Determinants of knowledge-sharing behaviour among students at higher educational institutions in Oman: a planned behaviour theoretical perspective of knowledge sharing

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Abstract

Purpose – This paper aims to investigate how students' attitude (SA), students' subjective norms (SN), students' knowledge sharing intentions (KSI) can contribute to the enhancement of knowledge sharing behaviour (KSB) among students at higher education institutes (HEI) in Oman.

Design/methodology/approach – This study follows the quantitative methodology and the deductive causal research approach. The data were conveniently collected through a Web-based questionnaire (Google forms) from 285 active students who are affiliated to Omani universities. SPSS was used to statistically analyse the collected data, including partial least square-structural equation modelling (PLS-SEM V3.3) to draw the results.

Findings – The study concluded that SA has both direct and indirect positive impact on SN, KSI and KSB. Moreover, the result revealed that there is a mediation effect between SA and KSB through KSI, SA and KSI when SN is playing as a mediation role.

Research limitations/implications – Although this study contributes to the existing body of knowledge, this study is limited by the scarcity of the related literature in the Omani context. It is recommended that these shortfalls be addressed together while improving the knowledge-sharing behaviour among students and administrative staff. Furthermore, the potential variation between academic staff and students in terms of factors affecting their intentions to share knowledge within HEIs should be explored.

Practical implications – This research provides policymakers in academic fields with the appropriate approaches to leverage the knowledge-sharing behaviour amongst Omani students with the understanding of the main factors affecting individuals' knowledge-sharing behaviours.

Social implications – This will help in improving the means of employing and practising knowledge-sharing strategies within HEIs, which can generate competitive advantages amongst students and institutions while benefiting knowledge management strategies and its members.

Originality/value – The importance of the study stems from its context being conducted in Oman as a developing country. In addition, this study is one of the initial attempts to investigate KSB by considering SA, SN and KSI and its applicability on HEI in Oman. The findings of the study can serve as inputs to HEI in

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developing best practices across KSB dimensions and expanding the knowledge-sharing culture amongst HEI's students in Oman. One of the developed strategies is the spreading of the knowledge-sharing culture among students by positively directing their attitude towards the practices of knowledge exchange.

Keywords Subjective Norms, HEIs, Omani students, Students attitude, Students behavioural intention, Students' knowledge sharing behaviour

Paper type Research paper

1. Introduction

Over the past decades, knowledge has been recognised as one of the most popular bases of the economy (Cavaliere and Lombardi, 2015; Lyu *et al.*, 2020; Yeşil *et al.*, 2013). Hence, many studies have described knowledge as intangible assets in either academic or commercial organisations (Abu Naser *et al.*, 2016; Akturan and Çekmecelioğlu, 2016; Areekkuzhiyil, 2019). Moreover, the literature has illustrated that knowledge is characterised by its unique value and difficult to duplicate and substitute (Mansor *et al.*, 2015). Osman *et al.* (2015) suggested that knowledge is the source of competitive advantage of any organisation; the value of knowledge substantially increases when used and shared, thereby offering immense opportunity for individuals or groups to raise their performance, competencies and innovative ideas (Al-Kurdi *et al.*, 2020; Lin and Huang, 2020; Naser *et al.*, 2016a; YIlmaz, 2016).

Knowledge sharing behaviour (KSB), which is a co-construct and component of knowledge management, is the means to create, present and distribute the mental knowledge of individuals and institutions (Bello and Oyekunle, 2014; Keong and Subhi, 2015; Kipkosgei *et al.*, 2020) through either the traditional face-to-face contact or technological mediation (Cabrera and Cabrera, 2002; Hsu and Lin, 2008; Neches *et al.*, 1991) The majority of the related studies have elucidated that the learning base nature of higher educational institutions (HEIs) makes the strategic role of knowledge sharing highly imperative among students to improve their knowledge sharing intention (KSI) level and gain a sustained competitive environment within educational institutions (Arabshahi *et al.*, 2013; Bello and Oyekunle, 2014; Ghadirian *et al.*, 2014; Akturan and Çekmecelioğlu, 2016). Knowledge sharing has been recognised for its decisive role in the advancement of an individual's performance (Naser *et al.*, 2016b). Abdul-Jalal *et al.* (2013) discussed the ultimate need to align knowledge management strategies with applied strategies and policies within universities.

However, many aspects hinder students from sharing knowledge (Bello and Oyekunle, 2014). One of these constraints is students' attitude (SA) and their subjective norms (SN) who are unwilling to exchange and share their knowledge with their peers (Jolaee *et al.*, 2014; Kathiravelu *et al.*, 2014). Hung *et al.* (2011) and Licorish and MacDonell (2014) explained that several determinants emerge amongst HEI students, such as a lack of incentives to motivate them to enhance the implementation of knowledge-sharing strategies that educational organisations aim to achieve. This idea is consistent with that of Naheed and Isa (2019), who confirmed the powerful influence of motivation in altering students' behaviour towards knowledge sharing. From other perspectives, lack of knowledge sharing shrinks the utilisation of the valuable intangible resources and limits individuals' opportunities to learn (Jolaee *et al.*, 2014). However, factors influencing individual intention to share knowledge are not well recognised and understood (Alajmi, 2011; Mansor *et al.*, 2015). Therefore, the main factors affecting students' willingness to share knowledge, particularly in academic institutions, should be clarified and substantially explained.

Recently, Omani HEIs have incorporated knowledge management strategies within the overall organisational strategy, which can meet the current competitive environment that is based on the knowledge economy. As a response, the aim of this paper is to emphasis on the factors that impact on students' knowledge sharing behaviour in HEIs.

> In response, the main research question of this study can be highlighted on examining how students attitudes (SA), at Omani universities, influences (a) Students Subjective Norm (SN), (b) Knowledge Sharing Intentions (KSI), and (c) Knowledge Sharing Behaviour (KSB).

The main objective of the current study is to identify the core factors influencing HEI students' willingness to share knowledge by developing and empirically testing the proposed conceptual framework. Given that the majority of the existing studies have examined knowledge sharing in organisational settings; only minimal research has investigated students' behaviour towards knowledge sharing in HEIs, particularly in Oman. Thus, the current study will contribute to gaining a substantial understanding of the critical factors limiting student participation in leveraging knowledge distribution. By focusing on the academic context, this research will provide policymakers in various HEIs with suggestions and recommendations to enhance knowledge sharing among students.

The next sections of this paper will focus on the construct development and literature review, and how the researchers formulate and develop the study framework and research hypotheses development. Next sections will discuss the research methodology adopted. Then, the paper progresses through presenting data analysis and results. The last sections will explain the essential findings, limitations, reflections on theory and practice and paving the way for future research.

2. Construct development and literature review

2.1 Students' attitudes

Attitude towards a particular behaviour has been characterised as a significant determinant of individuals' agreement or disagreement in situations where behaviours are evaluated (Lin and Huang, 2020; Martini, 2014; Sohail, 2009; Sugashwarprashanth, 2016). The decision of people to act in a certain manner (Sheppard *et al.*, 2010; Licorish and MacDonell, 2014; Sugashwarprashanth, 2016) and their attitude towards particular situations are considered according to the evaluation of such behaviour (Licorish and MacDonell, 2014; Martini, 2014). Moreover, people differ in their attitudes towards a particular behaviour, which is driven according to their benefits, beliefs and feelings (Lin *et al.*, 2020; Orces *et al.*, 2005; Sugashwarprashanth, 2016). Bello and Oyekunle (2014) suggested that personal attitude towards moral behaviours critically influences the behavioural intention to act morally. That is, attitude shapes individuals' behaviours (Orces *et al.*, 2005). Therefore, people with a positive attitude towards moral behaviours are likely to share knowledge (Sohail, 2009; Bello and Oyekunle, 2014). Sohail (2009) defined the attitude of sharing knowledge as the procedure in which people share opinions, thoughts, ideas and information.

