The Impact of Knowledge Sharing Through Facebook on Students' Academic Performance in Palestine

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ABSTRACT

This study examines the factors that affect knowledge sharing via an online social network (specifically, Facebook) and assesses its impact on students' academic performance in the education environment. The study sample comprised 60 undergraduate students attending classes in the principles of accounting at Palestine Technical University. The structural equation model was applied to identify the factors that may motivate these students to share their knowledge via Facebook for education purposes. The results show that altruism and knowledge self-efficacy are the main factors that influence students to share their knowledge via Facebook and that trust and reputation are not motivators for students to do so. In addition, the results of this study also indicate that knowledge sharing via social network has a strong impact on students' academic performance. The factors affecting students' knowledge sharing can differ between different people and contexts; therefore, future research could examine the differences in social network participation based on gender, age, education level, or subject. Based on the findings, recommendations are offered for using Facebook in education.

Keywords: Knowledge sharing, academic performance, social media, social
        networks, Facebook, education context.

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1.   INTRODUCTION

Social network sites (SNSs) have attracted an enormous number of Internet users who have included these websites in their daily life routines. Twitter and Facebook are among the most widely used social networks where students spend most of their time (Karpinski et al., 2013; Michikyan et al., 2015). LinkedIn is an example of a social network site that is used by many students and instructors for academic purposes. Research has shown that 50% of online adults with college degrees are on LinkedIn (Greenwood et al., 2016). Facebook, also widely used, has more than 1.26 billion users around the world (Smith, 2014). Facebook users can share opinions, ideas, pictures, and other content with friends and relatives and can interact with either old or new friends, which makes the platform very popular with college students (Luckin et al., 2009). College students, in fact, are the predominant users of Facebook (Duggan & Brenner, 2016). In the United States, 71% of Facebook users are college students (Duggan et al., 2015). In view of the fact that a sizable number of educators and students are members of online social networks, the use of these networks in academic processes is a subject thought to be worth researching (Yapici & Hevedanli, 2014).

The growth of social networks has offered solutions, new insights, and mechanisms for knowledge sharing for many institutions (e.g., hospitals and education institutions). The rapid exchange of information and knowledge via social networks has substantially changed lifestyles and promoted personal and organizational learning (Chen & Hung, 2010). The Internet eases knowledge exchange in different ways (Liang et al., 2008). Jones et al. (2010) found that social networks are tools used by educators and students to facilitate education.

With the expanding use of social networking websites, the demand for communication and information sharing among individuals is increasing. A growing number of Internet users are collaborating in social networks to earn knowledge for managing life difficulties (Liang et al., 2008). Grosseck et al. (2011) found that students spend most of their time on Facebook emailing their family

members and acquaintances, sharing photos and videos, and commenting on posts, but that they spend less time for academic purposes, even though they engage in conversations about their assignments or lectures or share information about research. Bicen and Uzunboylu (2013) stated that social networks provide an informal education. Social network users are in contact with plenty of information and ideas that show the learning potential that social networks offer (Ünlüsoy et al., 2013). On the other hand, social network use should be purposeful and the network should be used in instances that are suitable for learning, where educators and students' understanding can occur (Liu et al., 2011).

The current study aims to identify the motivators that influence the knowledge sharing behavior of college students via social networks (specifically, the Facebook platform) and to assess the impact of knowledge sharing behavior on the academic performance of students. To achieve these aims, this study sought to answer the following questions:

- What are the factors that influence students' online knowledge sharing via Facebook?
- What is the effect of knowledge sharing via Facebook on students' academic performance?

2. LITERATURE REVIEW

This literature review covers seven topics; namely: social network websites and education; knowledge sharing; trust and knowledge sharing; reputation; altruism; knowledge self-efficacy; and academic performance.

2.1. Social Network Websites and Education

Today's college students are what Prensky (2001) referred to as *digital natives*: individuals born in a technological age who are professionals at using technology and have a curiosity about interacting with technical devices. Most online social networks (such as Facebook) are free of charge, easy to use, and easily available

to students who have personal computers or smartphones with access to the Internet.   Many college students, in fact, have created Facebook accounts in high school and smoothly use the technology (Bowman et al., 2012).

Within the last few years, the use of social networking sites (SNSs) by students and educators experienced a tremendous increase (Pempek et al., 2009; Roblyer et al., 2010). Researchers have found that some of the concerns about the lack of relationship between teacher and students could be reduced by developing connections between educators and students through social networks (Mazer et al., 2007). With the use of Internet technology, activities that cannot be completed in lecture rooms could simply be completed on social network websites by using smartphones and portable computers. Communication in education is easier today because of the use of technology. Some lecturers use strategies to integrate social media in their lectures and curricula, although others are not willing to use such strategies (Fewkes & McCabe, 2012).

Motivating college students to use Facebook as part of class might appear strange in light of the fact that research that has pointed out that time spent using Facebook can restrict learning (Junco, 2012). Some researchers do not consider that Facebook itself is resulting in a negative effect on learning, but that Facebook can divert students from engaging their colleagues or studying course material.

