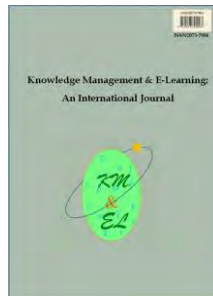# Factors influencing students' academic performance in universities: Mediated by knowledge sharing behavior

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Factors influencing students' academic performance in universities: Mediated by knowledge sharing behavior

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Abstract: Recently, using Social Network Sites has been rising noticeably, especially among young people (18 years-34 years) who compose more than 50% of Facebook users. Accordingly, university students may find Facebook familiar and easier to share knowledge. This study attempts to investigate the impact of knowledge sharing using Facebook on student performance. This study examines the effect of Technology Self-Efficacy (TS), Information Self-efficacy (IS), Social Expectations (SE), Enjoyment (EN), Size of Social Network (SN), Personal Trust (PT), and Reciprocity (REC) as main factors on students' academic performance as mediated by knowledge sharing behavior on Facebook in Jordanian University. Accordingly, a Covariance-based structural equation modeling (CB-SEM) using AMOS 22 was applied to test the model and posited hypotheses. A questionnaire-based survey was designed to collect the data based on a dataset of 450 university students from various five Jordanian universities. The results indicated that TS, IS, SE, EN, SN, PT, and REC positively and significantly affect students' academic performance. Additionally, knowledge sharing on Facebook significantly as well as positively mediated the relationship between the proposed factors and students' academic performance. This is one of the few studies which investigate the interrelationships among the examined factors, and the first to test the model on university students in Jordan. Practically, policymakers can depend on the results to create or modify the current learning environment by introducing the usage of social networks to help in increasing academic performance. Lastly, future research could study some other social network platforms looking at gender, educational level, or region.

Keywords: knowledge sharing; Academic performance; Social cognitive theory; Social exchange theory

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1. Introduction

In the education industry, the use of the Internet and communication technology is gaining a substantial amount of traction. Students at universities utilize the Internet regularly to access information, collect data and do research (Alshamayleh et al., 2015; Abu Gharrah & Aljaafreh, 2021). People also use the internet for entertainment and enjoyment. Students use the internet for enjoyment and pleasure fulfillment in addition to its instructional value (Al-Fraihat et al., 2020; Awad et al., 2022). Students spend two hours and 24 minutes every day on social media in 2019 (Statista, 2019). Due to the amount of time spent on the internet or social networking sites (Ali et al., 2021), researchers have looked at the antecedents or drivers of continuous intention in the past (SNS). Some researchers focus on introducing Technological Pedagogical Content Design using WEB 2.0 (Xie et al., 2021). Various media platforms, such as the Internet (Joorabchi & El-Nasr, 2011), and social networking sites (SNS), have been studied to understand what encourages students (Ali et al., 2021) and consumers to spend more time on them (Mehyar et al., 2020).

Such studies indicated that people are continually keeping up with technology, particularly social media, as time passes. According to Statista (2019), (2.82) billion individuals use social networking sites (SNSs) around the world in 2020, with that number predicted to rise to (3.09) billion in 2021. This demonstrates that people's interests are increasingly focused on the use of technology. As a result of better communications technology, this revolution is gaining momentum. Therefore, it creates an excessive number of options for online applications. Furthermore, significant improvements in the World Wide Web (WWW) paralleled the enhanced development in communication allowing users to have two-way channels to connect via Web 2.0 applications, which aided the establishment of SNSs (for example Facebook) (Hosen et al., 2021).

Undoubtedly, Internet resources have now become a major component of educational institutions (Abu Gharrah & Aljaafreh, 2021). Students use the Internet frequently and extensively to interact online, search for information, and complete specific tasks and activities. The usage of the Internet has both beneficial and negative consequences on the academic achievement of university students (Chang et al., 2019). Students nowadays are overly reliant on the Internet to complete numerous tasks and use social networking sites. The majority of people use the Internet for online communication, socializing, chatting, and gaming (Byun et al., 2009). The overabundance of information can have a negative impact on student's academic performance (Awad et al., 2022). Students utilize the Internet to complete work relevant and unrelated to their studies (Weldon et al., 2021), which has an impact on their academic performance (Chang et al., 2019). For example, (Kolek & Saunders, 2008) found there is no relationship between Facebook use and academic achievement in students. The study of Kirschner and Karpinski (2010) pointed out that students who did not use Facebook had higher GPAs

than students who did. As a result, the influence of students' use of the Internet and social media networks on their academic performance varies. It is, indeed, dependent on the websites people frequent and the technologies they employ (Michikyan et al., 2015).

Indeed, SNSs, particularly Facebook, play a critical role in drawing a significant number of Internet users in their daily lives. Due to the rise of Facebook's common applications, the demand for communication and the exchange of information and knowledge among students/individuals has skyrocketed. Consequently, the growth and development of Facebook provided solutions, ideas, and mechanisms to share knowledge among many organizations as well as students. The rapid exchange of information and knowledge across Facebook has dramatically changed behaviors and lifestyles and enhanced personal and organizational learning (Chen & Hung, 2010). Studies stated that the Internet helped in facilitating knowledge sharing in different ways (Liang et al., 2008). Recently, due to the intensive use of Facebook, the knowledge-sharing process has become easy and interesting (Sharabati, 2018; Rahab & Wahyuni, 2013).

In the organizational context including education ones, Vuori and Okkonen (2012) indicated some catalytic factors for knowledge sharing in higher education institutions, including contributing to the organization's success, obtaining incentives and rewards, feeling empowered, acquiring knowledge in return, enhancing its reputation, and adding value to knowledge and confidence, confirming that participation in knowledge-sharing is worthwhile. In the context of education, Jones et al. (2010) found that social network sites (specifically, Facebook) are effective tools or methods used by students and teachers. To prepare students for the dynamic situation (online), educational systems must keep up with these rapid changes (Kan'an, 2018).

In this day of globalization and technological progress, education is seen as the foundation for all human endeavors. The public's awareness of the importance of education is growing. To accommodate the growing number of students, the number of schools, colleges, and universities has expanded considerably (Faisal et al., 2017). According to Al-Rahmi et al. (2015), lecturers who use Facebook in their teaching methods can help students improve their educational performance. Students' academic performance is a major concern for schools and universities, as it impacts the institutions' reputations (Alsalman et al., 2019). Some research has shown insights into how Facebook, in particular, can be used as a valuable learning tool by students and teachers, how knowledge is shared and information is passed between them, and then such a tool can impact students' academic achievement (Sharabati, 2018). In this regard, it should be noted that while college students primarily view Facebook as a social place, they see long-term investment in social media platforms as important instruments in their academic success (Irwin et al., 2012). As a result, there is evidence that students regard Facebook as a potentially beneficial tool for their academic success.