Learning institutions have developed strategies and approaches to boost students' experience during learning (Chen, 2006; Kipkosgei *et al.*, 2020; Licorish and MacDonell, 2014). Numerous studies have also emphasised on examining the appropriate techniques to be implemented in learning institutions that contribute in fostering the students' attitudes towards learning experience (Neches *et al.*, 1991; Sheppard *et al.*, 2010; Sohail, 2009; YIlmaz, 2016), thereby enhancing their attitude towards knowledge sharing (Sohail, 2009; YIlmaz, 2016). Collaborative learning is one of the most effective and popular techniques implemented in many academic institutions (Areekkuzhiyil, 2019; Kipkosgei *et al.*, 2020) to

establish an improved cooperative attitude among students in exchanging and sharing their knowledge with their peers (Chong *et al.*, 2014; Areekkuzhiyil, 2019).

Nevertheless, one of the factors that categorise students' attitude towards knowledge sharing is the dominant organisational culture (Sohail, 2009; Bello and Oyekunle, 2014). Swift (2007) defined organisational culture as the shared norms and values that drive individuals' behaviours and determine their attitudes within the organisation. Orces *et al.* (2005) suggested that the set of embarked policies, procedures and activities, apart from the operational process, formulate the overall culture of organisations. Culture is a social phenomenon that is transferred from one generation to another (Swift, 2007). Thus, knowledge sharing is one of the processes embedded within the organisational culture that inevitably has a direct impact on students' attitudes towards knowledge exchange and sharing (Sohail, 2009; YIlmaz, 2016; Areekkuzhiyil, 2019).

From other perspectives, the extant empirical studies have investigated the influence of trust within an entire institution and among students only on a narrow scale (Sohail, 2009; Sugashwarprashanth, 2016). Bello and Oyekunle (2014) confirmed that the trust culture in organisations, specifically in learning institutions, is the corner stone to achieve the positive relationships that lead to the enthusiasm of students to share knowledge and exchange ideas (Orces *et al.*, 2005) and opinions; and critically leverage the process of creating knowledge and innovating (YIlmaz, 2016). However, the improvement of the knowledge-sharing pattern implementation in HEIs by directing Omani students' attitudes towards knowledge transition, along with the provided educational services, has an impressive role in developing the quality of educational outcomes (Chong *et al.*, 2014; Sugashwarprashanth, 2016). However, one of the determinants that lead to poor educational experiences is the lack of sharing information because students' "*hide your knowledge*" mindset distresses the improvement of extending the culture of knowledge sharing (Bello and Oyekunle, 2014; Sugashwarprashanth, 2016). Students are likely to share their ideas and knowledge with their group members and avoid unknown people. Consequently, these students develop a negative attitude towards the procedures of sharing knowledge (Swift, 2007; Sugashwarprashanth, 2016; YIlmaz, 2016).

2.2 Subjective norms

Ajzen and Driver (1991) defined subjective norms as the perceived pressure that is critically associated with social pressure, which is subject to performing or not performing a particular behaviour. Manteghi (2015) argued that behaviours should be evaluated taking into consideration the social expectations that shape people's attitudes and actions. Generally, individuals behave according to the prevailing subjective norms within institutions that are derived from dominant social norms (Keong and Subhi, 2015; Arsalan, 2018). Therefore, the expected or intended behaviour is significantly influenced by the dominant atmosphere (Arsalan, 2018) and subjective norms (Hinds and Pfeffer, 1996; Chennamaneni, 2006; Abdel Fattah, 2016). Subjective norms play an essential role in predicting the extent to which knowledge will be shared among individuals (Ajzen and Driver, 1991; Arabshahi *et al.*, 2013).

One of the most conspicuous constraints among Omani students' behavioural intention to transfer knowledge is the institutional climate (Chennamaneni, 2006), which is known as the perception of the dominant values, procedures, practices, norms and beliefs that emerged in situations where these perceptions are shared within organisations (Ostroff *et al.*, 2013; Manteghi, 2015). Manteghi (2015) explained the relationship between the prevailing subjective norms and long-term institutional success. That is, the subjective norms embedded within organisations guide individuals towards a desirable behaviour

(Ostroff *et al.*, 2013; Osman *et al.*, 2015; Arsalan, 2018). Therefore, students orientation to be engaged in knowledge-sharing practices is derived significantly from the perceived institutional climate, thereby leading their subjective norms (Ostroff *et al.*, 2013; Osman *et al.*, 2015). Additionally, students' subjective norms in learning institutions exert minimal influence on the establishment of the behavioural intention to transfer knowledge compared with their attitudes (Ostroff *et al.*, 2013; Osman *et al.*, 2015; Abdel Fattah, 2016; Abu Naser *et al.*, 2016).

Keong and Subhi (2015), Osman *et al.* (2015) and Arsalan (2018) ascertained that students' continuous behaviour depicted as unwillingness to transfer their acquired knowledge to their peers could be considered a side of their personalities and mindset. Hinds and Pfeffer (1996) argued that the fear of losing power is one of the determinants that limit students to collaborate with peers in the process of knowledge exchange. Chennamaneni (2006), Ostroff *et al.* (2013) and Arsalan (2018) revealed that Omani students exhibit minimal cooperation to share knowledge when their obtained information is significantly valuable and sensitive. Moreover, the negative competition among students in academic institutions is one of the factors that inhibit knowledge sharing (Hinds and Pfeffer, 1996; Ostroff *et al.*, 2013; Keong and Subhi, 2015; Osman *et al.*, 2015) and trust on their peers (Arsalan, 2018).

In light of this issue, highly positive subjective norms have a considerable influential role on individuals' knowledge-sharing behaviour (Ostroff *et al.*, 2013; Keong and Subhi, 2015; Osman *et al.*, 2015). Arsalan (2018) claimed that subjective norms deemed as efficient measurement tools to assess whether individuals can respond and behave under social pressure, as well as deal with their surroundings. Therefore, if students can achieve reasonable control on the knowledge exchange process (Hinds and Pfeffer, 1996; Osman *et al.*, 2015; Arsalan, 2018), then such knowledge will be effectively shared and their innovative ability will reach a remarkable level of success within the institution (Chennamaneni, 2006; Keong and Subhi, 2015; Manteghi, 2015).

2.3 Knowledge-sharing intention

Hong and Caire (2012) defined intention as individuals' attempt to exhibit a particular behaviour that is oriented by their willingness to execute an action. Meanwhile, behavioural intention is known as a motivational factor due to its role in directing people's actions (Abili *et al.*, 2011; Hong and Caire, 2012; Lin *et al.*, 2020).

Numerous studies have revealed that HEIs encounter difficulties in knowledge management are owing to many limitations, such as lack of knowledge maximisation (So and Bolloju, 2005). Abdul-Jalal *et al.* (2013) ascertained the imperative importance of reusing and maximising knowledge in HEIs through the exchange of information and ideas. Accordingly, the importance of Omani students' high behavioural intention to share and exchange knowledge is clarified. Managers and staff members characterised by a positive attitude and subjective norms (So and Bolloju, 2005; Jolaee *et al.*, 2014) inspire students to share knowledge (Allen *et al.*, 2007; Liu *et al.*, 2013; Naser *et al.*, 2016b). Abili *et al.* (2011) determined a strong relationship among managers, staff and students' subjective norms and knowledge-sharing intention. That is, their plan to share knowledge and behaviour significantly affects their subjective norms (So and Bolloju, 2005; Jolaee *et al.*, 2014). Additionally, the prevailing positive organisational climate has a direct impact on the facilitation of knowledge sharing and induces students' enthusiasm to transfer knowledge (Allen *et al.*, 2007; Chen, 2011).