On the other hand, focus group work by Tian et al. (2011) implies that Facebook is viewed mainly as a social space by college students; however, they do see long-term investment in social media platforms as essentially useful to their academic performance (Irwin et al., 2012). There is evidence, therefore, to suggest that students see Facebook as a potentially rewarding tool in their academic success.

2.2. Knowledge Sharing

Knowledge sharing signals the provision of task information and know-how to relieve other people and to work with others to solve issues, produce new ideas,

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or apply policies or procedures (Cross & Cummings, 2004). Knowledge sharing can happen through written or face-to-face communications by networking with other experts, or by documenting, arranging, and receiving knowledge for individuals (Cross & Cummings, 2004).

Williams and Bukowitz (1999) defined *knowledge sharing* as an activity by which knowledge (i.e., information, skills or expertise) is exchanged among individuals, friends, colleagues, families, communities, or organizations. Argote and Ingram (2000) and Ko et al. (2005) defined *knowledge sharing* as the transmission of knowledge from a source in a manner that it is gained and used by the receiver.   *Knowledge sharing* has also been defined as the voluntary distribution procedure for earned skills and experience with other individuals (Davenport & Prusak, 1997; Ipe, 2003). Clearly, social networks are well suited to promote relationships, idea sharing, and the exchange of individual experiences. Usually, information technology communications tools promote knowledge sharing (Eid & Nuhu, 2011).

Vygotsky's (1980) sociocultural theory of learning assures that people learn via social interaction and spreading ideas and experiences. Studies have revealed that knowledge sharing during collaborative learning leads to reflection and learning (Walker, 2002) and offers advantages regarding cognitive gains and favorable learning outcomes (Rafaeli & Ravid, 2003). Students learn more academically and socially in cooperative interaction, compared with competitive or individualistic interaction (Roger & Johnson, 1988). In addition, such knowledge exchanges help students to answer questions, solve problems, learn new things, improve their understanding about a certain topic, or contribute to helping others (Högberg & Edvinsson, 1998). Several empirical studies evaluate knowledge sharing based on participation and interaction (Kapur & Kinzer, 2007; Mazzolini & Maddison, 2007), whereas others evaluate knowledge sharing intentions (Bock et al., 2005).

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Many studies have documented findings about factors affecting knowledge sharing intention and behavior depending on social exchange theory (SET), which was introduced in the late 1950s.   The main supporter was Homans (1961), who suggested that exchange among individuals is an essential form of behavior and is usually dependent on principles of cost and benefit. Knowledge sharing might be viewed as a type of social exchange (Bock et al., 2005), with individuals sharing their knowledge and skills with peers and expecting, reciprocally, to get knowledge from others in return.

Research has been conducted on SET as an approach to understanding personal behavior in knowledge sharing (Bock et al., 2005; Kankanhalli et al., 2005). Since social exchange is a challenging task, several studies have focused on different aspects of it. Bock et al. (2005) used cost and benefit analysis based on SET to examine incentives and inhibitory factors in knowledge sharing. Chua (2003) highlighted reciprocity in knowledge sharing, and Constant et al. (1994) studied self-interest and context.

Social exchange is much like economic exchange. In both instances, exchange happens when the benefit that the individual gains is higher than the cost. The main difference is that social exchange focuses on intangible costs and intangible benefits. Thus, it cannot identify rights or obligations (Blau, 1964).

A review of prior research indicates that, regardless of the fact that both use the same theory, different studies usually adopt different factors to suit the theory. For instance, Kankanhalli et al. (2005) analyzed the impact of employees' knowledge self-efficacy and enjoyment in helping others on employees' knowledge contribution to electronic knowledge repositories. Ye et al. (2006) concentrated on several social exchange factors, such as reputation, reciprocity, knowledge self-efficacy, enjoyment in helping others, and commitment to explain the knowledge contribution of virtual community members. Moghavvemi et al. (2017) examined the relationship between perceived enjoyment, perceived reciprocal benefits, perceived status, outcome expectation, and the power of

knowledge, and the way these factors impact knowledge sharing among students via Facebook.

Even though several research studies have focused on knowledge sharing behavior from the social exchange perspective, different studies recorded inconsistent results. Taking trust as an example, the current research found that some studies showed significant positive influences on individuals' knowledge-sharing behavior (Chai & Kim, 2010; Hsu et al., 2007; Xiao et al., 2012; Zhang et al., 2010), but that other studies did not agree with this finding (Chow & Chan, 2008; Hsu & Lin, 2008).

Chang et al. (2008) researched users' contribution behavior on blogs and forums. Their research results reveal that users' intention toward knowledge sharing is impacted by extrinsic benefits (reputation and reciprocity), intrinsic benefits (enjoyment of helping and self-efficacy), and costs (convenience and interaction).

Yu et al. (2010b) explored the determinant that enables voluntary knowledge sharing in blogs, especially the knowledge sharing behaviors of community members. They discovered that fairness, openness, and the enjoyment of helping others substantially influenced the culture of sharing knowledge.   Identification for a sharing culture, however, was not determined to be significant.