Knowledge is a major organizational resource (Analoui et al., 2014), and knowledge-sharing behavior (KS) occurs when an individual disseminates his or her acquired knowledge to other members of the organization (Ryu et al., 2003). Knowledge sharing, according to Wang and Noe (2010), entails sharing mission information and knowledge with others and cooperating with them to solve problems, generate new ideas, or implement policies and procedures. Knowledge sharing (Bock et al., 2005) can be seen as a sort of social interaction in which people share their knowledge and abilities with colleagues and expect to get other people's knowledge in return.

The importance of the current study steamed from the importance of the cornerstone of the educational process which is academic performance (Rasto et al., 2021). Sharabati (2018) is the main study in the literature that this study considered to

develop its research model. Motivations are dependent on the context in which knowledge and information are shared (Talja & Hansen, 2006; Wilson, 2010). The process of sharing knowledge was investigated in different contexts, such as business organizations (Law & Ngai, 2008; Wah et al., 2005) and virtual communities (Chiu et al., 2006; Hsu et al., 2007). Given the difference between the organizational and the Facebook contexts, the current study attempts to identify key factors to illustrate knowledge-sharing behaviors in the context of Facebook. In addition, this study focuses on bridging the gap by investigating a combination of social cognitive theory factors, and social exchange theory factors and their impact on knowledge-sharing behavior. This study will help to better understand the nature of the behaviors and patterns of the knowledge-sharing process and its impact on student's academic performance in the context of Facebook, in particular. In addition, this study attempts to examine knowledge-sharing behavior as mediating the relationship between a set of factors and the academic performance of students in Jordanian universities.

The previous literature related to knowledge sharing and information that included news and entertainment on Facebook is limited (Li, 2015). Kim et al. (2015) suggested that studies examining the roles of both Environmental and individual factors in knowledge sharing and information on websites and other means of communication are very rare. Nevertheless, few studies examined the impact of environmental factors and motivations on individuals' sharing behavior toward using Facebook (Bandura, 1989). To bridge this gap, the current study developed a unified model by combining knowledge-sharing, social-cognitive, and exchange theories. Also, the importance of the current study is derived from the use of knowledge-sharing behavior as a mediator variable that is hypothesized to influence students' academic performance in Jordan. As far as our literature shows, there are no studies in Jordan that investigated knowledge-sharing behavior in the context of Facebook, in particular.

Hence, the study in hand aims to answer the following research question: What is the impact of (TS, IS, SE, EN, SN, PT, and REC) on students' academic performance on Facebook among Jordanian university students mediated by knowledge-sharing behavior? The methodology is then described including the research theoretical model, hypotheses, population and sample, data collecting, and analysis methodologies, and then, the proposed hypotheses are tested in the data analysis step. After that, there is a debate and a conclusion, as well as areas for future research. Due to the time and geographic limitations of this study, it examined the universities' Jordanian students.

2. Literature review

2.1. Academic achievement

Academic performance is defined as a student's ability to complete academic assignments, and it is assessed using objective criteria such as final course grades and grading point average (Anthonysamy et al., 2020; Busalim et al., 2019). Ellore et al. (2014) claim that the Internet is an important part of college/university students' lives and is growing increasingly important. According to Naqshbandi et al. (2017), the majority of students use Facebook daily, making it an integral part of their lives.

The benefits that Internet users provide to students have been proven in numerous research (Maqableh et al., 2021). According to McCamey et al. (2015), as the Internet becomes more widespread, college students will have more access to content to help

them broaden their knowledge. Students can use the Internet for research, coursework, and presentations on their subjects of study (Emeka & Nyeche, 2016). Several studies have looked into the relationship between using the Internet's resources/services and academic success in a variety of topics in this regard (Maqableh et al., 2021). For example, (Sampath Kumar & Manjunath, 2013) discovered that university lecturers and researchers who use Internet sources and services have a positive impact on their academic performance. Emeka and Nyeche (2016) observed that utilizing the Internet increases undergraduate students' academic performance.

2.2. Online knowledge sharing using Facebook

Knowledge-sharing is described as an individual's voluntary conduct in which he or she shares newly acquired knowledge with others (Helmstädter, 2003). The word "knowledge sharing" refers to the act of exchanging information with others to solve problems, generate new ideas, or put procedures and policies in place (Cross & Cummings, 2004). Bukowitz and Williams (1999) described knowledge sharing as an activity in which people, friends, families, organizations, or communities share information and knowledge. Argote and Ingram (2000) described knowledge sharing as the transfer of knowledge from many sources in a certain fashion so that it can be acquired and used in the future. Knowledge sharing Davenport and Prusak (1997) is also defined as a voluntary distribution of skills and experience gained with other individuals. It occurs in many ways, such as written or direct communication through communication with experts (Cross & Cummings, 2004). Hence, SNSs are very suitable for promoting and improving relationships, sharing ideas and knowledge as well as sharing individual experiences. In addition, this study sheds light on knowledge-sharing behavior as a mediator between a set of factors and the student's academic performance in Jordanian universities by using the Facebook platform.

Indeed, using social networks (particularly, Facebook) allows users to maintain interpersonal relationships with coworkers who have found success online and plplayntertainment and educational games (Xie et al., 2021). Colleague engagement can be an important part of achieving learning that provides emotional and intellectual support for academic fulfillment, capability growth, and performance improvement (Bauer et al., 2007; Yu et al., 2010). Moreover, Wong et al. (2022) explained that using social mobile learning stimulates idea generation among higher education students. Personal characteristics, such as individual motivation, have a substantial impact on voluntary information sharing, according to several knowledge management studies (Hosen et al., 2021; Kankanhalli et al., 2005; Nguyen et al., 2021).

2.3. Theoretical framework and hypotheses development

This study sheds light on the combination of two theories of social cognitive theory (SCT) and social exchange theory (SET) by investigating the selected variables based on the views of these two theories. Fig. 1 is the proposed model for this study. All hypotheses and variable names are clear. Also, Fig. 1 is followed by the operational definitions for all study variables with sources (see Table 1).
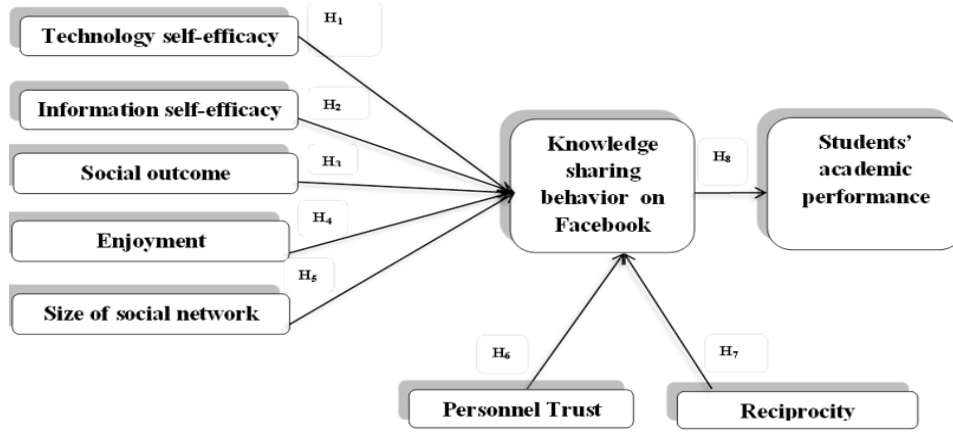
Fig. 1. Research model