However, the accomplishments of a thriving knowledge-sharing culture within learning institutions considerably draws on two aspects:

(1) students' willingness to contribute in increasing the quality of the provided services (So and Bolloju, 2005; Liu *et al.*, 2013) and their ability to raise educational output levels (Jolaee *et al.*, 2014);

(2) students' desire to participate in a broad communication network (Jolaee *et al.*, 2014).

Several studies have shown that the attitude of knowledge sharing is a buildable behaviour that is broadly influenced by the reflection of students' educational performance (Liu *et al.*, 2013; Naser *et al.*, 2016b). Consequently, this performance reflects the students' behavioural intention to share knowledge (So and Bolloju, 2005). Hong and Caire (2012) determined that knowledge sharing, coupled with the individuals who are willing to contribute, cooperate and share their acquired knowledge with others, will substantially enhance students' performance in HEIs.

From another perspective, the combination of trust and behavioural intention to share knowledge substantially enhances Omani students' interaction with their peers (Abili *et al.*, 2011; Liu *et al.*, 2013; Jolaee *et al.*, 2014), builds deep trusted relationship (Naser *et al.*, 2016b) and advances their ability to share valuable innovative ideas (Allen *et al.*, 2007; Abili *et al.*, 2011). Abili *et al.* (2011) stated that a relationship built on trust results in individuals likely being involved in knowledge-sharing practices and becoming comfortable in exchanging creative ideas.

2.4 Knowledge-sharing behaviour

Knowledge is reached on the bases of various values, validated information, experience and experts' thoughts and opinions (Akturan and Çekmecelioğlu, 2016). Islam *et al.* (2013) explained that knowledge is broadly classified into two categories, namely, explicit and tacit knowledge. Explicit knowledge is the knowledge that could be transferred to others through one's expertise. By contrast, tacit knowledge is the knowledge that is deeply rooted in people's values, experiences and actions (Kathiravelu *et al.*, 2014; Akturan and Çekmecelioğlu, 2016). However, knowledge sharing is a method in which individuals' behaviour towards distributing and exchanging their obtained information is enhanced by the transfer of this knowledge to colleagues (Yeşil *et al.*, 2013). Islam *et al.* (2013) suggested that knowledge sharing is the people's mutual exchange of mental analysis and understanding of information, opinion and ideas to improve communication and creation of new knowledge. Akturan and Çekmecelioğlu (2016) confirmed that the exchange of knowledge relies on members' willingness to voluntarily share their acquired knowledge to others besides their organisational citizenship, thereby inevitably induces the shared knowledge significantly. Several studies have suggested that knowledge sharing is the strategic source of any organisation competencies that directly influence the achieved performance.

Additionally, the value of knowledge cannot increase without maximisation of and sharing and exchange (Islam *et al.*, 2013; Kathiravelu *et al.*, 2014; Akturan and Çekmecelioğlu, 2016). Yeşil *et al.* (2013) identified a positive relationship between knowledge sharing and individuals' ability to improve creativity, leverage innovation level and create new knowledge. The result is sustainable, outstanding institutional performance.

Kathiravelu *et al.* (2014) explained that any organisation that strives to achieve sustainable success must boost the culture of knowledge sharing and development strategies. However, knowledge sharing is confined by the unwillingness of individuals to exchange knowledge, which is associated with the characteristics of a certain society's culture. This condition increases the difficulty of improving the knowledge-sharing culture

amongst HEI students. Moreover, the primary functions of HEIs, including creation, documentation and publishing, are knowledge-based (Yeşil *et al.*, 2013; Naser *et al.*, 2016a, 2016b). Al-Ammary and Fung (2008), Gagné (2009) and Akturan and Çekmecelioğlu (2016) asserted that two facets highly influence the creation of knowledge and survival of learning institutions: the extent to which knowledge is shared; and incentives provided by the institution to motivate students and change their attitudes towards knowledge sharing. Such issues as lack of trust (Al-Ammary and Fung, 2008), lack of reward system (Kathiravelu *et al.*, 2014; Murtaza *et al.*, 2016) and weak social network in HEIs, act as barriers that limit students' contributions in the knowledge transition process (Al-Ammary and Fung, 2008; Islam *et al.*, 2013). Consequently, students' knowledge and educational levels in learning institutions are critically influenced by knowledge-sharing behaviour (Islam *et al.*, 2013; Akturan and Çekmecelioğlu, 2016). That is, students are unable to participate effectively and efficiently unless knowledge is shared (Cavaliere and Lombardi, 2015).

However, improved behaviours and attitudes of students towards knowledge exchange have been generally shown from the influence of autonomous motivation (Gagné, 2009). Additionally, the reward systems in HEIs play an essential role in students' willingness to share ideas, opinions and information (Islam *et al.*, 2013; Akturan and Çekmecelioğlu, 2016; Murtaza *et al.*, 2016). Islam *et al.* (2013) stated that the lack of reward systems in HEIs limits Omani students' contribution to knowledge-sharing networks. That is, they are likely to exchange their acquired knowledge when rewards are involved (Nguyen and Malik, 2020). Furthermore, students' subjective norms significantly affect their attitude towards knowledge exchange practices (Al-Ammary and Fung, 2008; Kathiravelu *et al.*, 2014). The positive attitude influenced by an individual's subjective norms (Kathiravelu *et al.*, 2014) leads to substantial contribution in the process of transferring knowledge by students in HEIs (Al-Ammary and Fung, 2008; Islam *et al.*, 2013).

2.5 Omani students and knowledge sharing

Based on the differences of goal setting amongst people, many studies have found that Omani undergraduate students in HEIs differ from postgraduate students in terms of the motives that induce behaviour towards greater cooperation in the collaborative learning process (Cabrera and Cabrera, 2005; Ghadirian *et al.*, 2014). Graduate students show a higher level of cooperation than undergraduate students (Hsu and Lin, 2008). Kelloway and Barling (2000) and Mansor *et al.* (2015) clarified several approaches and techniques that can be used to encourage students in academic institutions in Oman to share information and knowledge. Quigley *et al.* (2007) proposed similar approaches, including upgrading the awareness on the positive impact of exchanging knowledge among students, preparing the universities in terms of facilities (Cabrera and Cabrera, 2005; Mansor *et al.*, 2015), providing internet access (Hsu and Lin, 2008) and encouraging teamwork and providing the needed materials (Hsu and Lin, 2008; Lam and Lambermont-Ford, 2010).

Riege (2005) stated that the primary motivating factor that enhances Omani students' knowledge sharing patterns with peers is to raise their understanding of the importance of information sharing in improving the quality of received learning. Gagné (2009) declared that discussion sessions and classes have influential roles in expanding the awareness of students towards knowledge-sharing involvement. From another perspective, peer appreciation is essential in encouraging students' attitudes to continually share their obtained knowledge (Lam and Lambermont-Ford, 2010; Mansor *et al.*, 2015).

The surrounding atmosphere in HEIs in Oman also has a significant influence on students' desire to share knowledge (Hung *et al.*, 2011). Mansor *et al.* (2015) argued that a

negative atmosphere inhibits individuals' motives towards knowledge sharing. Many factors prevent students' impetus to exchange knowledge with their peers (Jarrah and Alkhazaleh, 2020; Javadi *et al.*, 2012; Lam and Lambermont-Ford, 2010; Riege, 2005). One of these factors is the reward (Gagné, 2009). Rewards are the benefits received for providing services, accomplishing tasks and achieving goals (Hung *et al.*, 2011). However, many HEIs suffer from a lack of a reward system, which discourages students' engagement in knowledge sharing (Ghadirian *et al.*, 2014; Mansor *et al.*, 2015). Several empirical studies have proven that Omani students in various universities and colleges with supportive reward systems are substantially motivated to share knowledge compared with those in educational institutions that lack a reward system (Quigley *et al.*, 2007; Hung *et al.*, 2011; Javadi *et al.*, 2012). This finding proves the impact of motivation on students' attitudes towards exerting their best effort and sharing knowledge with their peers (Kelloway and Barling, 2000; Cabrera and Cabrera, 2005; Javadi *et al.*, 2012; Naheed and Isa, 2019).

