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UNIVERSIDADE NOVA DE LISBOA



The impact of social media on knowledge sharing among students during the Covid-19 pandemic

Varvara Keba

Dissertação de Mestrado em
Gestão e Curadoria de Informação

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**Orientador: Carlos Tam Chuem Vai
Coorientadora: Paula Alexandra Ochôa de Carvalho Telo**

julho, 2021

Dissertação apresentada para cumprimento dos requisitos necessários à obtenção do grau de Mestre em Gestão e Curadoria da Informação, realizada sob a orientação científica de Professor Carlos Tam Chuem Vai e a coorientação científica da Professora Paula Alexandra Ochôa de Carvalho Telo

O impacto das redes sociais na partilha de conhecimentos entre estudantes durante a pandemia de Covid-19

Resumo

A investigação identifica os fatores que motivam os estudantes a partilhar os seus conhecimentos através de plataformas de redes sociais. As atividades de partilha de conhecimentos através das redes sociais permitem aos estudantes partilhar ideias, experiências, independentemente da sua localização geográfica. Frequentemente, as instituições de ensino superior adotam sistemas de gestão da aprendizagem e proporcionam ambientes físicos para a comunicação. No entanto, a crise do Covid-19 tem tido uma grande influência na comunicação académica e na partilha de conhecimentos. Os objetivos desta investigação visam identificar os fatores que podem motivar os estudantes a partilhar os seus conhecimentos através de plataformas de redes sociais, encontrar ou não uma eficácia real na utilização das redes sociais e analisar os comportamentos de partilha de conhecimentos dos estudantes durante a pandemia de Covid-19. Para atingir o objetivo da investigação, foi escolhido um método misto, que inclui abordagens quantitativas e qualitativas. Foi recolhido um total de 253 respostas válidas de estudantes portugueses. Catorze estudantes participaram em entrevistas. Os resultados indicam que vários fatores, nomeadamente o divertimento, a perceção da utilização, a facilidade de utilização, os laços de interação social e a norma da reciprocidade, são fatores importantes na utilização contínua das redes sociais para a partilha de conhecimentos. O resultado do estudo poderá ser utilizado para criar condições apropriadas para a partilha de conhecimentos entre os estudantes, através da utilização das redes sociais.

Palavras-chave: Partilha de conhecimentos, Redes sociais, Covid-19, Ensino superior, Comunicação académica.

Abstract

The research identifies the factors that motivate students to share their knowledge via social media platforms. Knowledge sharing activities via social media enable students to share ideas, experiences and so on regardless of geographical location. Commonly, higher education institutions adopt learning management systems and provide physical environments for communication. Nevertheless, the Covid-19 crisis has had a great influence on academic communication and knowledge exchange. The study's objectives are to identify the factors that may motivate students to share their knowledge via social media platforms, find or not find real effectiveness of social media usage and analyse students' knowledge sharing behaviours during the Covid-19 pandemic. In order to achieve the aim of the research, a mixed method, which includes quantitative and qualitative approaches, was chosen. A total of 253 valid answers was collected from Portuguese students. Fourteen students participated in interviews. The results indicate that various factors, namely enjoyment, perceived usefulness, perceived ease of use, social interaction ties and the norm of reciprocity, are important drivers in social media continued usage for knowledge sharing. The study's result could be used to create appropriate conditions for knowledge sharing among students by using social media.

Keywords: Knowledge sharing, Social media, Covid-19, Higher education, Academic communication.

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1 Introduction

Knowledge sharing is a process of knowledge exchange in order to help each other (Hung and Cheng, 2013). It is a good way to exchange ideas, find new solutions and improve processes. Commonly, higher education institutions adopt learning management systems for distance and internal education. However, it does not exclude the use of social media for learning purposes. Before the pandemic, students and academics had already adopted social media platforms in the learning process. For example, employing the active usage of ResearchGate, Academia.edu, Slideshare.net, Facebook research groups, WhatsApp groups, and other means to communicate, share content, and collaborate in research. The use of social media platforms for knowledge sharing enables students to seek information, which also leads to knowledge contribution. Social media also allows students to participate actively in knowledge sharing or became content makers, which increases the value of knowledge (Chatterjee et al., 2020; Chen and Hung, 2010). The lack of a knowledge sharing strategy could influence learning performance negatively. During the Covid-19 crisis, the internet and social media platforms became the dominant communication and knowledge exchange infrastructure, considering that all physical forms of knowledge sharing, for example, in-person meetings were quite difficult to hold.

Covid-19 has challenged face-to-face education. On 11 March 2020, the World Health Organization recognised the spread of Covid-19 as a pandemic (World Health Organization, 2020). The Covid-19 pandemic has made a significant impact on global healthcare systems. As a result, it affected every aspect of human life (Nicola et al., 2020). In order to respond to the Covid-19 pandemic and follow all necessary prevention measures, a state of emergency was declared in Portugal on 18 March 2020 (Governo da República Portuguesa, 2020). Hence, all presential teaching activities were replaced by distance learning. Also, all shared spaces in faculties, namely libraries, study rooms, computer rooms, laboratory rooms and other areas, were closed. The situation transformed the education landscape and has had an impact not only on teaching methods but also on students' learning styles.

Social media platforms became a new form of information circulation. From the academic point of view, social media encourages students' motivation and, as a result, engages students in the learning process. The use of social media for learning performance provides peer-to-peer knowledge exchange and improves collaboration (Eid and Al-jabri, 2016). The process of knowledge sharing is voluntary (Amayah, 2013; Hung and Cheng, 2013). Nevertheless, knowledge sharing implies social exchange. As a result, knowledge

sharing activities form long term social relationships (Chen and Hung, 2010). Knowledge sharing via social media helps create a network and fosters sharing or gaining new knowledge (Kwahk and Park, 2016). However, economical rewards are still expected (Razmerita et al., 2016). In the institutional context, students do not feel that it would help in their learning performance or future jobs (Chatterjee et al., 2020). Hence, one of the biggest challenges of knowledge sharing activities is the lack of motivation. Prior research has examined factors, which influence knowledge sharing intentions in a different context. The results showed that social media positively influences knowledge sharing activities (Chatterjee et al., 2020; Hung and Cheng, 2013). Factors such as adaptability of technology, enjoyment, social interaction ties and the norm of reciprocity play a vital role in knowledge sharing activities. The unique factors related to the technology acceptance model, namely perceived usefulness and ease of use, are essential elements in examining behavioural intentions in social media usage. However, there is a lack of literature about knowledge sharing through social media among students.

The purpose of the research is to focus more on knowledge sharing via social media during the pandemic. Since all physical methods were forbidden, the research was conducted in order to identify the factors that may motivate students to share their knowledge via social media platforms for educational purposes during the pandemic. It is also essential to find or not find the real effectiveness of using social media for knowledge sharing. Finally, the influence of the Covid-19 pandemic on students' knowledge sharing behaviour in social media is examined. The study seeks to answer the following research question:

1. What factors motivate students to share knowledge via social media platforms during the Covid-19 pandemic?

The first contribution of the study is the use of the mixed methods approach. The triangulation between quantitative and qualitative results enables one to define the relationships between variables accurately and extends knowledge (Venkatesh et al., 2016). The combination of the strengths of quantitative and qualitative methods allows developing a rich insight into the topic. Secondly, in order to analyse the phenomena, the unique combination of the technology acceptance model, social factors and an individual factor was used. Moreover, the model allows to include the analysis of the impact of the mediation effects in the context of knowledge sharing via social media. The relationships between two dimensions, namely perceived usefulness and behavioural intention, determine the direct and indirect effects on behavioural intention and actual use.

The research is organised as follows: Section 2 presents the literature review, which includes the explanation of knowledge sharing, social media, Covid-19 and the technology acceptance model (TAM); Section 3 represents the research model; Section 4 explains the methodology of the study; Section 5 shows the results; Section 6 presents the discussion, which includes theoretical and practical implications; Section 7 includes limitations and directions for future research; Section 8 represents the conclusion; Section 9 represents attachment with interview answers.

2 Literature review

2.1 Knowledge sharing

Hung and Cheng (2013) define knowledge sharing as a process, an activity or behaviour, through which individuals, groups or organisations acquire knowledge from others. According to the literature, the process of knowledge sharing includes two types of knowledge: tacit and explicit. Explicit knowledge is a type of knowledge, which is easy to codify, write down or transform into a tangible form—for instance, documents, journals, manuals. Tacit knowledge is a highly personalised knowledge that is difficult to codify or write down, such as ideas, skills, and values (Chung et al., 2015; Nonaka and Von Krogh, 2009). As a result, sharing tacit knowledge is still considered a challenge (Kaewkitipong et al., 2016; Amayah, 2013).

The process of knowledge sharing includes knowledge-contributing and knowledge-seeking (Chen and Hung, 2010; Chatterjee et al., 2020). The role of knowledge contributors and knowledge seekers in the process is critical since, for the effective flow of knowledge, the activity of sharing and gaining are strongly connected. Knowledge contributors are those who have the intention to share their knowledge. Knowledge seekers are individuals who seek knowledge for their satisfaction. However, the same individual can be a contributor or a seeker at different times (Chatterjee et al., 2020).

The great advantage of knowledge sharing is that it improves an individual's or an organisation's action capability in a similar learning context. Knowledge sharing differs from only giving things to others or obtaining things from others. Rather, it is the readiness to help each other in actuality (Hung and Cheng, 2013; Amayah, 2013). By using social exchange theory, Chen and Hung (2010) explain that the benefit of knowledge sharing is a social exchange, which differs from an economic exchange. Social exchange implies long term relationships because a favour is made with the expectation of a future return. The future return means the construction of long social relationships, which positively affects users' well-being (Chung et al., 2015; Chen and Hung, 2010). However, Razmerita et al., (2016) found that individuals still prefer economic rewards rather than social benefits, which have a significant impact on motivation.

One of the biggest challenges of knowledge sharing is the unwillingness to share. In other words, a lack of motivation exists. Motivation is the outcome of an individual's expectations. In order to incentivise knowledge sharing activities, the expected benefits

should be perceived as higher rather than the cost (Razmerita et al., 2016). For example, if students feel that knowledge sharing would help improve their performance, they would actively participate in knowledge sharing activities. As a result, the flow of information would become more effective and enriched (Chatterjee et al., 2020). Moreover, higher education plays a crucial role in obtaining the abilities required for today's workers. Thus, a well-constructed knowledge sharing strategy in faculties would prepare students to use the obtained abilities in future jobs (Razmerita et al., 2016).

2.2 Social media

Social media is a global phenomenon, which provides many opportunities for its users. According to Kaplan and Haenlein (2010), social media are applications based on the Internet, which allow people to communicate and share their experiences and opinions. Web2.0 is defined as a platform for the evolution of social media. Hence, unique features, such as openness, two-way communication and open-ended feedback, have made social media a distinctive technology for different goals (Kaplan and Haenlein, 2010; Kwahk and Park, 2016).

Kwahk and Park (2016) define social media as an implementation for actualising participation, sharing, and openness online. It connects and brings people together through content. Due to social media, individuals create a network with each other. Hence, they can benefit from valuable knowledge exchange. However, individuals still prefer traditional methods such as meetings or e-mails in order to receive tangible benefits (Razmerita et al., 2016).

Social media helps users not only passively consume information but also create, evaluate and share knowledge. The emergence of the internet and social media grouped individuals in virtual communities, which serve as the storehouses of knowledge, in which individuals or even groups share or absorb information about common interests and topics (Hung and Cheng, 2013). Moreover, the use of social media in knowledge sharing allowed the dissemination of tacit and explicit knowledge among individuals, governments and non-governmental organisations by using an open and unstructured manner (Kaewkitipong et al., 2016). By nature, social media is a valuable tool for facilitating tacit and explicit knowledge sharing activities (Kwahk and Park, 2016).

In the case of the academic context, social media changed a student's way of learning. Measuring learning performance focuses on learning effectiveness, which refers to changes

achieved through obtaining knowledge, skills, and attitude after completing a certain period of education. Learning effectiveness differs from academic achievements (Eid and Al-jabri, 2016). Moreover, according to Rasheed et al. (2020), using social media for knowledge sharing increases students' engagement and creativity in the process of learning and education. In consequence, social media encourages active learning, distribution of information and sustainable communication.

Table 1 shows the relative empirical research about knowledge sharing behaviour in the academic and organisational context. Most of the research is focused on organisations and virtual communities (Amayah, 2013; Chen and Hung, 2010; Chung et al., 2015; Hung and Cheng, 2013; Kwahk and Park, 2016; Razmerita et al., 2016). Other studies, Chatterjee et al. (2020), Eid and Al-jabri (2016), and Moghavvemi et al. (2017), are concentrated on the academic context. Eid and Al-jabri (2016), Chatterjee et al. (2020), and Kwahk and Park (2016) include the concept of knowledge sharing via social media. Chen and Hung (2010), Chung et al. (2015), and Hung and Cheng (2013) analyse the concept of knowledge sharing in virtual communities. Amayah (2013) and Razmerita et al. (2016) explore the concept of knowledge sharing in an organisational context.

Table 1. Related researches of knowledge.

Research	Dependent variable(s)	Independent variables	Conclusions
Amayah, 2013	Knowledge sharing activities	Motivation factors (personal benefits, community-related considerations, normative considerations); Barriers (interpersonal, procedural, technological, cultural); Enablers (supportive corporate culture, trust, tools)	Personal benefits were negatively related to knowledge sharing. Reciprocity and trust were not statistically significant. The interaction effect of social interaction and the degree of courage on normative consideration was significant.
Chatterjee et al., 2020	Intention to use social media for knowledge sharing	Importance for knowledge exchange; Perceived usefulness for social media; Experience using social media	All factors positively influence knowledge sharing in an academic context.

Chen and Hung, 2010	Knowledge sharing utilisation	Contextual factors; Personal factors; Behavioural factors	The norm of reciprocity, interpersonal trust, self-efficacy and perceived relative advantage play a vital role in knowledge sharing activities.
Chung et al., 2015	Tacit knowledge sharing behaviour; Explicit knowledge sharing behaviour	Cognitive capital (shared goals); Relational capital (trusts); Structural capital (social network ties) Employees sense of well-being (as a mediating variable)	The well-being of employees positively influences tacit and explicit knowledge sharing activities. Trust, social networking ties, a consensus of shared goals, which relate to longer social relationships, positively influence well-being.
Eid and Al-jabri, 2016	Knowledge sharing; Learning performance	Chatting and online discussion; Content creation; File sharing; Enjoyment and Entertainment	Social media for chatting and discussion, file sharing and content creation have a positive impact on knowledge sharing. Enjoyment and entertainment is a predictor of learning performance rather than knowledge sharing.
Hung and Cheng, 2013	Knowledge sharing intentions	Optimism, innovativeness, discomfort, insecurity; Perceived usefulness, perceived ease of use, compatibility	Adaptability to technology could increase knowledge sharing intentions. Discomfort does not influence knowledge sharing intentions. Other factors significantly impact knowledge sharing intentions.
Kwahk and Park, 2016	Knowledge sharing activities; Job performance	Individual factors (knowledge self-efficacy, enjoyment of helping); Social factors (social interaction ties, the norm of reciprocity)	All factors, except the enjoyment of helping, positively influence knowledge sharing activities via social media.
Moghavvemi et al., 2017	Knowledge sharing	Perceived enjoyment; Perceived reciprocal benefits; Perceived status; Outcome expectation; Knowledge power	Outcome expectation, perceived reciprocal benefit, and perceived enjoyment positively influence students' knowledge sharing. Knowledge power and perceived status are considered not significant factors.
Razmerita et al., 2016	Frequency of knowledge sharing	Individual factors; Organizational factors; Technological factors	Individual factors, namely, enjoyment of helping, trust, fear, time, financial reward and organisational factors, specifically organisational culture and national culture, significantly influence knowledge sharing behaviour. Technological factors do not significantly influence motivation to share knowledge.

