

The Effect of Social Media Perceptions on Student's Intention to Use Facebook in Education and its Impact on Students' Engagement, Academic Performance, and Satisfaction: A Case Study on Students of Arab Academy for Science, Technology and Maritime Transport¹

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ABSTRACT

This study purposes investigate the impact of performance expectancy (perceived usefulness and perceived flexibility), effort (ease of use and ease of learning), self-efficacy (social media efficacy and attitude), communication functionality (interaction, collaboration, and sharing), and motivations (cognitive needs, affective needs, personal integrative needs, integrative social needs, and tension release needs) on student's intention to use Facebook as an educational tool. In addition, it examines the relationship between intention to use Facebook and actual usage and investigates the influence of actual usage on student engagement, academic performance, and satisfaction. This study targets higher education students at Arab Academy for Science, Technology and Maritime Transport (AASTMT) a private university in Egypt, where data is collected through a questionnaire. The collected data is analyzed using correlation and structural equation modeling. The results proved a significant relationship between performance expectancy and intention to use. In addition, it proved a partial effect Self-efficacy, communication, and motivation on intention to use. However, there is no proven relation between effort and intention to use.

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The results support the relationship between the intention to use social media in education and actual usage. It also fully supports the influence of actual usage on student engagement, academic performance, and student satisfaction.

Keywords: *social media, education, uses and gratifications theory, social media acceptance model, students' engagement, academic performance, student satisfaction.*

I. INTRODUCTION

During the last few years, social media users have significantly increased worldwide. In addition, this increment is expected to increase over time passes (Benedek, 2018). People need social media to satisfy different purposes such as education (Greenhow and Lewin, 2016), commerce (Chen, Lin and Yuan, 2017), healthcare (Antheunis, Tates and Nieboer, 2013), etc. Moreover, the intention to understand the impact of using social media in the long term has increased, especially in the educational system (Mourtada and Salem, 2012). This increment is social media-wide emergence (Al-Qaysi, Mohamad-Nordin and Al-Emran, 2020). Sobaih, Moustafa, Ghandforoush and Khan (2016) suggested that social media usage as a communication platform for teaching and learning in higher education has great potential. Social media sites have established new technological means for students to interact with others (Mostafa and Mostapha, 2020).

It is noticed that social media acceptance in the education field has been studied using various theories and models such as the theory developed by (Katz, Blumler and Gurevitch, 1973), which is named Uses and Gratifications Theory, Theory of Reasoned Action (Fishbein and Ajzen, 1975), Technology Acceptance Model (Davis, 1989), Unified Theory of Acceptance and Use of Technology (Venkatesh, Morris, Davis and Davis, 2003), E-Learning Acceptance Model (Umrani-Khan and Iyer, 2009) and Social Media Acceptance Model (Balakrishnan and Gan, 2016).

Depending on those theories and models, the variables of the study are identified, which are; performance expectancy (perceived flexibility and perceived usefulness); communication functionality (sharing, collaboration, and interaction), effort (perceived ease of learning and perceived ease of use), self (social media efficacy and attitude), and intention to use social media for learning were adopted from the Social Media Acceptance Model. Moreover, motivation dimensions are: cognitive needs, affective needs, personal integrative needs, social

integrative, and tension release needs are adopted from the Uses and Gratifications Theory. Additionally, the actual usage is adopted from E-Learning Acceptance Model. Finally, the researcher tried to identify the actual usage of students to know its effect on their engagement, performance, and satisfaction, where this variable exists in the e-learning acceptance model.

This study purposes to investigate the intention to adopt social media (Facebook) as a learning tool among higher education students in by examining the effect of performance expectancy (perceived usefulness and perceived flexibility), effort (ease of use and ease of learning), self-efficacy (social media efficacy and attitude), communication functionality (interaction, collaboration, and sharing), and motivations (cognitive needs, affective needs, personal integrative needs, integrative social needs, and tension release needs) on student's intention to use Facebook as an educational tool. It also investigates the relationship between intention to use Facebook and actual usage and investigates the influence of actual usage on student engagement, academic performance, and satisfaction.

Facebook can be discussed as an example of social media platform. Facebook is the first social application that succeeded in reaching one billion users per month by the 2017 first quarter. Active internet users reached 48 million in Egypt, as 30% use social media. Furthermore, the users of the Facebook application have reached approximately 27 million users (Halaweh, Elbahi, Kamel, Kabha and Yousef, 2020).

This research provides academic importance in narrowing the gaps found in the literature regarding the factors studied as determinants of intention to use social media in education by developing a framework that includes different types of previously independently studied variables. Moreover, it investigates the relative importance of each studied factor concerning the intention to use social media in education. On the other hand, it has practical importance in helping the educators to improve their lecturing and activities by identifying what is essential to consider while managing students inside and outside classrooms. It also can help higher education institutions to trigger student motivations to adopt, accept, and use social media in the educational process. Additionally, it is expected to help the decision-makers of the higher education institutions in

Egypt take initiatives for adopting social media in higher education and design the appropriate infrastructure as a critical step toward using such technology.

This paper divides into eight sections; the first section represents this paper's introduction. The second section discusses the literature review. The third section introduces the research methodology. The fourth section presents the research discussion. The fifth section discusses the research implications. The sixth section presents the conclusion of the paper. The seventh section introduces the recommendations. Finally, the eighth section discusses the research limitations.

2. LITERATURE REVIEW

This section introduces previous literature related to the research topic. Therefore, this section contains nine sub-sections, which include the research variables and link them with other variables according to previous studies.

2.1 Performance expectancy

Performance expectancy is defined as the degree to which people believe that their performance would improve by using this system (Akour, 2010). This section aims to identify prior studies that had examined performance expectancy (perceived usefulness and perceived flexibility) and its relation with other variables.

Suki, Ramayah and Ly (2012) examined the impact of perceived usefulness on students' intention to use Facebook for education. The targeted population was students at University Sains Malaysia (USM), who had active accounts on Facebook. The findings proved that perceived usefulness significantly influences the intention to use Facebook as an educational tool.

Bataineh, Al-Abdallah and Alkharabsheh (2015) examined the influence of perceived usefulness, ease of use, and perceived enjoyment on users' continuance intention to use Facebook in Jordan. Primary data was gathered through a five Likert-scale questionnaire, which targeted users that had active accounts on Facebook and live in the Hashemite Kingdom of Jordan. The findings assured a significant positive influence of perceived usefulness, perceived ease of use, and perceived enjoyment on the intention of the users to use Facebook.

Mouakket (2015) assured that social networking sites are considered the most means of social interaction, although few studies investigated SNS. Therefore, factors affecting the intention to use Facebook were investigated (as a popular SNS) among students of universities. The impact of perceived usefulness, enjoyment and subjective norms was examined using Facebook for education. Questionnaires included a targeted sample of undergraduate students in a major university in the United Arab Emirates. Data were analyzed through structural equation modeling. The results proved a significant impact of perceived usefulness, enjoyment, and subjective norms on the continuance intention to use Facebook for education.

Zaki and Khan (2016) assumed that perceived usefulness and ease of use enhanced the students' intention to use Facebook for education. Questionnaires were distinguished among students in KDU College at Penang Malaysia, and 325 responses were returned. Findings concluded that perceived usefulness and ease of use were strong predictors of usage intention.

From the above studies, the first hypothesis could be developed as follows:

H₁: performance expectancy has a significant positive influence on student intention to use Facebook for education.

2.2 Effort

Effort expectancy represents the extent to which the use of a specific technology is effortless (Adkins, 2011). This section introduces prior studies investigating the effort (ease of use and ease of learning) and its relation with other variables.

George and Kumar (2013) investigated the effect of perceived ease of use and perceived usefulness on customer satisfaction. The survey was done and collected from 406 internet banking users in Kerala, India. The findings proved that perceived ease of use and perceived usefulness positively impacted satisfaction.

Hong (2018) tested the influence of ease of use and perceived usefulness on using social media in the education process. Facebook was selected to represent social media sites, as it represented one of the most commonly used ones. The questionnaire was done and distributed among 251 undergraduate and graduate Korean students. The analysis assured that both perceived ease of use and

perceived usefulness were positively related to the intention of Facebook usage in the educational process.

Kontogiannatou, Liaskos, Gallos and Mantas (2019) investigated the impact of effort (ease of use and learning) on user satisfaction. Likert scale questionnaire targeted physicians, nurses, and administrative personnel who work in primary healthcare in Achaia and Attica located in Greece. Findings assured that effort had a positive influence on satisfaction.

From the above studies, the second hypothesis could be developed as follows:

H₂: effort has a significant positive impact on student intention to use Facebook for education.