Researchers are reporting that two factors affect Omani students' willingness to share knowledge in HEIs (Orces *et al.*, 2005; YIlmaz, 2016): student's attitudes towards knowledge sharing (Sugashwarprashanth, 2016; Areekkuzhiyil, 2019) and the dominant subjective norms (Arsalan, 2018; Rahman *et al.*, 2016). In the same vein, Sheppard *et al.* (2010) stated that the more positive the attitude and subjective norms of the people, the higher it will reflect on their behaviour. The reflection of the prevailing subjective norms among students in HEIs (Bello and Oyekunle, 2014; Sugashwarprashanth, 2016) affects their attitudes towards the exchange of information and knowledge (Keong and Subhi, 2015; Arsalan, 2018). Ostroff *et al.* (2013) inferred that the culture of knowledge sharing is highly influenced by the dominant subjective norms of the students in HEIs.

Quigley *et al.* (2007) determined that a reward system in any institution significantly influences individuals' performance. Rewards systems in learning institutions are a motivational factor that encourages and drives students towards considerable cooperation with their peers (Gagné, 2009; Hung *et al.*, 2011; Ghadirian *et al.*, 2014; Mansor *et al.*, 2015). Therefore, students' attitudes towards knowledge sharing will be positively derived from the expected rewards and benefits (Chen, 2006; Bello and Oyekunle, 2014). Ghadirian *et al.* (2014) suggested that to improve knowledge management capability in HEIs, strategies should be implemented and facilities should be provided to motivate students. Accordingly, remarkable success will be achieved in sharing and creating knowledge, which will result in the improvement of the innovation level amongst Omani students.

Subjective norms shape students' attitudes towards knowledge-sharing practices (Chennamaneni, 2006; Abu Naser *et al.*, 2016) as illustrated by the role of subjective norms in determining people's actions (Vallerand and Pelletier, 1992; Arabshahi *et al.*, 2013). Cabrera and Cabrera (2005) argued that subjective norms have an influential role in promoting students' motivation to share knowledge in a generally supportive organisational climate. The organisational climate is part of the overall surrounding environment that is affected by society (Chennamaneni, 2006; Ostroff *et al.*, 2013; Naser *et al.*, 2016a, 2016b). However, HEI students in Oman lack the motivation to share knowledge with their peers because of social pressure (Chennamaneni, 2006; Arabshahi *et al.*, 2013).

Arsalan (2018) stated that students' behavioural intention to act has a significant influence on motivation. Consequently, students' attitudes, subjective norms and behaviour are motivated by their intention to act in a specific manner (Orces *et al.*, 2005; Bello and Oyekunle, 2014). Moreover, the higher the intention of students to share knowledge, the more likely their attitude will be oriented towards contributing to knowledge-sharing patterns effectively and efficiently (Bello and Oyekunle, 2014; Licorish and MacDonell, 2014). Quigley *et al.* (2007) and Mansor *et al.* (2015) suggested that motivation directs

students' attitudes towards knowledge sharing, thereby leading their behaviour into effective communication, teamwork and cooperation to leverage the quality of education. Therefore, behavioural intention positively affects the extension and spread of knowledge-sharing culture amongst HEI students (Lam and Lambermont-Ford, 2010). To summit it up the researchers intend to present in Table 1 the conceptual and operational definitions of this study.

3. Research model and hypotheses development

Theory of planned behaviour (TPB) states that behavioural intention is one of the most influential factors in predicting and investigating a behaviour (Madden *et al.*, 1992; So and Bolloju, 2005). Ajzen (2002) explained that the combination of favourable attitudes towards behaviour and positive subjective norms, in addition to an adequately perceived control, substantially influences the formulation of individuals' intention to perform a particular behaviour. However, several studies have focused on highlighting the constraints impeding students' contribution to learning the processes within educational institutions (So and Bolloju, 2005; Hong and Caire, 2012; Liu *et al.*, 2013; Jolaee *et al.*, 2014). Abdul-Jalal *et al.* (2013) determined that one of these barriers is students' intention to share knowledge in HEIs in Oman.

Many studies have illustrated knowledge-sharing behaviours using the theory of reasoned action (TRA) (Ajzen and Driver, 1991; Vallerand and Pelletier, 1992; Manteghi, 2015; Abdel Fattah, 2016). TRA elucidate that individuals' intention to behave in a particular manner is determined by their attitude towards a certain behaviour and the embedded subjective norms (Ajzen and Driver, 1991; Vallerand and Pelletier, 1992; Arsalan, 2018). Extensive research has emphasised the factors that influence students' knowledge-sharing behaviours (Manteghi, 2015; Rahman *et al.*, 2020) and the impact of subjective norms on their eagerness to transfer knowledge (Keong and Subhi, 2015; Arsalan, 2018).

Consistent with the above and based on the literature review, Figure 1 depicts the proposed theoretical model. This study presents a debate on the most significant factors affecting Omani student's behaviour towards knowledge-sharing practices. The proposed model tries to discuss the influential factors that reflect on knowledge-sharing behaviour,

Table 1. Conceptual and operational definitions

Constructs	Definition	Source
Students' Attitude (SA)	An individual's intention to perform a behaviour and their actual behaviour can be determined by their attitude towards this behaviour is a good foundation for this study	Ajzen (1991, 2002)
Subjective Norms (SN)	The perceived pressure that is critically associated with social pressure, which is subject to performing or not performing a behaviour	So and Bolloju (2005), Chennamaneni (2006), Ajzen (1991, 2002)
Knowledge Sharing Intention (KSI)	As individuals' attempt to exhibit a behaviour that is oriented by their willingness to execute an action	Ajzen (1991, 2002), Hong and Caire (2012)
Knowledge Sharing Behaviour (KSB)	A process that occurs between two persons, knowledge contributor and knowledge recipient	Chong *et al.* (2014), Keong and Subhi (2015), Ajzen (1991, 2002)

including students' attitude, subjective norms and intention to share knowledge as mediating variables.

Based on the aforementioned debates, a set of hypotheses was raised as follow:

H1. There is a significant relationship between students' attitude and subjective norms.

H1a. There is a significant relationship between students' attitude and subjective norms when the knowledge sharing intention is playing a mediation role.

H2. There is a significant relationship between students' attitude and knowledge sharing intention.

H3. There is a significant relationship between subjective norms and knowledge sharing intention.

H4. There is a significant relationship between students' attitude and knowledge sharing behaviour.

H4a. There is a significant relationship between students' attitude and knowledge sharing behaviour when knowledge sharing intention playing as mediating role.

H5. There is a significant relationship between knowledge sharing intention and knowledge sharing behaviour.

H6. There is a significant relationship between subjective norm and knowledge sharing behaviour.

H6a. There is a significant relationship between subjective norm and knowledge sharing behaviour when knowledge sharing intention playing as mediating role.

