

THE MODERATING ROLE OF SELF-EFFICACY IN THE EFFECT OF SOCIAL
MEDIA USE-BASED LEARNING ON STUDENTS' ACADEMIC
PERFORMANCE IN MALAYSIA

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ABSTRACT

Academic institutions in Malaysia have long prioritized academic performance as a measure of students' success in achieving learning objectives. Based on reports, shows that a significant gap between gross enrolment and graduation ratios among international students in Malaysia, indicating that academic performance remains below expectations. Between 2000 and 2019, the enrolment ratio for international students in Malaysian higher education increased to 37.37%, but the gross graduation ratio fluctuated substantially, reaching only 9.14% in 2019, with a consistent decline in the last five years. This discrepancy underscores the need for a closer examination of factors influencing academic performance. Recent studies have begun to explore the potential impact of social media use on learning performance. However, prior research has yielded inconclusive results, leaving a gap in the literature and prompting the need for empirical re-examination. Additionally, the factors influencing social media use for learning have not been fully explored, and the moderating role of self-efficacy in this context has been overlooked. This study aims to address these gaps by investigating the determinants and outcomes of social media-based learning among international students in Malaysia, considering the moderating effect of self-efficacy. The research proposes a structural model wherein factors from the Technology Acceptance Model (TAM) and Constructivism Theory positively influence social media use. It further hypothesizes that social media use directly impacts students' academic performance, with self-efficacy moderating this relationship. Data were collected from 384 international students in Malaysian universities using a survey-based approach to validate these hypotheses. The study employed the SmartPLS technique to test its proposed relationships. Results indicate that TAM factors (perceived usefulness and perceived enjoyment) and Constructivism Theory factors (collaborative learning, interaction for learning, and online sharing) significantly influence social media use for learning among international students in Malaysia. However, perceived ease of use did not have a significant direct effect. The study also found that social media use had a positive direct effect on international students' academic performance in Malaysia, with self-efficacy moderating this relationship. These findings hold implications for Malaysian higher education institutions, offering insights into strategies to enhance international students' academic performance through effective utilization of social media in the learning process.

ABSTRAK

Institusi akademik di Malaysia telah lama menitikberatkan prestasi akademik sebagai ukuran utama kejayaan pelajar dalam mencapai objektif pembelajaran mereka. Namun, laporan terkini menunjukkan jurang yang signifikan antara nisbah pendaftaran kasar dan nisbah kelulusan di kalangan pelajar antarabangsa di Malaysia, menunjukkan bahawa prestasi akademik masih di bawah jangkaan. Antara tahun 2000 - 2019, nisbah pendaftaran pelajar antarabangsa dalam pendidikan tinggi Malaysia meningkat kepada 37.37%, sementara nisbah kelulusan kasar menunjukkan fluktuasi yang ketara, akhirnya hanya mencapai 9.14% pada tahun 2019, dengan penurunan dalam lima tahun terakhir. Kesenjangan ini menegaskan terdapat keperluan dalam mengkaji faktor yang mempengaruhi prestasi akademik. Terdapat minat yang meningkat untuk mengkaji impak potensi penggunaan media sosial terhadap prestasi pembelajaran. Walau bagaimanapun, kajian terdahulu dalam bidang ini telah memberikan hasil yang tidak pasti, mencipta satu kesenjangan yang ketara dalam literatur sedia ada dan menekankan keperluan untuk penyelidikan semula secara berempirikal yang teliti. Selain itu, faktor-faktor yang kompleks yang mempengaruhi penggunaan media sosial untuk pembelajaran belum dikaji sepenuhnya, dan peranan pengehad yang penting iaitu efikasi sendiri dalam konteks ini telah diabaikan secara tidak adil. Kajian ini direka untuk mengisi kesenjangan ini dengan menjalankan penyelidikan komprehensif mengenai penentu dan hasil pembelajaran berasaskan media sosial di kalangan pelajar antarabangsa di Malaysia, mempertimbangkan pengaruh moderating yang penting oleh efikasi sendiri. Penyelidikan ini menunjukkan model struktur yang menganggap faktor-faktor yang berasal daripada Model Penerimaan Teknologi (TAM) dan Teori Konstruktivisme memberikan pengaruh positif terhadap penggunaan media sosial. Ia juga menunjukkan bahawa penggunaan media sosial mempengaruhi prestasi akademik pelajar, dengan efikasi sendiri memainkan peranan penting dalam menghadkan hubungan ini. Untuk mengesahkan hipotesis ini, data telah dikumpul daripada 384 pelajar antarabangsa yang belajar di universiti di Malaysia melalui pendekatan tinjauan berdasarkan soal selidik. Kajian ini menggunakan teknik SmartPLS secara teliti untuk menguji hubungan yang dicadangkan. Hasil kajian menunjukkan bahawa faktor-faktor TAM, khususnya persepsi kegunaan dan persepsi keseronokan, bersama-sama dengan faktor-faktor Teori Konstruktivisme, termasuk pembelajaran kolaboratif, interaksi untuk pembelajaran, dan perkongsian dalam talian, memberikan pengaruh yang signifikan terhadap penggunaan media sosial untuk pembelajaran di kalangan pelajar antarabangsa di Malaysia. Hasil kajian ini membawa implikasi yang penting bagi institusi pengajian tinggi Malaysia, tentang strategi yang efektif untuk meningkatkan prestasi akademik pelajar antarabangsa melalui penggunaan media sosial secara bijak dalam proses pembelajaran.