A synthesis of earlier studies reveal that motivational factors in knowledge sharing occur at three levels (Bock et al., 2005): (1) individual benefits, (2) group benefits, and (3) organizational benefits. Individual benefits reflect self-interest and personal gains (Constant et al., 1994; McLure Wasko & Faraj, 2000); group benefits imply reciprocal relationships with other people (Constant et al., 1994; McLure Wasko & Faraj, 2000); and organizational benefits refer to organizational gains and responsibility (Kalman, 1999).

In keeping with social learning theory, Bandura and Walters (1977) pointed out that people usually self-initiate and regulate their learning to achieve desired learning outcomes. By interacting with peers and the situated environment,

individuals affect their cognition, affection, and behavior. According to social learning theory, three elements impact individuals' learning outcomes: individual learners, peers, and situations. The theory notes that it is people's interaction with their surroundings that produces their behavioral consequences. Individual interaction with peers, social support from peers, and their understanding of situations are the critical factors, therefore, that produce individual learning outcomes (DeAndrea et al., 2012). Most often, people will self-initiate and regulate learning and actively build knowledge by obtaining, producing, and structuring information.

To examine knowledge sharing behaviors in social networks, this study draws on social exchange theory and social learning theory to conceptualize a research model (see Figure 1 on p. 169). The researcher hypothesizes that trust, reputation, altruism, and knowledge self-efficacy are some of the main factors that influence knowledge sharing among students via Facebook groups. In addition, this study proposes that academic performance is the outcome of knowledge sharing behavior.

2.3. Trust and Knowledge Sharing

In organizational studies, *trust* has been seen as certain beliefs involving the integrity, affect, emotion, benevolence, and ability of another party (Mayer et al., 1995, 2006). According to Lee et al. (2014), *trust* refers to integrity, which is an individual's expectation that members on a social network site will use an accepted set of values, norms, and principles.

Trust plays an essential role in diffusing knowledge (Shapin, 1988). Roloff (1981) stressed that trust is a key factor in social exchange theory. Trust has also been found to be important for online social interactions (Coppola et al., 2004; Dwyer et al., 2007). Trust advances interactions between individuals in an institution and in a virtual community (Chiu et al., 2006; Chow & Chan, 2008). In the online world, trust in the online community is an early condition for users to

take part in trusting interactions in which they transfer and exchange information onlinet (Czerwinski & Larson, 2002). In the online context, trust is cited as one of the favorable influential factors in users' decisions to share information on the web (Kim et al., 2008). Trust is a key motivator for sharing knowledge (Inkpen & Tsang, 2005; Reagans & McEvily, 2003) and is considered a positive factor in the user's decision making online (Kim et al., 2008). Nahapiet and Ghoshal (1998) found that the higher the level of trust is among individuals, the more willing individuals are to share resources with one another.

This study assumes a positive relationship between students' knowledge sharing and the level of interpersonal trust. Considering that prior literature highlights the positive role of trust in knowledge sharing (McLeod, 2008; Shapin, 1988), we believe that online users' trust will improve their knowledge sharing in the Facebook sphere. If Facebook users are anxious about other users' actions, such as misusing shared knowledge, they may not share their knowledge via the Internet. Simply put, trust is to the tendency to believe in others and in their shared information in the social network (Hsu & Lin, 2008). We therefore propose this hypothesis:

H1: Trust has a positive effect on students' knowledge sharing behavior through Facebook.

2.4. Reputation

Reputation refers to the degree to which a person believes that participation in the online sphere could enrich his or her personal image because of knowledge sharing (Hsu & Lin, 2008).   Lakhani and Von Hippel (2003) argued that individuals assume to achieve greater status by interacting often and wisely, and Stewart (2005) found that reputation can be associated with social status.

Reputation can help people gain and keep their status within a community (Marett & Joshi, 2009). Some studies have found that individuals share their knowledge because they think that they may build and raise their personal

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reputation (Wasko & Faraj, 2005) or gain peer attention (Carrillo & Gaimon, 2004). When individuals think that knowledge sharing can improve their reputation, they will be more likely to share their knowledge (Ba et al., 2001; Wasko & Faraj, 2005).

Knowledge contributors can take advantage of displaying to others that they get valuable expertise (Ba et al., 2001). This approach earns them respect (Constant et al., 1994), and a better image (Constant et al., 1996). Thus, contributors can benefit from improved self-concept when they contribute knowledge (Hall, 2001). Most people believe that sharing their knowledge with others will help them gain a good reputation and heighten their status within their respective social community (Liang et al., 2008).

Furthermore, Wasko and Faraj (2005) stated that the potential for bettering one's reputation serves as a significant motivational factor for providing helpful guidance to other people in a social network. They examined why individuals share knowledge with others in an online social network and found that both reputation and centrality impact the helpfulness and level of knowledge contribution.

Earlier research found that creating reputation is a strong motivator for effective involvement in social networks (Donath, 1999). Zywica and Danowski (2008) stated that Facebook users may be involved in knowledge sharing in order to reach a preferred social status, to extend their relationship range, and to strengthen their self-esteem.

As a consequence, we posit the following hypothesis:

H2: Reputation has a positive effect on students' knowledge sharing behavior through Facebook.

2.5. Altruism

Altruism is described as the readiness to help other people without expecting rewards in return (Hsu & Lin, 2008). Altruism can be viewed as a kind of unconditional kindness with no expectation of return (Fehr & Gächter, 2000), where a person offers help and achieves a sense of pleasure from the action

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(Kollock, 1999). Hsu and Lin (2008) suggested that altruism impacts intention to share knowledge.