2.3 Self-efficacy

Self-efficacy refers to users' confidence in their skills in using computing technology (Balakrishnan and Gan, 2016). This section presents prior studies investigating self-efficacy (social media self-efficacy and attitude) and its relation with other variables.

Kanthawongs, Kanthawongs and Chitcharoena (2013) examined the influence of social media efficacy and perceived ease of use on the intention of students to use Facebook. Self-administrated questionnaires were distributed among students majoring in Bachelor of Business Administration majoring in marketing, business computer, and management at a Thai university. The final sample consisted of 57 participants. Results proved that only social media efficacy significantly impacts the students' intention to use Facebook for education.

Praveena and Thomas (2014) investigated the effect of attitude on the intention to use Facebook for education. This research used a survey method to target a sample of undergraduate and postgraduate students from colleges located in Central Kerala. The analysis results indicated that attitude positively influences the intention to use Facebook.

Moorthy, T'ing, Wei, Mei, Yee, Wern, and Xin (2019) examined the effect of self-efficacy represented in efficacy on intention to use Facebook. Questionnaires were distributed among a sample of students at a private university in Malaysia. The findings assured that efficacy had a positive effect on the intention of students to use.

From the above studies, the third hypothesis could be developed as follows:

H₃: self-efficacy has a significant positive impact on students' intention to use Facebook for education.

2.4 Communication-functionality

Communication functionality is the extent to which student believes that technical and organizational infrastructure would support the usage of the new system (Sharples, 2005). This section introduces prior studies investigating communication functionally (interactions, collaboration, and sharing) and its relation with other variables.

Balakrishnan (2017) had studied different dimensions that affect the intention to use social media for learning purposes. Those dimensions were communication functionally, self, effort, and performance expectancy. Facebook, Twitter, and YouTube represented the most popular sites globally. An online survey was done, where 300 responses were received from students. The findings indicated that all previous dimensions significantly impacted the usage intention, where Self-efficacy had the most effective effect.

Samed, Mohammed, Horani, Hamdi and Khasawneh (2020) tested the effect of collaboration, enhanced communication, and sharing on the students' intention to use social media. Questionnaires were distributed among undergraduate and postgraduate students at three universities in Jordan. Findings had shown that collaboration and enhanced communication had a positive effect on usage intention, while sharing had an insignificant impact.

Bonan, Battiston, Bleck, LeMay-Boucher, Pareglio, Sarr and Tavoni (2021) discussed the effect of social interaction on technology adoption. The targeted population was 1080 women from 36 neighborhood clusters in Bamako, and the final sample consisted of 1077 respondents. The analysis results proved that social interaction played a significant role in the decision-making of individuals over technology adoption.

From the above studies, the fourth hypothesis could be developed as follows:

H₄: communication functionality has a significant positive impact on students' intention to use Facebook for education.

2.5 Motivations

Motivations are defined as the extent to which individuals are expected to get interaction and entertainment through specific methods (Noguti, Singh and Waller 2019). This section identifies prior studies investigating motivations (cognitive, affective, personal integrative, social integrative, and tension to release) and their relation with other variables.

Hashim, Tan and Rashid (2015) studied the relationship between cognitive, affective, social needs, and intention to use social media in education. A web survey was done with a seven-point Likert scale. This survey was sent to undergraduate and postgraduate students from a university in the United States of America. Data were analyzed using partial least squares, and the findings proved that each cognitive, affective, and social need positively influenced the intention to use social media in education.

Thongsri, Shen, Bao and Alharbi (2018) examined the influence of cognitive need, affective need, social need, and performance expectancy on the intention to use SNS through mobile. The quantitative method was utilized in a developing country, Thailand, by making a questionnaire. Questionnaires were distributed among 400 undergraduate students at Prince of Songkla University. Results indicated a significant influence of cognitive need, affective need, social need, and performance expectancy on using m-learning.

Wiafe, Koranteng; Kastriku and Gyamera (2020) tested the relation between affective needs, perceived effort, and intention to use social networking sites for education. Data was gathered through a questionnaire, and the final sample consisted of 416 participants. Results had proved that affective needs and perceived effort had a significant effect on using social networking sites for education.

From the above studies, the fifth hypothesis could be developed as follows:

H₅: motivations have a significant positive impact on student intention to use Facebook for education.

2.6 Intention to use Social Media (Facebook)

Intention to use is defined as the individual's decision regarding future social media use (Venkatesh et al., 2003). Many studies have examined the factors that affect intention to use and measure its effect on other variables.

Tao (2009) have held focus groups and pre-and post- questionnaires to examine the relation between usage intention and actual usage. It was investigated if the public health students were used the e-resources in their learning process as they intended or not, as well as if the determinants of usage intention could predict the actual use of e-resources or not. the population of the research was all graduate students enrolled in the School of Public Health at Midwestern university in the USA during the 2008 spring semester. The results showed that the intention to use e-learning was significantly related to the actual usage.

Wee, Ariff, Zakuan, Tajudin, Ismail and Ishak (2014) have noticed the relation between intention and actual usage by adopting a case study of buying organic food in Malaysia. Data was collected through a questionnaire from supermarkets and surrounding areas in Kluang, Johor, Malaysia. The final sample consisted of 288 questionnaires, with a response rate of 96%. The findings have indicated that the intention of buying had a significant effect on the actual buying intention.

Marandu, Makudza and Ngwenya (2019) examined the relationship between the intention of students to use online learning and actual usage in Zimbabwe. Results assured that usefulness represented a significant predictor for intention to use online learning, while ease of use had no significant relation with intention. In addition, a significant relation was proven between the intention to use and actual usage.

From the above studies, the sixth hypothesis could be developed as follows:

H₆: intention to use Facebook for education has a significant positive impact on social media use.

2.7 Student Engagement

Student engagement represents the time and energy intersection students devote to educationally sound activities (Conner, 2011). This section introduces prior studies that discuss factors that affect student engagement.

Junco (2012) studied the role of Facebook usage in enhancing students' engagement. Student engagement was measured by utilizing three ways: a 19-item scale, time spent in co-curricular activities, and time spent preparing for class. Surveys were sent to all students of a primarily public residential institution. The findings from the analysis assured a negative effect of Facebook usage on students' engagement.

Diraditsile and Gamakabadi (2018) claimed to test the impact of social media usage on the collaboration and engagement of students, putting the focus on the use of Facebook. A descriptive survey design was adopted, which targeted undergraduates in the Bachelor of Social Work program at the University of Botswana. Findings indicated that all the participants were using social media to interact with their friends, discuss issues of national interest and connect with their classmates for online study. The results also showed that 98% of them had active accounts on Facebook. Despite all benefits that social media offers, there are dangers associated with social media. For instance, 70% of participants assured that they use social media while studying, although it is distractive.

Alioon and Delialioğlu (2019) aimed to examine the role of m-learning activities in enhancing the engagement and motivation of students. The mixed-method was utilized by making a survey and interview that targeted third-grade undergraduate students who enrolled in a computer networking course in the spring and summer semesters of 2015 in a public university located in Turkey. The analysis found that activities positively affected both engagement and motivation.

From the above studies, the seventh hypothesis could be developed as follows:

H₇: Social media use has a significant positive impact on student engagement.

2.8 Academic Performance

Academic performance is the measurement of education sustainability according to the achievement of educational aims in terms of knowledge acquisition and skills development (Alamri, Almaiah and Al-Rahmi, 2020). This section introduces prior studies that discuss factors that affect student academic performance.

Gabre and Kumar (2012) examined the effect of perceived stress on academic performance. The required data were collected through a questionnaire distributed among accounting students at two universities. Results showed that the more students use Facebook, the more they feel stressed, where the increase in stress level reflected negatively on their academic performance.

Alshuaibi et al. (2018) purposed to test the effect of social media use on academic performance through the mediating role of student engagement in higher education in Malaysia. Business students at a public university located in Malaysia were targeted, where questionnaires were distributed randomly among them, and 227 responses were received. Structural equation modeling-partial least square (SEM-PLS) was used in the analysis process.

Raza, Khan, Khan, Ali and Bano (2020) determined the effect of technostress, cyberbullying, and media multitasking on academic performance. Data was collected through a survey that targeted 248 school students in the public sector. Analysis proved a negative influence of the three independents on academic performance.

From the above studies, the eighth hypothesis could be developed as follows:

H₈: Social media use has a significant positive impact on students' academic performance.

2.9 Student Satisfaction

Student satisfaction is the extent to which the expectation of students about teaching and teachers is achieved (Alamri et al., 2020). This section identifies prior studies that discuss factors that affect student satisfaction.