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PT TUNKU AMINAH
PERPUSTAKAAN TUNKU AMINAH

LIST OF ABBREVIATIONS

SMU	Social Media Use
SNSs	Social network sites
TAM	Technology Acceptance Model
ETAM	Extended Technology Acceptance Model
CT	Constructivism Theory
PEOU	Perceived Ease of Use
PU	Perceive usefulness
PE	Perceive Enjoyment
CL	Collaborative Learning
OS	Online Sharing
SE	Self-Efficacy
AP	Academic Performance
SAP	Student's Academic Performance
SEM	Structural equation modelling
PLS	Partial least squares
EFA	Exploratory factor analysis
CFA	Confirmatory factor analysis

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CHAPTER 1

INTRODUCTION

1.1 Research Background

Academic performance is defined as "a personal outcome based on individual effort stems from the general belief that success in academic learning depends on competition, self-efficacy and individual's personal achievement" (Khaola *et al.*, 2022, p. 2). Academic performance is measured by how well students accomplish learning objectives such as knowledge acquisition and skill development (Alamriet *et al.*, 2020). According to previous studies, students' academic performance is a function of cooperative learning, academic skill, and students' attitudes and characteristics (Alaslani & Alandejani, 2020). Accordingly, academic performance can be viewed outcome of education process, which is a sign that a student, learner, teacher, or institution has succeeded in achieving their educational goals (Alalwan *et al.*, 2019). Students that like the online environment perform better than while learning through traditional methods (Ghosh *et al.*, 2022). ICT has significantly altered the educational system during the COVID-19 pandemic by providing students with an interactive medium that improves their academic performance (Sarfrazet *et al.*, 2022). Accordingly, current studies have more tendency to connect student academic performance with social media use.

Social media is defined as "services provided through the Internet to enable users to communicate with others, exchange information and create content" (Alshwiah & Alaulamie, 2022, p. 2). Social media thus, can be viewed as an act of engagement, and the tool or platform used for online engagement with mass audience. Students can use these social media apps for social communication with friends and family members, as well as for academic purposes (Alshwiah & Alaulamie, 2022). In

the context of education social media use as the students' perceptions with respect to the use of social media for learning purposes (Al-Adwan & Albelbisi, 2020). In fact, social media features give students special engagement possibilities they can benefit from such as commenting, polling, and sharing content (Hosenet *et al.*, 2021). Social media platforms allow students to interact with one another, build connections, express themselves, and look up information (Sarwaret *et al.*, 2018). Recently, the use of various social media platforms has grown as a result of COVID-19, the use of social media for learning, which reached a crescendo as a result of the mandatory pedagogical adjustments required to prevent the curriculum discontinue over the world (Dzogbenuket *et al.*, 2022). Current literature provides clear evidence that social media-based learning processes facilitate active learning and enhance students' academic performance (Ghosh *et al.*, 2022).

