data analysis was data preparation. This stage ensured that the data were accurate and appropriate for both studies. SPSS was used as the primary tool for data preparation (IBM SPSS, 2023). This software was chosen for several reasons. First, SPSS has been widely used in numerous survey-based studies in the social sciences (Sarstedt and Mooi, 2019). Second, SPSS enables effective data management and makes data analysis efficient because it clearly identifies the location of the cases and variables (Rahman, 2021). Third, SPSS offers a wide range of options and allows researchers to choose statistical methods tailored to their specific needs (Rahman, 2021). Finally, SPSS provides clear and organised statistical outputs that are distinct from the raw data set, making it easier to interpret and report results. This aspect of the data analysis is more challenging to manage in spreadsheet software such as Excel (Rahman, 2021).

Data preparation involved four steps (see

Figure 17): structuring the data, cleaning the data, testing assumptions, and testing for common method variance (Cooper and Schindler, 2014; Pallant, 2020). In the first step, the author loaded the data into SPSS for editing and coding prior to analysis. The next step was data cleaning in which the data were screened for all possible errors (such as straight-lining and data entry errors). Then, the data set was checked for any missing values and outliers. Next, the data were checked for assumption testing and common method variance. The results for each step are detailed in Chapter 7.

Figure 17 illustrates the steps in the data preparation process.

Figure 17: Data Analysis Process



Note. Source: Author's own work.

6.10.2 Statistical Analysis

Once the data had been cleaned, the data analysis process continued to the second stage of statistical analysis (see

Figure 17). The logical sequence of statistical tests from the social science literature was adopted at this stage (Hair, Page, and Brunsveld, 2019; Pallant, 2020). Statistical analysis involved two steps: descriptive statistical analysis and statistical analysis using SEM (see

Figure 17). Researchers can calculate descriptive statistics as a preliminary form of analysis as soon as they are sure that data preparation is complete (Hair, Page, and Brunsveld, 2019; Pallant, 2020). According to Hair, Page, and Brunsveld (2019), descriptive statistics are used to provide an understanding of the data. Descriptive statistics include various analyses. Frequency analysis and descriptive analysis of variables are the most commonly used analyses (Hair et al., 2019; Pallant, 2020). Chapter 7 provides a more detailed explanation of each analysis.

6.11 Statistical Analysis Using Structural Equation Modelling

The second step of the second stage was to apply SEM (see

Figure 17). SEM is a second-generation multivariate data analysis technique that has become an essential tool for testing theories and concepts (Hair, Black et al., 2019; Hair et al., 2022; Urbach and Ahlemann, 2010). Multivariate analysis refers to techniques used to examine the relationships among multiple variables simultaneously (Hair, Black et al., 2019). This second-generation technique allows researchers to test interrelationships simultaneously instead of using a step-by-step approach with a first-generation technique such as multiple regression (Hair, Black et al., 2019; Hair et al., 2022; Urbach and Ahlemann, 2010). In sum, SEM is a statistical technique for simultaneously testing and estimating causal relationships among multiple independent and dependent constructs (Gefen et al., 2000). Specifically, SEM comprises two different analysis techniques: covariance-based SEM (CB-SEM) and partial least squares SEM (PLS-SEM).

CB-SEM (using software such as LISREL, AMOS, and EQS) is primarily used to confirm or reject theories (i.e. a set of systematic relationships between multiple variables that can be tested empirically). It does so by assessing how well a proposed theoretical model estimates the covariance matrix of a sample data set. In contrast, PLS-SEM (using software such as SmartPLS, PLS-Graph, and VisualPLS) offers a causal-predictive approach, which focuses on explaining the variance in the model's dependent variables (Vinzi et al., 2009). PLS-SEM was selected as the data analysis procedure in both Study 1 and Study 2 to explore the factors related to the use of educational SNSs and their effect on SAP from student and teacher perspectives.

The decision to use PLS-SEM was based on several methodological considerations. First, the primary aim of this thesis was to extend and predict theories rather than strictly confirm them (Hair et al., 2022). Both Study 1 and Study 2 built upon established theoretical frameworks by incorporating additional constructs relevant to the use of educational SNSs in higher education. Second, the research models involved multiple latent constructs and complex relationships, which PLS-SEM is well-equipped to handle. Additionally, PLS-SEM is particularly suitable for exploratory extensions of existing theories and for maximising the explained variance of key endogenous constructs, aligning with the explanatory goals of this research (Hair et al., 2022; Ringle et al., 2024). Therefore, PLS-SEM was deemed more appropriate than CB-SEM for analysing the proposed models.

PLS-SEM was introduced by Herman Wold in the mid-1960s and has been acknowledged as a powerful analysis toolkit in various disciplines (Chin, 1998).

Compared to other SEM techniques, PLS-SEM has emerged as one of the most commonly used approaches to SEM in information systems and social science research, owing to its flexibility and predictive capabilities (Hair et al., 2022; Ringle et al., 2024).

Unlike CB-SEM, PLS-SEM is less stringent when dealing with non-normal data. PLS-SEM does not impose restrictions on the distribution and performs well with both normally and non-normally distributed data (Hair et al., 2017; Kock, 2019). The bootstrapping technique, discussed later, is the primary technique when testing the significance of the proposed relationships (Henseler et al., 2016). In addition, PLS-SEM has high statistical power and efficient parameter estimation, thereby controlling Type I error (Henseler et al., 2016). PLS-SEM is thus capable of handling the type of sophisticated and advanced research models that often exist in social sciences, such as model with formative constructs (explained later). It can also deal with different sample sizes (Becker et al., 2023; Hair et al., 2017; Kock, 2019; Ramayah et al., 2018). Table 21 compares CB-SEM with PLS-SEM.

Table 21: Comparison of CB-SEM and PLS-SEM

Criterion	PLS-SEM	CB-SEM
Research goal	Predicting key constructs or identifying key drivers; if research is exploratory or an extension of an existing theory	Testing theory (confirmation of theory) or comparing a theory with an alternative theory
Epistemic relationship between the variable and its items	Can be modelled in either formative or reflective mode	Typically, only modelled with reflective indicators; however, the formative mode is also supported
Model complexity	High complexity (e.g. 100 constructs and 1,000 indicators or items)	Small to moderate complexity (e.g. less than 100 indicators or items)
Data distribution assumption	Not necessary to meet the assumptions of normal data distribution (nonparametric)	Must meet the assumptions of normal data distribution (parametric)
Sample size	Small and large samples; minimal recommendations range from 30 to 100 cases	Large samples; minimal recommendations range from 200 to 800 cases

Note. Source: Urbach and Ahlemann (2010).

According to Anderson and Gerbing (1988), PLS-SEM consists of two steps: (1) measurement model (i.e. outer model) assessment and (2) structural model (i.e. inner model) assessment (see

Figure 17), explained later. As per Hair et al. (2022), dependent variables in PLS-SEM are called endogenous variables (i.e. constructs that are being explained in the model), and independent variables are called exogenous variables (i.e. constructs that explain other constructs in the model). Smart-PLS 4 software was used in both Study 1 and Study 2 to assess the measurement and structural models (Becker et al., 2023; Ringle et al., 2024).

6.12 Measurement Model Assessment

Measurement model assessment is the first step in PLS-SEM to test the research model in SmartPLS 4 software (see

Figure 17). The measurement model is also called the outer model. It specifies the relationships between variables (constructs) and their items (indicators) in the model (Hair et al., 2022). The main focus of the measurement model assessment is item reliability and validity. According to Hair et al. (2022), measurement items are deemed reliable if they consistently measure the concepts they are intended to measure. Similarly, measurement items are deemed valid if they accurately measure their intended concept. Hair et al. (2022) explained that researchers may proceed with structural model testing, the second step in PLS-SEM, once all measurement model requirements have been met. To evaluate a measurement model, it is important to know how the latent variables (constructs) are measured.

Generally, there are two ways to measure constructs. Reflective measurement is when items (indicators) represent a construct (Hair et al., 2022). All reflective indicators are interchangeable and highly correlated, and deleting any indicator does not change the meaning of the construct (Hulland, 1999; Urbach and Ahlemann, 2010). Formative measurement is when the items (indicators) form the construct using linear combinations (Hulland, 1999; Urbach and Ahlemann, 2010). Each indicator in formative measurement has a specific meaning that explains the construct. Therefore, indicators are not interchangeable. Unlike reflective measurement, the omission of any indicators in formative measurement can potentially affect the content validity of the measured variable (Hair et al., 2022; Urbach and Ahlemann, 2010). These two forms of construct measurement also differ in the direction of the arrow in the research model. In reflective measurement, the arrow points from the latent variable to its indicators. In formative measurement, the arrow points from the indicators to the latent variable (Hair et al., 2022; Urbach and Ahlemann, 2010).

All constructs in both studies were defined as reflective constructs. This approach was aligned with the theoretical understanding of the variables and the measurement scales used from previous research. The indicators were regarded as manifestations of the underlying latent construct, meaning that any changes in the construct were anticipated to be reflected in all indicators. Moreover, the indicators shared conceptual similarities, were highly correlated, and were largely interchangeable, key characteristics of reflective measurement models (Hair et al., 2022; Hulland, 1999). Therefore, specifying a reflective measurement was deemed appropriate for all constructs in both studies. To assess the measurement model in both studies, indicator reliability (outer loadings), internal consistency reliability, convergent validity, and

discriminant validity were evaluated (see Figure 17). These assessments were conducted to determine whether the measurement model was reliable and valid (Hair et al., 2017; Hair et al., 2022).

6.12.1 Indicator Reliability (Outer Loadings)

The first stage of assessment is to examine the outer loadings of the indicators (items), as shown in

Figure 17. Outer loading analysis assesses the extent to which indicators are consistent with what they are intended to measure (Urbach and Ahlemann, 2010). High outer loadings on a construct indicate that the associated indicators have much in common, which is captured by the construct. The size of the outer loading is also commonly called indicator reliability (Hair et al., 2022). Hair et al. (2022) recommended that the outer loadings should be 0.708 or higher to indicate that the construct can explain at least 50% of the indicator's variance. In contrast, outer loadings with a value of less than 0.4 should be discarded (Hair et al., 2022; Urbach and Ahlemann, 2010). Meanwhile, the items with outer loadings greater than 0.4 can be accepted if the construct has an average variance extracted (AVE) score of at least 0.5, as discussed later (Hair et al., 2022; Hulland, 1999; Urbach and Ahlemann, 2010).

6.12.2 Internal Consistency Reliability

Internal consistency reliability is the second criterion to be evaluated (see

Figure 17). It refers to measuring the reliability based on the intercorrelation between items (indicators) of the same variable. Cronbach's alpha (α) is often used to assess constructs' internal consistency (Hair, Black et al., 2019; Urbach and Ahlemann, 2010). An α value of 0.7 or higher is regarded as acceptable to confirm the consistency of a construct. Any value below 0.7 is considered poor and unacceptable, whereas values greater than 0.8 are excellent, and values greater than 0.9 are considered perfect (Gefen et al., 2000; Hair et al., 2022).

There have been criticisms of using Cronbach's alpha to measure reliability. For instance, the value of Cronbach's alpha is often said to underestimate true reliability (Hair et al., 2017; Sijtsma, 2009). Therefore, due to its deficiency, McNeish (2018) suggested an alternative reliability test, namely the composite reliability (CR) index. Chin (1998) described CR as a more rigorous estimate of reliability than Cronbach's alpha because it can determine whether the specific indicators are sufficient in their representation of the respective constructs. CR should be greater than 0.7 to indicate adequate internal consistency (Hair et al., 2022).

6.12.3 Convergent Validity

Convergent validity (see

Figure 17) refers to the extent to which a measure (item or indicator) correlates positively with alternative measures (items or indicators) of the same construct (Hair et al., 2022; Urbach and Ahlemann, 2010). To assess convergent validity, the average variance extracted (AVE) is measured (Fornell and Larcker, 1981). The AVE should be greater than 0.5, indicating that the measure explains at least 50% of the variance of the assigned indicators and supports a sufficient level of convergent validity (Chin, 2010; Hair et al., 2022).

6.12.4 Discriminant Validity

Discriminant validity (see

Figure 17) is the extent to which a construct is truly distinct from other constructs within a research model (Hair et al., 2022). Henseler et al. (2015) recommended using the heterotrait-monotrait ratio of correlations (HTMT), which measures the ratio of correlations within constructs to correlations between constructs. The HTMT value should be below 0.90 to establish discriminant validity (Franke and Sarstedt, 2019; Henseler et al., 2015). If, after performing these calculations, both reliability and validity requirements are met, the structural model can be assessed. A summary of the guidelines for measurement model assessment is provided in Table 22.

Table 22: Guidelines for Measurement Model Assessment

	Property	**Criterion**	**Guidelines**
1	Indicator reliability (outer loading)	Factor loadings	Factor loadings > 0.708 (Hair et al., 2022); outer loading > 0.4 acceptable if construct's AVE > 0.5 (Hair et al., 2022; Urbach and Ahlemann, 2010)
2	Internal consistency reliability	Cronbach's alpha (α) Composite reliability (CR)	α > 0.7 (Gefen et al., 2000; Hair et al., 2022) CR > 0.7 (Hair et al., 2022)
3	Convergent validity	Average variance extracted (AVE)	AVE > 0.5 (Fornell and Larcker, 1981; Hair et al., 2022)
4	Discriminant validity	Heterotrait-monotrait ratio of correlations (HTMT)	HTMT< 0.9 (Franke and Sarstedt, 2019; Henseler et al., 2015)

Note. Source: Author's own work.

6.13 Structural Model Assessment

After assessing the measurement model, the structural model is assessed (see

Figure 17) in the second step of PLS-SEM (Hair et al., 2022). The structural model represents the theoretical or conceptual element of the path model. The structural model (also called the inner model in PLS-SEM) includes the latent variables and their path relationships (Hair, Black et al., 2019). In alignment with standard PLS-SEM practice, collinearity, the structural model relationships, the coefficient of determination (R^2), and the effect size (f^2) were analysed for both Studies to assess the structural model (Hair et al., 2022; Wang et al., 2023).

6.13.1 Assessment of the Structural Model for Collinearity

Collinearity assessment is important and is the first step in structural model evaluation. It is conducted to ensure that the constructs within the structural model are distinct (Hair, Black et al., 2019; Hair et al., 2022). Multicollinearity refers to the degree to which two or more constructs in a structural model are correlated (Hair, Black et al., 2019). One way to assess multicollinearity is by examining the variance inflation factor (VIF). According to Hair et al. (2022) and Kock (2015), the standard cut-off value for VIF is 5, indicating that values below this threshold do not threaten the integrity of the structural model results.

6.13.2 Assessment of the Structural Model Relationships

The second step (see

Figure 17) is to evaluate the structural model relationships (i.e. the path coefficients), which represent the hypothesised relationships among the constructs (variables). For hypothesis testing in both Studies, the results of each path relationship in the model were obtained using a bootstrapping procedure (a non-parametric test in PLS-SEM for non-normally distributed data) in SmartPLS 4. In bootstrapping, the original sample is replaced by repeated random samples to estimate standard errors for hypothesis testing (Becker et al., 2023; Hair et al., 2022). Becker et al. (2023) suggested performing bootstrapping with 10,000 resamples. According to Urbach and Ahlemann (2010), researchers should check the path coefficient's significance, algebraic sign, and magnitude when testing hypotheses.

As recommended by Hair (2022), to confirm the significance of the hypothesised relationships (i.e. the path coefficients), the *p*-value should be less than 0.05. The significance of the relationship can also be determined based on (1) a statistical test (i.e. *t* value) and (2) confidence intervals. (1) The hypothesised relationship is statistically significant when *t* is greater than 1.645 for the one-tailed test at the 5% significance level ($\alpha = 0.05$). (2) The hypothesised relationship is also statistically significant when the value zero does not fall between the upper and lower limits of the confidence interval. All these statistical procedures for all paths can be performed using the SmartPLS 4 bootstrapping function.

After testing the significance of the hypotheses, the value and sign of the path coefficients should be assessed to support the hypotheses. The path coefficients have standardised values, called standardised β. These values lie approximately between −1 and +1. Although values can be smaller or larger, they almost always fall between these bounds (Hair et al., 2022). In this process, the variables are transformed into variables with a mean of 0 and a standard deviation of 1 (Sekaran and Bougie, 2019). This transformation is usually performed in social science research to enable the comparison of the relative strength of effect across different variables, and it indicates the direction of the relationship between dependent and independent variables in a meaningful way (Hair et al., 2022; Sekaran and Bougie, 2019). This raw data transformation is recommended and is automatically supported by software packages such as SmartPLS when running the PLS-SEM algorithm (Hair et al., 2022).

An estimated standardised β value close to +1 indicates a strong positive relationship, whereas a value close to −1 indicates a strong negative relationship. Such a relationship is usually statistically significant and supports the corresponding

hypothesis, indicating a difference from zero in the population (Hair et al., 2022; Urbach and Ahlemann, 2010). An estimated β coefficient closer to 0 indicates a weaker relationship and a lower relative importance of a construct in explaining another construct within the structural model. Very low values close to 0 are usually not statistically significant and do not support the corresponding hypothesis, indicating no difference from zero in the population (Hair et al., 2022; Urbach and Ahlemann, 2010). Moreover, Urbach and Ahlemann (2010) explained that, when the sign of the β coefficient of a path is contrary to the theoretically assumed relationship, it does not support the corresponding hypothesis. In contrast, a path with a sign that shows the hypothesised direction empirically supports the proposed causal relationship.

6.13.3 Assessment of the Coefficient of Determination (R^2)

The third step of structural model evaluation is to assess the model's explanatory power. The most commonly used measure to evaluate a structural model's explanatory power is the coefficient of determination (R^2) value (Hair et al., 2022; Urbach and Ahlemann, 2010). The R^2 value represents the proportion of variance in the endogenous constructs explained by the exogenous constructs linked to them and is known as the explained variance (Hair et al., 2022). Also, the R^2 value offers a measure of the model's predictive power or in-sample predictive power (Hair et al., 2022). The R^2 value ranges from 0 to 1, with higher values indicating greater predictive accuracy (Hair et al., 2022). Cohen (1988) suggested that R^2 values of 0.02, 0.13, and 0.26, respectively, indicate weak, moderate, and substantial levels of predictive accuracy.

6.13.4 Assessment of Effect Size (f^2)

The fourth step is to evaluate the effect size of each path in SEM using Cohen's f^2 (Cohen, 1988). The effect size measures whether an independent variable (exogenous construct) has a substantial impact on a dependent variable (endogenous construct) in the model (Cohen, 1988; Hair et al., 2022). The guidelines provided by Cohen (1988) were followed to measure the effect size for both studies. Based on Cohen's (1988) guidelines, values greater than 0.02, 0.15, and 0.35 represent small, medium, and large effects, respectively. In contrast, effect size values of less than 0.02 indicate no measurable effect (Cohen, 1988). Table 23 summarises the guidelines for assessing the structural model.

Table 23: Guidelines for Structural Model Assessment

	Property	Criterion	Guidelines
1	Collinearity	Variance inflation factor (VIF)	VIF ≤ 5.0 (Hair et al., 2022 ; Kock, 2015)
2	Structural model relationships	Path coefficients	*p*- value < 0.05 *t* value > 1.645 (one-tailed test) For the confidence interval, the value 0 should not fall between the lower and upper limits Standard β between −1 and +1 (Hair et al., 2022; Urbach and Ahlemann, 2010)
3	Coefficient of determination (R^2)	Coefficient of determination (R^2)	Three different levels (Cohen, 1988): > 0.26 (substantial) > 0.13 (moderate) > 0.02 (weak)
4	Effect size (f^2)	Effect size (f^2)	Three different levels (Cohen, 1988): > 0.35 (large) > 0.15 (medium) > 0.02 (small)

Note. Source: Author's own work.

6.14 Ethical Considerations

The consideration of ethical issues is crucial in social science research. It applies to all stages before, during, and after data collection (Saunders et al., 2019). In studies that neglect ethical issues related to data collection, respondents tend to be less cooperative or compliant, making it difficult to collect data (Sekaran and Bougie, 2016). According to Saunders et al. (2019), the confidentiality and anonymity of respondents in social science research are key ethical considerations. Thus, researchers should ensure that all participants know that all efforts will be made to protect their confidentiality.

The questionnaires for Study 1 and Study 2 each contained a cover letter (see Appendix A) explaining the purpose of the study, indicating that participation was voluntary, and confirming that responses would be treated confidentially. Also, participants were free to withdraw from the study at any time, and the researcher's contact details were given in the cover letter so that respondents could consult the author regarding any ethical concerns. In addition, all respondent information was protected and used only for the purposes of academic research. Respondents were also informed that the information they provided would not be used in any future research. An application was submitted to the Norwich Business School Research Ethical

Committee at the University of East Anglia. Approval for the research project was received on 7 December 2022. Appendix E shows the ethics application and participant information sheet for both Study 1 and Study 2.

6.15 Chapter Summary

This chapter outlines the methodological framework used to investigate the factors that influence SAP through the use of educational SNSs, considering both student and teacher perspectives. Following a positivist research paradigm and utilising a quantitative research design, the study employed a survey-based data collection approach and performed PLS-SEM analysis to test the proposed theoretical models. The chapter details the target population, the sampling strategy, the questionnaire development process, instrument validation procedures, data collection methods, and the analytical techniques used to assess both the measurement and structural models. It also addressed the ethical considerations guiding the research. The following chapter will present the analysis of the data collected from both studies.

7 Data Analysis and Results

7.1 Introduction

The main purpose of this chapter is to present the results of the data analysis and hypothesis testing for both studies. After this chapter introduction, the data analysis for Study 1 is presented. This analysis first describes the data preparation process, including data structure creation, data cleaning, assumption testing, and common method variance (CMV) assessment. Next, the chapter explains the respondent profile and descriptive analysis. Then, the results of the measurement model and structural model are presented. This analysis of the results of Study 1 is followed by the data analysis for Study 2 (Section 7.6), applying the same data analysis processes as for Study 1. SPSS 26.0 and SmartPLS 4 were used for the data analysis in this thesis.

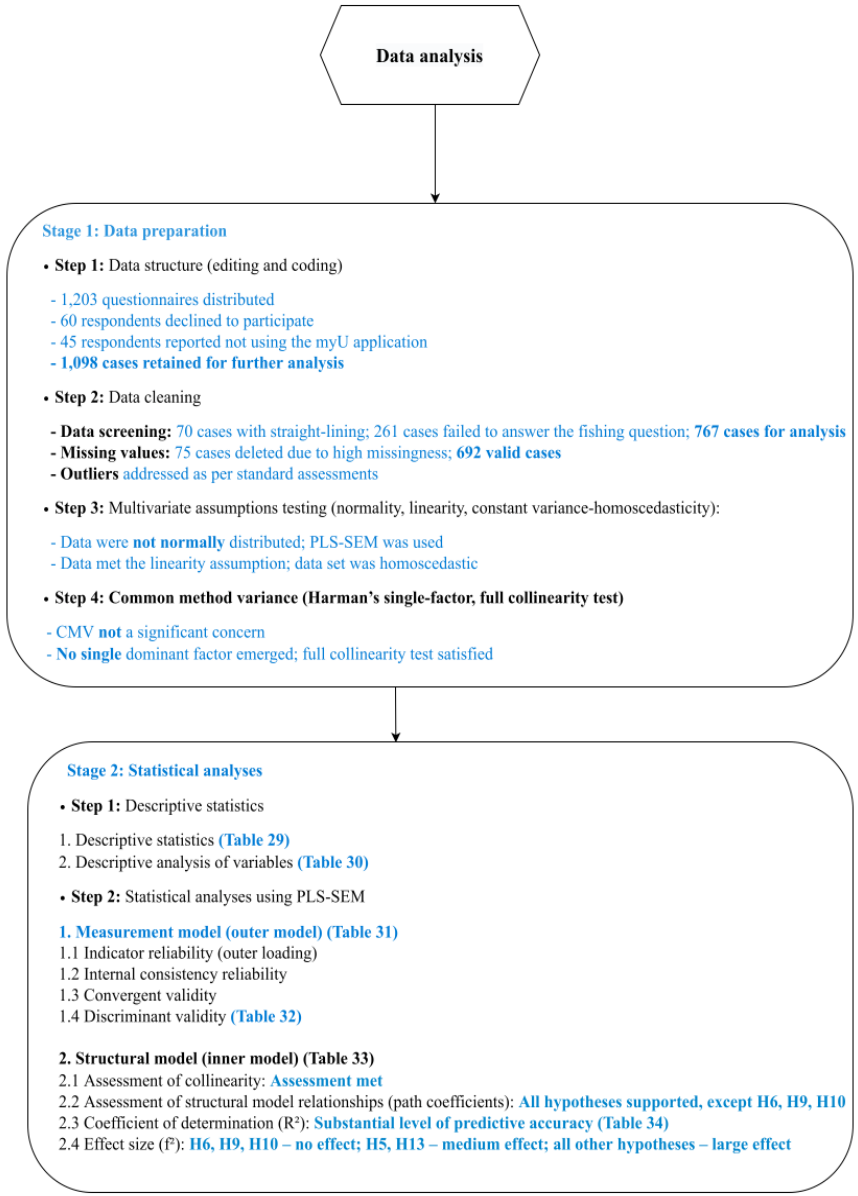
7.2 Data Preparation and Data Analysis for Study 1

This section presents the results of the data analysis and the findings arising from Study 1. As explained in Chapter 6, data analysis consisted of two stages: data preparation and statistical analysis. Each stage of the data analysis for Study 1 is explained in detail in the following sections.

Before evaluating the research model, the data were first prepared. Data preparation involved four steps (see

Figure 18): creating the data structure, cleaning the data, testing assumptions, and assessing common method variance. These steps are explained in the following sub-sections (Cooper and Schindler, 2014). SPSS 26.0 software was used as the primary tool for all steps of data preparation.

Figure 18: Data Analysis Process for Study 1



Note. Source: Author's own work.

7.2.1 Data Structure

Study 1 used an online data collection tool (SurveyMonkey). Therefore, the first step after data gathering was to create the data structure. First, the data file was downloaded directly from SurveyMonkey and imported into SPSS for analysis. Next, the variables were labelled. As explained in Chapter 6, the questionnaire consisted of closed-ended questions. The closed-ended questions comprised 28 items for the independent variables, 6 items for the dependent variables, and 6 demographic items.

The next step was coding. Categories were assigned, as numbers or symbols, so that items could be measured based on a certain number of groups or categories of responses (Cooper and Schindler, 2014; Hair et al., 2017). For Study 1, the responses to the items for all independent and dependent variables were pre-coded. Numbers were assigned to possible responses on the questionnaire ahead of time. A 5-point scale was used ranging from 1 (*Strongly Disagree*) to 5 (*Strongly Agree*). Later, all responses (e.g. responses to demographic questions) were post-coded, with a number assigned to each response category (Hair et al., 2017).

From 18 May to 30 July 2023, 1,203 questionnaires were received on SurveyMonkey. However, 60 respondents (i.e. students using the myU application at PAAET colleges) declined to participate. These cases were dropped from the study. In addition, 45 respondents reported not using the myU application. Therefore, 1,098 cases were retained for further analysis.

7.2.2 Data Cleaning

Data cleaning was the second step in the data preparation process. It was performed to confirm that the data had been input accurately. It involved checking for data screening, missing values, and outliers, as illustrated in

Figure 18 (Hair et al., 2019; Pallant, 2020).

7.2.2.1 Data Screening

Before analysing the data, data screening procedures must be performed. These procedures include checking for data entry errors and suspicious response patterns (Hair et al., 2017). According to Pallant (2020), a data entry error is a mistake that occurs when entering data into a computer system or database. Unfortunately, some errors may lead to incorrect or incomplete data, which can compromise data quality and reliability. To check for data errors, the sampling checking method in SPSS 26.0 was applied (Pallant, 2020). All fields were sorted in ascending or descending order to check for entry errors or any entry that was outside the accepted range for responses. For Study 1, no data entry errors were detected in the data set because the questionnaire was administered online. At this stage, the data were imported from SurveyMonkey to SPSS.

Another data screening procedure consists of checking for suspicious response patterns such as straight-lining and responses to fishing questions (see

Figure 18). Straight-lining occurs when a respondent indiscriminately provides the same response for most questions (Hair et al., 2017). Straight-lining was assessed in Study 1 by examining the standard deviation of each respondent's responses (Hair et al., 2017). According to Pallant (2020), responses should be excluded if the standard deviation is equal to zero. Of the 1,098 tested cases, 70 showed signs of straight lining. These responses were excluded from further analysis, leaving 1,028 cases.

In survey design, a fishing question is an instruction or statement that is deliberately included in the questionnaire to identify respondents who may not be carefully reading or paying attention to the content (Hair et al., 2017). Fishing questions often involve providing a specific instruction or request that, if followed blindly, would lead the respondent to select a particular response, even if that response would not logically or contextually fit the question (Hair et al., 2017). By including a fishing question, researchers can assess the validity of responses and identify respondents who may be rushing through the survey without thoughtful consideration (Hair et al., 2017). In Study 1, a fishing question was included in the service quality section, where respondents were asked to choose the response “Neutral”. Any case with an answer on this item other than “Neutral” was removed. Overall, 261 cases were removed for failing to answer the fishing question correctly, leaving 767 cases for further analysis.

7.2.2.2 Missing Values

The next data cleaning stage was to identify any missing values in the dataset. According to Hair et al. (2019), the issue of missing data occurs when a respondent does not answer one or more questions, either intentionally or unintentionally. The effect of missing data is to diminish the statistical power of a study or generate biased estimates that result in inaccurate conclusions (Kang, 2013). The seriousness of missing data depends on the configuration, quantity, and reason for missing data. A four-step process for identifying missing data and correcting for this issue was applied in Study 1 (Hair et al.,2019; Mooi et al., 2018).

1. **Step 1: Determine the type of missing data (ignorable or non-ignorable).** There are two types of missing data. The first type is ignorable, where it is allowable for respondents not to answer certain questions that are part of the data collection instrument. In such cases, specific corrections for missing data

are not needed (Hair et al., 2019). In contrast, non-ignorable missing data may be due to procedural factors during data entry (known processes) or failure by the respondents themselves to complete the entire questionnaire (unknown processes) because of a lack of interest or time (Hair et al., 2019). For non-ignorable missing data, it is important to identify the extent and pattern of the missing data before applying any correction. Therefore, the next step is to measure the extent of the missing data.

2. **Step 2: Determine the extent of the missing data.** In this step, the extent of missing data is determined to determine which actions (if any) are warranted. According to Hair et al. (2019), cases with high levels of missing data (i.e. 50% or more blank responses) or cases with missing data for the dependent variable, these cases should be deleted. Deletion of such cases helps avoid any artificial increase in relationships with independent variables. Following this step, the third step is to identify the randomness of missing data (Hair et al., 2019).
3. **Step 3: Diagnose the randomness of the missing data processes.** After determining the extent of the missing data, the next step is to ascertain the degree of randomness present in the missing data, which determines the appropriate corrective measures. There are three types of missing data processes (Hair et al., 2019; Mooi et al., 2018). First, missing completely at random (MCAR) refers to situations where data being missing is unrelated to both the observed and unobserved data. Second, missing at random (MAR) is where the probability of data being missing depends on the observed data but not on the missing data. Third, missing not at random (MNAR) occurs when the probability of data being missing is related to the missing values themselves, and this relationship is not explained by the observed data (Hair et al., 2019; Mooi et al., 2018). There are approaches to inspect the randomness of missing data. One of the most widely recommended tests is Little's MCAR test (Hair et al., 2019; Pallant, 2020). This overall test of randomness determines whether the missing data can be classified as MCAR or MAR. If Little's MCAR test yields a *p*-value greater than 0.05 (i.e. a non-significant result), then the missing data can be considered MCAR. If the test yields a *p*-value greater than 0.05 (i.e. a significant result), then the missing data can be considered MAR (Hair et al., 2019). The next step is to identify the appropriate corrections for missing data.

4. **Step 4: Apply corrections to treat the missing data.** In this step, the researcher must select an approach for dealing with missing data in the analysis. There are various techniques to treat missing data, such as listwise deletion, casewise deletion, mean value replacement, and expected maximisation (Hair et al., 2019). However, the choice of method may not matter and may not have a substantial effect on the findings because each method has its advantages and disadvantages (Hair et al. 2019).

This four-step process was applied in Study 1. In Step 1, all cases of missing data were unknown and non-ignorable because they were due to non-response by the respondent. Therefore, the missing data processes were examined. In Step 2, SPSS and Microsoft Excel were used to test the degree of missing data. Cases with substantial missing data (i.e. 50% or more blank responses) or cases with missing data for the dependent variable were deleted before moving on to Step 3. Using SPSS, 75 cases were observed to contain high levels of missing values (i.e. more than 50%), as shown in Table 24. These cases were confirmed using the formula "COUNTBLANK(item1 to item)" in Microsoft Excel to confirm the same number of cases containing missing data. These cases were deleted, leaving 692 valid responses.

Table 24: Study 1 Missing Data

Number of items		Frequency	Percent	Valid percent	Cumulative percent
	0.00	692	90.2	90.2	90.2
Valid	34.00	75	9.8	9.8	100.0
	Total	767	100.0	100.0	

Note. Source: Author's own work.

7.2.2.3 Outliers

Tabachnick and Fidell (2019) defined outliers as cases with an extremely high or low value on a single variable (univariate outlier) or an unusual combination of scores across two or more variables (multivariate outlier). Hair et al. (2019) defined outliers as cases with a unique combination of characteristics distinctly different from the other observations. Despite these different definitions, most researchers agree that outliers may distort statistical results when working with non-normal data (Hair et al., 2019; Mooi et al., 2018; Tabachnick and Fidell, 2019). Researchers have suggested several

reasons for the occurrence of outliers: (1) incorrect data entry; (2) treating codes for missing values as real data; and (3) entering observations that are not part of the population from which the sample is extracted (Hair et al., 2019; Mooi et al., 2018; Tabachnick and Fidell, 2019). There are methods to detect outliers. In Study 1, multivariate outliers were identified using the Mahalanobis Distance and Cook's Distance. These methods were chosen for their suitability in Study 1.

The Mahalanobis Distance (Mahalanobis D^2) is a multivariate evaluation of each observation across a set of variables. It has been shown to have robust performance in error detection in statistics (Hair et al., 2019). Its popularity as an approach to detecting multivariate outliers stems from its advantages in terms of mathematical tractability, affine invariance, and computational ease (Cohen et al., 2013). Using SPSS 29.0, in Study 1, the Mahalanobis D^2 was produced for every item by conducting multiple regression analysis, taking the case number as the dependent variable and all non-demographic measures as independent variables. A value of D^2/df, where df refers to the degrees of freedom, greater than 3.5 represents a potential multivariate outlier (Hair et al., 2017). As depicted in Table 25, the largest D^2 value was 3.483 (for case 347), among the 34 exogenous and endogenous items in this study. Hence, no cases were removed, given that all values were below the cut-off point of 3.5.

Table 25: Mahalanobis Distance and Outliers for Study 1

Case number	Mahalanobis Distance (D^2)	D^2/df
347	**118.43479**	**3.483**
294	109.37391	3.217
56	99.42093	2.924
464	99.42093	2.924
129	96.78751	2.847
537	96.78751	2.847
127	95.71732	2.815
535	95.71732	2.815
399	94.57744	2.782
304	88.57451	2.605

Note. Source: Author's own work.

Cook's Distance (Cook's D) was also used in Study 1 to identify multivariate outliers in SPSS 29.0. Cook's D reflects the amount that the regression coefficients would change if the outliers or influential data points were removed from the data set. In other

words, it measures the effect of deleting a particular observation (data point) on overall model fit (Hair et al., 2019). Identifying influential points using Cook's D can help detect outliers that disproportionately affect the regression results, allowing researchers to assess the robustness of their results (Cohen et al., 2013). A Cook's D value greater than 1.0 indicates a potential multivariate outlier (Cohen et al., 2013; Hair et al., 2019). The results in Table 26 show that the largest Cook's D value was 0.0384 (for case 684). Hence, no cases were removed because the value of Cook's D did not exceed the cut-off point of 1.0 in any case. In sum, all 692 cases were retained for further analysis because all values of D^2/df and Cook's D scores were below the established cut-off points.

Table 26: Cook's Distance and Outliers for Study 1

Case number	Cook's D
684	**0.0384**
276	0.0384
665	0.0260
257	0.0260
654	0.0130
246	0.0130
116	0.0114
524	0.0114
340	0.0080
39	0.0079

Note. Source: Author's own work.

7.2.2.4 Response Rate

As mentioned earlier, the total number of questionnaires distributed in Study 1 was 1,203. From the initial responses, 60 respondents stated they did not want to participate in the study, and 45 stated they did not use the myU application. Therefore, of the 1,203 responses that were initially returned, 692 valid and complete responses were retained after data cleaning for further analysis. Hence, the overall response rate was 57.5%, which is more than the 50% threshold recommended by Saunders et al. (2019). One reason for this high response rate is the brevity of the questionnaire, with the average respondent requiring seven minutes to complete it.

7.2.3 Assumption Testing

The next step after data cleaning (see

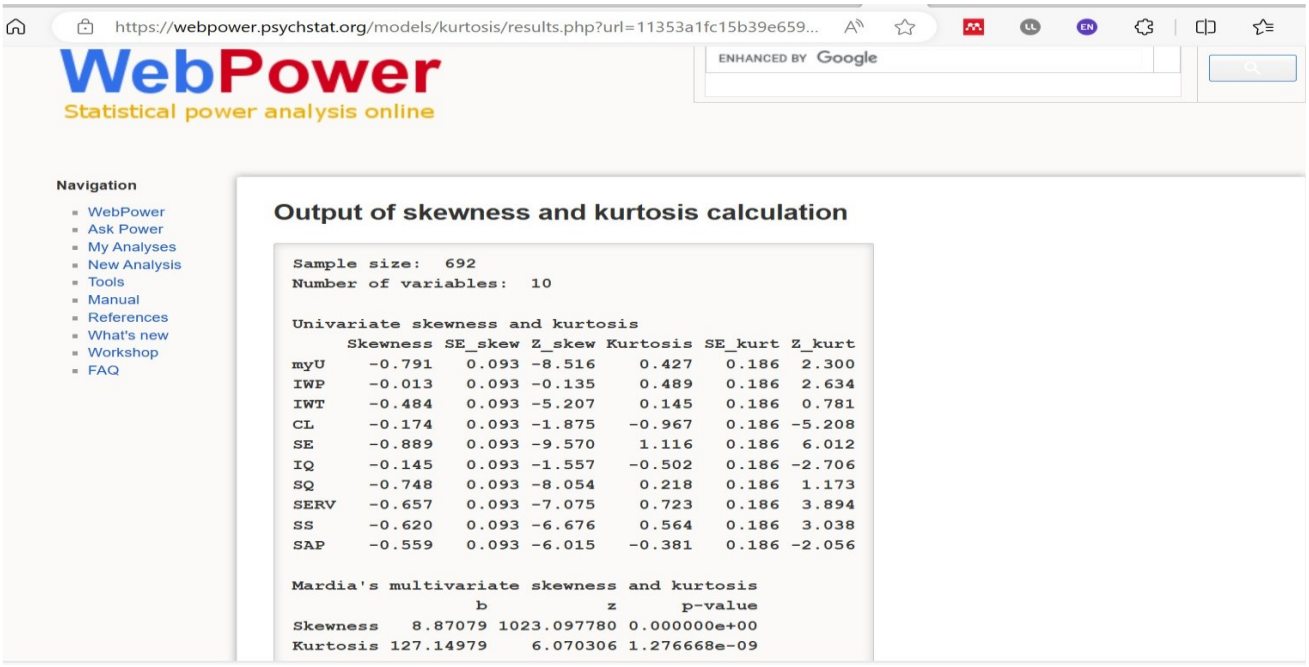
Figure 18) was to test the assumptions underlying the statistical multivariate analysis (Cohen et al., 2013; Hair et al., 2019; Mooi et al., 2018). There are two reasons for testing the assumptions. First, the complexity of relationships among a large set of variables may lead to distortions and biases. Second, the complexity of the analysis and results may hide indicators of assumption violations, which would be evident in simpler univariate analyses (Hair et al., 2019). In Study 1, the key multivariate analysis assumptions, including normality, linearity, and constant variance (homoscedasticity), were tested, as now discussed (Hair et al., 2019; Nimon, 2012).

7.2.3.1 Normality

The first assumption in multivariate analysis is normality, which is embodied in the assumption that each item and all linear combinations of items are normally distributed (Tabachnick and Fidell, 2019). Skewness and kurtosis are the key indicators to conclude that the distribution of the data is normal or non-normal (Cain et al., 2017; Hair et al., 2019; Tabachnick and Fidell, 2019). Skewness refers to the degree of symmetry in the data, whereas kurtosis refers to the degree of tailedness within a given data set (Hair et al., 2019). In Study 1, Mardia's multivariate skewness and kurtosis were used to check the normality of the data. This statistical procedure focuses on comparing the joint distribution of numerous variables with respect to a multivariate normal distribution (Cain et al., 2017). Thus, when using this measure, researchers can perform the normality test simultaneously for the overall model. A skewness between ± 3 and a kurtosis between ± 20 indicate that the data are normally distributed (Cain et al., 2017). Because SPSS cannot measure multivariate normality, Cain et al. (2017) and Hair et al. (2017) have suggested that the multivariate skewness and kurtosis should be calculated using the software available on the statistical analysis website WebPower, available at: https://webpower.psychstat.org/models/kurtosis/.

The results (see Figure 19) indicate that the data were non-normally distributed, as shown by the skewness (16.1853 > 3) and kurtosis (143.2638 > 20). All tests produced consistent results showing the violation of the assumption of the normal distribution of the data. Thus, PLS-SEM, a non-parametric analysis method, was used.

Figure 19: Results of Mardia's Multivariate Skewness and Kurtosis for Study 1



Note. Source: Author's own work using the WebPower website.

7.2.3.2 Linearity

The second key assumption in multivariate analysis is linearity. Linearity means that the relationship between the independent variables and the dependent variable can be represented by a straight line (Hair et al., 2019). The assumption is that the relationship between the independent and dependent variables is linear. In other words, a change in the independent variables is associated with a constant change in the dependent variable (Mooi et al., 2018). A common method for testing the assumption of linearity in multivariate analysis is to examine whether a straight line can be drawn on a scatter plot of the independent and dependent variables (Hair et al., 2019; Mooi et al., 2018).

However, researchers should be less concerned about this assumption if the sample size is large (Mooi et al., 2018). Accordingly, Nimon (2012) and Hair et al. (2019) reported that researchers may assume linear relationships in the data unless there is a strong theory specifying non-linear relationships. To evaluate the linearity assumption in Study 1, scatterplots were examined to assess the relationships among the variables. The visual inspection revealed approximately linear patterns, indicating that the assumption of linearity was satisfied. The figures in Appendix F demonstrate that the data met the linearity assumption, showing that a straight line could be drawn for all variables in Study 1.

7.2.3.3 Constant Variance (Homoscedasticity)

The third assumption relates primarily to dependence between variables. Homoscedasticity refers to the assumption that the dependent variable exhibits equal levels of variance (or dispersion) across the range of predictor or independent variables (Hair et al., 2019). The assumption of homoscedasticity is important to ensure the reliability and validity of statistical inferences, such as hypothesis testing, discussed later in the statistical analysis section (Mooi et al., 2018). If the assumption of homoscedasticity is violated (i.e. there is heteroscedasticity, the opposite of homoscedasticity), it can lead to inaccurate and biased results (Hair et al., 2019; Nimon, 2012).

Homoscedasticity is evaluated in multivariate analysis using several methods. One of the most common methods is to inspect a scatter plot (Hair et al., 2019; Nimon, 2012). In general, a scatter plot with a consistent spread of points around a horizontal line indicates homoscedasticity. A pattern that widens or narrows with increasing predicted values indicates heteroscedasticity (Hair et al., 2019; Mooi et al., 2018; Nimon, 2012). In Study 1, heteroscedasticity was tested by examining the pattern in a plot of the standardised residuals (i.e., the differences between observed and predicted values) against the predicted values (see Appendix F). The analysis revealed no discernible pattern, and the spread of residuals remained relatively constant across all levels of predicted values. Therefore, no evidence of heteroscedasticity was found, and the assumption of constant variance (homoscedasticity) was deemed to have held for the data set.

7.2.4 Common Method Variance (CMV)

Given that the data collected in Study 1 were from a single source, CMV was a possible concern, despite procedural measures before distributing the questionnaire. CMV is defined as a systematic error variance shared among variables measured using the same sources or methods (Richardson et al., 2009). Testing for CMV is crucial when data are collected from self-administered questionnaires, particularly when data on the predictor and criterion variables are obtained from the same person (Podsakoff et al., 2016). CMV may threaten the validity of the constructs in the model and create systematic bias in the study. To reduce CMV in Study 1, statistical measures were taken after data collection. To test the CMV, Harman's single-factor test and full collinearity test were used, following the standard techniques described in the literature (Tehseen et al., 2017).

Harman's single-factor test determines whether a single factor emerges from the principal component analysis or whether one factor explains the majority of the covariance among the variables in the unrotated factor analysis (Podsakoff et al., 2003). The results for Study 1 revealed 34 distinct factors, with the largest factor accounting for only 37.206% of the variance, less than the 50% cut-off value suggested by Podsakoff et al. (2003). The detailed results appear in Table 27. The results imply that CMV was not a serious problem in Study 1 because no single major factor emerged from the analysis.

Table 27: Common Method Variance for Study 1

Total variance explained						
Component	Initial eigenvalues			Extracted sums of squared loadings		
	Total	% of variance	Cumulative %	Total	% of variance	Cumulative %
1	12.650	37.206	37.206	12.650	37.206	37.206
2	3.841	11.297	48.503			
3	1.703	5.007	53.510			
4	1.495	4.397	57.907			
5	1.426	4.195	62.102			
6	1.181	3.473	65.575			
7	1.147	3.372	68.948			
8	.920	2.705	71.653			
9	.845	2.486	74.138			
10	.798	2.348	76.487			
11	.728	2.142	78.629			
12	.670	1.969	80.598			
13	.616	1.812	82.410			
14	.550	1.618	84.028			
15	.465	1.369	85.397			
16	.449	1.320	86.717			
17	.417	1.226	87.943			
18	.385	1.132	89.075			
19	.366	1.076	90.150			
20	.343	1.010	91.161			
21	.327	.962	92.123			
22	.307	.904	93.027			
23	.298	.877	93.904			
24	.271	.797	94.701			
25	.258	.759	95.460			
26	.241	.710	96.170			
27	.218	.640	96.811			
28	.204	.600	97.411			
29	.181	.531	97.943			
30	.163	.478	98.421			
31	.161	.472	98.893			
32	.150	.441	99.335			
33	.117	.343	99.678			
34	.110	.322	100.000			

Note. The extraction method was principal component analysis. Source: Author's own work.

The CMV was further tested using full collinearity assessment. Full collinearity indicates a high correlation between two or more variables (Hair et al., 2019). The full collinearity method is considered to generate a more stable outcome and is arguably more advanced than various traditional post-hoc analyses (Cohen et al., 2013; Hair et al., 2019). For Study 1, a full collinearity test was performed to determine whether any constructs had VIF values of less than or equal to 5 (Hair et al., 2022; Kock, 2015). The VIF values for all constructs ranged from 1.439 to 3.342 (see Table 28), again confirming that CMV was not a serious concern in this study.

Table 28: Full Collinearity Test for Study 1

Coefficients[a]			
Model		**Collinearity statistics**	
		Tolerance	**VIF**
1	myU	.414	2.414
	IWP	.362	2.765
	IWT	.405	2.469
	CL	.497	2.012
	SE	.299	3.342
	IQ	.691	1.447
	SQ	.695	1.439
	SERV	.375	2.665
	SS	.421	2.378

Note. a. Dependent variable: SAP – student academic performance. VIF – variance inflation factor. IWP – interaction with peers; IWT – interaction with teachers; CL – collaborative learning; SE – student engagement; IQ – information quality; SQ – system quality; SERV – service quality; myU – use of the myU application; SS – student satisfaction. Source: Author's own work.

7.3 Descriptive Analysis for Study 1

Once all the data had been cleaned and all assumptions had been tested, the next stage was to run the statistical analysis. As described in Chapter 6, the statistical analysis had two steps: descriptive statistical analysis and statistical analysis using SEM (see

Figure 18). Descriptive statistics have a number of uses. In Study 1, frequency analysis and descriptive analysis of variables were performed (Hair, Page, and Brunsveld, 2019; Pallant, 2020).

7.3.1 Frequency Analysis

According to Pallant (2020), frequency analysis involves collecting data on variables that capture respondents' background profiles. In Study 1, these values were gender, college, academic year, GPA, and use duration. As per Pallant (2020), respondents' demographic profile can be considered a categorical variable, which was explained in Chapter 6. The frequency distribution method was used to determine the number of occurrences of these variables. Table 29 presents the characteristics of the demographic profile for respondents in Study 1.

Table 29: Frequency Analysis (Respondent Profile) for Study 1

Item	Options	Frequency	Percentage (%)
Gender	Male	325	46.9
	Female	347	50.1
	Prefer not to answer	20	3.0
College	College of Basic Education	187	27.0
	College of Business Studies	181	26.2
	College of Technological Studies	170	24.6
	College of Health Sciences	89	12.9
	College of Nursing	65	9.4
Academic year	First year	103	14.9
	Second year	243	35.1
	Third year	230	33.2
	Fourth year and above	116	16.8
Grade point average (GPA)	4.00–3.60 points	79	11.4
	3.59–2.80 points	196	28.3
	2.79–2.00 points	165	23.8
	1.99 points or lower	163	23.6
	Prefer not to answer	89	12.9
Use duration (years using myU app)	Less than 1 year	169	24.4
	1–2 years	344	49.7
	More than 2 years	179	25.9

Note. Source: Author's own work.

Table 29 provides a snapshot of the respondent profile in terms of gender, college affiliation, academic year, GPA, and use duration (years using the myU app). In terms of gender distribution, 46.9% of the respondents were male, and a higher percentage (50.1%) were female. A small percentage of respondents (3%) preferred not to indicate their gender. In many Arab contexts, including Kuwait, some participants prefer to limit the amount of personal demographic information they share in online surveys due to cultural norms surrounding privacy, modesty, and cautious self-presentation in digital spaces (Hofstede, 2001). Previous research in similar Middle Eastern survey contexts has also reported low percentages of missing demographic responses, which are often attributed to privacy preferences rather than disengagement (Almaiah et al., 2019). Given the very low percentage of non-responses, this lack of disclosure is unlikely to affect the overall representativeness of the sample.

The respondents were enrolled at various colleges, with the College of Basic Education having the highest representation (27%), followed closely by the College of Business Studies (26.2%). The College of Technological Studies and the College of Health Sciences were also well represented, accounting for 24.6% and 12.9% of the sample, respectively. The College of Nursing had 9.4% representation.

The academic year with the most enrolment among respondents was the second year (35.1% of the sample). For the other academic years, the distribution was as follows: first year (14.9%), third year (33.2%), and fourth year and above (16.8%).

The GPA distribution reveals diverse academic performance among respondents. Those scoring between 3.60 and 4.00 points constituted 11.4% of the sample. Those with a GPA of 2.80 to 3.59 and 2.00 to 2.79 accounted for 28.3% and 23.8% of the sample, respectively. Respondents with a GPA of 1.99 points or less represented 23.6% of the sample. A considerable percentage (12.9%) chose not to disclose their GPA.

In terms of use duration (years using the myU application), 24.4% of respondents had been using myU for less than one year, 49.7% had been using it for one to two years, and 25.9% had been using it for more than two years.

The sample demographics were reasonably representative of the overall population. There were no significant differences in gender or college representation between the sample and the population. Additionally, the distribution of the duration of use of educational SNSs (in this case, the myU app) across groups within the sample was well balanced. Therefore, the sample demographics accurately reflected those of the population.

7.3.2 Descriptive Analysis of Variables

Descriptive analysis of variables is an attempt to understand how participants respond to each construct (Pallant, 2020). The means and standard deviations for each variable were analysed. As noted by Sekaran and Bougie (2019), the mean scores represent the central tendency of the data, whereas the standard deviation indicates the amount of variation in the data. Table 30 shows the descriptive analysis for all indicators (items) in Study 1, reporting the mean, minimum, maximum, and standard deviation for each item. The variable mean is also shown.

Table 30: Descriptive Analysis for Study 1

Constructs (variables)	Indicators (items)	N	Minimum	Maximum	Mean	Standard deviation
Actual use (myU) Mean = 4.295	myU1	692	1	5	4.25	0.811
	myU2	692	2	5	4.34	0.733
Interaction with peers (IWP) Mean = 4.370	IWP1	692	2	5	4.17	0.754
	IWP2	692	2	5	4.52	0.700
	IWP3	692	2	5	4.42	0.734
Interaction with teachers (IWT) Mean = 4.437	IWT1	692	3	5	4.44	0.690
	IWT2	692	2	5	4.40	0.674
	IWT3	692	3	5	4.47	0.630
Collaborative learning (CL) Mean = 4.070	CL1	692	3	5	4.27	0.684
	CL2	692	1	5	3.92	0.876
	CL3	692	1	5	4.02	0.857
Student engagement (SE) Mean = 4.250	SE1	692	1	5	4.29	0.790
	SE2	692	2	5	4.34	0.713
	SE3	692	2	5	4.05	0.864
	SE4	692	2	5	4.32	0.687
Information quality (IQ) Mean = 4.048	IQ1	692	1	5	4.18	0.807
	IQ2	692	1	5	4.08	0.777
	IQ3	692	1	5	4.18	0.755
	IQ4	692	1	5	3.75	0.982
System quality (SQ) Mean = 4.317	SQ1	692	2	5	4.35	0.745
	SQ2	692	2	5	4.38	0.682
	SQ3	692	1	5	4.22	0.821
Service quality (SERV) Mean = 4.067	SERV1	692	1	5	4.10	0.831
	SERV2	692	1	5	4.08	0.785
	SERV3	692	1	5	4.02	0.809
Student satisfaction (SS) Mean = 4.103	SS1	692	2	5	4.16	0.756
	SS2	692	1	5	4.10	0.848
	SS3	692	1	5	4.05	0.842
Student academic performance (SAP) Mean = 4.187	SAP1	692	3	5	4.34	0.655
	SAP2	692	3	5	4.33	0.689
	SAP3	692	1	5	3.83	1.133
	SAP4	692	1	5	4.05	0.921
	SAP5	692	2	5	4.28	0.741
	SAP6	692	3	5	4.29	0.702
	Valid N (listwise)	692				

Note. Source: Author's own work.