4. Research methodology

This study is adopting a quantitative deductive methodology approach. Moreover, the quantitative deductive approach methodology considered as an effective and robust method in predicting the underlying patterns of knowledge sharing behaviour and examining attitudes (Cecez-Kecmanovic, 2005; Pinsonneault and Kraemer, 1993). Based on the

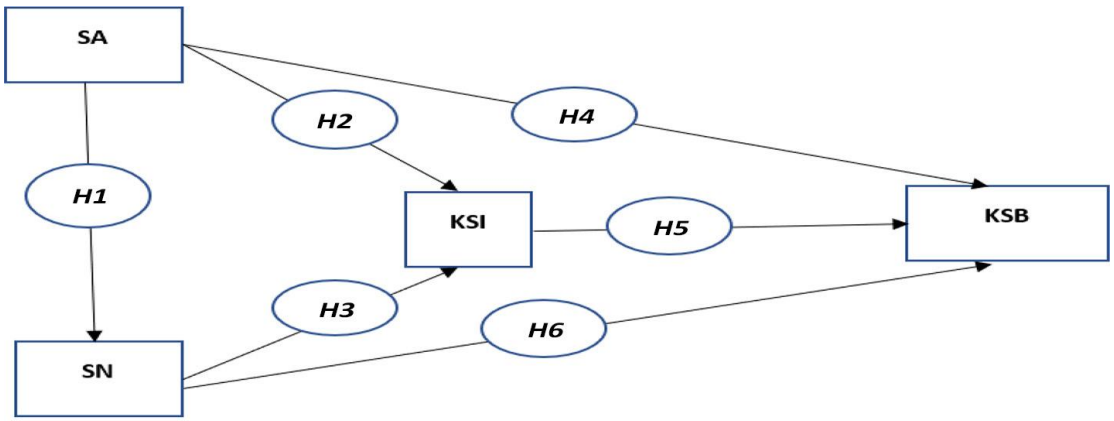


Figure 1.
Study theoretical framework

Notes: **SA: Students' attitude; SN:Subjective norms;KSI: Knowledgesharing intention; KSB: Knowledgesharing behaviour; **Study Theoretical framework was developed based on a critical reviewof the related literature

aforementioned discussions in the previous sections, it relies on both TPB and TRA theories which assumes causal relationships between variables that can be measured through representative data in an accurate manner (Ajzen, 1991, 2002).

The population of this study consists of all students affiliated with various public and private higher learning institutions in Oman. This inquiry is a cross-sectional study, and the information was collected from several university students. This inquiry applied convenience sampling were used to collect study data. Data were collected through structured questionnaire through using a Web-based platform, i.e. Google form during the period 1st February – 1st March 2020. The survey was prepared and pre-tested before distributing the link among the respondents which their participation was voluntary, and the questioners take around 7–12 min to be filled.

The questionnaire was including two parts. The first part was mainly about respondents' demographic profile, including respondents' gender, age, academic qualification, year of study, academic grade (rate) and finally their majors. Apart from the respondent's demographic profile the second section was divided into four main subsections which were related to study variables, i.e. Students' Attitude (SA), Subjective Norms (SN), Knowledge Sharing Intention (KSI) and Knowledge Sharing Behaviour (KSB) as shown in Table 2.

Twenty items were used to measure the study variables (SA – five items adopted from Ajzen (1991, 2002), Alajmi (2011), Rahman *et al.* (2016) SN - five items adopted from Ajzen (1991, 2002), Chennamaneni (2006), So and Bolloju (2005); KSI – five items adopted from Ajzen (1991, 2002), Bello and Oyekunle (2014) and KSB - five items adopted from Chong *et al.* (2014), Keong and Subhi (2015). All items were measured using five-point Likert scale (1 = Strongly Disagree, 2 = Disagree, 3 = neutral, 4 = Agree and 5 = Strongly Agree) to allow the respondents to rate their level of agreements or disagreements with the survived statement. Two hundred eighty-five questionnaires were received and applied different statistical tests by such as data screening, cleaning and descriptive analysis, i.e. frequencies, mean, median, percentages and weighted averages. On the other hand, this research applied partial least squares-structural equation modeling (PLS-SEM) V3.3 to assess the proposed model and testing hypothesis (Ringle *et al.*, 2015). In the first stage, the researchers used a Measurement model to confirm the constructs and test the validity and reliability of the instruments. The following section applied structural Model to test the hypotheses of the research. This research used variance inflation factor (VIF), R^2 and Beta are of the path coefficients, to check the fit indices of the constructs as well as the conceptual framework (Hair *et al.*, 2006; Fornell and Lucker, 1981).

5. Data analyses and results

5.1 Data screening and pre-analysis

Data were collected by using Google forms during 10 February–10 March 2020. Data were inputted into SPSS (V22.00) for data screening, cleaning and descriptive analysis, i.e. frequencies, mean, median, percentages and weighted averages. The screening test was performed as a process of data pre-preparation for analysis. Data were examined to exclude statistical errors of any potential outliers, normality or missing values, as well as demographic characteristics. However, data analysis and interpretation of study findings primarily describe the demographic characteristics of sample population regarding their gender, marital status, their age in years, academic qualification levels, years of study (students' level) and Academic Grade (Rate) as depicted in Table 3.

Table 2.
Details of all items under each construct measurement

Code	Construct name and measurement items	Source
SA	Students' Attitude (SA)	Adopted from Rahman *et al.* (2020), and Alajmi (2011)
SA1	My knowledge-sharing attitude with my colleagues is positive	
SA2	My knowledge-sharing attitude with my colleagues is an enjoyable experience	
SA3	Knowledge-sharing with my colleagues is valuable	
SA4	Knowledge-sharing activities with my colleagues are wise	
SA5	Knowledge-sharing with my colleagues makes me feel good about myself	
SN	Subjective norms (SN)	Adopted from Chennamaneni (2006) and So and Bolloju (2005)
SN1	People who influence my behaviour (e.g. colleagues, friends, etc.) think that I should share my knowledge	
SN2	People who are important to me (e.g. colleagues, friends, etc.) think that I should share my knowledge	
SN3	People whose opinions I value (e.g. colleagues, friends, etc.) would approve of my knowledge-sharing	
SN4	My supervisor thinks that I should share knowledge with my colleagues	
SN5	My colleagues think I should share knowledge with them.	
KSI	Knowledge Sharing Intention (KSI)	Adopted from Bello and Oyekunle (2014)
KSI1	I am willing to share knowledge and experience which I acquired	
KSI2	I try to participate in discussion groups and workshops to share knowledge	
KSI3	I try to help my colleagues as much as I can when they face a problem	
KSI4	I consider it necessary to tell my colleagues about the results, when I take part in meetings and seminars	
KSI5	I am willing to share my notes with my colleagues	
KSB	Knowledge sharing behaviour (KSB)	Adopted from Chong *et al.* (2014) and Keong and Subhi (2015)
KSB1	Knowledge-sharing is important for the benefit of all	
KSB2	Students should share knowledge with their friends when approached	
KSB3	Students should voluntarily share their knowledge with peers	
KSB4	Knowledge-sharing takes place when students care about the needs of each other's	
KSB5	Sharing knowledge with my colleagues is useful for enhancing my learning performance	

***Notes:** All items were measured using five-point Likert scale (1= Strongly Disagree, 2= Disagree, 3= neutral, 4= Agree and 5= Strongly Agree)

Measure	Frequency	(%)
Gender		
Female	66	23.2
Male	219	76.8
Age		
Below 19 years	28	9.8
20– 25	182	63.9
26– 29	48	16.8
30–34	19	6.7
35–39	8	2.8
Academic qualification		
Bachelor's degree	185	64.9
Diploma	75	26.3
Master	25	8.8
Year of study		
1st Year	39	13.7
2nd Year	58	20.4
3rd Year	70	24.6
4th Year	50	17.5
5th Year	68	23.9
Academic grade (Rate)		
Distinction	58	20.4
Very good	124	43.5
Good	72	25.3
Satisfactory	18	6.3
Under probation	13	4.6
Total		
285	100.0	100.0

Table 3.
Students profile here

Out of 285 responses, 76.8% were female, majority of respondents 63.9% were between 20 and 25 years old, 64.9% identified as Bachelor students, 24% had been students at the institution for three years, and 43.5% had a very good academic grade.