Taking all into consideration, social media itself has a positive impact on knowledge sharing. In the context of social media usage, adaptability to technology, experience in using social media, and perceived usefulness could increase knowledge sharing intentions. The individual factor, namely enjoyment of helping, is not significant. Besides, self-efficacy is considered an important factor in the knowledge sharing process. The social factor, namely, social interaction ties influence positively on knowledge sharing intentions. Other factors, such as the norm of reciprocity, trust, organisational factors, and compatibility, have different influences in different contexts. However, there is a lack of researches examining knowledge sharing behaviour via social media among students.

2.3 Influence of Covid-19

According to the National Cancer Institute (2020), Covid-19 is “a highly contagious respiratory disease caused by the SARS-CoV-2 virus”. It is believed that the virus spreads through droplets when an infected person talks, sneezes, etc. It may also be spread by touching a surface with the virus on it (National Cancer Institute, 2020). Because of its high contagiousness and rapid spread around the world, Covid-19 was declared a pandemic by the World Health Organization on 11 March 2020 (Giunchiglia et al., 2018). In order to respond to Covid-19, most national strategies include self-isolation, quarantine and the promotion of public health measures, including handwashing, respiratory etiquette, and social distancing (Bedford et al., 2020). Hence, in order to protect ourselves and others, the universities in Portugal and those all over the world shifted from face-to-face education to distance education.

Self-isolation and travel restrictions were implemented as necessary measures, but they resulted in a reduced workforce across all economic sectors. All levels of education systems, including schools and tertiary education, were affected by Covid-19 (Nicola et al., 2020). Thus, the Covid-19 crisis influenced the productivity and mental health of students. Elmer et al. (2020) found that university lockdowns negatively affected students' mental health and the social integration of some individuals. More social support is needed in order to cope with additional stress factors.

2.4 Technology acceptance model

The technology acceptance model (TAM) is frequently used to examine the acceptance and use of technology or system in various fields. Figure 1 represents TAM. In

1986, Davis introduced TAM based on the theory of reasoned action (TRA) in order to explain computer usage behaviour and acceptance of information systems (Davis et al., 1989). TRA was considered too general for explaining user behaviours. Thus, the primary purpose of TAM is to explain the impact of external factors on internal beliefs, attitudes, and intentions in a particular information system (Davis et al., 1989).

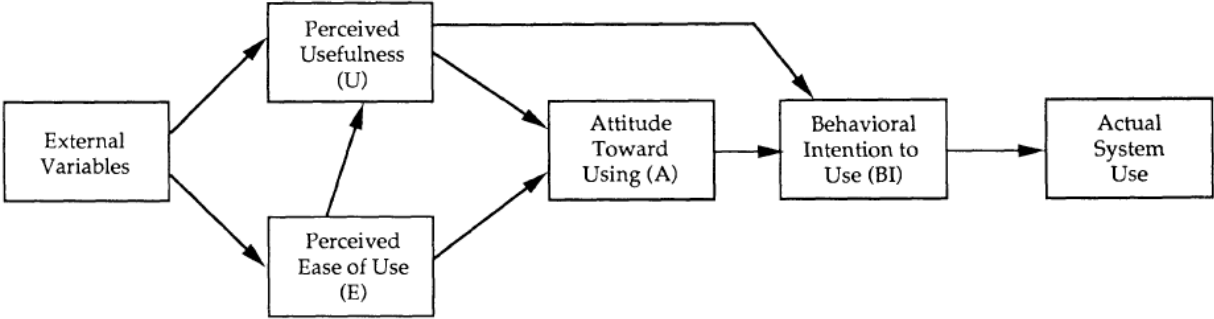


Figure 1. Technology acceptance model. Source: Davis, (1989).

Table 2 presents research in which TAM was adopted in different backgrounds. Al-Rahmi et al. (2019) examined big data adoption and knowledge management sharing using TAM and motivation theory. Alenazy et al. (2019) used TAM and additional moderating factors in order to analyse social media use for collaborative learning. Arpaci (2017) adopted TAM as an initial theoretical framework for studying cloud computing adoption in education. Chatterjee et al. (2020) investigated social media as a tool of knowledge sharing in academia, applying the valance, instrumentality and expectancy (VIE) theory and TAM. Hansen et al. (2018) adopted elements from TAM and the theory of planned behaviour (TPB) to study consumers’ use of social media for transactions. Hung and Cheng (2013) used TAM, the technology readiness index (TRI) and additional factor compatibility in order to analyse knowledge sharing behaviour in virtual communities. Hussein and Hassan (2017) adopted TAM to analyse customer engagement on social media.

Table 2. The researchers based on TAM.

Researches	Dependent variable(s)	Independent variables	Conclusions
------------	-----------------------	-----------------------	-------------

Al-Rahmi et al., 2019	Sustainability for education	Perceived usefulness, Perceived ease of use, Perceived risk, Age diversity, Cultural diversity, Motivators, Behaviour intention to use, Knowledge management sharing, big data adoption.	The connection between TAM and knowledge management sharing improves overall results. As a result, knowledge management sharing and behaviour intention support the use of big data for education sustainability.
Alenazy et al., 2019	Collaborative authoring	Perceived usefulness, Perceived ease of use, Perceived enjoyment	The results showed that the use of TAM positively and significantly affects social media for collaborative learning to enhance collaborative authoring.
Arpaci, 2017	Attitudes and Continued use intentions of cloud computing	Perceived ease of use, Perceived usefulness, Knowledge creation and discovery, Knowledge storage, Knowledge sharing, Knowledge application, Innovativeness, Training and education.	In this case, TAM provided general information on the topic. Additional factors enable the analysis of more details. The results showed that the adoption of cloud computing services can benefit students' academic performance and facilitate knowledge management.
Chatterjee et al., 2020	Intention to use social media for knowledge sharing	Importance for knowledge exchange; Perceived usefulness for social media; Experience using social media	All factors positively influence knowledge sharing in an academic context.
Hansen et al., 2018	Consumers' intentions to use social networking services for transactions	Perceived risk, Perceived ease of use, Perceived usefulness, Risk-taking propensity, Perceived Trust, Attitude, Behavioural control	Elements related to TAM and TPB have significant positive interactions in predicting behavioural intention.
Hung and Cheng, 2013	Knowledge sharing intentions	Optimism, innovativeness, discomfort, insecurity; Perceived usefulness, perceived ease of use, compatibility	Adaptability to technology could increase knowledge-sharing intentions. Discomfort does not influence knowledge sharing intentions. Other factors significantly impact knowledge sharing intentions.
Hussein and Hassan, 2017	Customers' continuation intention of social media usage	Perceived usefulness, Perceived ease of use, Perceived enjoyment, Perceived connectedness, Social Media Image,	Two factors of TAM, namely perceived connectedness and enjoyment, significantly affect attitude toward social media use. It was also found that

Attitude toward social
media, Level of Social
Media Use, Satisfaction.

attitude toward social media
significantly influences
continuation intention.

Essentially, the research does not include only TAM as a base. In most of the research, especially in the context of knowledge sharing, additional factors or theories are added. Nevertheless, the results showed that factors related to TAM, namely perceived usefulness and ease of use, positively and significantly affect examining behavioural intentions in different environments. These unique elements are considered as fundamental determinants of user acceptance (Davis, 1989).

3 Conceptual framework and Hypothesis development

The development of hypotheses is based on objectives and a literature review. Figure 2 represents the research model of the study. The unique elements related to TAM, namely perceived usefulness and perceived ease of use; social factors, namely social interaction ties and the norm of reciprocity; the individual factor, namely enjoyment, are considered as independent variables. The factors related to TAM, namely behavioural intention to use social media for knowledge sharing and actual use of social media for knowledge sharing, are considered as dependent variables.

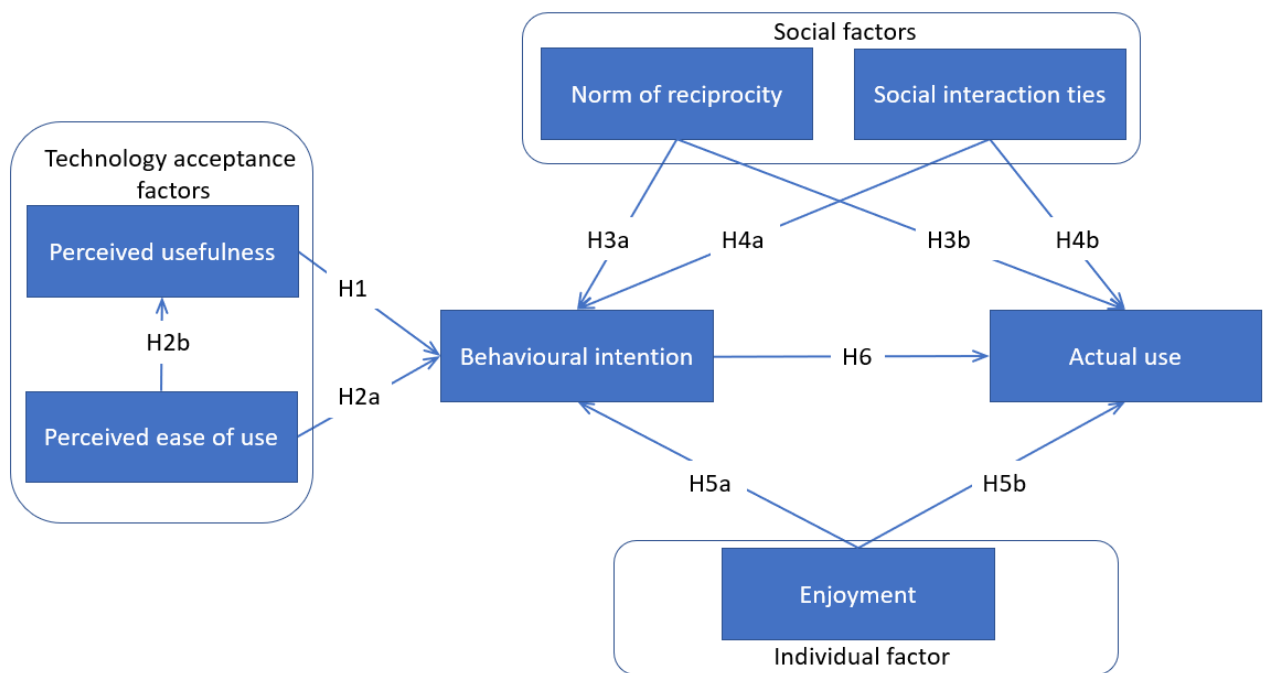


Figure 2. Research Model

3.1 Perceived usefulness

Adaptability to technology could increase knowledge sharing intentions (Hung and Cheng, 2013). By using modern technology, a user should be confident in the usefulness of that technology for a particular activity. The factor perceived usefulness refers to “the prospective user's subjective probability that using a specific application system will increase his or her job performance within an organisational context” (Davis et al., 1989, 985). The factor affects usage intention significantly (Davis et al., 1989). The feeling of effectiveness by using social media for knowledge sharing would motivate users to use social media,

perceiving the usefulness of the instrument for knowledge sharing (Chatterjee et al., 2020). Several studies (e.g. Al-Rahmi et al., 2019; Chatterjee et al., 2020; Hansen et al., 2018) examining topics such as social media and knowledge sharing supported the positive influence of perceived usefulness. Perceived usefulness is considered as the factor which influences the intention to use social media for knowledge sharing in an academic context. In other words, using social media for knowledge sharing increase students' learning performance. Hence, **hypothesis 1** is formed:

H1: Perceived usefulness positively influences behavioural intention.

3.2 Perceived ease of use

Perceived ease of use is defined as “the degree to which the prospective user expects the target system to be free of effort” (Davis et al., 1989, 985). The interface of the platform could play a crucial role in continued usage. If a user feels that social media is a comfortable tool for a particular activity, their intentions to use social media will increase (Hussein and Hassan, 2017). Moreover, a user-friendly interface essentially influences the user's preference, while difficulties could become a reason for a user's restriction (Hsu and Lu, 2007). The studies of Alenazy et al. (2019), Hung and Cheng (2013), and Hussein and Hassan (2017) supported the positive influence of perceived ease of use. Perceived ease of use is considered as the factor which describes a user's expectation of ease of social media usage for knowledge sharing in an academic environment. Thus, **hypothesis 2a** is formed:

H2a: Perceived ease of use has a positive impact on behavioural intention.

Both dimensions are primarily important for acceptable behaviour. Perceived usefulness is a major determinant of behavioural intentions. Perceived ease of use is a significant secondary dimension in the model (Davis et al., 1989). Nevertheless, it was found that ease of use influences behaviour intentions indirectly, particularly through perceived usefulness (Davis, 1989). Furthermore, the user's sense of efficacy would increase if it is easy to interact with a system (Davis et al., 1989). The difficulties in usage could be evidence of not useful functions of the system's performance (Davis, 1989). Hence, **hypothesis 2b** is formed:

H2b: Perceived ease of use positively influences perceived usefulness.

3.3 Norm of reciprocity

Another social factor is the norm of reciprocity. The norm of reciprocity means a set of socially accepted rules according to which an individual who provides a resource, for example, knowledge, obligates other people who use it to the latter return (Chen and Hung, 2010; Kwahk and Park, 2016). It can be considered a mutual responsibility, producing a supportive exchange (Chen and Hung, 2010). By the process of knowledge sharing, an individual must believe that their contribution would be worth the effort (Moghavvemi et al., 2017). Thus, the factor serves as motivation for future activities. Kwahk and Park (2016) include the origin of the factor to social capital theory, while Chen and Hung (2010) refer the factor to social exchange theory. The social capital theory includes various definitions and interpretations. Johnson (2016), through examining different definitions and approaches, defines social capital as the connections between individuals through which a social network is created. Social exchange theory explains the performance of social exchange in human behaviour. Social exchange differs from economic benefits.

A favour is made with the expectation of a future return. Hence, a long-term relationship is forming (Chen and Hung, 2010). In the previous studies, this social factor influences knowledge sharing differently. For example, Chen and Hung (2010) in the context of professional virtual communities, Kwahk and Park (2016) in enterprise social media environments and Moghavvemi et al. (2017) in an academic context found the positive effect of the variable. Nevertheless, Amayah (2013) found that the factor is not statistically significant in the public sector organisational setting. The factor was chosen because it was found significant in both social media backgrounds and an academic context. In the study, the norm of reciprocity is considered as the factor which helps to create a friendly environment, where in order to respond to the knowledge provision, similar actions are made. Therefore, the response for actions forms the pattern behaviour. Furthermore, the norm of reciprocity directly influences the actual use of social media for knowledge sharing through creating a friendly environment for mutual sharing. Thus, **hypothesis 3a** and **hypothesis 3b** are formed:

H3a: The norm of reciprocity positively influences behavioural intention.

H3b: The norm of reciprocity positively influences actual use.

3.4 Social interaction ties

The social factor, namely social interaction ties, is based on the social capital theory. During the formation of connections between individuals, long-term relationships are shaping, in which people expect mutual support and trust.

The social factor, namely social interaction ties, includes time spend on interaction, the strength of cooperation and the frequency of information exchange between users (Kwahk and Park, 2016). The formation of strong social relationships has a positive impact on knowledge creation (Kwahk and Park, 2016). Moreover, according to Kwahk and Park (2016), the activity of knowledge sharing implies active interaction with individuals who require knowledge. Thus, social interaction ties play a vital role in developing long-term social relationships, which increase the user's sense of well-being and enhance knowledge sharing activities (Chung et al., 2015; Chen and Hung, 2010; Kwahk and Park, 2016). Previous studies (e.g. Chung et al., 2015; Kwahk and Park, 2016) showed the positive effect of the variable. Social interaction ties is considered as the factor which increases knowledge sharing activities via social media in an academic environment due to the fact that the connection with other users could improve the ability to provide and accept valuable knowledge. Moreover, social interaction ties form social communication through long-term relationships, which directly increases the action of sharing knowledge. Hence, **hypothesis 4a** and **hypothesis 4b** are formed:

H4a: Social interaction ties positively influence behavioural intention.

