STUDENTS' ATTITUDES TOWARDS INTEGRATING SOCIAL MEDIA NETWORKS TO THE EDUCATIONAL PROCESS

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ABSTRACT

This study was carried out to ascertain the attitudes of students towards integrating social media networks (SMNs) to the educational process in accordance with the technology acceptance model (TAM) and the unified theory of acceptance and use of technology (UTAUT). It was conducted in Yarmouk University, Irbid, Jordan. The descriptive survey approach and quantifying qualitative approach were used. A study model was proposed, and five hypotheses were suggested. For data collection purposes, a study instrument was designed that consisted of a questionnaire and an open question. The questionnaire consisted of 16 paragraphs divided into three domains addressing performance expectancy, effort expectancy, and social influence as drivers of students' attitudes. The open question addressed the concerns and apprehensions students had about the use of social media in the educational process. Responses from 381 university students from different programs were gathered. Statistical analysis revealed that the students have positive attitudes toward the use of SMN in the educational process. The results further showed that there is a significant relationship between students' attitudes and performance expectancy, effort expectancy, and social influence. In response to the open question, students reported some concerns and apprehensions about the use of SMN in the educational process.

Keywords: educational process; interactive learning; students' attitudes; social media networks; technology acceptance

INTRODUCTION

In recent years, the world has witnessed tremendous developments in the field of information and communications technology (ICT). These developments have changed the means of communication and interaction among people (Li et al., 2017; Wu et al., 2018;). Social media networks have enacted fundamental transformations in the form and nature of social relations (Alaimo & Kallinikos, 2017). In turn, these networks contributed to reshaping and reformulating society inter-relations in various aspects. The prevalence of social media tools and applications has played a great role in the facilitation and acceleration of communication, and hence in deepening human relations (Alaimo & Kallinikos, 2017; Criado et al., 2017; Haro-de-Rosario et al., 2018).

With the increasing influence of Information and Communication Technology (ICT) on peoples' daily lives, attitudes towards the use of ICT have changed. Emerging technologies became more acceptable and immersed in the daily interactions

and activities of almost everyone (Criado et al., 2017; Haro-de-Rosario et al., 2018). Educational sectors worldwide were not far from this change. New technology methods and tools have penetrated the world of knowledge transfer and educational systems and improved the quality of education (Ariff et al., 2019; Dahdal, 2020; Omotayo & Salami, 2018; Omotayo et al., 2020). Therefore, the integration of ICT in higher education institutions has become an essential matter that proved to have a significant impact on the knowledge economy and the rapid growth of some countries (Herman & Kirkup, 2017).

Social media networks (SMNs) are interactive digitally mediated technologies that facilitate the creation or exchange of information, ideas, career interests, and other forms of expression via virtual communities and networks (Kietzmann et al., 2011; Obar & Wildman, 2015). These networks have attracted the attention and interest of higher education institutions of all levels. Platforms like Facebook, Twitter, Google+, YouTube, LinkedIn, Instagram, Myspace, and many others have attained extraordinary spread among and interaction between individuals (Cankaya et al., 2014; Alaimo & Kallinikos, 2017). Many institutions have incorporated one or more of these networks to serve different aspects of the educational process.

Such networks might facilitate enriching social interaction and the active participation of students. Collaborative discussions might be conducted remotely with audial and visual means. Different forms of teaching and learning styles have emerged, such as distance-, blended-, and online-learning (Chawinga, 2017; Williams & Adesope, 2017). The practicality of SMN came from the fact that such networks were widely used among people to communicate with family and friends (Bahari, 2020; Williams & Adesope, 2017).

Despite the belief that social media was a type of technology used for social and entertainment purposes, it has been wisely and carefully adapted to integrate into the educational process (Chawinga, 2017). Through SMNs, learners could share knowledge, search for information, work in virtual groups, and carry out learning activities and educational tasks (Draskovic et al., 2017; Salih & Elsaid, 2018).

Some educators have shown a tendency to use SMNs in their teaching activities. They benefited from the power and convenience of these tools and applications to create blogs and discussion boards. Educators have found this technology very assistive to exchange with their students' homework activities, supporting material, and self-assessment quizzes (Adesope & Ogan-Charles, 2015). Many instructors found these networks to be an opportunity to foster communication, participation, and cooperation with peers and among students (Goel et al., 2016; Tiruwa et al., 2018).