Table 1
Operational definitions

Variables	Operational definitions	literature review
Technology self-efficacy	The ability of individuals to use technology to share information through SNSs	(Lee & Ma, 2012)
Information self-efficacy	The degree to which a person believes that individuals have the ability to share information with others	(Hsu et al., 2007)
Social expectation	The degree to which a person believes that accomplishing the required tasks may lead to valuable results	(Bandura, 1986; Hsu et al., 2007)
Enjoyment	The extent to which individuals participate internet in social media is because the process "yields fun and enjoyment".	(Hsu & Lin, 2008)
Size of social network	The sum of the number of one's friends on SNS and the strength of their relationships.	(Berger, 2014)
Personnel trust	The degree of integrity, which is that an individual expects individuals to use a set of values and principles on SNSs sites.	(Inkpen & Tsang, 2005; Shapin, 1988)
Reciprocity	Defined as the benefit expectancy of a future request for knowledge being met as a result of current contributions	
Academic performance	The degree to which the student achieves his educational objectives	(Al-Rahmi et al., 2015)

2.4. Social cognitive theory (SCT)

This theory is highlighted based on the view that says people do not live in separation. In this regard, it is stated by Bandura (2001) socially-interdependent efforts are the main motivating factor of people. Hence, they have to work in coordination with others to secure what they cannot achieve on their own. In other words, the basic hypothesis of SCT is that individual behavior, personal factors, and environmental factors continuously influence and define each other bilaterally (Bandura, 1986). This theory also provides a framework for understanding and clarifying voluntary human behavior and education (Zimmerman, 1989), management (Bandura, 1989), and mass communication (Bandura, 2001). The behavior of the individual develops based on certain situations or through individuals' perceptions and social environment.

SCT emphasizes the importance of triadic reciprocal connections among cognitive, behavioral, and environmental components in determining psychosocial functioning (Bandura, 1989). By merging social structure (i.e., organizational routines and procedures) and cognitive views, the theory emphasizes the capacity and importance of absorbing, keeping, and applying knowledge (i.e., human cognitive processes). SCT also offers a perspective on learning that can be defined as the reciprocal interaction between cognitive and social dimensions. As a result, SCT is frequently utilized to investigate how information processing and information utilization influence social interactions (Gioia & Sims, 1986). It is, then, explained by (Bandura et al., 1999), the patterns of interaction between these factors are supposed to vary based on the person, behavior, or situation being verified and the specific context in which the behavior or situation occurs. This theory is used to explain the following factors' use TS, IS, SE, EN, and SN.

2.4.1. Technology self-efficacy

TS is defined as the ability of individuals to use technology to share information through SNSs (Compeau & Higgins, 1995). The literature has shown that TS has a significant impact on the use of SNSs to share knowledge. Lee and Ma (2012) stated that it is the degree to which users' knowledge of SNSs benefits can affect knowledge sharing and news transmission on SNSs platforms (Lee & Ma, 2012). Moreover, the ability to possess technological skills is an important indicator of knowledge sharing using SNSs (Jarvenpaa & Staples, 2000). However, in Jordan, the literature review process could not find any study that examined the impact of TS on the student's academic performance mediated by KS. We, therefore, posit the following hypothesis:

> **H1**: There is a relationship between TS and student's academic performance in Jordanian Universities.

2.4.2. Information self-efficacy

IS is defined as the degree to which a person believes that individuals can share information with others (Cabrera & Cabrera, 2002). These capabilities include experiences, authoring knowledge content, formal and informal knowledge sharing as well as interactions and relationships between individuals (Hsu et al., 2007). Many studies examined the relationship between beliefs of self-efficacy of information and people's desire to share information via SNSs. They argued that the individual's knowledge enhances his/her confidence in sharing that knowledge with others. Lee et al. (2006) found that individuals seldom share knowledge and transfer information on the Internet because they believe that they have little or not enough experience. Therefore, IS of an individual is expected to be an important factor affecting users' behavior to share knowledge and information via SNSs. We, therefore, posit the following hypothesis:

> **H2**: There is a relationship between IS and student's academic performance in Jordanian Universities.

2.4.3. Social expectations

According to (Butler et al., 2007), this factor was determined in SCT as the degree to which people expect the consequences of their behavior. The degree to which a person believes that accomplishing the required tasks may lead to valuable results (Chiu et al.,

2006). (Bandura, 1986) points out that when people take action and believe it will lead to positive results, they will be at more risk. According to previous studies, the use of SNSs regarding the relationship between the expected benefits and the behavior of individuals focused on social reactions. More deeply, several studies found that external rewards (such as monetary incentives) encouraged knowledge-sharing behaviors among employees (Bock et al., 2005; Gupta & Govindarajan, 2000). McLure Wasko and Faraj (2000) also found that the desire to build a reputation as an expert was a strong factor for participation among the users of discussion forums on SNSs and sharing knowledge. Studies suggest that predicting outcomes (reward systems) is an important factor influencing the decision to share knowledge (Bartol & Srivastava, 2002). We, therefore, posit the following hypothesis:

> **H3**: There is a relationship between SE and student's academic performance in Jordanian Universities.

2.4.4. Enjoyment

Researchers found that people are more inclined to engage in a specific behavior that will lead to favorable results (Chiu et al., 2006). (Hsu & Lin, 2008) defined EN as the degree to which an Internet user participates in social networks because the process "yields fun and enjoyment". (Lu & Hsiao, 2007) found that people undertake behaviors that they believe will lead to a "better" outcome. Strength of social ties of SNSs networks are used to create social relationships with other people or maintain current relationships, ranging from informal relationships and colleagues to formal relationships, such as close friends and family (Ellison et al., 2007). Some researchers classified personal relationships into two parts: strong bonds (close friends, family members, and relatives) and weak relationships, such as (Fingerman et al., 2004; Granovetter, 1977). It is also suggested that the more individuals have strong relationships with their audience, the more likely they are to share knowledge and transfer information (Nov & Ye, 2008). According to (Chiu et al., 2006), the more intense and frequent the interaction between individuals, the greater the amount of knowledge and information sharing. Individuals can also enhance the desire of SNSs users to share knowledge if they think that they can provide this information to their close friends (Sharabati, 2018). In the current study, we look for the strength of social relationships and links between individuals using SNSs and the extent of their impact on their participation in knowledge-sharing activities. We, therefore, posit the following hypothesis:

> **H4**: There is a relationship between EN and student's academic performance in Jordanian Universities.

