INVESTIGATING THE IMPACT OF SOCIAL MEDIA USE ON STUDENT'S PERCEPTION OF ACADEMIC PERFORMANCE IN HIGHER EDUCATION: EVIDENCE FROM JORDAN

Ahmad Samed Al-Adwan*	Electronic Business and Commerce Department, Al-Ahliyya Amman University, Amman, Jordan	a.adwan@ammanu.edu.jo
Nour Awni Albelbisi	University of Malaya, Putrajaya, Malaysia	noorbelbisi@gmail.com
Shadia Hasan Aladwan	Al-Balqa Applied University, Basic Sciences Department, Amman, Jordan	d-shadiahaladwan@bau.edu.jo
Omar Mohammed Al Horani	Electronic Business and Commerce Department, Al-Ahliyya Amman University, Amman, Jordan	o.horani@ammanu.edu.jo
Amro Al-Madadha	Princess Sumaya University for Technology, Amman, Jordan	a.almadadha@psut.edu.jo
Mohammad Hamdi Al Khasawneh	Princess Sumaya University for Technology, Amman, Jordan	m.alkhasaawneh@psut.edu.jo

* Corresponding author

ABSTRACT

Aim/Purpose	The main objective of this study is to explore students' beliefs with regard to social media use (SMU) in higher education and the consequences of such use on the perception of their academic performance. Additionally, the study aims to determine the major influential factors with regard to SMU in student learning settings as a means of enhancing their performance. To achieve these objectives, drawing on the literature related to SMU in higher education settings, a research model has been developed.
Background	Social media platforms have led to a significant transformation with regard to the communication landscape in higher education in terms of offering enhanced

learning and improved teaching experience. Nevertheless, little is known, particularly in developing countries such as Jordan, as to whether or not the use of such platforms by students in higher education increases the perceptions of their academic performance. Therefore, this study has developed a model to examine the perceptions of higher education students with regard to social media use and its effect on their performance.

Methodology	The Structural Equation Modelling approach is used to analyze data collected via an online survey in the form of a questionnaire to examine the use of such a model. The study sample is drawn from undergraduate and postgraduate students from three universities (one public and two private) in Jordan. Convenience sampling is used to collect data. Out of 730 sent questionnaire, 513 responses were received, of which 403 were deemed qualified to be part of the data analysis process.
Contribution	This study contributes to the literature on social media in higher education by enhancing our understanding of the perceptions of higher education students on the use of social media in their learning. The tested model can be used as a benchmark for other studies that target the impact of social media on student performance in higher education.
Findings	The results reveal that perceptions of (1) usefulness, collaborative learning, enhanced communication, enjoyment, and ease of use of social media have a positive effect on the use of such media in student learning; (2) resource sharing has an insignificant effect on social media use in student learning, and (3) social media use has a positive influence on students' perceptions of their academic performance.
Recommendations for Practitioners	Senior management and policy makers in higher education institutions will have to train faculty members on effective strategies and methods in order to effectively integrate social media into education. This would equip faculty members with the necessary digital skills needed to help them to be fully informed regarding the benefits of social media and its tools in learning and teaching activities and would also allow them to avoid any possible drawbacks. Furthermore, faculty members should reconsider their current techniques and strategies, and adopt new methods in their teaching that encourage students to use social media platforms as part of their learning. For example, they can regularly post discussions and assignments on social media platforms to inculcate the habit of using such platforms among students for educational purposes. Students, on the other hand, should be aware of the implications and potential advantageous aspects of SMU in their learning. This could be done by conducting regular workshops and seminars in the various faculties and schools at universities.
Recommendations for Researchers	Researchers are encouraged to investigate additional factors that might influence the use of social media by students as well as faculty members. Specially, an emphasis should be given to identify any potential obstacles that might hinder the use of social media in higher education.
Impact on Society	Social media is not only useful for socializing, but also it can be an effective educational tool that enhance students' performance in higher education.
Future Research	Although the collected data support the research model, this study is subjected to various limitations that need to be tackled by further studies. This study is based on the principles of quantitative research design. Data for this study was collected via survey questionnaires. Accordingly, future studies may consider a

qualitative research design in order to uncover additional factors that may impact the use of social media on the part of higher education students. This would allow researchers to generate in-depth insights and a holistic understanding of SMU by higher education students. A convenience sampling method was employed to select respondents for this study. The respondents who participated in this study were from three universities (one public and two private) in Jordan. Accordingly, future research is deemed to be necessary to achieve a degree of generalizability regarding the findings of this study.

INTRODUCTION

Technology has transformed the way students learn and the way educators teach, such that it has the potential to improve the learning experience of students (Glover et al., 2016). Businesses in this digital economy are forced to make effective use of ICT in order to succeed and survive. Higher education is not excluded from such rapidly changing technological advancements (Dumpit & Fernandez, 2017). Therefore, higher education cannot overlook such progress as these technological changes can bring about significant insights and benefits to the academic field. Students nowadays are recognized as pro-active users of ICTs and as being technologically savvy. McLoughlin and Lee (2008) point out that students are viewed as "active producers of knowledge" as they are becoming increasingly self-directed and in charge of their learning. Hence, institutions of higher education are required to address the uncertainties that may face students with regard to their learning process and discover new processes and ways to improve student learning, satisfaction, and performance through the use of ICTs. One such ICT is social media.

Social media is recognized as a contemporary innovation introduced to boost collaboration and communication on a broad scale (Aldahdouh et al., 2020). Since their launch, the diffusion of social media has rapidly grown, with the volume of users increasing daily (Chugh & Ruhi, 2018). Furthermore, social media has become an essential element of the professional and personal aspects of individuals. Social media is regarded by Kaplan and Haenlein (2010) as "a group of Internet-based applications that build on the ideological and technological foundations of Web 2.0, and that allow the creation and exchange of User Generated Content" (p. 61). However, social media as a term is viewed as a set of tools that consist of wikis, bookmarking services, discussion forums, and blogging services. Accordingly, Chugh and Ruhi (2018) point out that social network sites (SNSs) are implicitly incorporated within the underlying concept of social media and described as "an online service allowing users to construct a public or private profile to connect and interact with their social connections" (p. 606). For the sake of both consistency and clarity, the term *social media* will henceforth be used in this study to refer solely to SNSs.

With the massive penetration of mobile devices among the student population, specifically in the case of millennials, it has been argued that traditional methods of offering learning via learning management systems (LMS) are relatively less efficiency in terms of building effective learning settings, as such systems have several drawbacks such as enabling activities that reduce learning efficiency and being less student-centered than other approaches (Rahman et al., 2019). Anderson and Dron (2017) state that, although many institutions of higher education worldwide have been employing LMS to assist student learning, several of the most commonly employed systems are teacher-centered and do not provide Web 2.0 features such as dynamic content, vibrant user experience, and user participation and interaction (teacher–student, student–student). The characteristics of Web 2.0 technology have made the use of social media more appealing compared with LMS (Rahman et al. 2019). Thus, social media is recognized as a key player in teaching and learning (Dumpit & Fernandez, 2017). It is referred by Kietzmann et al. (2011) as one that *"employs mobile and web-based technologies to create highly interactive platforms via which individuals and communities share, co-create, discuss, and*

modify user-generated content" (p. 241). The academic field has become increasingly aware of the remarkable capabilities of social media in terms of improving the learning experience (Sánchez et al., 2019). Social media can be employed for many purposes in academic environments such as encouraging student interaction, providing supplementary help, providing course-related information, and encouraging class discussion boards.

However, even with the valuable advantages associated with using social media, universities are not actively adopting it despite the fact they may not suffer from vulnerable infrastructure to integrate social media with their learning platforms. Hew (2011) justifies that this by referring to the fact that social media is more appropriate for socializing than for educational purposes. Furthermore, Aymerich-Franch and Fedele (2014) point out that students are inclined to separate their social lives from their academic ones when it comes to their use of social media. Both students and instructors may hesitate to adopt social media due to privacy-related concerns.