Ku, Chu and Tseng (2013) tested the influence of interaction, internet self-efficacy, and self-regulated learning on student satisfaction. The findings concluded that learner-instructor, learner-content interaction, and self-efficacy significantly influenced satisfaction. Moreover, students' interactions and self-regulated learning did not affect student satisfaction.

Alamri et al. (2020) examined the role of social media usage in enhancing academic performance and student satisfaction in higher education by adopting the technology acceptance model (TAM). A quantitative method was conducted, and 192 questionnaires were collected from students at King Faisal

University. Structural equation modeling was conducted in analyzing the collected data. The findings proved a positive relationship between social media usage and students' academic performance and satisfaction.

Rahman, Ramakrishnan and Ngamassi (2020) examined the role of social media usage in enhancing students satisfaction. A five-point Likert scale questionnaire was used to gather the required variables. Online questionnaires were sent utilizing the survey tool Qualtrics. It was concluded that social media usage had a positive influence on student satisfaction

From the above studies, the ninth hypothesis could be developed as follows:

H₉, social media use has a significant positive impact on student satisfaction.

3. RESEARCH METHODOLOGY

This section divides into five sub-sections: the conceptual framework, variables and measurement, population and sample, data collection, and data analysis and findings.

3.1 Conceptual Framework

This study investigates the impact of perception of using social media on students' intention to use Facebook as an educational tool. It also aimed to examine the relationship between intention to use Facebook and actual usage. In addition, it investigated the influence of actual usage on student engagement, academic performance, and satisfaction. Accordingly, the research framework is presented as follows:

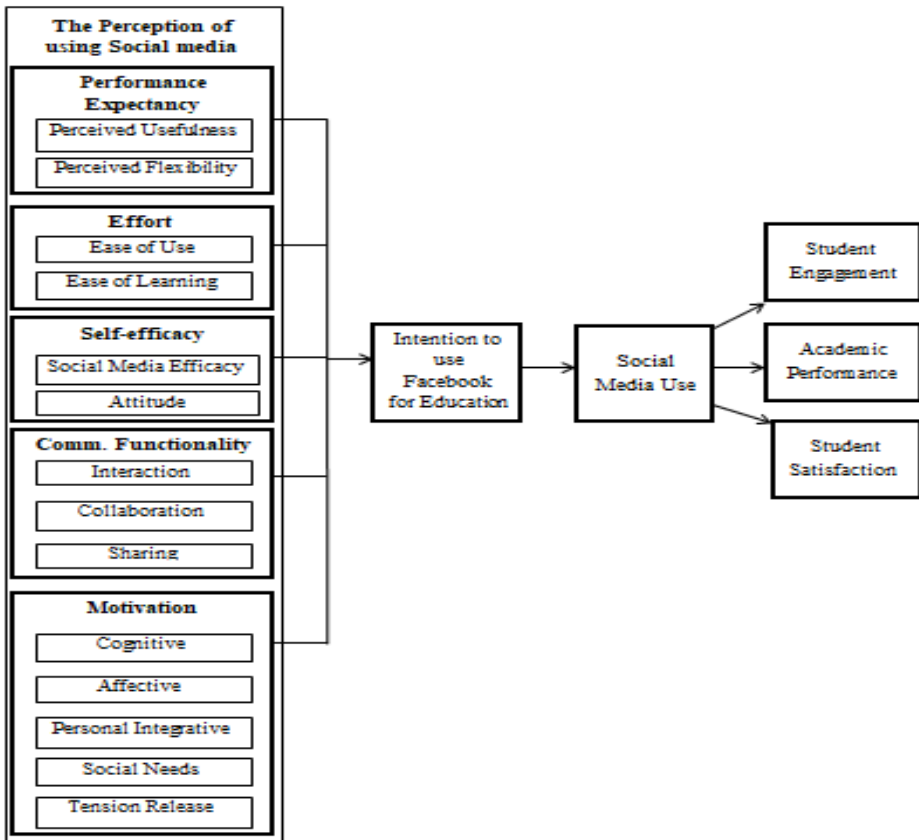


Figure 1: Research Framework

According to the framework, the research hypotheses are represented as follows:

H₁: performance expectancy has a significant positive influence on student intention to use Facebook for education.

H_{1.1}: perceived usefulness has a significant positive impact on student intention to use Facebook for education.

H_{1.2}: perceived flexibility has a significant positive impact on students' intention to use Facebook for education.

H₂: effort has a significant positive impact on student intention to use Facebook for education.

H_{2.1}: perceived ease of use has a significant positive impact on student intention to use Facebook for education

H_{2.2}: perceived ease of learning has a significant positive impact on student intention to use Facebook for education.

H₃: self-efficacy has a significant positive impact on students' intention to use Facebook for education.

H_{3.1}: social media efficacy has a significant positive impact on student intention to use Facebook for education.

H_{3.2}: attitude has a significant positive impact on students' intention to use Facebook for education.

H₄: communication functionality has a significant positive impact on students' intention to use Facebook for education.

H_{4.1}: interaction has a significant positive impact on students' intention to use Facebook for education.

H_{4.2}: collaboration has a significant positive impact on students' intention to use Facebook for education.

H_{4.3}: sharing has a significant positive impact on students' intention to use Facebook for education.

H₅: motivations have a significant positive impact on student intention to use Facebook for education.

H_{5.1}: cognitive needs have a significant positive impact on student intention to use Facebook for education.

H_{5.2}: affective needs have a significant positive impact on student intention to use Facebook for education.

H_{5.3}: integrative personal needs have a significant positive impact on student intention to use Facebook for education.

H_{5.4}: social integrative needs have a significant positive impact on student intention to use Facebook for education.

H_{5.5}: tension release needs have a significant positive impact on students' intention to use Facebook for education.

H₆: intention to use Facebook for education has a significant positive impact on social media use.

H₇: social media use has a significant positive impact on student engagement.

H₈: social media use has a significant positive impact on students' academic performance.

H₉: social media use has a significant positive impact on student satisfaction.

3.2 Variables and Measurement

The variables of this study are represented as follows:

Independent Variables: performance expectancy (perceived usefulness and perceived flexibility), effort (ease of use and ease of learning), self-efficacy (social media efficacy and attitude), communication functionally (interaction, collaboration, and sharing), and motivations (cognitive needs, affective needs, personal integrative needs, integrative social needs, and tension release needs)

Dependent Variables: student engagement, student satisfaction, and academic performance

Mediator: student's intention to use Facebook and Facebook usage

To achieve the study's goal, the researcher used positivism philosophy and a deductive approach. Furthermore, this paper depends on collecting quantitative data to measure the research variables by making a questionnaire. Table 1 represents the measurements of the variables in the questionnaire.

Table 1 Research Variables Measurement

Variables	References
Perceived Usefulness	
Using Facebook gave me an advantage in learning the topic.	Umrani-Khan and Iyer (2009)
Using Facebook helps me in increasing my chance of scoring higher marks.	
Using Facebook enables me to accomplish my study tasks (such as completing assignments and learning the topic).	
I find Facebook useful in my studies.	
Using Facebook helps me increase the number of topics that I can	

Variables	References
study per day.	
Using Facebook helps me to increase my studies efficiency.	
Using Facebook reduces my study load considerably.	
Perceived Flexibility	
Using Facebook allows me to choose different learning topics according to my preference.	Umrani-Khan and Iyer (2009)
Facebook helps me to learn at any place.	
Facebook provides me the flexibility to learn the topic at any time and any place.	
Facebook enables me to choose my learning style regarding my lessons.	
Effort (Ease of Use and Ease of Learning)	
It is easy to use Facebook to do what I need to do.	Umrani-Khan and Iyer (2009)
I find it easy to be competent at using Facebook.	
Facebook is easy to be used.	
I interact with Facebook in a characterized way by its clarity and understandability.	
Using Facebook requires making a mental effort.	
Learning to use Facebook tools is easy for me.	
Social Media Efficacy	
I can publish information on Facebook.	Hoffmann and Lutz (2021)
I can publish a video on Facebook.	
I can create or add a post on Facebook.	
Attitude	
Using Facebook is a good idea.	Davis et al. (1989)
Using Facebook is a foolish idea.	
I like the idea of using Facebook.	
Using Facebook is pleasant.	
Interaction	
Using Facebook helps me in improving my communication with classmates.	Sánchez et al. (2014)
Using Facebook helps me to improve my communication with the teacher.	
Using Facebook enables us to improve classroom discussions.	
Using Facebook helps in the improvement of course content and resources delivery.	
Using Facebook improves communication regarding courses, classes, or school announcements.	
Facebook helps by providing additional resources that support me while doing my homework.	
Collaboration	
Facebook helps to create communities with classmates.	Sánchez et al. (2016)
Facebook helps to share information related to the class.	
Facebook helps in completing group assignments.	
Sharing	