On the other side, students today who grew up in the ICT era are dominated by this technology. They prefer to have a role in establishing the learning environment. They like to participate in the curriculum content development in one way or another and to interact with their counterparts and peers worldwide to establish best practices. In this sense, the new generations tend to be knowledge producers rather than consumers (Rashid & Asghar, 2016; Tasir et al., 2011). Despite their availability, instructors may not activate social media interaction and instead rely on formal elearning platforms and learning management systems. This is either because those instructors do not approve the use of social media for teaching and learning purposes (Al-Dheleai & Tasir, 2019; Eaton & Pasquini, 2020; Tess, 2013), or they are hesitant and unconvinced that social media networks are useful (Zachos et al., 2018).

In psychology, the term attitude refers to a set of emotions, beliefs, and behaviors toward a particular object, person, thing, or event (Minton & Khale, 2014). Attitudes are often the result of experience or upbringing, and they can have a powerful influence over behavior. Behavior, on the other hand, is the actions and mannerisms made by individuals, organisms, systems, or artificial entities in conjunction with themselves or their environment, which includes the other systems or organisms around as well as the inanimate physical environment. It is the computed response of the system or organism to various stimuli or inputs, whether internal or external, conscious or subconscious, overt or covert, and voluntary or involuntary (Minton & Khale, 2014). In this sense, students' attitudes towards the use of SMNs in learning is related to the gain they benefit from, and the consequences and drawbacks of, that use (Abbas et al., 2019; Alamri et al., 2020; Boahene et al., 2019).

Sometimes, the attitudes go beyond being positive or negative. The new technology can be unfamiliar to some students, which results in resistance to it and makes its use an obstacle in their learning (John, 2017). On the other hand, some students see this technology as being very suitable for learning, whether formal or informal learning. This technology is very suitable for learners seeking information about a topic of interest or exchanging best practices and experiences with their counterparts worldwide (Chan et al., 2016; Cheung et al., 2011; Greenhow & Askari, 2017; Greenhow et al., 2019; Madge et al., 2019; Greenhow et al., 2009).

To students, the advantages of incorporating social media in the education process can be found in helping them carry out homework activities through continuous interaction with their colleagues within working groups to share information. In addition, the availability of their instructors outside the class time and office hours helps to quickly secure answers to questions and enquiries. Also, students then move from the role of being recipients of knowledge to the role of being participants in the process. Social media networks allow online and offline discussions and elaborations on any topic related to the course materials to be conducted. Henceforth, students' time and effort can be optimized to accomplish the tasks assigned to them (Faizi et al., 2013; Raut & Patil, 2016).

Though SMNs enable students to interact clearly and transparently, the students may have ownership and privacy concerns about their published work and fears of online misuse and misconduct (Waycott et. al, 2017). Some students may have a tendency to refuse to use SMNs in their learning (John, 2017). Drifting from student objectivity in accepting other opinions can be seen as another drawback, which may cause discussions to deviate from the academic atmosphere and may lead to disrespect, especially if personal and social freedoms or academic rights are dishonored (Waycott et al., 2017). SMNs may encourage users to become social introverts because they spend long hours using them (Ryan et al., 2017). Furthermore, managing the educational process through social media can be sometimes boring and discouraging (Dumpit & Fernandez, 2017). Sometimes, the presence of faculty members on students' personal pages limits the students' freedom (Cabrera et al., 2017).

Yarmouk University faculty members and students have realized the popularity and power of social media networks. No different from others, Yarmouk faculty understood that these networks provide tools that can be tailored to match and suit the learning environment to achieve the desired goals and outcomes. The educational environment can be governed by an array of rules and regulations to enhance communication, respect privacy, and establish a code of ethics for interaction. Within such an environment, students can exchange opinions, share information, and express their creativity, while instructors can direct students to learning resources and to send reminders. SMNs can imitate what is presented on the university learning management system (LMS) in a more encouraging, entertaining, and less formal environment.