Al-Qaysi et al. (2020) state that many scholars have been attracted to studying social media, given that it is a hot research area in various fields, one of which is higher education. Although the literature offers robust evidence that social media (e.g. Facebook) can be an effective tool for learning in that it provides several advantages (Chugh & Ruhi, 2018; Sánchez et al., 2019; Sarwar et al., 2019), there is very limited knowledge available about students' perceptions with respect to the utilization of social media as a learning tool and whether such use influences students' performance. This argument holds true, taking into consideration developing countries such as Jordan. In Jordan, while many studies have investigated the adoption of various educational technologies (Al-Adwan, 2020; Al-Adwan & Khdour, 2020; Al-Adwan et al., 2018), the factors that motivate Jordanian students to use social media for educational purposes in higher education are still insufficiently explored. Additionally, there is a limited amount of research investigating the effect of social media usage on students' academic performance. Thus, the main objective of this study is to explore students' beliefs with regard to social media use (SMU) in higher education and the consequences of such use on the perception of their academic performance. Additionally, the study aims to determine the major influential factors with regard to SMU in student learning settings as a means of enhancing their performance. To achieve these objectives, drawing on the literature related to SMU in higher education settings, an extend Technology Acceptance Model (TAM) model has been developed.

RATIONAL OF THE STUDY

A considerable number of studies used TAM to investigate the adoption of social media in higher education. Yet, these studies focus on perceived usefulness (PU) and perceived ease of use (PEOU) as the main determinant perceptions toward predicting social media use and its effect on student performance, which has provided incomplete understanding of social media use in higher education and has provoked the development of proper adoption strategies. Accordingly, the current study has reformed TAM by including contextually-specific factors that consider the distinctive characteristics of social media. The reformation of TAM retains PU and PEOU as key determinants of social media use; it also includes the inclusion of collaborative learning (COL), perceived enhanced communication (PEC), perceived enjoyment (PEE), and resource sharing (RES). These factors act as additional potential predictors of social media use. As the findings of the currents study indicate, except for resource sharing, all these factors serve as enablers of social media use by higher education students. The insignificant relationship between resource sharing and social media use was surprising. As indicated earlier in the previous section, the sharing of information, knowledge, and material is an important aspect of social media use and value for student performance. Accordingly, the construct of resource sharing used in this study should be revised and explored further. This reformation of TAM brought an extra broadness to the exploration of the factors that impact social media use by higher education students by pinpointing the influence of these factors on social media use and subsequently on student's perception of performance. The results thus allow higher education facilitators and senior management to develop informed plans and strategies to improve the use of social media

in the future. Hence, this contribution extends the reach of this study with regard to an understanding of the foundations and motivations allied with students' acceptance to the use of social media. Additionally, this study is based in Jordan, which provides a Middle East-Arabic context from a developing country perspective. Moreover, the current findings offer a comparison and complementary perspective in respect of social media adoption research in developed and non-Middle Eastern/Arabic countries.

THEORETICAL MODEL AND HYPOTHESES DEVELOPMENT

The proposed research model is presented in this section. As indicated in Figure 1, the dependent variable is student performance (STP), while social media use (SMU) mediates the relationship between STP and six independent variables: collaborative learning (COL), perceived ease of use (PEOU), perceived enhanced communication (PEC), perceived enjoyment (PEE), perceived usefulness (PU), and resources (RES). Previous related literature is used to develop hypotheses to be considered in conjunction with the proposed research model. The next subsections describe how these constructs are related to SMU and, subsequently, to student performance.
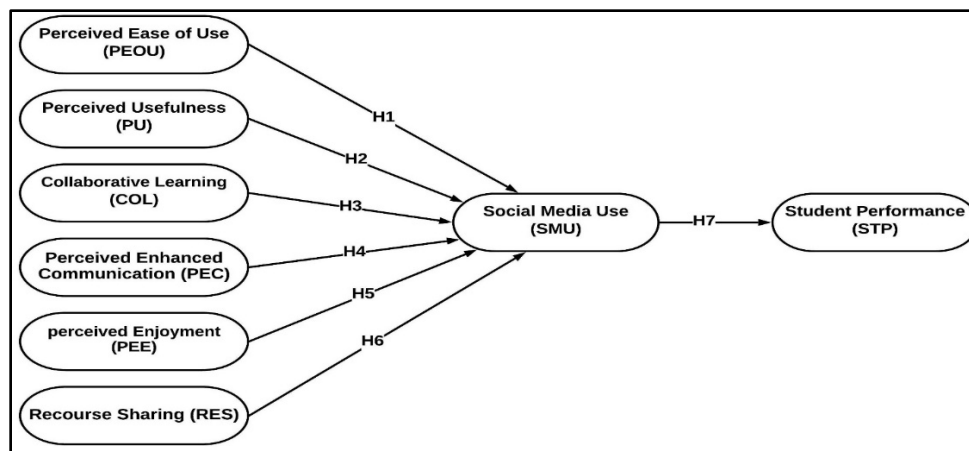

Figure 1. The Research Model

PERCEIVED EASE OF USE (PEOU) AND PERCEIVED USEFULNESS (PU)

User perceptions with regard to ease of use and usefulness are recognized as key elements in terms of technology acceptance and use. PEOU is perceived by Davis (1989) as "the degree to which a person believes that using a particular system would be free of effort" (p. 320), whereas PU means "the degree to which a person believes that using a particular system would enhance his or her job performance" (p. 320). If a technology is recognized as being easy to use, then it is more likely that the technology will be adopted and used. Similar to Sánchez et al.'s (2019) stance, PEOU in this study refers to the extent to which students consider that the usage of social media platforms for educational purposes would not involve extra effort. PU indicates the extent to which students consider that the use of social media platforms for educational purposes would enhance their educational performance. When a specific social media platform is perceived by students as being easy to use and to support their learning, then they are inclined to use the social media platform in their education (Rahman et al., 2019). This points to the fact that, if students are not forced to spend substantial amounts of effort and time in terms of understanding and learning how to use a particular social media platform, then they can be encouraged to use it in their learning. Moreover, a technology has high PU when it increases the performance of its users (Davis, 1989). Subsequently, students will believe that social media sites are useful if the use of such platforms improves their learning outcomes and performance. Al-Mashaqbeh (2015) points out that social media platforms are viewed as effective tools with regard to learning and education, and students feel comfortable in terms of interacting with, and

using, these platforms. Hence, it is expected that ease of use and usefulness beliefs to have an impact on student performance through SMU.

H1: "Perceived ease of use has a significant relationship with social media use".

H2: "Perceived usefulness has a significant relationship with social media use".

COLLABORATIVE LEARNING (COL)

In the present era, most of higher education students are recognized as frequent users of social media platforms as a means of staying informed about their social life (Al-Rahmi & Zeki, 2017). Students' participation in learning is seen to be improved through the usage of social media. Social media engagement involves students' in making mental and physical efforts and spending time boosting their educational performance (Ansari & Khan, 2020). It also involves the amount of time spent interacting with instructors and peers as part of collaborative learning. Sarwar et al. (2019) define collaborative learning as "an activity that involves a process where a group of students collaborate with each other to achieve some problem-solving task in a more interactive environment" (p. 10). By using social media platforms, students are allowed to interact, collaborate, and share education-related content with peers/instructors. It also helps them establish new, and maintain, connections with others (Faiza & El Fkihi, 2018). Furthermore, collaborative learning through social media facilitates knowledge-sharing and learning among students because the various social media tools effectively support such collaborative learning (Aldahdouh et al., 2020). Moreover, these platforms facilitate the building of communities of practice, which enhance both interaction and collaboration among community members. Subsequently, information exchange through these platforms enables academic communities to build an effective and smooth interaction and improve communication among students and instructors (Murire & Cilliers, 2019).

Ansari and Khan (2020) state that, besides enhancing collaboration and communication among students/instructors, the use of social media in students' education improves their capabilities when it comes to problem solving, as well as enabling them to organize social activities in a collaborative manner. For example, students can send/receive messages, post comments, and upload images, videos, audios, and text documents on social media platforms. Accordingly, by sharing useful information, resources, comments, and notes on such platforms, the whole learning process is promoted. As a result, such platforms boost collaborative learning, as students are permitted to work cooperatively towards a common goal. Thus, student performance is inclined to be influenced by collaborative learning through SMU.