In the same vein, PLS-SEM V3.3 was also used to assess the proposed model (Ringle *et al.*, 2015). Selecting the Smart-PLS was chosen as it well suited the study characteristics and met the collected data nature (Hair *et al.*, 2014). Besides, as the measures used a Likert scale, and the data not normally distributed. Thus, PLS-SEM is an appropriate method to be chosen for this study. PLS-SEM is also a suitable technique for the study on prediction and expanding the variance in crucial target constructs of a research model which contains levels of multidimensionality (Hair *et al.*, 2014). Following the guidelines by Hair *et al.* (2014), we used bootstrapping with 5,000 sub-samples to compute the beta-β coefficient values and the pertinent *t*-values and assess the level of significance for path coefficients.

5.2 Measurement model

As reported in Table 4, all constructs in the proposed model are first-order reflective. Measurement quality is verified by examining the internal consistency reliability Cronbach's alpha (α), convergent validity (CV) and discriminant validity were used as fit indices for the measurement model (Hair *et al.*, 2014).

Constructs/Indicators	Factor loading	α	rho_A	CR	AVE
KSB_2	0.857				
KSB_3	0.898				
KSB_4	0.867				
KSB_5	0.892				
SA_1	0.805	0.919	0.921	0.939	0.756
SA_2	0.895				
SA_3	0.915				
SA_4	0.869				
SA_5	0.859				
SN_1	0.751	0.887	0.895	0.928	0.688
SN_2	0.832				
SN_3	0.854				
SN_4	0.843				
SN_5	0.864				
KSI_1	0.876	0.902	0.909	0.928	0.720
KSI_2	0.829				
KSI_3	0.885				
KSI_4	0.769				
KSI_5	0.876				
KSB_1	0.903	0.930	0.933	0.947	0.781

Table 4.
Internal consistency reliability

Notes: $\alpha \leq 0.70$; rho_A ≥ 0.70; AVE ≥ 0.50; CR ≥ 0.70; SA: Students' attitude; SN: Subjective norms; KSI: Knowledge-sharing intention; KSB: Knowledge-sharing behaviour

Convergent validity was assessed against item reliability which was inspected for each Convergent item; validity requires indicator loadings to be 0.6 or more. In the result, all indicators had loadings well above 0.700. It was noted that all items were accepted, and no item was deleted. Thus, item loadings demonstrated acceptable convergent validity and were retained for subsequent analysis.

Based on Ringle and Hair (2017) recommendation to test rho_A coefficient, which considered as another indicator for as composite reliability the cutoff for rho_A $\geq$0.700. The result revealed that all variables showed more than the threshold. For internal consistency which was assessed via Cronbach's alpha coefficient, and all values were above 0.700 (Hair *et al.*, 2014), indicating excellent reliability for all the constructs.

The average of variance extracted (AVE) was also examined for each construct, and values were substantially higher than Chin's (1998) suggested 0.5 thresholds (Hair *et al.*, 2014). The CR indices of each scale were all greater than the level of 0.70 recommended by Bagozzi (1980). Thus, the internal consistency reliability of the measurement items is supported. Also, AVE scores exceeded the threshold of 0.50 recommended by Hair *et al.* (2011), which verifies the convergent validity of the measures.

Lastly, the Fornell–Larcker criterion value of each construct was more significant than its correlations with any other construct, which demonstrates discriminant validity, as shown in Table 5. Moreover, discriminant validity was also validated by using the Heterotrait-Monotrait Ratio of Correlations (HTMT) approach (Hair *et al.*, 2014). Overall, the measures used have been shown to have adequate psychometric properties.

5.3 Structural model

According to Hair *et al.* (2011), collinearity should be tested against all study constructs to estimate the structural model through variance inflation factor (VIF).

	KSB	KSI	SA	SN
Panel A. Fornell–Larcker criterion				
KSB	0.884*			
KSI	0.872	0.848*		
SA	0.687	0.700	0.869*	
SN	0.680	0.724	0.698	0.830*
Panel B. Heterotrait–Monotrait Ratio (HTMT)				
KSB	KSB	KSI	SA	SN
KSI	0.836			
SA	0.741	0.764		
SN	0.736	0.800	0.767	

Notes: Panel A: * Diagonal numbers are square roots of AVE while off-diagonal numbers are correlations; SA: Students' attitude; SN: Subjective norms; KSI: Knowledge-sharing intention; KSB: Knowledge-sharing behaviour; Panel B: *HTMT below 0.90, discriminant validity has been established between two reflective constructs, all squared correlations are significant at $p = 0.05$; SA: Students' attitude; SN: Subjective norms; KSI: Knowledge-sharing intention; KSB: Knowledge-sharing behaviour

Table 5. Discriminant validity here

Several researchers recommended that the threshold for VIF value is between 5 and 10; therefore, all study constructs ranging between the recommended cut off. It is worthy to mention that this paper has used the PLS algorithm procedure. The cut-off values of the t-statistic should be indicated, such as higher than 1.69 at a 5% error probability for a two-tailed test. In the other hand, the study results showed that R^2 is the significance of all paths coefficients in the structural model evaluation. The results of R^2 value for (KSI = 0.599; KSB = 0.773 and SN= 0.487) which indicate adequate explanatory power.

Figure 2 shows the analysis of path coefficients and levels of significance shows that all direct paths are significant except the path between SN and KSB as shown in Table 6.

Besides, the result revealed that SA has no significant impact on KSI ($\beta = 0.130$, P0.035). SN also is not a positively significant impact on KSB ($\beta = 0.051$, p 0.231), while SA has also a significant impact on SN ($\beta = 0.698$, $p = 0.000$), and the relationship between SA showed a significant positive impact on KSB ($\beta = 0.381$, $p = 0.000$) Lastly, KSI has a positively significant impact KSB ($\beta = 0.744$, $p = 0.000$). It was recommended by Hair *et al.*, 2017a to repeat the test by eliminating the lowest path impact and repeat the test to see if the result improved or not (the decision to accept or reject the result was only after performing the second run) After we remove the path SN toward KSB ($\beta = 0.051$, $p = 0.231$), the model showed that it fitted to the data at hand as depicted in Figure 3, the model fit was showing that all remaining paths are becoming significant. SA has a positively significant with the KSB ($\beta = 0.149$, $p = 0.010$), SA also has a significant relationship with KSI ($\beta = 0.382$, $p = 0.000$). SA has a significant relationship with SN ($\beta = 0.698$, $p = 0.00$). The relationship between KSI and KSB is also significant ($\beta = 0.768$, $p = 0.000$). In the indirect effect, Table 6 showed that all paths were significant as showed in Table 6. Path coefficients for direct effects, and total effects. Also, the data supported the proposed model after eliminating the insignificant path in the total effect.

Based on the aforementioned points, all hypotheses were supported except *H6* showed in Table 5. Path coefficients for direct effects, and total effects of testing the mediation effect, we run a contestant bootstrapping with 5,000 sub-samples to estimate the *t*-values to assess the level of significance for specific indirect effect as shown in Table 6.