Table 30 shows that interaction with teachers had the highest mean (4.437), with the item IWT3 having the largest mean score of any item for this variable (4.47). Next, interaction with peers had a mean of 4.370, with the item IWP2 having the largest mean score (4.52). System quality, actual use of myU, student engagement, SAP, student satisfaction, collaborative learning, and service quality had mean values of 4.317, 4.295, 4.250, 4.187, 4.103, 4.070, and 4.067, respectively. For each of these constructs, the items with the highest mean were SQ2 (4.38), myU2 (4.34), SE2 (4.34), SAP1 (4.34,) SS1 (4.16), CL1 (4.27), and SERV1 (4.10). The lowest mean score was for information quality (4.048).

7.4 Measurement Model in Study 1

The research model for this study was tested in SmartPLS 4. According to Anderson and Gerbing (1988), PLS-SEM consists of two steps (see

Figure 18): measurement model assessment (validity and reliability of the measures) and structural model assessment (testing of the hypothesised relationships). As explained in Chapter 6, all constructs in the research model were multi-item constructs conceptualised as reflective rather than formative constructs. A reflective construct should consist of measures that are intercorrelated and have strong internal consistency (Hair et al., 2022). A set of rigorous tests, including indicator reliability (outer loadings), internal consistency reliability, convergent validity, and discriminant validity were performed to assess the measurement model. The results of the assessment of the measurement model are detailed in the following subsections.

7.4.1 Indicator Reliability (Outer Loadings)

The first analysis consisted of examining indicator reliability or outer loadings of the indicators (items). Outer loadings are used to evaluate the extent to which indicators are consistent with what they intend to measure (Urbach and Ahlemann, 2010). As recommended by Hair et al. (2022), outer loadings should be at least 0.4 to indicate that the construct can explain at least 50% of the indicator's variance. In contrast, the outer loadings with a value of less than 0.4 should be discarded (Urbach and Ahlemann, 2010).

Appendix F shows the results of the first run of the data analysis for Study 1. All items met the suggested outer loading criteria, except for IQ4 (myU provides comprehensive information, which I need for my course) and SAP3 (myU develops my comprehension of the concepts studied), which had outer loadings below the acceptance cut-off of 0.40. Hence, the results suggest that, for two items (IQ4 and SAP3), respondents did not strongly associate these statements with their corresponding constructs. These results could be because students primarily use myU for communication and course management rather than as a comprehensive knowledge source or a direct means of enhancing their conceptual understanding.

According to established PLS-SEM guidelines, these items should be removed because indicators with loadings below 0.40 contribute little explanatory power and can diminish construct reliability and validity (Hair et al., 2022). Crucially, the remaining items had acceptable loadings, supporting the overall robustness of the measurement model. Therefore, these two items were excluded from the second run of the analysis. Table 31 shows the results from the second run. All items had

satisfactory outer loadings ranging from 0.436 to 0.942. These results show that the measurement model demonstrated adequate indicator reliability. The figure in Appendix F illustrates the PLS-SEM algorithm results for the measurement model from SmartPLS 4 software for the second run.

Table 31: Results of the Reflective Measurement Model Assessment (Second Run) for Study 1

Construct (variable)	Items	Factor loading	Cronbach's alpha (α)	Composite reliability (CR)	Average variance extracted (AVE)
Actual use (myU)	myU1	0.913	0.840	0.925	0.861
	myU2	0.942			
Interaction with peers (IWP)	IWP1	0.789	0.779	0.868	0.688
	IWP2	0.828			
	IWP3	0.869			
Interaction with teachers (IWT)	IWT1	0.903	0.875	0.923	0.799
	IWT2	0.901			
	IWT3	0.878			
Collaborative learning (CL)	CL1	0.810	0.741	0.853	0.659
	CL2	0.780			
	CL3	0.843			
Student engagement (SE)	SE1	0.870	0.861	0.905	0.705
	SE2	0.829			
	SE3	0.834			
	SE4	0.827			
Information quality (IQ)	IQ1	0.436	0.853	0.814	0.613
	IQ2	0.897			
	IQ3	0.919			
System quality (SQ)	SQ1	0.751	0.735	0.849	0.653
	SQ2	0.817			
	SQ3	0.853			
Service quality (SERV)	SERV1	0.879	0.890	0.932	0.820
	SERV2	0.928			
	SERV3	0.909			
Student satisfaction (SS)	SS1	0.826	0.836	0.902	0.754
	SS2	0.849			
	SS3	0.927			
Student academic performance (SAP)	SAP1	0.842	0.898	0.925	0.713
	SAP2	0.779			
	SAP4	0.802			
	SAP5	0.900			
	SAP6	0.891			

Note. Source: Author's own work.

7.4.2 Internal Consistency Reliability

Next, the internal consistency reliability was evaluated (see

Figure 18) based on the intercorrelation among items within a variable (Hair, Black et al., 2019). Two tests were performed, using Cronbach's alpha (α) and composite reliability (CR). Based on the results in Table 31, the values for Cronbach's alpha (α) in Study 1 ranged from 0.735 to 0.898, which implies a satisfactory level of internal consistency reliability, exceeding the threshold of 0.7 recommended by Hair et al. (2022).

Table 31 also shows that all constructs in Study 1 recorded CR values greater than 0.70, which is the recommended threshold (Hair et al., 2022). The lowest composite reliability value was for information quality (0.814), followed by system quality (0.849), collaborative learning (0.853), interaction with peers (0.868), student satisfaction (0.902), student engagement (0.905), interaction with teachers (0.923), SAP (0.925), actual use of myU (0.925), and service quality (0.932), which explained more than 93% of total variance. These results indicate that the measurement model had acceptable internal consistency reliability.

7.4.3 Convergent Validity

Convergent validity (see

Figure 18) refers to the extent to which individual indicators (items) reflect their underlying constructs in comparison to indicators measuring other constructs (Hair et al., 2022; Urbach and Ahlemann, 2010). To confirm convergent validity, the Average variance extracted (AVE) should be at least 0.5 (Fornell and Larcker, 1981). The AVE in Study 1 was calculated using the PLS-SEM algorithm in SmartPLS 4 software. Table 31 shows that all of the constructs had AVE values greater than 0.5. The lowest AVE value was for information quality (0.613), followed by system quality (0.653), collaborative learning (0.659), interaction with peers (0.688), student engagement (0.705), SAP (0.713), student satisfaction (0.754), interaction with teachers (0.799), service quality (0.820), and actual use of myU (0.861). These results show that the measurement model demonstrated adequate convergent validity.

7.4.4 Discriminant Validity

Subsequently, the discriminant validity of the model was assessed (see

Figure 18). Discriminant validity is the degree to which items differentiate among constructs or measure distinct concepts. It is measured by determining the correlations between measures that have the potential to overlap (Ramayah et al., 2018). In Study 1, discriminant validity was tested using the heterotrait-monotrait ratio of correlations (HTMT), introduced by Henseler et al. (2015). The HTMT should be below 0.90 to establish discriminant validity (Franke and Sarstedt, 2019; Henseler et al., 2015). As shown in Table 32, the HTMT for all constructs in Study 1 was below the conservative threshold of 0.90, thereby establishing discriminant validity.

Table 32: HTMT Criterion for Study 1

	CL	IQ	IWP	IWT	SAP	SE	SERV	SQ	SS	myU
CL										
IQ	.083									
IWP	.659	.105								
IWT	.694	.060	.823							
SAP	.810	.067	.787	.783						
SE	.744	.071	.839	.686	.781					
SERV	.069	.650	.054	.061	.089	.106				
SQ	.771	.096	.839	.835	.748	.781	.101			
SS	.797	.094	.659	.686	.720	.726	.144	.842		
myU	.587	.060	.769	.567	.588	.843	.057	.701	.642	

Note. IWP – interaction with peers; IWT – interaction with teachers; CL – collaborative learning; SE – student engagement; IQ – information quality; SQ – system quality; SERV – service quality; myU Use – use of the myU application; SS – student satisfaction; SAP – student academic performance. Source: Author's own work.

These tests confirm that both reliability and validity requirements were met for Study 1. Next, the structural model was assessed.

7.5 Structural Model in Study 1

Following the assessment of the measurement model, the analysis continued with structural model evaluation. Assessment of structural models is used to determine their ability to predict one or more target constructs (Hair, Black et al., 2019). In Study 1,

the data were analysed based on a standard four-step evaluation method. Each step is explained in the following subsections.

7.5.1 Assessment of the Structural Model for Collinearity

The first step in the structural model evaluation is to assess collinearity (see

Figure 18). Collinearity diagnostics were performed to ensure that the constructs were not highly correlated within the structural model (Hair et al., 2022). Collinearity was tested using the variance inflation factor (VIF), with acceptable values being less than or equal to the threshold of 5 (Hair et al., 2022; Kock, 2015). Table 33 displays the results of the multicollinearity testing for Study 1. No VIF value was greater than or equal to 5 (values ranged from 1.012 to 2.734), indicating that collinearity issues did not threaten the structural model results.

Table 33: Summary of the Structural Model (PLS Bootstrapping) for Study 1

Hypothesis		Std. β	Std. error	*t* value	*p* value	Decision	Confidence interval (CI)		f^2	Effect size	VIF
							Lower (5%)	Upper (95%)			
H1	IWP -> CL	0.254	0.038	6.714	0.000	Supported	0.193	0.318	0.374	Large	1.858
H2	IWT -> CL	0.389	0.038	10.154	0.000	Supported	0.326	0.451	0.425	Large	1.858
H3	CL -> SE	0.314	0.028	11.383	0.000	Supported	0.268	0.359	0.429	Large	1.283
H4	SE -> SAP	0.535	0.040	13.366	0.000	Supported	0.470	0.602	0.430	Large	2.734
H5	IQ -> myU Use	0.148	0.070	2.131	0.017	Supported	0.007	0.220	0.164	Medium	1.372
H6	IQ -> SS	-0.057	0.067	0.842	0.200	Rejected	-0.137	0.097	0.005	No effect	1.405
H7	SQ -> myU Use	0.569	0.031	18.501	0.000	Supported	0.517	0.618	0.476	Large	1.012
H8	SQ -> SS	0.514	0.034	15.302	0.000	Supported	0.458	0.568	0.350	Large	1.494
H9	SERV -> myU Use	-0.052	0.046	1.143	0.126	Rejected	-0.113	0.037	0.003	No effect	1.366
H10	SERV -> SS	-0.047	0.044	1.075	0.141	Rejected	-0.130	0.015	0.003	No effect	1.370
H11	myU Use -> SS	0.256	0.039	6.485	0.000	Supported	0.192	0.321	0.357	Large	1.488
H12	myU Use -> SE	0.610	0.023	26.333	0.000	Supported	0.572	0.647	0.530	Large	1.283
H13	myU Use -> SAP	0.073	0.037	1.958	0.025	Supported	0.013	0.135	0.155	Medium	2.395
H14	SS -> SAP	0.338	0.030	11.248	0.000	Supported	0.289	0.388	0.452	Large	1.647

Note. IWP – interaction with peers; IWT – interaction with teachers; CL – collaborative learning; SE – student engagement; IQ – information quality; SQ – system quality; SERV – service quality; myU Use – use of the myU application; SS – student satisfaction; SAP – student academic performance; Std. β – β coefficient or standardised β value [−1, +1]; *t* value > 1.645 (one-tailed test); *p* value < 0.05; effect size (f^2) – > 0.35 (large), > 0.15 (medium), > 0.02 (small); VIF – variance inflation factor ≤ 5.0. Source: Author's own work.

7.5.2 Assessment of the Structural Model Relationships

The second step was to evaluate the statistical significance and relevance of the path coefficients (i.e. structural model relationships) based on the proposed hypotheses. For Study 1, 14 hypotheses were proposed for the constructs in the model. As discussed in Chapter 6, the bootstrapping technique (a non-parametric technique applied in PLS-SEM) was used to test the hypotheses in SmartPLS 4. The bootstrapping parameters were set to a 0.05 significance level, one-tailed test, and 10,000 subsamples.

The results in Table 33 indicate that interaction with peers and interaction with teachers had a significant positive effect on collaborative learning. Hence, H1 and H2 were supported: β = 0.254, *t* value = 6.714, *p* value < .05 (.000), CI [0.193, 0.318] and β = 0.398, *t* value = 10.154, *p* value < .05 (.000), CI [0.326, 0.451], respectively. Collaborative learning had a significant positive effect on student engagement, supporting H3: β = 0.314, *t* value = 11.383, *p* value < .05 (.000), CI [0.268, 0.359]. Also, student engagement had a significant positive effect on SAP, thus supporting H4: β = 0.535, *t* value = 13.366, *p* value < .05 (.000), CI [0.470, 0.602]. Table 33 shows that information quality had a significant positive effect on myU application use, supporting H5: β = 0.148, *t* value = 2.131, *p* value < .05 (.017), CI [0.007, 0.220]. However, information quality had no significant effect on student satisfaction, leading to the rejection of H6: β = -0.057, *t* value = 0.842, *p* value > .05 (.200), CI [-0.137, 0.097].

The results indicate that system quality had a significant positive effect on myU application use and student satisfaction. Hence, H7 and H8 were supported: β = 0.569, *t* value = 18.501, *p* value < .05 (.000), CI [0.517, 0.618] and β = 0.514, *t* value = 15.302, *p* value < .05 (.000), CI [0.458, 0.568], respectively. In contrast, service quality had no significant effect on myU application use or student satisfaction. Thus, H9 and H10 were rejected: β = -0.052, *t* value = 1.143, *p* value > .05 (.126), CI [-0.113, 0.037] and β = -0.047, *t* value = 1.075, *p* value > .05 (.141), CI [-0.130, 0.015], respectively. Moreover, myU application use had a significant positive effect on student satisfaction, student engagement, and SAP, thereby supporting H11, H12, and H13: β = 0.256, *t* value = 6.485, *p* value < .001 (.000), CI [0.192, 0.321]; β = 0.610, *t* value = 26.333, *p* value < .001 (.000), CI [0.572, 0.647]; and β = 0.073, *t* value = 1.958, *p* value < .05 (.025), CI [0.013, 0.135], respectively. Finally, student satisfaction had a significant positive effect on SAP, thereby supporting H14: β = 0.338, *t* value = 11.248, *p* value <

.001 (.000), CI [0.289, 0.388]. The figure in Appendix F illustrates the structural model for Study 1 (tested using PLS-SEM bootstrapping).

7.5.3 Assessment of the Coefficient of Determination (R^2)

After assessing the path coefficients, the next step was to examine the model's explanatory power using the coefficient of determination (R^2). As mentioned in Chapter 6, R^2 represents the amount of variance in the endogenous constructs that is explained by all the exogenous constructs linked to them, known as explained variance (Hair et al., 2022). The R^2 value also represents a measure of the model's predictive power, namely its in-sample predictive power (Hair et al., 2022). The R^2 value ranges from 0 to 1, with higher values indicating higher predictive accuracy (Hair et al., 2022). The indications of Cohen (1988) were followed for Study 1. According to these indications, R^2 values of 0.02, 0.13, and 0.26 indicate weak, moderate, and substantial levels of predictive accuracy, respectively.

For Study 1, SmartPLS algorithm was used to calculate R^2. As shown in Table 34, interaction with peers and interaction with teachers explained 35.1% of the variance in collaborative learning, which indicates a substantial level of predictive accuracy. Collaborative learning and myU application use explained 65.1% of the variance in student engagement, which indicates a substantial level of predictive accuracy. Information quality, system quality, and service quality explained 32.8% of the variance in myU application use, which also indicates a substantial level of predictive accuracy. Moreover, myU application use, information quality, system quality, and service quality explained 49.4% of the variance in student satisfaction, which indicates a substantial level of predictive accuracy. Finally, Table 34 shows that student engagement, myU application use, and student satisfaction explained 54.4% of the variance in SAP, which also indicates a substantial level of predictive accuracy (Cohen, 1988).

Table 34: Coefficient of Determination (R^2) for Study 1

Construct	R^2
CL	.351
SE	.651
myU Use	.328
SS	.494
SAP	.544

Note. CL – collaborative learning; SE – student engagement; myU Use – use of the myU application; SS – student satisfaction; SAP – student academic performance. Source: Author's own work.

Overall, the R^2 values for Study 1 were quite similar to those reported in most of the studies found in the literature. For example, Pham and Dau (2022) reported an R^2 value of 56%. Thus, the analysis implies that the model can predict up to 54.4% of the factors influencing SAP, which is considered acceptable for a social science study.

7.5.4 Assessment of Effect Size (f^2)

The effect size of each path in the structural equation model was evaluated using Cohen's f^2 (Cohen, 1988). The effect size measures whether an independent variable (exogenous construct) has a substantial impact on a dependent variable (endogenous construct). The effect size (f^2) analysis is interpreted according to Cohen's (1988) guidelines, whereby values greater than 0.02, 0.15, and 0.35 represent small, medium, and large effects, respectively. Effect size values of less than 0.02 indicate no measurable effect (Cohen, 1988).

Table 33 presents the effect sizes of the effects of the exogenous variables on the endogenous variables in Study 1. The values of 0.374 and 0.425 for interaction with peers and interaction with teachers indicate large effects on collaborative learning. The value of 0.429 for collaborative learning indicates a large effect on student engagement. Also, the value of 0.430 for student engagement indicates a large effect on SAP. Information quality had a medium effect on myU use ($f^2 = 0.164$) but had no measurable effect on student satisfaction ($f^2 = 0.005$). Table 33 shows that system quality had a large effect on myU use and student satisfaction (0.476 and 0.350, respectively). Also, service quality had no measurable effect on myU use or student satisfaction ($f^2 = 0$ .003 and 0.003, respectively). Moreover, myU use had a large effect on student satisfaction and student engagement, with values of 0.357 and 0.530, respectively. In contrast, myU use had a medium effect on SAP, with a value of 0.155.

Finally, student satisfaction had a large effect on SAP ($f^2 = 0.452$). These results are discussed and explained in detail in Chapter 8.

7.5.5 Summary of Hypotheses Testing

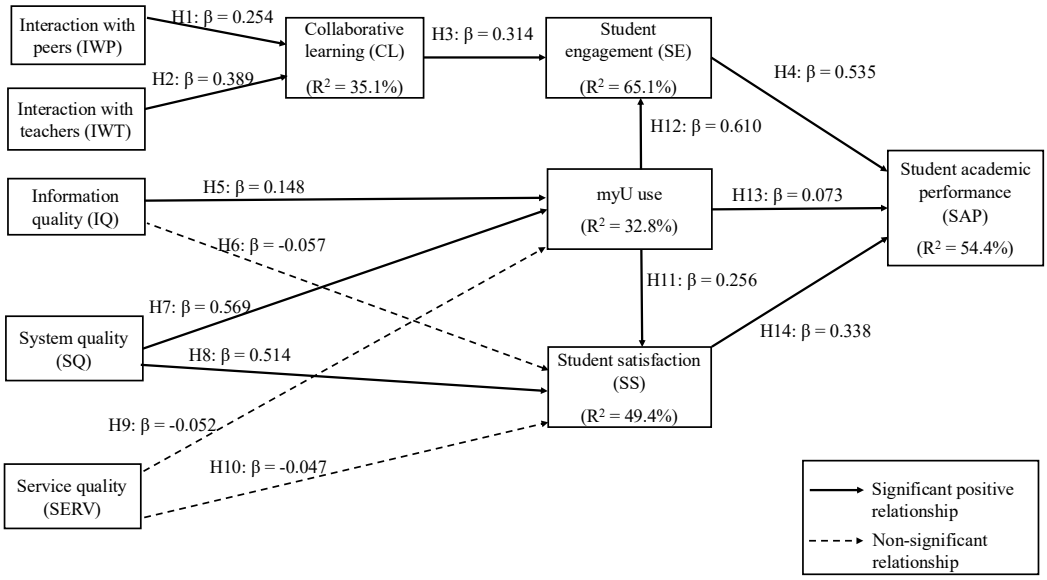
The 14 hypotheses formulated in Chapter 5 were tested using PLS-SEM. The results of the bootstrapping tests indicate that all proposed hypotheses for Study 1 were supported, except H6, H9, and H10. Table 35 summarises the results of the hypothesis testing, and Figure 20 illustrates the results of the path analysis.

Table 35: Summary of Hypothesis Testing Results for Study 1

No.	Hypothesis statement	Decision
H1	Interaction with peers has a positive effect on collaborative learning.	Supported
H2	Interaction with teachers has a positive effect on collaborative learning.	Supported
H3	Collaborative learning has a positive effect on student engagement.	Supported
H4	Student engagement has a positive effect on student academic performance.	Supported
H5	Information quality has a positive effect on myU application use.	Supported
H6	Information quality has a positive effect on student satisfaction.	Not Supported
H7	System quality has a positive effect on myU application use.	Supported
H8	System quality has a positive effect on student satisfaction.	Supported
H9	Service quality has a positive effect on myU application use.	Not Supported
H10	Service quality has a positive effect on student satisfaction.	Not Supported
H11	myU application use has a positive effect on student satisfaction.	Supported
H12	myU application use has a positive effect on student engagement.	Supported
H13	myU application use has a positive effect on student academic performance.	Supported
H14	Student satisfaction has a positive effect on student academic performance.	Supported

Note. Source: Author's own work.

Figure 20: Summary of the Results of the Path Analysis for Study 1



Note. Source: Author's own work.

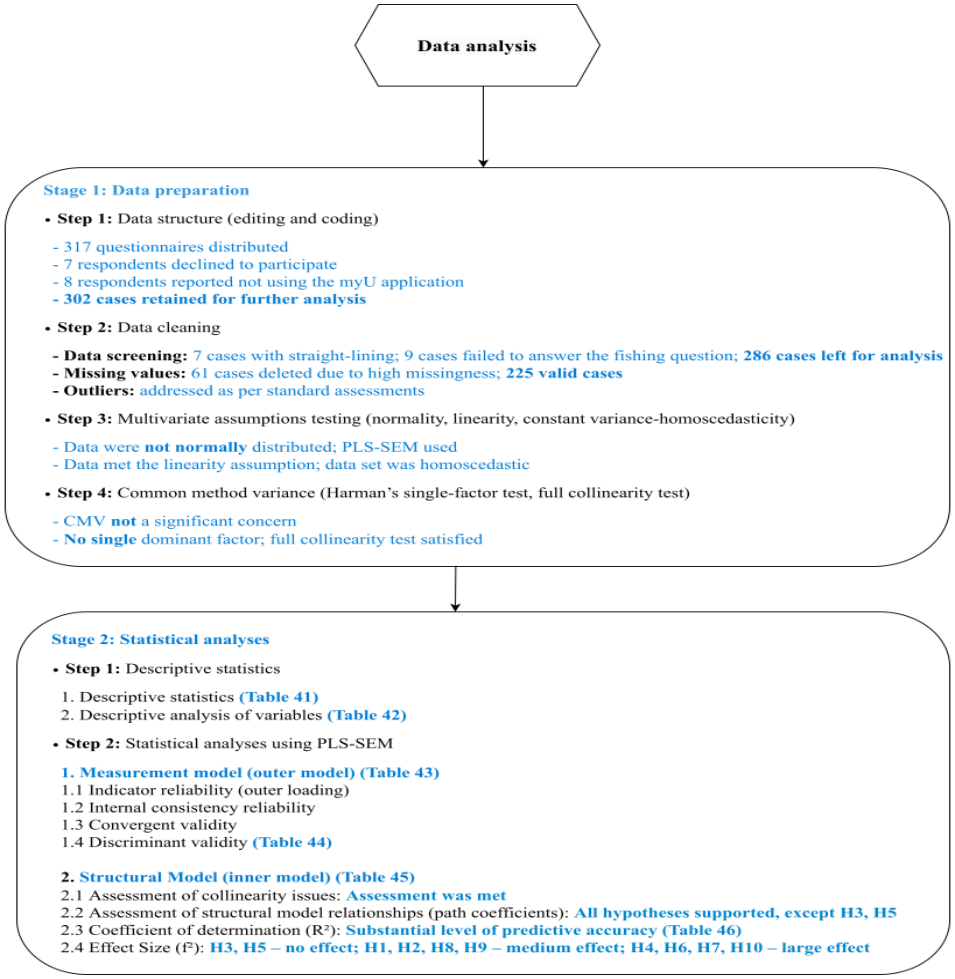
7.6 Data Preparation and Data Analysis for Study 2

This section presents the data analysis for Study 2. This second study followed the same data analysis processes and steps as for Study 1, as explained in the previous sections in this chapter. The data analysis was conducted in two stages. The first stage involved data preparation, followed by statistical analysis. Detailed explanations of each stage of the data analysis and the results for Study 2 are provided in the following sections.

Data preparation is the initial stage of data analysis conducted before evaluating the research model. This process has four key steps: creating the data structure, cleaning the data, testing assumptions, and assessing common method variance (see

Figure 21). These steps are detailed in the subsequent sections (Cooper and Schindler, 2014). SPSS 29.0 was the primary tool used for all stages of data preparation.

Figure 21: Data Analysis Process for Study 2



Note. Source: Author's own work.

7.6.1 Data Structure

For Study 2, an online survey was employed (SurveyMonkey). Consequently, the initial step following data gathering was to create the data structure. This process began by directly importing the data file from SurveyMonkey into SPSS for analysis. Subsequently, the variables were labelled. The questionnaire for Study 2 included 29 closed-ended questions for the independent variables, 4 items for the dependent variables, and 6 demographic questions. The next step was coding, whereby categories were assigned numerical or symbolic values to facilitate the measurement of items based on a predetermined number of groups or categories of responses (Cooper and Schindler, 2014). As explained earlier, all items used to form the independent and dependent variables were pre-coded. Accordingly, numerical values were assigned to the answer options specified on the questionnaire in advance. Responses were measured on a 5-point scale ranging from 1 (*Strongly Disagree*) to 5 (*Strongly Agree*) for the non-demographic items (Hair et al., 2017). Subsequently, all responses were subjected to post-coding, where specific numerical values were assigned to each responses category for the demographic items (Hair et al., 2017).

From 18 May to 30 July 2023, 317 questionnaires were received on SurveyMonkey. However, 7 respondents (teachers who use the myU application at PAAET colleges) declined to participate. Therefore, these cases were dropped from the study. A further 8 respondents reported not using the myU application. Overall, 302 cases were retained for further analysis.

7.6.2 Data Cleaning

Figure 21 illustrates the second step in the data preparation process, namely data cleaning. It included checking for data screening, missing values, and outliers (Hair et al., 2019).

7.6.2.1 Data Screening

Data screening (see

Figure 21) involved checking for data entry errors and suspicious response patterns (Hair et al., 2017). As explained by Pallant (2020), data entry errors are mistakes that occur when entering data into a computer system or database. To verify the data, a sampling-checking method was employed using SPSS 29.0. This method involved sorting all fields in ascending or descending order to identify any entry errors or values outside the expected range. For Study 2, there were no data entry issues because the questionnaire was administered online. The data were imported directly from SurveyMonkey to SPSS for analysis.

Analysing suspicious response patterns such as straight-lining and fishing questions is another data screening procedure. Straight-lining arises when a participant provides the same response for most questions (Hair et al., 2017). Straight-lining assessment in Study 2 was conducted by examining the standard deviation of the responses from each respondent (Hair et al., 2017). According to Pallant (2020), responses should be excluded if the standard deviation for them is zero. Of the 302 tested cases, 7 exhibited straight-lining and were excluded from further analysis, leaving 295 cases.

The inclusion of a specific instruction or statement, known as a fishing question, in a questionnaire is a deliberate design feature used by researchers to identify respondents who may not be reading the questionnaire thoroughly or responding attentively (Hair et al., 2017). By incorporating this fishing question, researchers can evaluate the validity of respondents' answers and recognise those who may be hastily completing the survey without thoughtful consideration (Hair et al., 2017). In Study 2, the fishing question was included in the effort expectancy section, instructing respondents to select the response "Neutral". Consequently, any cases where the response on this item differed from "Neutral" were removed. 9 cases were excluded for failing to answer the fishing question accurately, resulting in a final sample of 286 cases for further analysis.

7.6.2.2 Missing Values

The next stage of the data cleaning process was to detect any incomplete or missing values in the data set. As noted by Hair et al. (2019), the issue of missing data arises

when a participant fails to respond to one or more survey questions, whether purposely or inadvertently. As explained in Section 7.2.2.2, there are four steps for identifying missing data and applying corrections. The same steps were applied in Study 2 (Hair et al., 2019; Mooi et al., 2018).

In Step 1, all missing data in Study 2 were treated as unknown and non-ignorable because they resulted from non-response. Therefore, the researcher examined the processes underlying these missing values. In Step 2, SPSS and Microsoft Excel were used to test the extent of missing data. Cases that contained substantial missing data (i.e. 50% or more blank responses) or cases with missing data for the dependent variable were deleted. Analysis in SPSS (see Table 36) showed that 61 cases contained high numbers of missing values (i.e. more than 50%). These cases were confirmed using the formula "COUNTBLANK(item1 to item)" in Microsoft Excel to show the same number of cases with missing data. These cases were deleted, leaving 225 valid responses.

Table 36: Study 2 Missing Data

Number of items		Frequency	Percent	Valid percent	Cumulative percent
	.00	225	78.7	78.7	78.7
Valid	33.00	61	21.3	21.3	100.0
	Total	286	100.0	100.0	

Note. Source: Author's own work.

7.6.2.3 Outliers

As explained earlier, an outlier refers to an observation with a remarkably high or low value for a single variable (univariate outlier) or an unusual combination of values across multiple variables (multivariate outlier) in the data set (Tabachnick and Fidell, 2019). Consistent with the approach detailed in Section 7.2.2.3, multivariate outliers in Study 2 were identified using the Mahalanobis D^2 and Cook's D. The Mahalanobis D^2 was calculated to evaluate each observation across a set of variables (Hair et al., 2019). Using SPSS version 29.0, Mahalanobis D^2 values were generated for every item in Study 2 by performing multiple regression analysis with the case number as the dependent variable and all non-demographic measures as independent variables. As per the established threshold, a value of Mahalanobis D^2/df (where df refers to the degrees of freedom) greater than 3.5 indicates a potential multivariate outlier (Hair et

al., 2017). The results in Table 37 show that the largest D^2 value was 3.164 (for case 8). This value was below the cut-off value of 3.5. Therefore, no cases were removed from the analysis.

Table 37: Mahalanobis Distance and Outliers for Study 2

Case number	Mahalanobis distance (D^2)	D^2/df
8	**104.40166**	**3.164**
35	80.19196	2.430
177	77.33455	2.343
5	75.62905	2.292
56	74.42955	2.255
81	71.70814	2.173
118	71.62777	2.171
119	71.62777	2.171
127	69.25897	2.099
129	69.25897	2.099

Note. Source: Author's own work.

Cook's D was also used in Study 2 to detect multivariate outliers in SPSS 29.0. It reflects the extent to which the regression coefficients would change if outliers or influential data points were removed from the data set (Hair et al., 2019). A high Cook's D (exceeding 1.0) indicates a potential multivariate outlier (Cohen et al., 2013). According to the results presented in Table 38, the largest value for Cook's D was 0.2180 (for case 119). Therefore, no cases were removed because no case exceeded the established cut-off of 1.0. Consequently, all 225 cases were retained, and the D^2/df and Cook's D values were found to be below the designated cut-offs in each case.

Table 38: Cook's Distance and Outliers

Case number	Cook's D
119	**0.2180**
118	0.2180
129	0.1341
127	0.1341
8	0.1301
111	0.0965
113	0.0965
56	0.0504
140	0.0428
139	0.0428

Note. Source: Author's own work.

7.6.2.4 Response Rate

The total number of distributed questionnaires for Study 2 was 317. In 7 of these questionnaires, respondents indicated that they did not wish to participate, and 8 respondents reported not using the myU application. After data cleaning, 225 valid responses were retained from the initial 317 questionnaires, representing a 70.9% response rate. This response rate exceeds the 50% response rate recommended by Saunders et al. (2019). This high response rate can be attributed to the brevity of the questionnaire, which required respondents approximately 7 minutes to complete.

7.6.3 Assumption Testing

Following the data cleaning stage, the next step was to test the underlying statistical assumptions for conducting multivariate analysis (see

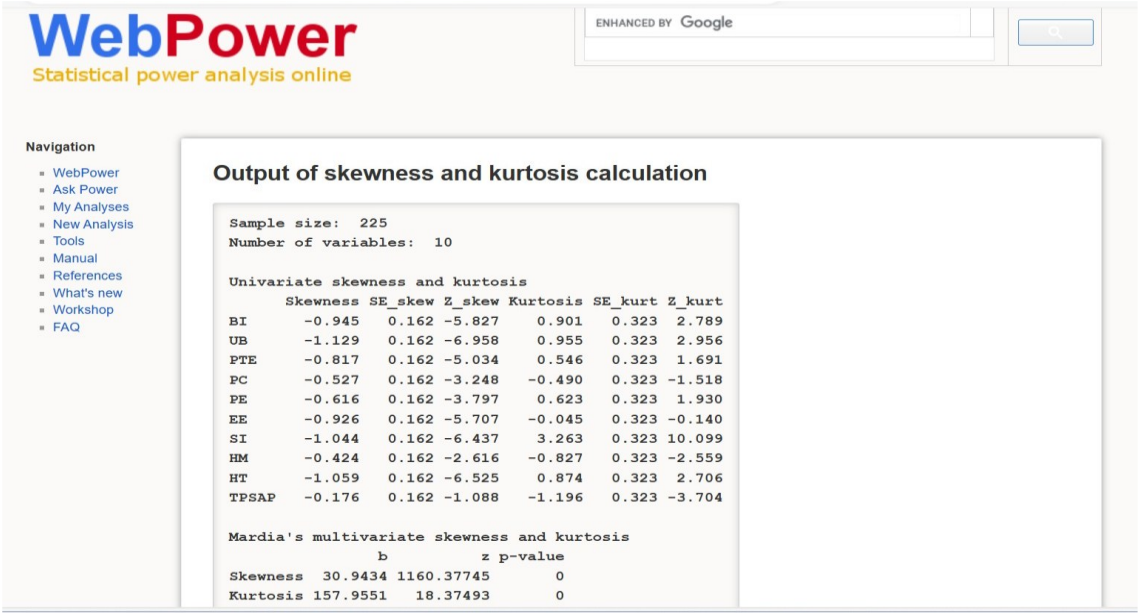
Figure 21). For Study 2, the key assumptions in multivariate analysis were evaluated. Specifically, normality, linearity, and constant variance (homoscedasticity) were assessed (Hair et al., 2019; Nimon, 2012).

7.6.3.1 Normality

The first assumption underlying multivariate analysis is that the data are normally distributed, with each variable and all linear combinations of variables following a normal distribution (Tabachnick and Fidell, 2019). Skewness and kurtosis are the primary statistical indicators used to assess the distribution of the data. Skewness quantifies the degree of asymmetry, whereas kurtosis measures the degree of tailedness of a distribution (Cain et al., 2017; Hair et al., 2019; Tabachnick and Fidell, 2019). In the context of Study 2, Mardia's multivariate skewness and kurtosis test was employed to evaluate the normality of the data. Values within the ranges of ±3 for skewness and ±20 for kurtosis suggest that the data are normally distributed (Cain et al., 2017). However, SPSS software cannot directly measure multivariate normality. Therefore, Cain et al. (2017) and Hair et al. (2017) have recommended using the software available on the WebPower website at: https://webpower.psychstat.org/models/kurtosis/.

The results in Figure 22 indicate that the data did not follow a normal distribution, as demonstrated by the measures of skewness (31.845 > 3) and kurtosis (161.215 > 20). All statistical tests consistently indicate that the data violate the assumption of normality. Consequently, the chosen analytical approach was PLS-SEM, which is a non-parametric technique.

Figure 22: Results of Mardia's Multivariate Skewness and Kurtosis for Study 2



Note. Source: Author's own work using the WebPower website.

7.6.3.2 Linearity

Relationships between independent and dependent variables may be characterised as linear, meaning the association can be represented by a straight line (Hair et al., 2019). Linearity is typically assessed using scatter plots in multivariate analysis (Hair et al., 2019; Mooi et al., 2018). The findings for Study 2 indicate that a straight line can be drawn for all variables, implying that the data met the assumption of linearity. The figures in Appendix G further confirm that the data met the assumption of linearity, with a straight-line fit for all variables in Study 2.

7.6.3.3 Constant Variance (Homoscedasticity)

Homoscedasticity means that the dependent variable has equal levels of variance across the full range of predictor variables (or independent variables). It is commonly assessed using various multivariate analysis techniques, as discussed in Section 7.2.3.3. One widely employed method is examining scatter plots, where a consistent spread of points around a horizontal line generally indicates homoscedasticity. In contrast, a widening or narrowing pattern with increasing predicted values indicates heteroscedasticity (Hair et al., 2019; Mooi et al., 2018; Nimon, 2012). For Study 2, this consistent pattern was observed when plotting the standardised residuals (i.e. the differences between observed and predicted values) against the predicted values (see Appendix G). The analysis showed no discernible pattern, and the spread of residuals remained relatively constant across all levels of the predicted values. Consequently, no evidence of heteroscedasticity was detected, and the assumption of constant variance was deemed to hold for the data set.

7.6.4 Common Method Variance (CMV)

The data for Study 2 were collected from a single source. Therefore, CMV was a possible concern, despite measures taken before distributing the questionnaire. CMV refers to systematic error variance shared among variables measured using the same method or source (Richardson et al., 2009). Assessing and addressing the threats of CMV is crucial when data are gathered via self-administered questionnaires, especially when the predictor and criterion variables are obtained from the same respondents (Podsakoff et al., 2016). CMV can undermine the validity of constructs and introduce systematic bias in the study. To test for CMV, Harman's single-factor test and the full collinearity test were employed in Study 2 following data collection (see

Figure 21).

Harman's single-factor test was performed to assess whether a single factor emerged from the principal component analysis or whether one factor explained most of the covariance among the variables in the unrotated factor analysis. The results for Study 2 reveal 33 distinct factors, with the largest factor accounting for only 39.050% of the variance, below the 50% cutoff suggested by Podsakoff et al. (2003). Detailed results are presented in Table 39. These results indicate that CMV was not a significant issue in Study 2 because no single dominant factor was identified.

Table 39: Common Method Variance for Study 2

Total variance explained						
Component	Initial eigenvalues			Extraction sums of squared loadings		
	Total	% of variance	Cumulative %	Total	% of variance	Cumulative %
1	12.886	39.050	39.050	12.886	39.050	39.050
2	2.936	8.896	47.945			
3	2.523	7.645	55.591			
4	1.646	4.987	60.578			
5	1.320	4.001	64.579			
6	1.268	3.842	68.421			
7	.947	2.871	71.292			
8	.930	2.819	74.111			
9	.800	2.423	76.534			
10	.734	2.226	78.759			
11	.692	2.096	80.855			
12	.598	1.813	82.669			
13	.527	1.596	84.265			
14	.491	1.487	85.752			
15	.476	1.443	87.196			
16	.430	1.304	88.499			
17	.390	1.181	89.680			
18	.349	1.059	90.739			
19	.339	1.028	91.767			
20	.320	.971	92.737			
21	.293	.888	93.625			
22	.277	.838	94.463			
23	.256	.776	95.240			
24	.238	.720	95.960			
25	.220	.667	96.626			
26	.201	.609	97.235			
27	.171	.518	97.753			
28	.168	.509	98.262			
29	.149	.450	98.712			
30	.136	.412	99.124			
31	.118	.358	99.482			
32	.099	.301	99.783			
33	.072	.217	100.000			

Note. The extraction method was principal component analysis. Source: Author's own work.

CMV was further examined using a full collinearity assessment. Full collinearity refers to a high correlation between two or more variables (Hair et al., 2019). The full

collinearity method is believed to yield more stable, and arguably more advanced, outcomes than various traditional post hoc analyses (Cohen et al., 2013). In Study 2, a full collinearity test was conducted to determine whether any constructs had VIFs of 5 or less (Hair et al., 2022; Kock, 2015). The VIFs for all constructs ranged from 1.071 to 3.374 (see Table 40), confirming that CMV was not a significant concern in Study 2.

Table 40: Full Collinearity Test for Study 2

Coefficients[a]			
Model		**Collinearity statistics**	
		Tolerance	**VIF**
1	BI	.484	2.067
	UB	.460	2.176
	PTE	.457	2.186
	PC	.338	2.961
	PE	.933	1.071
	EE	.347	2.884
	SI	.893	1.120
	HM	.296	3.374
	HT	.387	2.584

Note. a. Dependent variable: TPSAP – teachers' perceptions of student academic performance. VIF – variance inflation factor. PTE – perceived technology efficacy; PC – perceived compatibility; PE – performance expectancy; EE – effort expectancy; SI – social influence; HM – hedonic motivation; HT – habit; BI – behavioural intention to use the myU application; UB – use behaviour of the myU application. Source: Author's own work.

7.7 Descriptive Analysis for Study 2

Following data preparation, the statistical analysis for Study 2 was performed. As mentioned earlier, statistical analysis comprised two steps: descriptive statistics analysis and statistical analysis using PLS-SEM. Regarding descriptive statistics, frequency analysis and descriptive analysis of variables were used in Study 2 (see

Figure 21).

7.7.1 Frequency Analysis

Frequency analysis provides information about the background profile of respondents. In Study 2, frequencies were calculated for gender, age, affiliated college, academic rank, and use duration (Pallant, 2020). Table 41 describes the demographic characteristics of respondents in Study 2.

Table 41: Frequency Analysis (Respondent Profile) for Study 2

Item	Options	Frequency	Percentage
Gender	Male	112	49.8
	Female	63	28.0
	Prefer not to answer	50	22.2
Age	Less than 31 years	21	9.3
	31–40	47	20.9
	41–50	50	22.2
	51–60 years	48	21.3
	More than 60 years	43	19.1
	Prefer not to answer	16	7.1
College	College of Basic Education	56	24.9
	College of Business Studies	53	23.6
	College of Technological Studies	53	23.6
	College of Health Sciences	34	15.1
	College of Nursing	29	12.9
Academic rank	Full professor	26	11.6
	Associate professor	34	15.1
	Assistant professor	50	22.2
	Lecturer	46	20.4
	Teacher	45	20.0
	Teaching assistant	24	10.7
Use duration (years using myU app)	Less than 1 year	54	24.0
	1–2 years	74	32.9
	More than 2 years	97	43.1

Note. Source: Author's own work.

As illustrated in Table 41, 28% of the respondents were female, and a higher percentage (49.8%) were male. Approximately a fifth (22.2%) of respondents preferred not to declare their gender. The data show that 9.3% of respondents were

under 31 years old. People in the 31 to 40 age range made up 20.9% of the sample, closely followed by those in the 41 to 50 age range (22.2%). Respondents aged 61 years or older made up 19.1% of the sample, and those aged 51 to 60 accounted for 21.3%. Furthermore, 7.1% of respondents chose not to reveal their age. The proportion of respondents who chose not to disclose their gender or age likely reflects concerns about privacy and professional anonymity. Such trends are common in voluntary online surveys in higher education contexts, especially given the adequate overall sample size and representation.

The distribution of respondents' college affiliations is also clarified by the data. With 24.9% of the sample, the College of Basic Education had the largest number of affiliated respondents. The College of Business Studies and the College of Technological Studies had only slightly fewer affiliated respondents (23.6% in each case). The College of Health Sciences and the College of Nursing had 15.1% and 12.9%, respectively.

The respondents had a range of academic ranks. The distribution was as follows: full professor (11.6%), associate professor (15.1%), assistant professor (22.2%), lecturer (20.3%), teacher (20.0%), and teaching assistants (10.7%).

Finally, the data show the respondents' duration of use of the myU application. Roughly 24% of respondents reported using the application for less than a year, 32.9% reported one to two years of use, and 43.1% reported more than two years of myU usage.

The sample demographics were found to be reasonably representative of the population. There were no significant differences between the sample and population in terms of gender, college affiliation, and academic rank. Additionally, the distribution of years of educational SNSs use indicated that the sample adequately captured the range of use durations present in the population. Therefore, the sample can be considered representative of the population demographics, as discussed in greater detail in Chapter 8.

7.7.2 Descriptive Analysis of Variables

The aim of the descriptive analysis of the variables is to understand how participants responded to each variable (Pallant, 2020). As explained in Section 7.3.2, the means and standard deviations for all variables were analysed. The mean represents the

central tendency of the data, whereas the standard deviation indicates the degree of variation (Sekaran and Bougie, 2019). Table 42 presents the descriptive analysis for all indicators in Study 2, reporting the mean, minimum, maximum, and standard deviation for each item. Table 42 also reports the variable means.

Table 42: Descriptive Analysis for Study 2

Constructs (variables)	Indicators (items)	N	Minimum	Maximum	Mean	Standard deviation
Behavioural intention (BI) Mean = 4.16	BI1	225	3	5	4.35	0.686
	BI2	225	1	5	3.98	0.889
	BI3	225	1	5	4.11	0.856
	BI5	225	2	5	4.20	0.783
Use behaviour (UB) Mean = 4.34	UB2	225	1	5	4.28	0.838
	UB3	225	2	5	4.37	0.751
	UB4	225	1	5	4.38	0.771
Perceived technology efficacy (PTE) Mean = 4.28	PTE1	225	1	5	4.23	0.861
	PTE2	225	2	5	4.36	0.749
	PTE3	225	2	5	4.26	0.765
Perceived compatibility (PC) Mean = 4.41	PC1	225	2	5	4.40	0.708
	PC2	225	3	5	4.43	0.616
	PC3	225	3	5	4.40	0.669
Performance expectancy (PE) Mean = 4.16	PE1	225	1	5	4.14	0.776
	PE2	225	1	5	4.25	0.695
	PE3	225	1	5	4.09	0.757
Effort expectancy (EE) Mean = 4.52	EE1	225	3	5	4.53	0.634
	EE2	225	2	5	4.48	0.662
	EE3	225	3	5	4.54	0.612
Social influence (SI) Mean = 2.73	SI1	225	1	5	2.63	0.988
	SI2	225	1	5	2.88	1.014
	SI3	225	1	5	2.56	1.064
	SI4	225	1	5	2.85	1.436
Hedonic motivation (HM) Mean = 4.46	HM1	225	3	5	4.43	0.579
	HM2	225	3	5	4.49	0.606
	HM3	225	3	5	4.46	0.605
Habit (HT) Mean = 4.35	HT1	225	2	5	4.38	0.753
	HT2	225	2	5	4.40	0.648
	HT3	225	1	5	4.26	0.849
Teachers' perceptions of student academic performance (TPSAP) Mean = 4.38	TPSAP1	225	2	5	4.08	0.895
	TPSAP2	225	2	5	4.38	0.704
	TPSAP3	225	2	5	4.58	0.697
	TPSAP4	225	2	5	4.47	0.738
	Valid N (listwise)	225				

Note. Source: Author's own work.

Table 42 presents the mean values for the constructs in the model. Effort expectancy had the highest mean (4.52), with EE3 having the highest mean of any of its items (4.54). Next, hedonic motivation had a mean of 4.46, with HM2 having the largest mean among its items (4.49). The remaining constructs of perceived compatibility, TPSAP, habit, use behaviour, perceived technology efficacy, behavioural intention, and performance expectancy had mean values of 4.41, 4.38, 4.35, 4.34, 4.28, 4.16, and 4.16, respectively, and the individual items with the highest means were PC2 (4.43), TPSAP3 (4.58), HT2 (4.40), UB4 (4.38), PTE2 (4.36), BI1 (4.35), and PE2 (4.25), respectively. Notably, social influence had the lowest mean (2.73) of all constructs in the model. This low mean value may suggest that students perceive social pressure from peers or teachers as less influential in their use of the myU application than other factors.

7.8 Measurement Model Study 2

PLS-SEM consists of a two-stage process: measurement model assessment and structural model assessment (see

Figure 21). As discussed in Section 7.4 and Chapter 6, all constructs in the research model for Study 2 were multi-item reflective rather than formative. Reflective constructs comprise measures that are intercorrelated and have strong internal consistency. A series of tests, including indicator reliability, internal consistency reliability, convergent validity, and discriminant validity, were conducted to assess the measurement model using SmartPLS 4.

7.8.1 Indicator Reliability (Outer Loadings)

Indicator reliability is assessed using the outer loadings of the indicators (items). These outer loadings reflect the extent to which indicators consistently measure what they intend to measure (Urbach and Ahlemann, 2010). To demonstrate that a construct can explain at least 50% of the indicators' variance, the outer loadings should be 0.4 or higher. In contrast, any outer loadings with values less than 0.4 should be excluded from the analysis. As shown in Table 43, all items in Study 2 had satisfactory indicator reliability. Outer loadings ranged from 0.627 to 0.956, exceeding the threshold of 0.4 recommended by Hair et al. (2022) and Urbach and Ahlemann (2010). Hence, no further modification of the model was required. The figure in Appendix G shows the PLS-SEM algorithm results for the measurement model from SmartPLS 4 for Study 2.

7.8.2 Internal Consistency Reliability

Next, internal consistency reliability was assessed for Study 2. Reliability was measured based on the intercorrelations among the items comprising the variable (Hair, Black et al., 2019). Two measures were used: Cronbach's alpha (α) and composite reliability (CR). Based on Table 43, the values for Cronbach's alpha (α) in Study 2 ranged from 0.725 to 0.919, indicating a satisfactory level of reliability by exceeding the threshold of 0.70 recommended by Hair et al. (2022). Table 43 also shows that all constructs in Study 2 had CR values ranging from 0.844 to 0.949, exceeding the recommended threshold of 0.70 (Hair et al., 2022). These results show that the measurement model demonstrated adequate internal consistency reliability.

7.8.3 Convergent Validity

The analysis then assessed the convergent validity of the constructs in Study 2. The Average variance extracted (AVE) was calculated using the PLS-SEM algorithm in SmartPLS 4 software. Convergent validity refers to the extent to which individual indicators (items) reflect their corresponding constructs in comparison to indicators measuring other constructs (Hair et al., 2022; Urbach and Ahlemann, 2010). Table 43 indicates that all constructs had AVE values exceeding the threshold of 0.5, demonstrating adequate convergent validity (Fornell and Larcker, 1981). The construct with the lowest AVE was behavioural intention (0.633), followed by habit (0.644), social influence (0.670), performance expectancy (0.691), perceived compatibility (0.717), TPSAP (0.720), hedonic motivation (0.744), effort expectancy (0.797), use behaviour (0.802), and perceived technology efficacy (0.861). These values support the validity of the measurement model.

Table 43: Results of the Reflective Measurement Model Assessment for Study 2

Construct (variable)	Item	Loading	Cronbach's alpha (α)	Composite reliability (CR)	Average variance extracted (AVE)
Behavioural intention (BI)	BI1	.738	.806	.873	.633
	BI2	.813			
	BI3	.816			
	BI5	.812			
Use behaviour (UB)	UB2	.893	.876	.924	.802
	UB3	.909			
	UB4	.883			
Perceived technology efficacy (PTE)	PTE1	.934	.919	.949	.861
	PTE2	.933			
	PTE3	.916			
Perceived compatibility (PC)	PC1	.808	.802	.884	.717
	PC2	.884			
	PC3	.846			
Performance expectancy (PE)	PE1	.875	.875	.867	.691
	PE2	.627			
	PE3	.956			
Effort expectancy (EE)	EE1	.898	.873	.922	.797
	EE2	.893			
	EE3	.886			
Social influence (SI)	SI1	.926	.853	.888	.670
	SI2	.882			
	SI3	.794			
	SI4	.643			
Hedonic motivation (HM)	HM1	.885	.828	.897	.744
	HM2	.826			
	HM3	.875			
Habit (HT)	HT1	.717	.725	.844	.644
	HT2	.843			
	HT3	.841			
Teacher perception of student academic performance (TPSAP)	TPSAP1	.838	.872	.911	.720
	TPSAP2	.876			
	TPSAP3	.808			
	TPSAP4	.871			

Note. Source: Author's own work.

7.8.4 Discriminant Validity

Next, the model's discriminant validity was evaluated. Discriminant validity is the degree to which items differentiate among constructs and measure distinct concepts. It is measured by determining the correlations between items that may overlap (Ramayah et al., 2018). In Study 2, discriminant validity was determined using the HTMT, developed by Henseler et al. (2015). Table 44 shows that the HTMT values for all constructs in Study 2 were below the conservative 0.90 cut-off, thereby establishing discriminant validity (Franke and Sarstedt, 2019; Henseler et al., 2015).

Table 44: HTMT Criterion for Study 2

	BI	**EE**	**HM**	**HT**	**PC**	**PE**	**PTE**	**SI**	**TPSAP**	**UB**
BI										
EE	.740									
HM	.713	.805								
HT	.785	.838	.815							
PC	.744	.744	.843	.749						
PE	.103	.218	.091	.171	.121					
PTE	.534	.719	.700	.767	.622	.094				
SI	.140	.155	.121	.252	.145	.094	.039			
TPSAP	.636	.760	.841	.764	.768	.101	.694	.179		
UB	.687	.651	.702	.760	.706	.060	.636	.265	.836	

Note. Source: Author's own work.

In sum, the results confirm that the reliability and validity requirements were met for Study 2. Therefore, the analysis continued with assessment of the structural model.

7.9 Structural Model for Study 2

This section presents the results of evaluation of the structural model (see

Figure 21). As per standard practice in PLS-SEM, collinearity, structural model relationships, the coefficient of determination (R^2), and the effect size (f^2) were analysed for Study 2 to assess the structural model.

7.9.1 Assessment of the Structural Model for Collinearity

In PLS-SEM, researchers must check for problems of collinearity before testing the hypotheses to allay concerns about possibly inaccurate or biased results. As in Study 1, collinearity diagnostics were conducted to ensure that the constructs were not highly correlated within the structural model for Study 2 (Hair et al., 2022). The VIF is used to assess collinearity. For this test, the acceptable maximum value for the VIF is 5 (Hair et al., 2022; Kock, 2015). Table 45 reports the results of the multicollinearity assessment for Study 2, revealing no VIF values exceeding 5 (values ranged from 1.001 to 2.491). Hence, the results suggest that collinearity did not pose a threat to the structural model findings.