H4b: Social interaction ties positively influence actual use.

3.5 Enjoyment

The individual factor, namely enjoyment, is a personal motivation, which reflects pleasure associated with the system usage (Hussein and Hassan, 2017). Enjoyment can be considered an individual's intention to use and participate in a social network (Moghavvemi et al., 2017). Kwahk and Park (2016) compare the feeling of enjoyment with altruism in an organisational context. The sense of altruism encourages individuals to share knowledge with other colleagues because the enjoyment of helping serves as an individual motivation, which associates with a sense of pride, gaining respect from others, building self-esteem, etc. Razmerita et al. (2016) relate enjoyment to an intrinsic motivation, which works better than external pressure or reward.

In the previous studies, the individual factor influences knowledge sharing differently. Razmerita et al. (2016) found the factor important in an organisational context, while Kwahk and Park (2016) considered enjoyment as not significant in enterprise social media environments. Hussein and Hassan (2017) emphasised that enjoyment pushes individuals to use new technology. Moreover, the factor influences positive attitudes toward social media.

Moghavvemi et al. (2017) considered enjoyment one of the main factors that influence knowledge sharing activities. In the study, the factor is used in order to analyse the feeling of enjoyment by helping others in a social media environment. An individual who helps others and experiences enjoyment would continue to seek the opportunity to solve problems. This kind of behaviour is based on a sense of enjoyment. Moreover, the sense of enjoyment facilitates cooperation, which has an impact on the actual use of social media for knowledge sharing. Additionally, the feeling of enjoyment by using social media drives individuals for continuous usage of that social media for a specific purpose, namely knowledge sharing. Hence, **hypothesis 5a** and **hypothesis 5b** are formed:

H5a: Enjoyment positively influences behavioural intention.

H5b: Enjoyment positively influences actual use.

3.6 Actual use

The factor, namely actual use of social media for knowledge sharing, is based on TAM. The variable actual system usage and other variables described in TAM are used as a means to predict and explain user acceptance of a system (Davis et al., 1989). Knowledge sharing is a continuing process, which requires lasting participation and a renewable supply of knowledge. Thus, with the aim of creating a successful and comfortable environment for knowledge sharing, the users need to provide knowledge and reuse the codified knowledge. The role of a knowledge-contributor or a knowledge-seeker could be the same person at different times (Chatterjee et al., 2020; Chen and Hung, 2010). The variable, actual use of social media for knowledge sharing, is used in order to analyse the real utilisation of the applications, on account of the fact that the variable itself could underline the effectiveness of social media usage for knowledge sharing. Moreover, the connection between behavioural intentions and actual use could explain the importance of behavioural intentions in the process. Hence, **hypothesis 6** is formed:

H6: Behavioural intention positively influences actual use.

3.7. Mediating role of perceived usefulness and behavioural intention

Perceived usefulness involves the perception of the user that by using a specific application, their work performance would increase. Perceived ease of use includes the perception of the user that the target technology is effortless in usage (Davis et al., 1989). Both factors could affect behavioural intention directly. Nevertheless, the adaptation to the new technology could be associated with negative attitudes because users have to learn new

patterns of interactions and skills (Yadegaridehkordi et al., 2019). However, social media is a current and well-known technology. Thus, the facilities of social media that make it easy to use for knowledge sharing activities could positively influence the platform's usefulness and, as a result, have an indirect effect on users' behavioural intention. Perceived ease of use and behavioural intention could be correlated. Consequentially, perceived usefulness could play the role of mediator. Hence, **hypothesis 7a** is formed:

H7a: Perceived usefulness positively mediates the relationship between perceived ease of use and behavioural intention.

The norm of reciprocity creates a comfortable environment for mutual activities. Social interaction ties help to form connections between users which in turn encourage collaboration between users. The experience and expectation of enjoyment could form the intention of the user's behaviour. Based on reciprocity, social interaction ties, and enjoyment, users could form an intention to perform the behaviour toward actual usage of the platform. Thus, the correlation could exist between the norm of reciprocity and actual use, social interaction ties and actual use, enjoyment and actual use through behavioural intention. Hence, **hypotheses 7b, 7c, 7d** are formed:

H7b: Behavioural intention positively mediates the relationship between the norm of reciprocity and actual use.

H7c: Behavioural intention positively mediates the relationship between social interaction ties and actual use.

H7d: Behavioural intention positively mediates the relationship between enjoyment and actual use.

4 Methodology

In order to achieve the aim of the research, the mixed method was chosen. The mixed method combines qualitative and quantitative approaches, which provides a complete understanding of the research question, considering that all methods and avenues of data collecting have their weaknesses and strengths (Creswell, 2014). Hence, the mixed method is a perfect combination of the strengths of qualitative and quantitative procedures. The theoretical framework for the research helps to explain the chosen method. Figure 3 represents a framework for the research. It includes three components, specifically philosophical worldviews, design and research methods.

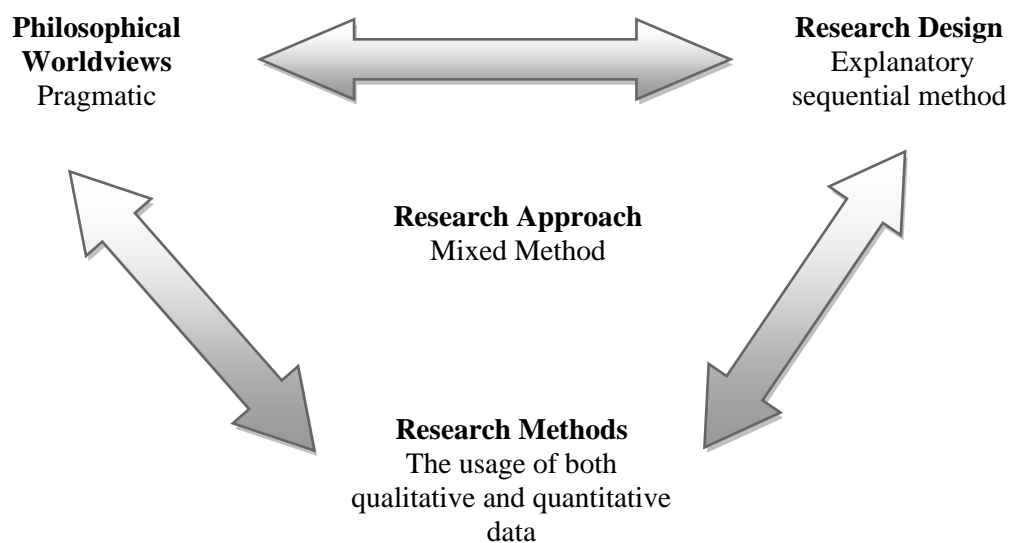


Figure 3. A framework for the research. Source: adopted Creswell (2014)

This study includes an analysis of the theory, developing hypotheses, both qualitative and quantitative data, both qualitative and quantitative instruments of seeking and processing. Hence, from the perspective of philosophical worldviews, the study is pragmatic. The pragmatic assumption is focused on the problem of the research rather than methods. Thus, pluralistic approaches are used in order to derive knowledge about the problem (Creswell, 2014).

Research design helps to specify the inquiry within a method. The explanatory sequential mixed method is used. The mixed method itself includes two or more phases. The order of explanatory sequential mixed method is first a quantitative and then a qualitative

analysis. Thus, quantitative data is explained further with qualitative data (Creswell, 2014). The processing of qualitative data supports the specification of findings and enriches the final results. This research includes two phases. The first phase covers building an online survey based on the literature review and conceptual model. The second phase includes the formation of an interview with open-ended questions. It is conducted in order to enhance the interpretation of the results.

Research Methods include specific practices in the forms of data collection, analysis, and interpretations (Creswell, 2014). Table 3 represents the research methods of the study in detail. An online survey was used in the quantitative part, and interviews were conducted in the qualitative component for data collection. For data analysis, the partial least squares structural equation modelling (PLS-SEM) method was applied in the quantitative part, and text analysis was used in the qualitative part. For the interpretation, the SmartPLS application was used in the quantitative stage, and tables, schemes and diagrams were employed in the qualitative segment. Hence, both qualitative and quantitative methods are used in the study.

Table 3. Research Methods of the study.

	Quantitative	Qualitative
Data Collection	Online survey	Interviews
Analysis	PLS-SEM method	Text analysis
Interpretation	SmartPLS application	Tables Report

4.1 Quantitative approach

The study was undertaken in order to analyse students' behaviour of using social media for knowledge sharing during the Covid-19 pandemic. Hence, collecting data through an online survey was considered the best technique for the first quantitative sequence since it is the quickest and most effective method of collecting opinions about the topic regarding the restrictions of physical meetings. The survey was created with the aim to answer the formed hypotheses, characterised in Figure 2. In order to ensure the logical arrangement of questions and guarantee the reliability and validity of the measurements, a pilot study was conducted. The data were collected from 30 Portuguese students who are studying at the same university. The data were not included in the final analysis.

Considering that the study's target population was Portuguese students, the online survey was developed in Portuguese and posted online through a free web application. The scales for the construct were adapted from Arpaci (2017), Davis (1985), Hussein and Hassan (2017), Kwahk and Park (2016). Each item was measured on the 7-point Likert scale ranging from “strongly disagree” (1) to “strongly agree” (7).

Table 4 represents the constructs and items in English. The construct perceived usefulness includes items, namely PU1, PU2, PU3, PU4 and PU5, which were adapted from Arpaci (2017). The construct perceived ease of use contains items, namely PEU1, PEU2, PEU3 and PEU4, which were adapted from Arpaci (2017) and Hussein and Hassan (2017). The construct norm of reciprocity includes items, namely NR1, NR2, NR3 and NR4, which were adapted from Kwahk and Park (2016). The construct social interaction ties contains items, namely SIT1, SIT2, SIT3 and SIT4, adapted from Kwahk and Park (2016). Enjoyment includes items, namely E1, E2, E3, E4 and E5, which were adapted from Kwahk and Park (2016). Behavioural intention contains items, namely BI1, BI2, BI3 and BI4, which were adapted from Arpaci (2017) and Hussein and Hassan (2017). The construct, actual use, includes items, namely AU1 and AU2, adapted from Davis (1985).

Table 4. Constructs and items.

Constructs	Items	Adapted from
Perceived usefulness	PU1. Using social media for knowledge sharing improves my academic performance.	Arpaci (2017)
	PU2. Using social media for knowledge sharing increases the efficiency of my studies and work.	
	PU3. Using social media for knowledge sharing increases my productivity.	
	PU4. Using social media makes knowledge sharing easier.	
	PU5. Using social media for knowledge sharing enables me to accomplish tasks more quickly.	
Perceived ease of use	PEU1. Learning to use social media for knowledge sharing is easy for me.	Arpaci (2017) and Hussein and Hassan (2017)
	PEU2. My interaction with social media for knowledge sharing is clear and understandable.	
	PEU3. It is easy for me to become skilful at using social media for knowledge sharing.	
	PEU4. I find social media easy to use for knowledge sharing.	
Norm of reciprocity	NR1. I believe that it is fair and obligatory to help others when I engage in social media activities because I know that other people will help me someday.	Kwahk and
	NR2. I believe that other people will help me when I need help if I share knowledge with others through social media.	

	NR3. I believe that other people will answer my questions regarding specific information and knowledge in the future if I share knowledge with others through social media.	Park (2016)
	NR4. I think that people who are involved with social media develop reciprocal beliefs on giving and taking based on other people's intentions and behaviour.	
Social interaction ties	SIT1. I maintain close social relationships with people through social media.	
	SIT2. I spend a lot of time interacting with other people through social media for educational purposes.	Kwahk and Park (2016)
	SIT3. I know some of the people who actively use social media for knowledge sharing personally.	
	SIT4. I frequently communicate with people through social media.	
Enjoyment	E1. I enjoy sharing knowledge with other people through social media.	
	E2. I enjoy helping other people by sharing knowledge through social media.	
	E3. I feel good when I help others by sharing my knowledge through social media.	Kwahk and Park (2016)
	E4. I want other people to ask my opinion about certain themes or work projects through social media.	
	E5. I enjoy helping others through social media.	
Behavioural intention	BI1. I intend to use social media for knowledge sharing in an academic context in the future.	
	BI2. I predict that I will continue to use social media for knowledge sharing in an academic environment.	Arpaci (2017) and Hussein and Hassan (2017)
	BI3. I plan to use social media for knowledge sharing in the future.	
	BI4. I recommend that others use social media for knowledge sharing in an academic environment.	
Actual use	AU1. Social media is available for me to use for educational purposes.	Davis (1985)
	AU2. I frequently use social media for knowledge sharing.	

Approximately 700 requests to fill in the survey were sent through e-mails and by using other social media platforms, namely Facebook, WhatsApp and Instagram. In particular, the department of history at the faculty of social and human sciences, NOVA University Lisbon sent the request to fill the survey to students and the posts were written with the request to fill the survey on social media platforms.

The requests were sent in January 2021. A total of 253 valid answers had been collected after one month. In sum, about 57% of respondents were under the age of 21-25, 58% were females, 49% had a bachelor's degree, and 71% were students. More detailed sample characteristics are described in Table 5.

Table 5. Sample characteristics.

Distribution (<i>n</i> = 253)		
Age		
≤ 20	49	19%
21-25	143	57%
26-30	20	8%
≥31	41	16%
Gender		
Female	146	58%
Male	107	42%
Education		
until 12th grade	26	10%
Bachelor's degree	123	49%
Master's degree	97	38%
Doctor's degree	5	2%
Do not know/ Do not answer	2	1%
Employment		
Student	179	71%
Employee	52	21%
Self-employed	12	5%
Unemployed	10	4%

4.2 Qualitative approach

The study's main objective was to determine the factors that influence knowledge sharing between students during the Covid-19 pandemic. With the aim to present a complete analysis of the subject, it was decided to conduct interviews. This kind of method allows to specify the details of the topic and take into consideration the current situation, specifically the Covid-19 pandemic.

Questions were constructed for each factor represented in Figure 2. The questions were based on the results of the quantitative research and the conceptual model. Table 6 represents the formed questions for the factors, namely perceived usefulness, perceived ease of use, the norm of reciprocity, social interaction ties, enjoyment, behavioural intention and actual use. In addition, one more factor, namely Covid-19 was added, in order to understand the influence of the Covid-19 pandemic on knowledge sharing through social media among students.

Considering that the study's target population was Portuguese students, the questions were developed in two languages English and Portuguese. The interviewee could choose the variant with which they were more comfortable. For promoting further interpretation, the answers were translated into English. In order to avoid and not create an agglomeration of people, it was decided to conduct the interviews online by using the most convenient tool for participants, specifically Zoom, Google Meet and WhatsApp. All participants were asked about verbal consent for voice recording during the interview.

Table 6. Questions for each construct.