H3: "Collaborative learning has a significant relationship with social media use".

PERCEIVED ENHANCED COMMUNICATION (PEC)

Social media platforms provide users with a variety of communication channels which can be employed by academic communities to share information and knowledge (Sánchez et al., 2019). In contrast to official communication channels (e.g., email), people nowadays are more active on social media platforms than ever before, which can also assist academic communities to rapidly distribute any vital educational information and disseminate knowledge. This means of communication is deemed to be promising for academic communities because it facilitates rapid communication and engagement with other members in a collaborative learning environment (Castro-Romero, 2015). It is anticipated that the active use of social media platforms and the formation of virtual relationships allows users to gain access to varied sets of information from diversified sources (Sarwar et al., 2019).

Hidayanto and Setyady (2014) explain that it is expected that students will make increased use of these platforms to achieve educational-related tasks, as it has been confirmed that it enhances interaction and communication between groups. Social media is considered as a rich resource for learning,

allowing students to make use of new communication tools, an important resource in terms of information and effective participation. Many scholars have suggested the adoption of social media platforms as a method of communication for the academic community. For example, Bernard and Dzandza (2018) and Arshad and Akram (2018) state that social media platforms can offer learners effective communication channels through social media apps and tools (e.g., Facebook), thus providing academic communities with a novel means of knowledge construction and of sharing educational information. Faculty can effectively communicate with their students via social media; instructors can build teams and discussion groups that enable students to share their questions and ideas with their classmates and to responsively seek support and guidance from their instructors (Zachos et al., 2018). Subsequently, this enhancement in communication may improve students' mutual performance. Hence, the perception of enhanced communication would significantly influence SMU and subsequently student performance.

H4: "Perceived enhanced communication has a significant relationship with social media use".

PERCEIVED ENJOYMENT (PEE)

The increasing use of social media is also greatly impacted by enjoyment as a motivating element (Al-Rahmi & Zeki 2017). Davis et al. (1992) state that perceived enjoyment means "the degree to which the activity of using technology is supposed to be enjoyable in its own way, apart from any likely performance concerns." Additionally, Wang et al. (2019) point out that enjoyment refers to the degree to which individuals experience happiness when performing a specific task, without any external reinforcements. Enjoyment is constantly described as a key intrinsic motivator that drives individuals to perform a specific task because they enjoy performing it (Gan & Balkrishnan, 2017). It is evident that individuals would be keen to put more effort and time into doing tasks and have greater curiosity and increased acceptance and use of information technology when these tasks generate a considerable degree of enjoyment. In this study enjoyment represents the extent to which student experience joy when using social media as part of their education. The use of social media platforms (e.g., Twitter, Facebook) is recognized as providing enjoyment and fun due to posting various videos and pictures. Providing such exciting posts can bring about pleasure and entertainment for users (Sarwar et al., 2019). It has been indicated by Rauniar et al. (2014) that the level of interactivity that a website encourages is the key influential element in terms of its usage, as users learn and enjoy more in such collaborative and interactive settings. Sánchez et al. (2014) point out that users who enjoy using a particular website would consider their interactions with the website positively and subsequently express favorable attitudes toward its usage to boost their collaborative learning. Thus, it is expected that enjoyment influences student performance indirectly through SMU.

H5: "Perceived enjoyment has a significant relationship with social media use".

RESOURCE SHARING (RES)

Arshad and Akram (2018) define resource sharing as "an individual's agreement to sharing their resources, such as ideas and academic material with others through social media platforms" (p. 248). Ganapathi (2019) demonstrates that various social media tools allow users to share and disseminate resources and user-generated content. In addition, Selwyn (2012) explains that social media platforms are recognized as a medium that helps both the providers and seekers of knowledge in terms of teaching and learning by creating a collaborative environment. The related literature proposes that social media facilitates the process of sharing knowledge/information by offering collaborative channels for disseminating online learning materials and resources (Arshad & Akram, 2018). This suggest that activities involving social media tools enable a smooth sharing and dissemination of resources, and that learners recognize this medium to be useful and easy to use, because it assists them in sharing their resources and knowledge with the targeted individual/group more effectively.

H6: "Resource sharing has a significant relationship with social media use".

SOCIAL MEDIA USE (SMU)

In this study, SMU refers to students' perceptions with respect to the use of social media for learning purposes. Investigating students' perceptions regarding SMU is essential, as students tend to make judgements in terms of the quality of education that they receive (Sánchez et al., 2019). A great deal of research has proven the effectiveness of using social media tools in an educational environment. With the use of social media, the boundaries of traditional classrooms can be expanded and academic engagement can be promoted. It is revealed by Ansari and Khan (2020) that students' engagement has a direct influence on academic performance. Engaged students are found to be relatively active in classroom activities, keen to contribute in additional classroom activities, and demonstrate a motivation to learn which significantly results in academic achievement. Al-Qaysi et al. (2020) state that the use of social media tools by higher education students "improves the learning process by positively enhancing knowledge acquisition, resource and information sharing, active participation, interaction, collaboration, and critical thinking" (p. 2087). Moreover, the use of social media can stimulate personal learning as an educational method to improve self-directed learning (Yot-Domínguez & Marcelo, 2017). Sarwar et al. (2019) state that the various social media tools "share most of the features of magnificent educational technologies regarding peer-feedback, student mentoring, and matching the social context of learning." The above-mentioned research demonstrates many positive aspects with regard to upgrading and supporting educational processes through the use of social media. At the same time, such use promotes successful educational outcomes. They investigate the aspects the social media may affect (e.g., collaborative learning, communication) and confirm that social media can create a more effective educational environment and enhance educational performance.

H7: "Social media use has a significant relationship with student performance".

STUDENT PERFORMANCE

The use of social media platforms permits people to interact with each other, make associations, express themselves, and seek information (Sarwar et al., 2019). Social media platforms include many applications that can be used by students for learning and entertainment purposes. It has been noted that there has been an increased use of different social media applications because they have become vital for learning purposes in the daily lives of students (Al-Rahmi & Zeki, 2017). Previous research confirms the positive relationship between social media platform use and learner performance, in that such use results in higher grades (Helou & Rahim, 2014). The use of social media is found to increase student motivation and improve engagement (Park et al., 2018). Furthermore, the use of social media leads to effective interaction, and access to educational content can be enhanced. Moreover, it has been identified that SMU can be an effective mechanism for informally reducing the gap among faculty and students with respect to communication, which in turn provides students with the benefit of being able to learn flexibly (Powers et al., 2012).

Social media platforms are acknowledged as a critical tool for the student development process as learning is greatly impacted by community participation. With regard to such a process, Tarantino et al. (2013) point out that student engagement reflects the time and determination they dedicate to their educational activities, which, as a result, is correlated with improved student development and learning outcomes. Additionally, research carried out by Al-Rahmi et al. (2015) found that the productivity of students is reliant on their interactions through social media platforms, their engagement, and their satisfaction with regard to participating in collaborative learning experiences. Learners seek to build competencies in terms of knowledge dissemination and to learn with others through online and face-to-face interaction. In such a way, teaching communities enable students to learn and work collaboratively in such a way as to develop knowledge.

METHODS AND PROCEDURES

This study is quantitative in nature and employs an online survey methodology to examine the proposed research model. All items used to measure the constructs are borrowed from previously validated research (see the Appendix), therefore ensuring content validity. These items are contextualized and formed to fit the research design of this study. A five-point Likert scale, ranging from "1-strongly agree" to "5-strongly disagree", is employed to measure all of the survey items. The survey involves a total of 30 items distributed over the eight constructs of the research model (see the Appendix). It also includes demographic data such as educational level, gender, age, and extent of SMU (see Table 1). The questionnaire survey was pilot tested with a panel of students, academics, and researchers, after which essential amendments were made in order to enhance the clarity and content of the questionnaire. Since the objective of this is to explore higher education students' perceptions with regard to the use of social media in terms of enhancing their performance, the study sample is drawn from undergraduate and postgraduate students from three universities (one public and two private) in Jordan. Students are invited to participate in this study by emailing them the URL of the online survey. Convenience sampling is used to collect data. Out of 730 sent questionnaire, 513 responses were received, of which 403 were deemed qualified to be part of the data analysis process. When the questionnaire was sent, many students were using social media platforms for educational purposes and in order to participate in courses. Those who had never used social media platforms for educational purposes responded to the questions in terms of how they would feel if they had used such platforms.