Table 45: Summary of Structural Model Analysis (PLS-SEM Bootstrapping) for Study 2

Hypothesis		Std. β	Std. error	*t* value	*p* value	Decision	Confidence interval (CI)		f^2	Effect size	VIF
							Lower (5%)	Upper (95%)			
H1	PTE -> UB	0.225	0.079	2.846	0.002	Supported	0.092	0.354	0.259	Medium	1.758
H2	PC -> UB	0.223	0.114	1.957	0.025	Supported	0.038	0.418	0.255	Medium	1.877
H3	PE -> BI	0.003	0.085	0.030	0.488	Rejected	-0.093	0.187	0.000	No effect	1.051
H4	EE -> BI	0.283	0.069	4.073	0.000	Supported	0.179	0.406	0.462	Large	2.491
H5	SI -> BI	0.007	0.069	0.098	0.461	Rejected	-0.137	0.102	0.000	No effect	1.045
H6	HM -> BI	0.213	0.069	3.076	0.001	Supported	0.089	0.316	0.372	Large	2.074
H7	HT -> BI	0.283	0.072	3.913	0.000	Supported	0.160	0.394	0.389	Large	2.213
H8	HT -> UB	0.205	0.077	2.663	0.004	Supported	0.073	0.326	0.169	Medium	2.186
H9	BI -> UB	0.220	0.083	2.634	0.004	Supported	0.088	0.364	0.153	Medium	1.892
H10	UB -> TPSAP	0.746	0.039	18.918	0.000	Supported	0.683	0.813	0.554	Large	1.001

Note. PTE – perceived technology efficacy; PC – perceived compatibility; PE – performance expectancy; EE – effort expectancy; SI – social influence; HM – hedonic motivation; HT – habit; BI – behavioural intention to use the myU application; UB – use behaviour of the myU application; TPSAP – teacher perception of student academic performance; Std β – β coefficient or standardised β value [−1, +1]; *t* value > 1.645 (one-tailed test); *p* value < 0.05; effect size (f^2) – >0.35 (large), > 0.15 (medium), > 0.02 (small); VIF – variance inflation factor ≤ 5.0; R^2 coefficient of determination – 0.26 (substantial), 0.13 (moderate), 0.02 (weak). Source: Author's own work.

7.9.2 Assessment of the Structural Model Relationships

To assess the statistical significance and relevance of the path coefficients (i.e. the structural model relationships), the proposed hypotheses for the constructs in Study 2 were evaluated. As explained in Chapter 6, bootstrapping (a non-parametric technique applied in PLS-SEM for non-normally distributed data) was performed in SmartPLS 4 to test the hypotheses. The bootstrapping parameters were a 0.05 significance level, a one-tailed test, and 10,000 subsamples.

According to Table 45, perceived technology efficacy and perceived compatibility had a significant positive effect on use behaviour. Hence, H1 and H2 were supported: β = 0.225, *t* value = 2.846, *p* value < .05 (.002), CI [0.092, 0.354] and β = 0.223, *t* value = 1.957, *p* value < .05 (.025), CI [0.038, 0.418], respectively. Performance expectancy had no significant effect on behavioural intention, leading to the rejection of H3: β = 0.003, *t* value = 0.030, *p* value > .05 (.488), CI [-0.093, 0.187]. Effort expectancy had a significant positive effect on behavioural intention. Hence, H4 was supported: β = 0.283, *t* value = 4.073, *p* value < .05 (.000), CI [0.179, 0.406]. In contrast, social influence had no significant effect on behavioural intention. Thus, H5 was rejected: β = 0.007, *t* value = 0.098, *p* value > .05 (.461), CI [-0.137, 0.102].

Hedonic motivation had a significant positive effect on behavioural intention. Hence, H6 was supported: β = 0.213, *t* value = 3.076, *p* value < .05 (.001), CI [0.089, 0.316]. Table 45 shows that habit had a significant positive effect on behavioural intention and use behaviour. Hence, H7 and H8 were supported: β = 0.283, *t* value = 3.913, *p* value < .05 (.000), CI [0.160, 0.394] and β = 0.205, *t* value = 2.663, *p* value < .05 (.004), CI [0.073, 0.326], respectively. Also, behavioural intention had a significant positive effect on use behaviour, thereby supporting H9: β = 0.220, *t* value = 2.634, *p* value < .05 (.004), CI [0.088, 0.364]. Finally, use behaviour had a significant positive effect on TPSAP, thereby supporting H10: β = 0.746, *t* value = 18.918, *p* value < .05 (.000), CI [0.683, 0.813]. The figure in Appendix G illustrates the results of the analysis of the structural model using PLS-SEM bootstrapping for Study 2.

7.9.3 Assessment of the Coefficient of Determination (R^2)

The next step was to evaluate the model's explanatory and predictive power (i.e., in-sample predictive power) using the coefficient of determination (R^2) (Hair et al., 2022). The R^2 metric indicates the proportion of variance in the endogenous constructs accounted for by all associated exogenous constructs, namely the explained variance (Hair et al., 2022). R^2 values range from 0 to 1, with higher values denoting greater predictive accuracy. According to Cohen's (1988) recommendations, R^2 values of 0.02, 0.13, and 0.26 indicate weak, moderate, and substantial levels of predictive power, respectively. These criteria were adopted in Study 2.

SmartPLS algorithm was used to calculate R^2. As shown in Table 46, performance expectancy, effort expectancy, social influence, hedonic motivation, and habit explained 47.8% of the variance in behavioural intention, which indicates a substantial level of predictive accuracy. Perceived technology efficacy, perceived compatibility, habit, and behavioural intention explained 51.5% of the variance in use behaviour, indicating a substantial level of predictive accuracy. Finally, Table 46 shows that use behaviour explained 55.6% of the variance in TPSAP, indicating also a substantial level of predictive accuracy, in line with Cohen's (1988) recommendations.

Table 46: Coefficient of Determination (R^2) for Study 2

Construct	R^2
BI	.478
UB	.515
TPSAP	.556

Note. BI – behavioural intention; UB – use behaviour; TPSAP – teachers' perceptions of students' academic performance. Source: Author's own work.

Overall, the R^2 values for Study 2 were similar to those reported in most studies found in the literature. For example, Adwan et al. (2022) reported an R^2 value of 57.9%. In sum, the analysis implies that the model predicts up to 55.6% of the factors influencing TPSAP, which is considered an acceptable level in social science studies.

7.9.4 Assessment of Effect Size (f^2)

The effect size of each path in the PLS-SEM model can be evaluated using Cohen's f^2. This metric assesses the substantive impact of an independent variable on a dependent variable (Cohen, 1988; Hair et al., 2022). In Study 2, the f^2 values were interpreted in line with Cohen's (1988) guidelines. According to these guidelines, values exceeding 0.02, 0.15, and 0.35 indicate small, medium, and large effects, respectively. Conversely, f^2 values below 0.02 suggest no meaningful effect (Cohen, 1988).

Table 45 presents the effect sizes of the exogenous (independent) variables on the endogenous (dependent) variables for Study 2. The f^2 values of 0.259 and 0.255 for perceived technology efficacy and perceived compatibility indicate that they had a medium effect on use behaviour. The f^2 value of 0.000 for performance expectancy indicates that it had no meaningful effect on behavioural intention. In contrast, effort expectancy and hedonic motivation had a large effect on behavioural intention (f^2 = 0.462 and 0.372, respectively). Social influence had no meaningful effect on behavioural intention (f^2 = 0.000). The f^2 values of 0.389 and 0.169 for habit indicate a large and medium effect on behavioural intention and use behaviour, respectively. Behavioural intention had a medium effect on use behaviour (f^2 = 0.153). Finally, use behaviour had a large effect on TPSAP (f^2 = 0.554). These findings are thoroughly explored and justified in Chapter 8.

7.9.5 Summary of Hypothesis Testing for Study 2

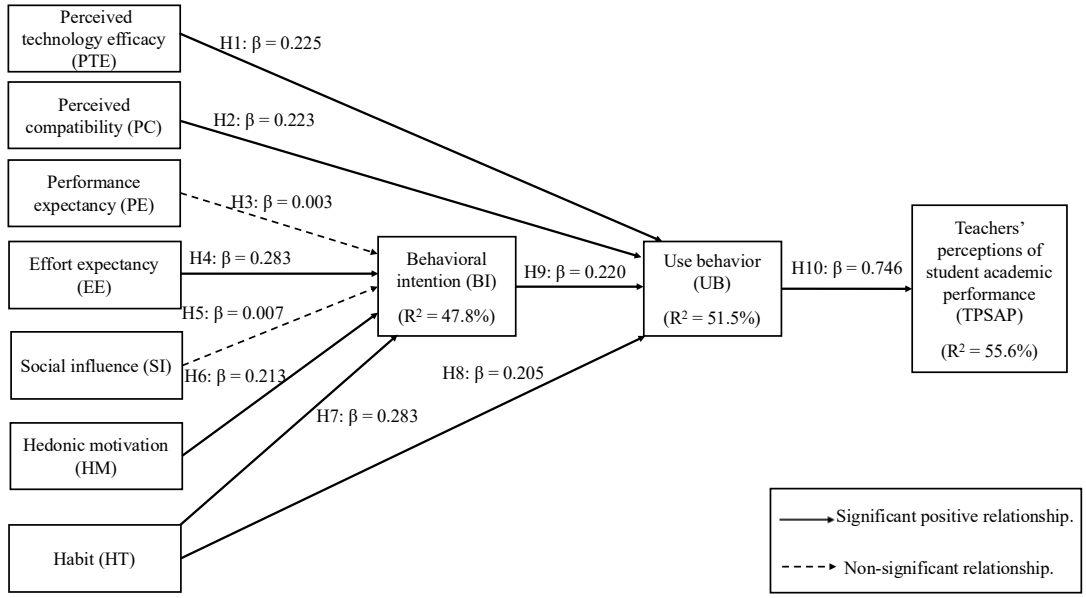
The 10 hypotheses presented in Chapter 5 for Study 2 were examined using PLS-SEM. The bootstrapping analysis supported most of the proposed hypotheses in Study 2. The only unsupported hypotheses were H3 and H5. Table 47 summarises the results of the hypothesis testing. Figure 23 shows the results of the path analysis.

Table 47: Summary of Hypothesis Testing Results for Study2

No.	Hypothesis statement	Decision
H1	Perceived technology efficacy has a positive effect on myU application use behaviour.	Supported
H2	Perceived compatibility has a positive effect on myU application use behaviour.	Supported
H3	Performance expectancy has a positive effect on behavioural intention to use the myU application.	Not Supported
H4	Effort expectancy has a positive effect on behavioural intention to use the myU application.	Supported
H5	Social influence has a positive effect on behavioural intention to use the myU application.	Not Supported
H6	Hedonic motivation has a positive effect on behavioural intention to use the myU application.	Supported
H7	Habit has a positive effect on behavioural intention to use the myU application.	Supported
H8	Habit has a positive effect on myU application use behaviour.	Supported
H9	Behavioural intention to use myU application has a positive effect on myU application use behaviour.	Supported
H10	myU application use behaviour has a positive effect on teachers' perceptions of student academic performance (TPSAP).	Supported

Note. Source: Author's own work.

Figure 23: Summary of the Results of the Path Analysis for Study 2



Note. Source: Author's own work.

7.10 Chapter Summary

This chapter presents the results of the data analysis Study 1 and Study 2. A series of data preparation procedures were performed in SPSS 26.0. Assessment of the measurement model and structural model was performed in SmartPLS 4. The results for Study 1 provided support for 11 out of the 14 hypothesised relationships (i.e. H1, H2, H3, H4, H5, H7, H8, H11, H12, H13, and H14). In contrast, H6, H9, and H10 were not supported. The results for Study 2 supported 8 of the 10 proposed hypotheses (i.e., H1, H2, H4, H6, H7, H8, H9, and H10). In contrast, H3 and H5 were not supported. Chapter 8 discusses the findings of both studies and the overall contribution of this research.

8 Discussion

8.1 Introduction

This chapter interprets the results through social, technological, educational, and contextual lenses, integrating insights from both students' and teachers' perspectives. Drawing on two complementary empirical studies, this chapter explains how educational SNSs affect SAP from the viewpoints of both students and teachers. Study 1 used an integrated framework combining the D&M IS Success Model with constructivist learning theory. By contrast, Study 2 extended the UTAUT2 model by including the constructs of perceived technology efficacy, perceived compatibility, and TPSAP. This chapter also highlights the interplay among people, systems, processes, and learning practices, aligning with an information systems perspective. Finally, it outlines the thesis's theoretical and practical contributions and implications.

8.2 Social Dimensions of Educational SNS Use

The results from both studies highlight the central role of social interaction in shaping learning experiences and academic outcomes in educational SNS environments. According to the student perspective (Study 1), interactions with peers and teachers are associated with enhanced collaborative learning. This enhanced collaborative learning is, in turn, associated with improved student engagement and SAP. These results strongly align with constructivist learning theory, which views learning as a socially constructed process that emerges through interaction, dialogue, and shared meaning making (Jonassen and Rohrer-Murphy, 1999; Vygotsky, 1978).

Empirically, this result is supported by prior research showing that peer interaction in digital learning environments enhances knowledge construction, problem-solving skills, and academic achievement (Al-Rahmi et al., 2018; Lin et al., 2023; Qureshi et al., 2023). Additionally, interaction with teachers plays a crucial role in promoting collaborative learning by offering cognitive support, feedback, and social presence. This result aligns with those of Blasco-Arcas et al. (2013) and Alamri et al. (2020). It also supports social presence theory, which highlights the importance of teacher

visibility and responsiveness in fostering meaningful online collaboration (Garrison et al., 2000).

Culturally, the significant impact of social interaction reflects the collectivist nature of Kuwaiti society, where cooperation, a sense of group belonging, and interpersonal relationships are highly valued (Hofstede, 2001). In this context, educational SNSs seem to align well with students' preferences for social learning. Additionally, the results support the idea that interaction quality is more important than interaction frequency (Al-Samarraie and Saeed, 2018; Wu et al., 2022). The strong positive effects observed in this thesis suggest that myU promotes meaningful academic interactions rather than just superficial social exchanges.

Interestingly, from the teachers' perspective (Study 2), social influence was not observed to be associated with students' behavioural intention. This result aligns with previous research suggesting that in voluntary-use environments, learners are more influenced by personal experiences than by social pressures when deciding whether to adopt educational technologies (Khechine et al., 2020; Venkatesh and Zhang, 2010). As argued by Venkatesh et al. (2003), the influence of social factors diminishes as users develop greater confidence and autonomy, a pattern also noted in higher education contexts by Gunasinghe et al. (2020) and Lutfi et al. (2022).

In Study 2, teachers reported that students' motivation to use myU primarily stem from personal convenience and familiarity rather than the encouragement or expectations of peers or instructors. This interpretation is consistent with the findings of Almaiah et al. (2019) and Cavus et al. (2021), who reported that, as technologies become more integrated and common in academic environments, social pressure becomes less predictive of use. Instead, internal factors such as perceived ease of use, individual learning value, and prior experience play a stronger role in determining intentions.

Supporting this interpretation, Alajmi and Alotaibi (2020) found that academic staff at PAAET were similarly unaffected by social recommendations when adopting digital library systems. They attributed this finding to academic staff's technological confidence and self-sufficiency. Teachers in the present study seemed to apply similar reasoning to their students based on the idea that those who feel digitally competent are less reliant on external validation when making adoption decisions. This conclusion is reinforced by the insights gathered during the expert interviews in the pretesting phase (see Section 6.9). Participants noted that students are increasingly

familiar with digital tools such as LMSs and institutional email accounts. Consequently, when students have positive prior experiences with technology, they are less likely to depend on social endorsement when deciding whether to use educational SNSs. This observation is also consistent with those of Venkatesh et al. (2003), who reported that, if users have a positive experience with technology, they are less likely to worry about support from their social systems. Given that many PAAET students already have moderate experience with myU (as indicated in Section 7.3), they may feel confident about using the application independently, further reducing the influence of social factors on their decision making.

8.3 Technological/IS Dimensions of Educational SNSs

The technological features of educational SNSs were observed to be significantly associated with use behaviour and learning outcomes, particularly in Study 1. System quality emerged as one of the strongest predictors of both system use and student satisfaction. This result aligns with the D&M IS Success Model, which identifies system quality as a fundamental determinant of IS success. Similar results have been observed in educational contexts by Al-Fraihat et al. (2020) and Aldholay et al. (2020), who found that reliable and user-friendly systems promote ongoing engagement, underscoring the importance of software quality in educational SNSs.

Despite the positive association between information quality and system use, Study 1 revealed no significant relationship between information quality and student satisfaction in Kuwaiti HEIs. Interestingly, this non-significant outcome aligns with studies reporting weak or null effects of information quality on student satisfaction. For instance, Alfaki (2021) emphasised the limited role of information quality in blended learning when considering system and support factors. Hsu (2021) also observed that, in MOOCs, learner satisfaction is influenced more by engagement features and instructional design than by the perceived quality of information. These findings suggest that, although information is necessary, it is not sufficient on its own. Student satisfaction often also depends on how that information is delivered, contextualised, and supported by the overall system.

For PAAET students, a possible explanation for their experience with the myU application is that it is structured as an educational SNS. As mentioned in previous chapters, the most important feature of the myU application is its design for use in an

academic setting, which facilitates communication and interaction between students and teachers. Additionally, teachers can create a special section for each course they teach at the beginning of each semester (myU, 2023). This feature helps students access course materials easily. Accordingly, students expect the information provided by the myU application to be accurate, up to date, and relevant to the course content within a specified timeframe. Therefore, they are unlikely to question the quality of the information, meaning that its effectiveness does not significantly influence their satisfaction with the platform.

Additionally, the non-significant effects of service quality observed in Study 1 may reflect the increasing digital confidence among Kuwaiti students. In the context of higher education in Kuwait, myU functions as a voluntary educational SNS rather than a mandatory institutional platform. As a result, students may not view technical support services as essential. Instead, they often prefer to seek assistance from peers or teachers or else rely on their own problem-solving skills when faced with challenges. This preference is consistent with the findings of Salam and Farooq (2020), who noted that students typically turn to their peers for support rather than to technical support services. Such cultural tendencies towards informal support can diminish the visibility and importance of technical support services, ultimately affecting their influence on usage patterns and satisfaction levels.

Moreover, this finding may be related to participants' intermediate experience with educational SNSs. As indicated in Table 29 (Chapter 7), 49.7% of respondents reported having already used myU for one to two years at the time of Study 1, suggesting that their familiarity with the platform has reduced their need for technical support. In this context, this result aligns with the observations of Alajmi (2014) and Zacharis and Nikolopoulou (2022), who noted that, in mature digital environments, traditional service support is a less significant determinant of perceived success. However, service quality must be viewed as a complementary factor rather than the primary driver of use and satisfaction. More importantly, improvements in system quality and information relevance appear to be more effective strategies for promoting sustained use and satisfaction in the context of educational SNSs.

From a teacher perspective (Study 2), effort expectancy and perceived compatibility were found to be key factors associated with students' behavioural intention and use behaviour. These results align with UTAUT2 research, which indicates that teachers believe that students are more likely to adopt educational platforms when these

systems are user friendly and naturally fit with existing learning practices (Isaac et al., 2019; Venkatesh et al., 2012). Additionally, perceived technology efficacy emerged as a significant predictor of students' use behaviour. This result suggests that teachers think students' confidence in using digital tools directly affects their actual engagement with educational SNSs. This result is consistent with social cognitive theory (Bandura, 1986) and previous information systems research, which has shown that self-efficacy enhances technology adoption and sustained use (Almaiah et al., 2019; Latip et al., 2022).

The non-significant relationship between performance expectancy and behavioural intention in Study 2 supports the idea that, if students have prior experience with various digital learning tools (such as LMSs, email systems, and mobile applications), they may take the perceived performance benefits of myU for granted. As suggested by García de Blanes Sebastián et al. (2025) and Khechine et al. (2020), when baseline expectations of usefulness are already high, performance expectancy becomes less impactful than experiential and usability-related factors.

From a teacher perspective, the non-associative relationship between performance expectancy and behavioural intention may reflect how myU is integrated into everyday teaching practices. Whereas the UTAUT2 model suggests that anticipated performance gains are a key motivator for adopting new technologies, teachers at PAAET may perceive that students use myU more for convenience, familiarity, and routine communication than for explicit performance improvement. From this point of view, myU serves primarily as an enabling learning infrastructure rather than what students would consider as a tool for enhancing performance. This perspective aligns with the findings of Wut et al. (2022), who reported that, in online learning environments, behavioural intention is often more strongly influenced by interactive factors and support mechanisms than by performance expectations alone. It suggests a shift from outcome-driven to context-drive use, where the perceived usefulness of the platform is less relevant.

This result offers important insights into how teachers interpret students' technology adoption behaviours. It indicates that teachers notice a gap between the educational potential of myU and the way in which students actually engage with it. Although myU is designed to support meaningful feedback, collaboration, and interactive learning, many students tend to use it functionally. In practice, this use often means that students log in mainly to check announcements, submit assignments, or

respond to communications rather than to actively enhance their learning experience. As a result, their behavioural intention seems to be influenced more by habitual use patterns or situational needs than by a deliberate expectation of improving SAP. This perspective helps explain why performance expectancy was not observed to be a significant driver of behavioural intention in the empirical analysis. It also aligns with previous research suggesting that, in environments where technology is mature and its use is voluntary, engagement with technology can become routine, diminishing the role of perceived usefulness as a motivating factor (Khechine et al., 2020; Wut et al., 2022).

8.4 Educational and Pedagogical Processes

Beyond social interaction and system characteristics, the results highlight the importance of educational processes in transforming technology use into meaningful learning outcomes. In Study 1, student engagement, system use, and satisfaction collectively accounted for a high percentage of the variance in SAP. This finding supports previous research that indicates that technology alone does not enhance learning. Instead, the effectiveness of technology depends on its integration into pedagogical practices (Al-Rahmi et al., 2020; Lv and Li, 2024).

In Study 1, collaborative learning was positively associated with student engagement, which, in turn, was a strong predictor of SAP. This finding supports the constructivist view of learning as a socially situated process, enhanced through dialogue and shared problem solving (Fredricks et al., 2004; Vygotsky, 1978). Research has shown that student engagement is a key predictor of academic success, underscoring the importance of the emotional aspects of learning in digital environments. When students feel emotionally connected to their learning activities through interaction and collaboration, such as participating actively in discussions, responding constructively to feedback, persisting in challenging tasks, and contributing to collaborative learning activities, their SAP improves (Alturki and Aldraiweesh, 2024; Fredricks et al., 2004).

Crucially, student satisfaction was found to play a significant role in the learning process. The analysis indicated that satisfaction was positively associated with SAP, suggesting that positive experiences with the myU platform encourage ongoing engagement and persistence in learning. This finding aligns with the D&M IS Success

Model, which identifies user satisfaction as a critical factor that connects system use to performance outcomes (Petter and McLean, 2009). Together, the results for engagement and satisfaction indicate that effective learning through educational SNSs relies not only on access and functionality but also on students' responses to the learning experience.

Additionally, system use affected performance both directly and indirectly through engagement and satisfaction. This finding supports the idea that consistent intentional use of educational SNSs fosters deeper learning and academic improvement (Chang et al., 2022; Sabah, 2023). Therefore, the results imply that simply being exposed to SNSs is not enough. Instead, the educational benefits arise when SNS use is frequent, meaningful, and integrated into pedagogy.

Study 2 reinforced and expanded on these insights from a teacher perspective. Teachers reported that students' behavioural intentions directly influenced their actual use behaviour, which in turn significantly affected their SAP. Crucially, this use behaviour had a strong effect on teachers' perceptions of SAP, suggesting that educators perceive a close link between consistent and purposeful engagement with SNSs and improved learning outcomes (Gunasinghe et al., 2020; Rashid, 2025). This result indicates that teachers assess the educational value of SNSs, such as the myU application, primarily by examining observable patterns of meaningful student participation, such as consistency in submissions and the quality of interactions, rather than simply focusing on usage frequency.

Notably, the results for the Study 2 model emphasise the importance of hedonic motivation and habit in maintaining students' use of educational SNSs. Hedonic motivation significantly enhanced behavioural intention, suggesting that enjoyment and a positive user experience are crucial even in formal academic settings. This finding aligns with previous research indicating that emotionally engaging digital environments can improve persistence and encourage voluntary technology use (Arain et al., 2019; Venkatesh et al., 2012). Additionally, habit strongly predicted both behavioural intention and actual use, indicating that repeated exposure to SNSs such as the myU application gradually normalises their role in students' learning routines. This finding is consistent with the UTAUT2 literature, which shows that routine technology use reduces cognitive effort and fosters sustained engagement (Ciftci et al., 2023; Venkatesh et al., 2012).

The results indicate that educational SNSs function as sociotechnical learning processes rather than mere digital tools. Academic benefits appear to arise from a complex mechanism involving engagement, user satisfaction, enjoyment, and the habitual use of these platforms in daily learning practices. From a critical perspective, this finding suggests that institutions should not view the adoption of SNSs solely as a technological matter. Instead, they should approach it within the framework of a pedagogical ecosystem that requires alignment between system design, instructional strategies, and student motivation.

8.5 Cultural and Contextual Influences in Kuwait

The reasons for the non-significant relationships observed in the two studies become clearer when viewed within the cultural and institutional context of Kuwaiti HEIs. Rather than suggesting weaknesses in the model, these results appear to reflect the evolving digital maturity of students and teachers in the PAAET environment.

In Study 2, the weak influence of social influence indicates that students' engagement with myU is becoming increasingly self-directed. In Kuwaiti HEIs, students are now regularly exposed to various digital platforms, including LMSs, institutional email accounts, and mobile applications. This exposure has gradually normalised the independent use of technology. As a result, the external expectations of peers or teachers seem to have less of an impact on students' behavioural intentions. This observation is consistent with previous research suggesting that normative pressures weaken as users gain more technological experience and confidence (Almaiah et al., 2019; Cavus et al., 2021).

A similar contextual logic helps explain the non-significant effect of performance expectancy. In environments where digital tools are familiar, students may perceive the academic benefits of educational platforms as implicit rather than motivating. For instance, students at PAAET might assume that tools such as myU inherently support their studies, thereby diminishing the importance of performance-related beliefs in shaping their intentions to use these technologies. This observation aligns with UTAUT research, which suggests that the influence of performance expectancy is stronger during the initial adoption phase but becomes less significant once technologies are used routinely (Wut et al., 2022).

Similar results emerged from Study 1, in which information quality and service quality were not positively associated with student satisfaction, and service quality also failed to have a meaningful impact on actual system use. In the context of PAAET, these results suggest that both informational accuracy and support services may increasingly be viewed as baseline expectations rather than key factors influencing user responses. Today's students, particularly those who have been socialised by using commercial SNS platforms, often take for granted the availability of reliable content and responsive technical support as standard features. As a result, their satisfaction and use decisions seem to be more strongly influenced by experiential, behavioural, and engagement-related factors than by traditional dimensions of information systems quality. This interpretation aligns with previous research indicating that, in digitally mature learning environments, factors such as usability, habit formation, and interactive affordances often outweigh the impact of technical support services (Rokhman et al., 2022; Zacharis and Nikolopoulou, 2022). From the perspective of information systems success, the declining significance of service quality may indicate a shift from service-dependent adoption to user-driven, self-regulated engagement patterns in the context of educational SNSs.

The results suggest that students' confidence with technology and the voluntary nature of use are factors that influence the adoption and effective use of educational SNSs at PAAET. Key factors affecting both the intention to use and the actual use of educational SNSs include enjoyment, ease of use, habitual behaviour, perceived compatibility, and perceived technology efficacy (Khechine et al., 2020; Venkatesh et al., 2012). Additionally, the results reveal the importance of core sociotechnical and pedagogical mechanisms. These mechanisms include system quality, interactions between students and teachers, collaborative learning processes, student engagement, and overall system use and satisfaction, all of which contribute to positive SAP (Al-Fraihat et al., 2020; Al-Rahmi et al., 2022; Fredricks et al., 2004). In contrast, traditional dimensions of information systems success, such as information quality and service quality, appear to have a limited impact. These results indicate that, although these aspects establish baseline conditions, they do not significantly drive user engagement (Alfaki, 2021; Salam and Farooq, 2020).

As a whole, the results offer valuable insights into technology adoption in HEIs, highlighting the key contextual conditions under which these results apply. These insights indicate that, as students become more familiar with digital technology and

gain confidence in their technology skills, the factors influencing the adoption of educational SNSs change. Instead of focusing primarily on social pressures and basic system availability, the emphasis shifts towards usability, experiential value, and the incorporation of learning practices (Hsu, 2023; Venkatesh et al., 2003). This shift reflects a more advanced socio-technical environment, where the educational benefits of SNSs rely less on mere access and more on how effectively they are integrated into meaningful teaching and interaction processes (Alfaki, 2021).

8.6 Integrative Interpretation Across the Two Studies

Studies 1 and 2 together provide a comprehensive understanding of the use of educational SNSs in Kuwaiti HEIs, depicting educational SNSs use as a sociotechnical and pedagogical phenomenon rather than solely a matter of technology adoption. The results show that SAP is influenced by a range of factors, including student interaction, student engagement, system experience, and satisfaction (Study 1). Meanwhile, teachers perceive (Study 2) that SAP is influenced by patterns in students' SNS use behaviours, which are shaped by habits, perceived ease of use, enjoyment, technology effectiveness, and compatibility. This dual perspective implies that the academic value of educational SNSs arises not only from the technology itself but also from the dynamic interactions between users, system features, and learning processes (Petter and McLean, 2009; Venkatesh et al., 2012).

Study 1 demonstrates that in the context of educational SNSs, the traditional constructs of information success, particularly system quality and system use, remain fundamental. However, SNSs' educational value becomes significant only when they enable collaborative learning and engagement. This finding supports long-standing constructivist theories that posit that learning technologies provide value mainly by facilitating interaction, co-construction of knowledge, and active learner involvement rather than merely by delivering information (Jonassen and Rohrer-Murphy, 1999; Vygotsky, 1978).

Study 2 complements this view by revealing how teachers interpret the effect of students' SNS use on SAP. The strong connection between behavioural intention and actual use, as well as between use and teachers' perceptions of SAP, suggests that educators at PAAET heavily rely on visible engagement signals to assess learning effectiveness. These signals might include the frequency and consistency of logging

into the SNS, the timely submission of assignments, participation in discussion forums, contributions to group tasks, responsiveness to feedback, and interaction with uploaded learning materials. In digital learning environments, these observable behaviours indicate engagement and effort, influencing teachers' evaluations of SAP (Al-Rahmi et al., 2022; Fredricks et al., 2004). This result extends UTAUT2 research by showing that the mechanisms of adoption of educational SNSs are closely linked to how teachers interpret pedagogical processes, a subject that has received limited empirical attention. It also aligns with recent studies indicating that behaviours that are visible through analytics increasingly affect teachers' judgements of student engagement in digital environments (Ifenthaler and Yau, 2020).

Crucially, these two studies reveal an asymmetry between students' and teachers' perspectives. Students' perceptions of SAP were most closely associated with engagement and satisfaction. In contrast, teachers placed more emphasis on behavioural consistency and use behaviour. This divergence is theoretically important because it underscores the dual nature of the success of educational SNSs: for students, it is experienced internally in terms of affective and cognitive factors, whereas, for teachers, it is inferred externally through behavioural and observational metrics (Bond et al., 2021). Although this misalignment has been noted in previous research on educational technology, it has rarely been modelled empirically within a framework that simultaneously considers both student and teacher perspectives (Bond et al., 2021; Kahu, 2013).

The pattern of non-significant relationships observed across the two studies further justifies the integrative interpretation of the results. Specifically, the limited impact of social influence and performance expectancy in Study 2, along with the minimal impact of information and service quality in Study 1, suggests that the use of educational SNSs at PAAET may have reached a stage of functional normalisation. By this stage, the myU platform is perceived by users as a standard academic tool rather than a new technology that requires social approval or clear justification for its use.

In mature digital learning environments, essential technological features such as usefulness, information availability, and service support often become taken for granted rather than being key drivers of adoption. Instead, the focus shifts to experiential and behavioural factors, including habit, perceived ease of use, and engagement (Venkatesh et al., 2012; Zacharis and Nikolopoulou, 2022). The current results illustrate this shift because students and teachers at PAAET seem to assess the

myU application less on its theoretical merits and more on how well it integrates into their established learning practices.

This insight enhances both the UTAUT2 and the D&M IS Success Model by identifying key contextual factors within SNSs in HEIs. It suggests that, in digitally familiar environments, traditional factors influencing technology adoption may become less significant as the technology becomes integrated into daily academic routines. As a result, sustained engagement and behavioural integration become more important for explaining the outcomes of educational technology.

From a sociotechnical systems perspective, the results imply that information systems in education should be understood as configurations of people, processes, technology, and data rather than isolated software artefacts (Bostrom and Heinen, 1977; Petter et al., 2013). At PAAET, the myU platform serves as an enabling infrastructure, with its educational impact shaped by four layers: (1) the social layer, which involves interaction among peers and teachers; (2) the technological layer, which focuses on system quality, ease of use, compatibility, and effectiveness; (3) the pedagogical layer, which includes engagement, collaboration, and satisfaction; and (4) the behavioural layer, which encompasses both habitual and purposeful use (Delone and McLean, 2003; Fredricks et al., 2004; Hirt and Cheung, 2007; Jonassen and Rohrer-Murphy, 1999; Venkatesh et al., 2012). Consequently, the evidence from both studies supports a process-oriented understanding of success in educational SNSs. Improvements in SAP were not observed to be simply due to access to the SNS. Rather, they were found to stem from sustained, meaningful, and contextually relevant use of the SNS. This insight is particularly valuable for HEIs in Kuwait and other similar digital ecosystems.

8.7 Theoretical Contributions and Implications

This thesis presents four key theoretical contributions to the fields of educational technology, information systems, and technology adoption in higher education. First, it contextualises and validates the D&M IS Success Model and the UTAUT2 framework specifically within Kuwaiti higher education. Second, it enhances these established models by including pedagogical and behavioural constructs that are particularly relevant to the use of educational SNSs. Third, it provides a dual-perspective analysis of educational SNS adoption by exploring both student and

teacher perspectives. Finally, it identifies significant contextual factors that affect the explanatory strength of established information systems and technology acceptance theories in voluntary educational technology settings.

Additionally, this thesis takes a theory-testing (confirmation) approach. Rather than proposing new theories, the research assesses the applicability, explanatory power, and contextual relevance of established theoretical frameworks in a previously underexplored environment (Saunders et al., 2019). This contextual validation is significant because theoretical relationships that have been supported in one educational, cultural, or technological setting may not function the same way in another. As a result, this thesis contributes to the growing body of research examining how established information systems and technology adoption theories operate across diverse educational and cultural contexts.

8.7.1 Contextual Validation of Established Theories

The first theoretical contribution of this thesis is the contextual validation of the D&M IS Success Model and the UTAUT2 framework, specifically within the context of Kuwaiti higher education. While both models have been widely used in research on information systems and educational technology, empirical evidence from Arab HEIs remains limited. Most previous studies have focused on these frameworks in Western and East Asian contexts, often examining LMSs such as Moodle and Blackboard, as well as other technologies mandated by institutions (Almaiah et al., 2019; Al-Rahmi et al., 2021). Therefore, it is necessary to assess whether the explanatory mechanisms proposed by these models hold true across different cultural, educational, and technological contexts.

This thesis addresses this gap by examining the use of the educational SNS, myU, at PAAET in Kuwait. In contrast to many previous studies that focused on institutionally mandated technologies, this research emphasises the voluntary usage of the myU platform. This distinction is crucial, as user motivations, engagement patterns, and technology acceptance behaviours may differ significantly between mandatory and voluntary systems (Venkatesh et al., 2012). The results indicate that the core concepts of both the D&M IS Success Model and the UTAUT2 model remain effective in explaining educational SNS usage and its relationship with SAP. This

result provides further empirical support for the relevance of these frameworks within Arab higher education contexts.

The contribution goes beyond mere replication. Theory-testing studies are crucial for establishing the external validity of theoretical frameworks in various contexts (Saunders et al., 2019). Just because a relationship is supported in one setting does not mean it will operate the same way in another. Educational environments vary in cultural norms, institutional structures, technology usage, and teaching practices. Therefore, validating established theories in previously underexplored settings contributes to the cumulative development of knowledge and helps to identify the contextual conditions under which theoretical relationships remain stable or change (Gunasinghe et al., 2020; Kalınkara and Özdemir, 2024).

The results are particularly relevant because Kuwait is characterised by widespread internet access, high smartphone adoption rates, and increasing institutional investments in educational technologies (New Kuwait, 2023; United Nations, 2023a). By demonstrating the relevance of both the D&M IS Success Model and UTAUT2 in this context, the thesis contributes to the growing body of cross-cultural research in information systems and expands the empirical evidence regarding the adoption of educational technology in Arab higher education institutions.

8.7.2 Extension of Existing Theoretical Models

The second theoretical contribution of this thesis involves extending established theoretical models by incorporating contextually relevant constructs that capture essential educational and behavioural dimensions of using educational SNS. In Study 1, the D&M IS Success Model was enhanced by integrating constructs derived from constructivist learning theory, specifically student interaction, collaborative learning, and student engagement. While the D&M model has traditionally been utilised to evaluate information system success based on technological and user-oriented outcomes, it offers limited insight into the pedagogical processes through which technology influences learning outcomes (Perez et al., 2023). Educational SNSs differ from many traditional information systems because they are designed not only to facilitate access to information but also to support interaction, collaboration, communication, and active learning (Al-Nuaimi and Al-Emran, 2021). As a result,

incorporating pedagogical constructs allows for a more comprehensive examination of how educational SNSs contribute to SAP.

The results indicate that student engagement and collaborative learning significantly impact SAP in educational SNS environments. These results support claims in the educational technology literature that successful SAP arises not only from the quality of the technology itself but also from the quality of the learning experiences that technology facilitates (Alamri et al., 2020; Al-Rahmi et al., 2021). Therefore, the contribution of Study 1 is not merely the integration of information systems and learning theories, which has been addressed in previous research, but rather the demonstration of how pedagogical processes influence SAP in a Kuwaiti higher education context.

Study 2 expands the UTAUT2 framework by adding perceived technology efficacy and perceived compatibility as new factors that influence usage behaviour. Previous research has suggested that contextual elements can impact technology adoption beyond the original UTAUT2 constructs (Tamilmani et al., 2021; Venkatesh et al., 2003). In line with this perspective, findings from the teachers' point of view reveal that they consider students' confidence in using educational technologies and the compatibility of these technologies with students' learning needs as significant influences on technology use behaviour. By incorporating these factors, the study enhances the explanatory power of UTAUT2 in educational contexts and provides additional evidence that technology acceptance models can benefit from context-specific adaptations.

An important extension of this study involves introducing teachers' perceptions of student academic performance (TPSAP) as the final dependent variable. Traditional applications of the UTAUT2 model often focus on behavioural intention and technology use as the final dependent variables (Venkatesh et al., 2012). However, educational technologies are ultimately implemented to enhance learning and SAP success. By incorporating TPSAP into the model, this thesis establishes a theoretical connection between technology acceptance processes and perceived SAP from teachers’ perspectives. This extension directly addresses calls for increased attention to the performance-related consequences of technology adoption and expands the application of UTAUT2 within educational research. Moreover, only a few previous studies (e.g., Taamneh et al., 2023; Zacharis and Nikolopoulou, 2022) have explored

this model from teachers' perspectives, making this contribution particularly innovative.

8.7.3 A Dual-Perspective Understanding of Educational SNS Use

The third theoretical contribution of this thesis is the development of a dual-perspective understanding of the use of educational SNSs by examining both student and teacher viewpoints simultaneously. While previous studies on educational technology have primarily focused on students as the primary users of digital learning systems, comparatively little attention has been paid to how teachers perceive the factors that influence the use of educational technology and its impact on SAP (Perez et al., 2023).

The choice to explore both perspectives stems from the understanding that the use of educational SNS occurs within a broader learning ecosystem involving multiple stakeholders. Both students and teachers interact with the same technology but often assess its value from different viewpoints. Students mainly focus on their personal learning experiences, engagement, satisfaction, and academic performance. In contrast, teachers tend to evaluate technology based on its effects on students' learning behaviours, participation, and educational effectiveness. Therefore, examining only one perspective offers an incomplete understanding of how educational SNSs operate within higher education settings.

The results illustrate that the factors affecting SAP vary among different stakeholder groups. Study 1 underscores the significance of pedagogical and experiential elements, such as engagement, interaction, collaborative learning, and student satisfaction. In contrast, Study 2 highlights the importance of behavioural and contextual factors, including habits, hedonic motivation, effort expectancy, perceived compatibility, and perceived efficacy of technology, from the teacher's perspective. Together, these results demonstrate the multifaceted nature of adopting educational SNSs and show that different stakeholder groups may prioritise distinct mechanisms through which technology enhances SAP

This contribution is crucial because educational technologies are becoming increasingly integrated into complex educational systems that involve students, teachers, institutions, and technology providers. Following the recommendations of Miles et al. (2014), it is essential to examine complex educational phenomena from

multiple stakeholders' perspectives. This approach provides a richer and more comprehensive understanding than relying on a single perspective of evidence. Therefore, this thesis enhances educational technology research by demonstrating the importance of including both student and teacher perspectives when assessing the educational effectiveness of SNSs in higher education.

8.7.4 Identification of Contextual Boundary Conditions

The fourth theoretical contribution identifies contextual boundary conditions that influence the operation of established information systems and technology adoption theories. Given that Kuwait shares many structural and cultural characteristics with other Arab higher education systems, such as collectivist social norms, high mobile penetration, and expanding digital education initiatives, this thesis provides valuable insights into how students and teachers use SNSs for learning in such contexts. The results indicate that, in digitally advanced yet pedagogically evolving environments, experiential factors such as habits, engagement, and usability often outweigh traditional predictors such as social norms and IS quality. Thus, this thesis contributes to understanding not only the Kuwaiti context but also the broader field of educational technology adoption in Arab HEIs.

The results from both studies indicate that contextual factors influence the framing of theoretical relationships. Some theoretical relationships remain strong, whereas others may weaken under conditions of voluntary adoption. For instance, Study 1 revealed no statistically significant relationships between information quality and student satisfaction (H6), service quality and system use (H9), and service quality and student satisfaction (H10). These results suggest that, in a voluntary-use environment, students' use of or satisfaction with educational SNSs may not necessarily result from the quality of information or services provided. In contrast to the traditional factors outlined in the D&M IS Success Model, an educational SNS design that enhances communication and interaction between students and teachers appears to play a more significant role than a design based on technical or service attributes. This finding highlights the motivational aspects of learning in such contexts.

In Study 2, neither performance expectancy (H3) nor social influence (H5) were significantly related to behavioural intention. This finding is consistent with the views of Hartwick and Barki (1994) and Venkatesh et al. (2003), who argued that social and

normative pressures lose their predictive power in voluntary settings. When technology use is optional rather than mandatory, factors such as individual perceptions of convenience and enjoyment tend to be more influential than peer or institutional pressure (Khechine et al., 2020). This finding is especially relevant at PAAET, where SNSs such as myU serve as supplementary tools rather than formal integrated learning systems.

The results of this thesis provide important empirical insights into the contextual boundaries of both the D&M IS Success Model and the UTAUT2. Although these frameworks have been widely validated across various settings, prior scholarship has increasingly recognised that their key predictors may not operate uniformly across contexts (Cavus et al., 2021; DeLone and McLean, 2003; Dwivedi et al., 2019; Venkatesh et al., 2012). In this thesis, several traditionally influential constructs, specifically information quality, service quality, social influence, and performance expectancy, were observed to have limited or non-statistically significant effects. This observation aligns with emerging evidence suggesting that the explanatory power of these variables weakens in voluntary-use environments or among users with considerable digital experience (Cavus et al., 2021; Khechine et al., 2020).

In the context of Arab higher education examined in the present thesis, technology adoption appears to be influenced more by experiential and behavioural factors, such as habit, effort expectancy, perceived compatibility, and student engagement, than by normative pressure or traditional perceptions of quality. Similar trends towards internally driven adoption mechanisms have been observed in digitally mature learning environments, where users increasingly rely on assessments of personal utility rather than social endorsements (Venkatesh et al., 2012). This evidence suggests that the predictive frameworks of established information systems success and technology acceptance models must be adapted to account for contextual maturity, user autonomy, and accumulated digital familiarity. Therefore, the results of the current thesis contribute to the ongoing refinement of these models by highlighting important contextual factors in environments where educational SNSs are voluntary and socially embedded.

To summarise the theoretical contributions discussed above, Table 48 outlines the main contributions of this thesis. It includes the empirical evidence supporting each contribution, the relevant study from which the contribution emerged, and the boundary conditions within which the findings should be interpreted. This format helps

clarify how the findings enhance existing knowledge while remaining consistent with the scope and context of the research.

Table 48: Summary of Theoretical Contributions of the Thesis

Contribution	Supportive Evidence	Study	Boundary Conditions
Contextual validation of the D&M IS Success Model in a Kuwaiti higher education setting	Core D&M constructs explained significant variance in SAP and remained relevant within an educational SNS environment	Study 1	PAAET, myU, voluntary use
Contextual validation of UTAUT2 in a Kuwaiti higher education setting	Core UTAUT2 constructs explained significant variance in TPSAP and technology use behaviour	Study 2	PAAET, myU, voluntary use
Extension of the D&M model through pedagogical constructs	Student interaction, collaborative learning, and student engagement provided additional explanatory power for SAP	Study 1	Students' perspectives
Extension of UTAUT2 through perceived technology efficacy, perceived compatibility, and teachers' perceptions of SAP (TPSAP)	Both constructs significantly influenced use behaviour, and use behaviour significantly influenced TPSAP	Study 2	Teachers' perspectives
Dual-perspective framework linking educational SNS use and SAP	Student and teacher perspectives provided complementary explanations of SNS use and SAP	Study 1 & Study 2	Separate student and teacher samples from the same institution (PAAET); findings reflect perceptions rather than matched student–teacher pairs; educational SNS context (myU)
Identification of contextual boundary conditions for established theories	Several traditionally significant predictors became non-significant in a voluntary SNS environment	Study 1 & Study 2	Voluntary use of myU; digitally mature users; Kuwaiti higher education context; educational SNS rather than a formal LMS environment

Source: Author's own work.

The contributions of this thesis, as outlined in Table 48, primarily consist of theoretical extensions, contextual validations, and refinements of established frameworks, rather than the creation of entirely new theories. Consistent with the confirmation approach of the research, the findings illustrate how the D&M IS Success Model and UTAUT2 function within Kuwaiti higher education. Additionally, they identify the contextual factors that affect their explanatory power. Overall, these contributions enhance understanding of educational SNSs by emphasising the significance of pedagogical processes, behavioural factors, and stakeholder perspectives in explaining student academic performance in environments where technology adoption is voluntary.

8.8 Practical Contributions and Implications

In addition to its theoretical contributions, this thesis also offers valuable practical implications for key educational stakeholders. Students, teachers, institutional leaders, policymakers, and system designers aiming to improve learning outcomes through educational SNSs can all benefit from the findings resulting from this thesis.

The results of Study 1 emphasise the importance of system quality, interaction, collaborative learning, and student engagement from students' perspective. These factors are crucial for enhancing both student satisfaction and SAP. Students tend to be more successful when educational SNSs are user friendly, offer relevant and high-quality learning materials, and promote interactive communication with peers and teachers. Therefore, students should view educational SNSs not only as communication tools but also as dynamic learning environments. Additionally, the results highlight the significance of effective self-regulated learning behaviours when using these platforms. The strong relationships among engagement, actual use, and SAP indicate that purposeful, well-managed use of SNSs is associated with more effective learning outcomes. This implication aligns with research on self-regulated learning (Ifenthaler and Yau, 2020; Khong et al., 2023; Zimmerman, 2002).

Institutions should also run targeted student development workshops that emphasise effective digital participation, critical evaluation of online information, and responsible academic use of educational SNSs. Such initiatives could help minimise the risks associated with excessive or unstructured use of these platforms, while reinforcing their academic purpose. Because myU currently operates under a voluntary

usage framework at PAAET, institutions may consider a carefully scaffolded approach to curricular integration rather than requiring mandatory adoption. This strategy would encourage consistent and meaningful engagement, while preserving students' sense of autonomy. Previous research indicates that enforced technology use can weaken intrinsic motivation, whereas pedagogically guided integration within course activities is more likely to promote sustained and purposeful engagement (Deci and Ryan, 2000; Venkatesh et al., 2003). This recommendation aligns with the findings of the present thesis, which suggest that experiential and behavioural factors, rather than external pressure, play the dominant role in shaping students' engagement with educational SNSs in the context of HEIs.

Furthermore, the results of this thesis indicate that educational SNS, myU, can function not only as a communication platform but also as a tool for evaluation and development in higher education. Therefore, institutions should evaluate the effectiveness of their educational SNS initiatives using indicators that reflect meaningful learning engagement. These indicators should include measures such as student interaction, collaborative learning, participation in discussions, reflective contributions, and sustained use of the system, rather than relying solely on metrics like access frequency or time spent online. As a result, the integrated models developed in this thesis may serve as a practical framework for assessing and enhancing the educational value of SNS initiatives in Kuwaiti HEIs.

From the perspective of teachers (Study 2), key factors such as habit, effort expectancy, hedonic motivation, perceived compatibility, and perceived technology efficacy significantly shape students' intentions and actions regarding the use of educational SNSs. Therefore, teachers play a crucial role as motivators and facilitators, guiding students towards meaningful and consistent engagement with technology. Teachers can use these findings by incorporating SNS-based activities into their teaching practices. Examples include discussion forums, reflective posts, and collaborative projects designed to foster digital learning habits among students. Given that use behaviour significantly influences TPSAP (accounting for 55.6% of its variance), educators should prioritise creating consistent opportunities for meaningful digital participation aligned with their course objectives.

Moreover, teachers should focus on creating online learning experiences that are straightforward, accessible, and enjoyable, especially given the significant influence of effort expectancy and hedonic motivation. For this purpose, it is important to design

myU activities with clear navigation pathways, concise task-oriented instructions, and mobile-friendly learning materials that minimise cognitive load. Additionally, incorporating interactive elements such as discussion prompts, quick polls, peer feedback tasks, and gamified features can boost students' intrinsic motivation and engagement. This approach not only reduces usability barriers but also maintains interest in SNS-mediated learning environments.

In addition, targeted training sessions for teachers in digital pedagogy and social learning design can further support the goal of improving SAP through educational SNSs. These sessions would enable teachers to use SNSs not as administrative tools but as purpose-designed platforms for interaction, feedback, and collaborative knowledge construction (Al-Rahmi et al., 2020).

For institutional leaders at PAAET and similar HEIs, the results imply that enhancing the technical and pedagogical quality of educational SNS, myU, are crucial for long-term success. Administrators should ensure that SNSs such as myU are reliable, responsive, and pedagogically sound in their integration into course design. Additionally, these SNSs should promote two-way communication, fostering continuous interaction among students and between students and teachers. Given the voluntary nature of myU use, policy strategies should prioritise motivation and relevance over enforcement. For example, integrating SNS participation into coursework or assessments while maintaining flexibility can encourage consistent use without undermining autonomy.

Regarding the absence of statistically significant effects of information quality and service in Study 1, and of social influence and performance expectancy in Study 2, the results indicate that external encouragement or pressure alone is insufficient to drive adoption in the context of educational SNSs within Kuwaiti HEIs. Consequently, policies should prioritise demonstrating how SNSs can provide academic value and support autonomous learning, rather than simply making their use mandatory. Training and orientation programmes should showcase how educational SNSs contribute to better SAP, engagement, and collaboration. The results also indicate that in mature digital environments, both students and teachers may view basic service provision and external support as fundamental expectations. Therefore, institutions should concentrate on improving meaningful engagement, usability, compatibility with learning activities, and fostering opportunities for interaction and collaboration.

Moreover, the results imply that use behaviour significantly influences TPSAP, so institutions should prioritise monitoring the quality of system use rather than focusing solely on use frequency. As mentioned in Chapter 4, this prioritisation of quality over quantity might refer to how effectively a student engages with the capabilities of educational SNSs in terms of nature, extent, quality, and appropriateness (Ain et al., 2016; Alamri et al., 2020). Indicators such as active participation in discussions, submission of reflective contributions, meaningful peer interactions, and evidence of task-focused engagement could be more useful for this purpose than relying solely on metrics like time spent online.

At the policy level, the results provide a roadmap for advancing digital transformation in Kuwaiti HEIs. Both PAAET and the Ministry of Higher Education can use these insights to develop evidence-based digital learning frameworks aligned with Kuwait Vision 2035. Empowering teachers through targeted professional development and fostering students' digital literacy can enhance the sustainability and inclusivity of SNS adoption in education.

For system developers, these results emphasise the importance of designing platforms that are intuitive, engaging, and aligned with users' learning habits. Developers should focus on features that promote collaboration, reflection, and engagement while minimising unnecessary complexity. By aligning design choices with constructivist learning principles, system developers can create technology that effectively supports pedagogy rather than hinders it.

The results are relevant to Kuwait Vision 2035 and the national goal of developing a knowledge-based economy that emphasises innovation, creativity, and digital transformation. Educational SNSs, in general, can contribute to these objectives by facilitating student-centred learning practices instead of merely delivering information passively. Examples of effective practices include structured peer collaboration activities, student-generated content, reflective discussion forums, peer feedback cycles, collaborative problem-solving tasks, and teacher-guided online discussions. These approaches promote active participation, knowledge sharing, critical thinking, and creativity, which are increasingly recognised as essential skills for graduates in contemporary higher education systems.

Overall, the practical implications of this thesis go beyond the implementation of a single educational SNS platform. The results offer evidence-based guidance for students, teachers, institutional leaders, policymakers, and system developers on how

to effectively design, implement, and integrate educational SNSs into teaching and learning practices to support SAP. Although these recommendations are based on the context of PAAET, they may also be applicable to similar HEIs in Kuwait and other Arab countries that are pursuing digital transformation initiatives aimed at enhancing SAP through educational technologies.