Constructs	Questions
Perceived usefulness	<p>1. Do you think that during the Covid-19 pandemic using social media for knowledge sharing would improve your academic performance? Why?</p> <p>2. Do you think using social media for knowledge sharing during the quarantine would increase your productivity and efficiency? Why? and How?</p> <p>3. Do you think that using social media during the quarantine would make knowledge sharing easier? Why?</p>
Perceived ease of use	<p>4. Do you know how to use social media for knowledge sharing? If yes, is it clear and understandable? Why? If no, would it be easy for you to learn how to use social media for knowledge sharing? Why?</p> <p>5. Do you think it is easy to use social media for knowledge sharing during the Covid-19 pandemic? Why?</p>
Norm of reciprocity	<p>6. Do you think that if you are already engaged in social media activity, other people will help you during the Covid-19 pandemic? Why?</p> <p>7. Do you think other users will answer your questions if you share your knowledge during the Covid-19 pandemic? Why?</p> <p>8. Do you think that people's intentions and behaviour influence the development of social norms that involve exchanges between people in the social media environment? Why?</p>
Social interaction ties	<p>9. Do you keep close social relationships with people through social media during the Covid-19 pandemic? Why?</p> <p>10. How much time per day/week do you use for interacting with other people through social media for educational purposes during the quarantine? Why?</p> <p>11. Do you know someone who actively uses social media for knowledge sharing?</p>
Enjoyment	<p>12. Do you like to share knowledge with others through social media during the quarantine? Why?</p> <p>13. During the Covid-19 pandemic, do you enjoy helping others through social media? Why?</p> <p>14. How do you feel when other users ask your opinion about certain themes or projects through social media?</p>
Behavioural intention	<p>15. Are you planning to use social media for knowledge sharing in an academic context in the future? Why?</p> <p>16. Do you recommend using social media for knowledge sharing in an academic environment? Why?</p>
Actual use	<p>17. Is social media available for you during the Covid-19 pandemic? If no,</p>

Covid-19	<p>why?</p> <p>18. During the quarantine, how often do you use social media for knowledge sharing in an academic context? Why?</p> <p>19. Do you think that the pandemic influences knowledge sharing in social media between students? How?</p>
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As a result, 14 interviews were done during the week, specifically from 15 March 2021 until 23 March 2021. Participation in interviews was voluntary. In order to find the participants for the interviews, it was made the post on social media and the volunteers, who showed their interests, became the participants of the interviews. The obligatory criterion for the participants selection is to currently take a course at Nova University Lisbon. All participants were informed that the research was being conducted for investigation purposes.

At the moment of conducting interviews, all participants were taking a degree at the NOVA University of Lisbon. Interviewee 1 is a 22-year-old female pursuing a master's degree in International Finance at NOVA SBE. Interviewee 2 is a 22-year-old male pursuing a bachelor's degree in Information Systems at NOVA IMS. Interviewee 3 is a 22-year-old male. Interviewee 6 is a 28-year-old female. Interviewee 8 is a 47-year-old female. Interviewee 14 is a 34-year-old male. Interviewee 12 is a 29-year-old female pursuing a master's degree in Information Management and Curation at NOVA FCSH/IMS. Interviewee 11 is a 49-year-old male pursuing a post-graduate degree in the same area. Interviewee 4 is a 22-year-old female pursuing a master's degree in Geography Teaching at NOVA FCSH. Interviewee 5 is a 22-year-old male pursuing a master's degree in Geography and Regional Planning at NOVA FCSH. Interviewee 7 is a 33-year-old male pursuing a master's degree in History Teaching at NOVA FCSH. Interviewee 9 is a 21-year-old female pursuing a bachelor's degree in History at NOVA FCSH. Interviewee 10 is an 18-year-old male pursuing an integrated master's degree in Electrical and Computer Engineering at FCT NOVA. Interviewee 13 is a 25-year-old female pursuing an integrated master's degree in Chemical and Biochemical Engineering at FCT NOVA.

To summarise, about 50% of respondents were under the age of 21-25, 50% are female, 50% of interviewees have completed a bachelor's degree, 79% are taking master's degree, 43% of respondents are currently studying Information Management and Curation at NOVA FCSH/IMS. More detailed demographic characteristics are described in Table 7.

Table 7. Demographic data.

Total = 14						
Age			Gender			
≤ 20	1	7%	Female	7	50%	
21-25	7	50%	Male	7	50%	
26-30	2	14%				
30-49	4	29%				
Complete level of education			Education in Progress			
High school (12th grade)	2	14%	Bachelor's degree	2	14%	
Bachelor's degree	7	50%	Postgraduate degree	1	7%	
Postgraduate degree	3	21%	Master's degree	11	79%	
Master's degree	2	14%				
Field of the study			Faculty			
Chemical and Biochemical Engineering	1	7%	NOVA FCSH	4	29%	
Electrical and Computer Engineering	1	7%	NOVA FCSH/IMS	6	43%	
Geography and Regional Planning	1	7%	FCT NOVA	2	14%	
Geography Teaching	1	7%	NOVA IMS	1	7%	
History	1	7%	NOVA SBE	1	7%	
History Teaching	1	7%				
Information Management and Curation	6	43%				
Information Systems	1	7%				
International Finance	1	7%				

5 Results

5.1 Quantitative approach

For analysing and interpreting quantitative data, partial least squares - structural equation modelling (PLS-SEM) was used. PLS technique allows analysing SEM using the components, namely measurement models and structural models, simultaneously (Hair et al., 2011).

The goals of the research are explanatory. From the measurement model perspective, the formative constructs are considered as a part of the structural model. The structural model itself consists of many constructs and indicators, which make the model complex. The sample size met the necessary conditions for using PLS-SEM. Thus, according to Hair et al. (2011), the PLS-SEM can be considered adequate for estimation. For data assessment and manipulation, SmartPLS 3 was used (Ringle, C. M., Wende, S., and Becker, 2015).

5.1.1 Measurement model

Before testing the structural model, it is necessary to ensure the validity and reliability of the measurement model (Fornell and Larcker, (1981); Hair et al., (2011)). In order to administer the analysis, the following measures were used: construct reliability, indicator reliability, convergence validity, and discriminant validity. Table 8 and Table 9 represent the used calculations in relation to items.

By using the cross-loading criteria, the indicator reliability was evaluated. According to Hair et al. (2011), the loadings should be higher than 0.7. Every loading less than 0.4 is considered a weaker indicator. In consequence, it should be eliminated. Thus, according to the loading criteria, the items, namely AU3 and AU4, were eliminated, and the model was recalculated. Table 8 represents the results without AU3 and AU4. As shown, all items are higher than 0.7. Accordingly, the items are reliable.

As for composite reliability (CR), Table 9 shows that it is greater than 0.7, which is regarded as satisfactory (Hair et al., 2011). Convergent validity was tested through average variance extracted (AVE), in other words, mean data. The indicators higher than 0.5 are considered as a sufficient degree for convergent validity (Hair et al., 2011). Table 9 shows that the indicators are above 0.5, signifying that the latent variable explains more than half of its indicators' variance (Hair et al., 2011). The discriminant validity is measured through the square roots of AVEs, which are greater than the correlation between each pair of constructs. Considering that the loadings are higher than cross-loading, according to Fornell and Larcker (1981), the indicators ensure discriminant validity.

Table 8. PLS loadings and cross-loading.

Constructs		PU	PEOU	NR	SIT	Enjoy	BI	USE
Perceived usefulness	PU1	.907	.324	.441	.436	.519	.637	.585
	PU2	.880	.275	.395	.423	.487	.622	.555
	PU3	.869	.297	.413	.393	.418	.560	.528
	PU4	.763	.275	.293	.380	.577	.621	.572
	PU5	.864	.371	.441	.440	.490	.577	.545
Perceived ease of use	PEU1	.352	.871	.311	.300	.282	.276	.317
	PEU2	.324	.893	.337	.318	.276	.256	.297
	PEU3	.268	.868	.307	.263	.258	.205	.274
	PEU4	.301	.857	.348	.353	.311	.305	.297
Norm of reciprocity	NR1	.322	.282	.763	.453	.443	.425	.445
	NR2	.398	.381	.911	.543	.535	.505	.474
	NR3	.450	.323	.904	.531	.536	.528	.480
	NR4	.424	.308	.874	.506	.515	.511	.505
Social interaction ties	SIT1	.349	.310	.406	.808	.448	.403	.402
	SIT2	.489	.250	.520	.831	.530	.542	.574
	SIT3	.292	.359	.501	.718	.437	.468	.466
	SIT4	.354	.193	.383	.754	.471	.422	.405
Enjoyment	E1	.451	.299	.541	.575	.892	.673	.667
	E2	.574	.320	.532	.545	.935	.711	.716
	E3	.556	.308	.539	.569	.926	.727	.723
	E4	.498	.241	.471	.484	.850	.630	.606
	E5	.559	.300	.579	.586	.929	.714	.706
Behavioural intention	BI1	.628	.251	.527	.544	.685	.920	.704
	BI2	.666	.277	.554	.548	.707	.950	.721
	BI3	.631	.313	.525	.592	.730	.938	.729
	BI4	.689	.279	.511	.531	.706	.900	.738
Actual use	AU1	.574	.296	.454	.439	.629	.653	.876
	AU2	.589	.313	.526	.626	.716	.736	.910

To summarise, the measurement model results showed that the model has good construct reliability, indicator reliability, convergent validity, and discriminant validity. Hence, the seven items, specifically PU, PEOU, NR, SIT, E, BI, USE, are statistically distinct and can be used for further analysis.

Table 9. Means, standard deviations, correlations, and reliability and validity measures (CR, CA, and AVE) of latent variables.

	Mean	SD	CR	CA	PU	PEOU	NR	SIT	E	BI	USE
PU	4.967	1.398	.933	.909	.858						
PEOU	5.890	1.076	.927	.896	.360	.872					
NR	4.929	1.221	.922	.886	.463	.375	.865				
SIT	5.003	1.267	.860	.785	.484	.356	.589	.779			
E	5.290	1.458	.959	.946	.583	.325	.588	.609	.907		
BI	5.121	1.644	.961	.945	.705	.302	.571	.598	.763	.927	
USE	5.039	1.441	.887	.748	.651	.342	.551	.604	.756	.780	.893

5.1.2 Structural Model

After establishing the adequate measurement model, the next step was to analyse the structural model for hypothesis testing. The bootstrapping method with a subsample of 5,000 iterations was used to assess the hypotheses and constructs' relationships. The bootstrapping analysis enables to test the estimated coefficients in PLS-SEM for their significance (Hair et al., 2011). Figure 4 represents the R square and path coefficients of the suggested research model.

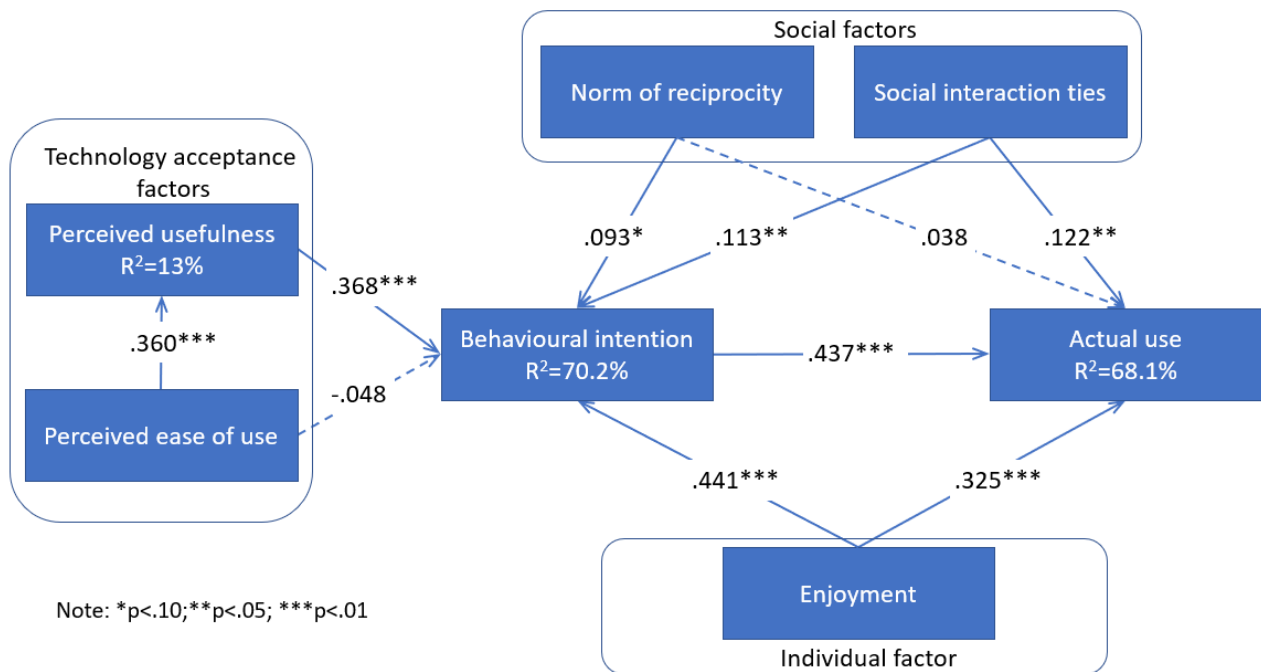


Figure 4. Research Model. R square and path coefficients.

The research model explains 13% of the variation in perceived usefulness. Perceived ease of use ($\beta = 0.360$; $p < 0.01$) is statistically significant in explaining perceived usefulness. Hence, hypothesis H2b is confirmed.

The research model explains 70.2% of the variation in behavioural intention. Perceived usefulness ($\beta = 0.368$; $p < 0.01$), norm of reciprocity ($\beta = 0.093$; $p < 0.10$), social interaction ties ($\beta = 0.113$; $p < 0.05$), and enjoyment ($\beta = 0.441$; $p < 0.01$) are statistically significant in explaining behavioural intention. Thus, the hypotheses H1, H3a, H4a, and H5a are confirmed. The variable perceived ease of use is not statistically significant. In consequence, hypothesis H2a is not confirmed.

The research model explains 68.1% of the variation in actual use. Social interaction ties ($\beta = 0.122$; $p < 0.05$), enjoyment ($\beta = 0.325$; $p < 0.01$), and behavioural intention ($\beta =$

0.437; $p < 0.01$) are statistically significant in explaining actual use. Hence, hypotheses H4b, H5b, and H6 are confirmed. The variable norm of reciprocity is not statistically significant. Accordingly, hypothesis H3b is not confirmed.

The analysis through bootstrapping method showed that in the case of factors, namely perceived ease of use, the norm of reciprocity, social interaction ties and enjoyment, each variable intervenes between two other related constructs. Thus, the next step was realising a mediation analysis. By analysing the strength of the relationship between the mediator variable and other constructs, it is allowed to substantiate the mechanisms underlying the cause-effect relationship between an exogenous construct and an endogenous construct (*Mediation / SmartPLS*, n.d.).

Table 10 represents the results of the mediation analysis. The indirect relationship between perceived ease of use and behavioural intention through perceived usefulness is considered significant ($\beta = 0.132$; $p < 0.01$). The direct relationship between perceived ease of use and behavioural intention is considered not significant ($\beta = -0.048$). Thus, perceived usefulness mediates the relationship between perceived ease of use and behavioural intention. It is concluded indirect effect (full mediation). Hypothesis 7a is confirmed.

Table 10. Mediation analysis.

	Beta	SD	t-Test	p-value
H7a - Indirect-only (full mediation)				
(P1*P2) Perc. ease of use > perc. usefulness > behav. intention	.132	.031	4.238	<.01
(P3) Perceived ease of use > behavioural intention	-.048	.043	1.117	NS
H7b - Indirect-only (full mediation)				
(P1*P2) Norm of recip. > behavioural intention > actual use	.041	.022	1.818	<.10
(P3) Norm of reciprocity > actual use	.038	.048	.788	NS
H7c - Complementary (partial mediation)				
(P1*P2) Social interaction ties > behav. intention > actual use	.050	.024	2.040	<.05
(P3) Social interaction ties > actual use	.122	.051	2.404	<.05
H7d - Complementary (partial mediation)				
(P1*P2) Enjoyment > behavioural intention > actual use	.193	.038	5.089	<.01
(P3) Enjoyment > actual use	.325	.065	5.033	<.01

The indirect relationship between the norm of reciprocity and actual use through behavioural is considered significant ($\beta = 0.41$; $p < 10$). The direct relationship between the norm of reciprocity and actual use is considered not significant ($\beta = 0.038$). Thus, behavioural

intention mediates the relationship between the norm of reciprocity and actual use. It is concluded indirect effect (full mediation). Hypothesis 7b is confirmed.