Most of the time, people help other people regardless of whether they receive anything in return (Davenport & Prusak, 1998). Constant et al. (1994) stated that individuals who share tangible information may do so because of pro-social attitudes. Wasko and Faraj (2005) found that these people are encouraged intrinsically to contribute knowledge to other people because they take pleasure in helping others.

Several empirical studies have also proved the positive relationship between altruism and knowledge sharing. Kankanhalli et al. (2005) reported that altruism significantly impacts electronic repository use by knowledge contributors and that, in addition, it substantially increases the helpfulness of the contribution. This result was also recognized by He and Wei (2009), who stated that knowledge workers share knowledge-to-knowledge management systems because of their satisfaction in helping other people.

In line with the studies previously mentioned, we realize that altruism is an essential determinant for online users' behavior in social network contexts. For that reason, this study presents altruism as a variable that impacts knowledge sharing among Facebook users. We therefore posit the following hypothesis:

H3: Altruism has a positive effect on students' knowledge sharing behavior through Facebook.

2.6. Knowledge Self-Efficacy

Self-efficacy is a form of self-evaluation that affects decisions about what behaviors to do, the level of effort and tolerance to put forth when dealing with difficulties, and mastery of the behavior itself (Bandura, 1997). Therefore, individuals who have low self-efficacy should be less likely to carry out related behavior in the future, compared with those with a higher level of self-efficacy.

Olson et al. (2012) found that individuals who have personal efficacy to produce a favorable social impact may use online social networks to develop, broaden, and keep their relationships with other online users. Individuals who have self-efficacy have a powerful opinion of their own personal talents. These are the type of people who will make an extra effort to interact and share knowledge with one another, thus raising their relationship to the next level.

Lately, self-efficacy has been applied to knowledge management to verify the effect of personal efficiency perception in knowledge sharing; that is, knowledge sharing self-efficacy (Hsu & Chiu, 2004). The desire to share knowledge is not enough to undertake knowledge sharing behavior. A knowledge contributor must also have the perceived capabilities to perform it (Hsu et al., 2007; Teh et al., 2010).

Some studies have evaluated the impact of knowledge sharing self-efficacy on knowledge sharing intention. For example, Bock and Kim (2001) suggested that self-efficacy could be viewed as a main element of self-motivation for knowledge sharing. Their results prove that the individual's judgment of his or her contribution to organization performance has a positive effect on knowledge sharing.

Kankanhalli et al. (2005) dealt with knowledge sharing self-efficacy as a factor of intrinsic benefits and combined it with other factors to evaluate their effect on knowledge contribution behavior. Their study results reveal that self-efficacy is positively related to knowledge sharing while using electronic knowledge repositories. Since knowledge sharing is broadly applied using the Internet as a communication tool, Internet self-efficacy in knowledge sharing contributors is important to promote knowledge sharing behavior (Teh et al., 2010).

Consistent with the results of the studies mentioned above, we find that knowledge sharing self-efficacy is an important determinant for online users' behavior in social network contexts. With it, online Facebook users are linked by a common interest (Ba et al., 2001) to deliver access to other users for combining and exchanging knowledge (Nahapiet & Ghoshal, 1998). On that basis, this

study proposes knowledge sharing self-efficacy as a variable that influences knowledge sharing among online Facebook users. We therefore posit the following hypothesis:

H4: Knowledge self-efficacy has a positive effect on students' knowledge sharing behavior through Facebook.

2.7. Academic Performance

Researchers have found that people are more prone to engage in a specific behavior that will lead to favorable results (Chiu et al., 2006). Lu and Hsiao (2007) found that people undertake behaviors that they believe will lead to a "better" outcome.

Some students use Facebook for academic purposes, particularly to get in touch with others in their respective classes to acquire information about assignments. Some say that they prefer Facebook to university education because it offers instant responses (Kosik, 2007), although there are no obvious measures to show that individuals learn from taking part in social networks (Ünlüsoy et al., 2013). There is, therefore, great academic interest in exploring the impact that online social networks may have on student academic outcomes (Abramson, 2011; Kamenetz, 2011).

Many studies have disclosed the negative effect of using social networks like Facebook on students' academic performance. Rouis et al. (2011) found that Facebook use is a leisure activity that negatively affects students' academic performance. Others have also found that academic performance is negatively affected by time spent on social networks (Jacobsen & Forste, 2011; Paul et al., 2012). Social media networks have long been reported to distract students from studying and to cause academic issues (Al-rahmi et al., 2015b; Junco, 2012; Paul et al., 2012), and undesirable study habits (Ahmed & Qazi, 2011). Studies have also found that past frameworks of social networks have several notable negative

impacts on student engagement, collaborative learning, and academic performance (Conway et al., 2011; Kirschner & Karpinski, 2010).

In contrast, some recent studies have reported positive results. Leung (2015) found that heavy Facebook use has a positive impact on overall grades. Al-Rahmi et al. (2015a) found that social network can help improve the education performance of students if lecturers assimilate social networks in their teaching methods. Their findings suggest that social networks facilitate collaborative learning and engagement, which advances the academic performance of students.