In this context, its mentioned that social media success in improve learning process is dependent on the extent to which student accept to use such technology (Alshwiah & Alaulamie, 2022). However, the factors that influence social media use for learning have not been fully explored (Ghosh *et al.*, 2022). Technology acceptance factors (TAM) and constructivism theory factors have been considered as important determinants for social media use for learning. In the context of TAM, social media either uses utilitarian or hedonistic technology based on related TAM foundations. Literature like Al-Rahmi *et al.*, (2018), which reveals favourable influences of perceived enjoyment and social media usage behaviour, confirms the hedonic nature of social media. other scholars also show how utilitarian nature of social media and enjoyment feature provide a favourable influence to use social media (Al-Adwan & Albelbisi, 2020; Al-Qaysiet *et al.*, 2021). While in the context of constructivism theory factors, students' collaboration, interaction, and sharing on social media are presented as important drivers in order to comprehend how they use social media applications (Alamriet *et al.*, 2020; Alaslani & Alandejani, 2020). Constructivism theory emphasises the removal of geographical obstacles and encourages social interaction and collaboration through computer-mediated learning. Building social communities of practise using the collaborative learning environment features of social media platforms is therefore important to provide a useful collaborative learning experience (Arshad & Akram, 2018). The central aspect of constructive theory is that learning is an active and constructive process; according to this logic, students use social media to build knowledge through interactive learning; hence, this learning will draw on

constructivism to promote a learning performance (Alalwan *et al.*, 2019). Previous study has shown that constructivism theory can be utilised effectively in conjunction with TAM to explain how social media use affects students' academic performance in higher education (Alamriet *al.*, 2020).

In the same vein, it's argued that social media usage is dependent on students' self-efficacy to surf the Internet and use various social media tools (Dzogbenuket *al.*, 2020). In higher education, students' belief in their capabilities to use social media has been associated with their academic achievement (Hitcheset *al.*, 2022). This is because, self-efficacy can reduce the academic stress in social media use (students reported lower levels of stress in relation to learning tasks), thus enhance students' academic performance (Hitcheset *al.*, 2022). Self-efficacy is reflected in students' ability to achieve their identified goals, facing difficult tasks and accomplish them, obtain important outcomes for them, focus on their endeavor they set in their mind (Cabir Hakyemez & Mardikyan, 2021). Highly self-efficacy students are more able to achieve their identified goals, facing difficult tasks and accomplish them, obtain important outcomes for them, focus on their endeavor they set in their mind, all these can enhance students' academic performance (Cabir Hakyemez & Mardikyan, 2021). Further highly self-efficacy students are successful in overcome challenges, perform effectively on many different learning tasks, do most learning tasks very well even when things are tough, thus strengthen academic performance (Alshwiah & Alaulamie, 2022). Accordingly, Self-efficacy has a significant impact on how much effort students put out to integrate their social and academic lives in order to achieve their learning objectives (Hitcheset *al.*, 2022).

1.2 Problem Statement

Academic performance has always been the focus of academic institutions in Malaysia to measure how well students accomplish learning objectives such as knowledge acquisition and skill development. The Knoema (2022a) and Knoema (2022b) reports, issued by the World Bank, reveal that the enrolment ratio in higher education in Malaysia has increased between 2000 and 2019. However, Malaysia's gross graduation ratio for tertiary education fluctuated substantially in recent years. It tended to decrease through the 2005-2019 period, ending at 9.14 % in 2019. More specifically, the gross

graduation ratio has suffered a continuous decrease in the last five years between 2015-2019. These statistics are supported by the results of (Hosenet *et al.*, 2021), who found that 15.72% of international students in Malaysia held CGPA below 2.5, which reflects the academic performance of international students. Current reports show a clear gap between the gross enrolment and graduation ratios in Malaysia in the past years, which indicates that the academic performance of international students in Malaysia is still below expectations. Current studies tend to connect student academic performance with social media use.

Social media features give students special engagement possibilities they can benefit from such as commenting, polling, and sharing content (Hosenet *et al.*, 2021). Social media platforms allow students to interact with one another, build connections, express themselves, and look up information (Sarwaret *et al.*, 2018). Recently, the use of various social media platforms has grown as a result of their importance for learning in students' daily lives (Al-Rahmi *et al.*, 2018). More specifically, with the introduction of COVID-19, the use of social media for learning reached a crescendo as a result of the mandatory pedagogical adjustments required to prevent curriculum discontinuity over the world (Dzogbenukuet *et al.*, 2022; Trivediet *et al.*, 2022). As a result, current studies argued that social media use is an important driver of student academic performance. This is because, social media-based learning processes facilitate active learning and enhance students' academic performance (Arshad & Akram, 2018; Ghosh *et al.*, 2022).