The indirect relationship between social interaction ties and actual use through behavioural intention is considered significant ($\beta = 0.050$; $p < 0.05$). The direct relationship between social interaction ties and actual use is also considered significant ($\beta = 0.122$; $p < 0.05$). Hence, three relationships are considered statistically significant. It is concluded a complementary effect (partial mediation). Hypothesis 7c is confirmed.

The indirect relationship between enjoyment and actual use through behavioural intention is considered significant ($\beta = 0.193$; $p < 0.01$). The direct relationship between enjoyment and actual use is also considered significant ($\beta = 0.325$; $p < 0.01$). Hence, three relationships are considered statistically significant. It is concluded complementary effect (partial mediation). In summation, the mediation effects are considered statistically significant. Hypothesis 7d is confirmed.

As a result, the majority of the hypotheses (12 out of 14 hypotheses) were supported by the suggesting research model.

5.2 Qualitative approach

The main objective of analysing interviews was to provide more detailed information about the topic and focus on the influence of the Covid-19 pandemic. In particular, to find or not find the real effectiveness of using social media for knowledge sharing during the Covid-19 pandemic and describe students' individual performance.

With the aim of finding which social media are useful for knowledge sharing in academic background, the participants were asked to make their top from the most used social media platforms (from 1 to 5) for knowledge sharing in an academic environment. The results are presented in Table 11. Not every participant mentioned five social media platforms. For the first option, out of fourteen answers, six interviewees are using WhatsApp; two are using Discord and Instagram; the other 4 participants are using Facebook, LinkedIn, Messenger and ResearchGate. For the second option, out of the twelve answers, five respondents are using WhatsApp; three are using Facebook; the other four are using Academia.edu, Instagram, TikTok and YouTube. For the third option, out of eight answers, two interviewees are using Academia.edu, two are using Facebook, two are using Instagram and two are using Messenger. For the fourth option, out of three answers, one respondent is using Academia.edu, one is using Facebook, and one is using WhatsApp. Only one person is using the fifth option, which is ResearchGate.

Table 11. Mostly used social media platforms for educational purposes.

	1 st option		2 nd option		3 rd option		4 th option		5 th option	
Academia.edu	0	0%	1	8%	2	25%	1	33%	0	0%
Discord	2	14%	0	0%	0	0%	0	0%	0	0%
Facebook	1	7%	3	25%	2	25%	1	33%	0	0%
Instagram	2	14%	1	8%	2	25%	0	0%	0	0%
LinkedIn	1	7%	0	0%	0	0%	0	0%	0	0%
Messenger	1	7%	0	0%	2	25%	0	0%	0	0%
ResearchGate	1	7%	0	0%	0	0%	0	0%	1	100%
TikTok	0	0%	1	8%	0	0%	0	0%	0	0%
WhatsApp	6	43%	5	42%	0	0%	1	33%	0	0%
YouTube	0	0%	1	8%	0	0%	0	0%	0	0%
Total	14		12		8		3		1	

5.2.2 Interview discussion

To summarise, the results showed that social media is an effective tool for knowledge sharing in an academic environment due to various advantages.

The *Covid-19* pandemic changed the way people communicate and interact with each other. As the only manner to continue to study and work was to go online. As a result, the frequency of using social media for knowledge sharing increased. Before the pandemic, students already used social media for educational purposes but not that frequently. The Covid-19 pandemic turned online resources, for instance, social media and collaborative platforms, a necessity rather than a choice. People understood that social media can be used not only for entertainment but also to study and work. All of the participants except number eleven consider knowledge sharing as a form of academic communication. Consequentially, social media became the most comfortable tool for sharing. Interviewee eleven uses social media primarily for knowledge sharing. Because of the pandemic, people also understood the benefits of social media usage and, in the future, will continue to use that.

Moreover, the pandemic has changed the way people use social media for knowledge sharing and the way people obtained knowledge. For instance, a lot of new groups appeared, and the necessity for valid information has increased. Another example is that students started to use platforms, which they did not use before this situation.

The negative side of using social media for knowledge sharing during the Covid-19 pandemic is the growth of misinformation. Some participants, specifically eleven, twelve and fourteen, showed their preoccupation regarding this problem. However, it is possible to avoid

it and enjoy the benefits. The Covid-19 pandemic had led to physical distance, while social media became a way of connecting people.

From the perspective of *perceived usefulness*, all participants except two, eleven and twelve agreed that using social media for knowledge sharing influences positively academic performance, productivity and efficiency. Participants two and eleven agreed partially because social media is considered a supportive tool for effective knowledge sharing. Participant twelve mentioned that social media usage did not change during the pandemic because social media was already actively used before the pandemic. All the respondents also emphasised the necessity of using social media for knowledge sharing. Several times it was underlined that it is impossible to continue working without social media during the pandemic. Due to the fact that all the physical methods of knowledge sharing and communication were replaced by social media usage. Thus, social media makes the process of knowledge sharing easier. Participants six, seven, eight, ten, and thirteen compared social media usage with phone calls and e-mail. However, social media is considered the most convenient way to stay connected with colleagues, cooperate to deliver group projects and promote collaborative work.

The issue of collaborative work and staying connected with colleagues is considered essential. During the Covid-19 pandemic, students have greater needfulness to fight isolation. Hence, the interaction with colleagues on social media gives the feeling of engagement and connection, as it is easy to access other people.

As for the factor, namely *perceived ease of use*, all participants know how to use social media in an academic environment. They also considered that it is easy and understandable because the interface of social media is built intuitively. However, it was considered that the platform itself has an impact on the choice of the student. Some platforms are considered useful in the context of information sharing, for example, Facebook and WhatsApp and others less functional, for instance, Twitter. It was also found that most of the students, specifically number one, two, three, four, seven, twelve and fourteen know how to use social media on a basic level, or they prefer to consume information rather than contribute knowledge.

All interviewees except participants two and thirteen considered the usage of social media for knowledge sharing easy because these channels were already known before the pandemic. The only difference is the frequency of usage. Participants number three, four, six and eight believed that intensive usage made social media even easier because students focus more on social media during the quarantine. One of the difficulties could be creating a group

or a room, but not the usage itself. The other reason is the interface of social media, which helps to create dynamic sharing. For example, the option to filter could help produce an environment viable for knowledge sharing. For participant nine, this method for knowledge sharing is easier than traditional ones, for example, libraries. Participants two and thirteen had mixed feeling about this aspect since daily usage of social media for any purpose could frustrate students and turn the aminated process into something boring. Moreover, the connection with the internet plays a vital role in usage.

In the case of the factor, *the norm of reciprocity*, all participants believed that if you are already engaged in social media activity, other people will help you. Due to the fact that there is no necessity to create new connections. Being a member of a group gives a network of people who are ready to help. However, it is not a problem to join a new group and start sharing. Moreover, because of the Covid-19 pandemic, people start to create new groups with the aim of knowledge sharing. In addition, the situation provokes more mutual sharing because of the understanding of the difficulties the society is going through. Participants one, nine, twelve and thirteen believe that it depends more on a person rather than a group. Even in a group, some members could help, and others could not help.

Furthermore, the platform itself has an impact on helping each other. For example, Academia.edu and ResearchGate are used for passive consumption from the students' perspective, and the previous engagement does not influence too much. However, in the professional group on Facebook or in the group with colleagues on WhatsApp, the mutual sharing inspires other members to feel tempted to ask and contribute. On the other side, if a person is an active member of the group, it could increase the likelihood that other people will answer your questions. However, all participants believe that people are always eager to share, especially during the Covid-19 pandemic when many people spend time online. It also depends on the quality of shared information. If the information is useful, it will have an effect and will get feedback in the future. If the information is useless, then it might get ignored.

All the participants agreed that people's intentions and behaviour influence the development of social norms that involve exchanges between people in a social media environment. In the professional groups for knowledge sharing or in the groups of students for the specific subject, the members have at least the basic knowledge of the topic. As a result, it comes to the point that all members are trying to find the same goal, which impacts what should be done, how to act, and what is acceptable. For example, the usage of a real profile, quick reflection and providing verified information could show the good intention of a

person. The culture of exchange always exists in a group. If there is no exchange behaviour, the group will not continue to exist. Hence, the balance between the process of contributing and consuming is important in information exchange.

From the perspective of *social interaction ties*, all participants except nine, eleven, thirteen and fourteen maintain a close social relationship through social media. During the Covid-19 pandemic, it is impossible to interact in real life. Hence, social media is a comfortable tool to replace face-to-face interaction. In order to promote a friendly environment for knowledge sharing, it is important to maintain social relationships not only with friends but also with colleagues. The situation did not change much for two participants because they already have used social media to keep social relationships before the Covid-19 pandemic. Participants seven, nine, ten and eleven underline that it is impossible to build close social relationships without previous face-to-face interaction. However, participant five mentioned that his new connections increased significantly because he participated in new groups.

Participants nine, eleven, thirteen and fourteen do not maintain close social relationships through social media. For instance, a participant emphasised that professional relationships differ from social relationships. Nevertheless, at least some level of interaction, for example, short conversations, is obligatory for promoting mutual sharing. Another example is that even though the Covid-19 pandemic could solidify some of the social relationships through social media, in order to share knowledge, it is not necessary to build close social relationships.

In order to interact with people for educational purposes, participants three, four, six, seven, ten and eleven spend from 1 to 6 hours per day. In some cases, the frequency is daily, but not in a quantifiable way. Participants number one, two, five, nine, twelve and thirteen spend several times per week, from 4 hours to 2 days per week, for the same purpose. For participant number fourteen, the interaction in social media during the quarantine period was always occasional. For participant eight, the time depends on the number of subjects and work in general. At the beginning of the pandemic, she was more active because of more academic work.

All participants except seven, eight and fourteen personally know people who actively use social media for knowledge sharing, either in a more professional manner or in closed groups for students. Participants seven, eight and fourteen did not know anyone who actively shares knowledge.

As for the factor, namely *enjoyment*, all participants except number fourteen like to share knowledge with others through social media during the Covid-19 pandemic. For the reason that it is an opportunity to strengthen acquired knowledge and at the same time give some purpose to it. As a result, the process of knowledge sharing gives a better understanding of the subject for both consumers and contributors. The feeling of enjoyment brings the use of social media for knowledge sharing because it is a simple, dynamic and interactive manner to share information. However, it also depends on the used platform. Participant fourteen had mixed feeling about knowledge sharing due to the lack of this experience.

All participants except eleven and twelve enjoy helping others through social media because, during the Covid-19 pandemic, many people need help, and the situation brings a feeling of empathy. In addition, helping through social media is also the way to strengthen connections or create the opportunity to make new ones. Participants eleven and twelve like to help in general but prefer to do it personally or by using other means. Participant one helps other people because of the norm of reciprocity, not because of the enjoyment.

For the most part, specifically for all interviewees except eight and fourteen, the action of asking someone's opinion about a particular topic or work is associated with good feelings—for example, the feeling of importance, usefulness and interest. Despite the fact that the reflection requires time and effort, the participants will use the possibility to contribute to someone else's work. Participant five emphasised that helping others is a natural thing for him, either personally or via social media. Participants eight and fourteen did not have this experience. Participant eleven likes to share knowledge but not go further, for example, comment or discuss.

In the case of *behavioural intention*, all participants were planning and recommended using social media for knowledge sharing in an academic environment. Participants four, nine and fourteen are planning to use it in their future careers. Despite the multiple advantages of knowledge sharing through social media, such as simplicity and usefulness, it brings additional flexibility and availability in an academic or professional scenario. Social media continues to be another way of knowledge sharing. However, there are both positive and negative sides. With the ability to filter and check information, the disadvantages of social media can be avoided.

From the *actual use* perspective, mainly for every participant, social media is available because the phone and internet are enough for effective usage. There were some internet problems due to the great number of people online. However, the problem did not affect participants' work in general. At the beginning of the Covid-19 pandemic, participant thirteen

had a problem with the accessibility of the internet. However, after some time, she received help from the state.

During the pandemic, participants one, two, three, seven, nine, ten and thirteen have used social media for knowledge sharing in an academic context daily. In comparison with before the pandemic, the frequency has increased in all cases since physical interaction was quite challenging. Additionally, the frequency of usage depends on the number of subjects, works and projects.

6 Discussion

The study has provided a proposed model to examine the influence of the technology acceptance model, social factors and an individual factor on knowledge sharing through social media among students during the Covid-19 pandemic. Most of the hypotheses, specifically 12 out of 14, were supported by the suggested research model. It can be concluded that the proposed model demonstrates a good fit.

The R^2 values show that technology acceptance factors, social factors and the individual factor explain 70.2% of the variation in behavioural intention and 68.1% of the variation in actual use. Additionally, the factor, namely perceived ease of use, accounts for 13% of the variation of the factor perceived usefulness.

The results showed that the technology acceptance factor, namely perceived usefulness, significantly influences behavioural intention. Perceived ease of use does not have a direct impact on behavioural intention. However, perceived ease of use directly influences perceived usefulness and indirectly influences behavioural intention. The results of the interviews showed that the participants have already used social media for different purposes. Moreover, the students chose a platform that is easy to use for a specific purpose, namely knowledge sharing in an academic environment. Hence, the ease in usage influences the usefulness of social media for knowledge sharing rather than directly on intention to use the platform. Nevertheless, during the Covid-19 pandemic, many students started to use social media more frequently, which increased the importance of usefulness rather than the facility in usage.

The social factor, namely the norm of reciprocity, directly influences behavioural intention and does not directly impact actual use. Thus, a norm of reciprocity serves as a motivation factor that influences behaviour intention, impacting actual usage. All the interviewees believe that people would help you if you are already engaged in social media. Hence, it motivates students to use a specific platform and indirectly influences the platform's actual usage. Furthermore, during the Covid-19 pandemic, students feel the necessity to experience that their contribution is worth the effort, and other users are also open to sharing.

Another social factor, namely social interaction ties, directly influences both behavioural intention and actual use. A greater influence on actual use was found. Moreover, social interaction ties influence actual use through behavioural intention. Because of the Covid-19 pandemic, physical interactions were quite difficult and very limited. Thus, the

existing social ties in social media help to continue with academic life. Moreover, they also lead to creating new connections and the usage of new social media platforms.

The individual factor, namely enjoyment, shows a significant influence on both behavioural intention and actual use. Both relationships are strong. Nevertheless, a greater influence on behavioural intention was found. In addition, partial mediation was found between enjoyment and actual use through behavioural intention. The results of interviews demonstrated that in the Covid-19 pandemic context, for most participants, the process of sharing knowledge via social media brings only positive feelings. Moreover, it is the opportunity to strengthen connections or create new ones.

The factor, namely behavioural intention, has a significant impact on actual use. The results of the interviews underline the importance of social media usage as a way for knowledge sharing. All the participants plan to use social media for knowledge sharing in an academic environment and some students in their future professional careers. Moreover, all the participants had the necessary tools for effective usage. Table 12 represents the summary of the results of the hypotheses testing.

Table 12. Hypotheses conclusion.