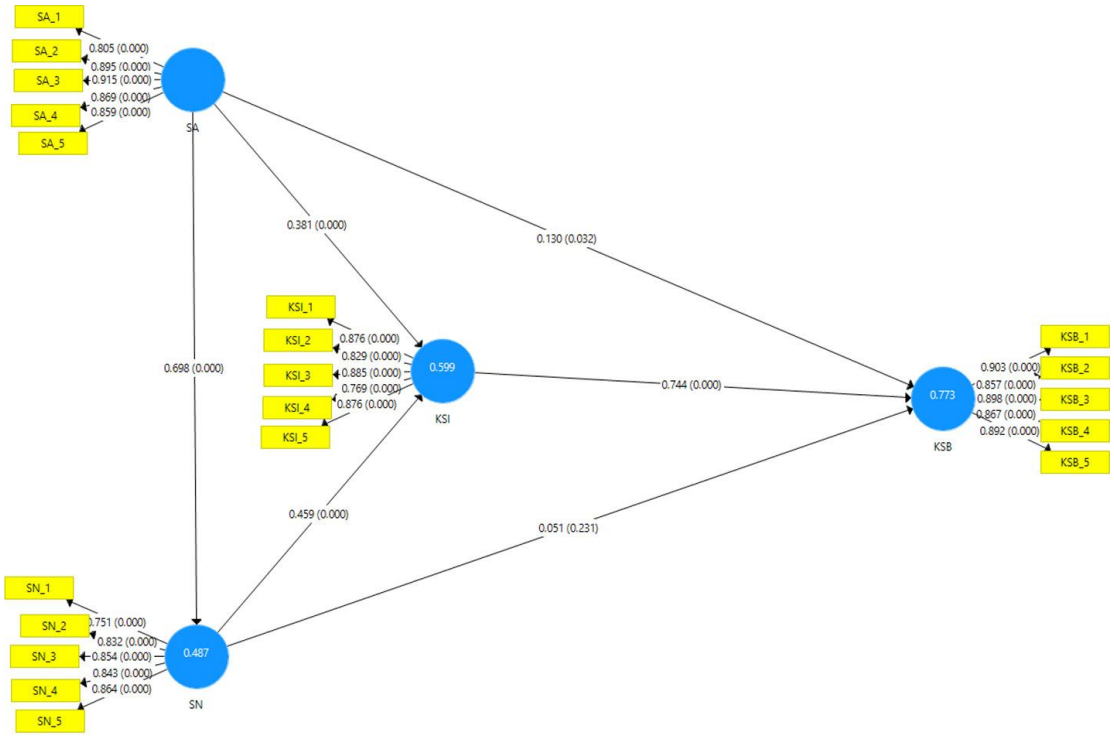


Figure 2.
Analysis of path coefficients (first run)

Note: SA: Students' attitude; SN: Subjective norms; KSI: Knowledge-sharing intention; KSB: Knowledge-sharing behaviour

Interestingly, the result revealed that there is a mediation effect between SA and KSB through KSI ($\beta = 0.334$, $p = 0.001$), SA and KSI when SN is playing as mediation role ($\beta = 0.402$, $p = 0.000$). Moreover, SN showing a positive relationship with KSB through the KSI ($\beta = 0.481$, $p = 0.000$).

Tables 8 and 9 – path coefficients for direct effects and total effects. Regarding model validation, the model estimation with PLS-SEM reveals standardised root mean square residual (SRMR) value of 0.039, below the recommended cut off 0.05, which confirms the overall fit of the PLS path model (Table 7) (Table 7 to 9).

6. Conclusions and recommendations

Knowledge is a key contributor to today's education-based environment. HEIs in Oman struggle to develop strategies to dominate the knowledge-sharing behaviour of Omani students owing to the sustained competitive advantage that most organisations strive to reach. One of the developed strategies is the spreading of the knowledge-sharing culture among students by positively directing their attitude towards the practices of knowledge exchange. Nevertheless, the valuable nature of knowledge, students' attitude and available motives and facilities significantly influence Omani students' intention to participate in knowledge sharing. Subjective norms exhibited a significant effect on the student's orientation towards knowledge-sharing involvement.

Additionally, reward systems in HEIs play a major role in encouraging students to engage in information, knowledge and innovative idea exchange. This study aims to analyse the main factors affecting Omani students' behaviour towards knowledge-sharing practices in HEIs. The results show that upgrading the level of facilities and rewards provided by HEIs will enhance students'

contributions to the learning context. This result was in the same vein with Abdul-Jalal *et al.*'s (2013) and Kathiravelu *et al.*'s (2013) findings. Furthermore, knowledge sharing can be further encouraged by coordinating classes, seminars and open discussions for students to raise awareness on the importance of knowledge sharing (Ipe, 2003; Jarrah and Alkhazaleh, 2020; Javadi *et al.*, 2012; Islam *et al.*, 2013; Zalk *et al.*, 2011).

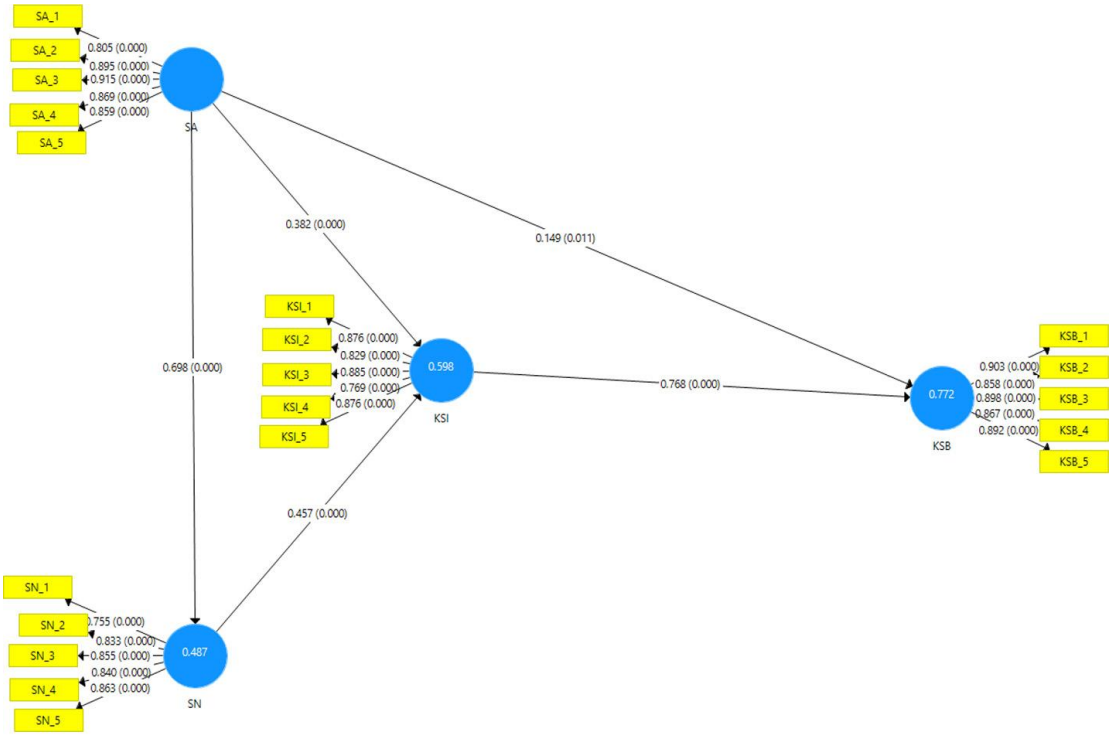
This study provides policymakers in academic fields with the appropriate approaches to leverage the knowledge-sharing behaviour among Omani students, as well as the other industries with the understanding of the main factors affecting individuals' knowledge-sharing behaviours.