Despite that, some students and instructors believed that when incorporating social media networks, they may face some hurdles and difficulties. Chief among these is the lack of skill for using new technology and resistance toward change, especially among instructors. Also, instructors may be reluctance for fear of jeopardizing privacy and may question accuracy of information obtained through social media. More importantly, some students have concerns pertaining to communication through social media in a conservative society, especially female students.

Little in the literature has been reported about the attitudes of users toward integrating social media networks to the educational process in Jordan. This study aims to ascertain the attitudes of Yarmouk University students toward integrating SMNs into the educational process. Furthermore, the study aims to reveal students' concerns and apprehensions toward SMN usage. Finally, the study aims to investigate the effect of gender and field of study on students' attitudes. Such an understanding can help university leaders and educators maximize the returns and minimize the hindrances of using SMNs.

RELATED WORK

In recent years, several studies have been conducted that addressed this topic from different perspectives, as seen in the previous section. In this section, key studies that were conducted in the past few years are presented with brief details.

Al-Qaysi et al. (2019) carried out a study on

the Omani higher education sector to investigate the differences in the attitudes of students towards the use of social media. Data were collected from 169 students enrolled at Sultan Qaboos University in Muscat, Oman via an online survey. The results indicated that there was a significant difference in attitudes with regard to age. The authors reported that students 18–22 years old showed more interest in using social media than the other students. On the other hand, the results indicated that there was no significant difference in attitudes with respect to social media application and gender. According to the respondents, WhatsApp was the application most frequently used by the students for educational purposes.

In 2018, Saaondo and Igbaakaa (2018) conducted a study to examine the perceptions and attitudes towards the use of SMNs among Benue State University undergraduates in Nigeria. The study employed an ex post facto research design to investigate the variables that influence social media network and which influenced use. A sample of 320 participants from both genders were randomly selected aged 18–43 years. Perception Scale, Attitude Scale, and Social Media Network Scale were used for data collation. The analyzed data revealed that perception predicted the use of social media network independently, whereas attitude did not. Furthermore, perception and attitude jointly predicted the use of social media network students. Based on their findings, the authors made some recommendations for the use of social media among students.

John (2017) performed a study to understand student attitudes toward using social media in the classroom and whether those attitudes have any influence on the way students perceive the instructors' usage of social media in the classroom. The study was conducted at Midwestern University in the USA. To achieve the goals, the author implemented a mixed method approach. To gain an in-depth understanding of the students' attitudes, focus groups were conducted and data were collected through a survey. The reported results revealed that students do hold a positive attitude toward using social media if their participation was voluntary. In addition, the results showed that there was a moderate correlation between voluntariness and proficiency and with the students' perception of the instructor.

In 2016, Goel et al. performed a study to examine the relationship between students' beliefs and attitude towards social media use in education and their academic performance. In addition, the authors sought to examine social media usage trends among management students at private colleges and universities to understand the interaction between social media usage and their academic performance. Data were collected using a self-designed questionnaire from 237 students from three private colleges and two private universities of the Delhi NCR region in India. The results provided considerable support for the hypothesized relationships between positive beliefs and attitudes towards social media for exchanging academic activities and the academic performance of the students. The results also indicated that management students used social media mainly for sharing their assignments, projects, and learning experiences with their colleagues.

Vasanthi and Padmapriya (2016) carried out a study to investigate students' attitudes towards social networking sites in Tirupur, India. The study targeted 100 undergraduate and postgraduate students to collect data. They found that students have a very positive attitude towards the use of these social networking sites. The findings revealed that students' scientific and educational functions were still limited. Vasanthi and Padmapriya concluded that social networks could have the potential to create new contexts and opportunities that increase students' motivation.

These studies and many similar studies reported in the literature show that social media networks can be a viable tool to enhance the teaching and learning experience. Students showed positive attitudes towards their use in the educational process inside and outside the classroom in different parts of the world. Rare studies have been conducted to investigate the learners and educators' attitudes towards integrating SMNs into the educational process in Jordan. This is the motivation for the current study.

STATEMENT OF THE PROBLEM AND GOALS

According to Davis (1989), perceived ease of use and perceived usefulness of technology are predictors of user attitude towards using the technology. In this study, we investigated the attitudes of Yarmouk University students

towards integrating social media networks into the educational process. The main goal of our study was to ascertain the attitudes of students towards the use of social media networks in the teaching and learning process in accordance with the technology acceptance model and Constructivism Theory (Davis, 1989; Masrom, 2007). Furthermore, the study aims to reveal students' concerns and apprehensions about SMN usage and to investigate the effect of gender and field of study on students' attitudes.