Hypotheses	Independent variable	→	Dependent variable	Findings	Conclusion		
H1	Perceived usefulness	→	Behavioural intention	$\beta = 0.368; p < 0.01$	Supported		
H2a	Perceived ease of use	→	Behavioural intention	Non-significant	Not supported		
H2b	Perceived ease of use	→	Perceived usefulness	$\beta = 0.360; p < 0.01$	Supported		
H3a	Norm of reciprocity	→	Behavioural intention	$\beta = 0.093; p < 0.10$	Supported		
H3b	Norm of reciprocity	→	Actual use	Non-significant	Not supported		
H4a	Social interaction ties	→	Behavioural intention	$\beta = 0.113; p < 0.05$	Supported		
H4b	Social interaction ties	→	Actual use	$\beta = 0.122; p < 0.05$	Supported		
H5a	Enjoyment	→	Behavioural intention	$\beta = 0.441; p < 0.01$	Supported		
H5b	Enjoyment	→	Actual use	$\beta = 0.325; p < 0.01$	Supported		
H6	Behavioural intention	→	Actual use	$\beta = 0.437; p < 0.01$	Supported		
Mediation analysis							
H7a	Perceived ease of use	→	Perceived usefulness	→	Behavioural intention	$\beta = 0.132; p < 0.01$	Supported (full mediation)

H7b	Norm of reciprocity	→	Behavioural intention	→	Actual use	$\beta = 0.050; p < 0.10$	Supported (full mediation)
H7c	Social interaction ties	→	Behavioural intention	→	Actual use	$\beta = 0.041; p < 0.05$	Supported (partial mediation)
H7d	Enjoyment	→	Behavioural intention	→	Actual use	$\beta = 0.193; p < 0.01$	Supported (partial mediation)

6.1 Theoretical Implications

The theoretical implications of the study are described in two points. Firstly, the fundamental contribution of the research is the unique combination of technology acceptance factors, social factors and an individual factor in order to explain the process of knowledge sharing through social media, addressing the context of behavioural intention and actual use. Previous studies (Akman and Turhan, 2017; Idemudia et al., 2018; Hartzel et al., 2016) explore the continuance usage or adoption of social media by students in higher education institutions. All the studies use some elements from TAM and additional variables, which are focused more on technology usage. Table 13 shows the additional details of the related research. The research is represented in chronological order. In the context of using social media for a specific purpose, in our case, knowledge sharing, additional social and individual factors play an important role in social media adoption in an academic environment.

Most of the recent studies are focused on specific social media. For example, Teo (2016), Doleck et al. (2017), Moghavvemi et al. (2017) and Teo et al. (2018) explored the usage of Facebook in an educational environment. Chintalapati and Daruri (2017) and Dumpit and Fernandez (2017) examined the usage of YouTube as a learning resource. Al-Daihani and Alhaji (2018) investigated the use of Twitter as an information and collaboration source in an academic environment. Most of the studies used TAM as the principal model. The results show that perceived usefulness directly influence behavioural intention and actual use. Perceived ease of use indirectly influences actual use through attitudes towards using. Factors and conclusions are described in Table 13.

Table 13. Related researches about social media usage.

Author	Sample	Factors	Conclusions
Hartzel et al., (2016)	Students at institutions in the United States, China and India	Perceived usefulness, behavioural intent, actual behaviour, involvement, self-efficacy	All the hypotheses are supported, except the relationship between self-efficacy and behavioural intention.

Teo, (2016)	Thai students	Perceived usefulness, perceived ease of use, attitudes towards technology use, technology use, emotional attachment	Perceived usefulness, attitude towards technology use and emotional attachment influence directly on actual use. Perceived ease of use is an indirect determinant of Facebook use. Emotional attachment has direct influences on all factors on TAM
Akman and Turhan, (2017)	Students	Perceived usefulness, perceived ease of use, attitudes towards using, behavioural intention to use, actual usage, security awareness, ethics awareness	The findings show the significance of direct and indirect effects of perceived usefulness, attitudes towards using, behavioural intention, ethical and security awareness towards the actual usage of social networking sites for learning. The factor namely perceived ease of use is considered not significant.
Chintalapati and Daruri, (2017)	Indian research scholars and students	Perceived usefulness, perceived ease of use, user attitude, behavioural intention	All the hypotheses were supported. TAM is validated as a useful model to study the adoption of YouTube as a learning resource by different academic stakeholders.
Doleck et al., (2017)	CEGEP students in Montreal, Quebec	Perceived usefulness, perceived ease of use, attitude, behavioural intention, use, need for self-expression	All the hypotheses were supported. Hence, all factors influence positively the use of Facebook in an academic environment.
Dumpit and Fernandez, (2017)	Students from public and private Higher Education Institutions in the Philippines	Perceived usefulness, perceived ease of use, behavioural intention to use, actual system use, subjective norm, perceived playfulness, internet reliability, internet speed	Perceived usefulness, perceived ease of use, subjective norm and perceived playfulness are robust predictors of usage behaviour of students. Internet reliability and speed were only significant in some public Higher Education Institutions.
Moghavvemi et al., (2017)	Malaysian students	Perceived enjoyment, perceived reciprocal benefits, perceived status, outcome expectation, the	Perceived reciprocal benefit, perceived enjoyment, outcome expectation influences positively knowledge sharing. Knowledge power and perceived status do not have an impact on knowledge sharing.

		power of knowledge, knowledge sharing	
Al-Daihani and Alhaji, (2018)	Students in the College of Social Sciences at Kuwait University	Perceived usefulness, perceived ease of use, behavioural intention, use, perceived enjoyment, social influence	There is no significant difference between males and females in perceived enjoyment, perceived ease of use, perceived usefulness, behavioural intention, social influence and actual use of Twitter. Female students are more affected by social influence than male students. Seniority might be a key factor in the level of usage of Twitter between students. The GPA of students is not influenced by any of the study's factors.
Idemudia et al., (2018)	Students from North America	Perceived usefulness, perceived ease of use, satisfaction, relative advantage, compatibility, information quality, risk	All factors and relationships are considered strong and significant. Thus, all factors have a positive impact on social media continues usage.
Teo et al., (2018)	Canadian students	Perceived usefulness, perceived ease of use, attitude toward use, behavioural intentions, use, attachment	The conventional relationships of the TAM were supported. The two relationships, perceived ease of use to actual use and attitudes towards use to actual use, not part of the original TAM, were not supported. The attachment had a role in the influencing mechanism underlying Facebook use.
Al-Emran and Teo, (2019)	Oman students	Perceived usefulness, perceived ease of use, behavioural intention to use, knowledge acquisition, knowledge sharing	The results show that perceived usefulness and perceived ease of use have significant direct effects on the students' behavioural intention to adopt e-learning systems. Perceived ease of use influence positively perceived usefulness. Knowledge acquisition and knowledge sharing have a significant positive influence on perceived usefulness and perceived ease of use.
Chatterjee et al., (2020)	Indian academics and students	Importance of knowledge exchange, perceived usefulness of social	All the hypotheses were supported. Hence, all factors positively influence knowledge sharing in an academic context.

media, experience
using social media,
intention to use
social media for
knowledge sharing,
knowledge
contributor,
knowledge seeker

Most of the studies are focused on Facebook. Nevertheless, our interview results showed that half of the participants use at least three social media applications for knowledge sharing in an academic environment. Students use social media like ResearchGate, Academia.edu and YouTube in order to consume knowledge rather than share it. However, Facebook and WhatsApp are used to consume and contribute knowledge, promoting continuous social media usage in an academic scenario. Hence, our study helps to determine the group of social media, which is considered useful for knowledge sharing and academic communication.

Social media is a unique tool that can be used for different purposes, even in an academic environment, for instance, non-formal communication and collaboration, managing accounts, blog creation, improving reading and writing skills and others. However, our study is focused on the combination of knowledge sharing and social media in higher education. There is a paucity of literature about social media usage for knowledge sharing in an academic background. Chatterjee et al. (2020) examined social media as a tool for knowledge sharing using the VIE theory and TAM. The results show that perceived usefulness positively influences intention to use social media for knowledge sharing. Al-Emran and Teo (2019) explored the usage of e-learning systems for knowledge sharing by using TAM and external variables. The results show that perceived usefulness and perceived ease of use directly influence behavioural intention to use.

Secondly, the study explores the process of knowledge sharing among students in an educational environment via social media usage. Most of the recent literature explores the process of knowledge sharing in an organisational context or the background of virtual communities. For instance, Chung et al. (2015) and Zhao et al. (2016) explored the knowledge sharing behaviour in virtual organizations and online communities. Ouakouak and Ouedraogo (2019) examined the relationship between knowledge sharing and knowledge utilization in an organisational context. Yeon et al. (2016) explored the knowledge sharing behaviour of community members in the research and development sector. Kwahk and Park (2016) and Razmerita et al. (2016) probed the process of knowledge sharing by using social

media in an organisational context. Singh et al. (2018) investigated Web 2.0 adoption for knowledge sharing by health care professionals. Table 14 shows the additional details of the related researches. The researches are represented in chronological order.

Table 14. Related researches about knowledge sharing.

Author	Sample	Factors	Conclusions
Chung et al., (2015)	Taiwanese virtual organisation	Cognitive capital (shared goals), Relational capital (trusts), Structural capital (social network ties), Employee's sense of well-being, Employee's tacit knowledge-sharing behaviour, Employee's explicit knowledge-sharing behaviour	All the hypotheses are supported. The results showed that employees' sense of well-being played a positively mediating role in the relationship between cognitive capital, relational capital, structural capital and employees' tacit and explicit knowledge sharing behaviour in the virtual organisation.
Kwahk and Park, (2016)	Employees from various organizations	Knowledge self-efficacy, Enjoyment of helping, Social interaction ties, Norm of reciprocity, Tertius iungens orientation, Knowledge sharing activities, Job performance	Knowledge self-efficacy, social interaction ties and the norm of reciprocity positively influence the tertius iungens orientation and knowledge sharing activities in social media. Enjoyment of helping does not have a significant influence. Additionally, the tertius iungens orientation has a significant impact on knowledge sharing activities in social media, which influences individual job performance.
Razmerita et al., (2016)	Danish companies	Individual factors, Organizational factors, Technological factors, Frequency of knowledge sharing	Individual factors, namely, enjoyment of helping, trust, fear, time, financial reward and organizational factors, specifically organizational culture, national culture influence significantly knowledge sharing behaviour. Technological factors do not influence significantly motivation to share knowledge.
Yeon et al., (2016)	BRIC members in the Biology Research Information Centre at South Korea	Social tie, Social trust, Shared vision, Knowledge self-efficacy, Enjoyment in helping others,	All factors except social tie influence positively knowledge sharing behaviour.

		Reciprocal benefits, Knowledge sharing intention, Knowledge sharing behaviour	
Zhao et al., (2016)	Chinese IT professionals	Enjoyment of helping others, Knowledge self-efficacy, Virtual organization reward, Reciprocity, Attitude toward knowledge sharing, Knowledge sharing behaviour	The results show that the effect of enjoyment in helping others on attitude toward knowledge sharing is decreased by virtual organizational rewards, while the effect of knowledge self-efficacy on attitude toward knowledge sharing is decreased by reciprocity. The effect of virtual organizational rewards on enjoyment in helping others depends on the activeness of a member. In the case of active members, virtual organizational rewards decrease enjoyment in helping others and in the case of inactive members, virtual organizational rewards increase enjoyment in helping others.
Singh et al., (2018)	Indian health care professionals	Knowledge sharing attitude, Knowledge seeking attitude, Intention to use Web 2.0, Trust, Perceived seeking effort, Perceived usefulness, Expected reciprocal benefits, Knowledge self-efficacy, Enjoyment in helping others	Expected reciprocal benefits and perceived seeking effort do not influence both knowledge attitudes and intention to use Web 2.0. Trust does not influence knowledge sharing attitudes. However, the factor influences positively knowledge seeking attitude. The other factors influence significantly on intention to use Web 2.0 through knowledge attitudes. As a result, health care professionals tend to share knowledge driven by intrinsic motivators rather than by extrinsic motivators.
Ouakouak and Ouedraogo, (2019)	Canadian organization	Knowledge sharing, Knowledge use, Business ethics, Affective commitment, Continuance commitment, Personal trust, professional trust	The results show that commitment and professional trust have a positive impact on knowledge sharing and knowledge utilization. Personal trust and continuance commitment do not influence knowledge sharing and knowledge utilization.

Our study differs from others in combining the different types of social media environments for examining students' knowledge sharing behaviour to develop knowledge sharing activities in higher education institutions.

As for the determinants of actual use and behavioural intention of social media for knowledge sharing, the results show that most of the hypotheses were supported. From the technological perspective, it was found that perceived usefulness positively influences behavioural intention and perceived ease of use indirectly influences behavioural intention through perceived usefulness. Similar results are presented in the studies of Yadegaridehkordi et al. (2019) in the context of the adoption of online collaborative learning tools at Malaysian universities; Liao et al. (2015) in the context of collaborative learning performance over social networking sites in higher education in Taiwan; Moghavvemi et al. (2017) in the context of users' perspectives on e-learning at Iran universities. Akman and Turhan (2017) found that individuals tend to use social media because of its usefulness rather than ease of use. Nevertheless, in our study, ease of use strengthens the usefulness of social media. The positive relationship between factors is considered that users find the specific social media useful for knowledge sharing if they do not need to put much effort into the process. Thus, if it is easy to use social media, it is considered useful. Consequentially, the behavioural intention will be more positive.

The social factor, namely the norm of reciprocity, predicts behavioural intention and does not influence directly actual use. It is considered that students would share their knowledge based on their expectations for future benefits and a level of trust of their colleagues, which serves as the motivation to help each other. Hence, students consider social media as a friendly environment for supportive knowledge exchange in an academic context. Yeon et al. (2016) used a similar factor, namely reciprocal benefits, which is defined as the expected benefits of a future request for knowledge. Thus, in the context of professional research information centres, the factor influences positively behavioural intention. Kwahk and Park (2016) and Moghavvemi et al. (2017) found the positive impact of reciprocity on knowledge sharing activities.

Another social factor, namely social interaction ties, positively influences behavioural intention and actual use. The formation of long-term relationships enhances interaction and a sense of belonging between users. Social ties provide mutual support and increase trust. Hence, if the students have a connection with other users, they are more likely to share knowledge. The facility of developing relationships in a social media environment increases the possibility of students' engagement in frequent knowledge sharing and communication.

Chung et al. (2015), in the context of virtual organisations and Kwahk nad Park, (2016), in the context of enterprise social media environment, found the positive impact of the factor on knowledge sharing activities and behaviour.

As for the individual factor, namely enjoyment, a great influence was found on both behavioural intention and actual use. Students share knowledge through social media because they gain a sense of enjoyment by helping others. In the case of participation in a voluntary process in the social media environment, the tremendous impact of the factor plays a vital role in the process of knowledge exchange. Consequentially, if the users enjoy the process, they would continue to contribute and consume knowledge that would promote continuous usage. Hence, enjoyment serves as the strong motivation to engage students in knowledge sharing activities via social media. Dumpit and Fernandez (2017) used a similar concept, namely perceived playfulness. The concept is referred to as the sense of enjoyment and pleasure. The results show a positive influence on behavioural intention in the context of social media usage. Yeon et al. (2016) found the strong impact of enjoyment in helping others on behavioural intention in the context of professional research information centres. In Idemudia et al. (2018), the factor, namely satisfaction, significantly influences the continuance usage of social media. However, Kwahk and Park (2016) found that enjoyment does not influence knowledge sharing activities in enterprise social media environments. Hence, in the educational environment, the process of knowledge sharing is considered as mutual helping and knowledge enrichment. Students believe that by the process of knowledge sharing, they could find better solutions and improve each other's works, which is associated with a sense of enjoyment.