2.4.5. Size of social network

The size of the audience may affect the behavior of knowledge sharing (Berger, 2014). For this factor, little research has been conducted on the relationship between public size and frequency of knowledge and information sharing (Kim et al., 2015). However, it was found that the most positive results are seen by individuals as being associated with a particular activity or work whenever they have the desire and tendency to perform that work or activity (Bandura, 1986a). The number of people online can be directly related to the size of information and knowledge published and can, therefore, affect an individual's expectation or perception of the level of expected positive results from the behavior of knowledge-sharing activities (Sharabati, 2018). In the current study, we look for the strength and the size of social relationships and links between individuals using social

media and the extent of their impact on their participation in knowledge-sharing activities. We, therefore, posit the following hypothesis:

H5: There is a relationship between SN on student's academic performance in Jordanian Universities.

2.5. Social exchange theory

SET is one of the most often used conceptual models for analyzing behavior. Its respected roots may be traced back to the 1920s (Malinowski, 2002; Mauss, 2002), linking disciplines such as anthropology (Firth, 2013; Sahlins, 1972), social psychology (Gouldner, 1960; Homans, 1958; VanYperen, 1997), and sociology (Blau, 2017; Firth, 2013; Sahlins, 1972). Even though many perspectives on social trade have arisen, theorists agree that social exchange entails a series of encounters that result in obligations (Emerson, 1976). Within SET, these relationships are frequently viewed as interdependent and reliant on the behaviors of another person (Blau, 2017). SET also emphasizes that these interdependent transactions have the potential to build high-quality connections; however, this will only happen under certain circumstances, as we will see. Social power (Molm et al., 1999), Network (Brass et al., 2004), board independence (Westphal & Zajac, 1997), organizational justice (Konovsky, 2000), psychological contracts (Rousseau, 1995), and leadership (Liden et al., 1997) are just a few of the areas where SET's explanatory value has been recognized. This theory is used to explain the following factors use of PT and REC.

2.5.1. Personnel trust

Hsu and Lin (2008) define trust as the degree of tendency to believe in others and their knowledge as well as the knowledge sharing in SNSs. Trust is the key to sharing knowledge (Shapin, 1988). Roloff (1981) also stressed that trust is an important factor in the theory of social exchange. According to Gefen et al. (2003), trust refers to the degree of integrity, where an individual expects other individuals to use a set of values and principles on SNSs sites. Trust is also a major supporter of knowledge sharing (Inkpen & Tsang, 2005) and is an important positive factor for decision-making across SNSs (Kim et al., 2008). In the current study, we look for the relationship between the level of PT and the sharing of knowledge among students via SNSs; here, we believe that trust increases when internet users improve in the field of SNSs. If individuals using SNSs do not share their knowledge because they are concerned about the actions of other users, such as misuse of knowledge or transfer of information, this will lead to fear of sharing their knowledge via SNSs sites. We, therefore, posit the following hypothesis:

H6: There is a relationship between PT and student's academic performance in Jordanian Universities.

2.5.2. Reciprocity

The reciprocity (REC) factor plays an important role in the theory of social exchange and indicates that both parties must make gains through exchanges (Li, 2015). Individuals can get their information from virtual communities, but they are worried and uncertain about sharing their knowledge without expecting a return (Chang & Chuang, 2011). Also, individuals may think that they do not receive good treatment as this leads to a few inputs (Li, 2015). Blau (2017) also classified the rewards as both internal and external. Based on

the view of the current study, REC indicates that an individual consumes all his/her effort, energy, and time to share knowledge so that the knowledge demander can share and transmit information to him when the knowledge demander becomes the owner of knowledge later. However, in Jordan, the literature review could not find any study that examined the impact of technology REC on the student's academic performance mediated by sharing knowledge. We, therefore, posit the following hypothesis:

H7: There is a relationship between REC and student's academic performance in Jordanian Universities.

2.6. The mediating role of knowledge sharing

In fact, SNSs can become useful tools for learning among students and teachers, how to share knowledge and transfer information between them, and their impact on the student's academic performance (Sharabati, 2018). SNSs helped to create an educational value and the ability to encourage and stimulate participation in the learning process (Thorne et al., 2009). The use of SNSs tools by learners and professionals enhances their experience (Patel et al., 2013). Better interaction through increased discussion and sharing of knowledge and ideas across the Internet provides higher education among students compared to traditional learning tools (Lin & Tsai, 2011). Students use Facebook for educational purposes, especially to communicate with other people during their studies to get tasks and assignments. Some researchers suggested that students prefer to use Facebook over university education platforms because it offers an immediate response (Kosik, 2007). Facebook can improve the educational performance of students if teachers use good methods in their teaching, which facilitate the process of learning and collaborative participation that enhances the academic performance of students (Al-Rahmi et al., 2015). Therefore, the researchers posit the following hypotheses:

H8: There is a relationship between KS behavior and students' academic performance in Jordanian Universities

H9: KS mediates the relationship between TS and student's academic performance.

H10: KS mediates the relationship between IS and student's academic performance in Jordanian Universities.

H11: KS mediates the relationship between SE and student's academic performance in Jordanian Universities.

H12: KS mediates the relationship between EN and student's academic performance in Jordanian Universities.

H13: KS mediates the relationship between SN and student's academic performance in Jordanian Universities.

H14: KS mediates the relationship between PT and student's academic performance in Jordanian Universities.

H15: KS mediates the relationship between REC and student's academic performance in Jordanian Universities.

3. Method

3.1. Research design

In the current research, the quantitative method was used to measure the variables of theories that influence KS behavior and its impact on the student's AP in the context of Facebook based on the extensive review of previous and most recent literature concerning the research topic.

3.2. Survey

A questionnaire was developed to achieve the study goals that aim at measuring the impact of TS, IS, SE, EN, SN, PT, and REC on the student's academic achievement, in addition to the impact of KS behavior on their relationships as being a mediator variable in Jordanian universities. To achieve the main goal of the study, the questionnaire was used as a main tool to collect data regarding the independent variables: TS, IS, SE, EN, SN, PT, and REC, and the dependent variable academic performance of students as well as the mediator variable KS. The questionnaire was developed according to the administrative literature related to the study subject; respondents answered all items on a five-point Likert scale ranging from "1" of "strongly disagree" to "5" of "strongly agree".

The questionnaire consisted of ten parts, and the first part contained demographic information (Gender, College, Degree, and Region). The following five parts included the following variables (TS, IS, SE, EN, and SN). Items of these variables were adapted from the following studies (Eastin & LaRose, 2000; Hsu et al., 2007; Kankanhalli et al., 2005; Sharabati, 2018). The following two parts which are related to the items of PT and REC variables, are adapted from (Lee & Ma, 2012; Moghavvemi et al., 2017; Nahapiet & Ghoshal, 1998). The last two parts which are the dependent variable and the mediator one, are adapted from (Bock et al., 2005; Lin, 2007).