Variables	References
Facebook helps me to share learning material.	Sharma et al. (2016)
Facebook helps to share motivational material.	
Facebook helps to share multimedia material.	
Cognitive Needs	
I use Facebook to help me know many things.	Hashim et al. (2015) Thongsri et al. (2018)
I use Facebook to search for new information.	
I do an Internet search using my mobile device to answer questions coming from class discussions.	
I use Facebook to explore more interesting topics beyond my normal school assignment.	
Affective	
I like to talk about Facebook to others.	Hashim et al. (2015) Thongsri et al. (2018)
I usually show my friends how to use Facebook in different ways.	
I like the layout, animation, and illustrations of Facebook.	
I enjoy learning using Facebook.	
Personal integrative	
Using Facebook eexpands my personal/social networks.	Nambisan and Baron (2007) Ha et al. (2015)
Using Facebook enhances the strength of my affiliation.	
Using Facebook enhances my sense of belongingness	
Using Facebook reinforces my credibility/authority	
Using Facebook derive gratification from influencing others	
Using Facebook enhances my status/reputation	
Social Needs	
Using Facebook enables me to expand my social and personal network.	Nambisan and Baron (2007)
Using Facebook helps me to enhance my affiliation strength with my community.	
Using Facebook enhances my sense of belongingness with my community.	
Tension release	
Facebook makes me spend some enjoyable and relaxing time.	Nambisan and Baron (2007) Ha et al. (2015)
Facebook derives fun and pleasure.	
Facebook entertains and stimulates my mind.	
Intention to Use Social Media in Learning	
I intend to use Facebook in the next semester.	Umrani-Khan and Iyer (2009)
I predict I will use Facebook in the next semester.	
I plan to use Facebook in the next semester.	
Social Media Use	
I use social media to interact with my peers.	Alamri et al. (2020)
I use social media to interact with my lecturers.	
I utilize social media applications for active collaborative learning.	
I use social media for engagement.	
Student Engagement	

Variables	References
I was motivated to participate and collaborate in the course	Rueda et al. (2017)
I was involved in participating and collaborating in the course	
I was emotionally committed to contributing to the course	
Academic Performance	
I am sure that I own relevant academic skills and abilities.	Ainin (2015)
I feel competent while I conduct my assignment.	
I learned an efficient manner to do my coursework.	
As I expected, I succeeded in performing academically.	
Student satisfaction	
I enjoy the experience of using social media with peers.	Rueda et al. (2017) Alamri et al. (2020)
I enjoy the experience of using social media with lecturers.	
I am satisfied with using social media for learning.	
I am satisfied with using SMAs to improve my studies.	
Social media has helped me to learn from my mistakes.	
Social media has motivated me to study and work very hard.	

3.3 Population and Sample

The study population in this research is the higher education students who study at Arab Academy for Science, Technology and Maritime Transport (AASTMT). The total population is 2285 students in the year 2020/2021.

The researcher depends on Saunder's 95% confidence interval population technique in selecting the sample. Thus, the chosen sample consisted of 385 questionnaires (Saunders, Lewis and Thornhill, 2016). The questionnaires were distributed depending on convenient sampling techniques. Meanwhile, the researcher also targeted a sample of higher education students who use Facebook as an educational tool. Facebook was selected from the several used social media applications in Egypt because it represents the most used application among Egyptian internet users.

3.4 Data collection

This study collects primary data by applying a questionnaire that targets higher education students.

Table 2 represents the respondents' profile that has participated in this study. The research has employed an online survey technique in collecting all the information regarding this study. Therefore, in this section, the explanation about Major, Term, and Access Device is introduced with specific statistics obtained from the data collection approaches. In total, it shows that the total

sample that participated in this research is $N=381$. It is observed that marketing majors contribute the highest percentage with 43.3% ($N=165$). Further, most of the respondents who participated in this research the area in the fifth term, with 46.2% ($N=176$). Lastly, when asked which access device the respondents use most to access social media, most respondents said by smartphone with 86.4% ($N=329$).

Table 2: Descriptive Statistics of Respondents' Profile

Item	Category	Frequency (N=381)	Percent %
Major	Accounting	37	9.7
	Finance	1	.3
	Marketing	165	43.3
	Media	111	29.1
	Political Science	67	17.6
Term	2.00	5	1.3
	3.00	56	14.7
	4.00	22	5.8
	5.00	176	46.2
	6.00	15	3.9
	7.00	93	24.4
	8.00	14	3.7
Access Device	Laptop	50	13.1
	PC (Desktop)	2	.5
	Smartphone	329	86.4

3.5 Data Analysis and Findings

3.5.1 VALIDITY AND RELIABILITY

The convergent validity of the measurement model can be assessed by the Average Variance Extracted (AVE) and Composite Reliability (CR). To achieve construct reliability, a value of $CR \geq 0.6$ is required. Moreover, the AVE measures the level of variance captured by a construct versus the level due to measurement error, values above 0.7 are considered very good, whereas the level of 0.5 is acceptable (Bell et al., 2022). From Table 3, the value of CR for some of the constructs is greater than 0.60. Therefore, the composite reliability achieved the required level. Moreover, the value of AVE for the major of the constructs is greater than 0.50. The required level was not achieved.

Table 3: Convergent Validity of the Measurement Model

Variables	Composite Reliability	AVE
Intention	0.766	0.669
Social media Use	0.882	0.882
Student Engagement	0.618	0.518
Academic Performance	0.646	0.646
Student Satisfaction	0.624	0.624

3.5.2 DISCRIMINANT VALIDITY

It is computed by comparing the square root of AVE values of each construct with the correlations between such construct and other constructs. Acceptable discriminant validity is achieved when the square root of AVE values of the construct is greater than the correlations between such construct and other constructs. Table 4 shows the discriminant validity of the research variables, where it could be observed that all square roots of AVE values are greater than the correlations between the corresponding construct and other constructs.

Table 4: Discriminant Validity of the Research Variables

	1.	2.	3.	4.	5.	6.	7.	8.	9.	10.	11.	12.	13.	14.	15.	16.	17.	18.	19.
Perceived Usefulness	(0.833)																		
Perceived Flexibility	.763**	(0.865)																	
Ease of use	.413**	.556**	(0.890)																
Ease of Learning	.267**	.415**	.778**	(0.927)															
Social Media Efficacy	.189**	.308**	.590**	.659**	(0.944)														
Attitude	.683**	.699**	.510**	.425**	.299**	(0.906)													
Interaction	.539**	.549**	.469**	.486**	.429**	.624**	(0.848)												
Collaboration	.556**	.598**	.514**	.500**	.432**	.637**	.778**	(0.870)											
Sharing	.510**	.566**	.522**	.524**	.472**	.627**	.732**	.727**	(0.903)										
Cognitive	.646**	.616**	.409**	.376**	.266**	.682**	.660**	.633**	.612**	(0.797)									
Social Needs	.489**	.515**	.567**	.485**	.428**	.541**	.647**	.666**	.700**	.669**	(0.841)								
Personal Integrative	.543**	.536**	.466**	.367**	.327**	.569**	.602**	.575**	.629**	.699**	.692**	(0.869)							
Affective	.561**	.536**	.438**	.348**	.253**	.603**	.627**	.574**	.583**	.734**	.642**	.720**	(0.878)						
Tension Release	.514**	.533**	.390**	.334**	.250**	.621**	.583**	.576**	.542**	.714**	.646**	.724**	.736**	(0.940)					
Intention	.588**	.614**	.480**	.416**	.299**	.683**	.685**	.648**	.683**	.713**	.611**	.598**	.628**	.573**	(0.960)				
Social media Use	.607**	.573**	.398**	.327**	.254**	.561**	.654**	.631**	.654**	.662**	.671**	.618**	.630**	.543**	.742**	(0.810)			
Student Engagement	.462**	.497**	.421**	.382**	.315**	.526**	.614**	.570**	.609**	.682**	.602**	.586**	.644**	.635**	.585**	.551**	(0.930)		
Academic Performance	.403**	.460**	.497**	.449**	.377**	.482**	.453**	.507**	.549**	.595**	.518**	.570**	.476**	.488**	.528**	.484**	.667**	(0.866)	
Student Satisfaction	.429**	.432**	.365**	.332**	.231**	.468**	.544**	.495**	.519**	.684**	.505**	.511**	.500**	.527**	.541**	.498**	.591**	.577**	(0.865)