Literature has recognized and provided compelling arguments that TAM factors and constructivism theory factors are important determinants for social media use for learning, which is an important driver of students' academic performance. It's argued that TAM factors: (i) Perceived usefulness; (ii) Perceived ease of use; (iii) perceived enjoyment; and constructivism theory factors (iv) collaborative learning; (v) interaction for learning; and (vi) online sharing have direct significant positive influence on social media use. Further, social media use has direct significant positive influence on students' academic performance, and this influence may reinforce "strengthen" by the moderating role of student self-efficacy. However, the current literature has several gaps. These gaps are that the theoretical foundation for an integrative perspective for TAM factors, constructivism theory factors, social media use, and self-efficacy as determinants of students' academic performance is limited; more specifically, there is a lack of studies that investigate the relationship between

TAM factors, constructivism theory factors, and social media use, and between social media use and students' academic performance, considering the moderating role of self-efficacy in such relationship. In the following, this study will elaborate these gaps.

The first issue is: academics have recently become more aware of the exceptional potential of social media to improve learning performance (Sánchez *et al.*, 2019). With the spread of COVID-19, this awareness has increased as a result of the necessary pedagogical revisions needed to prevent the curricula from being discontinued globally (Dzogbenukuet *et al.*, 2022). It's argued that social media use enables students to enhance their access to knowledge, learning opportunities, confidence, relationships with others, and communication (Alshwiah & Alaulamie, 2022), enhance group discussions (Al-Adwan & Albelbisi, 2020), and interact with their classmates and teachers virtually from any place (Hameed *et al.*, 2022). Social media thus lays the groundwork for increased student engagement in online learning, converting inactive learners into active ones who are more enthusiastic about learning, which is crucial to improving students' academic performance (Sánchez *et al.*, 2019). Thus, social media-based learning processes facilitate active learning and enhance students' academic performance (Ghosh *et al.*, 2022).

Overall, the existing literature suggests that the effects of social media on academic performance are equivocal (Khaola *et al.*, 2022), debatable (Bhandarkar *et al.*, 2021), and present contradictory results (Table 2.2). Practical literature is not clear on whether social media improves or inhibits students' academic performance (Boahene *et al.*, 2019). In this context, ambivalence in results has been reported in the relationship between social media use and student academic performance. For example, some studies have found a negative relationship between social media use and academic performance (e.g., Alshwiah & Alaulamie, 2022; Bhandarkar *et al.*, 2021; Boahene *et al.*, 2019). Meanwhile, a significant number of studies have reported that the use of social media had a significant positive influence on students' academic performance (e.g., Al-Adwan & Albelbisi, 2020; Alamri *et al.*, 2020; Bhat & Gupta, 2019; Ghosh *et al.*, 2022; Gohet *et al.*, 2019; Khaola *et al.*, 2022). Still more intriguing, other studies have reported that the use of social media had no influence on students' academic performance (e.g., El-Badawy & Hashem, 2015; Hameed *et al.*, 2022). Such ambivalence has presented a gap in the literature. In recognition of this gap in the literature, researchers have recommended that the inconclusive evidence in extant

research indicates that empirical re-examination of conflicting findings is necessary (Hosenet *et al.*, 2021).

Furthermore, the impact of social media on academic performance still a hugely escalating issue, where academicians are currently dealing with new pedagogical issues as a result of the rise in social media use (Hameed *et al.*, 2022). Thus, more studies are needed to validate the importance of distance learning through social media as a part of the blended learning to enhance students' academic performance (Ghosh *et al.*, 2022; Hameed *et al.*, 2022). This is important as social media use in education is likely to proliferate exponentially because of the accelerated progress in technology adoption and the immediate shift to online learning worldwide in response to the unprecedented COVID-19 pandemic, thus there is a need to chart its trajectory in the long run (Hosen *et al.*, 2021). Currently, studies on social media generally failed to capture the impact of social media usage on students' academic achievement (Khaola *et al.*, 2022). Social media acts as a dynamic tool to hasten the development of learning environments through encouraging cooperation and communication among students which enhance positively their performance, such issue need empirical validation (Sarwar *et al.*, 2018).