Table 1. Demographic profile of participants

Variable	Category	Frequency	Percentage
Gender	Male	207	53%
	Female	196	47%
Age	<20	131	33%
	21-30	175	43%
	>31	96	24%
Education	Bachelor	316	78%
	Master	75	19%
	PhD	12	3%
	1-2 times	31	8%
Usage of social media used per week for educational purposes	3-4 times	127	32%
	>4	232	57%
	None	13	3%

DATA ANALYSIS

Based on the research model and its proposed hypotheses, the structural equation modeling (SEM) approach along with SmartPLS version 33.2 software was employed for undertaking the data analysis and establishing the research model. The reason behind the use of SEM lies in its ability to allow multiple independent and dependent variables to be modeled (Lowry & Gaskin, 2014). According

Kline to (2010), SEM consists of two main phases: the measurement model and the structural model. While the measurement model tests the reliability and validity of the research model's constructs, the structural model is based on path analysis to test the proposed hypotheses in the research model.

MEASUREMENT MODEL ASSESSMENT

Confirmatory Factor Analysis (CFA) is used to ensure that the research model's constructs have reasonable reliability and validity. CFA is carried out to examine the constructs' internal consistency through Cronbach Alpha and through composite reliability (CR). In addition, CFA examines whether or not the commonly accepted criteria of convergent and discriminant validity are satisfied. As Table 2 demonstrates, the coefficients of both Cronbach Alpha and CR surpass the suggested limit of 0.7 (Hair et al., 2019), demonstrating that all constructs demonstrate a reasonable level of internal consistency reliability. Convergent validity is weighted by the means of item loadings, and "Average Variance Extracted" (AVE). Table 2 confirms that the loadings of each construct's items are higher than the recommended cut-off limit of 0.7 (Hair et al., 2019). Furthermore, the AVE value of each construct is greater than the recommended limit of 0.5. Therefore, convergent validity for the dataset is confirmed. Finally, multi-collinearity examination is performed based on the variance inflation factor (VIF) test (Kock, 2015). As Table 2 demonstrates, the value of VIF for all constructs is less than 5, indicating the absence of multi-collinearity.

Table 2. Instrument validation

Construct	Item	Loading	Cronbach Alpha	Composite Reliability	AVE*	VIF**
Collaborative Learning (COL)	COL1	0.87	0.89	0.93	0.76	2.23
	COL2	0.86				
	COL3	0.89				
	COL4	0.88				
Perceived Enhanced Communication (PEC)	PEC1	0.89	0.91	0.93	0.77	2.47
	PEC2	0.88				
	PEC3	0.86				
	PEC4	0.87				
Perceived Enjoyment (PEE)	PEE1	0.88	0.89	0.92	0.75	1.94
	PEE2	0.86				
	PEE3	0.87				
	PEE4	0.85				
Perceived Ease of Use (PEOU)	PEOU1	0.82	0.86	0.9	0.70	2.45
	PEOU2	0.83				
	PEOU3	0.84				
	PEOU4	0.85				

Construct	Item	Load-ing	Cronbach Alpha	Compo-site Relia-bility	AVE*	VIF**
Perceived Useful-ness (PU)	PU1	0.90	0.90	0.92	0.76	2.27
	PU2	0.87				
	PU3	0.89				
	PU4	0.86				
Recourse Sharing (RES)	RES1	0.86	0.85	0.91	0.77	2.10
	RES2	0.89				
	RES3	0.88				
Social Media Use (SMU)	SMU1	0.92	0.93	0.95	0.83	2.90
	SMU2	0.91				
	SMU3	0.93				
	SMU4	0.90				
Student Perfor-mance (STP)	STP1	0.91	0.90	0.94	0.84	-
	STP2	0.92				
	STP3	0.90				

*AVE: Average variance extracted ", **VIF: "Variance inflation factor*

Two criteria are employed to evaluate discriminant validity: 1) the criterion of "heterotrait-monotrait ratio" (HTMT) (Henseler et al., 2015), and 2) Fornell and Larcker's (1981) criterion. The results of the HTMT test shown in Table 3 indicates that all estimates of HTMT are less than the recommended limit of 0.85.

Table 3. HTMT ratio

	COL	PEC	PEE	PEOU	PU	RES	SMU	STP
COL	-							
PEC	0.72	-						
PEE	0.61	0.65	-					
PEOU	0.71	0.73	0.66	-				
PU	0.65	0.71	0.62	0.73	-			
RES	0.67	0.69	0.64	0.73	0.69	-		
SMU	0.73	0.75	0.70	0.77	0.73	0.71	-	
STP	0.57	0.59	0.56	0.64	0.56	0.64	0.65	-

Furthermore, the test of Fornell and Larcker's criterion in Table 4 shows that the $\sqrt{AVE}$ of each construct in the structural model is higher than the correlation with any other construct. Accordingly, based on these tests, there is evidence to conclude that discriminant validity is present in the dataset.

Table 4. Fornell and Larcker's criterion

	COL	PEC	PEE	PEOU	PU	RES	SMU	STP
COL	*0.876							
PEC	**0.64	0.88						
PEE	0.55	0.59	0.87					
PEOU	0.63	0.64	0.57	0.84				
PU	0.58	0.65	0.56	0.64	0.88			
RES	0.59	0.60	0.56	0.62	0.61	0.88		
SMU	0.68	0.69	0.65	0.69	0.68	0.64	0.92	
STP	0.52	0.54	0.51	0.57	0.50	0.56	0.60	0.92

* The numbers on the leading diagonal are the square root of AVE for each construct

** Correlation among the constructs

Finally, the model performance is evaluated by the means of the model fit indices (Henseler et al., 2016). The fit indices of the proposed model presented in Table 5 confirm a satisfactory fit between the observed data and the hypothesized model. This suggests that the 30 item 8 construct model results in a satisfactory limit with regard to model fit.

Table 5. Fit indices

Index	Recommended Value/Condition	Actual Value
SRMR - "Standardized Root Mean Square Residual"	<0.08	0.0481
NFI - "Normed Fit Index"	>0.9	0.932
d_ULS - "Unweighted Least Squares"	"d_ULS < bootstrapped HI 95% of d_ULS and d_G < bootstrapped HI 95% of d_G"	0.443
d_G - "Geodesic Discrepancies"		0.356