3.3. Study sample

3.3.1. Population and sample

The population consisted of all students from public Jordanian universities (North, Central and South). The chosen universities consist of the University of Jordan, Jordan University of Science and Technology, The Hashemite University, Yarmouk University, Al-Balqa' Applied University, Al al-Bayt University, German Jordanian University, Mutah university, Al-Hussein Bin Talal University, and Tafila Technical University. The respondents selected are those who have active studentship, undergraduate, and postgraduate programs. A non-probability sampling method approach was applied to collect the data. A snowball sampling method was applied as it was difficult to contact willing participants at large. Students of the respective universities were approached and asked to fill up a copy of the questionnaire. The questionnaire was developed as a web-based (online survey using google forms) and posted at the websites of the universities, offering a link to their Facebook pages. 478 responses were received, and 23 questionnaires were excluded due to erroneous entries by the respondents. The data from the remaining questionnaires were checked for possible missing data and outliers, wherein 5 questionnaires were omitted due to the aforementioned reasons. The final dataset came from 450 questionnaires and was useable for subsequent data analysis.

The data for this study were collected at the end of the one-month semester. (60 %) are female and (40 %) were males as shown in Table 2. Most of the respondents were baccalaureate students.

Table 2 shows that the highest percentage of respondents were those who are from the southern region with a percentage of 45.8%. 43.6% of respondents were from Humanity College. In regard to the student's degree, the highest percentage goes for those who have a bachelor's degree with a percentage of 76.7%.

Table 2
The demographic information of the respondents

		Frequency	Percent
Gender	Male	180	40.0
	Female	270	60.0
	Total	450	100.0
Region	South	206	45.8
	Middle	90	20.0
	North	154	34.2
	Total	450	100.0
College	Scientific	188	41.8
	Humanities	196	43.6
	Medical	66	14.7
	Total	450	100.0
Education	Bachelor	345	76.7
	Graduate	105	23.3
	Total	450	100.0

4.   Analysis and results

4.1. Descriptive analysis of the study variables

This section introduces the responses as perceived by the respondents looking at the mean and standard deviations for the variables as shown in Table 3.

Table 3
Descriptive analysis of the study variables

Variable	Dimensions	Mean	Std. Deviation	Rank
Independent variable	TS	4.27	.612	High
	IS	4.05	.672	High
	SE	3.95	.711	High
	EN	4.13	.666	High
	SN	3.85	.759	High
	PT	3.44	.942	Moderate
	REC	3.82	.767	High
Mediating variable	KS	3.72	.804	High
Dependent variable	AP	3.83	.833	High

4.2. Data collection instruments design

A web-based questionnaire was distributed over a period of one month within the context of Facebook. The research survey consisted of two sections: a) Demographic information (Gender, Educational level and Region,). The research variables included (TS, Information Self-efficacy, SNs, SE, EN, PT and RCE). The questionnaire used the 5-point Likert scale ranging from strongly disagree (1) to strongly agree (5) to measure the sample perceptions concerning the research variables.

4.3. Instrument validity and reliability

Validity means the ability of the instrument used to make sure the purpose for which it was designed. The tool was verified by sending the questionnaire to a group of professors, and academic experts for their comments, and suggestions regarding the items of the questionnaire, as many amendments were submitted, and all were taken into consideration.

Reliability refers to the ability of the research instrument to provide the same results if applied many times with a marginal error not exceeding (5%). In this research, the reliability of the instrument was tested using the reliability coefficient of Cronbach's alpha, which includes (450) respondents representing the sample of the target population. Table 4 shows Cronbach's alpha coefficients.

Table 4
Reliability test

Variable	Description	Cronbach's alpha	CR Value
	Technological self-efficacy	0.73	0.81
	IS	0.77	0.89
	SE	0.84	0.91
Independent	EN	0.85	0.93
	Social Network size	0.85	0.92
	Personal trust	0.87	0.90
	REC	0.84	0.91
Mediator	Knowledge sharing behavior	0.87	0.91
Dependent variables	Academic performance	0.83	0.90

The values of Cronbach's α for all the research variables ranged between (0.73 - 0.94), which confirms an acceptable level of reliability according to (Sekaran & Bougie, 2016). Moreover, the composite reliability (CR) test was also applied to test internal reliability, and it indicated good internal reliability if the CR value was greater than 0.7 (Hair et al., 2012). In this research, the values of CR ranged from (0.81) to (0.93). Were higher than 0.7 (Miller et al., 2012). As shown in Table 4, this adequately indicates that composite reliability has been achieved. As a result, Cronbach's alpha, and coefficient of determination for all constructs were deemed sufficiently error-free.

4.4. The scale's validity

Validity refers to the extent to which the indicator truly measures the contracts, that it is intended to measure (Hair et al., 2010). we applied the convergent validity (Hair et al., 2012) Examine the validity of the discriminatory level, where the variable reflects a

phenomenon that is not captured by another variable in the same measurement model (Hair et al., 2012).

Convergent validity means the degree to which the indicator of a specific variable converges or shares among variance and is highly correlated among each other (Hair et al., 2010). Factor loadings and average variance extracted can be used to calculate it (AVE). Firstly, convergent validity was checked by determining if the loading was large and exceeds the recommended minimum level (0.5) (Hair et al., 2010). In this research, all item loadings are more than (.715).

Second, as a convergent validity test, AVE determines the sum of variance explained in measures by their respective variables in relation to unjustified variance due to measurement error (Fornell & Larcker, 1981). Hair et al. (2010) agreed that a value greater than the AVE (0.5) demonstrates a high degree of convergent validity. In this research, all AVE values are greater than the acceptable value that are ranged from (0.76) to (0.87), and thus the scale is of convergent validity. As shown in Table 5.

Table 5
Properties of the measurement model

Item	Path	Factor	factor loadings	AVE	CR
TS1	<---	f1	.772		
TS2	<---	f1	.767		
TS3	<---	f1	.747	0.76	0.81
FS1	<---	f2	.820		
FS2	<---	f2	.831		
FS3	<---	f2	.812		
FS4	<---	f2	.822	0.82	0.89
SE1	<---	f3	.715		
SE2	<---	f3	.802		
SE3	<---	f3	.838		
SE4	<---	f3	.831		
SE5	<---	f3	.873	0.81	0.91
Enj1	<---	f4	.866		
Enj2	<---	f4	.848		
Enj3	<---	f4	.880		
Enj4	<---	f4	.881	0.87	0.93
SNS1	<---	f5	.850		
SNs2	<---	f5	.838		
SNs3	<---	f5	.854		
SNs4	<---	f5	.773		
SNs5	<---	f5	.852	0.83	0.92
PT1	<---	f6	.765		
PT2	<---	f6	.784		
PT3	<---	f6	.895		
PT4	<---	f6	.850	0.82	0.90
Rec1	<---	f7	.824		
Rec2	<---	f7	.919		
Rec3	<---	f7	.803		
Rec4	<---	f7	.822	0.84	0.91

Composite reliability calculated as:

$$CR = \frac{\left(\sum \lambda_i\right)^2}{\left(\sum \lambda_i\right)^2 + \sum Var(\varepsilon_i)}$$ (Raykov, 1997).