The second issue is: The COVID-19 pandemic has had a negative impact on face-to-face interactive learning methods and the dissemination of knowledge (Ghosh *et al.*, 2022). In response to this situation, social media has significantly altered the educational system during the COVID-19 pandemic by providing students with an interactive medium that improves their academic performance (Sarfraz *et al.*, 2022). literature provided evidence that students that like the online environment perform better than while learning through traditional methods (Ghosh *et al.*, 2022). Meanwhile, its mentioned that social media success in improve learning process is dependent on the extent to which student accept to use such technology (Hameed *et al.*, 2022). However, the factors that influence social media use for learning have not been fully explored (Ghosh *et al.*, 2022). More specifically, little studies have explained which factors affect social media use for education (Alaslani & Alandejani, 2020). In this context, TAM factors and constructivism theory factors have been considered as important determinants for social media use for learning. It's argued that TAM factors (e.g., perceived usefulness, perceived ease of use, and perceived enjoyment); and constructivism theory factors (e.g., collaborative learning, interaction for learning, and online sharing) have direct significant positive influence on social

media use (Al-Adwan & Albelbisi, 2020; Alamri *et al.*, 2020; Arshad & Akram, 2018). However, few studies examined TAM factors and constructivism theory factors as antecedents of social media usage (Al-Qaysi *et al.*, 2021; Hameed *et al.*, 2022). Future studies are encouraged to integrate TAM factors with constructivism theory factors to examine the impact of social media use on student academic performance (Al-Qaysi *et al.*, 2021; Alamri *et al.*, 2020). Such integrated model could improve our comprehension of how learning is a constructive and active method for education through the use of social media to improve students' performance (Alalwan *et al.*, 2019). This framework would also help researchers understand how social media can enhance student learning activities and facilitate group discussions (Al-Rahmi *et al.*, 2018; Al-Rahmi & Zeki, 2017), as well as how it can be used as a communication tool to supplement e-learning methods in higher education (Goh *et al.*, 2019).

The third issue is: in higher education, students' belief in their capabilities to use social media has been associated with their academic achievement (Hitches *et al.*, 2022). This is because, self-efficacy can reduce the academic stress in social media use (students reported lower levels of stress in relation to learning tasks), thus enhance students' academic performance (Hitches *et al.*, 2022). Highly self-efficacy students are more able to achieve their identified goals, facing difficult tasks and accomplish them, obtain important outcomes for them, focus on their endeavor they set in their mind, all these can enhance students' academic performance (Cabir Hakyemez & Mardikyan, 2021). Further highly self-efficacy students are successful in overcome challenges, perform effectively on many different learning tasks, do most learning tasks very well even when things are tough, thus strengthen academic performance (Alshwiah & Alaulamie, 2022). In this context, the study of Al Ahmad and Obeidallah (2019) has approved that the self-efficacy as a mediator has additionally improved the academic performance of learners. Further, the results of Slobodnikova and Randolph-Seng (2021) found that as self-efficacy in use of social media increases, academic performance improves, so they suggested that self-efficacy can work as a moderator to strengthen the relationship between social media use and academic performance in online learning context. However, the moderating mechanism between social media use and students' academic performance has been overlooked in the current literature (Dzogbenuku *et al.*, 2022; Hameed *et al.*, 2022). Thus, future research may examine whether the social media self-efficacy can upgrade "strengthen" the value of social media use for students' academic performance (Hitches *et al.*, 2022; Khanam, 2020;

Khaola *et al.*, 2022; Malik *et al.*, 2020). More specifically, future studies should add self-efficacy as a moderating variable that may strengthen or reduce the relationship between actual social media use for learning and learning performance grounding on TAM and constructivism theory factors (Al-Qaysi *et al.*, 2021).

The fourth issue is: the majority of studies on social media-based education has been done in developed countries (Ghosh *et al.*, 2022) such as Australia, Canada, Germany, the United Kingdom, and the United States (Hosen *et al.*, 2021). Additional research is required to evaluate the significance of blended learning via social media to improve students' academic performance in developing countries (Dzogbenuku *et al.*, 2020; Ghosh *et al.*, 2022). Although social media use is widespread in Malaysia as a developing country, but research on how it affects academic performance in higher education is still in its early stages (Hosen *et al.*, 2021).