8.9 Chapter Summary

This chapter interprets the empirical results using a combination of social, technological, educational, and contextual perspectives. It thus explains the impact of educational SNSs on SAP at PAAET. By integrating insights from both students and teachers, the discussion goes beyond individual hypotheses to uncover the broader sociotechnical dynamics that facilitate the effective use of SNSs in Arab HEIs.

Study 1 indicates that SAP is strongly associated with interaction, collaborative learning, engagement, system quality, and student satisfaction, supporting the integration of the D&M IS Success Model with constructivist learning theory. However, the non-significant effects of information quality and service quality highlight limitations within voluntary SNS environments. Study 2 expands on these results by demonstrating that teachers primarily assess SAP based on observable behaviours, which are influenced by habit, effort expectancy, hedonic motivation, perceived technology efficacy, and perceived compatibility. While social influence and performance expectancy play a limited role.

Overall, this chapter explains that the academic value of educational SNSs stems from the interaction between people, systems, and learning processes rather than from the technology itself. It also highlights the key theoretical and practical contributions and implications of this thesis. The next chapter summarises the overall conclusions, addresses the limitations of the studies that underpin this thesis, and offers recommendations for future research.

9 Conclusion

9.1 Introduction

This chapter concludes the thesis by synthesising the overall research design, implementation, and results. It revisits the thesis aim and summarises the main outcomes from the two empirical studies that underpin the thesis. The chapter also discusses the primary limitations and suggests directions for future studies.

This thesis aimed to investigate the factors related to the use of educational SNSs and their influence on students' academic performance in Kuwaiti HEIs. The study was motivated by the increasing adoption of SNSs in educational settings and the need to understand how these SNSs affect learning outcomes from the perspectives of both students and teachers.

To achieve this aim, the thesis addressed two research questions. The first research question asked, from a student perspective, what factors affect students' academic performance when using educational SNSs. The second research question asked, from a teacher perspective, what factors influence students' academic performance when using educational SNSs. By considering both perspectives, the thesis seeks to provide a more comprehensive understanding of the use of educational SNSs within HEIs.

Two theoretical models were used to guide the research design and analysis. Study 1 combined the D&M IS Success Model with constructivist learning theory to investigate how system-related factors and pedagogical methods influence SAP. Study 2 expanded the UTAUT2 model by adding perceived technology efficacy and perceived compatibility as antecedents. It also considered teachers' perspectives of SAP (TPSAP) as the dependent variable. This dual-model approach enabled the thesis to connect information systems theory with educational theory.

The empirical studies applied a quantitative research approach to data gathered from students and teachers at PAAET in Kuwait. Data were collected through two structured online questionnaires. Study 1 focused on students who actively use educational SNSs, specifically the myU application. In contrast, Study 2 focused on teachers who use the myU application in their teaching practices. In total, data were collected from 692 students in Study 1 and 225 teachers in Study 2. All questionnaire

items were adapted from previously validated instruments found in the literature to ensure content validity and reliability. The questionnaires were distributed online (using SurveyMonkey), which made it convenient for participants to access and respond. Data analysis was performed using PLS-SEM following the accepted two-stage process. First, the measurement models were evaluated to confirm their reliability and validity. Second, the structural models were assessed to test the hypothesised relationships in both studies.

The key results from the two empirical studies provided several important insights. Study 1 found that student engagement, use of the myU application, and student satisfaction together explained 54.4% of the variance in SAP. Most of the hypothesised relationships were supported, confirming the importance of both information systems success factors and constructivist learning elements. However, some relationships, specifically those related to information quality and service quality, were not significant, suggesting that their impact may vary depending on the educational SNS environment. Study 2 found that myU application use behaviour accounted for 55.6% of the variation in TPSAP. Key factors influencing students' behavioural intentions and use behaviour, from the perspective of teachers, included habit, effort expectancy, hedonic motivation, perceived technology efficacy, and perceived compatibility. In contrast, performance expectancy and social influence were found to be non-significant, indicating that external pressure and the anticipation of performance improvements play a limited role in the use of SNSs services.

This thesis not only presented empirical results but also contributed significantly to various theoretical perspectives. From an information systems perspective, the thesis extended the D&M IS Success Model beyond traditional organisational contexts and LMSs by validating it within an educational SNSs environment. Whereas previous studies (e.g. Al-Fraihat et al., 2020; Aldholay et al., 2018; Aldholay et al., 2020) had confirmed the applicability of the D&M IS Success Model for structured e-learning systems, this thesis showed that the constructs of information systems success also explained SAP in socially embedded platforms such as the myU application. The non-significant results regarding information and service quality identified the key contextual factors in voluntary contexts.

The thesis also refined the UTAUT2 model by empirically validating it in a non-Western higher education context and incorporated TPSAP as an independent variable. The results supported Venkatesh et al.'s (2003, 2012) assertion that the relationships

involved in technology acceptance are influenced by the specific context, especially in environments where the effects of social influence may be relatively weak. Therefore, this thesis contributed to the adaptation of the UTAUT2 model within information systems scholarship.

From an educational standpoint, the thesis revealed that SAP is not solely affected by technology. Instead, it is influenced by the interplay of factors such as technology quality, collaborative processes, engagement, and consistent behavioural patterns. By integrating constructivist learning theory with information systems models, the thesis confirmed that meaningful learning occurs through interaction, the co-construction of knowledge, and active participation, rather than merely through passive exposure to technology. Crucially, the thesis also provided empirical evidence from Kuwait, a geographical context in which large-scale research on the adoption of educational SNSs is scarce. By presenting strong quantitative results from the perspectives of both students and teachers, the thesis enhanced regional scholarship and offered insights that are relevant to digital transformation efforts in Kuwaiti HEIs.

This research also contributed to the literature on the use of SNSs in education by differentiating between superficial SNSs use and meaningful academic engagement. The results indicated that a structured, purposeful, and regular use of educational SNSs was positively correlated with SAP. However, aspects such as service quality did not necessarily lead to improved SAP. By examining the myU application as a sociotechnical educational platform, the research revealed that SNSs could serve as effective learning tools when aligned with educational goals and integrated into use behaviour. This deeper understanding helps resolve the inconsistent findings of previous studies of the academic impact of SNS use.

The results of this thesis should be interpreted primarily as a form of theory generalisation rather than statistical generalisation. The research aimed to test and extend established theoretical frameworks within a specific educational context, rather than produce statistically representative estimates for all higher education institutions. As a result, the findings provide evidence regarding the applicability of the D&M IS Success Model, constructivist learning theory, and UTAUT2 in the context of the use of educational SNSs within Kuwaiti higher education. However, caution should be exercised when applying these findings beyond contexts with similar institutional, cultural, technological, and educational characteristics, such as voluntary use of educational SNSs in higher education settings.

Overall, this thesis achieved its initial objectives. It identified and empirically tested the factors related to the use of educational SNSs and their influence on SAP from the perspectives of both students and teachers. The results revealed that SAP results from a dynamic interplay among individuals, technology, processes, and behavioural patterns. By integrating information systems theory, technology adoption theory, and learning theory within the HEI context, the thesis offers a coherent, contextually grounded, and theoretically informed understanding of how educational SNSs affect academic performance in HEIs.

9.2 Research Limitations

This thesis offers valuable theoretical and practical insights into the use of educational SNSs and their impact on SAP at PAAET. However, several limitations must be acknowledged when interpreting its results.

First, both studies that underpin this thesis used a cross-sectional research design, collecting data at a single point in time. Although this approach is effective for examining relationships among variables, it limits the ability to infer causal relationships or track changes in students' and teachers' perceptions over time. The use of educational SNSs and their impact on SAP may evolve as users gain more experience or as institutional policies change. Therefore, employing longitudinal designs might provide deeper insights into how these relationships develop over time.

Second, the empirical studies focused on a specific institutional context, namely PAAET in Kuwait. Although this setting offers valuable insights into the use of educational SNSs in a non-Western and voluntary use environment, the results may not be applicable to other HEIs, countries, or educational systems that differ in their cultural, technological, pedagogical, or organisational characteristics. Therefore, additional empirical testing is necessary before applying the findings to significantly different educational contexts.

Third, the study utilised purposive non-probability sampling due to the unavailability of a complete sampling frame for educational SNS users. While this method is widely accepted in theory-testing research and was suitable for the thesis's objectives, it does limit the ability to statistically generalise the findings to all students and teachers in Kuwait or other higher education systems. Therefore, the results should

primarily be seen as supporting the generalisation of theory rather than as a form of statistical or sampling generalisation.

Fourth, the thesis primarily examines the use of educational SNS through the lens of the myU application. Although myU is widely used at PAAET, both students and teachers often use multiple SNSs simultaneously. Therefore, focusing exclusively on myU may not fully represent the broader range of SNSs used for learning, nor capture the specific differences in design, functionality, or pedagogical benefits offered by each one.

Fifth, the measurement of SAP was based on perception-based measures. Study 1 examined students' perceptions of their own academic performance, while Study 2 focused on teachers' perceptions of students' academic performance. Although these perceptions are important because they can influence attitudes and behaviours, they may not always align directly with objective indicators of SAP, such as grade point averages, course grades, retention rates, or learning analytics. Therefore, the reliance on perceptual measures represents a significant limitation of the study.

Sixth, although the empirical studies integrated established theoretical frameworks, including the D&M IS Success Model, constructivist learning theory, and the UTAUT2, they omitted several potentially influential variables. Factors such as learning strategies, self-regulated learning, teaching styles, and institutional policies were outside the scope of this thesis. However, these variables may further explain variations in SAP.

Finally, although PLS-SEM is a strong analytical tool, the results depend heavily on the chosen model structure and selected constructs. Exploring alternative models or using mixed methods approaches that include qualitative data from interviews or focus groups could provide deeper insights into use behaviour and the contextual factors that influence the adoption and effectiveness of educational SNSs.

The limitations outlined do not reduce the significance of the findings. Instead, they clarify the specific conditions under which the results should be understood. In particular, these findings are relevant to PAAET, the context of higher education in Kuwait, the myU educational SNS platform, a voluntary-use environment, the timeframe during which the data were collected, and the perception-based measures utilised in both studies.

9.3 Recommendations for Future Research

Drawing from the results and limitations of this thesis, several suggestions for future studies can be proposed. The current thesis could enhance understanding of the use of educational SNSs and their impact on SAP in HEIs.

First, future research would greatly benefit from using longitudinal study designs to investigate how students' and teachers' perceptions of educational SNSs change over time. While this thesis identified significant relationships between SNS use, engagement, satisfaction, and academic performance, the cross-sectional design limited our ability to understand how these relationships develop over time. Longitudinal studies could offer stronger evidence of causal relationships and reveal whether the effects of system use, engagement, satisfaction, habit, and behavioural intention become stronger or weaker as users gain more experience with educational SNSs.

Second, future studies should incorporate objective indicators of SAP alongside perception-based measures. This thesis focused on students' perceptions of their academic performance and teachers' perceptions of students' academic performance. However, future research could include metrics such as grade point averages (GPA), course grades, retention rates, learning analytics, and other assessment outcomes. By combining both perceptual and objective measures, researchers can gain a more comprehensive understanding of the relationship between educational SNSs use and SAP.

Third, future research could utilise matched student-teacher research designs. While the current thesis explored both student and teacher perspectives through two complementary studies, subsequent studies could collect data from teachers and the same group of students simultaneously. This approach would enable researchers to compare students' actual experiences with teachers' perceptions of those experiences, leading to a more integrated understanding of how educational SNSs influence learning processes and SAP.

Fourth, researchers are encouraged to explore additional theoretical perspectives and constructs to complement the integrated models used in this thesis. For instance, examining self-regulated learning, digital literacy, learning strategies, or cognitive load theory could offer deeper insights into how students engage with educational SNSs and how this engagement translates into meaningful SAP. Additionally, incorporating

motivation theories or expectancy-value models could help clarify why certain factors, such as performance expectancy or social influence, do not appear to be significant in contexts of voluntary use.

Fifth, while this thesis adopted a deductive, theory-testing approach, future research could employ qualitative and inductive methods to identify additional critical success factors (CSFs) influencing the effective use of educational SNSs in higher education. Methods such as interviews, focus groups, observations, and case studies may uncover context-specific factors that established frameworks like the D&M IS Success Model, constructivist learning theory, or UTAUT2 do not fully address. This type of research could enhance theory development by identifying new social, pedagogical, organisational, or cultural factors that impact the successful implementation of educational SNSs, particularly within Arab higher education contexts.

Sixth, future research could greatly benefit from adopting mixed methods designs that combine quantitative surveys with qualitative data collection techniques. While quantitative approaches can identify the strength and significance of relationships among different constructs, qualitative research can provide richer explanations for why these relationships exist. For instance, mixed-methods research could help clarify how educational SNSs influence factors, such as student engagement, collaborative learning, usage behaviours, and SAP. Additionally, it could shed light on why certain variables identified in this thesis, such as performance expectancy, social influence, information quality, and service quality, demonstrated limited or non-significant effects. This approach would provide a deeper understanding of the mechanisms by which educational SNSs affect SAP in higher education settings.

Seventh, comparative studies across institutions, disciplines, and countries are recommended. The findings of this thesis are specific to PAAET and the context of higher education in Kuwait. Future research could examine differences between public and private universities, various academic disciplines, or institutions across Gulf Cooperation Council (GCC) countries and other Arab states. Additionally, comparative studies involving Western, East Asian, and Arab higher education systems would help identify which findings are applicable across different contexts and which are specific to certain situations. Such research would contribute to the ongoing development of information systems and theories regarding technology adoption in diverse educational environments. These studies would also help identify which

relationships presented in this thesis are consistent across educational contexts and which depend on specific cultural, institutional, or technological conditions.

Eighth, future research should focus on educational SNSs by using larger and more diverse samples. While the sample sizes in this thesis were sufficient for the statistical analyses conducted, involving broader samples that incorporate multiple institutions and educational settings would strengthen the findings. This would provide more compelling evidence regarding the applicability of the proposed models across various contexts.

Ninth, future studies should explore how educational SNSs contribute to the development of creativity, innovation, and collaborative problem-solving skills among students. This recommendation is especially pertinent to Kuwait Vision 2035, which emphasises the importance of developing human capital, fostering innovation, and promoting knowledge-based economic growth. Future research could investigate SNS-enabled practices such as peer collaboration, student-generated content, reflective discussions, structured feedback cycles, collaborative projects, and teacher-facilitated knowledge sharing. Such studies would provide valuable evidence regarding the broader educational benefits of SNSs beyond traditional measures of SAP.

Finally, future research should explore the design characteristics of educational SNSs in greater detail. The findings of this thesis indicate that factors such as system quality, information quality, engagement, collaborative learning, habits, perceived compatibility, and perceived technology efficacy significantly influence SAP. Future studies could examine how specific platform features, such as discussion forums, feedback mechanisms, recommendation systems, collaboration tools, gamification elements, and learning analytics dashboards, affect student engagement and academic performance. Using experimental and design-based research methods may be particularly beneficial for assessing the effectiveness of these interventions.

In conclusion, this thesis sheds light on the complexity of technology-enhanced learning in HEIs, especially in voluntary use environments. Although educational SNSs have the potential to create meaningful opportunities to enhance student engagement and SAP, their effectiveness depends on the complex interplay of technological, pedagogical, and contextual factors. Future research building on this thesis could contribute not only to theoretical development but also to the design of more meaningful, inclusive, and effective digital learning environments. By

continuing to explore educational SNSs from the perspectives of both students and teachers, researchers could support evidence-based innovation in higher education and contribute to the ongoing digital transformation of learning.

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Appendices

Appendix A – Questionnaires for Study 1 and Study 2

myU use and students' academic performance at The Public Authority for Applied Education from students' perspective

Dear student,

I am a PhD research student at the University of East Anglia conducting a study to investigate the factors that would affect students' academic performance through using educational SNSs (such as myU application) at PAAET from students' perspective.

The questionnaire designed for this study consists of two parts. The first part consists of demographic questions, while part two assesses the factors that would affect students' academic performance. If you use myU application, I would be very grateful if you fill out this questionnaire. Your participation is voluntary. If you do not wish to participate, simply discard the questionnaire. Responses will be completely anonymous; your name will not appear anywhere on the survey. Also, all of the information you kindly provide will be treated as completely confidential, and it will not be possible for anyone to identify the information you supply.

The questionnaire will take less than 7 minutes of your time to fill out. If you have any questions or concerns, please contact me at jpa21jqu@uea.ac.uk

By selecting "I Agree" below, you are providing your signature by electronic means and agree to be in this study. If you do not want to be in this study, you can select "I Do Not Agree" to exit the survey.

o I agree to participate

o I do not agree to participate

If you would like to take part, please first read the link below that contains the participant information sheet.

https://ueanorwich-my.sharepoint.com/:w:/g/personal/Jpa21jqueaacuk/ER4n2z9jxleqkogu0RdgZEBSrfWGyGO vPgfooWfbm e=8ojqsx

Regards

Bodoor Alazemi

PhD student

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- **Part one:** Personal Information

Instruction: Please select the appropriate answer.

1. Did you use myU before?*

- Yes
- NO

If your answer is NO, thank you for your time, you can stop now. If your answer is YES, please proceeded to the second question.

2. Gender.*

- Male
- Female
- Prefer not to answer.

3. College.*

- College of Basic Education
- College of Business Studies
- College of Technological Studies
- College of Health Sciences
- College of Nursing

4. Year of study.*

- First year
- Second year
- Third Year
- Fourth year and above

5. Grade Point Average (GPA).*

- 4.00 - 3.6 points
- 3.59 -2.8 points
- 2.79 – 2.0 Points
- 1.99 points or less
- Prefer not to answer.

6. How long have you been using myU?*

- Less than 1 year
- 1-2 years

- More than 2 years

➢ **Part two:**

Instruction: Please read questions 7 and 8 carefully and indicate your answer by selecting the appropriate number that describes your usage frequency and duration of myU**.**

7. On average, how frequently do you use myU? *

- Once a month or less
- Once a week
- Several times a week
- Once a day
- Several times a day

8. On average, how much time do you spend each time you use myU? *

- Less than 10 minutes
- 10- 20 minutes
- 21- 30 minutes
- 31- 40 minutes
- More than 40 minutes
-

Instruction: Please select your degree of agreement or disagreement with the following statements **using the 5-point scale below**: 1= Strongly Disagree, 2= Disagree, 3=Neutral, 4= Agree, 5= Strongly Agree.

No	**Statements**					
9. My Interaction with Peers.*		**Strongl**	**Disagr**		**Agree**	**strongl**
	myU gives me the opportunity to interact with my peers about course content and homework.	1	2	3	4	5
	myU helps facilitate dialogue with my peers.	1	2	3	4	5
	myU facilitates course discussions (such as exchange of information and ideas) with my peers.	1	2	3	4	5
10. My Interaction with Faculty members.*						

myU gives me the opportunity to interact with faculty members about course content and homeworks.	1	2	3	4	5
myU helps facilitate dialogue with faculty members.	1	2	3	4	5
myU facilitates course discussions (such as exchange of information, ideas, and feedback) with faculty members.	1	2	3	4	5
11. Collaborative Learning (CL) is learning with a group of my peers through myU.*					
Using myU, I was able to develop my learning abilities through peer collaboration.	1	2	3	4	5
Using myU, I was able to gain new skills from my peers.	1	2	3	4	5
Using myU, I was able to develop my understanding of the topics through group discussion.	1	2	3	4	5
12. My participation through myU.*					
Using myU, I like to communicate with my peers to discuss homework, lessons, and talk about the day's events	1	2	3	4	5
Using myU, I like to communicate with faculty members to discuss the topics explained in class, assessments, and study problems if any.	1	2	3	4	5
Using myU, I give importance to studying together with my peers.	1	2	3	4	5
Using myU, I feel that faculty members are near me when I need them	1	2	3	4	5
13. myU Information Quality.*					
The course content in myU is up to date.	1	2	3	4	5
The content in myU is considered accurate for the course.	1	2	3	4	5
The information provided by myU is relevant to the course content.	1	2	3	4	5
The information provided by myU is easy to understand.	1	2	3	4	5
14. myU Quality as an Application.*					
myU is easy to use.	1	2	3	4	5
myU provides flexible features to interact with.	1	2	3	4	5

I find myU features are understandable.	1	2	3	4	5
15. myU Technical Staff Quality.*					
The technical staff provide me with quick assistance in case of any difficulty in using myU.	1	2	3	4	5
Please select (Neutral) for this question.	1	2	3	4	5
Technical staff are available to provide help for using myU.	1	2	3	4	5
myU technical staff understand my specific needs.	1	2	3	4	5
16. My Satisfaction with myU.*					
I am satisfied that myU meets my requirements.	1	2	3	4	5
I am satisfied with the information provided by myU.	1	2	3	4	5
Overall, I am satisfied with myU.	1	2	3	4	5
17. My Academic Performance.*					
myU helps me to accomplish my tasks (such as HomeWorks, reports, and projects) on time	1	2	3	4	5
myU saves my learning time.	1	2	3	4	5
myU improves my comprehension of the concepts studied	1	2	3	4	5
Using myU helps me to review and know my mistakes in my studies.	1	2	3	4	5
myU helps me acquire useful information.	1	2	3	4	5
myU helps me acquire new communication skills.	1	2	3	4	5

Thank you for your cooperation

استخدام ماي **استخدام ماي يو (MyU) والأداء الأكاديمي للطلاب في الهيئة العامة للتعليم التطبيقي والتدريب من وجهة نظر الطلاب**

عزيزي الطالب،

أنا طالب دكتوراه في جامعة إيست أنجليا وأجري دراسة لاستقصاء العوامل التي قد تؤثر على الأداء الأكاديمي للطلاب من خلال استخدام مواقع الشبكات الاجتماعية التعليمية (مثل تطبيق ماي يو) في الهيئة العامة للتعليم التطبيقي والتدريب من وجهة نظر الطلاب.

يتكون الاستبيان المصمم لهذه الدراسة من جزأين. يضم الجزء الأول منه الأسئلة الديموغرافية، بينما يضم الجزء الثاني العوامل التي قد تؤثر على الأداء الأكاديمي للطلاب. لذا، إذا كنت تستخدم تطبيق ماي يو، سأكون ممتنًا جدًا لملء هذا الاستبيان. مشاركتك تطوعية، فإذا كنت لا تود المشاركة، ببساطة تجاهل الاستبيان. ستكون إجاباتك مجهولة الهوية تمامًا؛ فلن يظهر اسمك في أي مكان في الاستبيان. وسيتم التعامل أيضاً مع جميع المعلومات التي تتفضل بتقديمها على أنها سرية تمامًا ولن يكون ممكناً لأي شخص معرفة المعلومات التي تقدمها. إن إكمالك الاستبيان وإعادته بمثابة موافقتك على المشاركة فيه.

سيستغرق ملء الاستبيان أقل من 7 دقائق من وقتك لملئه. فإذا كان لديك أي أسئلة أو استفسارات، يُرجى التواصل معي على jpa21jqu@uea.ac.uk.

إذا كنت لديك النية في المشاركة، يُرجى أولاً قراءة الرابط أدناه الذي يحتوي على ورقة معلومات المشارك.

تحياتي

بدور العازمي

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رابط ورقة معلومات المشارك أدناه: رابط ورقة معلومات المشارك أدناه:

https://ueanorwich-my.sharepoint.com/:w:/g/personal/Jpa21jqueaacuk/ER4n2z9jxleqkogu0RdgZEBSrfWGyGO vPgfooWfbm e=8ojqsx

1. هل جربت **ماي يو (MyU) من قبل؟***
   - نعم
   - لا

إذا كانت إجابتك "لا"، فشكرا على وقتك وبإمكانك التوقف الآن.

الجزء الأول: المعلومات الشخصية

التعليمات: يُرجي اختيار الإجابة المناسبة:

2. النوع *
   - ذكر
   - انثي
   - أفضل عدم الإجاب
3. الكلية. *
   - كلية التربية الأساسية
   - كلية الدراسات التجارية
   - كلية الدراسات التكنولوجية
   - كلية العلوم الصحية
   - كلية التمريض
4. سنوات الدراسة. *
   - السنة الأولي
   - السنة الثانية
   - السنة الثالثة
   - السنة الرابعة فأعلى.
5. المعدل التراكمي. *
   - 4.00 – 3.60
   - 3.59 – 2.80
   - 2.79 – 2.00
   - 1.99أو أقل
   - أفّضل عدم الإجابة
6. منذ متى وانت تستخدم ماي يو (MyU)؟*
   - أقل من سنة

- من سنة إلى سنتين
- أكثر من سنتين

الجزء الثاني

التعليمات: يُرجي قراءة الأسئلة رقم 7 و 8 بحرص وتوضيح إجابتك باختيار الرقم المناسب الذي يصف درجة استخدامك لماي يو (MyU)ومدته.

7. في المتوسط، كم مرة تستخدم ماي يو (MyU)؟*
   - مرة في الشهر أو أقل
   - مرة في الأسبوع
   - عدة مرات في الأسبوع
   - مرة في اليوم
   - عدة مرات في اليوم
8. في المتوسط، كم تستغرق في كل مرة تستخدم فيها ماي يو (MyU)؟*
   - أقل من 10 دقائق
   - من 10 إلى 20 دقيقة.
   - من 21 إلى 30 دقيقة.
   - من 31 إلى 40 دقيقة.
   - أكثر من 40 دقيقة.

التعليمات: اختر درجة الموافقة أو عدم الموافقة مع العبارات الاتية **باستخدام مقياس الدرجات من 1 إلى 5**

أدناه: 1 = أرفض بشدة، 2= أرفض، 3 = محايد، 4= موافق، 5 = موافق بشدة

9. درجة تفاعلي مع زملائي. *

	1 = أرفض بشدة	2= أرفض	3 = محايد	4= موافق	5 = موافق بشدة
يُتيح لي ماي يو (MyU)الفرصة في التفاعل مع زملائي	□	□	□	□	□

بشأن محتوي المقرر الدراسي والواجبات المنزلية.					
يُسهل ماي يو (MyU) الحوار مع زملائي.	□	□	□	□	□
يُسهل ماي يو (MyU) المناقشات المتعلقة بالمقرر الدراسي مثل مشاركة المعلومات والأفكار مع زملائي.	□	□	□	□	□

10.درجة تفاعلي مع أعضاء هيئة التدريس. *

	1 = أرفض بشدة	2= أرفض	3 = محايد	4= موافق	5 = موافق بشدة
يُتيح لي ماي يو (MyU) الفرصة في التفاعل مع أعضاء هيئة التدريس بشأن محتوي المقرر	□	□	□	□	□

الدراسي والواجبات المنزلية.					
يُسهل ماي يو (MyU) الحوار مع أعضاء هيئة التدريس.	□	□	□	□	□
يُسهل ماي يو (MyU) المناقشات المتعلقة بالمقرر الدراسي مثل مشاركة المعلومات والأفكار والملاحظات مع أعضاء هيئة التدريس.	□	□	□	□	□

11.التعلم التعاوني: هو التعلم مع مجموعة من زملائي من خلال ماي يو (MyU).*

	1 = أرفض بشدة	2= أرفض	3 = محايد	4= موافق	5 = موافق بشدة
باستخدامي لماي يو (MyU)استطعت	□	□	□	□	□

تحسين قدراتي التعليمية من خلال التعلم التعاوني.					
باستخدامي لماي يو (MyU)استطعت اكتساب مهارات جديدة من زملائي.	□	□	□	□	□
باستخدامي لماي يو (myU) استطعت أن أُحسن فهمي للموضوعات من خلال المناقشة الجماعية.	□	□	□	□	□

12.مشاركتي من خلال ماي يو (MyU).*

	1 = أرفض بشدة	2= أرفض	3 = محايد	4= موافق	5 = موافق بشدة
باستخدامي لماي يو (MyU) يسعدني مشاركة زملائي لمناقشة الدروس،	□	□	□	□	□

والواجبات المنزلية، والتحدث بخصوص أحداث اليوم.					
باستخدامي لماي يو (MyU) يُسعدني مشاركتي لأعضاء هيئة التدريس في مناقشة المواضيع المشروحة في الفصل والتقييمات ومشكلات الدراسة إن وُجدت.	□	□	□	□	□
باستخدامي لماي يو (MyU) اهتم أكثر للدراسة مع زملائي.	□	□	□	□	□
باستخدامي لماي يو (MyU) أشعر أن أعضاء هيئة التدريس قريبون مني عندما أحتاج إليهم.	□	□	□	□	□

13.جودة المعلومات التي تقدم من خلال ماي يو (MyU).*

	1 = أرفض بشدة	2= أرفض	3 = محايد	4= موافق	5 = موافق بشدة
محتوى المقرر الدراسي الموجود في ماي يو (MyU)حديث.	□	□	□	□	□
محتوى المقرر الدراسي الموجود في ماي يو (MyU)دقيق.	□	□	□	□	□
المعلومات المقدمة بواسطة ماي يو (MyU)ذات صلة بمحتوي المقرر الدراسي.	□	□	□	□	□
المعلومات المقدمة بواسطة ماي يو (myU) سهلة الفهم.	□	□	□	□	□

14.جودة ماي يو (myU)كتطبيق. *

	1 = أرفض بشدة	2= أرفض	3 = محايد	4= موافق	5 = موافق بشدة
تطبيق ماي يو (myU)سهل الاستخدام.	□	□	□	□	□
يُقدم تطبيق ماي يو (myU)خصائص مرنة تسهل عملية الاستخدام.	□	□	□	□	□
تطبيق ماي يو (myU)مفهوم.	□	□	□	□	□

15.جودة فريق الدعم الفني لماي يو (myU). *

	1 = أرفض بشدة	2= أرفض	3 = محايد	4= موافق	5 = موافق بشدة
يُقدم لي فريق الدعم الفني مساعدة عاجلة في حالة	□	□	□	□	□

مواجهتي أي صعوبة أثناء استخدام ماي يو (myU).					
الرجاء اختيار (محايد) لهذا السؤال.	□	□	□	□	□
فريق الدعم الفني متاح لتقديم يد العون أثناء استخدام ماي يو (myU).	□	□	□	□	□
يفهم فريق الدعم الفني لماي يو (myU)احتياجاتي الخاصة.	□	□	□	□	□

16.درجة رضاي عن ماي يو (myU). *

	1 = أرفض بشدة	2= أرفض	3 = محايد	4= موافق	5 = موافق بشدة
أنا راض بتلبية ماي يو (myU) لمتطلباتي.	□	□	□	□	□
أنا راض عن المعلومات المقدمة	□	□	□	□	□

بواسطة ماي يو (myU).					
بشكل عام، أنا راضي عن ماي يو (myU).	□	□	□	□	□

17.أدائي الأكاديمي من خلال ماي يو (myU). *

	1 = أرفض بشدة	2= أرفض	3 = محايد	4= موافق	5 = موافق بشدة
يُساعدني ماي يو (MyU)في إنجاز مهامي (مثل الواجبات، التقارير، المشاريع) في الوقت المحدد.	□	□	□	□	□
يُوفر ماي يو (MyU)وقتي الخاص بالتعلم.	□	□	□	□	□
يطور ماي يو (MyU) فهمي للمفاهيم المدروسة.					

يساعدني ماي يو (MyU) في مراجعة ومعرفة أخطائي أثناء الدراسة.	□	□	□	□	□
يساعدني ماي يو (MyU)في اكتساب معلومات مفيدة.	□	□	□	□	□
يساعدني ماي يو (MyU)في اكتساب مهارات تواصل جديدة.	□	□	□	□	□

شكرا لتعاونكم

myU use and students' academic performance at The Public Authority for Applied Education from faculty members' perspective

Dear student,

I am a PhD research student at the University of East Anglia conducting a study to investigate to investigate the factors that would affect students' academic performance through using educational SNSs (such as myU application) at PAAET from faculty members' perspective.

The questionnaire designed for this study consists of two parts. The first part consists of demographic questions, while part two assesses the factors that would affect students' academic performance. If you use myU application, I would be very grateful if you fill out this questionnaire. Your participation is voluntary. If you do not wish to participate, simply discard the questionnaire. Responses will be completely anonymous; your name will not appear anywhere on the survey. Also, all of the information you kindly provide will be treated as completely confidential and it will not be possible for anyone to identify the information you supply.

The questionnaire will take less than 7 minutes of your time to fill out. If you have any questions or concerns, please contact me at jpa21jqu@uea.ac.uk

By selecting "I Agree" below, you are providing your signature by electronic means and agree to be in this study. If you do not want to be in this study, you can select "I Do Not Agree" to exit out of the survey.

o I agree to participate

o I do not agree to participate

If you would like to take part, please read first the link below that contains the participant information sheet.

https://ueanorwich-my.sharepoint.com/:w:/g/personal/Jpa21jqueaacuk/EX9jkVA7ObBFrqRwBFLfuBMB3vW7XoatlxjolOpDSxF3e=0y5ch5

Regards

Bodoor Alazemi

PhD student

+96590906670

jpa21jqu@uea.ac.uk

- **Part one:** demographic questions

Instruction: Please tick the appropriate answer.

18. Did you use myU before?*

- Yes
- NO

If your answer is NO, thank you for your time, you can stop now. If your answer is YES, please proceeded to the second question.

19. Gender.*

- Male
- Female
- Prefer not to answer.

20. Age. *

- under 30
- 31-40
- 41-50
- 51-60
- +61
- Prefer not to answer.

21. College.*

- College of Basic Education
- College of Business Studies
- College of Technological Studies
- College of Health Sciences
- College of Nursing

22. Academic rank.*

- Full professor
- Associate Professor
- Assistant professor
- Lecturer
- Teacher
- Assistant Teacher

23. How long have you been using myU?*

- Less than 1 year
- 1-2 years
- More than 2 years

➢ **Part two:**

Instruction: Please select your degree of agreement or disagreement with the following statements **using the 5-point scale below**: 1= Strongly Disagree, 2= Disagree, 3=Neutral, 4= Agree, 5= Strongly Agree.

Statements					
7. My perception of students' desire to use myU.*	**Strongl**	**Disagr**	**Neutra**	**Agree**	**strongl**
I think that my students are willing to use myU for the whole year.	1	2	3	4	5
I think that my students have positive perceptions about myU.	1	2	3	4	5
I think that my students are motivated to use myU.	1	2	3	4	5
I think that my students may use myU in their future modules.	1	2	3	4	5
8. My perception of students' use of myU.*					
I think that my students use myU for interacting with faculty members.	1	2	3	4	5
I think that my students use a variety of different functions in myU (e.g., comments, direct messages, downloading course contents, uploading assignments, etc.).	1	2	3	4	5
I believe that my students use myU instead of meeting the faculty members face-to-face.	1	2	3	4	5
9. My students' ability using myU.*					
I find that my students are able to use myU to find course content information.	1	2	3	4	5
I find that my students are able to use myU to send and receive messages.	1	2	3	4	5
I find that my students are able to use myU to download and upload files.	1	2	3	4	5
10. myU compatibility.*					
I believe myU fits with most aspects of students' study (such as interacting with peers and faculty members, downloading course content, and uploading assignments).	1	2	3	4	5
I believe myU fits with students' lifestyles.	1	2	3	4	5

I believe myU fits with the way students like to study.	1	2	3	4	5
11. My perception of the usefulness of myU for students.*					
I expect that my students would find myU useful to them in their studies.	1	2	3	4	5
I expect that using myU would allow my students to accomplish more in their studies.	1	2	3	4	5
I expect that using myU in the educational process would help my students increase their ability to get useful information.	1	2	3	4	5
12. Using and learning to use myU.*					
I believe that my students find myU easy to use	1	2	3	4	5
I believe that my students find using myU simple.	1	2	3	4	5
I believe that my students learn how to use myU quickly.	1	2	3	4	5
Please select (Neutral) for this question.	1	2	3	4	5
13. People that affect my students use of myU.*					
When I use myU my students find it useful.	1	2	3	4	5
I find that my students use myU when encouraged by their friends.	1	2	3	4	5
I find that my students use myU when encouraged by other colleagues from faculty members.	1	2	3	4	5
I am able to influence my students to use myU.	1	2	3	4	5
14. Enjoyment.*					
I believe that My students find myU interesting to use.	1	2	3	4	5
When my students use myU, I believe that they find it an exciting way to learn.	1	2	3	4	5
I believe my students enjoy communicating with each other in using myU	1	2	3	4	5
15. Habitual use of myU.*					
I find that my students regularly use myU.	1	2	3	4	5

I find that it is natural for my students to use myU any time.		1	2	3	4	5
I find that using myU is something that students do without hesitation.		1	2	3	4	5
16. My Perception of Student Academic Performance.*						
31	I expect my students to get new skills when they use myU.	1	2	3	4	5
32	I expect my students to perform better academically when using myU.	1	2	3	4	5
33	I anticipate that my students have good grades when using myU in courses.	1	2	3	4	5
34	I anticipate that my students have better grades when using myU in courses.	1	2	3	4	5

Thank you for your cooperation

استخدام ماي يو (MyU) والأداء الأكاديمي للطلاب في الهيئة العامة للتعليم التطبيقي والتدريب من وجهة نظر أعضاء هيئة التدريس

عزيزي عضو هيئة التدريس،

أنا طالب دكتوراه في جامعة إيست أنجليا وأجري دراسة لاستقصاء العوامل التي قد تؤثر على الأداء الأكاديمي للطلاب من خلال استخدام مواقع الشبكات الاجتماعية التعليمية (مثل تطبيق ماي يو (MyU)) في الهيئة العامة للتعليم التطبيقي والتدريب من وجهة نظر أعضاء هيئة التدريس.

يتكون الاستبيان المصمم لهذه الدراسة من جزأين. يضم الجزء الأول منه الأسئلة الديموغرافية، بينما يضم الجزء الثاني العوامل التي قد تؤثر على الأداء الأكاديمي للطلاب. لذا، إذا كنت تستخدم تطبيق ماي يو، سأكون ممتنًا جدًا لك لملء هذا الاستبيان. مشاركتك تطوعية، فإذا كنت لا تود المشاركة، ببساطة تجاهل الاستبيان. ستكون إجاباتك مجهولة الهوية تمامًا؛ فلن يظهر اسمك في أي مكان في الاستبيان. وسيتم التعامل أيضاً مع جميع المعلومات التي تتفضل بتقديمها على أنها سرية تمامًا ولن يكون ممكناً لأي شخص معرفة المعلومات التي تقدمها. إن إكمالك الاستبيان وإعادته بمثابة موافقتك على المشاركة فيه.

سيستغرق ملء الاستبيان أقل من 15 دقيقة من وقتك لملئه. فإذا كان لديك أي أسئلة أو استفسارات، يُرجى التواصل معي على jpa21jqu@uea.ac.uk.

إذا كنت لديك النية في المشاركة، يُرجى أولاً قراءة الرابط أدناه الذي يحتوي على ورقة معلومات المشارك.

تحياتي

بدور العازمي

طالب دكتوراه

96590906670+

jpa21jqu@uea.ac.uk

رابط ورقة معلومات المشارك أدناه:

https://ueanorwich-my.sharepoint.com/:w:/g/personal/Jpa21jqueaacuk/EX9jkVA7ObBFrqRwBFLfuBMB3vW7XoatlxjolOpDSxF3e=0y5ch5

18. هل استخدمت ماي يو (MyU) من قبل؟*
- نعم
- لا

إذا كانت إجابتك "لا"، فشكرا على وقتك وبإمكانك التوقف الآن.

الجزء الأول: المعلومات الشخصية

التعليمات: يُرجي وضع علامة على الإجابة المناسبة:

19. النوع. *
- ذكر
- انثي
- أفضل عدم الإجابة

20. العمر. *
- تحت سن 30
- 04-31
- 50-14
- 51-60
- 60+
- أفضل عدم الإجابة

21. الكلية. *
- كلية التربية الأساسية
- كلية الدراسات التجارية
- كلية الدراسات التكنولوجية
- كلية العلوم الصحية
- كلية التمريض

22. الرتبة العلمية. *
- بروفيسور
- أستاذ مشارك
- استاذ مساعد
- محاضر
- مدرس
- مدرس مساعد

23. منذ متى وأنت تستخدم ماي يو (MyU) ؟*
- أقل من سنة
- من سنة إلى سنتين
- أكثر من سنتين

الجزء الثاني

التعليمات: يُرجي اختيار درجة الموافقة أو عدم الموافقة مع العبارات الاتية باستخدام مقياس الدرجات من 1 إلى 5 أدناه: 1 = أرفض بشدة، 2= أرفض، 3 = محايد، 4= موافق، 5 = موافق بشدة

24. تصوري لرغبة الطلاب لاستخدام ماي يو (MyU). *

	1 = أرفض بشدة	2= أرفض	3 = محايد	4= موافق	5 = موافق بشدة
أعتقد أن الطلاب علي استعداد لاستخدام ماي يو (MyU) طوال العام.	□	□	□	□	□
أعتقد أن الطلاب لديهم تصورات ايجابية حول ماي يو (MyU).	□	□	□	□	□
أعتقد أن الطلاب لديهم دافع لاستخدام ماي يو (MyU).	□	□	□	□	□
أعتقد أن الطلاب قد يستخدمون ماي يو (MyU)في مقرراتهم الدراسية في المستقبل.	□	□	□	□	□

25. تصوري لاستخدام الطلاب ماي يو (MyU). *

	1 = أرفض بشدة	2= أرفض	3 = محايد	4= موافق	5 = موافق بشدة
أعتقد أن يستخدم الطلاب **ماي يو (MyU)** للتفاعل مع اعضاء هيئة التدريس.	□	□	□	□	□
أعتقد أن يستخدم الطلاب مجموعة متنوعة من الوظائف المختلفة في **ماي يو (MyU)**(على سبيل المثال: التعليقات، الرسائل المباشرة، تنزيل محتوى المقرر	□	□	□	□	□

الدراسي, تحميل الواجبات, الخ).					
أعتقد ان يستخدم الطلاب **ماي يو (MyU)** بدلاً من مقابلة أعضاء هيئة التدريس وجهًا لوجه.	□	□	□	□	□

9. قدرة طلابي في استخدام ماي يو (MyU). *

	1 = أرفض بشدة	=2 أرفض	3 = محايد	4=موافق	5 = موافق بشدة
أجد أن طلابي لديهم القدرة على استخدام ماي يو (MyU) لإيجاد معلومات متعلقة بالمقرر الدراسي.	□	□	□	□	□
أجد أن طلابي لديهم القدرة على استخدام ماي يو (MyU) في إرسال واستلام الرسائل.	□	□	□	□	□
أجد أن طلابي لديهم القدرة على استخدام ماي يو (MyU) لتحميل ورفع الملفات.	□	□	□	□	□

10. مناسبة ماي يو (MyU).*

	1 = أرفض بشدة	=2 أرفض	3 = محايد	4=موافق	5 = موافق بشدة

أعتقد ان ماي يو (MyU)يتناسب مع معظم جوانب دراسة الطلاب.	□	□	□	□	□
أعتقد ان ماي يو (MyU)يتناسب مع أنماط حياة الطلاب.	□	□	□	□	□
أعتقد ان ماي يو (MyU)يتناسب مع الطريقة التي يحب الطلاب الدراسة بها.	□	□	□	□	□

11. تصوري لفائدة ماي يو (MyU)للطلاب. *

	1 = أرفض بشدة	2= أرفض	3 = محايد	4= موافق	5 = موافق بشدة
أتوقع أن يجد طلابي ماي يو (MyU)مفيد لهم في دراستهم.	□	□	□	□	□
أتوقع أن استخدام ماي يو (MyU)سيسمح لطلابي بتحقيق انجاز أكثر في دراستهم.	□	□	□	□	□
أتوقع أن استخدام ماي يو (MyU)في العملية التعليمية سيساعد طلابي في زيادة الحصول	□	□	□	□	□

على معلومات مفيدة.					

12. سهولة استخدام ماي يو (MyU). *

	1 = أرفض بشدة	2= أرفض	3 = محايد	4= موافق	5 = موافق بشدة
أعتقد أن طلابي سيجدون ماي يو (MyU) سهل الاستخدام.	□	□	□	□	□
أعتقد ان طلابي يجدون ماي يو (MyU) بسيط.	□	□	□	□	□
اعتقد ان طلابي يتعلمون كيفية استخدام ماي يو (MyU) بسرعة.	□	□	□	□	□
الرجاء اختيار (محايد) لهذا السؤال.	□	□	□	□	□

13. الأشخاص الذين يؤثرون على استخدام طلابي لـماي يو (MyU).*

	1 = أرفض بشدة	2= أرفض	3 = محايد	4= موافق	5 = موافق بشدة
عندما استخدم ماي يو (MyU	□	□	□	□	□

)، يجد طلابي أنه مفيد.					
أجد ان طلابي يستخدمون ماي يو (MyU)عندما يُشجعهم أصدقائهم.	□	□	□	□	□
أجد أن طلابي يستخدمون ماي يو (MyU) عندما يشجعهم زملاء اخرون من أعضاء هيئة التدريس	□	□	□	□	□
لدي القدرة على التأثير على طلابي لكي يستخدموا ماي يو (MyU).	□	□	□	□	□

14. **الاستمتاع.** *

	1 = أرفض بشدة	2= أرفض	3 = محايد	4= موافق	5 = موافق بشدة
أعتقد أن طلابي يجدون أستخدام ماي يو (MyU) شيق.	□	□	□	□	□
عندما يستخدام طلابي ماي يو (MyU), أعتقد	□	□	□	□	□

انهم يجدوه طريقة محفزه للتعلم.					
أعتقد أن طلابي يستمتعون بالتواصل مع بعضهم البعض باستخدام ماي يو (MyU).	□	□	□	□	□

15. عادات الاستخدام لماي يو (MyU). *

	1 = أرفض بشدة	=2 أرفض	3 = محايد	=4 موافق	5 = موافق بشدة
أجد أن طلابي يستخدمون ماي يو (MyU)بانتظام.	□	□	□	□	□
أجد أنه من الطبيعي أن يستخدم طلابي ماي يو (MyU) في أي وقت.	□	□	□	□	□
أجد أن استخدام ماي يو (MyU) شيء يفعله الطلاب بدون تردد.	□	□	□	□	□

16. تصوري للأداء الأكاديمي للطالب من خلال استخدام ماي يو (MyU). *

	1 = أرفض بشدة	=2 أرفض	3 = محايد	=4 موافق	5 = موافق بشدة
أتوقع أن يكتسب طلابي مهارات جديدة عند استخدامهم	□	□	□	□	□

ماي يو (MyU).					
أتوقع أن يؤدي طلابي أداءً أكاديميًا أفضل عند استخدام ماي يو (MyU).	□	□	□	□	□
أتوقع أن يحصل طلابي على درجات جيدة عند استخدام ماي يو (MyU) في المقرر الدراسي.	□	□	□	□	□
أتوقع أن يحصل طلابي على درجات أفضل عند استخدام ماي يو (MyU) في المقرر الدراسي.	□	□	□	□	□

شكرا لتعاونكم

Appendix B – Back-Translation of Student and Teacher Questionnaire

استخدام ماي يو (MyU)والأداء الأكاديمي للطلاب في الهيئة العامة للتعليم التطبيقي والتدريب من وجهة نظر الطلاب

عزيزي الطالب،

أنا طالب دكتوراه في جامعة إيست أنجليا وأجري دراسة لاستقصاء العوامل التي قد تؤثر على الأداء الأكاديمي للطلاب من خلال استخدام مواقع الشبكات الاجتماعية التعليمية (مثل تطبيق ماي يو) في الهيئة العامة للتعليم التطبيقي والتدريب من وجهة نظر الطلاب.

يتألف الاستبيان المصمم لهذه الدراسة من جزأين. يضم الجزء الأول منه الأسئلة الديموغرافية، بينما يقيم الجزء الثاني العوامل التي قد تؤثر على الأداء الأكاديمي للطلاب. لذا، إذا كنت تستخدم تطبيق ماي يو، سأكون ممتنًا جدًا لملء هذا الاستبيان. مشاركتك تطوعية، فإذا كنت لا تود المشاركة، ببساطة تجاهل الاستبيان. ستكون إجاباتك مجهولة الهوية تمامًا؛ فلن يظهر اسمك في أي مكان في الاستبيان. وسيتم التعامل أيضاً مع جميع المعلومات التي تتفضل بتقديمها على أنها سرية تمامًا ولن يكون ممكناً لأي شخص معرفة المعلومات التي تقدمها. إن إكمالك الاستبيان وإعادته بمثابة موافقتك على المشاركة فيه.

سيستغرق ملء الاستبيان أقل من 7 دقائق من وقتك لملئه. فإذا كان لديك أي أسئلة أو استفسارات، يُرجى التواصل معي على jpa21jqu@uea.ac.uk.

إذا كنت لديك النية في المشاركة، يُرجى أولاً قراءة الرابط أدناه الذي يحتوي على ورقة معلومات المشارك.

تحياتي

بدور العازمي

طالب دكتوراه

96590906670+

jpa21jqu@uea.ac.uk

رابط ورقة معلومات المشارك أدناه:

https://ueanorwich-my.sharepoint.com/:w:/g/personal/Jpa21jqueaacuk/ER4n2z9jxleqkogu0RdgZEBSrfWGyGO vPgfooWfbm e=8ojqsx

1. هل جربت ماي يو (MyU) من قبل؟
   - ○ نعم
   - ○ لا

إذا كانت إجابتك "لا"، فشكرا على وقتك وبإمكانك التوقف الآن.

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الجزء الأول: المعلومات الشخصية

التعليمات: يُرجي اختيار الإجابة المناسبة:

2. النوع *
   - o ذكر
   - o انثي
   - o أفضل عدم الإجابة
3. العمر *
   - o 22-18
   - o 27-23
   - o 37-28
   - o 38+
   - o أفضل عدم الإجابة
4. الحالة الاجتماعية*
   - o أعزب
   - o متزوج
   - o مُطلق
   - o أرملة
   - o أفضل عدم الإجابة
5. الكلية. *
   - o كلية التربية الأساسية
   - o كلية الدراسات التجارية
   - o كلية الدراسات التكنولوجية
   - o كلية العلوم الصحية
   - o كلية التمريض
6. سنوات الدراسة. *
   - o السنة الأولي
   - o السنة الثانية
   - o السنة الثالثة
   - o السنة الرابعة فأعلى.
7. المعدل التراكمي. *
   - o 3.6-4.00 نقطة
   - o 2.8- 3.59 نقطة
   - o 2.0-2.79 نقطة
   - o 1.99 نقطة أو أقل
   - o أفّضل عدم الإجابة
8. منذ متى وانت تستخدم ماي يو (MyU)؟
   - o أقل من سنة
   - o من سنة إلى سنتين
   - o أكثر من سنتين

الجزء الثاني

التعليمات: يُرجي قراءة الأسئلة رقم 10 و11 بحرص وتوضيح إجابتك باختيار الرقم المناسب الذي يصف درجة استخدامك لماي يو (MyU)ومدته.

9. في المتوسط، كم مرة تستخدم ماي يو (MyU) ؟
   - o مرة في الشهر أو أقل
   - o مرة في الأسبوع
   - o عدة مرات في الأسبوع
   - o مرة في اليوم
   - o عدة مرات في اليوم
10. في المتوسط، كم تستغرق في كل مرة تستخدم فيها ماي يو (MyU) ؟
   - o أقل من 10 دقائق
   - o من 10 إلى 20 دقيقة.
   - o من 21 إلى 30 دقيقة.
   - o من 31 إلى 40 دقيقة.
   - o أكثر من 40 دقيقة.

التعليمات: اختر درجة الموافقة أو عدم الموافقة مع العبارات الاتية **باستخدام مقياس الدرجات من 1 إلى 5 أدناه:** 1 = أرفض بشدة، 2= أرفض، 3 = محايد، 4= موافق، 5 = موافق بشدة

11. درجة تفاعلي مع أقراني. *

	1 = أرفض بشدة	2= أرفض	3 = محايد	4= موافق	5 = موافق بشدة
يُتيح لي ماي يو (MyU) الفرصة في التفاعل مع أقراني بشأن محتوي الدورة والواجبات المنزلية.	□	□	□	□	□
يُسهل ماي يو (MyU) لي إجراء الحوار مع أقراني.	□	□	□	□	□
يُسهل ماي يو (MyU) لي المناقشات المتعلقة بالدورة مثل مشاركة المعلومات والأفكار مع أقراني.	□	□	□	□	□

12. درجة تفاعلي مع أساتذتي. •

	1 = أرفض بشدة	2= أرفض	3 = محايد	4= موافق	5 = موافق بشدة
يُتيح لي ماي يو (MyU) الفرصة في التفاعل مع أساتذتي بشأن محتوي الدورة والواجبات المنزلية.	□	□	□	□	□
يُسهل ماي يو (MyU) لي إجراء الحوار مع أساتذتي.	□	□	□	□	□
يُسهل ماي يو (MyU)لي المناقشات المتعلقة بالدورة مثل مشاركة المعلومات والأفكار والملاحظات مع أساتذتي.	□	□	□	□	□

13. التعلم التعاوني هو التعلم مع مجموعة من أقراني من خلال ماي يو (MyU) .

باستخدامي لماي يو (MyU) استطعت تنمية .....•

	1 = أرفض بشدة	2= أرفض	3 = محايد	4= موافق	5 = موافق بشدة
قدراتي التعليمية من خلال التعلم التعاوني.	□	□	□	□	□
اكتساب مهارات جديدة من أقراني.	□	□	□	□	□
استطعت أن أُنمي فهم أكثر شمولاً للموضوعات من خلال المناقشة الجماعية.	□	□	□	□	□

14. مشاركتي من خلال ماي يو (MyU) .

باستخدامي لماي يو (MyU) .....*

	1 = أرفض بشدة	2= أرفض	3 = محايد	4= موافق	5 = موافق بشدة
يُسعدني مشاركة أقراني لمناقشة الدروس، والواجبات المنزلية، والتحدث بخصوص أحداث اليوم.	☐	☐	☐	☐	☐
يُسعدني مشاركتي لأساتذتي في مناقشة المواضيع المشروحة في الفصل والواجبات ودراسة المشكلات إذا وُجدت.	☐	☐	☐	☐	☐
أُعير اهتمام بالدراسة مع أقراني في الفصل (في مجموعة).	☐	☐	☐	☐	☐
استطيع تحسين اهتمامي أثناء الدورة.	☐	☐	☐	☐	☐

15. جودة المعلومات التي تقدمها ماي يو (MyU) .