Regarding Common Method Bais or Variance, it is not a serious concern for our study because the initial hypothesized model with the entire item indicators of the constructs modeled as a single factor was not statistically fit (RMSEA = 0.125, RMR = 0.086, AGFI = 0.513, CFI = 0.678, NFI = 0.443, GFI = 0.753).

4.5. Testing hypotheses

For both descriptive and analytical analyses, a total of (450) valid cases were considered. This research employed AMOS, a tool that enables to conduct of Structural Equation Modeling (SEM).

Table 6
Result (Default model)

Minimum was achieved
Chi-square = 1113.999
Degrees of freedom = 362
Probability level = .000

Based on Table 6, Chi2 = 1113.999, which is statistically significant at (*p*-value = 0.00), which indicates the validity of our model. Moreover, factor loadings related to each dimension of the independent variables are satisfying for each group of items (i.e., all estimates are greater than 0.50). The table proves the construct validity of our model.

4.6. Regression weights

In the following section, hypotheses are tested individually based on the direct relationship between the IV and the DV, and then, they are tested with the availability of the mediator as being the indirect relationship. Table 7 summarized the final results of direct and indirect effects.

Table 7
Regression weights

Regression Weights for relationships between TS, KS, &AP						
			Estimate	S.E.	C.R.	*P*
KS	<---	TS	.339	.060	5.651	***
AP	<---	TS	.220	.048	4.612	***
AP	<---	KS	.661	.036	18.250	***
Regression Weights for relationships between IS, KS, &AP						
			Estimate	S.E.	C.R.	*P*
KS	<---	IS	.580	.049	11.746	***
AP	<---	IS	.103	.049	2.103	.035
AP	<---	KS	.663	.041	16.258	***

Regression Weights for relationships between SE, KS, &AP						
			Estimate	S.E.	C.R.	*P*
KS	<---	SE	.592	.046	13.003	***
AP	<---	SE	.193	.047	4.134	***
AP	<---	KS	.615	.041	14.908	***
Regression Weights for relationships between EN, KS, &AP						
			Estimate	S.E.	C.R.	*P*
KS	<---	EN	.550	.051	10.834	***
AP	<---	EN	.201	.048	4.223	***
AP	<---	KS	.628	.039	15.924	***
Regression Weights for relationships between SN, KS, &AP						
			Estimate	S.E.	C.R.	*P*
KS	<---	SN	.653	.039	16.574	***
AP	<---	SN	.274	.046	5.908	***
AP	<---	KS	.545	.044	12.434	***
Regression Weights for relationships between PT, KS, &AP						
			Estimate	S.E.	C.R.	*P*
KS	<---	PT	.397	.036	11.131	***
AP	<---	PT	.125	.034	3.660	***
AP	<---	KS	.636	.040	15.958	***
Regression Weights for relationships between REC, KS, &AP						
			Estimate	S.E.	C.R.	*P*
KS	<---	REC	.668	.038	17.527	***
AP	<---	REC	.346	.046	7.536	***
AP	<---	KS	.494	.044	11.274	***
Regression Weights of KS, &AP						
			Estimate	S.E.	C.R.	*P*
AP	<---	KS	.704	.036	19.658	***

5. Results and discussion

The current study aimed at answering the following question: What is the impact of (TS, IS, SE, EN, SN, PT, and REC) on students' academic performance on Facebook among Jordanian university students mediated by knowledge-sharing behaviour? The data analysis revealed that all the examined variables significantly statistically impact students' academic performance except information self-efficacy (IS). However, the results summarized in Table 7 showed that all variables, including IS, have a significant statistical impact. The following are explanations for the findings.

This study indicates that Technology self-efficacy (TS) is a significant indicator of exchanging knowledge on Facebook, which corresponds with the previous literature. The statistical analysis revealed that there is a direct effect of TS on AP (Estimate = 0.22; $p = 0.00$; < 0.05); however, it is lower than the indirect product of (TS on KS * KS on AP). This result indicates that students who are well-qualified and have excellent skills in using SNS, especially Facebook applications, will share knowledge more than those with low computer skills. The latter agrees with Lee and Ma (2012) that the higher users' knowledge of SNSs, the more benefits can affect knowledge sharing and news transmission on SNSs platforms therefore, having high technology self-confidence will lead to sharing more knowledge and result in a significant effect on their academic performance. This corresponds with Jarvenpaa & Staples (2000), who confirm that the ability to possess technological skills is an essential indicator of knowledge sharing using SNSs. Therefore, hypothesis (H1) is accepted. Also, there is an indirect effect that has statistically significant coefficients (TS to KS ((Estimate = 0.34; $p = 0.00$; < 0.05), KS to AP (Estimate = 0.66; $p = 0.00$; < 0.05). This conclusion may be due to the characteristics of the study sample individuals with high efficacy in using computers since there are mandatory computer skills courses at the Universities provided to their students. These students represent the users defined by Compeau & Higgins (1995) as those who can use technology to share information through SNSs. Also, students frequently use Facebook applications which will, in turn, promote their abilities in dealing with it. Therefore, hypothesis (H9) is accepted.

This study reveals that information self-efficacy (IS) has a strong effect on the behavior of knowledge sharing. Whereas the direct estimate from IS to AP (Estimate = 0.103; $p = 0.035$; < 0.05), which is lower than the indirect product of (IS on KS * KS on AP), is necessary too. This finding indicates that students can share information with others, which leads to self-confidence in sharing knowledge with others next time. Therefore, hypothesis (H2) is accepted. Analysis shows that there are indirect effects that have statistically significant estimates from (IS to KS) (Estimate = 0.580; $p = 0.00$; < 0.05) and KS to AP (Estimate = 0.66; $p = 0.00$; < 0.05). This conclusion shows that students share knowledge according to their abilities (the degree to which people can share information with others). This is the degree defined by Cabrera & Cabrera (2002) to which a person believes that individuals can share information with others. In addition, there is a need to have self-efficacy about knowledge because students believe it is a great benefit to share knowledge with others. The meaning of self-efficacy here corresponds with what Hsu et al. (2007) called its capabilities, which include experiences, authoring knowledge content, formal and informal knowledge sharing, and interactions and relationships between individuals. Therefore, hypothesis (H10) is accepted. This study agrees with the finding that students with extraordinary abilities in using information technology are more able to share knowledge than others (Chen & Hung, 2010; Kim et al., 2015; Lin, 2007). It also agrees with Lee et al. (2006), who found that individuals with little or no experience seldom share knowledge and transfer information on the Internet because they do not trust their capabilities.