Behavioural intention was found to influence actual use. Hence, students consider the features of social media supportable for knowledge sharing activities. Similar results are presented in studies in the context of social media and e-learning systems (Akman and Turhan, 2017; Doleck et al., 2017; Dumpit and Fernandez, 2017; Mohammadi, 2015; Teo et al., 2018).

In general, the factors perceived usefulness, the norm of reciprocity, social interaction ties and enjoyment predict behavioural intention. Perceived ease of use indirectly influences behavioural intention. Similar results are presented in other studies (Chung et al., 2015; Dumpit and Fernandez, 2017; Kwahk and Park, 2016; Liao et al., 2015; Moghavvemi et al., 2017; Yadegaridehkordi et al., 2019; Yeon et al., 2016). The factors behavioural intention, social interaction ties and enjoyment predict actual use. Similar results are presented in other studies too (Akman and Turhan, 2017; Chung et al., 2015; Kwahk and Park, 2016; Doleck et

al., 2017; Dumpit and Fernandez, 2017; Idemudia et al., 2018; Moghavvemi et al., 2017; Mohammadi, 2015; Teo et al., 2018; Yeon et al., 2016). Thus, the study provides a comprehensive understanding of factors affecting behavioural intention and the actual use of social media for knowledge sharing in an academic environment.

6.2 Practical implications

The results contribute to new insights about the impact of social media on knowledge sharing among students during the Covid-19 pandemic. The study determines the factors which motivate students to share knowledge via social media platforms. The identification of the factors could be used in order to create appropriate conditions for knowledge sharing among students by using available and well-known resources.

The Covid-19 pandemic drastically changed education and the way students communicate and share knowledge. According to Marinoni et al. (2020) in the IAU Global Survey, 59% of respondents replied that all campus activities had stopped and the institutions were closed entirely. Four hundred and twenty-four higher education institutions around the world took part in the survey. Despite the fact that 91% of higher education institutions have an infrastructure to communicate with students and staff, promoting clear and effective communication is considered a challenge. Teaching and learning methods were affected by the Covid-19 pandemic at almost all higher education institutions. The main difficulties are access to technical infrastructure, competencies and pedagogies for distance learning and the requirements of specific fields of study. Thus, most institutions are working on the improvement and development of solutions for teaching and learning online to provide opportunities for students. The pandemic situation showed that even the higher educational institutions that were ready to move to a distance education reality experienced the need to improve distance learning. This study could be used for promoting a better environment for knowledge sharing and communication between students by using social media. One of the main difficulties is access to technical infrastructure. In this case, social media could be used as an additional tool for sustainable communication and knowledge sharing activities because social media is a well-known and available instrument, which requires minimum devices, for example, only a mobile phone and access to the internet.

Due to physical restrictions, the pandemic influenced the digital behaviour of individuals. A significant increase is observed in social media usage. According to Kemp (2020), in April 2021, more than half a billion new users joined social media platforms over the past 12 months. At the beginning of April 2021, the world population was 7.85 billion. 4.33 billion used social media. Thus, 55.1% of the population used social media. From the

beginning of the Covid-19 pandemic, social media adoption continues to accelerate. In comparison to April 2020, social media usage grew by 14%. The results of the interviews also showed that students have started to use social media more frequently for educational purposes. Moreover, all the participants did not have difficulties in accessing and using social media. In some cases, students started to use social media platforms that they did not use before the pandemic. As the necessity for valid information and discussions increased.

Students feel comfortable using social media for daily purposes. Thus, using the technology with which students are familiar is the opportunity to provide flexible learning possibilities and create a powerful learning environment. Moreover, social media brings additional availability. In particular, these platforms enable students to contribute and consume knowledge at any time. This study found that 58,5% (148 respondents) used social media for knowledge sharing more than ten times during the previous three months. 14,2% (36 respondents) did not use social media for knowledge sharing over the previous three months. The requests to complete the survey were sent in January 2021. The answers were collected after one month. It can be concluded that social media could be used as an effective tool for knowledge sharing between students. The platforms can be used as another approach for knowledge sharing and knowledge recording in an academic environment.

Furthermore, the study considers the critical part, which includes students' experience, to understand their expectations. Understanding the factors and communication with students helps to recognise their preferences and needs. The results of the study provide a better understanding of students' behaviour on social media. For instance, many students found social media as a comfortable instrument for sharing and consider knowledge sharing as an integral part of communication between students. As for perceived usefulness, students consider social media as a convenient and effective way for knowledge sharing and collaboration. It is easy to use in an academic environment because students utilise social media very frequently and for different purposes.

Nevertheless, usefulness plays a more critical role than ease of use in behavioural intention. The easiness of usage could strengthen the usefulness of social media. Moreover, already being a member of the group in social media gives more confidence for students in terms of knowledge sharing and communication. Furthermore, the members' intentions and behaviour influence the exchange culture in the specific group. It is essential to use an authentic profile, give a reflection and verify the information. Due to the physical restrictions imposed by the pandemic, social media can be considered a comfortable instrument to replace

face-to-face interaction. Existing social ties and creating new social relationships could provide a friendly environment for sharing and communication.

Moreover, in order to promote mutual sharing surroundings, at least a minimal level of interaction is needed—for example, short conversations, requests, explanations and feedback. Knowledge sharing is considered as helping others and at the same time helping ourselves. In other words, it is considered as a way to solidify obtained knowledge. Hence, knowledge sharing is associated with positive feelings and enjoyment.

Consequently, university management and educators could improve students' learning based on the factors that impact behavioural intention and actual use. As a result, social media integration into formal education could improve students' motivation and performance. On that point, the enjoyment factor had the strongest influence on actual use and behavioural intention. Thus, in order to create a comfortable and safe environment and promote sustainable knowledge sharing, special communities in social media could be constructed for students based on the studied factors. The understanding of the impact of each factor could help to create appropriate conditions for the special communities.

Moreover, the results of interviews provide insight into social media usage. For example, some students show preoccupations with misinformation. Thus, in order to make these communities safe, ensuring minimum security risks and ethical awareness should be paramount.

In addition, the switch from traditional education to distance learning increased the feeling of preoccupation and loneliness. Elmer et al. (2020) investigated Swiss undergraduate students' social networks and mental health before and at the time of the Covid-19 pandemic in April 2020. The results show that the level of stress, anxiety, loneliness and depressive symptoms increased compared to the period before the crisis. With the beginning of distance education, students have started to study alone. Before the pandemic, they had the opportunity to meet at the faculty or during classes. As a result, isolation, lack of interaction and emotional support were associated with adverse mental health trajectories. Hence, the creation of special communities in social media could provide the opportunity to interact and socialise with other students that can impact students' well-being and academic success.

The interview results showed that students feel the necessity to belong to a community and stay connected with other colleagues. The development of social ties between students could support students during the academic year and enhance the motivation for knowledge sharing. According to Marinoni et al. (2020) in the IAU Global Survey, 45% of respondents underlined that the Covid-19 pandemic increased their community engagement, and for 31%,

the pandemic decreased their community engagement. Thus, collaborative work is considered an important aspect of distance learning because it is impossible to isolate themselves due to the number of group work tasks. One of the advantages of social media is that it is easy to access other people and get quick answers and feedback. Hence, the use of this technology increases the interaction with other colleagues and mutual help that brings the feeling of engagement and connection. As a consequence, collaborative work and interaction help to fight isolation.

Another contribution of the study produces valuable insights in providing facilities to enhance knowledge sharing among students. Understanding students' motivation to share knowledge via social media could enhance students' perception of knowledge sharing in general by providing the necessary resources and information based on students' needs and experience. In a consequence, the willingness to share knowledge could increase.

The study results show that students share knowledge on a basic level, for example, sharing notes, scientific articles, ideas and making discussions. Hence, identifying the factors that influence knowledge sharing via social media could help create a knowledge-sharing culture that would support knowledge sharing activities within an academic environment. In order to create a continuous knowledge sharing culture, all the relationships between factors should be taken into account. In particular, one or more social media platforms should be useful and easy in usage for knowledge sharing. Knowledge is the product of critical thinking, debate and creativity. It differs from information. Thus, it is vital to provide an environment for sharing, debates, creativity and critical information. The factor which has the most substantial impact on behavioural intention and actual use is enjoyment. Hence, students should feel that their active participation serves as actual help for other students through sharing knowledge. For example, the construct feedback and short conversations from knowledge consumers could give a feeling of importance to knowledge contributors.

Moreover, a special space for discussions should be provided in order to enrich and solidify the shared knowledge. As it is considered easy to form social ties through social media, students with similar subjects or interests could be connected in specific groups in order to increase interaction. Interaction between students is an efficient way to provide circulation of knowledge which serves as the groundwork for development and innovation. Therefore, the practice of knowledge exchange in networks could improve academic performance and facilitate knowledge sharing activities. Furthermore, it could increase the level of trust between students. The norm of reciprocity is also based on trust. Hence, the implementation of measures should include the creation of a reciprocal culture for knowledge

sharing. One of the possibilities to create a norm of reciprocity is using an authentic profile, providing additional information about the users, adding original sources while sharing and giving reflections about the topics. As a result, the provision of viable knowledge sharing communities in an academic environment could offer a possibility to create and codify new knowledge, make knowledge more accessible and usable, evaluate and reflect new knowledge and enhance the learning process.

Knowledge sharing is the opportunity to gain knowledge through exchange and also to be capable of applying this knowledge in the practical field. Creating a knowledge base of students' tacit and explicit knowledge, including their capabilities, skills, experiences, and works, could help them adapt to new environments and create new knowledge based on existing knowledge. Hence, existing knowledge could serve as a source of ideas, problem-solving, team building and motivation for students. Moreover, the existing platforms could be used by newly enrolled students. Another advantage is identifying missing knowledge, which could give new approaches for future knowledge creations, such as research and studies.

Furthermore, according to Razmerita et al. (2016), in order to prepare students for future jobs, well-constructed knowledge sharing strategies should be created in the faculties. The results of the interviews showed that some participants are planning to use social media for knowledge sharing in their future careers. Hence, the study could be used to create strategies in order to improve the knowledge sharing mechanism in higher educational institutions and develop sustainable knowledge sharing among students.

The study provides a comprehensive insight into the factors which influence students' information behaviour in social media. The information managers and curators work as mediators and collaborators to new informational behaviours in the information society. Hence, they should follow new approaches in information behaviour. The study contributes to a better understanding of students' behaviour and digital competencies while sharing knowledge via social media. During the Covid-19 pandemic, the physical structure is no longer an essential factor. Technology became an integral part of the daily and academic lives of students. Hence, the work in social networks in an educational environment presents new behaviours. Based on the students' behaviour, the improvement and adaptation of appropriate practices for knowledge codifying, recording and organisation is needed. Capturing and recording knowledge is a continuous activity that requires an understanding of different kinds of digital environments in order to preserve knowledge for future use.

Nowadays, technologies demand advanced digital skills from users. Despite the fact that the results show that it is easy for students to use social media for knowledge sharing,

producing and disseminating knowledge in the open digital environment requires a sufficient level of digital literacy, which enables the construction of knowledge and, as a result, progress.

The process of building knowledge demands safe, reliable and high-quality information. Hence, in order to make social media fully useful for education in the context of knowledge sharing, proper training for students and faculty members is required. Higher educational institutions and libraries should work together with the aim of providing preparation programs related to social media usage and digital literacy.

7 Limitations and Future research directions

The study has several limitations that should be taken into consideration. Firstly, in order to analyse the process of knowledge sharing among students during the Covid-19 pandemic, the data were collected over a specific period. In particular, January and February 2021 for quantitative analysis and in March 2021 for qualitative analysis. Hence, for better understanding the influence of the Covid-19 pandemic, future research could conduct a longitudinal study. Secondly, because of physical restrictions, the collection of data was done by using online tools. In order to provide a more detailed vision and take into account the population with no access to the internet, future research could include other manners of data collection, for example, personal interviews and surveys. Thirdly, all the participants of the study are Portuguese students. Thus, the proposed model could be tested in other countries and regions. Finally, the differences in social media participation could influence students' knowledge sharing behaviour. Hence, future studies should include additional analysis with the aim to examine students' social media usage based on gender, age, course or subject.

8 Conclusion

The research identifies the factors that motivate students to share their knowledge via social media platforms. Knowledge sharing activities via social media enable students to share ideas, experiences and so on regardless of geographical location. Commonly, higher education institutions adopt learning management systems and provide physical environments for communication. Nevertheless, the Covid-19 crisis has had a substantial influence on academic communication and knowledge exchange. In previous studies, the process of knowledge sharing through social media has been frequently examined in an organisational context or virtual communities background. In an academic context, the topic of social media was focused on the continuous usage of social media. Hence, the study aims to fill the gap in the literature by using the combination of the technology acceptance model, social factors and the inclusion of an individual factor. To achieve the aim of the research, the mixed method, which includes the quantitative and qualitative approaches, was chosen. A structured questionnaire was constructed based on the scales adapted from the literature. A total of 253 valid answers were collected from Portuguese students. The questions for interviews were based on the results of the quantitative research and the conceptual model. As a result, the data were collected from 14 interviewees. At the moment of conducting the interviews, all participants were taking a degree at the NOVA University of Lisbon.

The results show that the proposed model demonstrates a good fit, specifically 12 out of 14 hypotheses were supported. The R^2 values show that technology acceptance factors, social factors and the individual factor explain 70.2% of the variation in behavioural intention and 68.1% of the variation in actual use. Additionally, the factor, namely perceived ease of use, accounts for 13% of the variation of the factor perceived usefulness.

The theoretical implications of the study are described in two points. Firstly, the fundamental contribution of the research is the unique combination of technology acceptance factors, social factors and an individual factor in order to explain the process of knowledge sharing through social media, addressing the context of behavioural intention and actual use. Secondly, the study explores the process of knowledge sharing among students in an educational environment via social media usage during the Covid-19 pandemic. As for the practical implications, identifying the factors could be used to create appropriate conditions for knowledge sharing among students by using available and well-known resources. Consequently, university management and educators could improve students' learning based

on the factors that impact behavioural intention and actual use. For example, special communities in social media could be constructed for students based on the studied factors.

Moreover, creating a knowledge base of students' tacit and explicit knowledge, including their capabilities, skills, experiences, and works, could help them adapt to new environments and create new knowledge. In order to create a continuous knowledge sharing culture, all the relationships between factors should be taken into account. The factor which has the strongest impact on behavioural intention and actual use is enjoyment. Hence, students should feel that their active participation serves as actual help for other students through sharing knowledge. In order to make social media fully useful for education in the context of knowledge sharing, proper training for students and faculty members is required. Higher educational institutions and libraries should work together with the aim to provide preparation programs related to social media usage and knowledge sharing activities.

9 Attachment - Interview answers

Interviewee 1

Perceived usefulness

1. I agree. During the Covid-19 pandemic, social media help me to stay connected with my colleagues, cooperating to deliver group projects, to number social networks through chats, messages, videos, e-mails, sharing files. I don't even think that the completion of the last trimester, I had at university would have been possible without social media, because of the classes' formats and communication with colleagues.

2. It did. Because it allowed communication with people, with more colleagues. As a result, it is faster, easier and more efficient to get to a conclusion. For example, when you talk to someone, who already had the same problem or knows the source, where the needed information is. So, social media improve cooperation and communication with others during the Covid-19 pandemic.

3. I agree because it is a channel for communication and knowledge sharing. For instance, you can transmit information, knowledge, links, your thoughts and progress or questions to your colleagues. I consider social media as a vehicle, a communication channel, which makes knowledge sharing easier.

Perceived ease of use

4. I do. Most of the knowledge sharing I made through social media is because I am using it to communicate with my colleagues, with university and to search for sources and articles. I also use social media to consume valid information. For example, on Instagram, the Portuguese government has an Instagram page, where they publish the update of the rules currently in place. I found it very useful. There are other ways to share knowledge, but the most comfortable way for me is through social media.