STRUCTURAL MODEL ASSESSMENT

After satisfying the reliability and validity of the measurement model, the outlined hypotheses of the research model are examined. Figure 2 displays the results of path analysis (path coefficients of all hypotheses) as drawn by SmartPLS 3.3.2. While it is observed that all of the hypotheses presented in Figure 1 are supported and accepted, H6 is rejected and not supported. The results demonstrate that PU (β=0.179), PEOU (β=0.185), COL (β=0.191), PEC (β=0.158) and PEE (β=0.184) have significant positive effects on SMU. In contrast, the effect of RES (β=0.104) on SMU is found to be insignificant. All the above-mentioned constructs explain 67.1% (R^2=0.671) of the variance in SMU. Additionally, SMU (β=0.598) has a significant positive effect on STP, explaining 35.7% (R^2=0.3587) of the variance in STP.
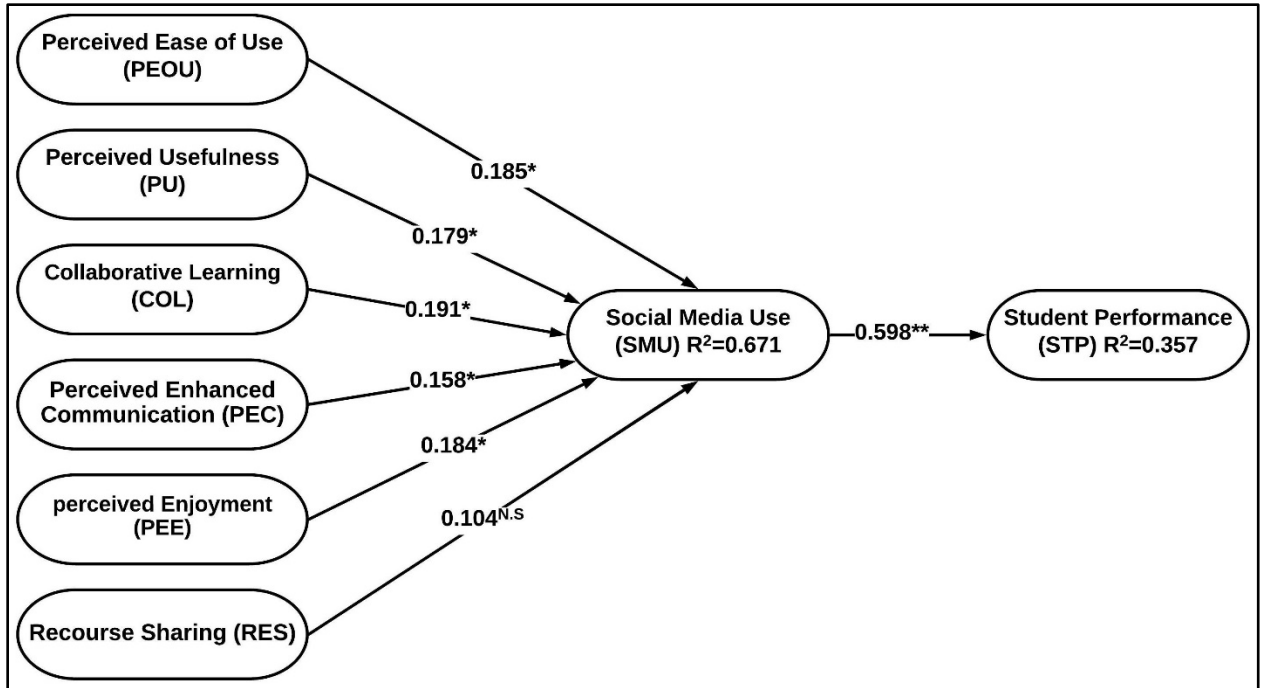
Figure 2. Path analysis
**p-value< 0.001, *p-value< 0.01, NS: not significant

Table 6 summarizes the path coefficient, t-statistic and *p*-value for each of the proposed hypotheses. The following section demonstrates the indirect effects in the research model.

Table 6. Path analysis statistics

Path	β	T-Statistics	*P*-Values
COL -> SMU	0.191	3.27	*0.001
PEC -> SMU	0.158	2.74	*0.006
PEE -> SMU	0.184	3.38	*0.001
PEOU -> SMU	0.185	3.47	*0.001
PU -> SMU	0.179	3.48	*0.001
RES -> SMU	0.104	1.92	N.S0.055
SMU -> STP	0.598	9.87	**0.000

β: path coefficient, "**p-value< 0.001, *p-value< 0.01, NS: not significant

TOTAL INDIRECT EFFECT

The total indirect effects of all the independent variables on STP through SMU are presented in Table 7. All independent variables have significant positive indirect effects on STP through SMU except for RES which shows a non-significant indirect effect on STP. Such results demonstrate that COL, PEE, PU, PEOU, and PEC participate considerably in enhancing STP by increasing SMU.

Table 7. Total indirect effect

Path	β	T Statistics	P Values
COL -> STP	0.114	3.08	0.002**
PEC -> STP	0.095	2.55	0.011*
PEE -> STP	0.110	3.27	0.000***
PEOU -> STP	0.111	3.14	0.002**
PU -> STP	0.107	3.39	0.001**
RES -> STP	0.086	1.86	0.025[N.S]

*β: path coefficient,   ***p-value< 0.001, **p-value< 0.01, *p-value< 0.05, NS: not significant*

DISCUSSION AND IMPLICATIONS

The findings of this study demonstrate that perceptions of ease of use and usefulness have a significant positive effect on SMU. While similar findings are reported by previous researchers (Arshad & Akram, 2018; Rahman et al., 2019), these findings are contrary to the results of Sánchez et al. (2019). In addition, perceived enhanced communication is found to have a positive influence on SMU, which is in line with Arshad and Akram (2018). The respondents of this study confirm that the use of social media is useful and can increase their learning performance and productivity. Additionally, they consider ease of use as a key reason for encouraging the use of social media in their academic life. Moreover, improved communication is viewed by the respondents as another predictor of SMU in their learning. It was found that social media usage enables improved communication, creativeness, access to online classroom discussion and online resource on the part of individuals (Sarwar et al., 2019). Teaching materials can be posted on the various social media portals, which in turn boosts students' online access in that it is free of cost and can be accessed anytime. Consequently, students are able to gain access to various communication channels and learning tools, which subsequently improves their engagement and interaction (with peers and instructors). It is worth mentioning that perceived usefulness, perceived enhanced communication, and perceived ease of use are highly influenced by the massive penetration of mobile devices, and especially smart phones, among higher education students. Students are considered as being *mobile savvy*, which points to the fact that they can easily use the different mobile applications (Pedro et al., 2018). It has been noted by Conradie et al. (2013) that mobile devices have a significant positive effect on learners' enjoyment, engagement, and motivation. Mobile devices have contributed significantly in terms of making social media platforms extremely accessible, and thus widely popular and highly used. Being available on mobile devices has made social media platforms more accessible, easier to join, and more convenient. Students are heavily reliant on mobile devices to share content/information, participate, be notified when peers/educators interact with educational materials, or send new information/content.

Furthermore, the findings reveal that perceived enjoyment has a significant positive influence on SMU, which is consistent with the findings of previous studies (Al-Rahmi & Zeki, 2017; Sarwar et al., 2019). The respondents of this study consider social media as a source of enjoyment and entertainment. Social media has gained a wide reputation among people due to its convenience and global use. It has been noted that most current higher education students (undergraduate and postgraduate) have grown up with social media (Spector, 2015). Accordingly, most higher education students are very familiar with social media and they enjoy using it heavily throughout their daily lives, including their education. Students find it fun and enjoy the use of social media for community building, communication, and collaborative work.

Unlike previous research (Arshad & Akram, 2018), resource sharing is found to have an insignificant impact on social media for academic purposes. The respondents of this study believe that sharing resources via social media is not an influential factor in terms of their SMU for academic purposes. This finding could be justified by the fact that students believe that social media platforms are more useful for discussions, share opinions/knowledge, communicate with peers, and exchange academic information related to their courses (e.g., important announcements, exams, and assignment dates) than for sharing educational materials. Students prefer to use other channels (e.g., emails, Dropbox) to share educational materials especially if the intended materials' contents are difficult to be shared through social media platforms. The various limitations and restrictions found on social media platforms might be viewed by students as an obstacle in terms of sharing educational materials. For instance, Facebook does not allow users to share PDF files on their personal pages or to share executable files. Accordingly, perhaps the construct of resource sharing should be analyzed as two separate constructs: material sharing and knowledge sharing. In agreement with previous research (Arshad & Akram, 2018), collaborative learning is reported to have a positive significant impact on SMU. The participants feel that the use of social media boosts their capabilities to engage in an increasingly collaborative learning environment. Such a finding demonstrates that social media act as a "dynamic tool" to assist the process of developing learning environments by promoting collaboration among students. Sarwar et al. (2019) point out that "using communication media enables the students to enhance healthy class discussions, student engagement, and peer integration" (p. 21). Al-Rahmi et al. (2015) point out that students are enabled to learn how to work with others more effectively through collaborative learning created by social media. Furthermore, it has been argued that the collaborative learning supports the use of social media and creative learning. Collaborative learning embraces the connections and interactions of students with curricula. In this case, given that only a part of learning takes place in the classroom, social media allows the learning environment to be extended to outside the classroom.