3.5.3 CONFIRMATORY FACTOR ANALYSIS

Confirmatory Factor Analysis (CFA) is required to confirm the factor structure extracted by the researcher as a measurement scale for each dimension before

launching the structural equation modeling (SEM). At this point, it should be highlighted that the constructs extracted are Interaction, Entertainment, Trendiness, Customization, Functional Value, Social Value, Emotional Value, Epistemic Value, and Brand Loyalty. AMOS 24 program was used, and the ML method was applied to show each variable's factor loading and model fit. Regarding the CFA using the covariance method, it had been illustrated using Figure 2, and the results had been shown as follows:

The model fit of the confirmatory factor analysis was computed, where it was found that the minimum discrepancy or chi-square divided by the degrees of freedom (CMIN/DF) was 1.981; the probability of getting a larger discrepancy as occurred with the present sample (p-value) was 0.000; goodness of fit (GFI) was 0.832; adjusted goodness of fit index (AGFI) was 0.789 - that evaluate the fit of the model versus the number of estimate coefficients or the degrees of freedom needed to achieve that level of fit; the Bentler-Bonett normed fit index (NFI) was 0.889, and the Tucker-Lewis index or Bentler-Bonett non-normed fit index (TLI) was 0.928 – which assess the incremental fit of the model compared to a null model; the comparative fit index (CFI) was 0.941.

In addition, the root means square residual (RMR) was 0.047 – which shows the amount by which the sample variances and covariances differ from their estimates obtained under the assumption that the model is correct; the root means square of approximation (RMSEA) was 0.051 – which is an informative criterion in covariance structure modeling and measures the amount of error present when attempting to estimate the population (Hair, Hollingsworth, Randolph and Chong, 2017). Table 5 shows these indicators' value in CFA and their recommended values.

Table 5: Fit Indices and Thresholds for Measurement Model

Measure	Results	Threshold
Chi-square/df	1.981	< 2 excellent; < 3 good; < 5 sometimes permissible
P-value	0.000	> 0.05
GFI	0.832	> 0.80
AGFI	0.789	> 0.80
NFI	0.889	> 0.80
TLI	0.928	> 0.85
CFI	0.941	> 0.80
RMR	0.047	< 0.09
RMSEA	0.051	< 0.10

Figure 2 shows the confirmatory factor analysis applied, where the factor loadings are shown on arrows implying good factor loadings (Factor Loadings > 0.4) for the confirmatory factor analysis. These factor loadings are shown in numbers using Table 6.

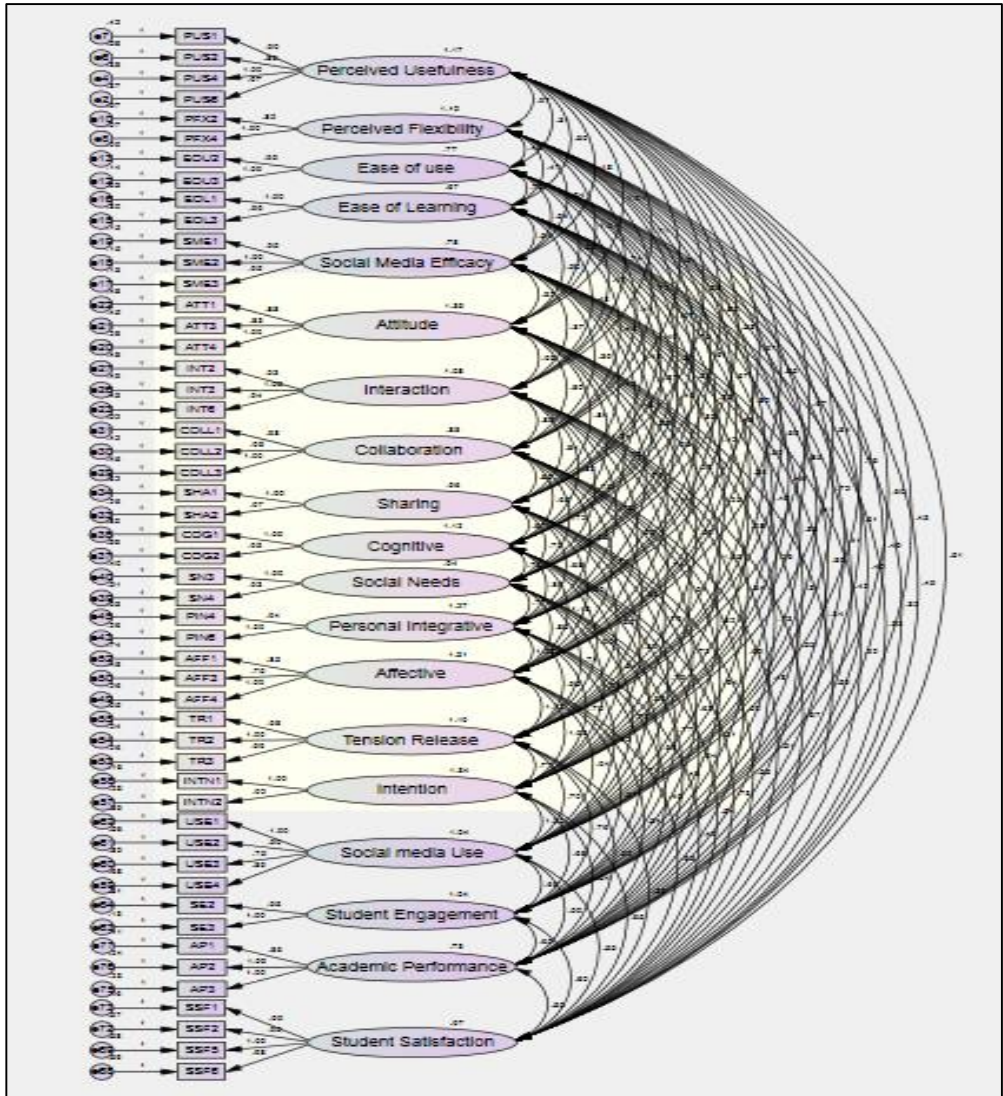


Figure 2: CFA for the Measurement Model

Table 6 shows that all factor loadings (FL), which represent the size of the loadings of items on their corresponding variables, are greater than or equal to 0.40, implying that the constructs under study have adequate validity. Also, all the P-values are less than 0.05, showing the significance of the corresponding statements to their constructs.

Table 6: Item Loading after Confirmatory Factor Analysis

			Estimate	S.E.	C.R.	P
PUS6	<---	Perceived Usefulness	.971	.044	22.315	***
PUS4	<---	Perceived Usefulness	1.000			
PUS2	<---	Perceived Usefulness	.889	.047	18.829	***
PUS1	<---	Perceived Usefulness	.903	.043	20.938	***
PFX4	<---	Perceived Flexibility	1.000			
PFX2	<---	Perceived Flexibility	.821	.048	17.223	***
EOU3	<---	Ease of use	1.000			
EOU2	<---	Ease of use	.946	.040	23.919	***
EOL3	<---	Ease of Learning	.990	.046	21.552	***
EOL1	<---	Ease of Learning	1.000			
SME3	<---	Social Media Efficacy	.955	.033	29.079	***
SME2	<---	Social Media Efficacy	1.000			
SME1	<---	Social Media Efficacy	.951	.033	28.476	***
ATT4	<---	Attitude	1.000			
ATT3	<---	Attitude	.826	.037	22.358	***
ATT1	<---	Attitude	.882	.039	22.804	***
INT6	<---	Interaction	.938	.049	19.319	***
INT3	<---	Interaction	1.000			
INT2	<---	Interaction	.934	.050	18.721	***
COLL3	<---	Collaboration	1.000			
COLL2	<---	Collaboration	.932	.053	17.725	***
COLL1	<---	Collaboration	.977	.057	17.209	***
SHA2	<---	Sharing	.974	.044	22.082	***
SHA1	<---	Sharing	1.000			
COG2	<---	Cognitive	.930	.047	19.826	***
COG1	<---	Cognitive	1.000			
SN4	<---	Social Needs	.926	.055	16.952	***
SN3	<---	Social Needs	1.000			
PIN6	<---	Personal Integrative	1.000			
PIN4	<---	Personal Integrative	.937	.037	25.178	***
AFF4	<---	Affective	1.000			
AFF3	<---	Affective	.754	.037	20.623	***
AFF1	<---	Affective	.854	.044	19.225	***
TR3	<---	Tension Release	.992	.035	28.358	***
TR2	<---	Tension Release	1.000			

			Estimate	S.E.	C.R.	P
TR ₁	<---	Tension Release	.976	.034	28.397	***
INTN ₂	<---	Intention	.925	.030	30.349	***
INTN ₁	<---	Intention	1.000			
USE ₄	<---	Social media Use	.892	.053	16.831	***
USE ₃	<---	Social media Use	.753	.054	13.969	***
USE ₂	<---	Social media Use	.896	.050	18.000	***
USE ₁	<---	Social media Use	1.000			
SE ₃	<---	Student Engagement	1.000			
SE ₂	<---	Student Engagement	.933	.039	23.665	***
SSF ₆	<---	Student Satisfaction	.983	.048	20.421	***
SSF ₅	<---	Student Satisfaction	1.000			
SSF ₂	<---	Student Satisfaction	.948	.048	19.909	***
SSF ₁	<---	Student Satisfaction	.899	.049	18.352	***
AP ₃	<---	Academic Performance	.997	.046	21.438	***
AP ₂	<---	Academic Performance	1.000			
AP ₁	<---	Academic Performance	.863	.050	17.239	***

3.5.4 TESTING RESEARCH HYPOTHESES

In this section, the hypotheses under study are tested using path analysis of the structural equation modeling.