	1 = أرفض بشدة	2= أرفض	3 = محايد	4= موافق	5 = موافق بشدة
المحتوى الدراسي في ماي يو (MyU محدث باستمرار.	☐	☐	☐	☐	☐
يُوفر ماي يو (MyU)معلومات دقيقة لمحتوى الدورة.	☐	☐	☐	☐	☐
المعلومات المقدمة بواسطة ماي يو (MyU) ذات صلة بمحتوي الدورة.	☐	☐	☐	☐	☐
المعلومات المقدمة من ماي يو (MyU) سهلة الفهم.	☐	☐	☐	☐	☐

16. جودة ماي يو (MyU) كتطبيق.

	1 = أرفض بشدة	2= أرفض	3 = محايد	4= موافق	5 = موافق بشدة
تطبيق ماي يو (MyU) سهل الاستخدام.	□	□	□	□	□
يُقدم تطبيق ماي يو (MyU) خصائص مرنة لسهولة الإستخدام.	□	□	□	□	□
من وجهة نظري، تطبيق ماي يو (MyU) مفهوم.	□	□	□	□	□

17. جودة الفريق التقني لماي يو (MyU) . •

	1 = أرفض بشدة	2= أرفض	3 = محايد	4= موافق	5 = موافق بشدة
يُقدم لي الفريق التقني مساعدة عاجلة في حالة مواجهتي أي صعوبة أثناء استخدام ماي يو (MyU) .	□	□	□	□	□
الفريق التقني متاح لتقديم يد العون أثناء استخدام ماي يو (MyU) .	□	□	□	□	□
يفهم الفريق التقني لماي يو (MyU) احتياجاتي الخاصة.	□	□	□	□	□

18. درجة رضاي عن ماي يو (MyU) . •

	1 = أرفض بشدة	2= أرفض	3 = محايد	4= موافق	5 = موافق بشدة
أنا راضي بتلبية ماي يو (MyU) لمتطلباتي.	□	□	□	□	□
أنا استمتع باستخدام ماي يو (MyU) في دراستي.	□	□	□	□	□
بشكل عام، أنا راضي عن ماي يو (MyU).	□	□	□	□	□

19. أدائي العلمي. *

	1 = أرفض بشدة	2= أرفض	3 = محايد	4= موافق	5 = موافق بشدة
يُساعدني ماي يو (MyU) في إنجاز مهامي بشكل أسرع.	☐	☐	☐	☐	☐
ماي يو (MyU) يعمل على تحسين تجربة التعلم الخاصة بي ويوفر لي الوقت.	☐	☐	☐	☐	☐
يُحسن ماي يو (MyU) فهمي للمفاهيم المُدرسة.	☐	☐	☐	☐	☐
استخدامي لماي يو (MyU) يساعدني في المراجعة والوقوف على أخطائي أثناء الدراسة .	☐	☐	☐	☐	☐
يساعدني ماي يو (MyU) في استيعاب معلومات مفيدة.					
يساعدني ماي يو (MyU)في تعلم مهارات تواصل جديدة.					

هذا المحتوي غير مُنشأ أو مُصدق بواسطة مايكروسوفت، والبيانات المقدمة من قِبلك سوف تُرسل إلى صاحب النموذج.

myU use and students' academic performance at PAAET from students' perspective

Dear student,

I am a PhD research student at the University of East Anglia conducting a study to investigate the factors that would affect students' academic performance through using educational SNSs (such as myU application) at PAAET from students' perspective.

The questionnaire designed for this study consists of two parts. The first part consists of personal information, while part two assesses the factors that would affect students' academic performance. If you use myU application, I would be very grateful if you fill out this questionnaire. Your participation is voluntary. If you do not wish to participate, simply discard the questionnaire. Responses will be completely anonymous; your name will not appear anywhere on the survey. Also, all of the information you kindly provide will be treated as completely confidential and it will not be possible for anyone to identify the information you supply. Completing and returning the questionnaire constitutes your consent to participate.

The questionnaire will take less than 7 minutes of your time to fill out. If you have any questions or concerns, please contact me at jpa21jqu@uea.ac.uk

If you would like to take part, please read first the link below that contains the participant information sheet.

Regards

Bodoor Alazemi
PhD student
+96590906670
jpa21jqu@uea.ac.uk

* Required

* This form will record your name, please fill your name.

The link to the participant information sheet is below

https://ueanorwich-my.sharepoint.com/:w:/g/personal/jpa21jqu_uea_ac_uk/ER4n_2z9jxlEqkogu0RdgZEBSrfWGyGO_vPgfooVVfbmyQ?e=8oJqsx

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1. **Have you used myU before? ***

- ◯ Yes
- ◯ No

` If your answer is NO, thank you for your time, you can stop now.

Part 1: Personal Information

Instruction: Please select the appropriate answer.

2. **Gender**. *

- ◯ Male
- ◯ Female
- ◯ Prefer not to answer

3. **Age.** *

- ◯ 18-22
- ◯ 23-27
- ◯ 28-37
- ◯ +38
- ◯ Prefer not to answer

4. **Marital status.** *

- ◯ Single
- ◯ Married
- ◯ Divorced
- ◯ Widowed
- ◯ Prefer not to answer

5. **College.** *

- ◯ College of Basic Education
- ◯ College of Business Studies
- ◯ College of Technological Studies
- ◯ College of Health Sciences
- ◯ College of Nursing

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6. **Year of study. ***

- ◯ First year
- ◯ Second year
- ◯ Third year
- ◯ Fourth year and above

7. **Grade point average (GPA). ***

- ◯ 4.00 - 3.6 points
- ◯ 3.59 -2.8 points
- ◯ 2.79 – 2.0 Points
- ◯ 1.99 points or less
- ◯ Prefer not to answer

8. **How long have you been using myU? ***

- ◯ Less than 1 year
- ◯ 1-2 years
- ◯ More than 2 years

Part 2

Instruction: Please read questions 9 and 10 carefully and indicate your answer by selecting the appropriate number that describes your usage frequency and duration of myU.

9. **On average, how frequent do you use myU? ***

- ◯ Once a month or less
- ◯ Once a week
- ◯ Several times a week
- ◯ Once a day
- ◯ Several times a day

10. **On average, how much time you spend each time you use myU? ***

- ◯ Less than 10 minutes
- ◯ 10- 20 minutes
- ◯ 21- 30 minutes
- ◯ 31- 40 minutes
- ◯ more than 40 minutes

Instruction: Please select your degree of agreement or disagreement with the following statements **using the 5-point scale below:** 1= Strongly Disagree, 2= Disagree, 3=Neutral, 4= Agree, 5= Strongly Agree.

11. **My interaction with peers.** *

	1=Strongly Disagree	2= Disagree	3= Neutral	4= Agree	5= Strongly Agree
myU gives me the opportunity to interact with my peers about course content and homeworks.	○	○	○	○	○
myU helps facilitate dialog with my peers.	○	○	○	○	○
myU facilitates course discussions, such as exchange of information and ideas, with my peers.	○	○	○	○	○

12. **My interaction with teachers.** *

	1= Strongly Disagree	2= Disagree	3=Neutral	4= Agree	5= Strongly Agree
myU gives me the opportunity to interact with my teachers about course content and homeworks.	○	○	○	○	○
myU helps facilitate dialog with my teachers.	○	○	○	○	○
myU facilitates course discussions, such as exchange of information, ideas, and feedback with my teachers.	○	○	○	○	○

13. **Collaborative Learning (CL) is learning with a group of my peers through myU.**

Using myU, I was able to... *

	1= Strongly Disagree	2= Disagree	3=Neutral	4= Agree	5= Strongly Agree
improve my learning abilities through peer collaboration.	○	○	○	○	○
Gain new skills from my peers.	○	○	○	○	○
improve my understanding of the topics through group discussion.	○	○	○	○	○

14. **My participation through myU.**

Using myU... *

	1= Strongly Disagree	2= Disagree	3=Neutral	4= Agree	5= Strongly Agree
I like to communicate with my peers to discuss homework, lessons, and talk about the day's events	○	○	○	○	○
I like to communicate with my teachers to discuss the topics explained in class, assessments, and study problems if any.	○	○	○	○	○
I give importance to studying together with my classmates (in a group).	○	○	○	○	○
I can improve my interest in my course.	○	○	○	○	○

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15. **myU information quality.** *

	1= Strongly Disagree	2= Disagree	3=Neutral	4= Agree	5= Strongly Agree
The course content in myU is up to date.	○	○	○	○	○
The content in myU is considered accurate for the course.	○	○	○	○	○
The information provided by myU is relevant to the course content.	○	○	○	○	○
The information provided by myU is easy to understand.	○	○	○	○	○

16. **myU quality as an application.** *

	1= Strongly Disagree	2= Disagree	3=Neutral	4= Agree	5= Strongly Agree
myU is easy to use.	○	○	○	○	○
myU provides flexible features to interact with.	○	○	○	○	○
I find myU features are understandable.	○	○	○	○	○

17. **myU technical staff quality.** *

	1= Strongly Disagree	2= Disagree	3=Neutral	4= Agree	5= Strongly Agree
The technical staff provide me with quick assistance in case of any difficulty in using myU	○	○	○	○	○
Technical staff are available to provide help for using myU.	○	○	○	○	○
myU technical staff understand my specific needs.	○	○	○	○	○

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18. **My satisfaction with myU.** *

	1= Strongly Disagree	2= Disagree	4= Agree	5= Strongly Agree
I am satisfied that myU meets my requirements.	○	○	○	○
I enjoy using myU for my study.	○	○	○	○
Overall, I am satisfied with myU.	○	○	○	○

19. **My academic performance.** *

	1= Strongly Disagree	2= Disagree	3=Neutral	4= Agree	5= Strongly Agree
myU helps me to accomplish my tasks more quickly.	○	○	○	○	○
myU saves my learning time.	○	○	○	○	○
myU improves my comprehension of the concepts studied.	○	○	○	○	○
Using myU helps me to review and know my mistakes in my studies.	○	○	○	○	○
myU helps me acquire useful information.	○	○	○	○	○
myU helps me acquire new communication skills.	○	○	○	○	○

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Microsoft Forms

MyU Use & Students' Academic Performance at PAAET from Students' Perspective

Dear student,

I am a PhD researcher at the University of East Anglia conducting a study to investigate the factors that would affect students' academic performance through using educational SNSs (such as MyU application) at PAAET from students' perspective.

The questionnaire designed for this study consists of two parts. Part one includes the demographic questions, whereas part two assesses the factors that would affect student's academic performance. Therefore, if you use MyU application, I would be very grateful if you complete this questionnaire. Your participation is voluntary. If you are not willing to participate, simply discard the questionnaire. Your responses will be completely anonymous, as your name will not be disclosed anywhere throughout the questionnaire. Moreover, all of the information provided by you will be treated as entirely confidential, and it will be impossible for anyone to identify the information you provide. Completing and returning the questionnaire constitutes your consent to participate.

The questionnaire will take less 7 minutes of your time to complete. If you have any questions or concerns, kindly contact me at jpa21jqu@uea.ac.uk.

If you would like to participate, kindly see the link below that contains the participant information sheet.

Best regards,

Bodoor Alazemi

PhD student

+96590906670

jpa21jqu@uea.ac.uk

Below is the link to the participant information sheet

https://ueanorwich-my.sharepoint.com/:w:/g/personal/Jpa21jqueaacuk/ER4n2z9jxleqkogu0RdgZEBSrfWGyGO_vPgfooWfbm_e=8ojqsx

1. Did you use MyU before?
   - Yes
   - No

If your answer is "No", thank you for your time, you can stop now.

Ibn Sina Certified Translation Co.

Part 1: Personal Information

Instruction: please tick the appropriate answer.

2. **Gender. ***
   - o Male
   - o Female
   - o Prefer not to answer

3. **Age. ***
   - o 18-22
   - o 23-27
   - o 28-37
   - o +38
   - o Prefer not to answer

4. **Marital status. ***
   - o Single
   - o Married
   - o Divorced
   - o Widowed
   - o Prefer not to answer

5. **College. ***
   - o College of Basic Education
   - o College of Business Studies
   - o College of Technological Studies
   - o College of Health Sciences
   - o College of Nursing

6. **Year of study. ***
   - o First year
   - o Second year
   - o Third year
   - o Fourth year and above

7. **Cumulative GPA: ***
   - o 4.00–3.6 points
   - o 3.59–2.8 points
   - o 2.79–2.0 points
   - o 1.99 points or below

8. **How long have you been using MyU?**
   - o Less than 1 year
   - o 1-2 years
   - o More than 2 years

Part 2

Instructions: Please read questions 10 and 11 carefully and indicate your answer by selecting the appropriate number that describes your usage frequency and duration of MyU.

9. On average, how frequent do you use MyU?
   - o Once a month or less
   - o Once a week
   - o Several times a week
   - o Once a day
   - o Several times a day
10. On average, how long does it take each time you use MyU?
   - o Less than 10 minutes
   - o From10 to 20 minutes.
   - o From 21 to 30 minutes.
   - o From 31 to 40 minutes.
   - o More than 40 minutes.

Instructions: Please select whether you agree or disagree with the following statements **using the 5-point scale below**: 1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly Agree

11. My interaction with peers. *

	1 = Strongly Disagree	2 = Disagree	3 = Neutral,	4 = Agree	5 = Strongly Agree
MyU gives me the opportunity to interact with my peers on course content and homework.	□	□	□	□	□
MyU makes it easy for me to have a conversation with my peers.	□	□	□	□	□
MyU facilitates course-related discussions such as exchanging information and ideas with my peers.	□	□	□	□	□

12. My interaction with faculty members.

	1 = Strongly Disagree	2 = Disagree	3 = Neutral,	4 = Agree	5 = Strongly Agree
MyU gives me the opportunity to interact with my faculty members on course content and homework.	☐	☐	☐	☐	☐
MyU makes it easy for me to have conversations with my faculty members.	☐	☐	☐	☐	☐
MyU facilitates course-related discussions such as exchanging information and ideas and feedback with my faculty members.	☐	☐	☐	☐	☐

13. Cooperative learning (CL) refers to learning with a group of my peers through MyU.

By using MyU, I was able to.....*

	1 = Strongly Disagree	2 = Disagree	3 = Neutral,	4 = Agree	5 = Strongly Agree
Improve my learning capabilities enhanced by cooperative learning.	☐	☐	☐	☐	☐
acquire new skills from my peers..	☐	☐	☐	☐	☐
gain a broader understanding of the topics through collective discussion	☐	☐	☐	☐	☐

14. My participation through MyU.
Using MyU … *

	1 = Strongly Disagree	2 = Disagree	3 = Neutral,	4 = Agree	5 = Strongly Agree
I like to join my peers to discuss homework lessons and talk on the day's events.	☐	☐	☐	☐	☐
I like to communicate with my faculty members in discussing the topics explained in class, assignments, and considering problems, if any.	☐	☐	☐	☐	☐
I give importance to studying with my peers in the class (in a group).	☐	☐	☐	☐	☐
I can improve my interest during the course.	☐	☐	☐	☐	☐

15. The quality of information provided by MyU.

	1 = Strongly Disagree	2 = Disagree	3 = Neutral,	4 = Agree	5 = Strongly Agree
The curriculum in MyU is constantly updated.	☐	☐	☐	☐	☐
MyU supplies accurate information for the course curriculum..	☐	☐	☐	☐	☐
The information provided by MyU is relevant to the course content.	☐	☐	☐	☐	☐
The information provided by MyU is easy to understand	☐	☐	☐	☐	☐

16. MyU quality as an application. *

	1 = Strongly Disagree	2 = Disagree	3 = Neutral,	4 = Agree	5 = Strongly Agree
MyU is easy to use.	☐	☐	☐	☐	☐
MyU provides flexible features for easy use.	☐	☐	☐	☐	☐
In my opinion, the MyU app is understand.	☐	☐	☐	☐	☐

17. MyU technical staff quality. *

	1 = Strongly Disagree	2 = Disagree	3 = Neutral,	4 = Agree	5 = Strongly Agree
The technical staff provides me with quick support in case I encounter any difficulty while using MyU.	☐	☐	☐	☐	☐
The technical staff is available to provide help for using MyU.	☐	☐	☐	☐	☐
MyU technical staff understand my specific needs.	☐	☐	☐	☐	☐

18. My degree of satisfaction with myU. *

	1 = Strongly Disagree	2 = Disagree	3 = Neutral,	4 = Agree	5 = Strongly Agree
I am satisfied that MyU meets my requirements.	☐	☐	☐	☐	☐
I enjoy using MyU in my study.	☐	☐	☐	☐	☐
Overall, I am satisfied with MyU.	☐	☐	☐	☐	☐

19. My academic performance* .

	1 = Strongly Disagree	2 = Disagree	3 = Neutral,	4 = Agree	5 = Strongly Agree
MyU helps me get my tasks done faster.	☐	☐	☐	☐	☐
MyU enhances my learning experience and saves me time	☐	☐	☐	☐	☐
MyU improves my understanding of the studied topics.	☐	☐	☐	☐	☐
Using MyU helps me to review and find out my mistakes while studying.	☐	☐	☐	☐	☐
MyU helps me to accommodate useful information.	☐	☐	☐	☐	☐
MyU helps me acquire new communication skills.	☐	☐	☐	☐	☐

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استخدام ماي يو (MyU) والأداء الأكاديمي للطلاب في الهيئة العامة للتعليم التطبيقي والتدريب من وجهة نظر المدرسين

عزيزي المدرس،

أنا طالب دكتوراه في جامعة إيست أنجليا وأجري دراسة لاستقصاء العوامل التي قد تؤثر على الأداء الأكاديمي للطلاب من خلال استخدام مواقع الشبكات الاجتماعية التعليمية (مثل تطبيق ماي يو (MyU)) في الهيئة العامة للتعليم التطبيقي والتدريب من وجهة نظر المدرسين.

يتألف الاستبيان المصمم لهذه الدراسة من جزأين. يضم الجزء الأول منه الأسئلة الديموغرافية، بينما يقيم الجزء الثاني العوامل التي قد تؤثر على الأداء الأكاديمي للطلاب. لذا، إذا كنت تستخدم تطبيق ماي يو، سأكون ممتنًا جدًا لك لملء هذا الاستبيان. مشاركتك تطوعية، فإذا كنت لا تود المشاركة، ببساطة تجاهل الاستبيان. ستكون إجاباتك مجهولة الهوية تمامًا؛ فلن يظهر اسمك في أي مكان في الاستبيان. وسيتم التعامل أيضاً مع جميع المعلومات التي تتفضل بتقديمها على أنها سرية تمامًا ولن يكون ممكناً لأي شخص معرفة المعلومات التي تقدمها. إن إكمالك الاستبيان وإعادته بمثابة موافقتك على المشاركة فيه.

سيستغرق ملء الاستبيان أقل من 07 دقائق من وقتك لملئه. فإذا كان لديك أي أسئلة أو استفسارات، يُرجى التواصل معي على jpa21jqu@uea.ac.uk.

إذا كنت لديك النية في المشاركة، يُرجى أولاً قراءة الرابط أدناه الذي يحتوي على ورقة معلومات المشارك.

تحياتي

بدور العازمي

طالب دكتوراه

96590906670+

jpa21jqu@uea.ac.uk

رابط ورقة معلومات المشارك أدناه:

https://ueanorwich-my.sharepoint.com/:w:/g/personal/Jpa21jqueaacuk/EX9jkVA7ObBFrqRwBFLfuBMB3vW7XoatlxjolOpDSxF3e=0y5ch5

قسم

1. هل استخدمت ماي يو (MyU) من قبل؟
   - ○ نعم
   - ○ لا

إذا كانت إجابتك "لا"، فشكرا على وقتك وبإمكانك التوقف الآن.

الجزء الأول: المعلومات الشخصية

التعليمات: يُرجي وضع علامة على الإجابة المناسبة:

2. النوع. *
   - ○ ذكر
   - ○ انثي
   - ○ أفضل عدم الإجابة
3. العمر. *
   - ○ تحت سن 30
   - ○ 40-31
   - ○ 50-41
   - ○ 60-51
   - ○ 61+
   - ○ أفضل عدم الإجابة
4. الكلية. *
   - ○ كلية التربية الأساسية
   - ○ كلية الدراسات التجارية
   - ○ كلية الدراسات التكنولوجية
   - ○ كلية العلوم الصحية
   - ○ كلية التمريض
5. الرتبة العلمية. *
   - ○ بروفيسور
   - ○ أستاذ مشارك
   - ○ استاذ مساعد
   - ○ محاضر
   - ○ مدرس
   - ○ مدرس مساعد
6. منذ متى وأنت تستخدم ماي يو (MyU) ؟
   - ○ أقل من سنة
   - ○ من سنة إلى سنتين
   - ○ أكثر من سنتين

الجزء الثاني

التعليمات: يُرجى اختيار درجة الموافقة أو عدم الموافقة مع العبارات الاتية باستخدام مقياس الدرجات من 1 إلى 5 أدناه: 1 = أرفض بشدة، 2= أرفض، 3 = محايد، 4= موافق، 5 = موافق بشدة

7. تصوري عن رغبة الطلاب في استخدام ماي يو (MyU) *

	1 = أرفض بشدة	2= أرفض	3 = محايد	4= موافق	5 = موافق بشدة
اعتقد ان الطلاب على استعداد لاستخدام ماي يو MyU) (طوال العام.	☐	☐	☐	☐	☐
اعتقد ان الطلاب لديهم تصورات إيجابية حول ماي يو MyU)).	☐	☐	☐	☐	☐
اعتقد ان الطلاب لديهم الدافع لاستخدام ماي يو MyU)).	☐	☐	☐	☐	☐
اعتقد ان الطلاب يمكنهم استخدام ماي يو MyU)) في مقرراتهم الدراسية المستقبلية.	☐	☐	☐	☐	☐

08 تصوري لاستخدام الطلاب لماي يو (MyU)؟ *

	1 = أرفض بشدة	2= أرفض	3 = محايد	4= موافق	5 = موافق بشدة
اعتقد ان يستخدم الطلاب ماي يو (MyU) للتفاعل مع الأقران.	☐	☐	☐	☐	☐
أعتقد بأن يستخدم الطلاب ماي يو (MyU) للتفاعل مع المدرسين.	☐	☐	☐	☐	☐
أعتقد بان يستخدم الطلاب مجموعة متنوعة من الوظائف المختلفة في ماي يو (MyU) على سبيل المثال، التعليقات، الرسائل المباشرة،	☐	☐	☐	☐	☐

تحميل محتوي الدورة، تحميل الواجبات، إلخ).					
بفضل ماي يو (MyU)، لا يحتاج الطلاب إلي الذهاب إلي مكتب المدرس أو السؤال له/لها في الفصل.	☐	☐	☐	☐	☐

9. **قدرة طلابي على استخدام ماي يو (MyU).**

أجد بأن طلابي لديهم القدرة على استخدام ماي يو (MyU) في ... *

	1 = أرفض بشدة	2= أرفض	3 = محايد	4= موافق	5 = موافق بشدة
إيجاد معلومات محتوي الدورة.	☐	☐	☐	☐	☐
إرسال واستلام الرسائل.	☐	☐	☐	☐	☐
تحميل ورفع الملفات.	☐	☐	☐	☐	☐

10. توافق ماي يو (MyU)

	1 = أرفض بشدة	2= أرفض	3 = محايد	4= موافق	5 = موافق بشدة
اعتقد ان ماي يو (MyU) يتوافق مع القيم / المعتقدات الاجتماعية والثقافية لطلابي.	☐	☐	☐	☐	☐
اعتقد ان ماي يو (MyU) يتوافق مع انماط التعلم الخاصة بطلابي	☐	☐	☐	☐	☐
اعتقد ان ماي يو (MyU) يتوافق مع احتياجات التعلم لطلابي (مثل اكتساب المعرفة ومهارات الاتصال) لطلابي.	☐	☐	☐	☐	☐

11. تصوري لفائدة ماي يو (MyU) للطلاب.

بناءً على تجربتي في استخدام ماي يو (MyU)، أعتقد ...*

	1 = أرفض بشدة	2= أرفض	3 = محايد	4= موافق	5 = موافق بشدة
أن طلابي يجدوا ماي يو (MyU) مفيد لهم في دراستهم.	O	O	O	O	O
استخدام ماي يو myU سيمكن طلابي من إنجاز المزيد في دراستهم.	O	O	O	O	O
استخدام ماي يو myU في العملية التعليمية سيساعد طلابي على زيادة قدرتهم في الحصول على معلومات مفيدة.	O	O	O	O	O

12. استخدام وتعلم كيفية استخدام ماي يو (MyU). *

	1 = أرفض بشدة	2= أرفض	3 = محايد	4= موافق	5 = موافق بشدة
أعتقد أن طلابي سيجدون ماي يو myU سهل الاستخدام.	O	O	O	O	O
أعتقد أن طلابي يجدون استخدام ماي يو myU بسيطًا وواضحًا.	O	O	O	O	O
أعتقد بأن طلابي يتعلمون كيفية استخدام ماي يو (MyU) بسرعة.	O	O	O	O	O

13. الأشخاص الذين يؤثرون على استخدام طلابي لماي يو (MyU).

	1 = أرفض بشدة	2= أرفض	3 = محايد	4= موافق	5 = موافق بشدة
عندما استخدم ماي يو (MyU)، يجد طلابي أنه مفيد.	O	O	O	O	O
أجد أن طلابي يستخدمون ماي يو (MyU)عندما يتم تشجيعهم من قبل أصدقائهم وزملائهم.	O	O	O	O	O
لدي القدرة على التأثير على طلابي لكي يستخدموا ماي يو (MyU).	O	O	O	O	O

14. ماي يو (MyU) ودعم البنية التحتية التقنية.

	1 = أرفض بشدة	2= أرفض	3 = محايد	4= موافق	5 = موافق بشدة
أعتقد بأن طلابي يمتلكون الموارد اللازمة على سبيل المثال (الإنترنت والأجهزة) لاستخدام ماي يو (MyU)) .	O	O	O	O	O
أعتقد أن ماي يو (MyU) يتوافق مع الأنظمة الأخرى على سبيل المثال نظام إدارة التعلم (Module) الذي يستخدمه طلابي.	O	O	O	O	O
اعتقد ان الموظفون الفنيون يستجيبون بسرعة لمشاكل الطلاب عند استخدام ماي يو (MyU)	O	O	O	O	O

15. الاستمتاع. *

	1 = أرفض بشدة	2= أرفض	3 = محايد	4= موافق	5 = موافق بشدة
أعتقد أن طلابي يجدون ماي يو (MyU)شيقاً في الاستخدام.	O	O	O	O	O
عندما يستخدم طلابي ماي يو (MyU) اعتقد انهم يجدونها طريقة جيدة للتعلم.	O	O	O	O	O
اعتقد ان طلابي يجدون ماي يو (MyU طريقة جيدة للتواصل مع بعضهم البعض	O	O	O	O	O

16. الاستخدام المعتاد لماي يو (MyU). *

	1 = أرفض بشدة	2= أرفض	3 = محايد	4= موافق	5 = موافق بشدة
اجد ان طلابي يستخدمون ماي يو (MyU) بانتظام.	O	O	O	O	O
أجد أنه من الطبيعي لطلابي استخدام ماي يو (MyU) في أي وقت.	O	O	O	O	O
اجد ان استخدام ماي يو (MyU) شيء يفعله الطلاب بدون تردد.	O	O	O	O	O

17. تصوري للأداء الأكاديمي للطالب. *

	1 = أرفض بشدة	2= أرفض	3 = محايد	4= موافق	5 = موافق بشدة
أتوقع أن يثق طلابي بمهاراتهم وقدراتهم الأكاديمية المناسبة من خلال استخدام ماي يو (MyU).	○	○	○	○	○
أتوقع أن يؤدي طلابي أداءً أكاديميًا أفضل عند استخدام ماي يو (MyU).	○	○	○	○	○
أتوقع أن يحصل طلابي على درجات جيدة / أفضل عند استخدام ماي يو (MyU) في الدورات.	○	○	○	○	○

myU use and students' academic performance at PAAET from teachers' perspective

Dear teacher,

I am a PhD research student at the University of East Anglia conducting a study to investigate to investigate the factors that would affect students' academic performance through using educational SNSs (such as myU application) at PAAET from teachers' perspective.

The questionnaire designed for this study consists of two parts. The first part consists of personal information, while part two assesses the factors that would affect students' academic performance. If you use myU application, I would be very grateful if you fill out this questionnaire. Your participation is voluntary. If you do not wish to participate, simply discard the questionnaire. Responses will be completely anonymous; your name will not appear anywhere on the survey. Also, all of the information you kindly provide will be treated as completely confidential and it will not be possible for anyone to identify the information you supply. Completing and returning the questionnaire constitutes your consent to participate.

The questionnaire will take less 7 minutes of your time to fill out. If you have any questions or concerns, please contact me at jpa21jqu@uea.ac.uk

If you would like to take part, please read first the link below that contains the participant information sheet.

Regards

Bodoor Alazemi
PhD student
+96590906670
jpa21jqu@uea.ac.uk

* Required

* This form will record your name, please fill your name.

The link to the participant information sheet is below.

https://ueanorwich-my.sharepoint.com/:w:/g/personal/jpa21jqu_uea_ac_uk/EX9jkVA7ObBFrqRwBFLfUBMB3vW7XoatlxjolQpDSxF3DQ?e=0y5ch5

Ibn Sina Certified Translation Co.
شركة ابن سينا للترجمة المعتمدة

Section

1. Did you use myU before? *

- ◯ Yes
- ◯ No

If your answer is NO, thank you for your time, you can stop now.

Part 1: Personal Information.

Instruction: Please tick the appropriate answer.

2. **Gender.** *

- ◯ Male
- ◯ Female
- ◯ Prefer not to answer

3. **Age.** *

- ◯ Under 30
- ◯ 31-40
- ◯ 41-50
- ◯ 51-60
- ◯ 61+
- ◯ Prefer not to answer.

4. **College.** *

- ◯ College of Basic Education
- ◯ College of Business Studies
- ◯ College of Technological Studies
- ◯ College of Health Sciences
- ◯ College of Nursing

5. **Academic rank. ***

- ◯ Full professor
- ◯ Associate professer
- ◯ Assistant professer
- ◯ Lecturer
- ◯ Teacher
- ◯ Teacher Assistant

6. **How long have you been using myU? ***

- ◯ Less than 1 year
- ◯ 1-2 years
- ◯ More than 2 years

Part 2

Instruction: Please select your degree of agreement or disagreement with the following statements **using the 5point scale below:** 1= Strongly Disagree, 2= Disagree, 3=Neutral, 4= Agree, 5= Strongly Agree

7. **My perception of students' desire to use myU. ***

	1= Strongly Disagree	2= Disagree	3=Neutral	4= Agree	5= Strongly Agree
I think that my students are willing to use myU for the whole year.	○	○	○	○	○
I think that my students have positive perceptions about myU.	○	○	○	○	○
I think that my students are motivated to use myU.	○	○	○	○	○
I think that my students may use myU in their future modules.	○	○	○	○	○

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8. My perception of students' use of myU. *

	1= Strongly Disagree	2= Disagree	3=Neutral	4= Agree	5= Strongly Agree
I think that my students use myU for interacting with peers.	○	○	○	○	○
I think that my students use myU for interacting with teachers.	○	○	○	○	○
I think that my students use a variety of different functions in myU (e.g., comments, direct messages, downloading course contents, uploading assignments, etc.).	○	○	○	○	○
Because of myU, the students do not need to go to the teacher's office or ask him/her in class.	○	○	○	○	○

9. **My students' ability using myU.**

I find that my students are able in using myU to... *

	1= Strongly Disagree	2= Disagree	3=Neutral	4= Agree	5= Strongly Agree
Find course content information.	○	○	○	○	○
Send and receive messages.	○	○	○	○	○
Download and upload files.	○	○	○	○	○

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10. **myU compatibility.**

I believe myU fits with my students'... *

	1= Strongly Disagree	2= Disagree	3=Neutral	4= Agree	5= Strongly Agree
Sociocultural values/beliefs.	○	○	○	○	○
learning styles.	○	○	○	○	○
learning needs (such as acquire knowledge, and communication skills).	○	○	○	○	○

11. **My perception of the usefulness of myU for students.**

Based on my experience using myU, I expect that... *

	1= Strongly Disagree	2= Disagree	3=Neutral	4= Agree	5= Strongly Agree
my students would find myU useful to them in their studies.	○	○	○	○	○
using myU would allow my students to accomplish more in their studies.	○	○	○	○	○
using myU in the educational process would help my students increase their ability to get useful information.	○	○	○	○	○

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12. **Using and learning to use myU. ***

	1= Strongly Disagree	2= Disagree	3=Neutral	4= Agree	5= Strongly Agree
I believe that my students would find myU easy to use	○	○	○	○	○
I believe that my students find using my simple and clear	○	○	○	○	○
I believe that my students learn how to use myU quickly.	○	○	○	○	○

13. **People that affect my students use of myU. ***

	1= Strongly Disagree	2= Disagree	3=Neutral	4= Agree	5= Strongly Agree
When I use myU my students find it useful.	○	○	○	○	○
I find that my students use myU when encouraged by their friends and colleagues.	○	○	○	○	○
I am able to influence my students to use myU.	○	○	○	○	○

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14. **MyU and supporting technical infrastructure.** *

	1= Strongly Disagree	2= Disagree	3=Neutral	4= Agree	5= Strongly Agree
I consider that my students have the resources necessary (e.g., internet and devices) to use myU.	○	○	○	○	○
I consider that myU is compatible with other systems (e.g., LMS such as Moodle) that my students use.	○	○	○	○	○
I consider that the technical staff is available for assistance with any difficulties students may encounter in using myU.	○	○	○	○	○

15. **Enjoyment.** *

	1= Strongly Disagree	2= Disagree	3=Neutral	4= Agree	5= Strongly Agree
I believe that my students find myU interesting to use.	○	○	○	○	○
When my students use myU, I believe that they find it an exciting way to learn.	○	○	○	○	○
I believe my students enjoy communicating with each other in using myU.	○	○	○	○	○

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16. **Habitual use of myU.** *

	1= Strongly Disagree	2= Disagree	3=Neutral	4= Agree	5= Strongly Agree
I find that my students regularly use myU.	○	○	○	○	○
I find that it is natural for my students to use myU ant time.	○	○	○	○	○
I find that using myU is something that students do without hesitation.	○	○	○	○	○

17. **My Perception of Student Academic Performance.** *

	1= Strongly Disagree	2= Disagree	3=Neutral	4= Agree	5= Strongly Agree
I expect that my students are confident of their adequate academic skills and abilities via using myU.	○	○	○	○	○
I expect my students to perform better academically when using myU.	○	○	○	○	○
I anticipate that my students have good/better grades when using myU in courses.	○	○	○	○	○

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Microsoft Forms

MyU Use & Students' Academic Performance at PAAET from Faculty members' Perspective

Dear faculty member,

I am a PhD researcher at the University of East Anglia conducting a study to investigate the factors that would affect student's academic performance through using educational SNSs (such as my application) at PAAET from faculty members' perspective.

The questionnaire designed for this study consists of two parts. Part one includes the demographic questions, whereas part two assesses the factors that would affect student's academic performance. Therefore, if you use MyU application, I would be very grateful if you complete this questionnaire. Your participation is voluntary. If you are not willing to participate, simply discard the questionnaire. Your responses will be completely anonymous, as your name will not be disclosed anywhere on the questionnaire. Moreover, all of the information provided by you will be treated as entirely confidential and it will be impossible for anyone to identify the information you supply. Completing and returning the questionnaire constitutes your consent to participate.

The questionnaire will take less 7 minutes of your time to fill it out. If you have any questions or concerns, kindly contact me at jpa21jqu@uea.ac.uk.

If you would like to take part, kindly see the link below that contains the participant information sheet.

Best regards,

Bodoor Alazemi

PhD student

+96590906670

jpa21jqu@uea.ac.uk

Below is the link to the participant information sheet

https://ueanorwich-my.sharepoint.com/:w:/g/personal/Jpa21jqueaacuk/EX9jkVA7ObBFrqRwBFLfuBMB3vW7XoatlxjolOpDSxF3e=0y5ch5

Section

1. Did you use MyU before?
   - Yes
   - No

If your answer is "No", thank you for your time, you can stop now.

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Part 1: Personal Information

Instruction: please tick the appropriate answer.

2. Gender. *

- o Male
- o Female
- o Prefer not to answer

3. Age. *

- o Under 40
- o 42-50
- o 51-60
- o +61
- o Prefer not to answer

4. **College. ***
   - o College of Basic Education
   - o College of Business Studies
   - o College of Technological Studies
   - o College of Health Sciences
   - o College of Nursing
5. **Academic rank. ***
   - o Full professor
   - o Associate professor
   - o Assistant professor
   - o Lecturer
   - o Teacher
   - o Teacher Assistant
6. **How long have you been using MyU?**
   - o Less than 1 year
   - o 1-2 years
   - o More than 2 years

Part 2

Instructions: Please select your level of agreement or disagreement with the following statements using the rating scale from 1 to 5 below:

1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly Agree

7. My Perception of Students' Willingness to Use myU *

	1 = Strongly Disagree	2 = Disagree	3 = Neutral	4 = Agree	5 = Strongly Agree
I believe that students are willing to use MyU throughout the year.	☐	☐	☐	☐	☐
I believe that students have positive perceptions of MyU.	☐	☐	☐	☐	☐
I believe that students are motivated to use MyU	☐	☐	☐	☐	☐
I believe that students recommend using MyU.	☐	☐	☐	☐	☐
I believe that students can use MyU in their future courses	☐	☐	☐	☐	☐

8. My Perception of Students' Use of MyU *

	1 = Strongly Disagree	2 = Disagree	3 = Neutral	4 = Agree	5 = Strongly Agree
I believe that students use MyU to interact with peers.	☐	☐	☐	☐	☐
I believe that students use MyU to interact with instructors.	☐	☐	☐	☐	☐
I believe that students use a variety of different functions in MyU, such as comments, direct messages, course content uploads, assignment submissions, etc.	☐	☐	☐	☐	☐
Thanks to MyU, students do not need to visit the instructor's office or ask questions in class	☐	☐	☐	☐	☐

9. My students' Ability in using MyU.

I find that My students have the ability to use MyU for ...*

	1 = Strongly Disagree	2 = Disagree	3 = Neutral	4 = Agree	5 = Strongly Agree
Find course content information	☐	☐	☐	☐	☐
Send and receive messages.	☐	☐	☐	☐	☐
Download and upload files	☐	☐	☐	☐	☐

10. MyU compatibility.

I believe MyU complies with my students' .....*

	1 = Strongly Disagree	2 = Disagree	3 = Neutral	4 = Agree	5 = Strongly Agree
Socio-cultural values/beliefs.	☐	☐	☐	☐	☐
learning styles.	☐	☐	☐	☐	☐
Learning needs (such as knowledge acquisition and communication skills).	☐	☐	☐	☐	☐

11. My perception of the usefulness of MyU for students.

Based on my experience using MyU, I think ....*

	1 = Strongly Disagree	2 = Disagree	3 = Neutral	4 = Agree	5 = Strongly Agree
My students find MyU useful in their studies	○	○	○	○	○
Using myU will enable my students to achieve more in their studies.	○	○	○	○	○
Using myU in the educational	○	○	○	○	○

process will help my students increase their ability to obtain useful information.					

12. Using and learning how to use MyU* .

	1 = Strongly Disagree	2 = Disagree	3 = Neutral	4 = Agree	5 = Strongly Agree
I believe my students will find MyU easy to use	o	o	o	o	o
I believe my students find MyU simple and easy to understand	o	o	o	o	o
I believe my students are able to learn how to use MyU rapidly	o	o	o	o	o

13. People that influence my students' use of MyU.

	1 = Strongly Disagree	2 = Disagree	3 = Neutral	4 = Agree	5 = Strongly Agree
When I use MyU, my students find it helpful.	o	o	o	o	o
I notice that my students use MyU when they are encouraged by their friends and classmates	o	o	o	o	o
I am capable of influencing my students to use MyU.	o	o	o	o	o

14. MyU and technical infrastructure support.

	1 = Strongly Disagree	2 = Disagree	3 = Neutral	4 = Agree	5 = Strongly Agree
I believe my students have the necessary resources (e.g. internet and devices) to use MyU.	o	o	o	o	o
I think MyU is compatible with other systems, for example the Learning Management System (Module) that my students use.	o	o	o	o	o
I think the technical staff responds quickly to students' .	o	o	o	o	o

problems when using MyU.					

15. Enjoyment. *

	1 = Strongly Disagree	2 = Disagree	3 = Neutral	4 = Agree	5 = Strongly Agree
I think my students find MyU interesting to use.	o	o	o	o	o
When my students use MyU I think they find it a good way to learn.	o	o	o	o	o
I think that my students find MyU as a good method to communicate with each other's.	o	o	o	o	o

16. Habitual use of MyU. *

	1 = Strongly Disagree	2 = Disagree	3 = Neutral	4 = Agree	5 = Strongly Agree
I notice that my students consistently use MyU	o	o	o	o	o
I think it's normal for my students to use MyU whenever they need.	o	o	o	o	o
I believe using MyU is something students do effortlessly	o	o	o	o	o

17. My perception of the student's academic performance* .

	1 = Strongly Disagree	2 = Disagree	3 = Neutral	4 = Agree	5 = Strongly Agree
I expect my students to be confident in their adequate academic skills and abilities via the use of MyU.	○	○	○	○	○
I expect my students to perform better academically when using MyU.	○	○	○	○	○
I expect my students to get good/better grades when using MyU in courses.	○	○	○	○	○

Appendix C – Experts' Evaluation of the Questionnaires for Study 1 and Study 2

Questionnaire Evaluation

Dear Dr. Kamel Rouibah

I am a PhD research student at the University of East Anglia conducting a study to investigate the factors that would affect students' academic performance through using educational SNSs (such as myU application) at The Public Authority for Applied Education (PAAET) from students' perspective.

Since your practical experience in the field of Information Systems (IS) and technology in the context of Kuwait, I am attaching the questionnaire questions for the proposed research model (see Figure 1 below) for you. Where the research question is " "What are the factors that affect students' academic performance through using educational Social Networking sites (SNSs) at PAAET in Kuwait from students' perspective?"

I would be very grateful if you reviewed the questions and expressed your opinion and feedback, which will inevitably be of high value and appreciation to the researcher.

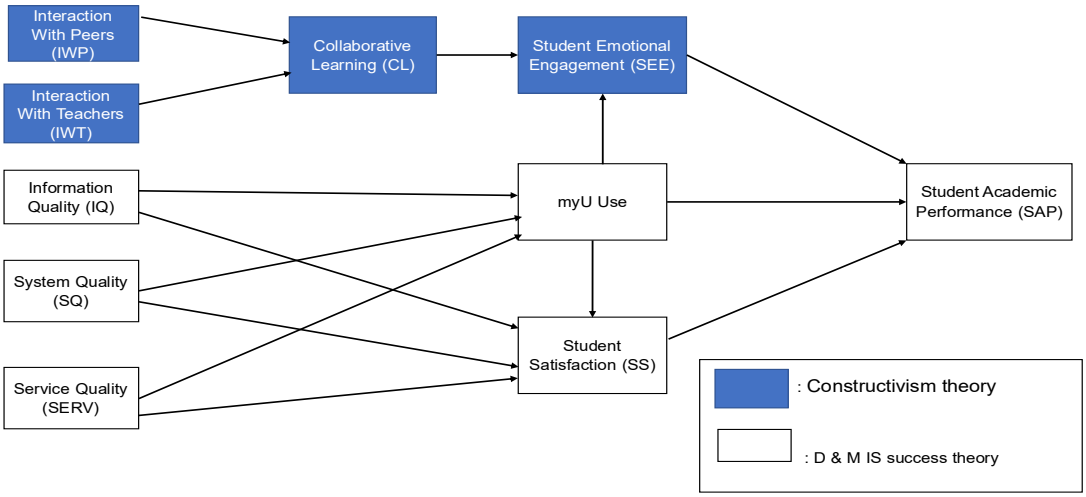


Figure 1: proposed research model.

Regards

Bodoor Alazemi

PhD student

+96590906670

- **Part one:** demographic questions

No.	Question or statement	Clarity/ appropriateness of the question or statement		Suggestions or modifications
		Yes	No	
1	Did you use myU before?	X		
2	Gender. o Male o Female o Prefer not to answer	X		
3	Age. o 18-22 o 23-27 o 28-37 o +38 o Prefer not to answer.		X	I suggest removing this question because students' ages are usually close.
4	Marital status. o Single o Married o Divorced o Widowed o Prefer not to answer.		X	I suggest removing this question because it is not important to know the students' marital status.

5	College. o College of Basic Education o College of Business Studies o College of Technological Studies o College of Health Sciences o College of Nursing.	X		
6.	Year of study. o First year o Second year o Third Year o Fourth year and above	X		
7	Grade Point Average (GPA). o 4.00 - 3.6 points o 3.59 -2.8 points o 2.79 – 2.0 Points o 1.99 points or less o Prefer not to answer.	X		

8	How long have you been using myU? ○ Less than 1 year ○ 1-2 years ○ More than 2 years	X		

- **Part Two:**

No.	Question or statement	Clarity/ appropriateness of the question or statement		Suggestions or modifications
		Yes	No	
9	On average, how frequently do you use myU? ○ Once a month or less ○ Once a week ○ Several times a week ○ Once a day ○ Several times a day	X		
10	On average, how much time do you spend each time you use myU? ○ Less than 10 minutes ○ 10- 20 minutes ○ 21- 30 minutes ○ 31- 40 minutes ○ More than 40 minutes	X		

11	**Interaction with Peers (IWP):** The extent of interaction, dialogue, discussion, and information exchange between students and peers through using educational SNSs (Blasco-Arcas et al., 2013). 1. myU gives me the opportunity to interact with my peers about course content and homework. 2. myU helps facilitate dialogue with my peers. 3. myU facilitates course discussions (such as exchange of information and ideas) with my peers.	X		
12	**Interaction with Teachers (IWT):** The extent to which educational SNSs facilitate the interaction of students with their teachers in terms of dialogue, discussion, and information exchange (Blasco-Arcas et al., 2013). **1.** myU gives me the opportunity to interact with my teachers about course content and homeWork. **2.** myU helps facilitate dialogue with my teachers.	X		I suggest writing faculty members instead of teachers. This is because in Kuwait, teachers in higher education are referred to as faculty members while teachers in schools are referred to as teachers.

	3. myU facilitates course discussions, (such as information, ideas, and feedback) with my teachers.			

13	**Collaborative Learning (CL):** The extent to which a group of learners works together through educational SNSs to solve a particular problem, finish a task, improve skills, evaluate one another's ideas, or produce a new product (Sarwar, B., 2019). 1. Using myU, I was able to improve my learning abilities through peer collaboration. 2. Using myU, I was able to gain new skills from my peers. 3. Using myU, I was able to improve my understanding of the topics through group discussion.	X		

14	**Student Emotional Engagement (SEE):** Students' emotional reactions through their use of educational SNSs. including their relationships, attitudes, and interests to their peers, teacher, and study (Gunuc & Kuzu, 2015). 1. Using myU, I like to communicate with my peers to discuss homework, lessons, and talk about the day's events. 2. Using myU, I like to communicate with my teachers to discuss the topics explained in class, assessments, and study problems if any. 3. Using myU, I give importance to studying together with my classmates (in a group). 4. Using myU, I can improve my interest in my course.	X		• I suggest writing (with my peers) in item no.3 instead of (with my classmates) • I suggest changing item no.4 to (Using myU, I feel that my teachers are near me when I need them) to be more appropriate.
15	**Information quality (IQ)**: The degree to which system users (students) think that educational SNSs information is up-to-date, accurate, relevant, and easy to understand (Isaac et al., 2019; Salam & Farooq, 2020). 1. The course content in myU is up to date. 2. The content in myU is considered accurate for the course.	X		

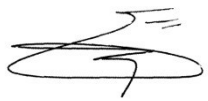
	3. The information provided by myU is relevant to the course content. 4. The information provided by myU is easy to understand.			
16	**System Quality (SQ):** The degree to which the system users (students) believe that educational SNSs are easy to use, flexible, and understandable (Isaac et al., 2019; Salam & Farooq, 2020). 1. myU is easy to use. 2. myU provides flexible features to interact with. 3. I find myU features are understandable.	X		
17	**Service quality (SERV)**: The quality of professional support provided by educational SNSs administrators and developers. Is assessed through timeliness, responsiveness, and empathy (Al-Adwan et al., 2022; Salam & Farooq, 2020). 1. The technical staff provide me with quick assistance in case of any difficulty in using myU.	X		

	2. Technical staff are available to provide help with using myU. 3. myU technical staff understands my specific needs.			
18	**Student Satisfaction (SS):** The extent to which students believe that educational SNSs meet their educational requirements in terms overall satisfaction (Cavus et al., 2021; Hsu, L., 2023). 1. I am satisfied that myU meets my requirements. 2. I enjoy using myU in my study. 3. Overall, I am satisfied with myU.	X		I suggest changing item no.2 to (I am satisfied with the information provided by myU) to be more appropriate.

19	**Student Academic Performance (SAP):** The extent to which educational SNS influences student performances based on, knowledge acquisition, resource savings, and development of skills (Alamri et al., 2020; Hosen, M., 2021). 1. myU helps me to accomplish my tasks more quickly. 2. myU saves my learning time. 3. myU improves my comprehension of the concepts studied. 4. Using myU helps me to review and know my mistakes in my studies. 5. myU helps me acquire useful information. 6. myU helps me acquire new communication skills.	X		• It would be better for item no.1 to say (myU helps me to accomplish my tasks **(put some examples here)** on time.) to make the statement more understandable for the participant. • I suggest removing item no.3 because it has the same meaning as item no.5. But do not remove the item yet. see what you will get in the pilot study.

General feedback, if any:

Adding a fishing question between survey questions helps in collecting correct and complete data.

Evaluator Name:	Dr Kamel Rouibah
Signature	

Academic Rank	Professor of MIS
Evaluation Date	21 March 2023
Name of the University/Department	Kuwait University/ College of Business Administration, Information Systems and Operation management department

Questionnaire Evaluation

Dear Dr. Abdullah Al-Failakawi

I am a PhD research student at the University of East Anglia conducting a study to investigate the factors that would affect students' academic performance through using educational SNSs (such as myU application) at The Public Authority for Applied Education (PAAET) from students' perspective.

Since your practical experience in the field of Information Systems (IS) and technology in the context of Kuwait, I am attaching the questionnaire questions for the proposed research model (see figure 1 below) for you. Where the research question is " "What are the factors that affect students' academic performance through using educational Social Networking sites (SNSs) at PAAET in Kuwait from students' perspective?"

I would be very grateful if you reviewed the questions and expressed your opinion and feedback, which will inevitably be of high value and appreciation to the researcher.

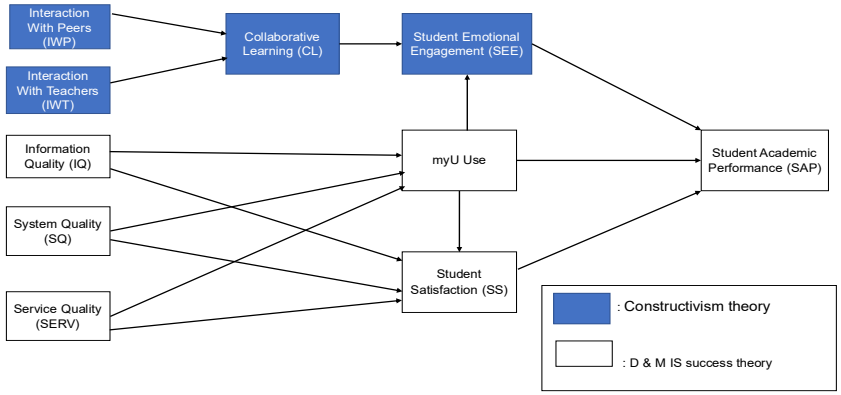


Figure 1: proposed research model.

Regards,
Bodoor Alazemi
PhD student
+96590906670

➢ **Part one:** demographic questions

No.	Question or statement	Clarity/ appropriateness of the question or statement		Suggestions or modifications
		Yes	No	
1	Did you use myU before?	X		
2	Gender. o Male o Female o Prefer not to answer	X		
3	Age. o 18-22 o 23-27 o 28-37 o +38 o Prefer not to answer.		X	No need to ask about age because there is no great diversity in the ages of the students, as the ages are usually close.
4	Marital status. o Single o Married o Divorced o Widowed o Prefer not to answer.		X	No need to ask students about marital status.

5	College. o College of Basic Education o College of Business Studies o College of Technological Studies o College of Health Sciences o College of Nursing.	X		
6.	Year of study. o First year o Second year o Third Year o Fourth year and above	X		
7	Grade Point Average (GPA). o 4.00 - 3.6 points o 3.59 -2.8 points o 2.79 – 2.0 Points o 1.99 points or less o Prefer not to answer.	X		

8	How long have you been using myU? o Less than 1 year o 1-2 years o More than 2 years	X		

➢ **Part Two:**

No.	Question or statement	Clarity/ appropriateness of the question or statement		Suggestions or modifications
		Yes	No	
9	On average, how frequently do you use myU? o Once a month or less o Once a week o Several times a week o Once a day o Several times a day	X		
10	On average, how much time do you spend using myU each time? o Less than 10 minutes o 10- 20 minutes o 21- 30 minutes o 31- 40 minutes o More than 40 minutes	X		The options are ok for now but double-check the pilot study results.

11	**Interaction with Peers (IWP):** The extent of interaction, dialogue, discussion, and information exchange between students and peers through using educational SNSs (Blasco-Arcas et al., 2013). 1. myU gives me the opportunity to interact with my peers about course content and homeworks. 2. myU helps facilitate dialogue with my peers. 3. myU facilitates course discussions (such as exchange of information and ideas) with my peers.	X		
12	**Interaction with Teachers (IWT):** The extent to which educational SNSs facilitate the interaction of students with their teachers in terms of dialogue, discussion, and information exchange (Blasco-Arcas et al., 2013). **1.** myU gives me the opportunity to interact with my teachers about course content and homework. **2.** myU helps facilitate dialogue with my teachers.	X		It is better to write faculty members instead of teachers.