Finally, in line with related literature (Al-Rahmi & Zeki, 2017; Sarwar et al., 2019), SMU has a significant positive relationship with student performance. Students who participated in this study believe that social media usage in their learning increases their academic performance. Social media enables collaboration and effective communication, facilitates relationship development among students, offers prompt opportunities for curricula distribution and improvement, and allows users to perform tasks that are beyond the actual classroom. In the same context, Castro-Romero (2015) states that students have the ability "to connect a network to create, edit, transform, and/or share content with others through virtual learning communities" (p. 12). Subsequently, all these features seem to be advantageous in terms students' academic outcomes and performance.

The findings of this study show that the majority of the students who participated in this study have a favorable attitude towards incorporating social media into their education, and that they actively use these social media platforms for educational purposes. Incorporating social media platforms into academic settings will give rise to major changes in learning styles and teaching methods at higher education institutions in Jordan. As demonstrated by the literature, the main teaching style in Jordan is the lecturing method, whereby students, mostly, have a limited role to play, except to be a listener and memorize what the lecturer delivers (Al-Adwan & Khdour, 2020). The chance to give students an opportunity to deliberate and share ideas with the class is restricted due to the large number of students in the class, the curriculum, the lecture time and, furthermore, the absence of training in teaching methods. Nevertheless, the findings of this study endorse a set of motivating measures, such as positive perceptions of usefulness and ease of use, collaborative learning, improving students' communication skills, and generating enjoyment; undeniably, such motivational measures inspire students to incorporate social media into their academic life. Accordingly, it is fundamental to determine faculty members' and students' motivations and concerns regarding integrating social media into academic settings; it is also essential to identify practical experiences with regard to how both students and faculty members effectively use social media platforms in academic settings. Definitely, the use of such platforms will play a part in developing Jordanian higher education strategies in terms of

practice and policy. Senior management and policy makers in higher education institutions will have to train faculty members on effective strategies and methods in order to effectively integrate social media into education. This would equip faculty members with the necessary digital skills needed to help them to be fully informed regarding the benefits of social media and its tools in learning and teaching activities and would also allow them to avoid any possible drawbacks. Furthermore, faculty members should reconsider their current techniques and strategies, and adopt new methods in their teaching that encourage students to use social media platforms as part of their learning. For example, they can regularly post discussions and assignments on social media platforms to inculcate the habit of using such platforms among students for educational purposes. Students, on the other hand, should be aware of the implications and potential advantageous aspects of SMU in their learning. This could be done by conducting regular workshops and seminars in the various faculties and schools at universities.

THEORETICAL CONTRIBUTION

A considerable number of studies used TAM to investigate the adoption of social media in higher education. Yet, these studies focus pay more attention to PU and PEOU as the main determinant perceptions toward predicting social media use and its effect on student performance, which therefore has provided incomplete understanding of social media use in higher education and has provoked the development of proper adoption strategies. Accordingly, the current study has reformed TAM by including contextually specific factors that consider the distinctive characteristics of social media. The reformation of TAM retains PU and PEOU as key determinants of social media use, it also includes the inclusion of collaborative learning (COL), perceived enhanced communication (PEC), perceived enjoyment (PEE), and resource sharing (RES). These factors act as additional potential predictors of social media use. As the findings of the currents study indicate, except for resource sharing, all these factors serve as enablers of social media use by higher education students. The insignificant relationship between resource sharing and social media use was surprising. As indicated earlier in this study, that the sharing of information, knowledge and material is an important aspect of social media use and value for the student performance. Accordingly, the construct of resource sharing used in this study should be revised and explored further. This reformation brought an extra broadness to the exploration of the factors that impact social media use by higher education students by pinpointing the influence of these factors on social media use and subsequently on student's perception of performance. The results thus allow higher education facilitators and senior management to implement effective strategies to enhance the usage of social media in the future. Therefore, this contribution expands the reach of this study in terms of an understanding of the drivers that motivate students to acceptance of the use of social media. Moreover, this study is conducted in Jordan, which offers a Middle East-Arabic context from a developing country perspective. Moreover, the current findings provide a comparison and complementary perspective regarding social media adoption in higher education research in developed and non-Middle Eastern/Arabic countries.

CONCLUSION AND FUTURE WORK

The increase use of social media by students necessitates more attention on the part of higher education institutions. Social media motivates students to be involved in learning through effective interaction and offers a great chance for collaborative learning. The aim of this study was to investigate the impact of various factors on SMU which lead to a better student performance. The results of the study offer insights into the potential educational benefits that can be generated from the use of social media in higher education, specifically in terms of student performance. The findings of the study demonstrate that the use of social media for learning purposes can increase students' perception of their academic performance. Additionally, the findings show that perceived enjoyment, perceived enhanced communication, collaborative learning, ease of use, and usefulness perceptions are recognized as the key determinants behind students' decisions to use social media for academic purposes. At the same time, the factor of resource sharing is found to have an insignificant impact on SMU. This

study contributes to the literature on social media in higher education by enhancing our understanding of the perceptions of higher education students on the use of social media in their learning.

Although the collected data support the research model, this study is subjected to various limitations that need to be tackled by further studies. This study is based on the principles of quantitative research design. Data for this study was collected via survey questionnaires. Furthermore, the selection of the research model constructs was based on previous research. Accordingly, future studies may consider a qualitative research design in order to uncover additional factors that may impact the use of social media on the part of higher education students. This would allow researchers to generate in-depth insights and a holistic understanding of SMU by higher education students (Al Adwan, 2017). A convenience sampling method was employed to select respondents for this study. The respondents who participated in this study were from three universities (one public and two private) in Jordan. Accordingly, future research is deemed to be necessary to achieve a degree of generalizability regarding the findings of this study. Finally, the current study has not differentiated between the various social media sites and platforms in terms of their impact on student performance. Specifically, the functionality, popularity, and level of experience with the various social media platforms are varied among students. Follow-up studies might apply the research model with different social media platforms separately in order to determine if students' performance is impacted more by a particular social media platform. This might help in identifying what social media platform has greater impact on students' performance, therefore revealing such differences in such a way as to help educators to select the most appropriate social media platform that enhance students' performance.

REFERENCES

Al Adwan, A. S. (2017). Case study and grounded theory: A happy marriage? An exemplary application from healthcare informatics adoption research. *International Journal of Electronic Healthcare*, *9*(4), 294 – 318. https://doi.org/10.1504/IJEH.2017.085821

Al-Adwan, A. S. (2020), Investigating the drivers and barriers to MOOCs adoption: The perspective of TAM. *Education and Information Technologies*, *25, 5771–5795*. https://doi.org/10.1007/s10639-020-10250-z

Al-Adwan, A. S., Al-Madadha, A., & Zvirzdinaite, Z. (2018). Modeling students' readiness to adopt mobile learning in higher education: An empirical study. *International Review of Research in Open and Distributed Learning*, *19*(1), 221-241. https://doi.org/10.19173/irrodl.v19i1.3256

Al-Adwan, A. S., & Khdour, N. (2020). Exploring student readiness to MOOCs in Jordan: A structural equation modelling approach. *Journal of Information Technology Education: Research*, *19*, 223-242. https://doi.org/10.28945/4542

Aldahdouh, T. Z., Nokelainen, P., & Korhonen, V. (2020). technology and social media usage in higher education: The influence of individual innovativeness. *SAGE Open*, *10*(1). https://doi.org/10.1177/2158244019899441

Al-Mashaqbeh, I. (2015). Facebook applications to promote academic engagement: Student's attitudes towards the use of Facebook as a learning tool. *International Journal of Modern Education and Computer Science*, *11*, 60–66. https://doi.org/10.5815/ijmecs.2015.11.07

Al-Qaysi, N., Mohamad-Nordin, N., & Al-Emran, M. (2020). A systematic review of social media acceptance from the perspective of educational and information systems theories and models. *Journal of Educational Computing Research*, *57*(8), 2085-2109. https://doi.org/10.1177/0735633118817879

Al-Rahmi, W. M., Othman, M. S., & Yusuf, L. M. (2015). The role of social media for collaborative learning to improve academic performance of students and researchers in Malaysian higher education. *The International Review of Research in Open and Distributed Learning*, *16*(4), 177-204. https://doi.org/10.19173/irrodl.v16i4.2326