Table 7 shows the SEM analysis for the impact of the performance expectancy dimensions on intention to use. It could be observed that:

- Perceived usefulness has an insignificant impact on intention to use, as the corresponding P-value is more than 0.05 (P-value = 0.424).
- Perceived flexibility has an insignificant impact on intention to use, as the corresponding P-value is more than 0.05 (P-value = 0.347).

Furthermore, the R square is 0.823, which means the model can explain 82.3% of the variation in the intention to use.

Table 7: SEM Analysis of Performance Expectancy dimensions on Intention to use

			Estimate	P
Intention	<---	Perceived Usefulness	.096	.424
Intention	<---	Perceived Flexibility	.145	.347

Therefore, the first hypothesis, “performance expectancy has a significant positive impact on student intention to use Facebook for education,” is not supported.

Table 8 shows the SEM analysis for the impact of the effort dimensions on intention to use. It could be observed that:

- There is an insignificant impact of ease of use on intention to use, as the corresponding P-value is more than 0.05 (P-value = 0.398).
- There is a significant impact of ease of learning on intention to use, as the corresponding P-value is more than 0.05 (P-value = 0.331).

Table 8: SEM Analysis of Effort dimensions on Intention to use

			Estimate	P
Intention	<---	Ease of use	-.227	.398
Intention	<---	Ease of Learning	.301	.331

Therefore, the second hypothesis, “effort has a significant positive impact on student intention to use Facebook for education,” is not supported.

Table 9 shows the SEM analysis for the impact of the self-efficacy dimensions on intention to use. It could be observed that:

- There is an insignificant impact of social media efficacy on intention to use, as the corresponding P-value is more than 0.05 (P-value = 0.714).
- There is an insignificant impact of attitude on intention to use, as the corresponding P-value is more than 0.05 (P-value = 0.723).

Table 9: SEM Analysis of Self-efficacy dimensions on Intention to use

			Estimate	P
Intention	<---	Social Media Efficacy	-.027	.714
Intention	<---	Attitude	-.040	.723

Therefore, the third hypothesis, “self-efficacy has a significant positive impact on student Intention to use Facebook for education,” is not supported.

Table 10 shows the SEM analysis for the impact of the communication functionality dimensions on intention to use. It could be observed that:

- Interaction has an insignificant impact on intention to use, as the corresponding P-value is more than 0.05 (P-value = 0.384).
- Collaboration has an insignificant impact on intention to use, as the corresponding P-value is more than 0.05 (P-value = 0.695).

- Sharing has an insignificant impact on intention to use, as the corresponding P-value is more than 0.05 (P-value = 0.071).

Table 10: SEM Analysis of Communication Functionality dimensions on Intention to use

			Estimate	P
Intention	<---	Interaction	.153	.384
Intention	<---	Collaboration	-.094	.695
Intention	<---	Sharing	.273	.071

Therefore, the fourth hypothesis, “communication functionality has a significant positive impact on student intention to use Facebook for education,” is not supported.

Table 11 shows the SEM analysis for the impact of the motivations dimensions on intention to use. It could be observed that:

- There is an insignificant impact of cognitive on intention to use, as the corresponding P-value is more than 0.05 (P-value = 0.440).
- There is an insignificant impact of social needs on intention to use, as the corresponding P-value is more than 0.05 (P-value = 0.657).
- There is an insignificant impact of personal integrative on intention to use, as the corresponding P-value is more than 0.05 (P-value = 0.492).
- Affective has a significant impact on intention to use, as the corresponding P-value is less than 0.05 (P-value = 0.046). Also, affective has a positive impact on intention to use, as the corresponding estimate is greater than zero (Estimate = 0.5885).
- Tension release has an insignificant impact on intention to use, as the corresponding P-value is more than 0.05 (P-value = 0.068).

Table 11: SEM Analysis of Motivations dimensions on Intention to use

			Estimate	P
Intention	<---	Cognitive	.138	.440
Intention	<---	Social Needs	.063	.657
Intention	<---	Personal Integrative	-.060	.492
Intention	<---	Affective	.585	.046
Intention	<---	Tension Release	-.282	.068

Therefore, the fifth hypothesis, “motivations have a significant positive impact on student intention to use Facebook for education,” is partially supported.

Table 12 shows the SEM analysis for the impact of the intention to use and social media use. It could be observed that:

- There is a significant impact of intention to use on social media use, as the corresponding P-value is less than 0.05 (P-value = 0.000). Also, there is a positive impact on the intention to use social media use, as the corresponding estimate is greater than zero (Estimate = 0.854).

Furthermore, the R square is 0.882, which means the model explains 88.2% of the variation in social media use.

Table 12: SEM Analysis of Intention to use on Social Media Use

			Estimate	P	R ²
Social media Use	<---	Intention to use	.854	***	.882

Therefore, the sixth hypothesis, “intention to use Facebook for education has a significant positive impact on social media use,” is fully supported.

Table 13 shows the SEM analysis for the impact of social media use on student engagement. It could be observed that:

- There is a significant impact of social media use on student engagement, as the corresponding P-value is less than 0.05 (P-value = 0.000). Also, there is a positive impact on the Intention to use social media use, as the corresponding estimate is greater than zero (Estimate = 0.728).

Furthermore, the R square is 0.519, which means the model can explain 51.9% of the variation in student engagement.

Table 13: SEM Analysis of Social media Use on Student Engagement

			Estimate	P	R ²
Student Engagement	<---	Social media Use	.728	***	.519

Therefore, the seventh hypothesis, “Social Media Use has a significant positive impact on Student Engagement,” is fully supported.

Table 14 shows the SEM analysis for the impact of social media uses on academic performance. It could be observed that:

- There is a significant impact of social media use on academic performance, as the corresponding P-value is less than 0.05 (P-value = 0.000). Also, there is a positive impact of on the intention to use social media use, as the corresponding estimate is greater than zero (Estimate = 0.570).

Furthermore, the R square is 0.447, which means the model can explain 44.7% of the variation in academic performance.

Table 14: SEM Analysis of Social media Use on Academic Performance

			Estimate	P	R ²
Academic Performance	<---	Social media Use	.570	***	.447

Therefore, the eighth hypothesis, “social media use has a significant positive impact on academic performance,” is fully supported.

Table 15 shows the SEM analysis for the impact of social media use on student satisfaction. It could be observed that:

- There is a significant impact of social media use on student satisfaction, as the corresponding P-value is less than 0.05 (P-value = 0.000). Also, there is a positive impact of the intention to use social media use, as the corresponding estimate is greater than zero (Estimate = 0.631).

Furthermore, the R square is 0.424, which means the model can explain 42.4% of the variation in student satisfaction.

Table 15: SEM Analysis of Social media Use on Student Satisfaction

			Estimate	P	R ²
Student Satisfaction	<---	Social media Use	.631	***	.424

Therefore, the ninth hypothesis, “social media use has a significant positive impact on student satisfaction,” is fully supported.

The model fit indices; CMIN/DF = 2.353, GFI = 0.789, CFI = 0.914, AGFI= 0.749, and RMSEA = 0.060 are all within their acceptable levels. The SEM model conducted for the effect of the motivations dimensions on intention to use is illustrated in Figure 3.