	3. myU facilitates course discussions, (such as information, ideas, and feedback) with my teachers.			

13	**Collaborative Learning (CL):** The extent to which a group of learners works together through educational SNSs to solve a particular problem, finish a task, improve skills, evaluate one another's ideas, or produce a new product (Sarwar, B., 2019). 1. Using myU, I was able to improve my learning abilities through peer collaboration. 2. Using myU, I was able to gain new skills from my peers. 3. Using myU, I was able to improve my understanding of the topics through group discussion.	X		

14	**Student Emotional Engagement (SEE):** Students' emotional reactions through their use of educational SNSs. including their relationships, attitudes, and interests to their peers, teacher, and study (Gunuc & Kuzu, 2015). 1. Using myU, I like to communicate with my peers to discuss homework, lessons, and talk about the day's events. 2. Using myU, I like to communicate with my teachers to discuss the topics explained in class, assessments, and study problems if any. 3. Using myU, I give importance to studying together with my classmates (in a group). 4. Using myU, I can improve my interest in my course.	X		• It is better to write (with my peers) in item no.3 instead of (with my classmates).
15	**Information quality (IQ)**: The degree to which system users (students) think that educational SNSs information is up-to-date, accurate, relevant, and easy to understand (Isaac et al., 2019; Salam & Farooq, 2020). 1. The course content in myU is up to date. 2. The content in myU is considered accurate for the course.	X		

	3. The information provided by myU is relevant to the course content. 4. The information provided by myU is easy to understand.			
16	**System Quality (SQ):** The degree to which the system users (students) believe that educational SNSs are easy to use, flexible, and understandable (Isaac et al., 2019; Salam & Farooq, 2020). 1. myU is easy to use. 2. myU provides flexible features to interact with. 3. I find myU features are understandable.	X		
17	**Service quality (SERV)**: The quality of professional support provided by educational SNSs administrators and developers. Is assessed through timeliness, responsiveness, and empathy (Al-Adwan et al., 2022; Salam & Farooq, 2020). 1. The technical staff provide me with quick assistance in case of any difficulty in using myU.	X		

	2. Technical staff are available to provide help with using myU. 3. myU technical staff understands my specific needs.			
18	**Student Satisfaction (SS):** The extent to which students believe that educational SNSs meet their educational requirements in terms overall satisfaction (Cavus et al., 2021; Hsu, L., 2023). 1. I am satisfied that myU meets my requirements. 2. I enjoy using myU in my study. 3. Overall, I am satisfied with myU.	X		

19	**Student Academic Performance (SAP):** The extent to which educational SNS influences student performances based on, knowledge acquisition, resource savings, and development of skills (Alamri et al., 2020; Hosen, M., 2021). 1. myU helps me to accomplish my tasks more quickly. 2. myU saves my learning time. 3. myU improves my comprehension of the concepts studied. 4. Using myU helps me to review and know my mistakes in my studies. 5. myU helps me acquire useful information. 6. myU helps me acquire new communication skills.	X		• It is better to give examples of tasks in item no.1 It is better to remove item no.3 because it is • similar to item no.5. However, leave it in the pilot study and see the results that will appear.

General feedback, if any:

Evaluator Name:…….Dr. Abdullah Alfailakawi

Signature:……

Academic Rank:…….Assistant Professor

Evaluation Date: 15th March 2023

Name of the University/Department……Kuwait University / Department of Curriculum and Instructions

Questionnaire Evaluation

Dear Dr. Ali Dashti

I am a PhD research student at the University of East Anglia conducting a study to investigate the factors that would affect students' academic performance through using educational SNSs (such as myU application) at The Public Authority for Applied Education (PAAET) from students' perspective.

Since your practical experience in the field of Information Systems (IS) and technology in the context of Kuwait, I am attaching the questionnaire questions for the proposed research model (see figure 1 below) for you. Where the research question is " "What are the factors that affect students' academic performance through using educational Social Networking sites (SNSs) at PAAET in Kuwait from students' perspective?"

I would be very grateful if you reviewed the questions and expressed your opinion and feedback, which will inevitably be of high value and appreciation to the researcher.

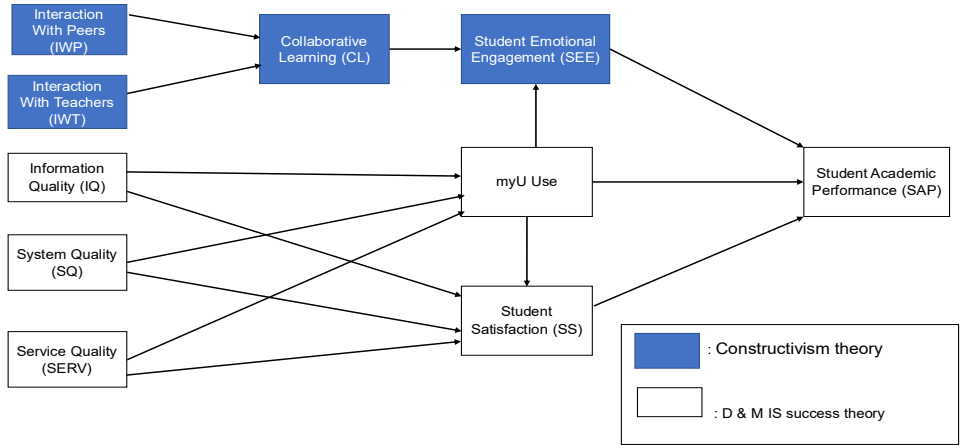


Figure 1: proposed research model

Regards,

Bodoor Alazemi

PhD student

+96590906670

- **Part one:** demographic questions

No.	Question or statement	Clarity/ appropriateness of the question or statement		Suggestions or modifications
		Yes	No	
1	Did you use myU before?	X		
2	Gender. o Male o Female o Prefer not to answer	X		
3	Age. o 18-22 o 23-27 o 28-37 o +38 o Prefer not to answer.	X		Students' ages are usually close, but it is ok to leave the question for the pilot study.
4	Marital status. o Single o Married o Divorced	X		No need to ask students about marital status but it is ok to leave the question for the pilot study.

	○ Widowed ○ Prefer not to answer.			
5	College. ○ College of Basic Education ○ College of Business Studies ○ College of Technological Studies ○ College of Health Sciences ○ College of Nursing.	X		
6.	Year of study. ○ **First year** ○ Second year ○ Third Year ○ Fourth year and above	X		
7	Grade Point Average (GPA). ○ 4.00 - 3.6 points ○ 3.59 -2.8 points ○ 2.79 – 2.0 Points ○ 1.99 points or less ○ Prefer not to answer.	X		

8	How long have you been using myU? o Less than 1 year o 1-2 years o More than 2 years	X		

- **Part Two:**

No.	Question or statement	Clarity/ appropriateness of the question or statement		Suggestions or modifications
		Yes	No	
9	On average, how frequently do you use myU? o Once a month or less o Once a week o Several times a week o Once a day o Several times a day	X		

10	On average, how much time do you spend each time you use myU? o Less than 10 minutes o 10- 20 minutes o 21- 30 minutes o 31- 40 minutes o More than 40 minutes	X		Check the results of the pilot study.
11	**Interaction with Peers (IWP):** The extent of interaction, dialogue, discussion, and information exchange between students and peers through using educational SNSs (Blasco-Arcas et al., 2013). 1. myU gives me the opportunity to interact with my peers about course content and homeworks. 2. myU helps facilitate dialogue with my peers. 3. myU facilitates course discussions (such as information and ideas) with my peers.	X		
12	**Interaction with Teachers (IWT):** The extent to which educational SNSs facilitate the interaction of students with their teachers in terms of dialogue,	X		Write faculty members instead of teachers.

	discussion, and information exchange (Blasco-Arcas et al., 2013). 1. myU gives me the opportunity to interact with my teachers about course content and HomeWorks. 2. myU helps facilitate dialogue with my teachers. 3. myU facilitates course discussions, (such as information, ideas, and feedback) with my teachers.			
13	**Collaborative Learning (CL):** The extent to which a group of learners works together through educational SNSs to solve a particular problem, finish a task, improve skills, evaluate one another's ideas, or produce a new product (Sarwar, B., 2019). 1. Using myU, I was able to improve my learning abilities through peer collaboration. 2. Using myU, I was able to gain new skills from my peers.	X		

	3. Using myU, I was able to improve my understanding of the topics through group discussion.			
14	**Student Emotional Engagement (SEE):** Students' emotional reactions through their use of educational SNSs. including their relationships, attitudes, and interests to their peers, teacher, and study (Gunuc & Kuzu, 2015). 1. Using myU, I like to communicate with my peers to discuss homework, lessons, and talk about the day's events. 2. Using myU, I like to communicate with my teachers to discuss the topics explained in class, assessments, and study problems if any. 3. Using myU, I give importance to studying together with my classmates (in a group). 4. Using myU, I can improve my interest in my course.	X		• I think it would be better to change item no. 4 and put another item that is more appropriate to your study.

15	**Information quality (IQ)**: The degree to which system users (students) think that educational SNSs information is up-to-date, accurate, relevant, and easy to understand (Isaac et al., 2019; Salam & Farooq, 2020). 1. The course content in myU is up to date. 2. The content in myU is considered accurate for the course. 3. The information provided by myU is relevant to the course content. 4. The information provided by myU is easy to understand.	X		
16	**System Quality (SQ):** The degree to which the system users (students) believe that educational SNSs are easy to use, flexible, and understandable (Isaac et al., 2019; Salam & Farooq, 2020).	X		

	1. myU is easy to use. 2. myU provides flexible features to interact with. 3. I find myU features are understandable.			
17	**Service quality (SERV)**: The quality of professional support provided by educational SNSs administrators and developers. Is assessed through timeliness, responsiveness, and empathy (Al-Adwan et al., 2022; Salam & Farooq, 2020). 1. The technical staff provide me with quick assistance in case of any difficulty in using myU. 2. Technical staff are available to provide help with using myU. 3. myU technical staff understands my specific needs.	X		
18	**Student Satisfaction (SS):** The extent to which students believe that educational SNSs meet their educational requirements in terms	X		• Think again about item no.2.

	overall satisfaction (Cavus et al., 2021; Hsu, L., 2023). 1. I am satisfied that myU meets my requirements. 2. I enjoy using myU in my study. 3. Overall, I am satisfied with myU.			
19	**Student Academic Performance (SAP):** 1. myU helps me to accomplish my tasks on time. 2. myU saves my learning time. 3. myU improves my comprehension of the concepts studied. 4. Using myU helps me to review and know my mistakes in my studies. 5. myU helps me acquire useful information. 6. myU helps me acquire new communication skills.	X		• It would be better to put examples of tasks in item no.1 (such as homework, reports, and projects).

General feedback, if any:

It would be useful to add what is called a fishing question among the questionnaire questions to see if the participants read the questions before answering or not.

Evaluator Name: Dr. Ali Dashti

Signature: ali ali

Academic Rank: Assistant Professor

Evaluation Date: 20th March 2023

Name of the University/Department: KU - CBA - ISOM

Questionnaire Evaluation

Dear Dr. Kamel Rouibah

I am a PhD research student at the University of East Anglia conducting a study to investigate the factors that would affect students' academic performance through using educational SNSs (such as myU application) at The Public Authority for Applied Education (PAAET) from faculty members' perspective.

Since your practical experience in the field of Information Systems (IS) and technology in the context of Kuwait, I am attaching the questionnaire questions for the proposed research model (see figure1 below) for you. Where the research question is " "What are the factors that affect students' academic performance through using educational Social Networking sites (SNSs) at PAAET in Kuwait from faculty members' perspective?"

I would be very grateful if you reviewed the questions and expressed your opinion and feedback, which will inevitably be of high value and appreciation to the researcher.

Regards

Bodoor Alazemi

PhD student

+96590906670

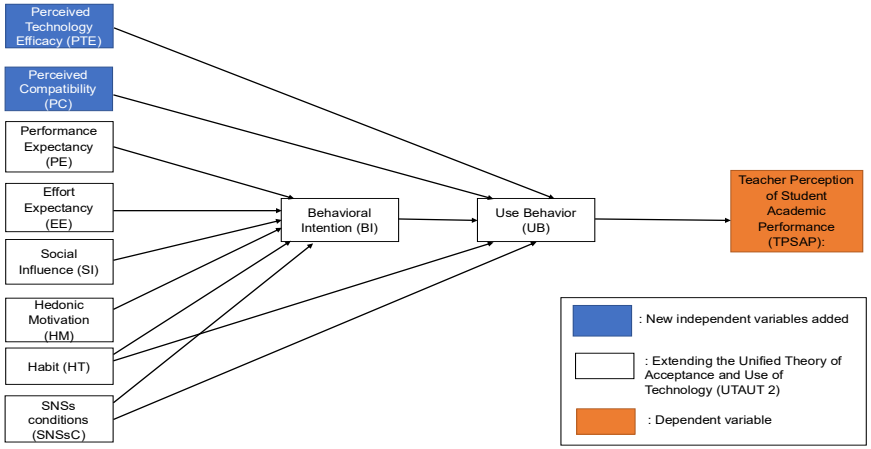


Figure 1: proposed research

- **Part one:** demographic questions

No.	Question or statement	Clarity of the question or statement		Suggestions or modifications
		Yes	No	
1	Did you use myU before?	X		
2	Gender. o Male o Female o Prefer not to answer	X		
3	Age. o under 30 o 31-40 o 41-50 o 51-60 o +61 o Prefer not to answer	X		

4	College. o College of Basic Education o College of Business Studies o College of Technological Studies o College of Health Sciences o College of Nursing.	X		
5	Academic rank. o Full professor o Associate professer o Assistant professer o Lecturer o Teacher o Teacher Assistant	X		
6.	How long have you been using myU? o Less than 1 year o 1-2 years o More than 2 years	X		

- **Part Two:**

No.	Question or statement	Clarity of the question or statement		Suggestions or modifications
		Yes	No	
7	**Behavioral intention (BI):** The measure of teacher's perceptions of students' intention strength to use educational SNSs in achieving their educational goals (Cavus et al., 2021b). 1. I think that my students are willing to use myU for the whole year. 2. I think that my students have positive perceptions about myU. 3. I think that my students are motivated to use myU. 4. I think that my students recommend using myU. 5. I think that my students may use myU in their future modules.	X		I think it would be better to remove item no.4. Since the participants in this study are teachers, I might expect that teachers do not know whether students recommend using myU. It is just a suggestion and see what you will get in the pilot test.

8	**User behavior (UB):** The teacher's point of view on the degree to which a student uses the capabilities of an educational SNSs in terms of nature, extent, quality, and appropriateness of use (Alamri et al., 2020; Ain et al., 2016). 1. I think that my students use myU for interacting with peers. 2. I think that my students use myU for interacting with teachers. 3. I think that my students use a variety of different functions in myU (e.g., comments, direct messages, downloading course contents, uploading assignments, etc.) 4. Because of myU, the students do not need to go to the teacher's office or ask him/her in class.	X		• My comment on item no.1 is the same as the comment I mentioned above. • I suggest rephrasingthe last option as follows: The students use myU instead of meeting the faculty members face-to-face.
9	**Perceived Technology Efficacy (PTE):** Teacher's perceptions of students' ability to use educational SNSs for learning(Hsu & Chiu, 2004). 1. I find that My students are able to use myU to find course content information. 2. I find that My students are able to use myU to send and receive messages.	X		

	3. I find that My students are able to use myU to download and			

	upload files.			
10	**Perceived Compatibility (PC):** The teacher's view of the degree to which educational SNSs are perceived as being consistent with existing utility values, needs, and experiences of students (Islam, 2016). 1. I believe my fits with my students' sociocultural values/beliefs. 2. I believe myU fits with my students' learning styles. 3. I believe myU fits with my students' learning needs (such acquire knowledge, and communication skills).	X		I suggest changing the items because I think they are not appropriate for your study, Or make the items clearer, such as giving examples or formulating them in a simpler way for the participant.

11	**Performance Expectancy (PE):** Describes teacher's expectations of the usefulness of educational SNSs for students (Wut et al., 2022; Venkatesh et al., 2012). 1. I expect that my students would find myU useful to them in their studies. 2. I expect that using myU would allow my students to accomplish more in their studies. 3. I expect that using myU in the educational process would help my students increase their ability to get useful information.	X		
12	**Effort Expectancy (EE):** Explains the teacher's point of view regarding the students' possibility of using educational SNSs without much effort. It describes the degree of simplicity and ease of use of educational SNSs (Gharrah & Aljaafreh, 2021; Venkatesh et al., 2012). 1. I believe that My students find myU easy to use. 2. I believe that My students find using my simple and clear. 3. I believe that My students learn how to use myU quickly.	X		

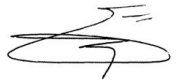
13	**Social Influence (SI):** The degree to which a teacher perceives that people important to the student (such as teachers, colleagues, and friends) believe he/she should use educational SNSs (Farooq et al., 2017; Venkatesh et al., 2012). 1. When I use myU my students find it useful. 2. I find that My students use myU when encouraged by their friends and colleagues. 3. I am able to influence my students to use myU.	X		▯ I suggest splitting statement no.2 as follows: ✓ I find that my students use myU when encouraged by their friends. ✓ I find that my students use myU when encouraged by other colleagues from faculty members.
14	**SNSs Conditions (SNSsC):** The degree to which a teacher believes that the students have the necessary resources to use educational SNSs (Venkatesh et al., 2012). 1. I consider that my students have the resources necessary (e.g., internet and devices) to use myU. 2. I consider that myU is compatible with other systems (e.g., Microsoft teams) that my students use.	X		• I suggest changing item no.2 to (I consider that my students have the knowledge necessary to use myU) to be more appropriate. • I think it would be better to remove this variable. Since the participants in this study are teachers, they may not have known whether students had the necessary resources and knowledge to use myU such as the internet and devices. It is just a suggestion and see what you will get in the pilot test.
	3. I consider that the technical staff is available for assistance with any difficulties students may encounter in using myU.			

15	**Hedonic motivation (HM):** The fun or pleasure derived from using educational SNSs (Farooq et al., 2017; Venkatesh et al., 2012) 1. I believe that My students find myU interesting to use. 2. When my students use myU, I believe that they find it an exciting way to learn. 3. I believe my students enjoy communicating with each other in using myU.	X		
16	**Habit (HT):** The teacher's perspective to the extent to which students tend to perform behaviors automatically because of learning (Gharrah & Aljaafreh, 2021; Venkatesh et al., 2012). 1. I find that My students regularly use myU. 2. I find that It is natural for my students to use myU any time. 3. I find that using myU is something that students do without hesitation.	X		

17	**Teacher Perception of Student Academic Performance (TPSAP):** The degree of teacher perception of students' ability to carry out academic tasks when using educational SNSs. It is measured in terms of the anticipated grade and the achievement patterns (e.g., acquiring new skills, and bolstering perseverance) (Sabah & Altalbe, 2022). 1. I expect that my students are confident of their adequate academic skills and abilities via using myU. 2. I expect my students to perform better academically when using myU. 3. I anticipate that my students have good/better grades when using myU in courses.	X		• It is better to rephrase statement no.1 as follows: I expect my students to get better skills when they use myU. • I suggest splitting statement no.3 as follows: ✓ I anticipate that my students have good grades when using myU in courses. ✓ I anticipate that my students have better grades when using myU in courses.

General feedback, if any:

Adding a fishing question between survey questions helps in collecting correct and complete data.

Evaluator Name:	Dr Kamel Rouibah
Signature	
Academic Rank	Professor of MIS
Evaluation Date	21 March 2023

Name of the University/Department	Kuwait University/ College of Business Administration, Information Systems and Operation management department

Questionnaire Evaluation

Dear Dr. Abdullah Al-Failakawi

I am a PhD research student at the University of East Anglia conducting a study to investigate the factors that would affect students' academic performance through using educational SNSs (such as myU application) at The Public Authority for Applied Education (PAAET) from faculty members' perspective.

Since your practical experience in the field of Information Systems (IS) and technology in the context of Kuwait, I am attaching the questionnaire questions for the proposed research model (see figure 1 below) for you. Where the research question is " "What are the factors that affect students' academic performance through using educational Social Networking sites (SNSs) at PAAET in Kuwait from faculty members' perspective?"

I would be very grateful if you reviewed the questions and expressed your opinion and feedback, which will inevitably be of high value and appreciation to the researcher.

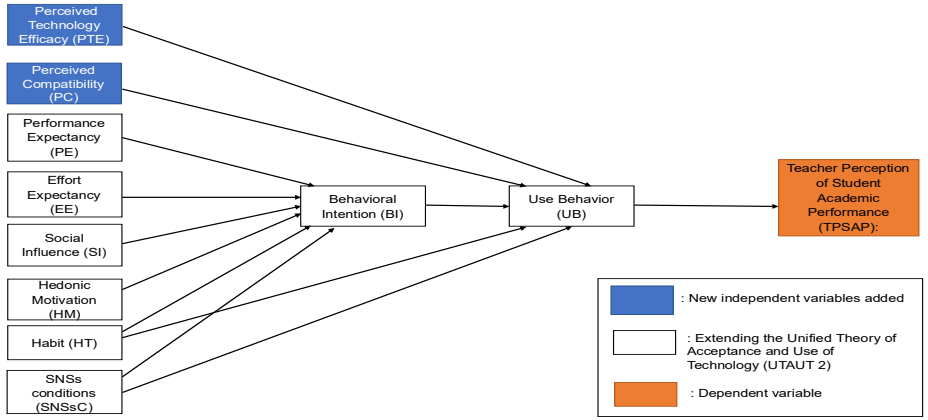


Figure 1: proposed research model

Regards,
Bodoor Alazemi
PhD student
+96590906670

- **Part one:** demographic questions

No.	Question or statement	Clarity/ appropriateness of the question or statement		Suggestions or modifications
		Yes	No	
1	Did you use myU before?	X		
2	Gender. o Male o Female o Prefer not to answer	X		
3	Age. o under 30 o 31-40 o 41-50 o 51-60 o +61 o Prefer not to answer	X		Think about asking age because I think there is no need to ask about age.

4	College. o College of Basic Education o College of Business Studies o College of Technological Studies o College of Health Sciences o College of Nursing.	X		
5	Academic rank. o Full professor o Associate professor o Assistant professor o Lecturer o Teacher o Teacher Assistant	X		
6.	How long have you been using myU? o Less than 1 year o 1-2 years o More than 2 years	X		

➢ **Part Two:**

No.	Question or statement	Clarity/ appropriateness of the question or statement		Suggestions or modifications
		Yes	No	
7	**Behavioral Intention (BI):** The measure of teacher's perceptions of students' intention strength to use educational SNSs in achieving their educational goals (Cavus et al., 2021b) 1. I think that my students are willing to use myU for the whole year. 2. I think that my students have positive perceptions about myU. 3. I think that my students are motivated to use myU. 4. I think that my students recommend using myU. 5. I think that my students may use myU in their future modules.	X		• Think in item no.4, Because participants in this study are teachers. However, see what results you will get in the pilot test.

8	**User Behavior (UB):** The teacher's point of view on the degree to which a student uses the capabilities of an educational SNSs in terms of nature, extent, quality, and appropriateness of use (Alamri et al., 2020; Ain et al., 2016). 1. I think that my students use myU for interacting with peers. 2. I think that my students use myU for interacting with teachers. 3. I think that my students use a variety of different functions in myU (e.g., comments, direct messages, downloading course contents, uploading assignments, etc.) 4. Because of myU, the students do not need to go to the teacher's office or ask him/her in class.	X		• Also, it is the same for item no.1. Think about it, but do not remove it for now. • Again here, write faculty members instead of teachers.
9	**Perceived Technology Efficacy (PTE):** Teacher's perceptions of students' ability to use educational SNSs for learning(Hsu & Chiu, 2004). 1. I find that My students are able to use myU to find course content information.	X		

	2. I find that My students are able to use myU to send and receive messages.			

	3. I find that My students are able to use myU to download and upload files.			
10	**Perceived Compatibility (PC):** The teacher's view of the degree to which educational SNSs are perceived as being consistent with existing utility values, needs, and experiences of students (Islam, 2016). 1. I believe myU fits with my students' sociocultural values/beliefs. 2. I believe myU fits with my students' learning styles. 3. I believe myU fits with my students' learning needs (such acquire knowledge, and communication skills).	X		Think over the items again if they are appropriate or you can give examples to make them clearer.

11	**Performance expectancy (PE):** Describes teacher's expectations of the usefulness of educational SNSs for students (Wut et al., 2022; Venkatesh et al., 2012). 1. I expect that my students would find myU useful to them in their studies. 2. I expect that using myU would allow my students to accomplish more in their studies. 3. I expect that using myU in the educational process would help my students increase their ability to get useful information.	X		
12	**Effort Expectancy (EE):** Explains the teacher's point of view regarding the students' possibility of using educational SNSs without much effort. It describes the degree of simplicity and ease of use of educational SNSs (Gharrah & Aljaafreh, 2021; Venkatesh et al., 2012). 1. I believe that My students find myU easy to use. 2. I believe that My students find using my simple and clear. 3. I believe that My students learn how to use myU quickly.	X		It is better to remove (clear) in item no.2.

13	**Social Influence (SI):** The degree to which a teacher perceives that people important to the student (such as teachers, colleagues, and friends) believe he/she should use educational SNSs (Farooq et al., 2017; Venkatesh et al., 2012). 1. When I use myU my students find it useful. 2. I find that My students use myU when encouraged by their friends and colleagues. 3. I am able to influence my students to use myU.	X		
14	**SNSs Conditions (SNSsC):** The degree to which a teacher believes that the students have the necessary resources to use educational SNSs (Venkatesh et al., 2012). 1. I consider that My students have the resources necessary (e.g., internet and devices) to use myU. 2. I consider that myU is compatible with other systems (e.g., Microsoft teams) that my students use. 3. I consider that the technical staff is available for assistance with any difficulties	X		How do the faculty members know if the students have the necessary resources or knowledge? Think of this variable.

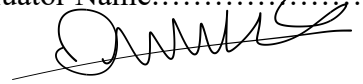
	students may encounter in using myU.			
15	**Hedonic motivation (HM):** The fun or pleasure derived from using educational SNSs (Farooq et al., 2017; Venkatesh et al., 2012) 1. I believe that My students find myU interesting to use. 2. When my students use myU, I believe that they find it an exciting way to learn. 3. I believe my students enjoy communicating with each other in using myU.	X		

16	**Habit (HT):** The teacher's perspective to the extent to which students tend to perform behaviors automatically because of learning (Gharrah & Aljaafreh, 2021; Venkatesh et al., 2012). 1. I find that My students regularly use myU. 2. I find that It is natural for my students to use myU any time. 3. I find that using myU is something that students do without hesitation.	X		
17	**Teacher Perception of Student Academic Performance (TPSAP):** The degree of teacher perception of students' ability to carry out academic tasks when using educational SNSs. It is measured in terms of the anticipated grade and the achievement patterns (e.g., acquiring new skills, and bolstering perseverance) (Sabah & Altalbe, 2022). 1. I expect that my students are confident of their adequate academic skills and abilities via using myU. 2. I expect my students to perform better academically when using myU.	X		

	3. I anticipate that my students have good/better grades when using myU in courses.			

General feedback, if any:

Evaluator Name:……Dr. Abdullah Alfailakawi



Signature:……

Academic Rank:……Assistant Professor Evaluation Date: 15th March 2023

Name of the University/Department:……Kuwait University / Department of Curriculum and Instructions

Questionnaire Evaluation

Dear Dr. Ali Dashti

I am a PhD research student at the University of East Anglia conducting a study to investigate the factors that would affect students' academic performance through using educational SNSs (such as myU application) at The Public Authority for Applied Education (PAAET) from faculty members' perspective.

Since your practical experience in the field of Information Systems (IS) and technology in the context of Kuwait, I am attaching the questionnaire questions for the proposed research model (see figure 1 below) for you. Where the research question is " "What are the factors that affect students' academic performance through using educational Social Networking sites (SNSs) at PAAET in Kuwait from faculty members' perspective?"

I would be very grateful if you reviewed the questions and expressed your opinion and feedback, which will inevitably be of high value and appreciation to the researcher.

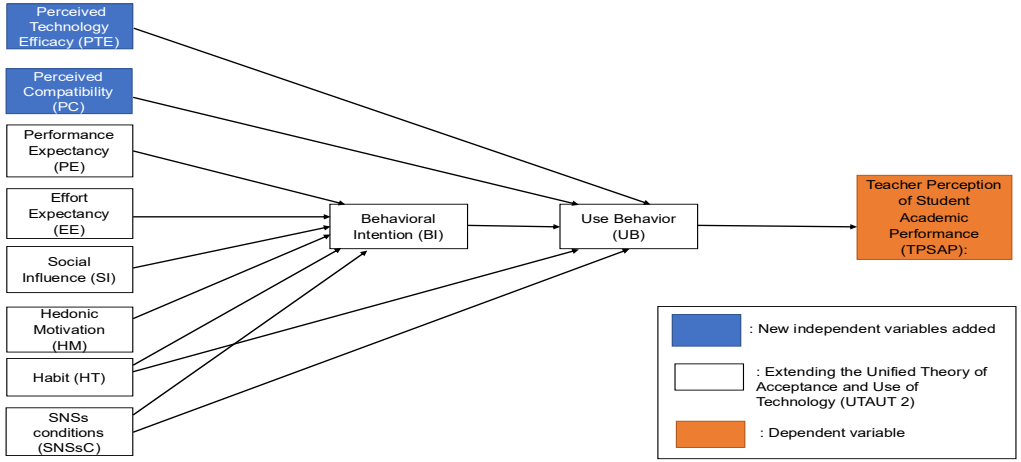


Figure 1: proposed research model.

Regards,

Bodoor Alazemi

PhD student

+96590906670

- **Part one:** demographic questions

No.	Question or statement	Clarity of the question or statement		Suggestions or modifications
		Yes	No	
1	Did you use myU before?	X		
2	Gender. o Male o Female o Prefer not to answer	X		
3	Age. o under 30 o 31-40 o 41-50 o 51-60 o +61 o Prefer not to answer	X		

4	College. o College of Basic Education o College of Business Studies o College of Technological Studies o College of Health Sciences o College of Nursing.	X		
5	Academic rank. o Full professor o Associate professer o Assistant professer o Lecturer o Teacher o Teacher Assistant	X		
6.	How long have you been using myU? o Less than 1 year o 1-2 years o More than 2 years	X		

- **Part Two:**

No.	Question or statement	Clarity of the question or statement		Suggestions or modifications
		Yes	No	
7	**Behavioral intention (BI):** The measure of teacher's perceptions of students' intention strength to use educational SNSs in achieving their educational goals (Cavus et al., 2021b). 6. I think that my students are willing to use myU for the whole year. 7. I think that my students have positive perceptions about myU. 8. I think that my students are motivated to use myU. 9. I think that my students recommend using myU.	X		Consider removing item no.4, but see what the results of the pilot study give you.

	I think that my students may use myU in their future modules.			
8	**User Behavior (UB):** The teacher's point of view on the degree to which a student uses the capabilities of an educational SNSs in terms of nature, extent, quality, and appropriateness of use (Alamri et al., 2020; Ain et al., 2016). 5. I think that my students use myU for interacting with peers. 6. I think that my students use myU for interacting with teachers. 7. I think that my students use a variety of different functions in myU (e.g., comments, direct messages, downloading course contents, uploading assignments, etc.) 8. Because of myU, the students do not need to go to the teacher's office or ask him/her in class.	X		• Think about item no.1 here also. • It would be better to rephrase item no.4 to be simpler.

9	**Perceived Technology Efficacy (PTE):** Teacher's perceptions of students' ability to use educational SNSs for learning(Hsu & Chiu, 2004). 1. I find that My students are able to use myU to find course content information. 2. I find that My students are able to use myU to send and receive messages. 3. I find that My students are able to use myU to download and upload files.	X		
10	**Perceived Compatibility (PC):** The teacher's view of the degree to which educational SNSs are perceived as being consistent with existing utility values, needs, and experiences of students (Islam, 2016). 1. I believe my fits with my students' sociocultural values/beliefs.	X		It is better to give examples of learning styles in item no.2.

	2. I believe myU fits with my students' learning styles. 3. I believe myU fits with my students' learning needs (such acquire knowledge, and communication skills).			
11	**Performance expectancy (PE):** Describes teacher's expectations of the usefulness of educational SNSs for students (Wut et al., 2022; Venkatesh et al., 2012). 1. I expect that my students would find myU useful to them in their studies. 2. I expect that using myU would allow my students to accomplish more in their studies. 3. I expect that using myU in the educational process would help my students increase their ability to get useful information.	X		

12	**Effort Expectancy (EE):** Explains the teacher's point of view regarding the students' possibility of using educational SNSs without much effort. It describes the degree of simplicity and ease of use of educational SNSs (Gharrah & Aljaafreh, 2021; Venkatesh et al., 2012). 1. I believe that My students find myU easy to use. 2. I believe that My students find using my simple and clear. **3.** I believe that My students learn how to use myU quickly.	X		
13	**Social Influence (SI):** The degree to which a teacher perceives that people important to the student (such as teachers, colleagues, and friends) believe he/she should use educational SNSs (Farooq et al., 2017; Venkatesh et al., 2012).	X		I think it would be better if item no.2 splits into two parts.

	1. When I use myU my students find it useful. 2. I find that My students use myU when encouraged by their friends and colleagues. 3. I am able to influence my students to use myU.			
14	**SNSs Conditions (SNSsC):** The degree to which a teacher believes that the students have the necessary resources to use educational SNSs (Venkatesh et al., 2012). 1. I consider that My students have the resources necessary (e.g., internet and devices) to use myU. 2. I consider that myU is compatible with other systems (e.g., Microsoft teams) that my students use. 3. I consider that the technical staff is available for assistance with any difficulties students may encounter in using myU.	X		I suggest removing this variable as it is not appropriate for your study and participants.

15	**Hedonic motivation (HM):** The fun or pleasure derived from using educational SNSs (Farooq et al., 2017; Venkatesh et al., 2012) 1. I believe that My students find myU interesting to use. 2. When my students use myU, I believe that they find it an exciting way to learn. 3. I believe my students enjoy communicating with each other in using myU.	X		
16	**Habit (HT):** The teacher's perspective to the extent to which students tend to perform behaviors automatically because of learning (Gharrah & Aljaafreh, 2021; Venkatesh et al., 2012). 1. I find that My students regularly use myU. 2. I find that it is natural for my students to use myU any time. 3. I find that using myU is something that students do without hesitation.	X		

17	**Teacher Perception of Student Academic Performance (TPSAP):** The degree of teacher perception of students' ability to carry out academic tasks when using educational SNSs. It is measured in terms of the anticipated grade and the achievement patterns (e.g., acquiring new skills, and bolstering perseverance) (Sabah & Altalbe, 2022). 1. I expect that my students are confident of their adequate academic skills and abilities via using myU. 2. I expect my students to perform better academically when using myU. 3. I anticipate that my students have good/better grades when using myU in courses.	X		I suggest rephrasing item no.1 and 3.

General feedback, if any:

It would be useful to add what is called a fishing question to the questionnaire to see if the participants read the questions before answering.

Evaluator Name: Dr. Ali Dashti

Signature: ali ali

Academic Rank: Assistant Professor

Evaluation Date: 20th March 2023

Name of the University/Department: KU – CBA_ISOM

Appendix D – Pilot Test Results for Study 1 and Study 2

- **Pilot Test Results: Study 1**

Table 1: Respondent Profile for Study 1

Demographic information	**Overall (N=84)**
Gender	
Male	34 (40.5%)
Female	50 (59.5%)
College	
College of Business Studies	84 (100.0%)
Year of Study	
First-year	21 (25.0%)
Second- year	41 (48.8%)
Third - year	13 (15.5%)
Fourth year and above	9 (10.7%)
Grade Point Average (GPA)	
Prefer not to answer.	18 (21.4%)
1.99 points or less	3 (3.6%)
2.79 – 2.0 Points	12 (14.3%)
3.59 -2.8 points	27 (32.1%)
4.00 - 3.6 points	24 (28.6%)
How long have you been using myU?	

Less than 1 year	37 (44.0%)
1-2 years	24 (28.6%)
More than 2 years	23 (27.4%)

Table 2: Factor loadings and Cronbach Alpha Acceptance Levels for study1

Items	Factor loadings	Cronbach's Alpha if Item Deleted	Cronbach's Alpha
U1	0.675	0.811	0.857
U2	0.639	0.697	
IWP1	0.604	0.774	0.846
IWP2	0.747	0.791	
IWP3	0.765	0.793	
IWFM1	0.731	0.791	0.845
IWFM2	0.692	0.758	
IWFM3	0.603	0.809	
CL1	0.557	0.907	0.831
CL2	0.687	0.653	
CL3	0.644	0.702	
SEE1	0.724	0.762	0.840
SEE2	0.727	0.824	
SEE3	0.780	0.772	
SEE4	0.645	0.818	
IQ1	0.694	0.794	0.839
IQ2	0.591	0.837	
IQ3	0.627	0.787	
IQ4	0.661	0.771	
SQ1	0.643	0.797	0.900
SQ2	0.618	0.931	
SQ3	0.591	0.795	
SERV1	0.548	0.777	0.818
SERV2	0.699	0.657	
SERV3	0.680	0.805	
SS1	0.632	0.681	0.813
SS2	0.627	0.757	
SS3	0.794	0.789	
SAP1	0.838	0.909	0.918
SAP2	0.853	0.888	
SAP3	0.842	0.890	
SAP4	0.662	0.914	
SAP5	0.758	0.903	
SAP6	0.643	0.916	

- **Pilot test results: Study 2**

Table 3: Respondent Profile for Study 2

Demographic information	Overall (N=36)
Gender	
Female	11 (30.6%)
Male	25 (69.4%)
Age	
under 30	1 (2.8%)
31-40	9 (25.0%)
41-50	16 (44.4%)
51-60	9 (25.0%)
61+	1 (2.8%)
College	
College of Business Studies	36(100.0%)
Academic rank	
Associate professor	12 (33.3%)
Lecturer	3 (8.3%)
Teacher	6 (16.7%)
Assistant Teacher	3 (8.3%)
Assistant professor	11 (30.6%)
Full professor	1 (2.8%)
How long have you been using myU?	
1-2 years	2 (5.6%)
Less than 1 year	4 (11.1%)
More than 2 years	30 (83.3%)

Table 4: Factor loadings and Cronbach Alpha Acceptance Levels for study 2 (first and second run)

Items	Factor loadings	Cronbach's Alpha if Item Deleted	Cronbach's Alpha (1st run)	Cronbach's Alpha after Drop (2nd run)
BI1	0.846	0.798	0.861	0.929
BI2	0.816	0.794		
BI3	0.796	0.810		
BI4	**0.359**	**0.929**		
BI5	0.800	0.813		
UB1	**0.259**	**0.836**	0.728	0.836
UB2	0.734	0.653		
UB3	0.767	0.588		
UB4	0.785	0.539		
PTE1	0.711	0.696	0.805	0.805

PTE2	0.652	0.696		
PTE3	0.598	0.827		
PC1	0.834	0.684	0.828	0.828
PC2	0.596	0.840		
PC3	0.729	0.748		
PE1	0.795	0.900	0.885	0.885
PE2	0.854	0.806		
PE3	0.785	0.803		
EE1	0.615	0.851	0.904	0.904
EE2	0.669	0.889		
EE3	0.683	0.840		
SI1	0.742	0.895	0.915	0.915
SI2	0.610	0.890		
SI3	0.688	0.901		
SI4	0.760	0.870		
SNSsC1	**0.249**	**0.583**	**0.555**	**0.555**
SNSsC2	**0.433**	**0.144**		
SNSsC3	**0.299**	**0.612**		
HM1	0.737	0.726	0.846	0.846
HM2	0.832	0.766		
HM3	0.636	0.870		
Habit1	0.788	0.863	0.825	0.825
Habit2	0.713	0.627		
Habit3	0.602	0.756		
TPSAP1	0.690	0.893	0.896	0.896
TPSAP2	0.789	0.863		
TPSAP3	0.680	0.861		
TPSAP4	0.678	0.846		

Appendix E – Ethics Application

Ethics ETH2223-0297 : Mrs Bodoor Alazemi

Date Created	05 Oct 2022
Date Submitted	09 Nov 2022
Date forwarded to committee	15 Nov 2022
Researcher	Mrs Bodoor Alazemi
Category	PGR
Supervisor	Dr Adrian Benfell
Faculty	Faculty of Social Sciences
Current status	Waiting for researcher to make amendments

This is a draft version

Ethics application

Applicant and research team

Principal Applicant

Name of Principal Applicant Mrs Bodoor Alazemi

UEA account jpa21jqu@uea.ac.uk

School/Department

Norwich Business School

Category

PGR

Primary Supervisor

Name of Primary Supervisor Dr Adrian Benfell

Primary Supervisor's school/department

Norwich Business School

Project details

Project title

Educational Social Networking Sites Use and Students' Academic Performance at The Public Authority for Applied Education and Training in Kuwait Context

Project start date 08 Dec 2022

Project end date

30 Sept 2025

Describe the scope and aims of the project in language understandable by a non-technical audience. Include any other relevant background which will allow the reviewers to contextualise the research.

Social Networking Sites (SNSs) (e.g., Facebook) are online communities of Internet users who want to communicate with other users about areas of mutual interest. Higher Education Institutions (HEIs) now recognise that SNSs have the potential to become a shared platform that encourages engagement among educational stakeholders (such students, and teachers) when used well and for purely educational purposes. They are called educational SNSs (such Edmodo, myU) and refer to online

platforms where two or more (students and teachers) interact to exchange educative information both outside and inside the classroom environment.

It was found that the use of SNSs in higher education is one of the solutions to face-to-face communication difficulties – that may be because of the high number of students admitted in universities, increase in the number of students per classroom, and lack of highly qualified instructors - between teachers and students. Where these difficulties may affect the level of students' academic performance. In Kuwait context, HEIs are interested in enhancing learning process generally by encouraging using ICT tools (such educational SNS) to improve communication between students and teachers and improve students' academic performance.

Despite the acceptance of SNSs in HEIs as a platform where students connect with their teachers and peers, there is limited evidence on the use of SNS in education and its effect on students' academic performance. Although there are studies focusing on the use SNSs in education and their impact on student academic performance in developed countries (such U.S., and U.K), studies that examined the issue in developing countries in general and Kuwait, in particular, remain scarce. To fill the gap in the literature, this research aims to examine the impact of using educational SNSs on students' academic performance at HIEs (especially the Public Authority for Applied Education and Training (PAEET)) in the context of Kuwait.

Provide a brief explanation of the research design (e.g. interview, experimental, observational, survey), questions, methodology, and data gathered/analysis. If relevant, include what the participants will be expected to do/experience.

This research includes Three possible substantive chapters or studies. Study one will use a positivist quantitative method to answer the research question that investigates for what are the factors that affect students' academic performance through using educational SNSs at PAAET in Kuwait from students' perspective. Study two will use a positivist quantitative method as well to answer the second research question that investigates for what are the factors that affect students' academic performance through using educational SNSs at PAAET in Kuwait from teachers' perspective. while study three will use an interpretive qualitative method to answer the third research question that explores for what are the teacher's characteristics that affect students' academic performance through using educational SNSs at PAAET in Kuwait. The total target population of the research is students and teachers who use educational SNS (such myU application) in PAAET colleges. The sample size for each study will be as follows: 370 students for study one, 196 teachers for study two, and 30 students for study three.

The data will be collected by two methods. First, study one will apply the survey method (structured questionnaire) to students who use educational SNS (myU application) in colleges of PAAET. The survey (structured questionnaire) also will be applied in study two to teachers who use educational SNS (myU application) in colleges of PAAET. The survey will be distributed online to participants in both studies. Second, study three will apply the focus group method (semi-structured focus group questions) to students who use educational SNS (myU application) in colleges of PAAET.

The data collected from the survey will be analysed by using Structural Equation Modeling (SEM).

While the data collected from the focus groups will be analysed by using thematic analysis.

Detail how any adverse events arising in the course of the project will be reported in a timely manner.

If events arise which were not anticipated in the research design (such as data break). Which could potentially cause risk or harm to the participants or myself. I will report this as an adverse event in Ethics Monitor, and also to the supervision team as soon as possible.

Will you also be applying for Health Research Authority approval (HRA)?

No

Indicate if you are applying for approval for an experiment to be conducted in the School of Economics' Laboratory for Economic and Decision Research (LEDR).

No

Is the project?: none of the options listed

Does the project have external funding administered through the University's Research and Innovation Services (RIN)? No

Will the research take place outside of the UK? Yes

Will any part of the project be carried out under the auspices of an external organisation, or involve collaboration between institutions?

No

Do you require or have you already gained approval from an ethics review body external to UEA?

No

Does this new project relate to a project which already has ethics approval from UEA?

No

Research categories

Will the project involve human participants? Yes

Will the project involve the use of live animals?

No

Will the project have the potential to affect the environment?

No

Will the project have the potential to affect culturally valuable, significant or sensitive objects or practices?

No

Will the project involve security sensitive research?

No

Human participants - selection and recruitment

How many Participant Groups are there who will receive tailored participant information?: Two

Name of Participant Group 1.

Students who use educational SNS (such myU application) in colleges of PAEET.

Name of Participant Group 2, if applicable.

Teachers who use educational SNS (such myU application) in colleges of PAEET.

How will the participants be selected/recruited?

PAAET is the main venue of the research, as it is the place of work of the researcher. Therefore, the researcher will have the ability to access and reach the participants. Based on the statistical report of the myU application, which is available on the internet, the total target population for the research will be 23,380 students, and 424 teachers who use myU application in PAAET colleges.

Study one: Students will be selected by applying a simple random sampling method. To reach them, teachers who use myU application will be contacted (by sending a direct message to them via application itself (myU application)) to inform their students about the questionnaire and their volunteer participation in it. After that, the questionnaire will be sent to teachers, and they, in turn, will send it to their students for their participation. The researcher aims to recruit 370 students who use myU application in colleges of PAAET as a minimum number of participants to be reached.

Study two: Teachers will be selected by applying a simple random sampling method. To reach them, they will be contacted through myU application (by sending a direct message to them via application itself (myU application)) to inform them about the questionnaire and their volunteer participation in it.

After that, the questionnaire will be sent to them for their participation. The researcher aims to recruit 196 teachers who use myU application in colleges of PAAET as a minimum number of participants to be reached.

Study Three: Students (who use myU application in colleges of PAAET) will be selected by applying the qualitative purposive sampling method for the focus group. Volunteers' students will be reached by contacting teachers who use myU application. The researcher aims to recruit 30 participants as a standard number for qualitative studies.

In terms of UEA participants only, will you be advertising the opportunity to take part in this project to?:

None of the above (i.e. UEA's Student Insight Review Group (SIRG) does not need to be informed)

What are the characteristics of the participants?

The characteristics of the participants will be as follow:

Study one: Students (include males and females) should have an account and use myU application and they are 18 years old and above.

Study two: Teachers (include males and females) should have an account and use myU application.

Study Three: Students (include males and females) should have an account in myU application, they are 18 years old and above, and they should have used the application with at least two modules (that is, at least two teachers use the application with their students).

Will the project require the cooperation of a gatekeeper for initial access to the individuals/groups to be recruited? Yes

Who will be your gatekeeper for accessing participants?

Teachers who use myU application will be gatekeepers for accessing students who use myU application.

How and when will a gatekeeper permission be obtained?

At first, teachers who use myU application will be contacted by sending a direct message to them via the application itself (myU application). The researcher will inform them that she needs their students' voluntary participation in the questionnaire and focus groups. The direct message will be sent to teachers after obtaining ethical approval. That is, on the project start date mentioned earlier.

Provide any relevant documentation (letters of invite, emails etc).

How will you record a gatekeeper's permission?

If the teachers are happy to distribute the questionnaire to their students and inform their students who would like to participate in focus groups, their responses to the direct message sent to them via the application will be kept. Where these messages will be saved in a separate folder from the research data on the researcher's UEA OneDrive account.

Is there any sense in which participants might be 'obliged' to participate?

No

Will the project involve vulnerable groups?

No

Will payment or any other incentive be made to any participant?

No

Include any other ethical considerations regarding participation.

All reasonable steps will be undertaken to ensure that no harm comes to participants. Participants in study one and study two will be reminded that they are free to terminate their participation at any time before they have submitted the questionnaire without penalty and without stating a reason why. Once they have submitted it, their responses cannot be withdrawn because they are anonymous and therefore, the researcher will not be able to tell which one is the participant's response. Participants in study three are free to stop participating at any stage or to refuse to answer any of the questions. However, it will not be possible to withdraw their individual comments from our records once the group has started, as it is a group discussion. All data will be stored on password protected computers. The respondents will be made aware of these confidentiality and anonymity issues before commencing the survey and focus group discussions as well as the fact that they can answer in as much as they feel comfortable with.

Human participants - consent options

By which method(s) will consent to participate in the research be obtained?:

Participant Information Sheet and Consent Form

Human participants - information and consent

Participant Information and Consent

Will opt out consent for participation in the research be used?

No

You can generate a Participant Information Text and Consent Form for this application by completing information in the Participant Information Text and Consent Form Generator tab. Alternatively you can upload your Participant Information Text and Participant Consent Form which you have already prepared. Confirm below:

Generate automated Participant Information Text and Consent Form.

When will participants receive the participant information and consent request?

Study one: Participants will receive the information sheet and consent form at the start of the survey.

Study two: Participants will receive the information sheet and consent form at the start of the survey.

Study Three: participants in focus groups will receive the information sheet and consent form after knowing their desire to participate voluntarily and prior to confirming the date, time, and place for participation.

How will you record a participant's decision to take part in the research?

By signing or indicated via tick box on the Participant Information Text and Consent Form.

Human participants - method

Which data collection methods will be used in the research?:

Focus group

Anonymous questionnaire

If your research involves any of the methods (including Other) listed above, upload supporting materials.

How have your characteristics, or those of the participants influenced the design of the study or how the research is experienced by participants?

The researcher targeting the students and teachers who use educational SNSs (such myU application). The questions only relate to how using educational SNS affect students' academic performance from their perspectives. No sensitive questions will be asked, e.g., no questions about the family, ethnicity, or monthly (or expenses) income of the participants.

Participants will be aware of the researcher's gender (based on the Participant Information Sheet and consent form) before they respond to the participation.

As the researcher is a faculty member in PAAET, this may put her in a perceived position of power over the participant (such as a student). Ice breakers and general questions will be used at the beginning of the survey and focus group to put the participant at ease and to build rapport.

Reflexive notes will be kept by the researcher during the entire research process to understand her role throughout the data collection. This will also form an effective part of the later data analysis.

Will the project involve transcripts? Yes

Select ONE option below: Transcription software

If yes provide details.

NVivo software will be used, where UEA provides the license for it and is available via UEA Application Catalogue.

Provide an explanation if you are not offering the participant the opportunity to review their transcripts.

Not applicable.

Will you be capturing photographs or video footage (digital assets) of individuals taken for University business? No

Is this research using visual/vocal methods where respondents may be identified? Yes

If yes, confirm if you have included safeguards to ensure that participants are not vulnerable or underage? Describe any safeguards included.

Focus groups will be held for study three. The attendees would be able to see and identify each other. They are students ages 18 and above.

Before beginning all focus group discussions, the researcher will distribute the informed consent conditions to the students individually. Which state that students should keep confidential what they hear in the session and not name others in any comments they make outside the session. The researcher then reiterates this when starting the focus group and manages the discussion with this in mind.

Will it be necessary for participants to take part in the study without their knowledge and consent at the time? No

Will deception or incomplete disclosure be used? No

Will the participants be debriefed?

No

Will substances be administered to the participants?

No

Will involvement in the project result in, or the risk of, discomfort, physical harm, psychological harm or intrusive procedures? No

Will the project involve prolonged or repetitive testing?

No

Will the project involve potentially sensitive topics?

No

Will the project involve elite interviews?

No

Will the project involve any incitement to, encouragement of, or participation, in an illegal act (by participant or researcher)?

No

Will the research involve an investigation of people engaged in or supporting activities that compromise computer security or other activities that may normally be considered harmful or unlawful? No

Does the research involve members of the public in participatory research where they are actively involved in undertaking research tasks?

No

Does the research offer advice or guidance to people?

No

Is the research intended to benefit the participants, third parties or the local community? Yes

Provide an explanation.

Since the research will shed light on the impact of using educational SNSs on students' academic performance, this research may be a source for stakeholders (such as students, teachers, higher institutions, decision-makers, and service providers) on how properly invest in the education sector in general and in Kuwait in particular. Also, it may help on increasing the degree of effectiveness of using educational SNSs for all targeted stakeholders.

What procedures are in place for monitoring the research with respect to ethical compliance? The researcher will work closely with three experienced supervisors for the whole research journey to maintain the appropriate monitoring regarding ethical compliance. The researcher will report any ethical breaches. Also, PAAET is part of process to monitor the ethical management of data.

Does the study involve the use of a clinical or non-clinical scale, questionnaire or inventory which has specific copyright permissions, reproduction or distribution restrictions or training requirements? No

Include any other ethical considerations regarding data collection methods. Not applicable

Health and safety - participants

Is there a possibility that the health and safety of any of the participants in this project including a support person (e.g. a care giver, school teaching assistant) may be in question?

No

Health and safety - researcher(s)

Is there a possibility that the health and safety of any of the researcher(s) and that of any other people (as distinct from any participants) impacted by this project including research assistants/translators may be in question?

No

Risk assessment

Are there hazards associated with undertaking this project where a formal risk assessment will be required?

No

Research outside the UK

State the countries where research will be undertaken.