Facebook can be used as a tool to produce and promote online connections among college students and faculty inside academic institutions (Mazer et al., 2007). The improvement in academic communication could have a positive effect on class discussions and student involvement and integration with their colleagues (Ross et al., 2009). Online social networking facilitates better and more efficient interpersonal support, collaborative information sharing, content creation, and knowledge accumulation (Lee & McLoughlin, 2008). Also, offering a learning environment that matches the needs of students' learning styles improves students' performance (Graf & Liu, 2010).

Using social networks (specifically, Facebook) as a facility that allows users to fulfill interpersonal interactions with colleagues has achieved success on the web (Zhou et al., 2010). The interaction of colleagues can be an essential way to achieve learning that offers emotional and intellectual support that facilitates academic satisfaction, capability development, and performance improvement (Bauer et al., 2007; Yu et al., 2010a). By the same token, peer interaction would encourage the development of communication skills and boost the self-esteem of those who have good interpersonal skills (Ainin et al., 2015). Thus, it is essential to ensure that these students spend their time with the right group of colleagues (Ainin et al., 2015). From the viewpoint of educators, providing online course materials – e.g., electronic books, online videos, and PowerPoint files – is useful in motivating participants to learn in the online environment (Chen, 2015).

Based on the findings of these studies, we posit the following hypothesis:

H5*: Knowledge sharing has a positive effect on students' academic performance.*

Figure 1 presents the conceptual framework for this study.   The research model incorporates the variables and the five hypotheses discussed in this section.
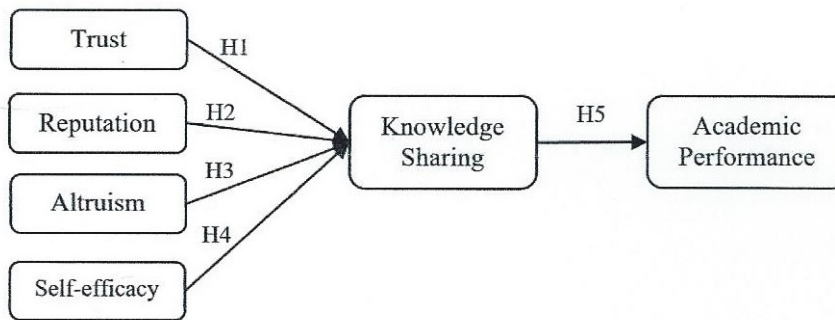

Figure 1.   Research Model for the Current Study

3.   METHODOLOGY

This discussion of methodology focuses on the research procedure and study sample and the research instrument used.

3.1. Procedure and Study Sample

The survey questionnaire method was adopted to collect empirical data for this study. The study population comprised 60 first-year undergraduates who were registered for the course in principles of accounting at Palestine Technical University.   Enrollment in the class totaled 150.

At the beginning of the semester, the course lecturer formed a Facebook group to set up an online environment to facilitate communication among students and to share online materials with students. The lecturer announced the address of the Facebook group to the class but left the choice of joining the online group to the

students. The lecturer then began uploading accounting materials, related videos, online books and notes, and other information related to the subject. Also, the lecturer updated the online group after each lecture, based on the topic taught in the class.

Although enrollment in the Facebook group was voluntary, within a month, 120 of the 150 students (80%) enrolled in the class had asked to join the group. The group members began sharing information related to the class and assignments. They watched related videos and downloaded online materials provided by the lecturer and other colleagues.

Most of the time, the number of *Seen* and *Like* clicks on the online posts was almost equal to the number of members in the group. Each time, around 40% of the members commented on Facebook group posts and shared extra information related to the subject. Around 20% of the online students were active in the Facebook group. They made an effort to answer questions from other students, comment on inquiries, share lecture notes, help other students to understand accounting issues and to solve accounting problems, post extra information related to the assignments, and update the group on university news. After the first month, the lecturer interaction in the Facebook group reached the minimum (20%) of group interaction.

The data for this study was collected at the end of the four-month semester. At this time, the lecturer told online students about her interest in evaluating their experience with the Facebook group during the semester. The lecturer shared an online questionnaire with volunteer students. The questionnaire was anonymous. About 60 of the 120 students (50%) who participated in the Facebook group chose to take part in the survey. All the responses were complete and were considered valid for analysis. Of the 60 respondents, 73% were female and 27% were male. All respondents were between the ages of 18 and 19.

3.2. Research Instrument

This study being quantitative, the researcher designed a questionnaire (see Appendix) and used the survey method to collect data. The study used the original validated scales and adapted them to the context of online knowledge sharing. Some previously validated scales were modified to better fit the current research context. The items used to measure *trust*, for example, were adopted from Nahapiet and Ghoshal (1998) and Lee et al. (2014). The items used to measure *reputation* were adopted from Wasko and Faraj (2005). The items used to measure *knowledge self-efficacy* were adopted from Van Den Hooff and De Ridder (2004), and the items designed to measure *altruism* were adopted from Kankanhalli et al. (2005). *Knowledge sharing* items were adopted from Lin (2007a) and Bock et al. (2005). Items used to measure *academic performance* were adopted from Yu et al. (2010a) and Igbaria and Tan (1997).