Findings show that social expectations (SE) has a good statistical significance. Whereas estimates showed that the effect from SE to AP was important too, where (Estimate = 0.19; $p = 0.00$; < 0.05); however, it is lower than the indirect product of (SE on KS * KS on AP). The finding shows that the student's social network comprises knowledge-sharing with individuals other than friends and relatives. Therefore, hypothesis (H3) is accepted. It was found that (SE to KS (Estimate = 0.59; $p = 0.00$; < 0.05), KS to AP (Estimate = 0.62; $p = 0.00$; < 0.05). The analysis revealed that when students share knowledge with others on Facebook, the expected conclusion will

positively affect social outcomes. According to Bartil & Srivastava (2002), predicting outcomes is an important factor influencing the decision to share knowledge. Sharing activities on SNSs, exceptionally Facebook, will be more precise when students feel that links are weak. Also, when SNS users realize that their followers intend to have people with ineffective communication, believing that their behavior in knowledge-sharing will result in reasonable Social expectations will encourage them to share knowledge. Besides, this corresponds with McLure Wasko and Faraj's belief (2000) that the desire to build a reputation as an expert was a vital factor for participation among the users of discussion forums on SNSs and sharing knowledge. Therefore, hypothesis (H11) is accepted. Thus, the results of this study agree with the previous studies regarding the relationship between the expected benefits and the behavior of individuals focused on social reactions. More profoundly, several studies found that external rewards (such as monetary incentives) encouraged employee knowledge-sharing behaviors (Bock et al., 2005; Gupta & Govindarajan, 2000).

This Study revealed that Enjoyment (EN) significantly affects knowledge-sharing behavior on Facebook. This agrees with researchers who found that people engage in a specific behavior that will produce favorable results (Chiu et al., 2006). This Study leads us to conclude that there are essential factors that have statistical significance (EN to KS) (Estimate = 0.55; $p = 0.00$; < 0.05), KS to AP (Estimate = 0.63; $p = 0.00$; < 0.05). People who share information, experience, and knowledge EN interact and learn from each other. Interpretation suggests that communication encourages students to share knowledge and promotes self-efficacy (Yu et al., 2010). Therefore, hypothesis (H4) is accepted.

On the other hand, the estimate (EN to AP) shows that its effect was significant too (Estimate = 0.20; $p = 0.00$; < 0.05), but it is lower than the indirect product of (EN on KS * KS on AP). This Study revealed that when students receive good responses and their interaction is powerful, they enjoy spreading knowledge, which positively affects their academic performance. This corresponds with those (Hsu & Lin, 2008) who think that social networks "yield fun and enjoyment". Moreover, those users who have attitudes to sharing information may have many followers, which makes communication thrilling; according to Ellison et al. (2007), they create social relationships with other people or maintain current relationships, ranging from informal relationships and colleagues to formal relationships. This might also lead to sharing knowledge and transferring information (Nov & Ye, 2008). In addition, students who share information believe that they will become amazed and thrilled when they help people with problems (Moghavvemi et al., 2017). Therefore, hypothesis (H12) is accepted.

The current study examined the impact of the Size of social networks (SNs) on the frequency of participation. Estimating the direct impact from SN to AP was also significant (Estimate = 0.20; $p = 0.00$; < 0.05), but it was lower than the indirect product of (SN on KS * KS on AP). When the size of the network, i.e. colleagues on Facebook, increases, the sharing of knowledge, acceptance, and follow-up by them increases and positively impacts their academic performance, this is what Berger (2014) called "The size of the audience affects". Some users who tend to share a lot on Facebook can have many contacts, making the knowledge-sharing process more enjoyable. Sharabati (2018) confirms that the number of people affects the expected positive results from the behavior of knowledge-sharing activities. Therefore, hypothesis (H5) is accepted. The results showed that there are critical indirect effects that include statistical indications, where (SN to KS ((Estimate = 0.65; $p = 0.00$; < 0.05), KS to AP (Estimate = 0.54; $p = 0.00$; < 0.05). The SNs were found as a significant predictor of activity-sharing on Facebook. Nowadays, network size has become a key criterion for information exchange. Therefore, hypothesis (H13) is accepted.

Findings revealed a strong relationship between Personal Trust (PT) and student's behavior through KS on Facebook. This means that the estimate which has a direct effect from PT to AP was critical too (Estimate = 0.12; $p = 0.00$; < 0.05), but it is lower than the indirect product of (PT on KS * KS on AP). These results correspond to the "trust" definition of Hsu and Lin (2008), the degree of tendency to believe in others and their knowledge as well as the knowledge sharing in SNSs. Moreover, to the definition provided by Shapin (1988), Trust is the key to sharing knowledge. When a student has excellent and correct knowledge, he will confidently exchange it without fear of any disclosure of this knowledge. In addition, students will feel safe that other people's behavior regarding their accounts will be under governmental control. Thus, this study agrees with Roloff (1981) that Trust is an essential factor in social exchange theory. Therefore, hypothesis (H6) is accepted. Analysis indicated that there is a significant indirect effect with a statistical significance (PT to KS) (Estimate = 0.40; $p = 0.00$; < 0.05), KS to AP (Estimate = 0.64). This conclusion shows that PT in communication via the internet is a vital factor that positively affects students when using and sharing knowledge. In contrast, studies suggested that PT has a negative effect on them. However, technological advancement has resulted in new regulations and laws controlling electronic crimes. In Jordan, within the context of this study, the government issued the "Cyber Crime Act 2017"; this law makes it safe and secure for students to share their knowledge and information with others without fear. Therefore, hypothesis (H14) is accepted.

The results showed that there is a significant impact of Reciprocity (REC) on the sharing of knowledge via Facebook. This is confirmed by Chang and Chuang (2011), that Individuals can get their information from virtual communities. Estimating the direct impact from REC to AP was also significant (Estimate = 0.35; $p = 0.00$; < 0.05), but it was lower than the indirect product of (REC on KS * KS on AP). Students spend time and effort answering each other's questions, helping others, and sharing their knowledge, expecting that they will benefit from that and hoping that other students will share their thoughts and respond to them. According to Li (2015), this is the social exchange theory's role assigned to the Reciprocity (REC) factor, indicating that both parties must make gains through exchanges. Therefore, a strong sense of reciprocity will encourage them to exchange knowledge, positively influencing their academic performance. However, Chang and Chuang (2011) say that even when Individuals can get their information from virtual communities, they are always worried and uncertain about sharing their knowledge without expecting a return. The results of this factor were consistent with other researchers who suggested that REC involves the degree to which it is believed that a person can obtain mutual benefits by sharing knowledge using Facebook (Hsu & Lin, 2008; McLure Wasko & Faraj, 2000). Also, this result is consistent with previous studies (Ahmad et al., 2021; Moghavvemi et al., 2017). Therefore, hypothesis (H7) is accepted. The researchers found that there are critical indirect effects that include statistical indications, where (REC to KS ((Estimate = 0.67; $p = 0.00$; < 0.05), KS to AP (Estimate = 0.49; $p = 0.00$; < 0.05). This indicates that students will exchange knowledge based on their expectations of future benefits from what they share, motivating them to help each other via Facebook. Therefore, hypothesis (H15) is accepted.