THEORETICAL FRAMEWORK AND RESEARCH QUESTIONS

Davis (1989) proposed a model called the Technology Acceptance Model (TAM), which was based on the Theory of Reasoned Action (TRA) by Fishbein and Ajzen (1975) in psychology research. According to TAM, the perceived ease of use and perceived usefulness of technology are predictors of user attitudes towards using the technology, their subsequent behavioral intentions, and its actual usage. Perceived ease of use was also considered to influence perceived usefulness of technology.

Masrom (2007) proposed a modification on the original TAM; namely, TAM for elearning. The modified TAM was a reduced model that excluded actual system use and the external variables because there was no immediate intention to examine antecedents to perceived usefulness and perceived ease of use.

In 2003, Venkatesh et al. proposed the Unified Theory of Acceptance and Use of Technology (UTAUT). UTAUT was based on identifying the significant factors affecting one's decision on whether to adopt a particular new technology or not (Liu, 2012). Performance expectancy, effort expectancy, and social influence were considered to be the direct determinants of behavioral intention.

Based on this, we proposed a model to reveal students' attitudes toward integrating SMNs in the educational process, as shown in Figure 1. According to the model, Performance Expectancy, Effort Expectancy, and Social Influence are predictors of Students' Attitude towards SMN integration into the educational process. Accordingly, Performance Expectancy refers to the student's estimate of the potential benefit that the use of technology may bring. This estimate is composed of the perceived usefulness of the technology, extrinsic motivation to use the technology, relative advantages of the technology over other technologies, and outcome expectancy. Effort Expectancy is similar to the notion of perceived usefulness of technology described in the TAM model. It refers to the perceived ease of use, the complexity, and the actual ease of use. It aims at testing the extent to which a student can spare the effort to use the technology. Finally, Social Influence describes a situation in which a student considers adopting the technology because of other people's suggestions. It refers to a situation in which a student makes the decision to adopt a technology under the influence of other people whose ideas are deemed to be important to them and thus influences the whole social situation.

Figure 1. Proposed Research Model Based on UTAUT

We developed five hypotheses as follows:

H01: There is no significant relationship between Performance Expectancy and Students' Attitudes toward integrating SMNs into the educational process.

H02: There is no significant relationship between Effort Expectancy and Students' Attitudes toward integrating SMNs into the educational process.

H03: There is no significant relationship between Social Influence and Students' Attitudes toward integrating SMNs into the educational process.

H04: There is no significant difference between female and male Students' Attitudes towards integrating SMNs into the educational process.

H05: There is no significant difference between science and social and humanities Students' Attitudes towards integrating SMNs into the educational process.

In addition, the study aimed to address the following Research Question:

What are the main concerns and apprehensions students have against using SMNs in the teaching and learning process?

METHODOLOGY

To achieve the goals of the study and examine the validity of our hypotheses and address the research question, we employed a descriptive survey

approach and targeted a random representing sample of students. WE designed A study instrument for this purpose but before conducting the survey, we examined the validity, reliability, and internal consistency of the designed study as follows:

Population and Study Sample

The study population consisted of all undergraduate and postgraduate students studying at Yarmouk University, Irbid, Jordan in the academic year of 2019/2020. According to the general registrar office, the number of students was around 28,600. To guarantee representation, a stratified random sample of 500 students from both genders and different fields of study were targeted, out of which 381 responded. Table 1 portrays the demographic distribution of the study sample according to independent variables.

Table 1.

Variable	Categories/Levels	Frequency	Percentage
Gender	Female	236	61.9%
	Male	145	38.1%
	Total	381	100.0%
Field of Study	Sci	253	66.4%
	SSH	128	33.6%
	Total	381	100.0%

Study Variables

We considered two independent variables that resembled the mediating factors: Gender, which possesses two values (Female or Male), and Field of Study, which likewise possesses two values as well (Scientific [Sci] or Social Sciences & Humanities [SSH]). This classification was based on the university categorization of schools and colleges. In addition, we used one dependent variable, which is Students' Attitude toward integrating SMNs into the educational process. According to Eagly and Chaiken (1998), an attitude is defined as a psychological tendency that determines favor or disfavor of an individual towards a particular entity. In addition, and in accordance with the proposed study model, three drivers determine the Student's Attitude: Performance Expectancy, Effort Expectancy, and Social Influence.