To ensure ease of answerability, the questionnaire was tested using seven students. Substantive comments were taken into consideration before sharing the last version with the study sample.

Respondents were required to answer all items using a 5-point Likert scale ranging from *1=strongly disagree* to *5=strongly agree*. In addition, the respondents were asked to complete their demographic profile (age and gender) using categorical scales.

4. DATA ANALYSIS AND RESULTS

SmartPLS 2.0.M3 was used as the main statistical analysis tool to purify the measurement items and test the hypothetical relationships.

4.1. Measurement Model

To assess the reliability and validity of the study variables, we performed confirmatory factor analysis. Factor cross loading (Table 1) indicated that all items loaded on their construct more than other constructs (Hair Jr. et al., 2014).

Table 1
Factor Cross Loadings

	ALT	KSE	KSH	PRF	REP	TRS
ALT1	**0.910**	0.620	0.544	0.289	0.522	0.386
ALT2	**0.890**	0.546	0.435	0.307	0.414	0.541
ALT3	**0.893**	0.555	0.516	0.139	0.405	0.401
KSE1	0.456	**0.806**	0.323	0.369	0.538	0.330
KSE2	0.398	**0.766**	0.310	0.290	0.449	0.218
KSE3	0.633	**0.868**	0.628	0.356	0.512	0.362
KSH1	0.435	0.449	**0.774**	0.412	0.317	0.352
KSH3	0.505	0.421	**0.782**	0.374	0.219	0.301
KSH4	0.403	0.497	**0.840**	0.442	0.344	0.208
PRF1	0.253	0.313	0.369	**0.851**	0.381	0.311
PRF2	0.246	0.388	0.495	**0.878**	0.425	0.228
PRF3	0.213	0.428	0.512	**0.919**	0.432	0.292
PRF4	0.217	0.246	0.327	**0.744**	0.281	0.353
REP1	0.334	0.483	0.177	0.295	**0.669**	0.055
REP2	0.390	0.488	0.209	0.380	**0.885**	0.316
REP3	0.498	0.565	0.431	0.441	**0.940**	0.297
TRS1	0.400	0.153	0.204	0.120	0.082	**0.665**
TRS2	0.367	0.355	0.400	0.385	0.360	**0.867**
TRS3	0.402	0.289	0.135	0.116	0.057	**0.720**
TRS4	0.311	0.321	0.157	0.230	0.177	**0.656**

All of the variables were tested for reliability using composite reliability and Cronbach's alpha. Compared with Cronbach's alpha, composite reliability is acknowledged as a more rigorous assessment of reliability (Chin, 1998). Table 2 presents the loading of all constructs items in addition to AVE, composite reliability, and Cronbach's alpha values for each construct.

Table 2
Variables Measurement Model Assessment

Construct	Item	Loading	AVE	Composite Reliability	Cronbach's Alpha
Academic Performance (PRF)			**0.723**	**0.912**	**0.872**
	PRF1	0.851			
	PRF2	0.878			
	PRF3	0.919			
	PRF4	0.744			
Knowledge Sharing (KSH)			**0.639**	**0.841**	**0.717**
	KSH1	0.774			
	KSH2	0.782			
	KSH3	0.840			
Trust (TRS)			**0.536**	**0.820**	**0.739**
	TRS1	0.665			
	TRS2	0.867			
	TRS3	0.720			
	TRS4	0.656			
Reputation (REP)			**0.705**	**0.875**	**0.800**
	PEP1	0.669			
	PEP2	0.885			
	PEP3	0.940			
Altruism (ALT)			**0.806**	**0.926**	**0.880**
	ALT1	0.910			
	ALT2	0.890			
	ALT3	0.893			
Knowledge Self-Efficacy (KSE)			**0.663**	**0.855**	**0.773**
	KSE1	0.806			
	KSE2	0.766			
	KSE3	0.868			

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As shown in Table 3, the results of composite reliability and Cronbach's alpha for all variables were greater than 0.70, which indicates that all variables measures are reliable. Variables validity was assessed by examining convergent and discriminant validities. Convergent validity was evaluated by the average variance extracted (AVE) values. As shown in Table 3, the AVE for all variables is more than the threshold value of 0.50 (Hair Jr. et al., 2014).

Table 3
Correlation Matrix of Variables

	AVE	ALT	KSE	KSH	PRF	REP	TRS
ALT	**0.806**	**0.898**					
KSE	**0.663**	0.641	**0.814**				
KSH	**0.639**	0.560	0.571	**0.799**			
PRF	**0.723**	0.270	0.415	0.513	**0.850**		
REP	**0.705**	0.501	0.608	0.368	0.454	**0.840**	
TRS	**0.536**	0.486	0.385	0.358	0.337	0.287	**0.732**

Items on the diagonal are square roots of AVE scores.

Further, discriminant validity was evaluated by comparing the square root of AVE values for each variable, with the correlation values located between the variable and other variables (Chin, 1998). As shown in Table 3, all square roots of AVE are larger than variables correlations, implying that the variance outlined by the particular variable is greater than the measurement error variance. Thus, all variables proved an acceptable level of convergent and discriminant validities.