Al-Rahmi, W. M., & Zeki, A. M. (2017). A model of using social media for collaborative learning to enhance learners' performance on learning. *Journal of King Saud University-Computer and Information Sciences, 29*(4), 526-535. https://doi.org/10.1016/j.jksuci.2016.09.002

Anderson, T., & Dron, J. (2017). Integrating learning management and social networking systems. *Italian Journal of Educational Technology*, *25*(3), 5-19. https://doi.org/10.17471/2499-4324/950

Ansari, J. A. N., & Khan, N. A. (2020). Exploring the role of social media in collaborative learning the new domain of learning. *Smart Learning Environments*, *7*(1), 1-16. https://doi.org/10.1186/s40561-020-00118-7

Arshad, M., & Akram, M. S. (2018). Social media adoption by the academic community: Theoretical insights and empirical evidence from developing countries. *International Review of Research in Open and Distributed Learning*, *19*(3),244-262. https://doi.org/10.19173/irrodl.v19i3.3500

Aymerich-Franch, L., & Fedele, M. (2014). Students' privacy concerns on the use of social media in higher education. In *Digital arts and entertainment: Concepts, methodologies, tools, and applications* (pp. 1327-1348). IGI Global. https://doi.org/10.4018/978-1-4666-6114-1

Bernard, K. J., & Dzandza, P. E. (2018). Effect of social media on academic performance of students in Ghanaian Universities: A case study of University of Ghana, Legon. *Library Philosophy and Practice (e-journal)*, 1637. https://digitalcommons.unl.edu/libphilprac/1637

Castro-Romero, O. (2015). Social Media as learning tool in higher education: The case of Mexico and South Korea. *Sinéctica*, (44), 1-16.

Chugh, R., & Ruhi, U. (2018). Social media in higher education: A literature review of Facebook. *Education and Information Technologies*, *23*(2), 605-616. https://doi.org/10.1007/s10639-017-9621-2

Conradie, P. W., Lombard, A., & Moller, M. (2013, January). Learners' perceptions of mobile devices for learning in higher education – Towards a mobile learning pedagogical framework. In *Proceedings of World Academy of Science, Engineering and Technology* (No. 73, p. 514). World Academy of Science, Engineering and Technology (WASET). http://hdl.handle.net/10394/13528

Davis, F. D. (1989). Perceived usefulness, perceived ease of use, and user acceptance of information technology. *MIS Quarterly*, 319–340. https://doi.org/10.2307/249008

Davis, F. D., Bagozzi, R. P., & Warshaw, P. R. (1992). Extrinsic and intrinsic motivation to use computers in the workplace. Journal of Applied Social Psychology, 22(14), 1111-1132. https://doi.org/10.1111/j.1559-1816.1992.tb00945.x

Dumpit, D. Z., & Fernandez, C. J. (2017). Analysis of the use of social media in Higher Education Institutions (HEIs) using the Technology Acceptance Model. *International Journal of Educational Technology in Higher Education*, *14*(1), 5. https://doi.org/10.1186/s41239-017-0045-2

Faizi, R., & El Fkihi, S. (2018). Investigating the role of social networks in enhancing students' learning experience: Facebook as a case study. Paper presented at *the International Association for Development of the Information Society (IADIS) International Conference on e-Learning (Madrid, Spain, July 17-19, 2018)*. https://eric.ed.gov/?id=ED590278

Fornell, G., & Larcker, F. (1981). Evaluating structural equation models with unobservable variables and measurement error. *Journal of Marketing Research, 18*(1), 39-50. https://doi.org/10.1177/002224378101800104

Gan, C. L., & Balakrishnan, V. (2017). Predicting acceptance of mobile technology for aiding student-lecturer interactions: An empirical study. *Australasian Journal of Educational Technology, 33*(2), 143-158. https://doi.org/10.14742/ajet.2525

Ganapathi, J. (2019). User-generated content's impact on the sustainability of open educational resources. *Open Praxis*, *11*(2), 211-225. https://doi.org/10.5944/openpraxis.11.2.941

Glover, I., Hepplestone, S., Parkin, H. J., Rodger, H., & Irwin, B. (2016). Pedagogy first: Realising technology enhanced learning by focusing on teaching practice. *British Journal of Educational Technology*, *47*(5), 993-1002 https://doi.org/10.1111/bjet.12425

Hair, J. F., Jr., Risher, J. J., Sarstedt, M., & Ringle, C. M. (2019). When to use and how to report the results of PLS-SEM. *European Business Review, 3*1(1), 2-24. https://doi.org/10.1108/EBR-11-2018-0203

Helou, A. M., & Rahim, N. Z. A. (2014). The influence of social networking sites on students' academic performance in Malaysia. *International Journal of Electronic Commerce Studies*, *5*(2), 247-254. https://doi.org/10.7903/ijecs.1114

Henseler, J., Hubona, G., & Ray A. (2016). Using PLS path modelling in new technology research: Updated guidelines. *Industrial Management & Data Systems, 116*(1), 2-20. https://doi.org/10.1108/imds-09-2015-0382

Henseler, J., Ringle, C. M., & Sarstedt, M. (2015). A new criterion for assessing discriminant validity in variance-based structural equation modeling. *Journal of the Academy of Marketing Science*, *43*(1), 115-135. https://doi.org/10.1007/s11747-014-0403-8

Hew, K. F. (2011). Students' and teachers' use of Facebook. *Computers in Human Behavior, 27*(2), 662-676. https://doi.org/10.1016/j.chb.2010.11.020

Hidayanto, A. N., & Setyady, S. T. (2014). Impact of collaborative tools utilization on group performance in university students. *The Turkish Online Journal of Educational Technology*, *13*(2), 88–98.

Kaplan, A. M., & Haenlein, M. (2010). Users of the world, unite! The challenges and opportunities of Social Media. *Business Horizons*, *53*(1), 59–68. https://doi.org/10.1016/j.bushor.2009.09.003

Kietzmann, J. H., Hermkens, K., McCarthy, I. P., & Silvestre, B. S. (2011). Social media? Get serious! Understanding the functional building blocks of social media. *Business Horizons, 54*(3), 241–251. https://doi.org/10.1016/j.bushor.2011.01.005

Kline, R. B. (2010) *Principles and practice of structural equation modeling*. Guilford Press.

Kock, N. (2015). Common method bias in PLS-SEM: A full collinearity assessment approach. *International Journal of e-Collaboration, 11*(4), 1-10. https://doi.org/10.4018/ijec.2015100101

Lowry, P. B., & Gaskin, J. (2014). Partial least squares (PLS) structural equation modeling (SEM) for building and testing behavioral causal theory: When to choose it and how to use it. *IEEE Transactions on Professional Communication*, *57*(2), 123-146. https://doi.org/10.1109/TPC.2014.2312452

McLoughlin, C., & Lee, M. J. (2008). Future learning landscapes: Transforming pedagogy through social software. *Innovate: Journal of Online Education*, *4*(5). https://nsuworks.nova.edu/innovate/vol4/iss5/1

Murire, O., & Cilliers, L. (2019). Critical success factors to improve the adoption of social media in teaching and learning: A case study at a traditional university. *International Journal of Interactive Mobile Technologies*, *13* (3), 81-94.

Park, E., Song, H. D., & Hong, A. J. (2018). The use of social networking services for classroom engagement? The effects of Facebook usage and the moderating role of user motivation. *Active Learning in Higher Education*, 1469787418809227. https://doi.org/10.1177/1469787418809227

Pedro, L. F. M. G., Barbosa, C. M. M., & Santos, C. M. (2018). A critical review of mobile learning integration in formal educational contexts. *International Journal of Educational Technology in Higher Education, 15*(1), 10. https://doi.org/10.1186/s41239-018-0091-4

Powers, L., Alhussain, R., Averbeck, C., & Warner, A. (2012). Perspectives on distance education and social media. *Quarterly Review of Distance Education*, *13*(4), 241.