Knowledge management (KM) become an integral part of any progressive institution as it does have a significant impact on developing their competitive advantage, which will positively impact on the overall institution success (Ipe, 2003; Jarrah and Alkhazaleh, 2020;

Indirect effects	Beta	t-test	*p*-values	Comments
SA → KSI → KSB	0.334	3.278	0.001	Support
SN → KSI → KSB	0.481	5.134	0.000	Support
SA → SN → KSI → KSB	0.369	4.664	0.000	Support
SA → SN → KSI	0.402	4.792	0.000	Support

Notes: SA: Students' attitude; SN: Subjective norms; KSI: Knowledge-sharing intention; KSB: Knowledge-sharing behaviour

Table 6. Specific indirect effects (mediation effect) here



Notes: SA: Students' attitude; SN: Subjective norms; KSI: Knowledge-sharing intention; KSB: Knowledge-sharing behaviour

Figure 3. Analysis of path coefficients (second run)

Table 7. Summary of hypothesis testing here

Hypothesis	Decision
H1. There is a significant relationship between students' attitude and subjective norms	Supported
H1a. There is a significant relationship between students' attitude and Subjective norms when the knowledge sharing intention is playing a mediation role	Supported
H2. There is a significant relationship between students' attitude and knowledge sharing intention	Supported
H3. There is a significant relationship between subjective norms and knowledge sharing intention	Supported
H4. There is a significant relationship between students' attitude and knowledge sharing behaviour	Supported
H4a. There is a significant relationship between students' attitude and knowledge sharing behaviour when knowledge sharing intention playing as mediating role	Supported
H5. There is a significant relationship between knowledge sharing intention and knowledge sharing behaviour	Supported
H6. There is a significant relationship between subjective norm and knowledge sharing behaviour	Not Supported
H6a. There is a significant relationship between subjective norm and knowledge sharing behaviour when knowledge sharing intention playing as mediating role	Not supported

Javadi *et al.*, 2012; Zalk *et al.*, 2011). One of the merits of the academic institutions is to develop their students mental and cognitive skills to appreciate the power of knowledge and how to effectively manage their knowledge accumulation, nonetheless, how they can effectively share the knowledge that they have gained or inherited to contribute to the development of their communities (Ipe, 2003; Jarrah and Alkhazaleh, 2020; Neches *et al.*, 1991; Nonaka *et al.*, 2000; United Nations, 2014).

The success of any institutions and students rest significantly on the way competitive advantage is perceived, and how persistently they seek the development of their services or the way they share the knowledge. The resources alone are not sufficient to remain competitive, and the rapid dynamic changes within our communities and the business domain; institutions and students must actively develop their KM capacities.

The framework proposed in this paper will help institutions and students to assess and analyse their KM capabilities and how effective they are implemented, nonetheless, KM capability framework summary. It is of paramount importance to distinguish between KM process capacity and infrastructure capacity. Our proposed framework is expected to help institutions and students to understand obstacles that hinder the implementation of their initiatives.

Embedding knowledge processes into student's cognitive skills in a way that promote the efficient knowledge acquisition, development and application should be an integral part of any academic institution that think beyond its boundaries and responsibly deliver its social responsibilities.

It is highly recommended that institutions and students should persistently seek building-up their KM capabilities, as it will significantly improve their innovation and creativity and improve their work and rules of engagement practices. One of the most important factors that need to be adequately managed is the process of knowledge gathering through interaction and feedback as major methods of knowledge sharing. Managing people thought and behaviours and in cultivating them using the institution infrastructure can create a culture of trust that encourage students to actively seeking knowledge development and sharing which reflect in promoting healthy communities; moreover, no one will feel the pressure that he or she will be blamed, which works as an incentive to commit to knowledge sharing.

Table 8.
Path coefficients, indirect effects, and total effects

Hypothesis	Path Path coefficients	Beta	t-test	*p*-value	Comments	Path Indirect effects	Beta	t-test	*p*-value	comments	Path Total effects	Beta	t-test	*p*-value	comments
H1	SA → SN	0.698	16.835	0.000	supported	SA → KSI → KSB	0.283	4.998	0.000	supported	KSI → KSB	0.744	14.257	0.000	supported
H2	SA → KSI	0.381	5.321	0.000	supported	SN → KSI → KSB	0.341	6.212	0.000	supported	SA → KSB	0.687	15.371	0.000	supported
H3	SN → KSI	0.459	6.916	0.000	supported	SA → SN → KSI → KSB	0.238	5.618	0.000	supported	SA → KSI	0.700	16.802	0.000	supported
H4	SA → KSB	0.130	2.147	0.032	supported	SA → SN → KSB	0.036	1.173	0.241	Not supported	SA → SN	0.698	16.835	0.000	supported
H5	KSI → KSB	0.744	14.257	0.000	supported	SA → SN → KSI	0.320	6.033	0.000	supported	SN → KSB	0.392	5.465	0.000	supported
H6	SN → KSB	0.051	1.198	0.231	Not supported						SN → KSI	0.459	6.916	0.000	supported

Notes: SA: Students' attitude; SN: Subjective norms; KSI: Knowledge-sharing intention; KSB: Knowledge-sharing behaviour; The significance level is α 5 0.05 (2-tailed), Path is supported when its *p*-value is less than 0.05, and its *t*-values is 1.96 or more (italics)

Table 9.
Path coefficients, indirect effects and total effects after eliminating the insignificant paths

Hypothesis	Path coefficients	Beta	t-test	*p*-value	comments	Path Indirect effects	Beta	t-test	*p*-value	comments	Path Total effects	Beta	t-test	p-value	comments
H1	SA → SN	0.698	16.744	0.000	supported	SA → KSI → KSB	0.293	5.269	0.000	supported	KSI → KSB	0.768	15.654	0.000	supported
H2	SA → KSI	0.382	5.402	0.000	supported	SN → KSI → KSB	0.351	6.074	0.000	supported	SA → KSB	0.687	15.442	0.000	supported
H3	SN →KSI	0.457	6.925	0.000	supported	SA → SN →KSI → KSB	0.245	5.435	0.000	supported	SA → KSI	0.700	17.154	0.000	supported
H4	SA → KSB	0.149	2.544	0.011	supported	SA → SN → KSI	0.319	5.983	0.000	supported	SA → SN	0.698	16.744	0.000	supported
H5	KSI → KSB	0.768	15.654	0.000	supported						SN → KSI	0.457	6.925	0.000	supported

Notes: SA: Students' attitude; SN: Subjective norms; KSI: Knowledge-sharing intention; KSB: Knowledge-sharing behaviour; the significance level is α 5 0.05 (2-tailed), Path is supported when its *p*-value is less than 0.05, and its *t*-values is 1.96 or more (italics)

7. Limitations and suggestion for future research

This study is limited by the scarcity of the related literature in the Omani context. Additionally, the current research focused only on the behaviours of HEI students in Oman and disregarded those of the academic staff and administration. The absence of numerical data to examine the proposed hypothesis is also a drawback.

This study aims to contribute to the learning context field by facilitating further research with the recommendation and suggested studies. Future studies should examine the knowledge-sharing behaviour amongst students, staff and administration to explore the potential strategies that may improve the knowledge-sharing culture within HEIs. Moreover, the investigation should cover the conceptual model of the organisational culture or the impact of individuals' characteristics on the knowledge-sharing behaviour within academic and non-academic groups to extend the understanding of the conditions limiting this behaviour. Furthermore, the potential variation between academic staff and students in terms of the factors affecting their intentions to share knowledge within HEIs should be explored by considering the influence of other factors, such as technological advancement.

Also, using a convenience sample can be considered as a methodological limitation of the study. Future research may focus on repeating the study following other sampling technique which provides more insight and understanding of findings. various research shows that issues and challenges related to knowledge sharing implementation follow a continuum, dynamic and may develop through time (Al-Kurdi *et al.*, 2020).

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