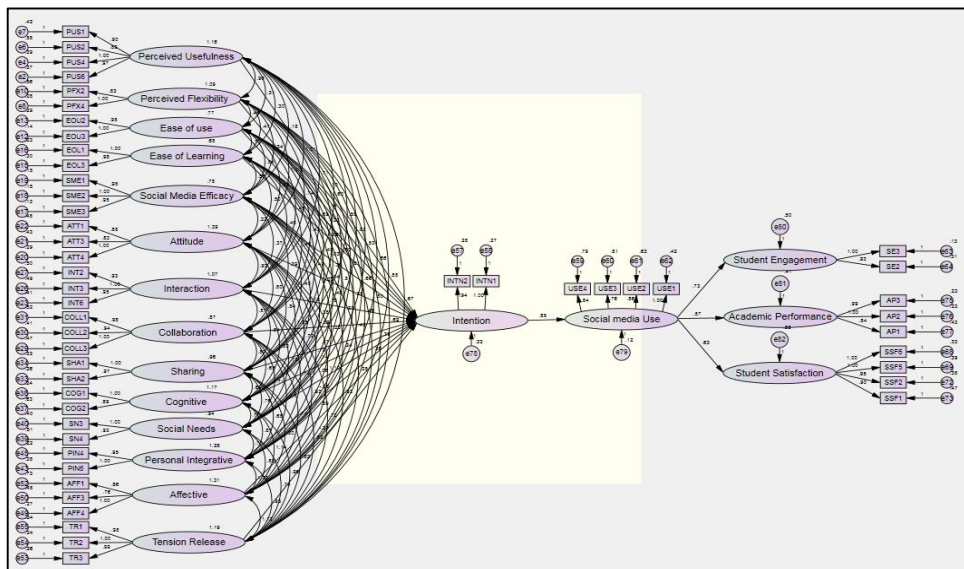


Figure 3: SEM for the Proposed Model

4. RESEARCH DISCUSSION

This research aims to investigate the effect of the intention to adopt social media (Facebook) as a learning tool among students of higher education in Egypt and examine the impact of using this technology on students' engagement, academic performance, and satisfaction.

The SEM analysis of the first hypothesis, performance expectancy has a significant positive impact on student intention to use Facebook for education, proved an insignificant impact of perceived usefulness on intention to use, as the P-value is more than 0.05. Additionally, perceived flexibility has an insignificant impact on intention to use, as the corresponding P-value is more than 0.05. Accordingly, the first hypothesis is not supported.

Based on the above result, this result is consistent with the studies of (Bataneh et al., 2015; Mouakket, 2015; Suki et al., 2012). Accordingly, it is noticed that also those studies are consistent with the results of the current one, but they differ on other points. The study of Suki et al. (2012) had investigated the relationship between perceived usefulness and the intention of higher education students to use Facebook for education. This relation is consistent with the current study, while the difference is in the population of both studies as this study targeted students at University Sains Malaysia (USM). On the other hand, the current study investigated the relationship between perceived usefulness and intention

to use Facebook in education among higher education students at Arab Academy for Science, Technology and Maritime Transport (AASTMT) in Egypt.

The SEM analysis of the second hypothesis, the effort has a significant positive impact on student intention to use Facebook for education, proved an insignificant impact of ease of use on intention to use, as the P-value is more than 0.05, while it proved a significant impact of ease of learning on intention to use, as the P-value is more than 0.05. Accordingly, the second hypothesis is not supported.

Based on the above result, this result is inconsistent with the studies of (George and Hong, 2013; Kontogiannatou et al., 2019). It is noticed that the results of those previous studies are inconsistent with the current study, where the current study did not support the relationship between effort and intention to use Facebook, while previous studies proved the relation.

The SEM analysis of the third hypothesis, self-efficacy has a significant positive impact on student intention to use Facebook for education, concluded an insignificant impact of social media efficacy on intention to use, as the corresponding P-value is more than 0.05. Additionally, there is an insignificant impact of attitude on intention to use, as the corresponding P-value is more than 0.05. Accordingly, the third hypothesis is not supported.

Based on the above result, this result is inconsistent with the studies of (Kanthawongs et al., 2013; Moorthy et al., 2019; Praveena and Thomas, 2014). where the current study did not support the relationship between effort and intention to use Facebook, while previous studies proved the relation.

The SEM analysis of the fourth hypothesis, communication functionality has a significant positive impact on student Intention to use Facebook for education, observed an insignificant impact of interaction on intention to use, as the P-value is more than 0.05. On the other hand, there is an insignificant impact of collaboration on intention to use, as the P-value is more than 0.05. Furthermore, there is an insignificant impact of sharing on intention to use, as the P-value is less than 0.05. Accordingly, the fourth hypothesis is not supported.

Based on the above result, this result is inconsistent with the studies of (Balakrishnan, 2017; Bonan et al., 2021; Samed et al., 2020). However, Samed et

al. (2020) had proved an insignificant effect of sharing on intention, which is similar to the current study.

The SEM analysis of the fifth hypothesis, motivations have a significant positive impact on student intention to use Facebook for education, proved an insignificant impact of cognitive on intention to use, as the P-value is more than 0.05. There is an insignificant impact of social needs on intention to use, as the P-value is more than 0.05. Moreover, there is an insignificant impact of personal integrative on intention to use, as the P-value is more than 0.05. On the other hand, there is a significant positive impact of affective on intention to use, as the P-value is less than 0.05 and the corresponding estimate is more than 0. Furthermore, there is an insignificant impact of tension release on intention to use, as the P-value is more than 0.05. Accordingly, the fifth hypothesis is partially supported.

Based on the above result, the studies of (Hashim et al., 2015; Thongsri et al., 2018; Wiafe et al., 2020) are consistent with the current study is proving a significant positive impact of Affective on Intention to use. On the other hand, they are inconsistent in the other dimensions of the motivations, as previous studies proved a significant effect of cognitive, social needs, personal integrative, and tension release on intention to use, but the current study proved an insignificant effect.

The SEM analysis of the sixth hypothesis, intention to use Facebook for education has a significant positive impact on social media use, proved a significant positive impact of intention to use social media. Use, as the corresponding P-value is less than 0.05 and the corresponding estimate is more than 0. Accordingly, the sixth hypothesis is fully supported.

Based on the above result, this result is consistent with the studies of (Marandu et al., 2019; Tao, 2009; Wee et al. 2014). The above studies had worked on examining the impact of intention to use on other variables and investigating the factors that affect intention to use, which is similar to the current study. The current study investigated the relation between intention to use and actual usage among higher education students in Egypt. Wee et al.'s (2014) study are consistent with the current study investigating the same relation, and the same results are concluded. The difference between the two studied represented in the

chosen population and sample, as Wee et al. (2014) targeted people at supermarkets and surrounding areas in Malaysia.

The SEM analysis of the seventh hypothesis, social media use has a significant positive impact on student engagement, proved a significant positive impact of social media use on student engagement, as P-value is less than 0.05 and the corresponding estimate is more than 0. Accordingly, the seventh hypothesis is fully supported.

Based on the above result, this result is consistent with the studies of (Alioon and Delialioğlu, 2019; Diraditsile and Gamakabadi, 2018), and Alioon and Delialioğlu (2019), while results are inconsistent with Junco (2012). The consistent studies are all similar to the current study in examining the factors affecting student engagement. The current study aims to investigate the impact of social media use on student engagement. For example, the study of Diraditsile and Gamakabadi (2018) examined the same relation as well as reached the same results, the only difference was in the population and sample as Diraditsile and Gamakabadi (2018) targeted undergraduates in the Bachelor of Social Work program at the University of Botswana, while the current study targeted students at Arab Academy for Science, Technology and Maritime Transport located in Egypt.

The SEM analysis of the eighth hypothesis, social media use has a significant positive impact on academic performance, proved a significant positive impact of social media use on academic performance, as P-value is less than 0.05 and the corresponding estimate is more than 0. Accordingly, the eighth hypothesis is fully supported.

Based on the above result, this result is consistent with the study of Alshuaibi et al. (2018), although the results are consistent, there are differences in other points between the two studies. As the study of Alshuaibi et al. (2018) targeted 277 students at a public university located in Malaysia, while the current study targets 385 students who study at a private university in Egypt. On the other hand, the results are inconsistent with (Gabre and Kumar, 2012 and Raza et al., 2020).

The SEM analysis of the ninth hypothesis, social media use has a significant positive impact on student satisfaction, observed a significant positive impact of social media use on student satisfaction, as P-value is less than 0.05 and the

corresponding estimate is more than 0. Accordingly, the ninth hypothesis is fully supported.