Kuwait

Has formal permission/a research permit been sought to conduct this research in the host overseas country? Yes

If yes, describe the action you have taken and upload documentary evidence below. Since PAAET is the main venue of the research and it is the place of work of the researcher, the researcher sought permission from the Dean of PAAET (Dr. Ahmed Al-Hunaiyyan) by sending him an e-mail to inform and see if he does not mind contacting the researcher's colleagues (teachers) who use myU application. The researcher explained in her e-mail that those teachers will be contacted by sending them a direct message via the application itself (myU application) and informing them of the researcher's need for their

voluntary participation in the questionnaire, as well as their students' voluntary participation in the questionnaire and focus groups. The participants' responses (teachers and students) will be completely anonymous; their names will not appear anywhere on the surveys. All of the information they provide will be treated as completely confidential and it will not be possible for anyone to identify the information they supply. As for focus groups, the conversations will be recorded. Respondents' contributions (students) will be anonymised in any subsequent reporting.

Summary findings will be shared with participants to confirm accuracy.

The researcher asked the Dean, in the e-mail sent to him, to know if he was happy with this matter.

His response was with approval, and there is no objection to conducting the research at PAAET.

Upload the approval correspondence where relevant.

Does the research comply with the relevant legal requirements of the host overseas country? Yes

Provide details.

The research complies with the legal requirements of Kuwait. Which stipulates that the participants in any research must be provided with a participants information sheet and consent form. Also, formally clarifying the aim of the research, the purpose of data collection, and the ethical procedures and regulations followed (such as keeping the data confidential).

If relevant, have you taken out travel and health insurance for the full period of the research? not applicable

If relevant, have you reviewed the Foreign, Commonwealth and Development Office (FCDO) guidance and applied for a visa? not applicable

Data management

Will the project involve personal data (including pseudonymised data) not in the public domain? Yes

If yes, will the personal data collected be?: Anonymised and pseudonymised

If using anonymised and/or pseudonymised data, describe the measures that will be implemented to prevent de-anonymisation.

The data shall be stored on the researcher's UEA OneDrive account. All access to this will be through password protected computers.

For the questionnaire, all of the information provided by questionnaire participants will be completely anonymous and no records of questionnaire answers have been linked with the participant's name on them. The measures taken to anonymise responses will continue as well as omitting precise and detailed information and any other points which may threaten anonymity.

The names of participants and other personal details for focus groups will only be available to the researcher and saved in a separate folder from the research data. whilst the measures taken to anonymise focus group respondents will continue to use pseudonyms at all points of reference. As well as omitting precise and detailed information such as names and any other points which may threaten anonymity.

If not using anonymised or pseudonymised data, how will you maintain participant confidentiality and comply with data protection requirements?

Not applicable.

Will you be using secondary personal data not in the public domain?

No

Will any personal data collected be processed by another organisation(s)?

No

Will the project rely on data supplied by others (internal or external sources)?

No

Will the project involve access to records of sensitive/confidential information?

No

Will the project involve access to confidential business data?

No

Will the project involve secure data that requires permission from the appropriate authorities before use? No

Will you be using publicly available data from the internet for your study?

No

Will the research data collected in this study be deposited in a repository to allow it to be made available for scholarly and educational purposes?

No

Provide details.

Not applicable.

Who will have access to the data during and after the project?

The researcher and supervision team will have access to the data.

The names of participants and other personal details for focus groups will only be available to the researcher and supervision team and saved in a separate folder from the research data.

Where/how do you intend to store the data during and after the project?

The data shall be stored on the researcher's UEA OneDrive account. All access to this will be through password protected computers. All of the data will be pseudonymised at all points of reference and will be stored in line with General Data Protection Regulation 2018 and the Data Protection Act 2018.

How will you ensure the secure storage of the data during and after the project?

The data shall be stored on the researcher's UEA OneDrive account and all access to this will be through password protected computers.

How long will research data be stored after the study has ended?

10 years.

How long will research data be accessible after the study has ended?

10 years.

How are you intending to destroy the project data when it is no longer required?

Electronically stored data, recordings, and contact details will be deleted from the file store. Any destruction will be in accordance with legal and UEA policy.

Generate and upload files

PARTICIPANT INFORMATION TEXT AND CONSENT FORM

Upload the Participant Information Sheet and Consent Form.

Enter Participant Group number and name.

Students who use educational SNS (such myU application) in colleges of PAEET.

Enter Participant Group number and name.

Teachers who use educational SNS (such myU application) in colleges of PAEET.

Enter Participant Group number and name.

Students who use educational SNS (such myU application) in colleges of PAEET.

Attached files

Gatekeeper message.docx

BA-Questionnaire (study1).docx

BA-Questionnaire (study2).docx

BA- focus group questions guide (study3).docx

Dean response.jpg

ETH2223-0297 - Participant Information Sheet (OPT IN)(students)- Anonymous Questionnaire (2).docx

ETH2223-0297 - Participant Information Sheet (OPT IN)(teachers)- Anonymous Questionnaire (2).docx

ETH2223-0297 - Participant Information Sheet and Consent Form (OPT IN) - Focus Group.docx

Dear colleague

How are you, I hope you are doing well.

This is Bodoor Alazemi a faculty member from the Management Department in the College of Business Studies at PAAET. I am on a scholarship from PAAET to complete my PhD study. I am currently in my second year in PhD Business and Management program at Norwich Business School at the University of East Anglia (UEA) in UK.

My research is about how educational social networking sites (SNSs) such as myU application affect students' academic performance from teachers' and students' perspectives. I am sending you this direct message because you are using myU application, which is the most popular educational SNSs in Kuwait. Also, I need your voluntary participation in the questionnaire, as well as your students' voluntary participation in the questionnaire and focus groups. So, if you are happy to participate in the questionnaire, and happy to distribute the questionnaire to your students, and inform your students who would like to participate in focus groups, please notify me by replying to this direct message. I, in turn, will send you the questionnaires (for you and your students) along with the participant information sheet and consent form. I will also send you the participant information sheet and consent form for students who would like to participate in focus groups.

Regards

Bodoor Alazemi

Email: jpa21jqu@uea.ac.uk

Tel: +96590906670

myU use and students' academic performance at The Public Authority for Applied Education from students' perspective

Dear student,

I am a PhD research student at the University of East Anglia conducting a study to investigate the factors that would affect students' academic performance through using educational SNSs at PAAET from students' perspective.

The questionnaire designed for this study consists of two parts. The first part consists of demographic questions, while part two assesses the factors that would affect students' academic performance. If you use educational SNS (myU), I would be very grateful if you fill out this questionnaire. Your participation is voluntary. If you do not wish to participate, simply discard the questionnaire. Responses will be

completely anonymous; your name will not appear anywhere on the survey. Completing and returning the questionnaire constitutes your consent to participate. All of the information you kindly provide will be treated as completely confidential and it will not be possible for anyone to identify the information you supply.

The questionnaire will take less than 15 minutes of your time to fill out. If you have any questions or concerns, please contact me at jpa21jqu@uea.ac.uk

If you would like to take part, please read first the link below that contains the participant information sheet.

Regards

Bodoor Alazemi

PhD student +96590906670 jpa21jqu@uea.ac.uk

A **Part one:** demographic questions

Instruction: Please tick the appropriate answer.

Did you use myU before?

- ○ Yes
- ○ NO

If your answer is NO, thank you for your time, you can stop now. If your answer is YES, please proceeded to the second question.

Gender.

- ○ Male
- ○ Female
- ○ Prefer not to answer

Age.

- ○ Under 18
- ○ 18-22
- ○ 23-2
- ○ 28-37
- ○ +38
- ○ Prefer not to answer

Marital status.

- ○ Single
- ○
- ○
- ○

Married

Divorced

Widowed

Prefer not to answer

College.

○ College of Basic Education

○ College of Business Studies

○ College of Technological Studies

○ College of Health Sciences

Year of study.

○ First year

○ Second year

○ Third Year

○ Fourth year and above

GPA.

○ Less than 1 point

○ 1-2 points

○ 2.01-3 Points

○ More than 3 points

○ Prefer not to answer

How long have you been using myU?

○ Less than 1 year

○ 1-2 years

○ More than 2 years

A **Part two:**

Instruction: Please read questions 9 and 10 carefully and indicate your answer by selecting the appropriate number that describes your usage frequency and duration of myU**.**

No	1	2	3	4	5
9	1= Once a month or less	2= Once a week	3= Several times a week	4= once a day	5= Sev times a day
10	1= Less than 10 minutes	2= 10- 20 minutes	3= 21- 30 minutes	4= 31- 40 minutes	5= more t 40 minutes

A **Actual use (my usage):** The degree to which a student uses the capabilities of an educational SNSs in terms of frequency and duration of use (Isaac et al., 2019).

On average, how frequently do you use myU?

○ 1= Once a month or less

○ 2= Once a week

○ 3= Several times a week

○ 4= Once a day

○ 5= Several times a day

On average, how much time you spend each time you use myU?

Note: The options for this question are more relevant to the nature of the study (Because the average time that the users actually spend in Kuwait on myU application each time they used it ranges between these options).

○ 1= Less than 10 minutes

○ 2= 10- 20 minutes

○ 3= 21- 30 minutes

○ 4= 31- 40 minutes

○ 5= More than 40 minutes

Instruction: Please select your degree of agreement or disagreement with the following statements (from 11 to 42) **using the 5-point scale below**: 1= Strongly Disagree, 2= Disagree, 3=Neutral, 4= Agree, 5= Strongly Agree.

No	Statements

Interaction with Peers (INTP): The extent of interaction, dialogue, discussion, and exchange of information between students and peers through using educational SNSs (Alamri et al., 2020; Lin et al., 2022).		**Strongl disagre**	**Disagre**		**Disagre**	**strongl Agr**
11	myU gives me the opportunity to interact with my peers about content and tasks.	1	2	3	4	5
12	myU helps facilitate dialog with my peers.	1	2	3	4	5
13	myU facilitates course discussions, such as information and ideas, with my peers.	1	2	3	4	5
Interaction with Teachers (INTT): The extent to which educational SNSs facilitate the interaction of students with their teachers in terms of dialog, discussion, and information exchange (Alamri et al., 2020; Lin et al., 2022).		**Strongl**	**Disag**	**Neutr**	**Disag**	**strongl Agr**
14	myU gives me the opportunity to interact with my teachers about content and tasks.	1	2	3	4	5
15	myU helps facilitate dialog with my teachers.	1	2	3	4	5
16	myU facilitates course discussions, such as information, ideas, and feedback with my teachers.	1	2	3	4	5
Collaborative Learning (CL): The extent to which a group of learners works together through educational SNSs to solve a particular problem, finish a task, improve skills, evaluate one another's ideas, or produce a new product (Khan et al., 2021; Manickam et al., 2020).		**Strongl disagre**	**Disagre**	**Neutr**	**Disagre**	**strongl Agr**
17	Using myU, I was able to develop my learning abilities through peer collaboration.	1	2	3	4	5
18	Using myU, I was able to develop new skills from other group members.	1	2	3	4	5
19	Using myU, I was able to develop more comprehensive understanding of the topics through group discussion.	1	2	3	4	5

Student Emotional Engagement (SEN): students' emotional reactions through their use of educational SNSs. including their relationships, attitudes, and interests to their peers, teacher, course content, and class (Gunuc & Kuzu, 2015). Note: Based on the literature, engagement through educational SNSs is usually emotional. Furthermore, the statements used align with the voluntary use of the educational SNSs, where myU application is a voluntary use.		**Strongl disagre**	**Disagre**	**Neutr**	**Disagre**	**strongly Agree**
20	Using myU, I like to Communicate with my peers to discuss homework, talk about the day, and talk about a lesson.	1	2	3	4	5
21	Using myU, I like to communicate with my teachers to discuss my problems, ask about assessment, and discuss topics taught in the classroom.	1	2	3	4	5
22	Using myU, I give importance to studying together with my classmates (in a group).	1	2	3	4	5

23	Using myU, I can improve my interest in my course.	1	2	3	4	5
Information quality (INFQ): The degree to which system users (students) think that educational SNSs information is up-to-date, accurate, relevant, comprehensive, and organised (Salam & Farooq, 2020; Xu & Du, 2021).		**Strongl disagre**	**Disagre**	**Neutr**	**Disagre**	**strongl Agr**
24	myU provides up-to-date learning content and information.	1	2	3	4	5
25	myU provides accurate information to the course content.	1	2	3	4	5
26	The information provided by myU is relevant to the course content.	1	2	3	4	5
27	myU provides comprehensive information, which I exactly want for my course.	1	2	3	4	5
System Quality (SYSQ): The degree to which the system users (students) believe that educational SNSs are easy to use, flexible, and understandable (Salam & Farooq, 2020).		**Strongl disagre**	**Disagre**	**Neutr**	**Disagre**	**strongl Agr**

28	myU is easy to use.	1	2	3	4	5
29	myU provides flexible features to interact with.	1	2	3	4	5
30	I find myU features are clear and understandable.	1	2	3	4	5
Service Quality (SERQ): The quality of professional support provided by educational SNSs administrators and developers. Is assessed through timeliness, responsiveness, and empathy (Al-Adwan et al., 2022; Salam & Farooq, 2020).		**Strongl disagre**	**Disagre**	**Neutr**	**Disagre**	**strongl Agr**
31	In case of any difficulty in using myU, I am provided with quick online assistance.	1	2	3	4	5
32	Technical staff is available to provide help for using myU.	1	2	3	4	5
33	myU technical staff understand my specific needs.	1	2	3	4	5
Student Satisfaction (SAT): The extent to which students believe that educational SNSs meet their educational requirements in terms of enjoyment, and overall satisfaction (Al-Adwan et al., 2021; Cavus et al., 2021).		**Strongl disagre**	**Disagre**	**Neutr**	**Disagre**	**strongl Agr**
34	I am satisfied that myU meets my requirements.	1	2	3	4	5
35	I enjoy using myU in my study.	1	2	3	4	5
36	Overall, I am satisfied with myU.	1	2	3	4	5
Student Academic Performance (SAP): The extent to which educational SNS influences student performances based on competence, knowledge acquisition, resource savings, and development of skills (Alamri et al., 2020).		**Strongl disagre**	**Disagre**	**Neutr**	**Disagre**	**strongl Agr**
37	myU helps me to accomplish my tasks more quickly.	1	2	3	4	5
38	myU makes it easier to complete my tasks.	1	2	3	4	5
39	myU improves my comprehension of the concepts studied.	1	2	3	4	5

40	Using myU helps me to review and eliminate errors in my work tasks.	1	2	3	4	5
41	myU helps me acquire new knowledge.	1	2	3	4	5
42	myU helps me acquire new communication skills.	1	2	3	4	5

Thank you for your cooperation

Reference

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myU use and students' academic performance at The Public Authority for Applied Education from teachers' perspective

Dear student,

I am a PhD research student at the University of East Anglia conducting a study to investigate investigate the factors that would affect students' academic performance through using educational SNSs at PAAET from teachers' perspective.

The questionnaire designed for this study consists of two parts. The first part consists of demographic questions, while part two assesses the factors that would affect students' academic performance. If you use educational SNS (myU), I would be very grateful if you fill out this questionnaire. Your participation is voluntary. If you do not wish to participate, simply discard the questionnaire. Responses will be completely anonymous; your name will not appear anywhere on the survey. Completing and returning the questionnaire constitutes your consent to participate. All of the information you kindly provide will be treated as completely confidential and it will not be possible for anyone to identify the information you supply.

The questionnaire will take less than 15 minutes of your time to fill out. If you have any questions or concerns, please contact me at jpa21jqu@uea.ac.uk

If you would like to take part, please read first the link below that contains the participant information sheet.

Regards

Bodoor Alazemi

PhD student +96590906670 jpa21jqu@uea.ac.uk

A **Part one:** demographic questions

Instruction: Please tick the appropriate answer.

Did you use myU before?

- ○ Yes
- ○ NO

If your answer is NO, thank you for your time, you can stop now. If your answer is YES, please proceeded to the second question.

Gender.

- ○ Male
- ○ Female
- ○ Prefer not to answer

Age.

- ○ Under 40
- ○ 42-50
- ○ 51-60
- ○ 61+
- ○ Prefer not to answer

College.

- ○ College of Basic Education
- ○ College of Business Studies
- ○ College of Technological Studies
- ○ College of Health Sciences

Academic rank.

○ Full professor

○ Associate professer

○ Assistant professer

○ Teacher

○ Teacher Assistant

How long have you been using myU?

○ Less than 1 year

○ 1-2 years

○ More than 2 years

A **Part two:**

Instruction: Please read questions 7 and 8 carefully and indicate your answer **by choosing at least one statement** that describes the student's behavioural intention and user behaviour (actual usage) of using myU from the teacher's perspective.

A **Behavioral intention (BI):** The measure of students' intention strength to use educational SNSs in achieving their educational goals (Cavus et al., 2021; Prasetyo et al., 2021)

7. Based on your experience using myU, which of the following statements do you think reflects the student's willingness to use myU? **(Choose at least one statement).**

○ The students are willing to use myU for the whole year.

○ The students have positive perceptions about myU.

○ The students are motivated to use myU.

○ The students recommend using myU.

○ The students may use myU in their future courses.

A **User behavior (actual usage) (UB):** The degree to which a student uses the capabilities of an educational SNSs in terms of nature, extent, quality, and appropriateness of use (Alamri et al., 2020; Cavus et al., 2021; Prasetyo et al., 2021; Yakubu & Dasuki, 2018)

8. Which of the following statements you think describe the student's use of myU? **(Choose at least one statement).**

○ The students use myU for interaction with peers.

○ The students use myU for interaction with teachers.

○

The students use a variety of different functions in myU (e.g., comments, direct messaging, downloading course contents, uploading assignments, etc.). myU helps the students to contact the teacher and find the information that they want.

○ Because of myU, the students do not need to go to the teacher's office or ask him/her in class.

Instruction: Please circle your degree of agreement or disagreement with the following statements (from

9 to 33) **using the 5-point scale below**: 1= Strongly Disagree, 2= Disagree, 3=Neutral, 4= Agree, 5= Strongly Agree.

No	Statements					
Student self-efficacy (SSE): The extent to which a student believes in the ability to learn successfully from a course through the use of educational SNSs (Aldholay et al., 2018).		**Strongl disagre**	**Disagre**		**Disagre**	**strongl Agr**
9	My students are confident in using myU to find course content information.	1	2	3	4	5
10	My students are confident in using myU to send and receive messages.	1	2	3	4	5
11	My students are confident in using myU to download and upload files.	1	2	3	4	5
Compatibility (CMP): The intensity with which educational SNSs fit students' sociocultural values/beliefs, lifestyles, and needs (Isaac et al., 2019).		**disagre**	**Disagre**	**Neutr**	**Disagre**	**strongl Agr**
12	myU complies with my students' sociocultural values/beliefs.	1	2	3	4	5
13	myU complies with my students' lifestyle such as their prior and present experiences, learning situation, and preference for conducting learning activities.	1	2	3	4	5
14	myU complies with my students' learning needs (such acquire knowledge, and communication skills).	1	2	3	4	5

Performance expectancy (PE): Describes users' (students) perceptions and expectations of the usefulness of educational SNSs (Wut et al., 2022).		**Strongl disagre**	**Disagre**	**Neutr**	**Disagre**	**strongl Agr**
15	My students find myU useful to them in their studies.	1	2	3	4	5
16	Using myU would allow my students in their studies to accomplish more work than would otherwise be possible.	1	2	3	4	5
17	Using myU in my students' studies would increase their ability to get useful information.	1	2	3	4	5

Effort Expectancy (EE): Explains the possibility of using educational SNSs without much effort. It describes the degree of simplicity and ease of use of educational SNSs (Pham & Dau, 2022; Wut et al., 2022).		**Strongl disagre**	**Disagre**	**Neutr**	**Disagre**	**strongl Agr**
18	My students know to use myU.	1	2	3	4	5
19	My students' find interaction with myU is easy (clear and understandable).	1	2	3	4	5
20	My students learn how to use myU quickly.	1	2	3	4	5
Social Influence (SI): The degree to which a student perceives that those important others (such as family, colleagues, instructors, friends, and other important people) believe he/she should use educational SNSs (Gharrah & Aljaafreh, 2021).		**Strongl disagre**	**Disagre**	**Neutr**	**Disagre**	**strongl Agr**
21	When I use myU my students find it useful.	1	2	3	4	5
22	My students use myU when encouraged by their friends and colleagues.	1	2	3	4	5
23	I am able to influence my students to use myU.	1	2	3	4	5
SNSs Conditions (SNSsC): The degree to which a student believes that an organizational and technical infrastructure exists to support the use of educational SNSs (Wut et al., 2022; Gharrah & Aljaafreh, 2021).		**Strongl disagre**	**Disagre**	**Neutr**	**Disagre**	**strongl Agr**
24	My students have the resources necessary (e.g., internet and devices) to use myU.	1	2	3	4	5

25	myU is compatible with other systems (e.g., LMS) that my students use.	1	2	3	4	5
SNSs C4	Technical staff responds quickly to student issues when using myU.	1	2	3	4	5
Hedonic motivation (HM): The fun or pleasure derived from using educational SNSs (Gharrah & Aljaafreh, 2021).		**Strongl disagre**	**Disagre**	**Neutr**	**Disagre**	**strongl Agr**
26	My students find myU interesting to use.	1	2	3	4	5
27	When my students use myU they find it an exciting and enjoyable way to learn.	1	2	3	4	5
Habit (HT): The extent to which students tend to perform behaviors automatically because of learning (Gharrah & Aljaafreh, 2021).		**Strongl disagre**	**Disagre**	**Neutr**	**Disagre**	**strongl Agr**
28	My students regularly use myU.	1	2	3	4	5
29	It is natural for my students to use myU.	1	2	3	4	5
30	myU is something that students do without hesitation.	1	2	3	4	5
Teacher Perception of Student Academic Performance (TPSAP): The degree of teacher perception of students' ability to carry out academic tasks when using educational SNSs. It is measured in terms of the anticipated grade and the achievement patterns (e.g., acquiring new skills, boosting selfconfidence, and bolstering perseverance) (Sabah & Altalbe, 2022).		**Strongl disagre**	**Disagre**	**Neutr**	**Disagre**	**strongl Agr**
31	I expect that my students are confident of their adequate academic skills and abilities via using myU.	1	2	3	4	5
32	I expect my students to perform better academically when using myU.	1	2	3	4	5
33	I anticipate that my students have good/better grades when using myU in courses.	1	2	3	4	5

Thank you for your cooperation

Reference

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Teachers' characteristics and Students' academic performance through using myU at The Public Authority for Applied Education and Training

Description

1 facilitator

Up to 8 participants

Time: 2 hours

Venue: Date:

With the permission of participants, the conversations will be recorded. Respondents' contribution will be anonymised in any subsequent reporting. Summary findings will be shared with participants to confirm accuracy.

Participants

Volunteer students who use educational SNS (myU application) in colleges of PAAET.

Purpose

Investigate the impact of teachers' characteristics on students' academic performance through using educational SNSs (myU application in particular) at PAAET in Kuwait.

Topic guide

The facilitator is tasked to explore, probe where necessary, and follow up specifically the topics listed below, gathering responses from all attending.

Views on teacher skills in motivating students to use myU.

Views on teacher's attitudes towards students through myU.

Views on teacher's relevant expertise (e.g., academic and technological) through myU.

Views on how these characteristics affect students' academic performance through using myU.

Program

10 minutes:

Welcome and brief introductions

30 minutes:

Poll one 'Can you please tell us about your experience with the teacher through using myU?' The discussion will be about response to identify the teacher's motivational skills

30 minutes:

Poll two 'What kind of teachers would you like to interact and communicate with more when using myU?' The discussion will be about response to identify the teacher's attitudes towards students and relevant expertise.

30 minutes:

Poll Three 'How these characteristics affect students' academic performance' The discussion will be about response to identify the main teachers' characteristics that affect student's academic performance in Kuwait context.

20 minutes:

Summarising key points and closing (check that expectations have been met and confirm follow up actions).

Can't attach Dean response.jpg, please review file online.

Mrs Bodoor Alazemi Faculty of Social Sciences PhD student Norwich Business School
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Tel: +96590906670 Web: www.uea.ac.uk

myU use and students' academic performance at The Public Authority for Applied

Education from students' perspective

PARTICIPANT INFORMATION SHEET

(1) What is this study about?

You are invited to take part in a research study about factors that would affect students' academic performance through using educational SNSs at The Public Authority for Applied Education and Training from students' perspectives. You have been invited to participate in this study you have experience in using educational Social Networking Sites (SNSs) such as myU application. This Participant Information Sheet tells you about the research study. Knowing what is involved will help you decide if you want to take part in the study. Please read this sheet carefully and ask questions about anything that you don't understand or want to know more about.

Participation in this research study is voluntary. By giving consent to take part in this study you are telling us that you:

AUnderstand what you have read.

AAgree to take part in the research study as outlined below.

AAgree to the use of your personal information as described.

AYou have received a copy of this Participant Information Sheet to keep.

Who is running the study?

The study is being carried out by the following researcher(s): Mrs. Bodoor Alazemi. This will take place under the supervision of Dr. Adrian Benfell (A.Benfell@uea.ac.uk, +01603 59 1002).

What will the study involve for me?

You will be asked to take part in answering the questionnaire in your classroom before or after the lecture. While in the classroom you will be provided with the questionnaire link which you can access from any smart device. The questionnaire is divided into 2 parts (42 items). part one consists of personal information, while part

two assesses the factors that would affect students' academic performance from students' perspective.

You will not have the opportunity to review information generated about you prior to publication.

(4)How much of my time will the study take?

There are 2 parts to the questionnaire, and each section is estimated to take the following amount of time:

Part 1 will take 1 minute.

Part 2 will take 12 to 14 minutes.

Your total time commitment for participating in this study is expected to take less than 15 minutes.

Do I have to be in the study? Can I withdraw from the study once I have started?Being in this study is completely voluntary and you do not have to take part.

Your decision whether to participate will not affect your current or future relationship with the researchers or anyone else at Public Authority for Applied Education and Training now or in the future.

If you decide to take part in the study, you can withdraw your consent up to the point that your data is fully anonymised. You can do this by contacting the researcher, Bodoor Alazemi via email (jpa21jqu@uea.ac.uk) stating that you would like to withdraw.

What are the consequences if I withdraw from the study?

If you decide to take part in the study and then change your mind, you are free to withdraw at any time before you have submitted the questionnaire. Once you have submitted it, your responses cannot be withdrawn because they are anonymous and therefore we will not be able to tell which one is yours.

Are there any risks or costs associated with being in the study?

Aside from giving up your time, we do not expect that there will be any risks or costs associated with taking part in this study.

Are there any benefits associated with being in the study?

Your experience will be contributed to the overall understanding of the factors that may affect students' academic performance through using educational SNSs.

This could be useful for stakeholders (such as students, teachers, higher institutions, decisionmakers, and service providers) in improving the learning process in Kuwait.

Also, it may help on increasing the degree of effectiveness of using educational SNSs for all targeted stakeholders.

What will happen to information provided by me and data collected during the study?You, and all of the information you provide, will remain completely anonymous and no records of questionnaire answers will be linked with your name on them. The measures taken to anonymise your responses will continue as well as omitting precise and detailed information and any other points which may threaten anonymity.

Your personal data and information will only be used as outlined in this Participant Information Sheet, unless you consent otherwise. Data management will follow the Data Protection Act 2018 (DPA 2018) and UK General Data Protection Regulation (UK GDPR), and the University of East Anglia's Research Data Management Policy.

The information you provide will be stored securely and your identity will be kept strictly confidential, except as required by law. Study findings may be published, but you will not be identified in these publications if you decide to participate in this study. Study data may also be deposited with a repository to allow it to be made available for scholarly and educational purposes. The data will be kept for at least 10 years beyond the last date the data were accessed. The deposited data will not include your name or any identifiable information about you

What if I would like further information about the study?

When you have read this information, Mrs Bodoor Alazemi (jpa21jqu@uea.ac.uk, +96590906670) will be available to discuss it with you further and answer any questions you may have.

Will I be told the results of the study?

You have a right to receive feedback about the overall results of this study.

You can receive feedback from contacting the researcher by email at jpa21jqu@uea.ac.uk This feedback will be in the form of a one-page lay summary of the findings. This feedback will be made accessible at the end of the project.

What if I have a complaint or any concerns about the study?

If there is a problem please let me know. You can contact me via the University of East Anglia at the following address:

Mrs Bodoor Alazemi

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NORWICH NR4 7TJ jpa21jqu@uea.ac.uk +96590906670

If you are concerned about the way this study is being conducted or you wish to make a complaint to someone independent from the study, please contact the Head of Norwich Business School, Professor Olga Tregaskis (o.tregaskis@uea.ac.uk; 01603 591089).

How do I know that this study has been approved to take place?

To protect your safety, rights, wellbeing and dignity, all research in the University of East Anglia is reviewed by a Research Ethics Body. This research was approved by the NBS S-REC (Norwich Business School Research Ethics Subcommittee).

What is the general data protection information I need to be informed about?

According to data protection legislation, we are required to inform you that the legal basis for processing your data as listed in Article 6(1) of the UK GDPR is because this allows us to process personal data when it is necessary to perform our public tasks as a university.

In addition to the specific information provided above about why your personal data is required and how it will be used, there is also some general information which needs to be provided for you:

The data controller is the University of East Anglia.

For further information, you can contact the University's Data Protection Officer at dataprotection@uea.ac.uk

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Further information

This information was last updated on 09 November 2022.

If there are changes to the information provided, you will be notified by the researcher before the start of the questionnaire.

This information sheet is for you to keep

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myU use and students' academic performance at The Public Authority for Applied

Education from teachers' perspective

PARTICIPANT INFORMATION SHEET

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You are invited to take part in a research study about factors that would affect students' academic performance through using educational SNSs at The Public Authority for Applied Education and Training from teachers' perspectives. You have been invited to participate in this study you have experience in using educational Social Networking Sites (SNSs) such as myU application. This Participant Information Sheet tells you about the research study. Knowing what is involved will help you decide if you want to take part in the study. Please read this sheet carefully and ask questions about anything that you don't understand or want to know more about.

Participation in this research study is voluntary. By giving consent to take part in this study you are telling us that you:

AUnderstand what you have read.

AAgree to take part in the research study as outlined below.

AAgree to the use of your personal information as described.

AYou have received a copy of this Participant Information Sheet to keep.

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The study is being carried out by the following researcher(s): Mrs. Bodoor Alazemi. This will take place under the supervision of Dr. Adrian Benfell (A.Benfell@uea.ac.uk, +01603 59 1002).

What will the study involve for me?

You will be asked to take part in answering the questionnaire at any time and place you prefer. You will be provided with the questionnaire link which you can access from any smart device. The questionnaire is divided into 2 parts (33 items). part one consists of personal information, while part two assesses the factors that would affect students' academic performance from teachers' perspective.

You will not have the opportunity to review information generated about you prior to publication.

(4)How much of my time will the study take?

There are 2 parts to the questionnaire, and each section is estimated to take the following amount of time:

Part 1 will take 1 minute.

Part 2 will take 12 to 14 minutes.

Your total time commitment for participating in this study is expected to take less than 15 minutes.

Do I have to be in the study? Can I withdraw from the study once I have started?Being in this study is completely voluntary and you do not have to take part.

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Are there any risks or costs associated with being in the study?

Aside from giving up your time, we do not expect that there will be any risks or costs associated with taking part in this study.

Are there any benefits associated with being in the study?

Your experience will be contributed to the overall understanding of the factors that may affect students' academic performance through using educational SNSs.

This could be useful for stakeholders (such as students, teachers, higher institutions, decisionmakers, and service providers) in improving the learning process in Kuwait. Also, it may help on increasing the degree of effectiveness of using educational SNSs for all targeted stakeholders.

What will happen to information provided by me and data collected during the study?You, and all of the information you provide, will remain completely anonymous and no records of questionnaire answers will be linked with your name on them. The measures taken to anonymise your responses will continue as well as omitting precise and detailed information and any other points which may threaten anonymity.

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What if I would like further information about the study?

When you have read this information, Mrs Bodoor Alazemi (jpa21jqu@uea.ac.uk, +96590906670) will be available to discuss it with you further and answer any questions you may have.

Will I be told the results of the study?

You have a right to receive feedback about the overall results of this study.

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What if I have a complaint or any concerns about the study?

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If you are concerned about the way this study is being conducted or you wish to make a complaint to someone independent from the study, please contact the Head of Norwich Business School, Professor Olga Tregaskis (o.tregaskis@uea.ac.uk; 01603 591089).

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Further information

This information was last updated on 09 November 2022.

If there are changes to the information provided, you will be notified by the researcher before the start of the questionnaire.

This information sheet is for you to keep

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Teachers' characteristics and Students' academic performance through using myU at

The Public Authority for Applied Education and Training

PARTICIPANT INFORMATION SHEET

(1) What is this study about?

You are invited to take part in a research study about the impact of teachers' characteristics on students' academic performance through using educational Social Networking sites (SNSs) at The Public Authority for Applied Education and Training. You have been invited to participate in this study because you have experience in using educational SNSs such as myU. This Participant Information Sheet tells you about the research study. Knowing what is involved will help you decide if you want to take part in the study. Please read this sheet carefully and ask questions about anything that you don't understand or want to know more about.

Participation in this research study is voluntary. By giving consent to take part in this study you are telling us that you:

AUnderstand what you have read.

AAgree to take part in the research study as outlined below.

AAgree to the use of your personal information as described.

AYou have received a copy of this Participant Information Sheet to keep.

Who is running the study?

The study is being carried out by the following researcher(s): Mrs. Bodoor Alazemi. This will take place under the supervision of Dr. Adrian Benfell (A.Benfell@uea.ac.uk, +01603 59 1002).

What will the study involve for me?

You will be asked to take part in a face-to-face focus group after you have agreed on the consent form and confirmed the exact time and date. Note that one of the meeting rooms in the colleges at PAAET will be reserved. You will be notified of the room number in which the focus group discussion is expected to take place later through your teacher and a direct message will be sent to you via myU application as well. The focus group questions will ask you about your experience with the teacher through using educational SNSs, how the teacher motivates you, what are the characteristics of the teacher you prefer when you want to interact or communicate with him/her through educational SNSs, and how these characteristics may affect students' academic performance through the use of educational SNSs.

An audio/video recording will be taken.

You will have the opportunity to review information generated about you prior to publication.

(4)How much of my time will the study take?

Your total time commitment for participating in this study will be two hours for the focus group discussion.

Do I have to be in the study? Can I withdraw from the study once I have started?Being in this study is completely voluntary and you do not have to take part.

Your decision whether to participate will not affect your current or future relationship with the researchers or anyone else at the Public Authority for Applied Education and Training now or in the future.

If you decide to take part in the study, you can withdraw your consent up to the point that your data is fully anonymised. You can do this by contacting the researcher, Bodoor Alazemi via email (jpa21jqu@uea.ac.uk) stating that you would like to withdraw.

What are the consequences if I withdraw from the study?

If you take part in a focus group, you are free to stop participating at any stage or to refuse to answer any of the questions. However, it will not be possible to withdraw your individual comments from our records once the group has started, as it is a group discussion.

Are there any risks or costs associated with being in the study?

Aside from giving up your time, we do not expect that there will be any risks or costs associated with taking part in this study.

Are there any benefits associated with being in the study?

You will gain the opportunity to share your experience on how the teacher's characteristics affect students' academic performance through using educational SNSs. This could be useful for stakeholders (such as students, teachers, higher institutions, decision-makers, and service providers) in improving the learning process in Kuwait. Also, it may help on increasing the degree of effectiveness of using educational SNSs for all targeted stakeholders.

What will happen to information provided by me and data collected during the study?

You, and all of the information you provide, will remain completely anonymous and no records of the focus group discussion will be kept with your name on them. Only pertinent quotes from the focus group discussions shall be included within the proposed body of work with no sensitive nor identifiable information to do with you being shared. You can answer in as little or as much detail as you feel comfortable with. The measures taken to anonymise your responses will continue to use

pseudonyms at all points of reference as well as omitting precise and detailed information, such as names and any other points which may threaten anonymity.

Your personal data and information will only be used as outlined in this Participant Information

Sheet, unless you consent otherwise. Data management will follow the Data Protection Act 2018 (DPA 2018) and UK General Data Protection Regulation (UK GDPR), and the University of East Anglia's Research Data Management Policy.

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Also, I would like to ask for your permission to audio record this focus group. This is so that there is an accurate recording of your responses and opinions, improving the validity of the data set. This will also facilitate the analysis of the data which will have to be conducted at a later date.

What if I would like further information about the study?

When you have read this information, Mrs Bodoor Alazemi (jpa21jqu@uea.ac.uk, +96590906670) will be available to discuss it with you further and answer any questions you may have.

Will I be told the results of the study?

You have a right to receive feedback about the overall results of this study.

You can tell us that you wish to receive feedback by ticking the relevant box on the consent form.

This feedback will be in the form of a one-page lay summary of the findings. This feedback will be made accessible at the end of the project.

What if I have a complaint or any concerns about the study?

If there is a problem please let me know. You can contact me via the University of East Anglia at the following address:

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If you are unhappy with how your personal data has been used, please contact the University's Data Protection Officer at dataprotection@uea.ac.uk in the first instance.

OK, I want to take part – what do I do next?

You need to fill in one copy of the consent form and return it to the researcher. Please keep the letter, information sheet and the second copy of the consent form for your information.

Further information

This information was last updated on 09 November 2022.

If there are changes to the information provided, you will be notified by the researcher before the focus group begins.

This information sheet is for you to keep

PARTICIPANT CONSENT FORM (First Copy to Researcher)

I, ... [PRINT NAME], **am** willing to participate in this research study.

In giving my consent I state that:

I understand the purpose of the study, what I will be asked to do, and any risks/benefits involved.

I have read the Participant Information Sheet, which I may keep, for my records, and have been able to discuss my involvement in the study with the researchers if I wished to do so.

The researchers have answered any questions that I had about the study and I am happy with the answers.

I understand that being in this study is completely voluntary and I do not have to take part. My decision whether to be in the study will not affect my relationship with the researchers or anyone else at the Public Authority for Applied Education and Training now or in the future.

I understand that I may leave the focus group at any time if I do not wish to continue. I also understand that it will not be possible to withdraw my comments once the group has started, as it is a group discussion.

I understand that the results of this study may be published but that any publications will not contain my name or any identifiable information about me.

I understand that personal information about me that is collected over the course of this project will be stored securely and will only be used for purposes that I have agreed to. I understand that information about me will only be told to others with my permission, except as required by law.

I consent to:

Audio-recording YES A NO A

Would you like to receive feedback about the overall results of this study?

YES A NO A

If you answered **YES**, please indicate your preferred form of feedback and address:

A Postal: _____

_____

A Email: _____

.....

Signature

.....

PRINT name

.....

Date

PARTICIPANT CONSENT FORM (Second Copy to Participant)

I, ... [PRINT NAME], **am** willing to participate in this research study.

In giving my consent I state that:

I understand the purpose of the study, what I will be asked to do, and any risks/benefits involved.

I have read the Participant Information Sheet, which I may keep, for my records, and have been able to discuss my involvement in the study with the researchers if I wished to do so.

The researchers have answered any questions that I had about the study and I am happy with the answers.

I understand that being in this study is completely voluntary and I do not have to take part. My decision whether to be in the study will not affect my relationship with the researchers or anyone else at the Public Authority for Applied Education and Training now or in the future.

I understand that I may leave the focus group at any time if I do not wish to continue. I also understand that it will not be possible to withdraw my comments once the group has started, as it is a group discussion.

I understand that the results of this study may be published but that any publications will not contain my name or any identifiable information about me.

I understand that personal information about me that is collected over the course of this project will be stored securely and will only be used for purposes that I have agreed to. I understand that information about me will only be told to others with my permission, except as required by law.

I consent to:

Audio-recording YES A NO A

Would you like to receive feedback about the overall results of this study?

YES A NO A

If you answered **YES**, please indicate your preferred form of feedback and address:

A Postal : _____

_____

A Email : _____

.....

Signature

.....

PRINT name

.....

Date

ETH2223-0297

Appendix F – Data Analysis for Study 1

Appendix G: Data Analysis and Results for Study 1

- **Linearity Assumption for Study 1**

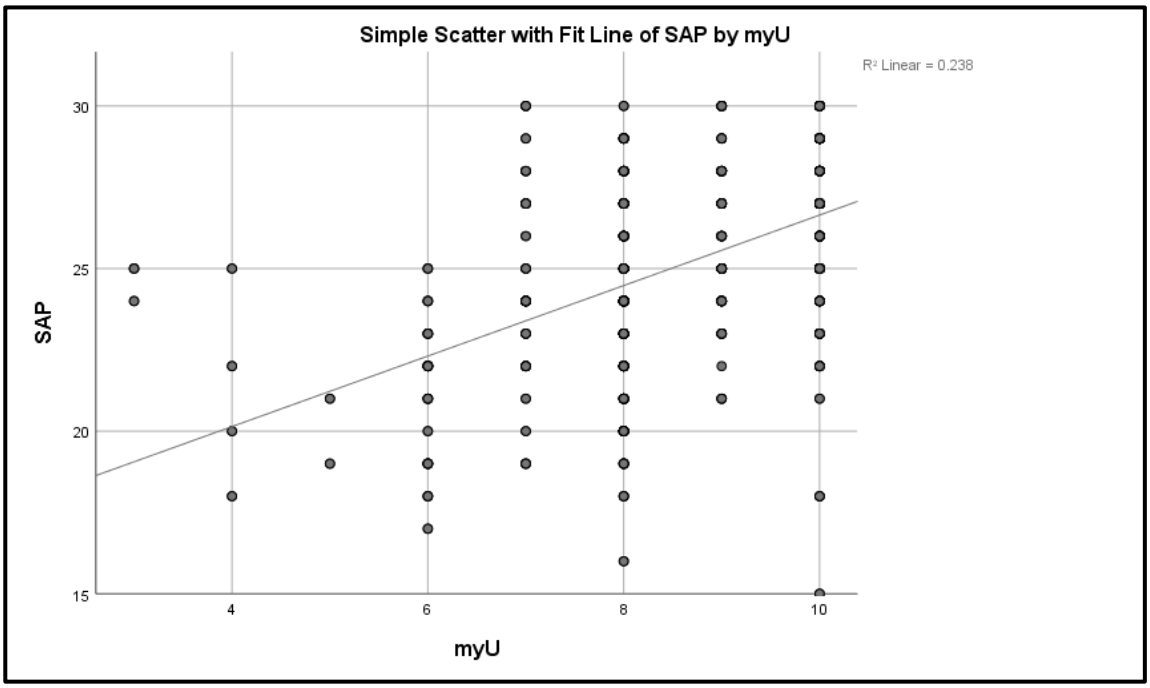

Figure 1: Linearity of myU usage

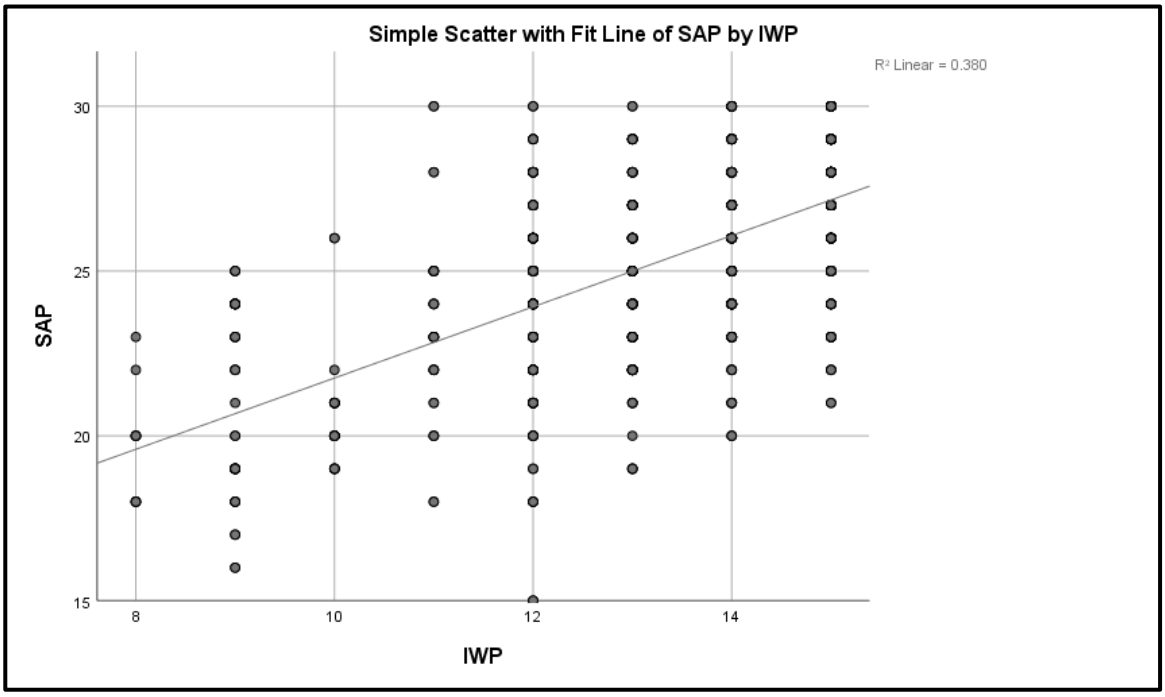

Figure 2: Linearity of Interaction with Peers (IWP)

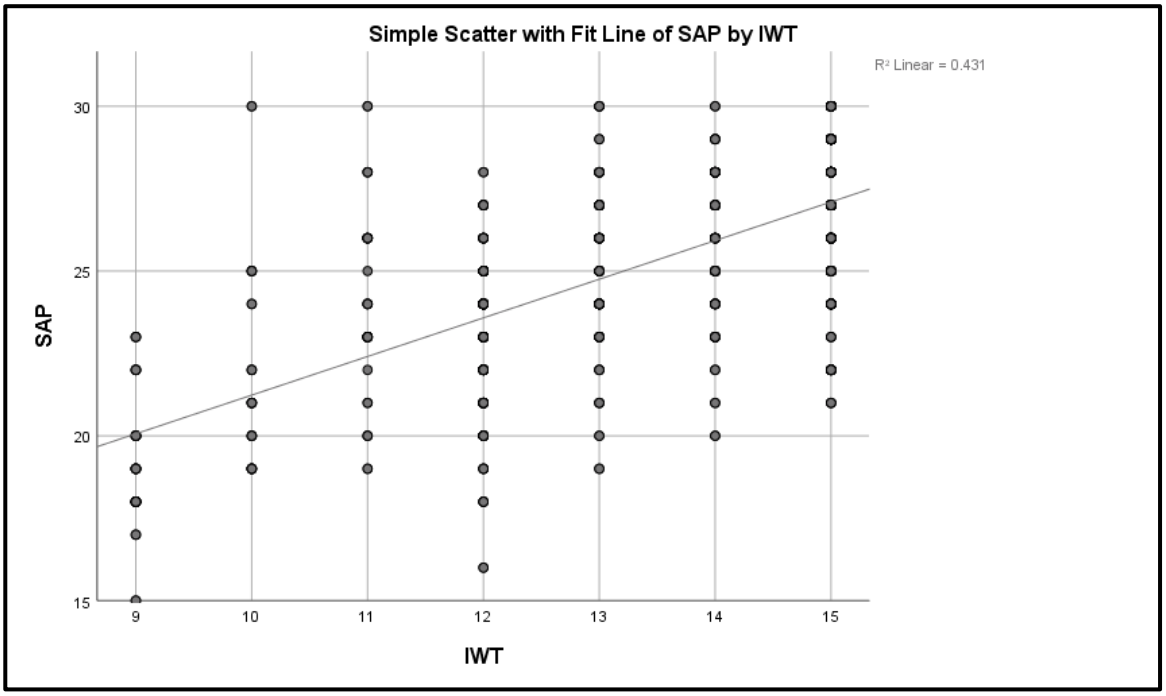

Figure 3: Linearity of Interaction with Teacher (IWT)

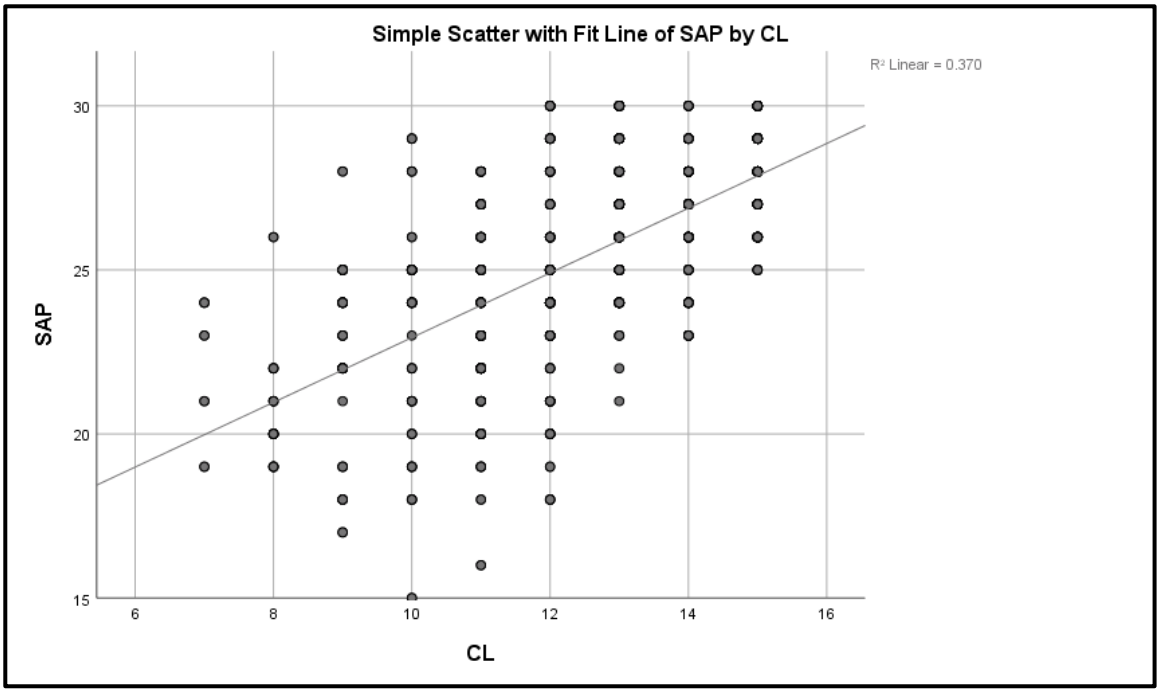

Figure 4: Linearity of Collaborative Learning (CL)

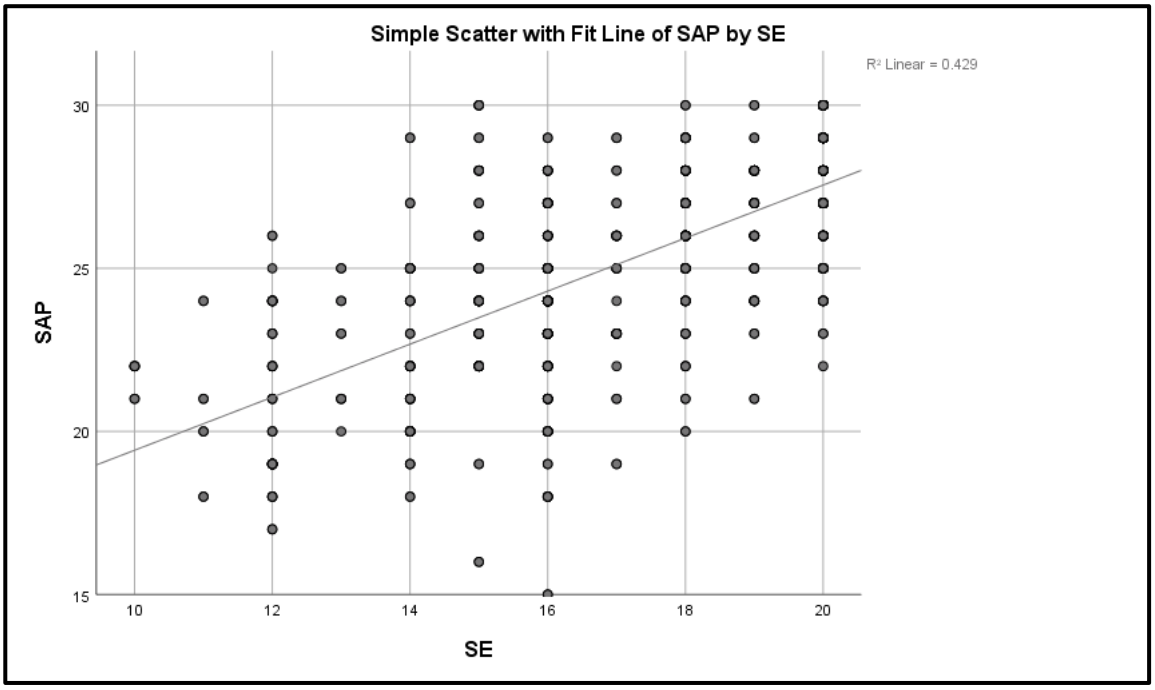

Figure 5: Linearity of Student Engagement (SE)

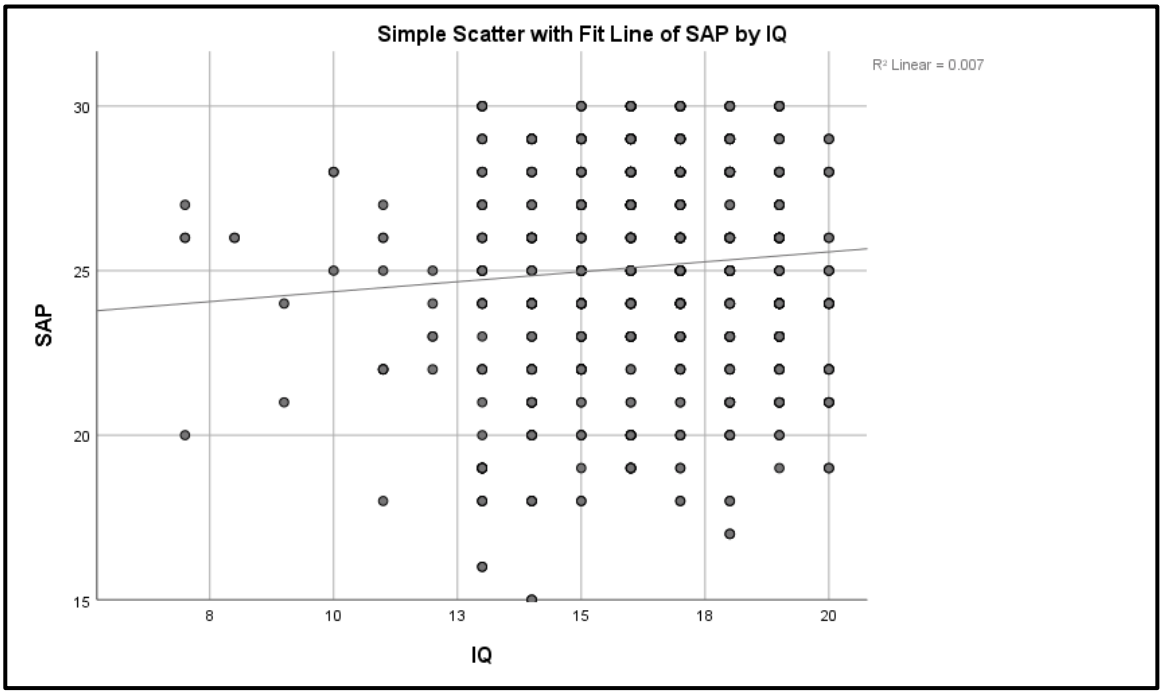

Figure 6: Linearity of Information Quality (IQ)