Rahman, S., Ramakrishnan, T., & Ngamassi, L. (2019). Impact of social media use on student satisfaction in Higher Education. *Higher Education Quarterly, 74*(3), 304-319. https://doi.org/10.1111/hequ.12228

Rauniar, R., Rawski, G., Yang, J., & Johnson, B. (2014). Technology acceptance model (TAM) and social media usage: An empirical study on Facebook. *Journal of Enterprise Information Management, 27*(1), 6–30. https://doi.org/10.1108/JEIM-04-2012-0011

Sánchez, R. A., Cortijo, V., & Javed, U. (2014). Students' perceptions of Facebook for academic purposes. *Computers & Education, 70*, 138–149. https://doi.org/10.1016/j.compedu.2013.08.012

Sánchez, R. A., Cortijo, V., & Javed, U. (2019). Factors driving the adoption of Facebook in higher education. *E-Learning and Digital Media*, *16*(6), 455-474. https://doi.org/10.1177/2042753019863832

Sarwar, B., Zulfiqar, S., Aziz, S., & Ejaz Chandia, K. (2019). Usage of social media tools for collaborative learning: The effect on learning success with the moderating role of cyberbullying. *Journal of Educational Computing Research, 57*(1), 246-279. https://doi.org/10.1177/0735633117748415

Selwyn, N. (2012). Social media in higher education. *The Europa World of Learning, 1*(3), 1-10.

Spector, J. M. (Ed.). (2015). *The SAGE encyclopedia of educational technology*. Sage Publications.

Tarantino, K., McDonough, J., & Hua, M. (2013). Effects of student engagement with social media on student learning: A review of literature. *The Journal of Technology in Student Affairs, 42* https://www.studentaffairs.com/resources/ejournal/archives/2013-summer/

Wang, L., Lew, S., Lau, S & Leow, M. C. (2019). Usability factors predicting continuance of intention to use cloud e-learning application. *Heliyon*, *5*(6), e01788. https://doi.org/10.1016/j.heliyon.2019.e01788

Yot-Domínguez, C., & Marcelo, C. (2017). University students' self-regulated learning using digital technologies. *International Journal of Educational Technology in Higher Education*, *14*(1), 38. https://doi.org/10.1186/s41239-017-0076-8

Zachos, G., Paraskevopoulou-Kollia, E. A., & Anagnostopoulos, I. (2018). Social media use in higher education: A review. *Education Sciences*, *8*(4), 194. https://doi.org/10.3390/educsci8040194

APPENDIX. QUESTIONNAIRE FORM

Construct	Item	Source
Collaborative Learning (COL)	COL1: "I am able to develop my learning abilities through peer collaboration". COL2: " I am able to develop more comprehensive understandings of the topics through group discussion on Social Media". COL3: "I can develop new skills and knowledge from other members of my group of Social Media". COL4: "Collaborative learning by using Social Media is effective".	Sarwar et al. (2019); Al-Rahmi and Zeki (2017)
Perceived Enhanced Communication (PEC)	PEC1: "Social Media makes the communication easier with instructor/colleagues and other classmates for me". PEC2: "The instructor/colleagues are good at communicating with each other via Social Media". PEC3: "The instructor/colleague encourages us/me to interact with other students/colleagues by using Social Media interactive tools". PEC4: "I think communicating with the instructor/colleagues via Social Media is important and valuable".	Arshad and Akram (2018)
Perceived Enjoyment (PEE)	PEE1: "It is interesting to use Social Media in my learning". PEE2: " I feel excited while exploring more information by using Social Media". PEE3: "Features and applications of Social Media are a source of thrilling for me". PEE4: "When interacting with Social Media, I did not realize time had elapsed".	Sarwar et al. (2019)

Construct	Item	Source
Perceived Ease of Use (PEOU)	PEOU1: "My interaction with Social Media is clear and under-standable".	Rahman et al. (2019); Sánchez et al. (2019)
	PEOU2: "It is easy for me to become skillful at using Social Me-dia".	
	PEOU3: "I find Social Media easy to use".	
	PEOU4: "Learning to operate Social Media is easy for me".	
Perceived Use-fulness (PU)	PU1: "I find Social Media useful in my studies/research".	Sánchez et al. (2019); Arshad and Akram (2018)
	PU2: "Using Social Media enables me to accomplish tasks more quickly".	
	PU3: "Using Social Media increases my productivity".	
	PU4: "Overall, using Social Media enhances my effectiveness in my studies".	
Recourse Shar-ing (RES)	RES1: "Sharing of my knowledge with other members of Social Media is always good".	Arshad and Akram (2018)
	RES2: "Sharing of my knowledge with other members of Social Media is always beneficial".	
	RES3: "Sharing of my knowledge with other members of Social Media is always an enjoyable experience".	
Social Media Use (SMU)	SMU1: " I use Social Media for academic purposes to discuss and share my ideas with my peers".	Sarwar et al. (2019); Al-Rahmi and Zeki (2017)
	SMU2: " I use Social Media to communicate and collaborate with my peers/colleagues in my course".	
	SMU3: "I use Social Media to complete my academic tasks".	
	SMU4: " I use Social Media for knowledge sharing".	
Student Per-formance (STP)	STP1: " I feel competent in completing my academic tasks".	Sarwar et al. (2019)
	STP2: "I have learned how to do my task compilation efficiently".	
	STP3: "I have performed academically as well as I expected I would".	

BIOGRAPHIES

Dr. Ahmad Samed Al-Adwan is the Vice Dean for academic affairs and an Associate Prof. of Electronic Business and Commerce at Al-Ahliyya Amman University, Business School, Jordan. He holds a Ph.D in Management Information Systems Studies/E-business, and M.Sc in Information Technology Management from the University of Wales, UK. He is particularly interested in using management information systems to inform long-lasting developments in ICTs. His research interests include user acceptance of ICT and information systems, modelling ICT, e-learning, SME, management information systems, e-commerce, knowledge management, m-commerce, educational technology, e-business, and healthcare information technology. He is serving as reviewer of several international reputed journals. Dr. Al-Adwan is a member of many international affiliations. He has authored and published many research articles in several reputed international journals in UK, USA, Swaziland and Canada.

Dr. Nour Awni Albelbisi holds a Ph.D. in Instructional Technology from the University of Malaya, Malaysia. She also holds a Master degree in Instructional Technology at the University of Malaya. Her current research interests are online homework, Massive Open Online Courses (MOOCs), and online learning.

Dr. Shadia Hasan Aladwan is an Associate Prof. of history in the department of basic sciences, Al- Balqa' Applied University, Jordan. She holds a Ph.D in history from the University of Jordan. She has published many articles in many international Journals.

Omar Mohammed Al Horani is currently a lecturer at the department of Electronic Business and Commerce, Business School, Al-Ahliyya Amman University, Jordan. He holds M.Sc in Information Technology Management, the University of Sydney, Australia, and Bachelor degree in Computer Information Systems from Al-Ahliyya Amman University, Jordan. His research articles appeared in several international journals.

Dr. Al-Madadha holds a PhD in Management from Cardiff Metropolitan University – United Kingdom, he holds an MBA from New York Institute of Technology. His B.Sc. in Banking Management from Hashemite University, Jordan. Dr Amro Al-Madadha worked for ten years at Deposit Insurance Corporation in Jordan as a financial analyst and head of research and development division. Dr. Al-Madadha worked at Logistics and Clearance Company for one year. Currently, Dr Al-Madadha teaches at Princess Sumaya University for Technology (PSUT) and he is the Vice Dean for King Talal School of Business Technology and the coordinator for the Master of Business entrepreneurship & Business Analytics program. Amro's research focuses on leadership, empowerment, creativity, organizational behavior and human resource management. His research has been published at several international journals.

Dr. Mohammad Hamdi Al Khasawneh is an Associate Professor in the Department of E-Marketing and Social Media at Princess Sumaya University for Technology Amman, Jordan. He earned his Bachelor's degree in Accounting from Yarmouk University, Jordan, followed by a Master of Business Administration in Marketing from Coventry University, UK, and a PhD degree in E-Marketing from Griffith University, Australia. His work has been published in several international journals such as International Journal of Electronic Marketing and Retailing, Journal of Internet Commerce, and International Journal of Business Information Systems. His research interests include internet advertising, search engine advertising, social media marketing, viral marketing, mobile marketing, mobile banking, consumer behavior, CRM, and corporate social responsibility.