4.2. Structural Model

Figure 2 shows the test results for the five hypotheses executed by PLS. The overall assessment of the model is presented in Table 4.
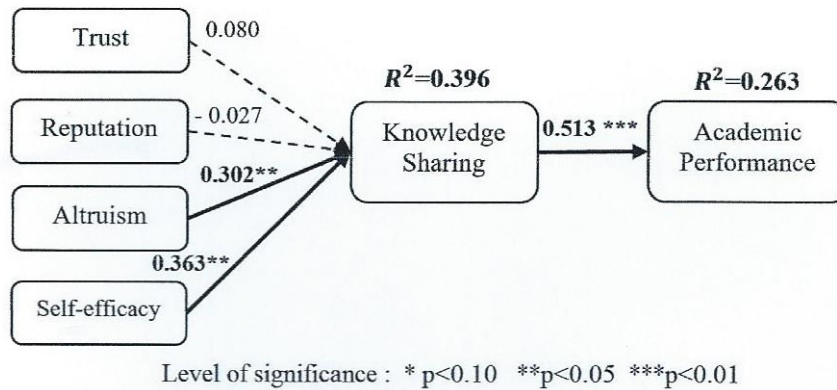
Level of significance : * p<0.10   **p<0.05   ***p<0.01

Figure 2.   Results of PLS Analysis of Study Hypotheses

Table 4
Overall Assessment Results for Structural Model

Hypothesis	Path Coefficient	Sample Mean	Standard Deviation	T-Values	P-Values	Result
TRS -> KSH	0.080	0.158	0.110	0.725	0.472	Rejected
REP -> KSH	-0.027	-0.141	0.106	0.254	0.801	Rejected
ALT-> KSH	0.302	0.274	0.145	2.075	0.044	**Supported**
KSE -> KSH	0.363	0.367	0.157	2.312	0.026	**Supported**
KSH -> PRF	0.513	0.534	0.116	4.415	0.000	**Supported**

The results indicate that the relationships between *trust* (β= 0.080, p = 0.158) and *reputation* (β= -0.027, p = 0.801) to *knowledge sharing* are not significant. Thus, H1 and H2 are not supported. On the other hand, the results show that the relationships between *altruism* (β= 0.302, p = 0.044) and *knowledge self-efficacy* (β= 0.363, p = 0.026) to *knowledge sharing* are significant and positive. Thus, H3 and H4 are supported. The results show that *knowledge sharing* reported $R^2 =$

0.396, which means 40% of the variance associated with knowledge sharing was accounted for by these four variables. Also, the results reveal that *knowledge sharing* has a strong positive significant effect on *academic performance* (β= 0.513, p = 0.000); therefore, H5 is supported. Finally, *academic performance* reported R^2 of (0.263), which means about 26.3% of students' academic performance can be explained by knowledge sharing.

5. DISCUSSION

Based on previous literature, we proposed the research model in Figure 1 to examine the impact of trust, reputation, altruism, and knowledge self-efficacy on knowledge sharing via Facebook. The overarching goal was to examine the effect of knowledge sharing through Facebook on students' academic performance. Based on the analysis of results, three of our five hypotheses were supported.

The results showed a nonsignificant relationship between trust in others and knowledge sharing behavior among students using Facebook. This result implies that trust in online colleagues is not an important motivator that affects students when they use and share knowledge online. This result may be due to the fact that the students' community is close and that all students in the class know one another in offline classes; thus, trust is already implied. The result may also be due to the fact that the culture of Palestine criticizes people who spread incorrect information, but instead encourages people to r share only correct information. In other words, when a student has correct information, he or she will share it; otherwise the student will not. This result is consistent with the findings of Hsu and Lin (2008) and Chow and Chan (2008).

The results of the current study indicate that reputation is not a significant determinant of knowledge sharing by students. This result suggests that reputation among friends and the course lecturer is not an important factor for students compared with other factors. This result may be due to the fact that the students are friends and classmates and know one another; therefore, sharing knowledge to

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increase status is not an essential matter for them. This finding is consistent with previous research by Moghavvemi et al. (2017), who found that caring about strengthening the reputation among university colleagues is not important.   The finding may differ, however, for different groups and communities.

This study found that altruism has a significant impact on online knowledge sharing. This result reveals that students share their knowledge because they enjoy helping other colleagues without expecting a return. One possible explanation is that frequent communication among students affected their knowledge sharing behavior, which indirectly encouraged the feeling of intrinsic enjoyment (Yu et al., 2010b). Students who take pleasure in sharing knowledge and helping others are more motivated to share knowledge with colleagues. Students share knowledge because they think that helping others facing problems would be enjoyable and interesting, and they feel good when doing so (Rahab & Wahyuni, 2013). This result is consistent with previous studies that found that altruism influences knowledge sharing (Hsu & Lin, 2008; Lin, 2007b; Moghavvemi et al., 2017).

The current study found that knowledge self-efficacy plays a vital role in knowledge sharing behavior. This finding indicates that students will share knowledge based on their abilities. This result implies that a sense of competence and self-confidence may be needed for students to engage in knowledge sharing. Students who believe in their ability to share useful knowledge therefore have a stronger motivation to contribute their knowledge to colleagues. The finding of this paper is consistent with other research results that found that students with knowledge self-efficacy will contribute to knowledge sharing more than others (Chen & Hung, 2010; Lin, 2007b).