Approach and Limitations

The study employed the descriptive survey approach for its suitability for the research study. We assumed objectivity of respondents in estimation.

Data Collection

For data collection purposes, a study instrument was designed that consisted of two parts: first, a questionnaire that consisted of 16 5-point Likert scale paragraphs. These paragraphs were divided into three domains addressing Performance Expectancy, Effort Expectancy, and Social Influence. The second part was an open question for respondents to state their concerns and apprehensions against the use of SMNs in the teaching and learning process.

To verify the validity of the content, the instrument was presented in its initial form to a group of 11 experts and specialists in the field. We carefully considered their opinions on the clarity of the questionnaire paragraphs and their suitability to the study objectives. The questionnaire was revised accordingly to its final form.

To verify the reliability of the questionnaire and its internal consistency, we applied to a pilot sample of 20 students that was different from the study sample. Cronbach's α analysis was performed on the pilot data, as shown in Table 2. The test results showed that the overall Cronbach's α was 0.88, which demonstrated that the questionnaire paragraphs were internally consistent and suitable (Odeh, 2010).

Table 2.

Domain	Cronbach's α
Performance Expectancy	0.96
Effort Expectancy	0.89
Social Influence	0.85
Overall	0.88

Data Analysis

The Statistical Package for Social Sciences (SPSS) software was used to analyze the data and reveal results. For the questionnaire part of the instrument, statistical means and standard deviations of students' estimates were calculated. Linear regression and ANOVA analysis were performed to examine the validity of the developed hypotheses. To establish judgements on students' estimates to the 5-point Likert scale questionnaire paragraphs, the range was divided into two subranges, namely: Positive Attitude for estimates ≥ 3.0 and Negative Attitude for estimates < 3.0 (Odeh, 2010).

To analyze students' responses to the open question, a quantifying qualitative data approach

was used, which refers to the process of categorizing verbal or behavioral data in an aim to classify, summarize, and tabulate that data. This process involves turning the data from words into numbers and consists of three main steps: developing and applying codes; then identifying themes, patterns and relationships; and finally summarizing, representing, and interpreting the data (Chi, 1997).

In the first step of the process, data from respondents are organized into groups resembling ideas based on the open question. In the second step, the data is carefully read, and a category system is constructed that allows categorizing the data systematically, so that the categories are internally homogeneous and externally heterogeneous. In the last step, summarization, representation and interpretation are performed in terms of the frequency of occurrence and percentages of each idea included in the question.

This process was employed in this study to analyze the data collected in response to the open question. We identified the main concerns and apprehensions facing the use of SMNs in the teaching and learning process as reported in the literature as well as our prior knowledge of the use of SMN in Jordanian universities. These concerns were considered the distinct and independent themes and categories to classify responses. Then we used these classes as a base to classify responses.

Responses from students were numbered for referencing purposes, and the classification process was performed in three stages. In the first stage, each of us carried out the classification independently and the classification results were recorded. This process was repeated after one month on all responses by all three of us independently and without screening the earlier classification results. At this stage, six classification scores were recorded. The goal behind these two stages was to eliminate the inter- and intra-classification variations. In the final stage, a panel by

Table 3.