Based on the above result, this result is consistent with the studies of Alamri et al. (2020), and Rahman et al. (2020), while the result is inconsistent with Ku et al. (2013). The consistent studies with the current study are similar in examining the factors that affect student satisfaction. The current study investigates the impact of social media use on student satisfaction among students at Arab Academy for Science, Technology, and Maritime Transport in Egypt. Furthermore, Alamri et al. (2020) examined the same relation and proved the same results of the current study as well as used the questionnaire method to collect data, and the only difference was in the population as Alamri et al. (2020) targeted students at King Faisal University in Saudi Arabia.

5. RESEARCH IMPLICATIONS

This research examines the impact of the perception of using social media (performance expectancy, effort, Self-efficacy, communication functionality, and motivations) on the intention to use Facebook in education. It also investigates the relationship between intention to use and actual usage and examines its effect on student engagement, academic performance, and satisfaction. The study targeted higher education students at Arab Academy for Science, Technology and Maritime Transport (AASTMT) in Egypt. This section introduces the academic and practical implications of the study.

The Academic Implications: This study developed a new model of social media adoption depending on the previous models/theories of social media. This model aimed to identify factors that affect the intention to adopt social media inside the educational process and their effect on students' engagement, academic performance, and satisfaction in Egypt as a developing Middle East country, where there is a lack of social media studies on education. Therefore, this study tries to cover this gap as well as open a new base of studies on social media adoption in future research inside this region.

Another important point is represented in that the provided model includes many factors that could affect the adoption of social media. Those factors are not collected before in one model. Thus, this study succeeded in covering the gaps in

the literature related to the factors studied as determinants of perception of using social media in higher education depending on different theories.

The practical implications: A clear understanding of factors that affect students' intention to adopt social media in education and its impact on their engagement, academic performance, and satisfaction is provided, which benefits the administration of the universities and academic institutions, the lecturers and at the same time benefits the students themselves. Moreover, it also refers to the importance of adopting appropriate infrastructure that enhances social media usage in the learning process. This could help owners and managers of universities and academic institutions as well as the governments in getting a clear vision about the procedures related to technology that are needed to be done to encourage students to use social media in their educational process.

Another implication is represented in providing guidelines to the lecturers and academics, which help them to improve their lecturing and activities by identifying what is important to consider while managing students inside and outside classrooms and what is not.

6. CONCLUSION

This research aims to identify the influence of the Perception of Using Social Media (performance expectancy effort, self-efficacy, communication functionally, and motivations) on students' intention to use Facebook as an educational tool. Moreover, it investigated the effect of intention to use Facebook on the actual usage of students. Additionally, it examined the influence of actual usage on each student's engagement, academic performance, and satisfaction. This study adopted a positivism philosophy and deductive approach and depended on collecting quantitative data by distributing a questionnaire to students who studied at AASTMT in Egypt.

7. RECOMMENDATIONS

This research aims to develop a model that explains the adoption of social media as an educational tool among students. After developing this model, some recommendations are being suggested, including current and future recommendations. Those recommendations are provided to decision-makers and future research.

The current recommendations for decision-makers are well establishing a proper infrastructure that provides suitable technological progress and internet connection inside the universities and academic institutions. This suitable infrastructure will encourage both teachers and students to use the internet as an educational method. Additionally, it is recommended that the decision-makers provide facilitating conditions regarding using a specific social media platform in education. It is noticed that perceived usefulness, flexibility, and learning are significant factors that affect the intention to use social media in education.

Another recommendation provided to decision-makers is to provide suitable training to the teachers in the way of dealing with different social media platforms as a learning tool as well as training them on utilizing different ways and techniques that make them able to manage students and encourage them also to use social media in Education. This recommendation is significant because previous studies proved that the resistance to using social media among teachers could prevent the institution from using it as a learning tool.

Another recommendation for decision-makers is regarding the students, as it was recommended to do workshops, especially for the students, in which the benefits of using social media platforms are illustrated. Those workshops must focus on the importance of using social media in providing a new tool of learning that enables more interaction between students and each other and between students and teachers. It also enables students to get more information whether through searching on the internet or asking different questions using those platforms.

On the other hand, regarding current recommendations for future research, this research succeeds to create a new model that measures the adoption of social media in education among students, so it is recommended to future research to make more studies that adopt this new model to see if the same results will be concluded or no. The study also recommends focusing on the independent variables and examining whether they affect social media adoption simultaneously or whether each variable has its separate effect. In addition, the research recommends adding new independent variables that may affect the intention to use social media.

The study also provides future recommendations for decision-makers and future researchers. The future recommendation of maker's decision-makers is to try to

identify the continuous and changeable needs of students related to social media as an educational tool to succeed in filling those needs, which helps in enhancing the educational process.

On the other hand, for future research, the first recommendation is regarding the targeted population as this study targeted a private university, so it was recommended to make studies on the public universities to see if the same results will be concluded. Moreover, as the study was done in Egypt as a developing country, it was recommended making other research on developed countries as well as making more studies on developing countries, especially Middle East countries, as it is noticed that a lack of studies on the effect and the importance of social media adoption inside the education sector in the Middle Eastern context. It was also suggested to utilize comparative studies between both developed and developing countries.

Another future recommendation for future research is to focus on sectors other than the education sector to see if the independent variables could affect intention usage in sectors other than education. Finally, it was recommended to increase the study period and the sample used in future studies. Moreover, the study recommends using another way of collecting data as this study depends on a questionnaire so future studies may use other ways such as interviews or focus groups.

8. RESEARCH LIMITATION

Any scientific research faces some limitations, and this section will identify the limitations of this study. The first limitation could be represented in the timing, as the data collected for the study includes a limited duration of time, so the study recommends that future research must include a wider period. Another important limitation is the population and sample chosen as this study depends on choosing a convenient sample of students at the Arab Academy for Science, Technology and Maritime Transport (AASTMT) a private university located in Egypt. Therefore, the study suggests making more studies that target a larger sample. Moreover, it is suggested that studies include the public sector to notice if the results differed between the private and public sectors.

This study also targeted Egypt as a developing country, so it is suggested to target more developing (especially Middle East Countries) and developed countries to

see the impact of this new model on different countries and reach generalization. Finally, it is suggested that future research make more studies that examine this model and add other independent variables to measure their influence on the intention to use social media.

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أثر الفائدة المدركة من استخدام وسائل التواصل الاجتماعي على نية الطالب لاستخدام الفيسبوك في التعليم وإنعكاسه على الطلاب من حيث المشاركة، الأداء الأكاديمي والرضا: دراسة حالة طلاب الأكاديمية العربية للعلوم والتكنولوجيا والنقل البحري

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ملخص البحث باللغة العربية

هدفت هذه الدراسة إلى دراسة أثر الأداء المتوقع (الفائدة المدركة والمرونة المدركة)، والجهد (سهولة الاستخدام وسهولة التعلم)، والكفاءة الذاتية (فعالية وسائل التواصل الاجتماعي واتجاهاتها)، ووظيفة الاتصال (التفاعل والتعاون والمشاركة) والدوافع (الاحتياجات المعرفية، والاحتياجات العاطفية، والاحتياجات التكاملية الشخصية، والاحتياجات الاجتماعية التكاملية واحتياجات التخلص من التوتر) على نية الطالب في استخدام الفيسبوك كأداة تعليمية. بالإضافة إلى ذلك، فإنها تفحص العلاقة بين نية استخدام الفيسبوك والاستخدام الفعلي بالإضافة إلى التحقيق في تأثير الاستخدام الفعلي على مشاركة الطلاب والأداء الأكاديمي ورضاهم. استهدفت هذه الدراسة طلاب مرحلة البكالوريوس في الأكاديمية العربية للعلوم والتكنولوجيا والنقل البحري كجامعة خاصة تقع في مصر، حيث تم جمع البيانات من خلال استبيان. تم تحليل البيانات المجمعة من خلال استخدام نموذج الارتباط ونموذج المعادلة الهيكلية. أثبتت النتائج وجود علاقة ذات دلالة إحصائية بين الأداء المتوقع ونية الاستخدام. علاوة على ذلك، فقد أثبتت وجود تأثير جزئي للفعلية الذاتية والتواصل والتحفيز على نية الاستخدام. كما لم يتم إثبات أي علاقة بين الجهد ونية الاستخدام. تدعم النتائج العلاقة بين نية استخدام وسائل التواصل الاجتماعي في التعليم والاستخدام الفعلي لها. كما أنه يدعم بشكل كامل تأثير الاستخدام الفعلي لوسائل التواصل على كلا من مشاركة الطلاب والأداء الأكاديمي ورضا الطلاب.

الكلمات الدالة: مواقع التواصل الاجتماعي، التعليم، نظرية الاستخدامات والإشباع، نموذج قبول التواصل الاجتماعي، مشاركة الطلاب، الأداء الأكاديمي، رضا الطلاب.

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