Concerning Knowledge Sharing (KS), through the analysis, the researchers found that there is a significant impact of knowledge-sharing on academic performance (TS to AP) (Estimate = 0.70; $p = 0.00$; < 0.05). This result aligns with Sharabati (2018), who assumes that SNSs can become valuable tools for learning among students and teachers, how to share knowledge and transfer information between them, and their impact on

student's academic performance. Furthermore, it aligns with Thorne et al. (2009), who confirmed that SNSs helped to create an educational value and ability to encourage and stimulate participation in the learning process. This result indicates that when students share their information and knowledge on social networks to benefit from their experiences and abilities, provide assistance to each other, and solve their problems, it will positively affect their academic performance and subsequently improve it. Besides, Al-Rahmi et al. (2015) found a positive and robust relationship between the use of social networks and students' academic performance. In addition, a recent study (Alyouzbaky et al., 2022) found that knowledge-sharing behavior significantly impacts academic performance. This agrees with Kosik (2007), who points out that Students use Facebook for educational purposes, primarily to communicate with other people during their studies to get tasks and assignments. Some researchers suggested that students prefer to use Facebook over university education platforms because it offers an immediate response.

6.   Conclusion

This study examined the effect of TS, IS, SE, EN, SN, PT, and REC as main factors on students' academic performance as mediated by KS behavior on Facebook in Jordanian Universities. The results found that (TS, IS, SE, EN, SN, PT, and REC) are all affecting factors at a significant value ($p = 0.00$; < 0.05) pointing out that these factors can encourage students to share their knowledge with other classmates. The results also justify the finding of the power of knowledge in different contexts including the context of Facebook use. More deeply, KS is an important factor that influences students to share their information and knowledge on Facebook. This factor plays a positive role in encouraging users to share their knowledge if they fear losing their individuality or attitudes. This study also showed that the factors affecting individual knowledge-sharing can vary depending on circumstances and contexts. Therefore, it is important to examine the factors that influence KS and their impact on academic performance. In general, the results of this study promoted an understanding of why students choose to engage in social media, specifically Facebook, to share knowledge in a specific educational context; thus, providing considerations for Facebook users, colleagues, and people to improve and change practices.

This study agrees with previous studies in some senses. For example, there is a general agreement with the study of Abu Gharrah and Aljaafreh (2021) who stated social network sites (SNS) are used to transform the traditional ways of education. It agrees with the study of Jami Pour and Taheri (2019) which found there is a significant change in knowledge-sharing behavior among students enhancing academic performance. It also agrees with the study of Sharabati (2018) who pointed out that KS affects students' academic performance through the use of Facebook. In addition, it can be inferred that social media positively affect students' academic performance and this result is supported by Oktavia et al. (2017) who stated that the social media model support teaching and learning activities and then affects the academic performance of the students at the university level. Additionally, the present study to some extent agrees with (Moghavvemi et al., 2017) who found that KS, EN, and REC significantly affect academic performance. It is also found that the current study agrees with Kim et al. (2015) who indicated that there is a significant relationship between TS, SN size, SE, EN, and IS on students' academic performance. It also agrees with Sharabati (2018) who indicated that PT significantly affects students' academic performance.

Ultimately, according to the results, Knowledge sharing process can be a distinguishable remark for students' academic performance who prefer to use social

media platforms as unofficial eLearning systems. Previous studies showed that students are from the age interval that is heavily immersed in using technology and social media platforms (Abu Gharrah & Aljaafreh, 2021). Therefore, the more sharing activity of students' knowledge and experiences the more they improve their academic performance. Adding to that, the results create attention to the need for enhancing the traditional teaching systems to meet the new technological requirements and make an e-learning system more attractive and similar to social media platforms.

7. Theoretical and practical contributions

This study combines two famous theories: social cognitive theory (TS, IS, SNs, SE, EN), and the theory of social Exchange (PT, Rec). Moreover, it investigates such a new topic within the Jordanian context (university students) and the role of knowledge sharing using social media platforms. In addition, the current study is investigating the mediating effect of knowledge-sharing behavior on the relationships between the examined theories and the dependent variable "academic performance". This combination of theories and variables is considered very fruitful for the decision-makers to enhance or employ social media in the learning process. Nevertheless, as far as our extensive literature shows, there are no studies in Jordan investigating the behavior of knowledge-sharing in the context of social media.

The findings of this research provide several pertinent implications, wherein our study advances conventional understanding associated with higher education institutes' students. Specifically, our investigation of a combination of theories (social cognitive theory and social exchange theory) influencing student knowledge sharing and academic performance extends theoretical insights that undergird core antecedents that HEIs should not overlook when initiating relevant policies for leveraging social media sites in university learning environments. We demonstrate the distinct roles of core factors such as social cognitive theory and social exchange theory, which have been scarcely employed simultaneously in prior literature.

Moreover, our findings show that all factors have a meaningful relationship with students' knowledge sharing via Facebook and their expectations of knowledge sharing. The results showed that (TS, IS, SE, EN, SN, PT, and REC) are all desirable outcomes. They all encourage students to share their knowledge with other classmates while at the same time expecting rewards and desirable outcomes. The results also justify the finding of the power of knowledge in a different context, specifically in the context of Facebook use. Additionally, this factor positively encourages users to share their knowledge if they fear losing their individuality or attitudes. This study also showed that the factors affecting individual knowledge-sharing can vary depending on circumstances and contexts. Therefore, it is important to examine the factors that influence knowledge-sharing and their impact on academic performance. Moreover, the results showed that the ease of using Facebook creates a sense of belonging among users with the same interest, which can be an influencing factor in sharing knowledge and experience. In general, the results of this study promoted an understanding of why students choose to engage in social media, specifically Facebook, to share knowledge in a specific educational context; thus, providing considerations for Facebook users, colleagues, and people to improve and change practices.

8.   Future research

The findings and the discussion of this study lead to several potential future research from different perspectives. Technologically, e-learning systems developers may need to develop or amend their systems to include social media functions in the structure of that systems and examine them empirically.

The other perspective might focus on the pedagogical issues by shedding the light on the teaching way used in higher education institutes. The emergence of virtual groups cannot be neglected and should be employed in the teaching system. Consequently, conducting empirical research to discover the impact of changing the method of teaching on academic performance. Also, future research can study the factors affecting knowledge sharing using other social media platforms (rather than Facebook) and their impact on academic performance.

Author Statement

The authors declare that there is no conflict of interest.

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