Paragraph	X	SD
Performance Expectancy		
Using SMN in the educational process enriches your learning experience	3.4619	0.88659
Using SMN in the educational process improves your chances to achieve the learning outcomes	3.3937	0.96101
Using SMN in educational process improves your chances to interact with your instructors and counter peers	3.4278	0.91661
Using SMN in educational process leverages your role from a recipient of knowledge to a participant	3.4278	0.85727
Using SMN in the educational process enhances your academic achievement	3.3255	0.80727
SMN capabilities help instructors improve the delivery of the courses they teach	4.0446	0.92657
Overall (Performance Expectancy)	**3.8766**	**0.698**
Effort Expectancy		
You find learning more fun and entertaining using SMN	3.3911	0.94135
It is easy to use SMN in the educational process	4.0709	0.76276
You get faster responses for queries and questions from instructors or counter peers via SMN	3.6850	0.77494
Your instructors and counter peers find it easy to communicate with you via SMN	4.1627	0.83020
Using SMN in the educational process saves time and effort	3.7927	0.83133
Overall (Effort Expectancy)	**3.8205**	**0.43589**
Social Influence		
You would interact with your instructors and counter peers through SMN for educational purposes at any time	4.0210	0.81407
You would encourage your counter peers to interact with their instructors and colleagues through SMN for educational purposes at any time	4.0499	0.83043
The presence of instructors on your SMN personal pages creates psycho-social comfort and a sense of pride	4.1391	0.73918
Communicating with your instructors and counter peers through SMN increases self-confidence	4.1076	0.82810
Communicating with your instructors and counter peers through SMN increases your willingness to learn	3.6824	0.79567
Overall (Social Influence)	**4.0000**	**0.54134**
Overall	**3.7615**	**0.38248**

all three of us was held to review the results, and the classification for every response was reviewed. When there was agreement in classification, the case was considered closed, and the classification was considered final. When a difference in classification was encountered, the case was opened for discussion until a consensus was reached.

RESULTS AND DISCUSSION

The study instrument was distributed electronically among targeted students with directions explaining the purpose of the study, the way to participate and respond, and the deadlines for submitting complete responses. A total of 500 students confirmed the of the instrument, out of which 381 complete responses were secured.

In order to obtain results and make judgements, the statistical means and standard deviations of students' estimates were calculated per paragraph as well as for the overall domain paragraphs as shown in Table 3.

Before linear regression analysis could be performed to examine the study hypotheses, it was required to examine that the data possessed the normal distribution. A Shapiro-Wilk normality test was performed for each of the three domains. The results are shown in Table 4.

Table 4.

	Shapiro-Wilk		
	Statistic	df	Sig.
Performance Expectancy	0.976	381	0.100
Effort Expectancy	0.878	381	0.180
Social Influence	1.073	381	0.072

Investigating the results reported in Table 4, it can be noticed that the significance values ranged from 0.072–0.180 and were always greater than 0.05. Thus, according to Shapiro and Wilk, the data possesses normal distribution for each and every domain (Odeh, 2010; Shapiro & Wilk, 1965).

A simple linear regression analysis was conducted to examine the validity of the first hypothesis, which stated that:

H01: There is no significant relationship between Performance Expectancy and Students' Attitudes toward integrating SMNs into the educational process.

The results are shown in Table 5.

As can be seen from Table 5, the value of the adjusted correlation coefficient (R2) was 0.625 and the significance was 0.000, which means that changes in Performance Expectancy led to changes in the Students' Attitudes. Further to that, ANOVA analysis confirmed that there was significant statistical impact of Performance Expectation and Students' Attitude at a significance level of ($\alpha \leq 0.05$). Hence, the null hypotheses H01 was rejected, which means there was a significant relationship between Performance Expectancy and Students' Attitudes toward integrating SMNs to the educational process.

Similarly, to examine the validity of the second and third hypotheses, which stated:

H02: There is no significant relationship between Effort Expectancy and Students' Attitudes toward integrating SMNs into the educational process.

H03: There is no significant relationship between Social Influence and Students' Attitudes toward integrating SMNs into the educational process.

The same analysis was carried out and the results are reported in Table 6 and Table 7.

The results shown in Table 6 and Table 7 reveal that the values of the adjusted correlation coefficient

Table 5.

				Change Statistics				
R	R^2	Adjusted R^2	Std. Error of the Estimate	R^2 Change	F Change	df1	df2	Sig. F Change
0.791	0.626	0.625	0.23407	0.626	635.591	1	379	.000
Results of ANOVA Analysis								
			Sum of Squares	df	Mean Squares	F	Sig.	
Regression			34.825	1	34.825	635.591	0.000	
Residual			20.766	379	0.055			
Total			55.590	380				

Table 6.

				Change Statistics				
R	R^2	Adjusted R^2	Std. Error of the Estimate	R^2 Change	F Change	df1	df2	Sig. F Change
0.658	0.432	0.431	0.28853	0.432	288.751	1	379	0.000
Results of ANOVA Analysis								
		Sum of Squares		**Df**	**Mean Squares**	**F**		**Sig.**
Regression		24.039		1	24.039	288.751		0.000
Residual		31.552		379	0.083			
Total		55.590		380				

Table 7.