The results of the current study also revealed a significant impact of online knowledge sharing on students' academic performance. This finding means that the more that lecturers promote and use social networks in the academic context, the more students will achieve higher academic performance, and vice versa. This find is in agreement with the results of Ainin et al. (2015) and Al-rahmi et al.

(2015b), who found a positive and strong relationship between using social networks and student academic performance. This finding suggests that education institutions should provide collaborative and interactive online social media to improve students' academic performance. In addition, a study by Du et al. (2007) found that knowledge sharing as a significant influence on performance.

5.1. Managerial Implications

This study suggests the following recommendations for academic facilitators (i.e., institution administrators or lecturers) who care about launching knowledge sharing practices or who wish to encourage knowledge sharing within their academic institutions.

1. Academic institutions should encourage their lecturers to integrate online social networks as a tool in their courses by training them to use this tool in the academic context and by supplying them with suitable online material for their courses.

2. Academic institutions may need to impose suitable policies and rules to satisfy the new online academic environment.

3. Since this study provides evidence that knowledge self-efficacy is an important antecedent to students' knowledge sharing behavior, lecturers should pay more attention to providing useful feedback to students in order to improve their knowledge self-efficacy. Self-efficacy can be established by motivating and selecting students who are proactive and who have high intellectual skills and self-esteem.

4. Academic administrators should boost the perceptions of knowledge self-efficacy among valued knowledge students by informing them of the important contribution they make to their university and colleagues.

5. Since altruism and enjoyment in helping others significantly influence students' knowledge sharing behavior, academic managers should raise the level of enjoyment that students experience when they help one another by improving the positive mood of students.

6. Academic institutions should set up and sustain knowledge sharing by facilitating the use of social networks inside the university by equipping suitable computer labs and by providing Internet access on campus.

5.2. Limitations of Study

There are several limitations of this study that require further examination and research. First, this study focuses on undergraduate students in a university course on the principles of accounting. Future research could study different levels of students and different academic courses. Second, the sample population for the study was limited to students in one Palestinian university. It would be interesting to test the research model at other universities, both inside and outside Palestine, since cultural differences influence students' opinion about knowledge sharing. Third, this study comprised a sample population of 60 respondents. Although several significant results were obtained, increasing the sample size would provide greater statistical power and would increase generalizability.

6. CONCLUSIONS

This study examined the effect of trust, reputation, altruism, and knowledge self-efficacy on knowledge sharing through Facebook and assessed the impact of knowledge sharing on academic performance. The results show that only altruism and knowledge self-efficacy significantly predict knowledge sharing behavior through Facebook; that trust and reputation are not significant; and that knowledge sharing through Facebook significantly predicts academic performance.

APPENDIX: Study Variables Measurement Items

Variable	Item
Academic Performance Yu et al. (2010a) & Igbaria and Tan (1997)	PRF1: Knowledge sharing helps me enrich my research.
	PRF2: I am confident I have adequate academic skills and abilities.
	PRF3: I feel competent conducting my course assignment.
	PRF4: I have learned how to do my coursework in an efficient manner.
	PRF5: I have performed academically as I expected I would.
Knowledge Sharing Lin (2007a) & Bock et al. (2005)	KSH1: I share my knowledge based on my experience with my colleagues.
	KSH2: I share my expertise at the request of my colleagues.
	KSH3: I frequently share reports, papers, and notes with other students.
	KSH4: I frequently share reports, papers, and notes prepared by others with other students.
Trust Nahapiet and Ghoshal (1998) & Lee et al. (2014)	TRS1: I have faith in my colleagues and trust them.
	TRS2: I have belief in the good intent and concern of in my colleagues.
	TRS3: I have belief in my colleagues' reliability.
	TRS4: I trust in my colleagues when discussing topics via Facebook.
Reputation Wasko and Faraj (2005)	REP1: I earn respect from my colleagues by participating in the Facebook accounting group.
	REP2: I feel that participation improves my status in the Facebook accounting group.
	REP3: Participating in the Facebook accounting group can enhance my reputation among colleagues and lecturer.
	REP4: I can earn some feedback or rewards through participation that represents my reputation and status in the Facebook accounting group.
Altruism Kankanhalli et al. (2005)	ALT1: I enjoy sharing my knowledge with other colleagues through the Facebook accounting group.
	ALT2: I enjoy helping other colleagues by sharing my knowledge through the Facebook accounting group.
	ALT3: It feels good to help someone else by sharing my knowledge through the Facebook accounting group.
	ALT4: Sharing my knowledge with other colleagues through the Facebook accounting group gives me pleasure.
Knowledge Self-Efficacy Van Den Hooff and De Ridder (2004)	KSE1: I have confidence in my ability to provide information on the Facebook accounting group that can solve my colleagues' problem
	KSE2: I have confidence in my ability to provide information on Facebook accounting group which my colleagues are interested in or consider useful.
	KSE3: I am confident that most information I provide can attract my colleagues' attention.

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