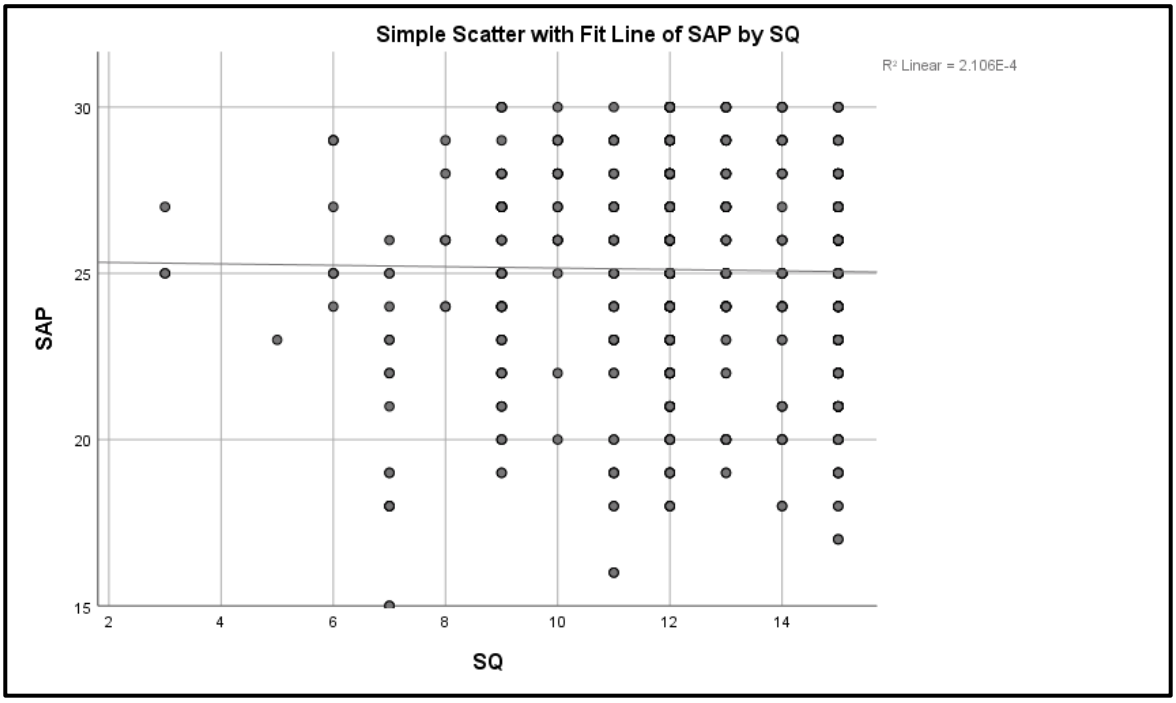

Figure 7: Linearity of System Quality (SQ)

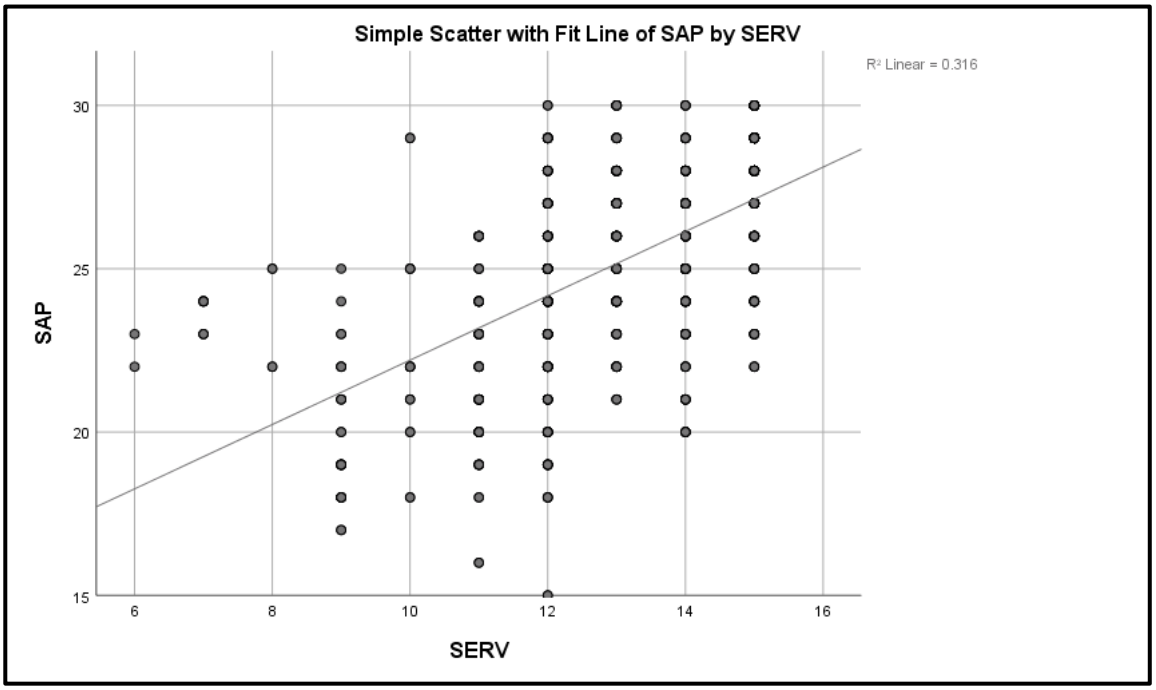

Figure 8: Linearity of Service Quality (SERV)

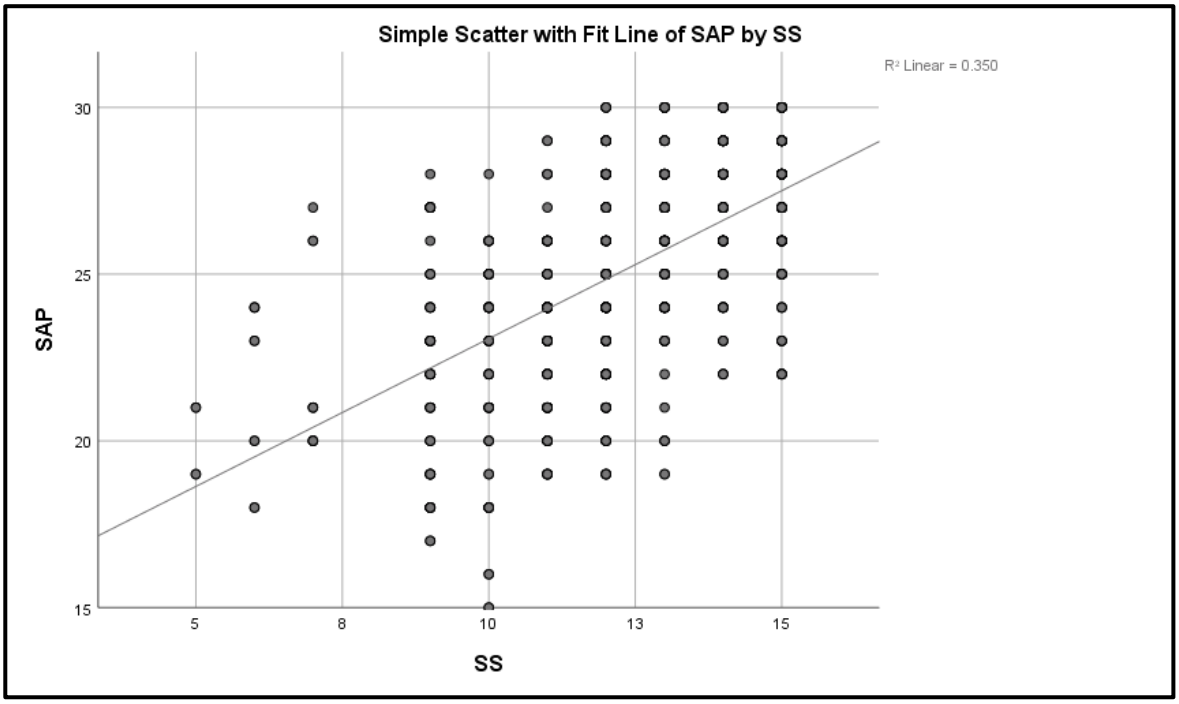

Figure 9: Linearity of Student Satisfaction (SS)

- **Constant Variance-Homoscedasticity test for study 1**

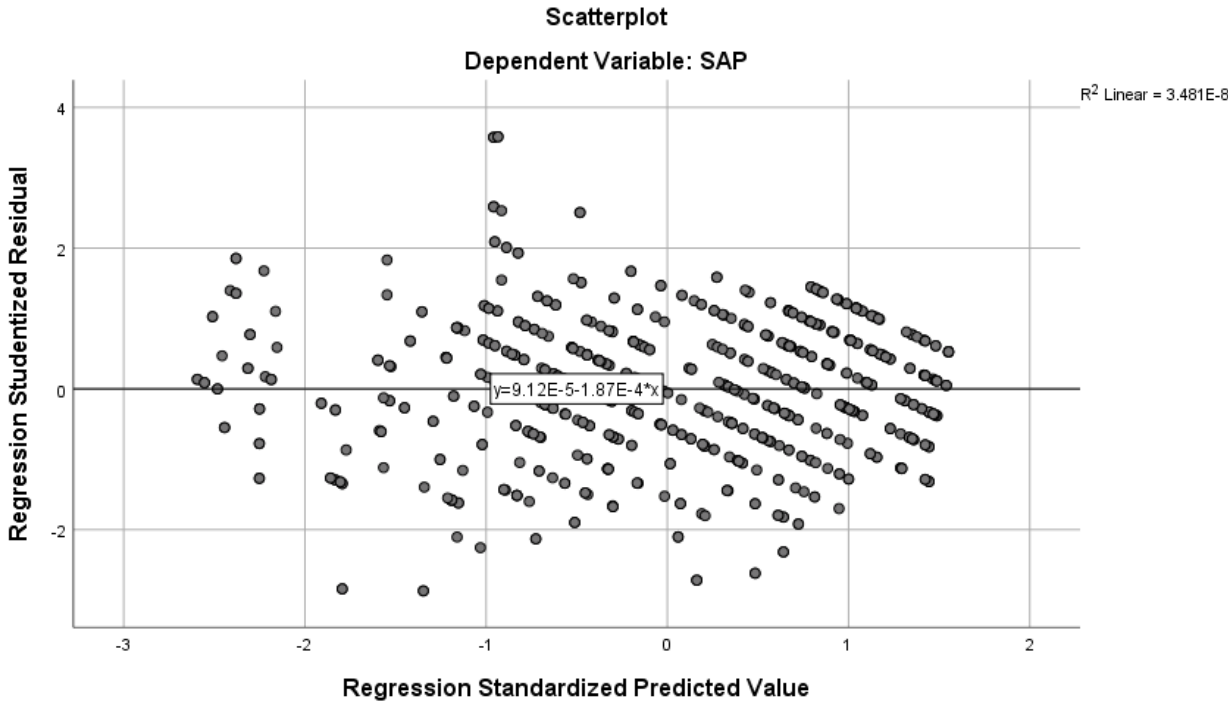

Figure 10: Homoscedasticity Test for Study 1

- **Measurement model (Indicator Reliability or Outer Loadings) for study 1**

Table 1: Results Summary for Reflective Measurement Model (First Run) for Study1

Items	Factor loadings	Cronbach's Alpha	Composite Reliability	Average Variance Extracted (AVE)
myU1	.913	.840	.925	.861
myU2	.942			
IWP1	.789	.779	.868	.688
IWP2	.828			
IWP3	.869			
IWT1	.903	.875	.923	.799
IWT2	.901			
IWT3	.878			
CL1	.810	.741	.853	.659
CL2	.780			
CL3	.843			
SE1	.870	.861	.905	.705
SE2	.829			
SE3	.834			
SE4	.827			
IQ1	.428	.631	.646	.463
IQ2	.890			
IQ3	.904			
IQ4*	-.243			
SQ1	.751	.735	.849	.653
SQ2	.817			
SQ3	.853			
SERV1	.879	.890	.932	.820
SERV2	.928			
SERV3	.909			
SS1	.826	.836	.902	.754

SS2	.849			
SS3	.927			
SAP1	.842	.793	.872	.597
SAP2	.779			
SAP3*	-.152			
SAP4	.801			
SAP5	.900			
SAP6	.891			
IQ4 and SAP3 were both dropped due to low factor loadings (below 0.4)				

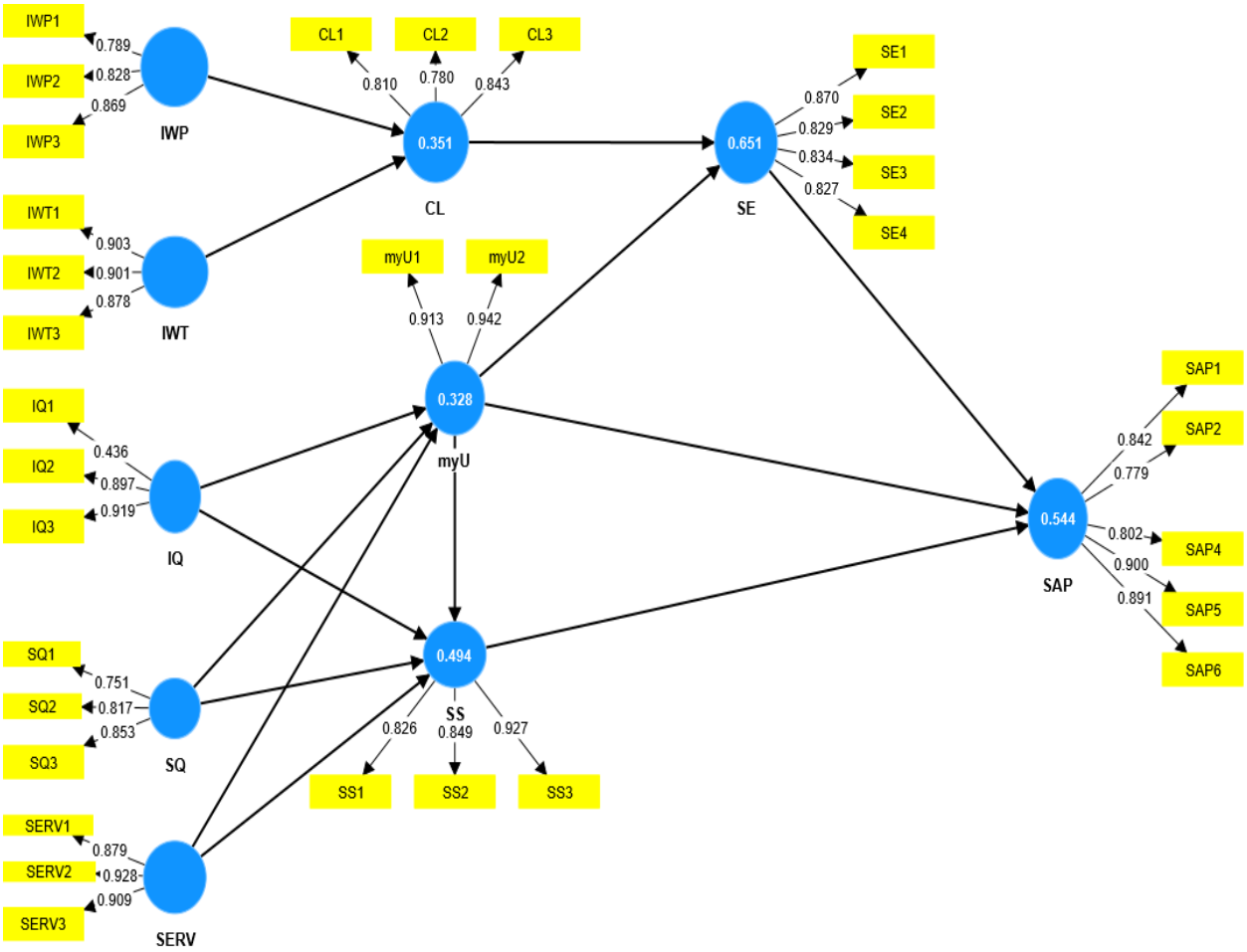

Figure 11: Model of PLS algorithm results (Measurement model) – (Second run) for study1

➢ **Assessment of the structural model relationships for Study 1**

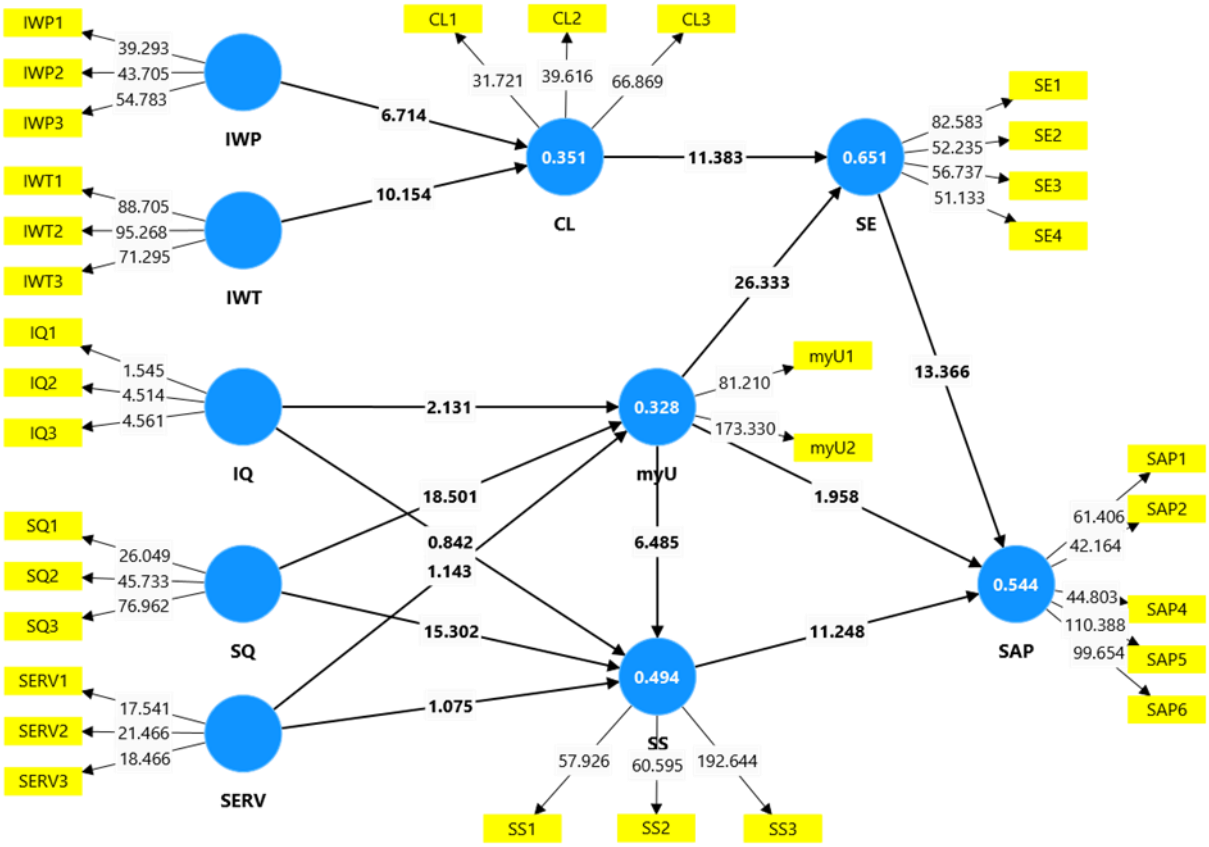

Figure 12: Structural Model (PLS bootstrapping) for Study 1

Appendix G – Data Analysis for Study 2

Appendix H: Data Analysis and Results for Study 2

- **Linearity Assumption for Study 2**

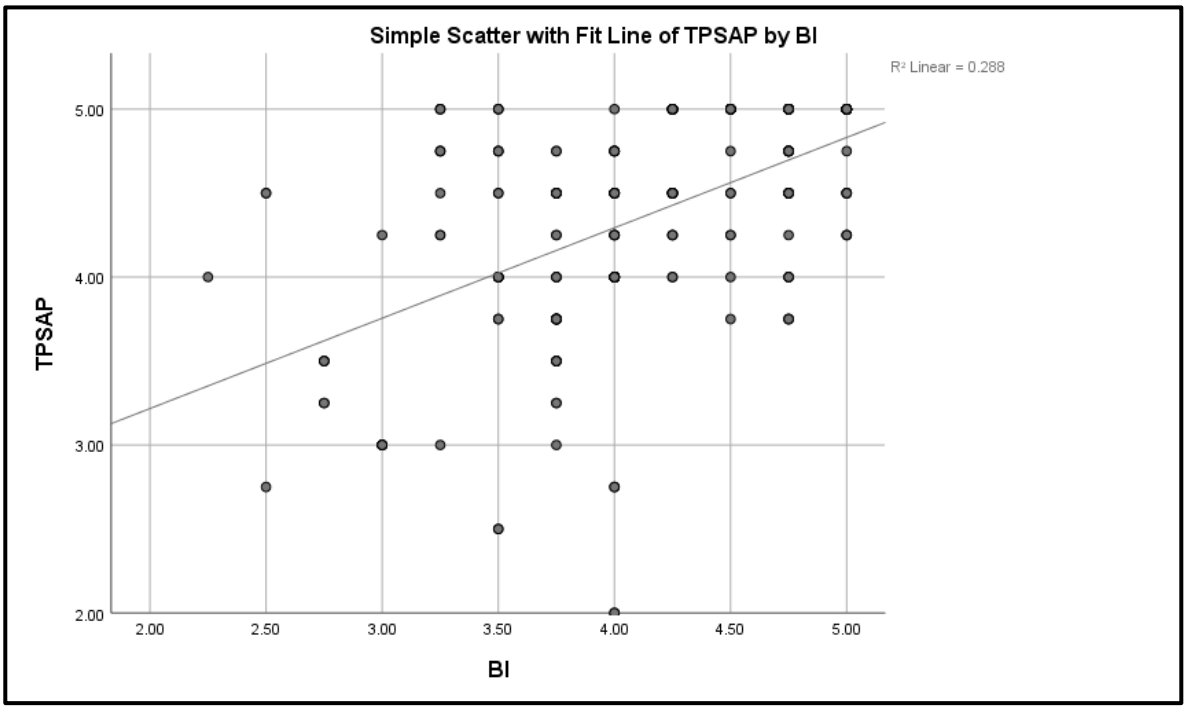

Figure 1: Linearity of Behavioural Intention (BI)

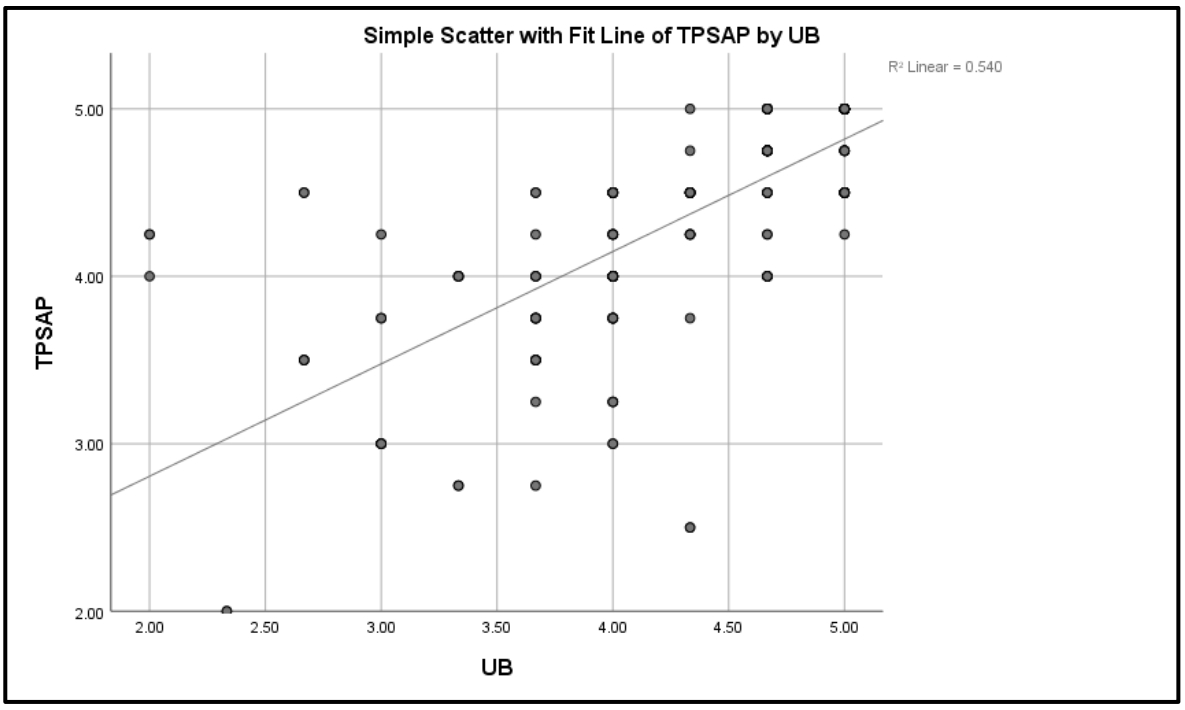

Figure 2: Linearity of User behaviour (UB)

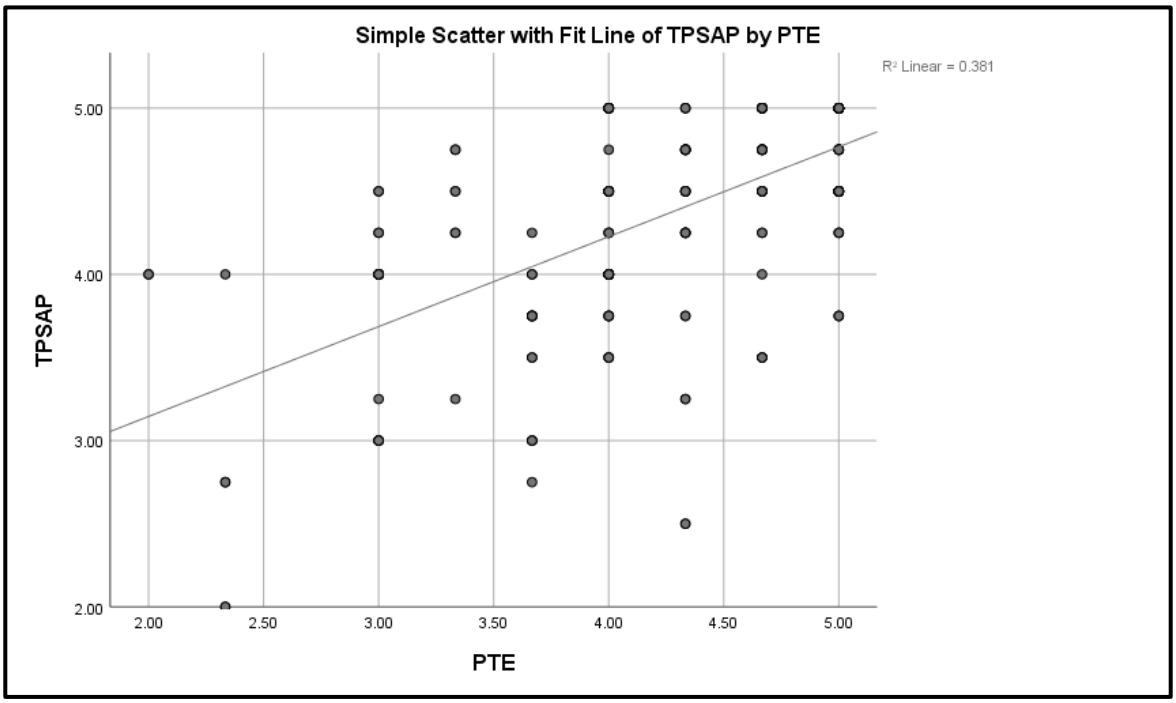

Figure 3: Linearity of Perceived Technology Efficacy (PTE)

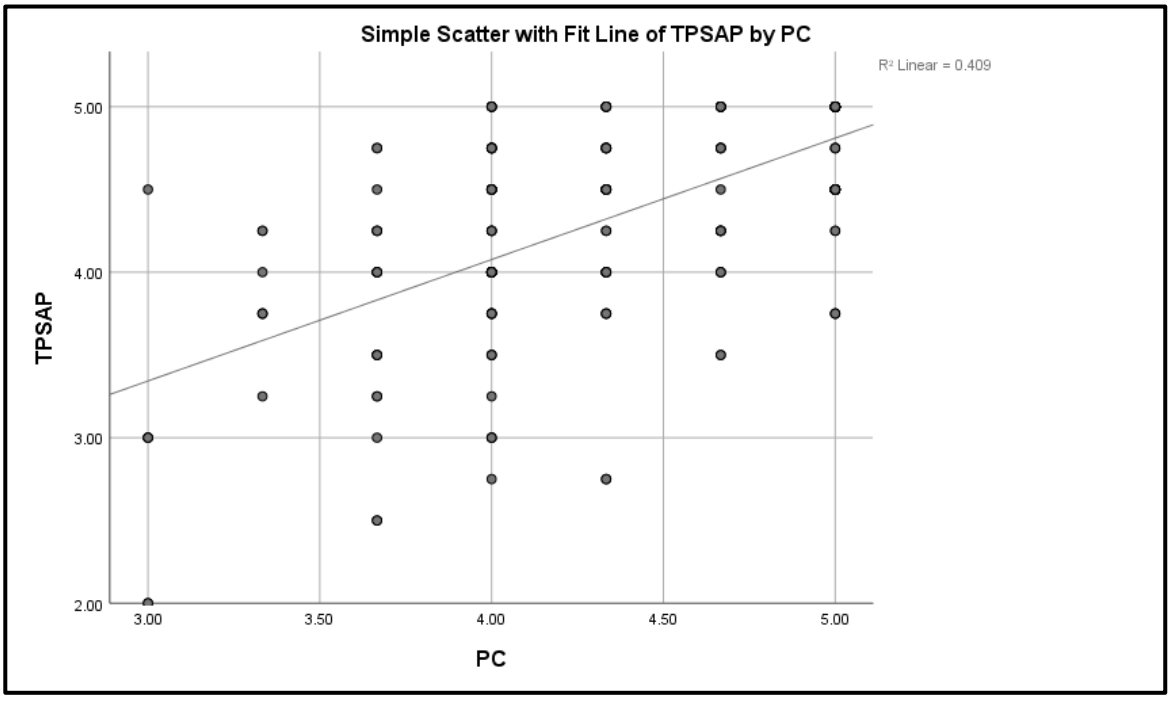

Figure 4: Linearity of Perceived Compatibility (PC)

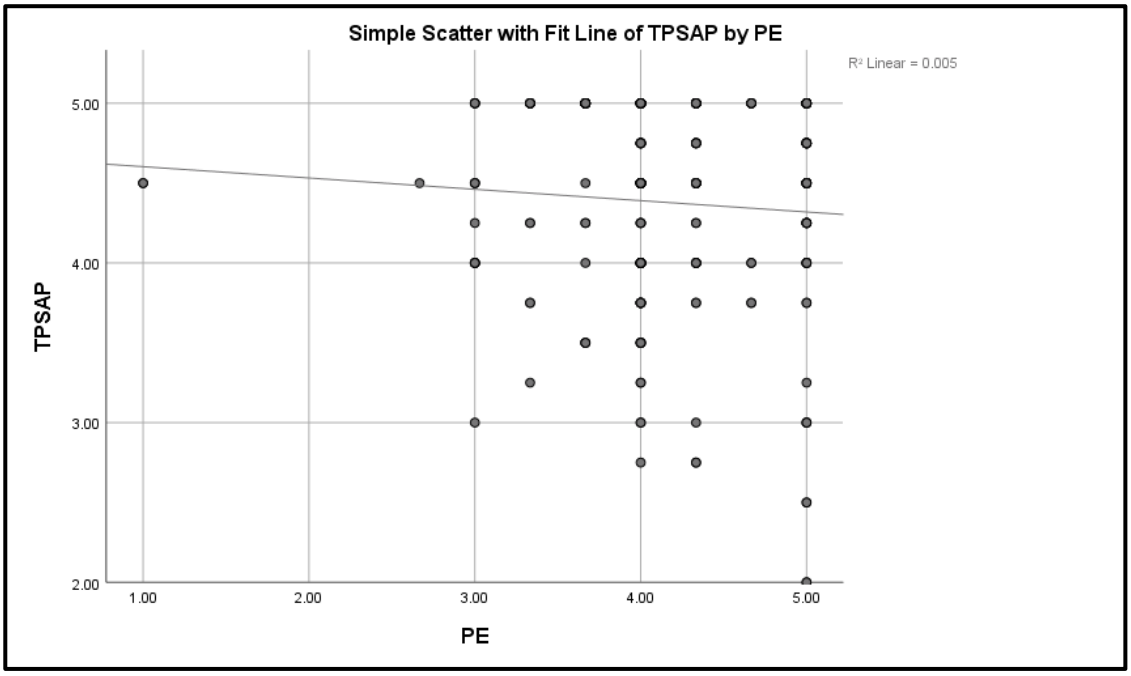

Figure 5: Linearity of Performance Expectancy (PE)

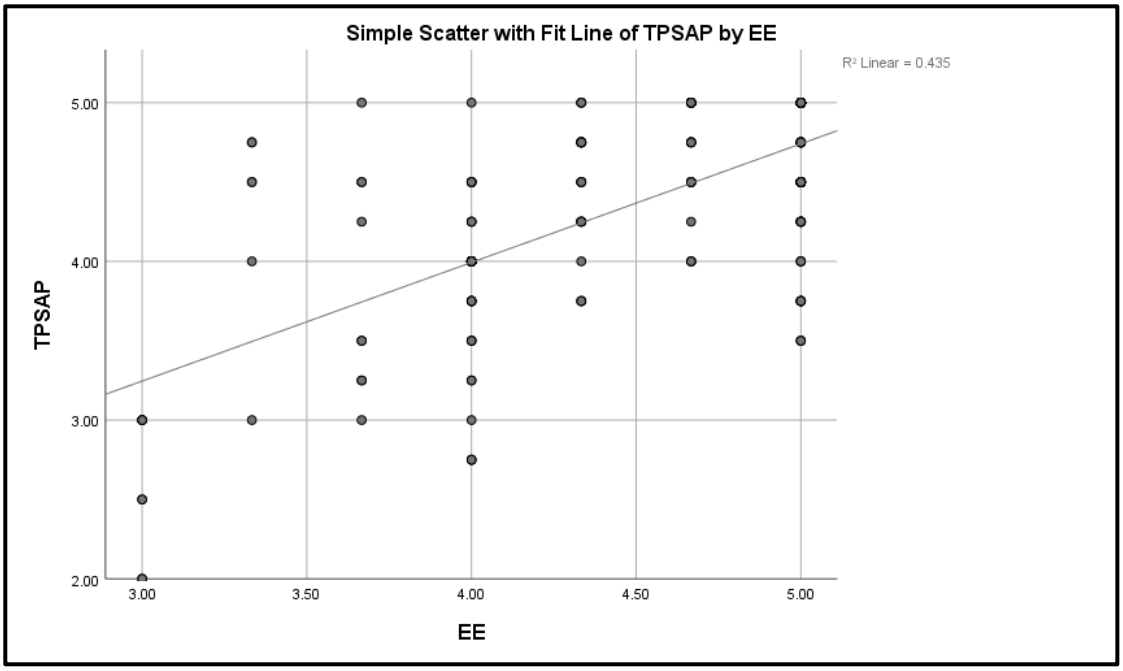

Figure 6: Linearity of Effort Expectancy (EE)

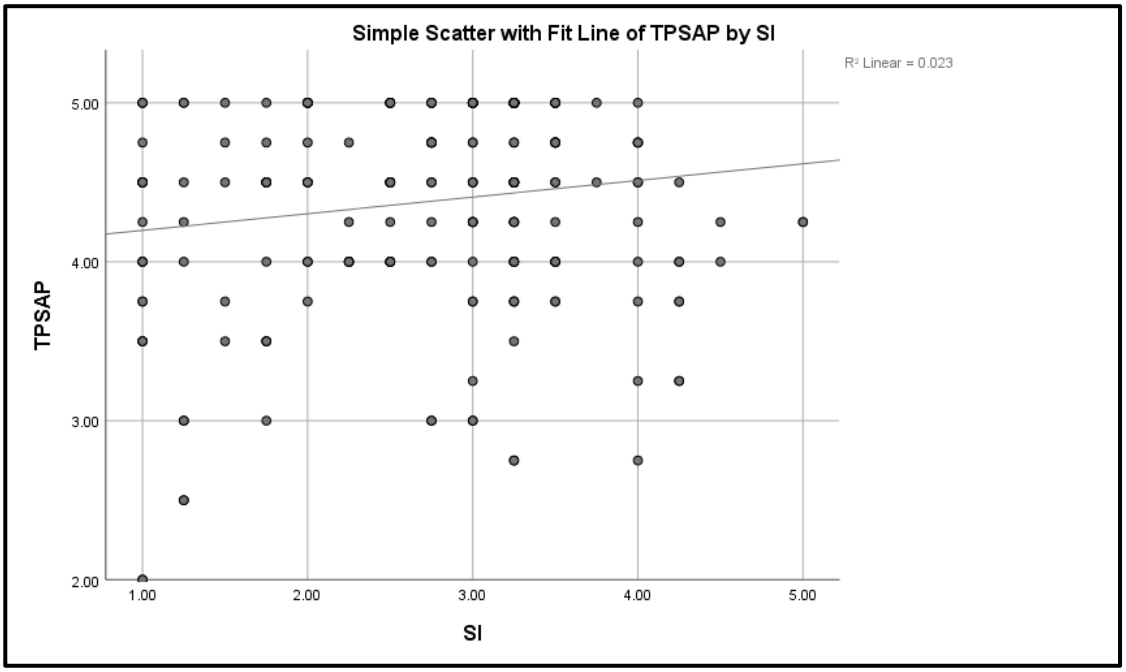

Figure 7: Linearity of Social Influence (SI)

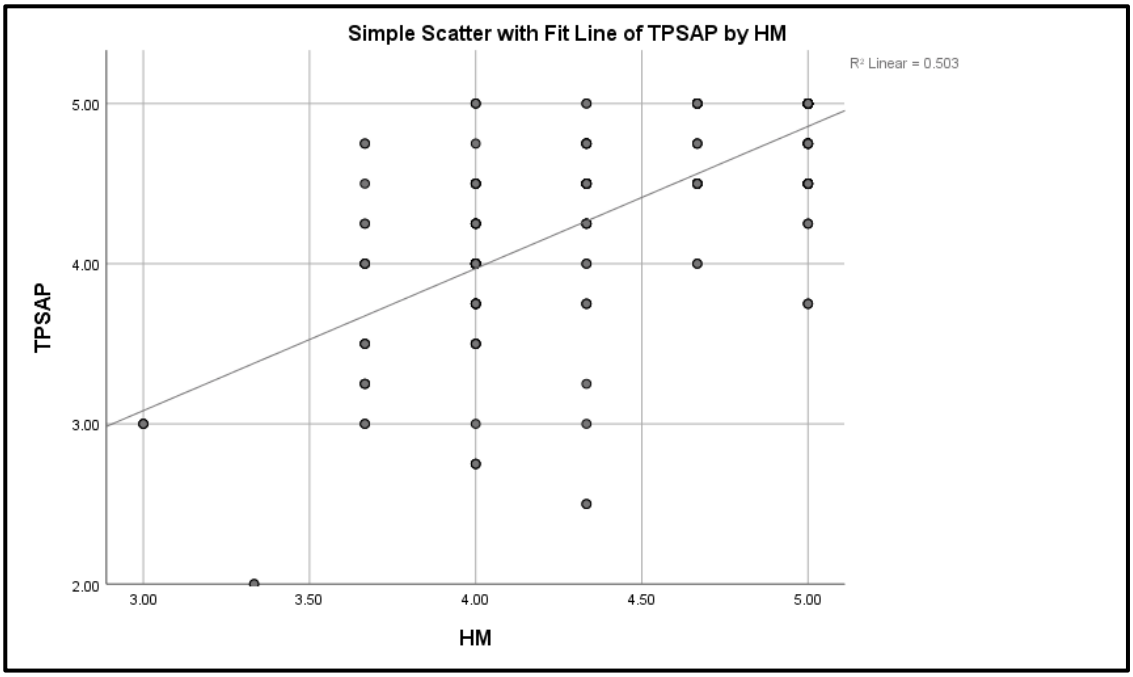

Figure 8: Linearity of Hedonic Motivation (HM)

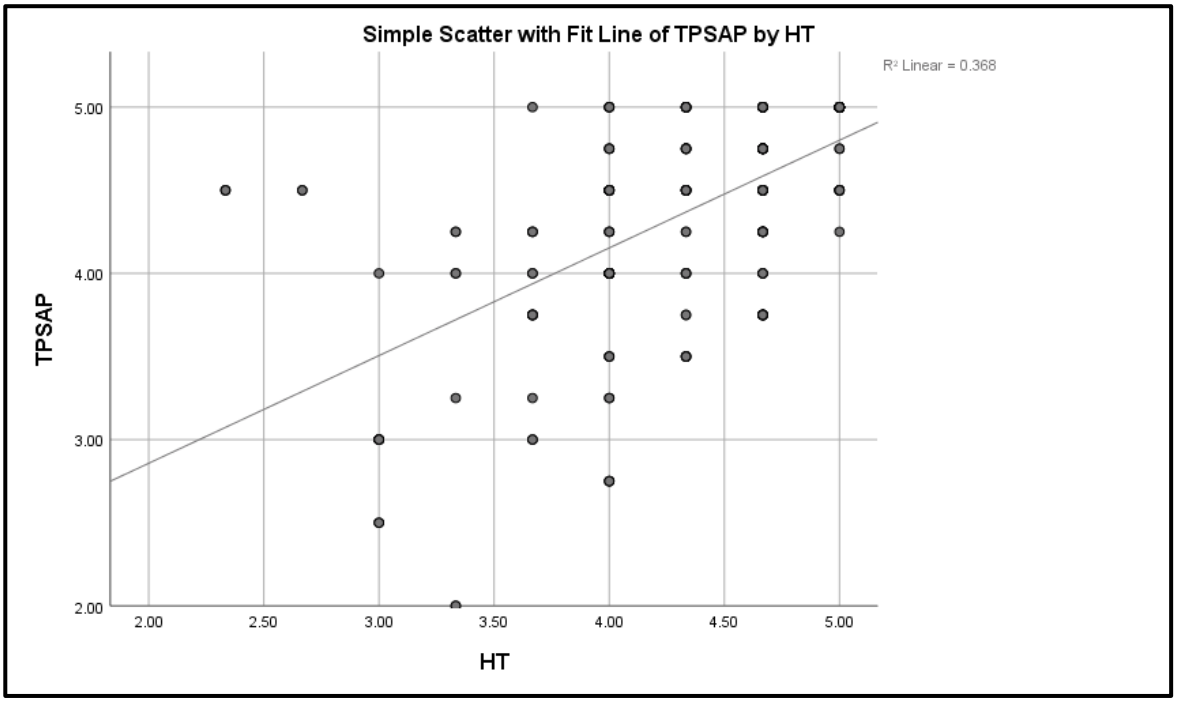

Figure 9: Linearity of Habit (HT)

- **Constant Variance-Homoscedasticity test for study 2**

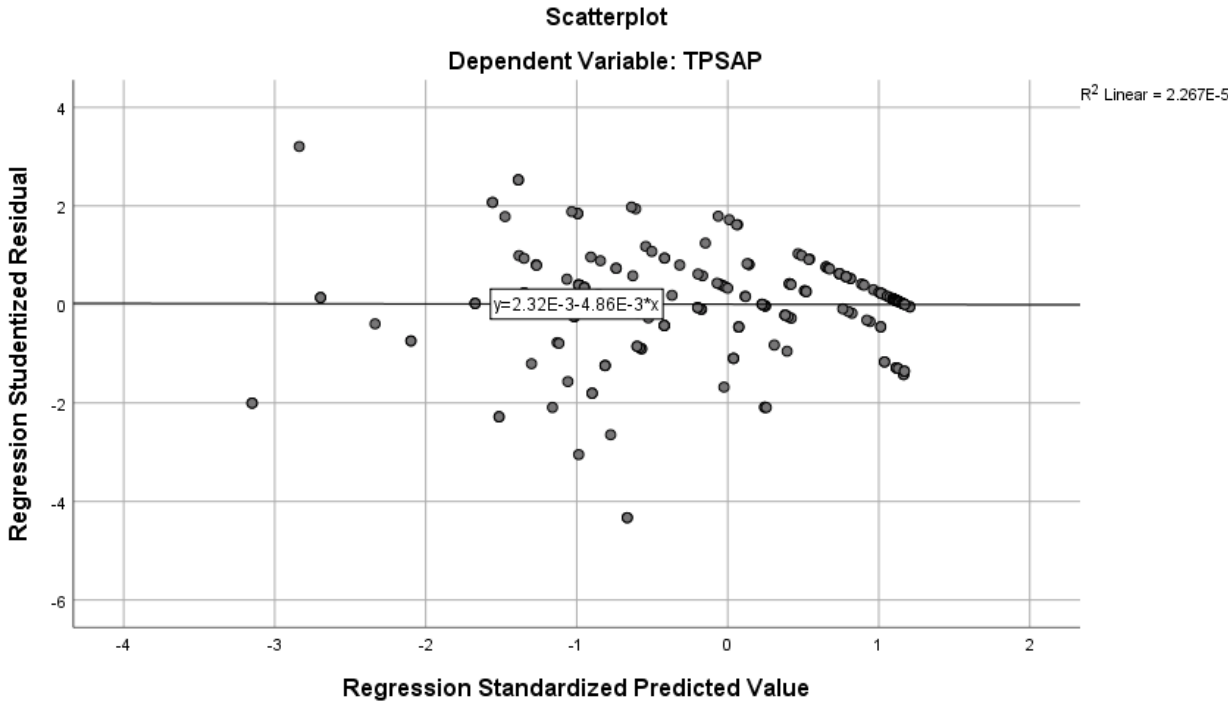

Figure 10: Homoscedasticity Test for Study 2

- **Measurement model section and Indicator Reliability (Outer Loadings) for study2**

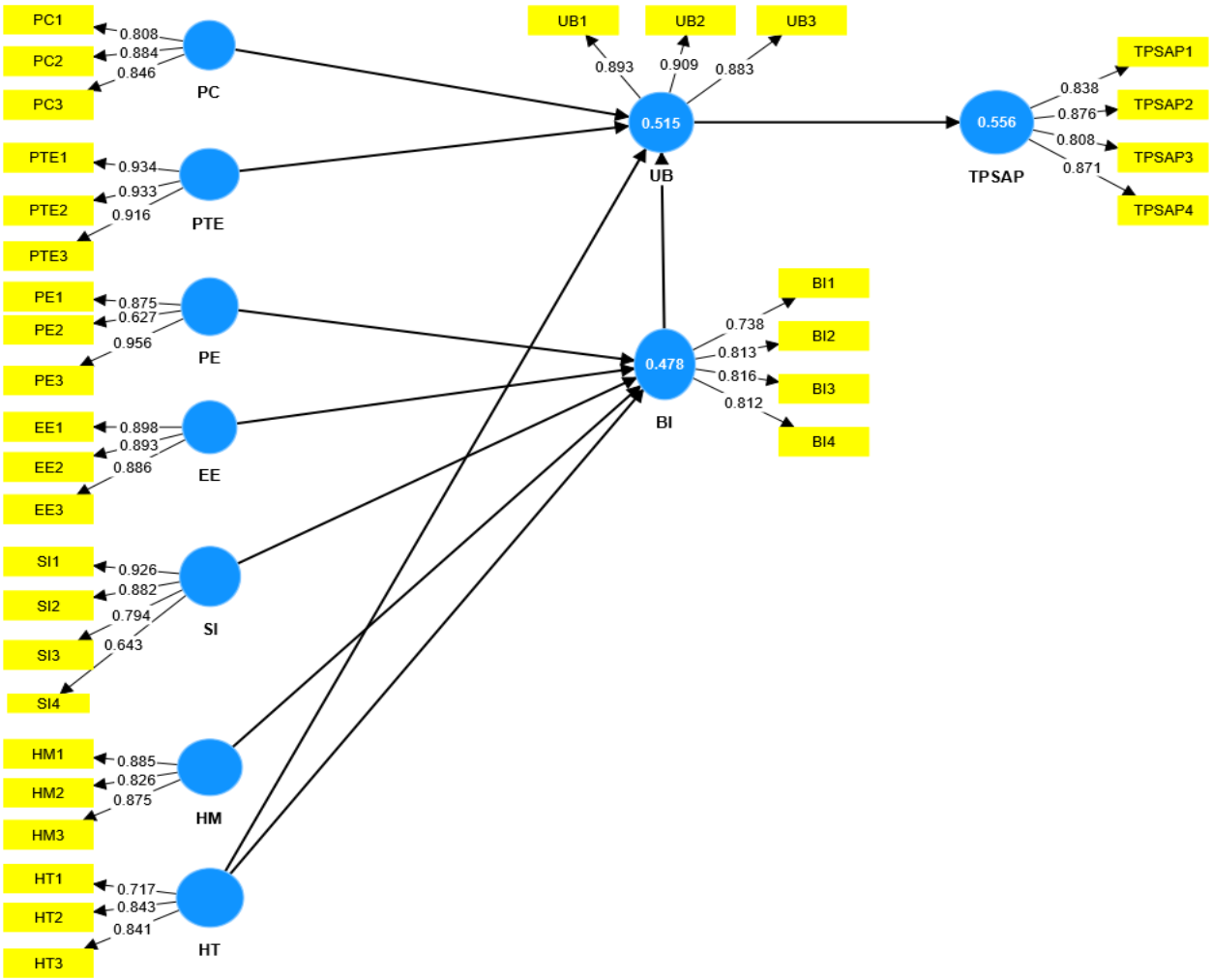

Figure 11: Model of PLS algorithm results (Measurement model) for study 2

➢ **Assessment of the structural model relationships for Study 2**

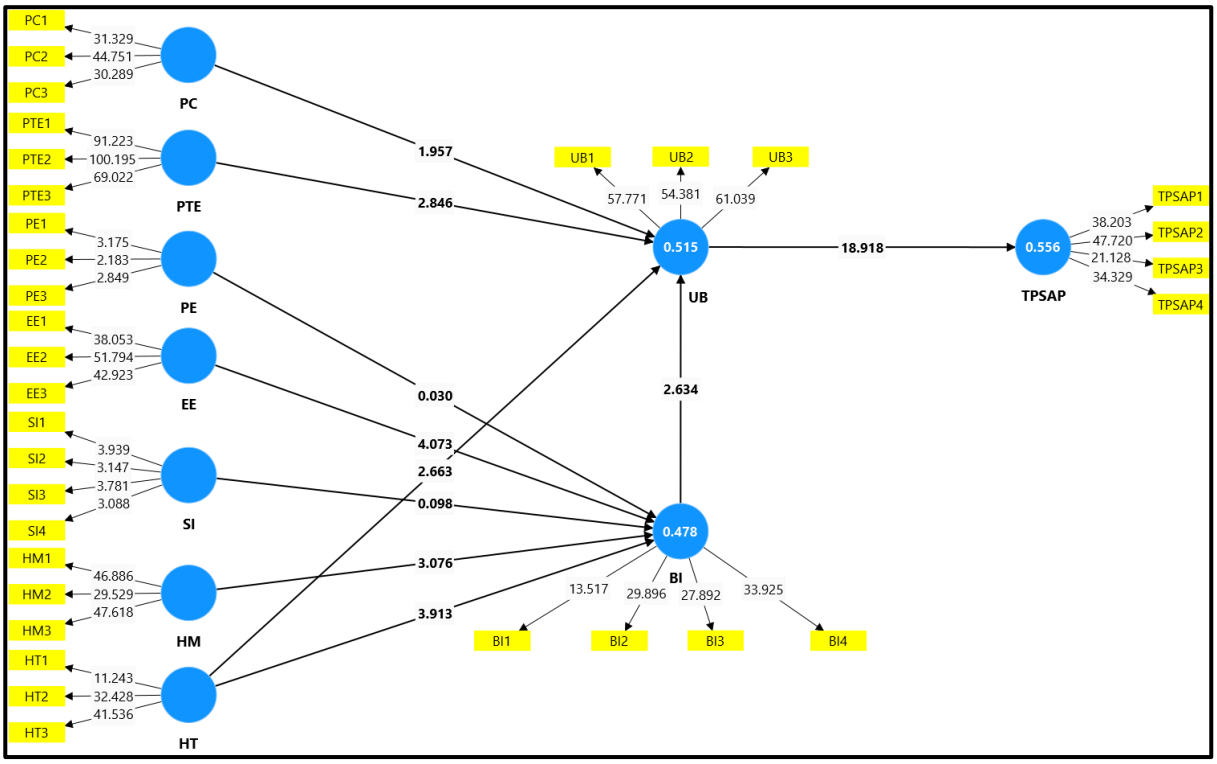

Figure 12: Structural Model (PLS bootstrapping) for study 2