				Change Statistics				
R	R2	Adjusted R2	Std. Error of the Estimate	R2 Change	F Change	df1	df2	Sig. F Change
0.700	0.490	0.489	0.27345	0.490	364.435	1	379	0.000
Results of ANOVA Analysis								
		Sum of Squares		**Df**	**Mean Squares**	**F**		**Sig.**
Regression		24.039		1	24.039	288.751		0.000
Residual		31.552		379	0.083			
Total		55.590		380				

(R2) were 0.431 and 0.489, respectively. The calculated significance was 0.000 in both tables, which means that changes in Effort Expectancy as well as in Social Influence led to changes in the Students' Attitudes. Similarly, ANOVA analysis confirmed that there was significant statistical impact of Effort Expectancy and Social Influence on Students' Attitude at a significance level of ($\alpha \leq 0.05$). Hence, the null hypotheses H02 and H03 were rejected. That is, on the one hand there was a significant relationship between Effort Expectancy and Students' Attitudes, but there was also a significant relationship between Social Influence and Students' Attitudes toward integrating SMNs to the educational process.

The above results regarding H01 to H03 agree with the theoretical framework presented earlier and resemble an evident proof of the proposed model of Figure 1. Furthermore, these results agree with TAM (Davis, 1989), Modified TAM (Masrom, 2007), and UTAUT (Venkatesh et al., 2003). In addition, these results agreed with the findings of most previous studies reported in the literature (Adesope & Ogan-Charles, 2015; Chawinga, 2017; Draskovic et al., 2017; Faizi et al., 2013; Goel et al., 2016; Rashid & Asghar, 2016; Raut & Patil, 2016; Saaondo & Igbaakaa, 2018; Salih & Elsaid, 2018; Tasir et al., 2011; Vasanthi & Padmapriya, 2016; Williams & Adesope, 2017).

Thus, Performance Expectancy, Effort Expectancy, and Social Influence proved to be strong predictors for Students' Attitude towards SMN integration into the educational process. Students tended to develop positive attitudes towards the adoption of SMN as they appreciated the potential benefit that using the technology may bring. The perceived usefulness of the technology, extrinsic motivation to use it, relative advantages of the technology over other technologies, and outcome expectancy have all led to developing positive attitudes towards SMN use.

In addition, the perceived ease of use made students believe that employing SMNs in the educational process spares effort. Finally, the results indicat that the influence of peers and instructors has increased students' tendency towards SMN use. This influence helped increasing self-confidence and willingness to learn, and it encouraged them to greater engagement.

To examine the fourth and fifth hypotheses, the statistical means and standard deviations of students' responses according to mediating factors (independent variables) were calculated and tabulated in Table 8.

Table 8.

Mediating Factor	X	SD	N
Gender			
Male	3.7690	0.35921	145
Female	3.7569	0.39678	236
Total	3.7615	0.38248	381
Field of Study			
Sci	3.7485	0.38163	253
Soc Sci & Hum	3.7871	0.38435	128
Total	3.7615	0.38248	381

It can be seen from Table 8 that there was a slight difference in students' response means related to gender and in favor of male students. Likewise, the results showed a slight difference in the statistical means related to field of study and in favor of students in social sciences and humanities.

One-way ANOVA analysis was conducted to investigate the significance of these differences with respect to gender and to examine the validity of the fourth hypothesis, which stated:

H04: There is no significant difference between female and male Students' Attitudes towards integrating SMNs into the educational process.

The results of this test are shown in Table 9. As can be seen from the table, the value of obtained significance was 0.765. Therefore, the apparent differences between the statistical means of male and female estimates at a significance level of ($\alpha \leq 0.05$) were not significant. This means that the hypothesis H04 was accepted. In other words, the results proved no significant difference between Students' Attitudes toward integrating SMN to the educational process between female and male students.

Table 9.

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	0.013	1	0.013	0.089	0.765
Within Groups	55.577	379	0.147		
Total	55.590	380			

The same ANOVA analysis was performed to examine the validity of the fifth hypothesis, which stated:

H05: There is no significant difference between science and social and humanities Students' Attitudes towards integrating SMNs into the educational process.