In an attempt to fill these research gaps, this study proposes a conceptual model by which TAM factors (e.g., perceived usefulness, perceived ease of use, and perceived enjoyment); and constructivism theory factors (e.g., collaborative learning, interaction for learning, and online sharing) have direct significant positive influence on social media use. Further, social media use has a direct significant positive influence on students' academic performance. Moreover, self-efficacy in using social media moderates "strengthen" the relationship between social media use for learning and students' academic performance. The primary objective of this study is to develop an integrated model of factors effect on international students' academic performance while using social media. This is because these concepts lack of studying in an integrated manner, especially, in the context of developing countries.

1.3 Research Questions (RQs)

In order to achieve the study objectives, this research seeks to provide answers to the following questions:

RQ1. Do the TAM model's factors (perceived usefulness, perceived ease of use, and perceives enjoyment) and constructivism theory's factors (collaborative learning, interaction for learning, and online sharing) have significant relationships with social media use for learning among international student in Malaysia?

RQ2. Does social media use has a significant relationship with international student's academic performance in Malaysia?

RQ3. Does self-efficacy moderate the relationship between social media use and international students' academic performance in Malaysia?

RQ4. What is the integrated model of factors effect on social media use-based learning and the subsequent international students' academic performance in Malaysia?

The answers to RQ1, RQ2, RQ3 and RQ4 are used to achieve the first, second, third and fourth research objectives. The first research question RQ1 be used to achieve the first objective. The second research question RQ2 be used to achieve the second objective. The third research question RQ3 be used to achieve the third objective. The fourth research question RQ4 be used to achieve the fourth objective. This study uses literature review, hypotheses development and questionnaire survey and data analysis to answer RQ1, RQ2, RQ3 and RQ4.

1.4 Research Objectives (ROs)

Based on the problem statements discussed above, this study seeks to achieve the following objectives, which guides the purpose and process of this study:

RO1. To investigate the influence of TAM model's factors (perceived usefulness, perceived ease of use, and perceived enjoyment) and constructivism theory's factors (collaborative learning, interaction for learning, and online sharing) on social media use-based learning among international student in Malaysia.

RO2. To explore the relationship between social media use and international student's academic performance in Malaysia.

RO3. To examine the moderating role of self-efficacy between social media use and international students' academic performance in Malaysia.

RO4. To develop and validate an integrated model of factors effect on social media use-based learning and the subsequent international students' academic performance in Malaysia.

1.5 Significance of the research

This study seeks to address the above-mentioned gaps identified in Section 1.2. This research mainly contributes to the detailed understanding of the influence of TAM model's factors and constructivism theory's factors on social media use-based learning and the subsequent students' academic performance between international student in Malaysia. Further, the moderating role of self-efficacy between social media use and international students' academic performance in Malaysia. The significance of this research can be outlined as follow:

Determinants of Social media use: the identification of social media use determinants is important to provide empirical evidence on the expectations of past studies, TAM model and the constructivism theory that such factors are important driver for social media use. Currently, there is a lack of empirical evident relating to the factors that influence social media use for learning have not been fully explored (Ghosh *et al.*, 2022). More specifically, little studies have explained which factors affect social media use for learning (Alaslani & Alandejani, 2020). Therefore, this research contributes to the literature and to the ongoing generalizability of some of the key factors in theoretical underpinning of TAM and constructivism theory for the determinants of social media use for learning.

Verifying of the relationship between TAM, Constructivism Theory and Social Media Use: little is known about the contributions of TAM factors and constructivism theory factors as antecedents of social media usage (Al-Qaysi *et al.*, 2021; Hameed *et al.*, 2022). Future studies are encouraged to integrate TAM factors with constructivism theory factors to examine the impact of social media use on student academic performance (Al-Qaysi *et al.*, 2021; Alamri *et al.*, 2020). This study adds to the literature by taking a more comprehensive look at the determinants of social media use. This study thus adds to the literature by providing additional empirical evidence on the direct impact of TAM factors and constructivism theory factors on social media use in the context of Malaysian higher education sector.

Social media use and academic Performance: Ambivalence in results has been reported in the relationship between social media use and student academic performance. Such ambivalence has presented a gap in the literature. Scholars have

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