The obtained results are shown in Table 10. As can be seen from the table, the significance value was (0.353) > (0.05). In turn, the hypothesis H05 was accepted. That is, the results indicated that there was no significant difference between Students' Attitudes towards integrating SMN to educational process between Science students and Social and Humanities students.

Table 10.

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	0.127	1	0.127	0.865	0.353
Within Groups	55.464	379	0.146		
Total	55.590	380			

The absence of significant statistical differences between the estimates of students regardless of gender or field of study could be due to the fact that all students were exposed to the same situations. They were in the same learning environment, they were subject to the same conditions and regulations, and they were all exposed to the same ideological structure of the society. Besides, they all had the same access to the technology and had the same opportunity to experience it in their daily life. To this end, these results agreed with the results reported in (Al-Qaysi et al., 2019; Patrick & James, 2018; John, 2017; Vasanthi & Padmapriya, 2016; Goel et al., 2016).

Finally, we applied the quantifying qualitative approach to answer the research question "What are the main concerns and apprehensions students have against using SMN in the teaching and learning process?" The classification was systematically performed according to the three-step process described in the Methodology section. The number of occurrences in every category was computed and a percentage of the total number of occurrences was calculated. Table 11 portrays the findings sorted according to frequency.

Table 11.

	Frequency (out of 381)	Percentage
The possibility to deviate unprofessionally causing disrespect.	67	17.59%
The possibility to deviate from objectivity in accepting the others' opinions.	53	13.91%
The possibility of invading privacy and social freedom.	48	12.60%
The possibility of increasing the risk of social isolation, anxiety or depression because of the excessive use of social media & Internet.	41	10.76%
The tendency to refuse the use of social media communication in learning.	23	6.04%
The academic environment is not encouraging to use social media networks.	18	4.72%
The presence of the instructor on students' personal pages limits their freedom.	8	2.10%

One can notice that students reported some concerns and apprehensions toward the use of SMNs in the teaching and learning process. These concerns were mostly related to fear from unprofessional use that could lead to disrespect, subjectivity, and the freedom of expressing opinions. Some students raised the issue of spending long hours on the internet that could lead to social isolation and addiction. Few students raised concerns related to their not believing in the suitability of SMNs for education purposes or the suitability of the learning environment, or their being reluctant to have instructors intrude on their personal pages on social media. These results agreed with results reported in previous studies discussed earlier (Abbas et al., 2019; Alamri et al., 2020; Boahene et al., 2019; Cabrera et al., 2017; Dumpit & Fernandez, 2017; John, 2017; Ryan et al., 2017; Waycott et al., 2017).

Nevertheless, the percentages of occurrence of the reported concerns in Table 11 were relatively low and ranged from 2.10% to 17.59%. Also, looking into the results regarding the first three hypotheses, in which students appeared to have positive attitudes toward using SMNs in the teaching and learning process driven by their belief in achieving better performance and less effort, we conclude that these fears and apprehensions can be sorted out and eliminated. This can perhaps be done through spreading the ICT culture by establishing strict and clear policies and procedures of conduct and a clear code of ethics.

CONCLUSION

The findings of this study reveal that students have developed positive attitudes toward the use of SMNs in the educational process. We found that there is a significant relationship between Students' Attitudes and Performance Expectancy, Effort Expectancy, and Social Influence. Nevertheless, students reported some concerns and apprehensions against the use of SMNs. These results support the proposition that social media networks can be a viable supporting tool to help instructors and students enrich the learning environment. In the light of the obtained results, we believe that, if used properly, social media networks can be very supportive and motivating for students to be more engaged in the educational process.

Therefore, we suggest that universities work intensively to encourage educators and learners to integrate and mingle the new evolving technology in the educational process. Educators are encouraged to merge these emerging technologies into the teaching methodologies and strategies to motivate students and leverage their engagement in friendly and encouraging environments. They ought to do their utmost to relieve any stress, sensitivity, or barriers that could be hurdles in the face of using all means of technology in education. Finally, institutional leaders should spread the ICT culture among all parties of the educational process and set out policies and regulations to govern well the use of this technology.

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