5. I do, because before the pandemic we already knew these channels. However, before we didn't need to use them much for knowledge sharing, because we always had life, physical interaction at work, at school, etc. Nowadays, the usage of social media has changed, specifically in knowledge sharing and communication in academic background.

Norm of reciprocity

6. It depends on which platform you use. For example, on Academia.edu and ResearchGate, I only go there to download papers, not to upload. Even being passive, I can download papers. If we will talk about Facebook from the communication perspective, if you are engaged, if

you communicating with your colleagues, sharing tips on the exams on the groups, sharing questions that other people will tend to move more towards it, that will gain gravity. As a result, more and more people will feel tempted to ask and to contribute.

7. I think it is not direct, because people ask and do get an answer. For example, when others start to ask, soon or later they also will feel tempted to answer something if they do know the answer. As you contributing to it to gain gravity and it does, so it increases the likelihood that you will have your question answered by someone else as well.

8. I think we all think that if you take, you have to give. As a result, an exchange in relationships may change, if there is a balance between what you give and what you take, which then impacts the way you behave in the information exchange. For example, if I would write a useful paper that will be suited for Academia.edu or ResearchGate, I would upload it. However, when it comes to chatting to group chats with colleagues, I think that everyone has their norm, which then would impact the way we behave.

Social interaction ties

9. Yes, because there is no other way of maintaining the social relations during the Covid-19 pandemic because you can't interact in real life with people. If you want to interact with people, you have to do it through social media or phone calls, but most of the phone calls nowadays are through social media. So, there is no running away from it.

10. 5 from 7 days per week I'm working alone. So, I would say that on Saturday and Sunday I use social media for educational purposes very actively.

11. Yes, everyone from university, residence colleagues and my brother. Everyone, that somehow involved with the university, school and learning.

Enjoyment

12. I think I do. Most of the time I share knowledge, not because I like it, but because I have to. However, there are times, when I found something important, like news or articles. I share it, in order to prove some facts.

13. I help because this is how human relations are built, not because I like it. If you want help someday, you have to help others. However, when the help of one particular person was relevant for my work, I really glad when I can give it back.

14. I feel important and I like it, but if you want to give a good opinion it's work. You have to read through it, to put some effort, to spend some time. There is also an ego meter because you feel that someone is consulting you and have the possibility to have the contribution to someone else work.

Behavioural intention

15. Yes, because nowadays it is an integral part of academic life. It is more a necessity now rather than a choice because you will still have to engage with your work colleagues, for example, if you find something useful and important for the project you have currently attended. So, I think the knowledge sharing for social media is here to stay with us.

16. I do, because currently all of us are getting used to working more autonomously and sharing knowledge or ideas through social media. So, I think social media will prevail, because it is really useful and brings additional flexibility. Now, when we started really engaging with this, we as a society understood the advantages that come with using social media for knowledge sharing. As a result, we know the advantages and additional benefits it can bring us.

Actual use

17. Yes, I think I had all that is necessary to engage in social media and knowledge sharing, like devices and the internet. Internet is not always awesome, because I do think that the internet providers were a little bit overworked during the pandemic, because before never so many people at the same time were online.

18. Daily. Mostly because of news and articles and because of my master thesis. In the last semester because of group projects and the delivers.

Covid-19

19. Yes, I do think so, because social media is a communication channel that students can use. Now we cannot hang out personally and personal meetings are not allowed. Even libraries went online. They took the step to be able to provide all the books online. Also, we started using social media much more, because we had group projects to deliver, we had to communicate, share files, ideas, to organize ourselves through social media. All that worked only because of social media, collaborative platforms, etc. We were able to continue classes and to deliver projects and do exams, only because of social media and knowledge sharing through social media.

Interviewee 2

Perceived usefulness

1. I think it would improve a lot my academic performance because in university we have to get in touch with social media a lot of time. Because of the pandemic, we need to increase more productivity based on social media. Even, if we don't want to, we depend on it now. For me, it would improve a lot, because we are already 100% online.

2. During quarantine, it would increase a lot of productivity and efficiency, because now we no longer have another way to study and to do group works. If there were no social media, I do not know how we would be working.

3. It deepens a lot on how people feel about social media. I would say that now it will be easier for people to adapt to social media, but I do not know if they will feel comfortable. because some people prefer to work presential, some people prefer to do everything online.

Perceived ease of use

4. I would say yes because for example in my faculty we have a group on WhatsApp, Facebook and we share some group work. I would say that it is a way of sharing knowledge on social media. I think it is pretty understandable and clear.

5. I would not say that it is easy, because now we are using social media all the time and we get frustrated and a little bit boring. All the time we are at home, attending classes, working on group projects - everything is online. I don't know if it is still easy. I am a little bit tired of using it every time.

Norm of reciprocity

6. In that case, I think it depends more on a person, rather than any kind of activity in a group or chat. As for me, I think that some of my colleagues would help me, but not everyone.

7. I think they would answer my questions because everybody is online. Now everyone uses social media with more frequency than before. For instance, on Instagram, I used to share videos with a challenge from another channel. The challenge is about programming, algorithm. When I do not know the solution, I share it with my colleagues and they help me, they answer me. If they know the solution and want to help.

8. It depends on the people, on each one intention, because we all don't have the same intention. I think I would agree that behaviour influences exchange between people,

especially on information exchange. Well, I prefer to believe that we all have the feeling of helping others.

Social interaction ties

9. Yes, I keep close social relationships, because I always used social media to interact with people even before the pandemic. Now I use social media with more frequency because for example, I live in the students' residence and it is empty. Almost everyone went home, so I use social media to talk with my friends, colleagues from the faculty, my family, etc.

10. I use social media for educational purposes, several times per week because I have some works to do in groups and on weekends we are working and sharing educational things, like links and sources. Even when one group doesn't understand me, I ask things from another group.

11. Yes, I know a lot. One of my friends is sharing on Instagram his knowledge about good habits and how to become a better person with time management and money management. He shares a lot of things on social media. Also, my other colleague is sharing on Instagram poetry to inspire others to live under this pandemic situation.

Enjoyment

12. I like to share knowledge with others. I mean I don't fabric things so that everybody could see, just some friends and colleagues. I also help my cousin. I am teaching her English and Mathematics. I share what I know with her by using social media.

13. I do enjoy it because it is a way of spending time. I also like to help others, because I always had that feeling of helping others and that is why I do this. If a friend or colleague will ask me for help or support and if I know the subject, I will help.

14. I appreciate they need me because it means that they trust me to do something. Their attempt to ask me means that they think I know the subject or this particular thing and then I can help them. I appreciate the effort of the feedback.

Behavioural intention

15. I do not plan to use social media to share knowledge with a big impact. If I will see the opportunity or the situation and if I know something and that could help others, I would share. However, I don't plan to share something with a big impact.

16. I do recommend it a lot because now we are living in the information era. Information is everywhere and the more information we have, that what we become. Sometimes, when I do some exercises or some work and if I have trouble, I would search on the internet and I see the solution. I wouldn't see the solution if there is no one put it there. I think it's so good and I recommend it lot because social media help others. We have the same issues.

Actual use

17. Yes. I have internet and devices, my phone and laptop.

18. I would say every day because we have classes and a lot of work. So, I use social media for knowledge sharing often and frequently.

Covid-19

19. I think this pandemic influences the way how people use social media for sharing information because now they are obliged to share information through these channels. There is no other way. I mean people can find other ways for sharing things, but now this pandemic brought us the need to use social media to share information. For instance, now we are having classes online and I study together with my colleagues and as we cannot meet physically because of the pandemic, we need to find other ways, for example, social media or collaborative platforms. With professors we use Zoom, but with colleagues use more WhatsApp, Messenger and other social media.

Interviewee 3

Perceived usefulness

1. I agree because it's the main way to stay connected with colleagues and to share information regarding the classes, especially when you can't be there physically. I often end up having chat rooms or sharing what's being talked about in class or information the professor might give during the class and it is particularly useful. So, social media is important anyways for classes and to share information or other students' works. I think during the pandemic it became even more important because people don't get the connection as much through other means. As a result, it became the main way of networking with other students. I guess exist distances with the professors and the students, especially since classes are online. As a result, it is becoming more important to share things between other students, because we may miss something that was said during class. Another example is that you could not attend a class for a wherever reason, so it becomes more even the necessity to always get in touch with other students.

2. I agree because by using information that other students share on a certain subject, you can improve your work. It gives you a guideline, stronger bases to work on and sometimes someone can share with you very important information, which helps you a lot on your productivity. Overall, it defiantly makes you more efficient because you are working more as a group or at least you get a brainstorm together or sharing thought with other students. As a result, you end up sharing information and knowledge across your group or the whole class.

3. I think so. It is a way to connect with other people and especially the other students. So, it does help you to share knowledge, because you connect with others. It is another way to share knowledge.

Perceived ease of use

4. I think I know how to use social media for knowledge sharing and it is easy. Especially for our generation, as we are using social media for pretty much anything over a decade now or even over than that. So, it is easy for me, maybe not for an older generation, but I think especially nowadays social media is very intuitive for a given goal.

5. I think it was already easy to use before the pandemic and I do not think it is changed much. I guess because of the distance, it became more a necessity than before, which makes it easier. I guess one challenge would be to create a group or room to share those things, but I think it is easy to use. I think the pandemic did not affect much on this aspect.

Norm of reciprocity

6. I think in this kind of situation, they are more likely to help, because of the pressure. For example, if they would see lots of other people sharing their knowledge, perhaps they are more likely to share as well. Just out of the obligation and reciprocity, because they feel like they should give something back as well.

7. I think so, defiantly, because they know you are helping them, and they feel more obliged to help you in return. So that you can keep helping them.

8. I do, especially because the behaviour itself also shapes the norm and how the platform is built. The developers have kept in mind how people would use them. If people would see you as the one who wants just to have information and do not help, they are less likely to help. They might still help, but it is less likely. They do not feel the mature helping.

Social interaction ties

9. I do. I was already kept close social relationships with people through social media even before the pandemic. I always saw the necessity to be reachable through social media. The Covid-19 pandemic made the distances a lot larger because you cannot travel as much. I start to use it a bit more. However, I keep using it because I did it before.

10. I do not dedicate too much time to social media. I use it in parrel while doing something else, but I end up using it over the day intermittently. So, daily, but I guess not in a quantifiable way.

11. Yes. I guess the entire class. I think my colleagues from the faculty and some other students from the university.

Enjoyment

12. I like to share knowledge in general. Especially, when it is something that I am a passion about or something that I enjoyed learning. As a result, I will try to share it. I enjoy sharing knowledge during pandemic through social media.

13. I do it for a reason, I feel like I strengthen the connections that I have. If not, it is also the opportunity to make a new one. That is something I enjoy in the process of knowledge sharing through social media.

14. I like it and enjoy it. In a way, I feel some straight validation that people see in me on special topics. I like when I really can help. If not, I feel confused. In general, it makes me feel good.

Behavioural intention

15. I do, because it is something I already use and know how to do. So, I will keep doing it, just because it is practical. It is a way to reach people.

16. Yes, because it is very practical and easy to reach people through social media. It is something people already used all the time for many reasons and it is easy to adapt. Also, it is everywhere and there is already the tendency to use those platforms to share knowledge and other things in an academic context, etc.

Actual use

17. Yes, I have access to social media. The internet is unstable sometimes, but in general, everything is nice. I have internet and devices.

18. During quarantine, I use social media very frequently, daily. Because it is practical and I am still studying and I have to do a lot of projects. So, I am obligated to always be in touch and to always use it. I have classes every day, so we share the information about the class and on weekends we are using social media to work on projects.

Covid-19

19. Personally I have always seen students use social media for knowledge sharing. It's been consent from me since 7th grade. We had a group on Facebook for the specific class, that we had used for knowledge sharing. In the faculty, it became an integral part of studying. I think the pandemic did not affect me too much. I think, it just changed the way people obtained the knowledge, that they did not use to share. Before the pandemic, people always had an opportunity to ask directly for some information, especially on campus. Now, the only way to do it is through social media. So, before the pandemic social media was already used for educational purposes, but it starts encompassing more parts of the process.

Interviewee 4

Perceived usefulness

1. Yes. Since we are home, it is easier to access social media than only use our manuals, collaborative platforms, etc. It is a good way for communication and sharing, which impact positively on academic performance, because of the dynamic sharing.

2. I do. We are the generation, who use computers and cell phones for everything on our daily basis. So, I do believe that it is important to take all the benefits from it. As it is easy for us to use, we can use it for educational purposes. For example, share documents and discuss different topics.

3. Yes, because during quarantine, we all are at home and social media is the easiest way for sharing information. Also, we have all the tools for using social media and at the same time to feel connected in all the ways.

Perceived ease of use

4. I do know how to use it. Actually, I use it more since we are in quarantine. We are always on Instagram, Facebook, LinkedIn. I do believe that we all consume information from social media. I am a geography student, so I learn a lot from social media. From the knowledge sharing perspective, I know how to use social media, but I consider myself as a consumer, I do not share too much.

5. Yes, because we are all at home now. Mostly, people have a cell phone or computer. We were already using it before the quarantine and now we are using it more than ever before. Thus, it became easier.

Norm of reciprocity

6. I do. I think that in a specific group if someone would ask me for help or anything, I would help and other people too. Even if I do not know the person, because we have empathy for other people. I also think that it is even easier for you to ask for help by using social media.

7. I do believe because if people see that you are active in the group, they would definitely help you. Especially, the one which you helped before.

8. It depends. I do not believe that a negative attitude would influence a lot on knowledge sharing. Maybe only in more professional groups. However, good intentions and behaviour, for example, the use of a real profile or being active, always works better.

Social interaction ties

9. I do, because nowadays, it is impossible to keep close social relationships physically. So, I use social media a lot to maintain close social relationships with my friends.

10. I use social media for educational purposes six hours per day because I do not have any other choice.

11. Yes, not too much. Only one friend from faculty.

Enjoyment

12. Yes, because I found it interesting. I like to learn something new and at the same time apply my knowledge in someone's else work. If they want of course. At that moment I feel that I have helped someone and I am useful.

13. Yes, because it is an integral part of knowledge sharing. For example, I am participating in a volunteering and non-governmental association, namely UNICEF, ONU. So, through Instagram, I see a lot of requests for help and I help whenever I can, depending on the cases.

14. I feel good. I give my opinion and feedback with no problem. It means that I do have some valuable information or I do know how to do things or for something my opinion matters, so that is good.

Behavioural intention

15. Yes. I am taking my master's degree to become a teacher and I am already working as a teacher. So, I am planning to use social media, not only in an academic environment but also in my professional career. Nowadays, it is very important and became an integral part of education.

16. I do, because it is easy, practical and useful.

Actual use

17. Yes, I do. I have internet and devices.

18. I would say frequently, specifically two in two weeks.

Covid-19

19. Because of the pandemic, social media usage for knowledge sharing increased. People understood that we can use social media not only for entertainment but also to study and work. It already exists before, but not that active as now. I think after the pandemic, we would continue the active usage of social media for knowledge sharing because we understood all the benefits.

Interviewee 5

Perceived usefulness

1. I think it could greatly help because you have a direct channel to communicate with your peers since you are so far from them. That could develop your study network or you can just use social media to share knowledge and help each other.

2. I think it has the capability to help you to be more productive at least while working in an online setting. For example, due to social media, you can have connections with your peers, find more material, etc. Even organizations start to make online conferences and that also helps you to develop in your academic life. So, not only students but the professors and other organizations use social media to share different material and resources so that you can better engage and better use your online resources, such as social media.

3. I think it does. Using social media can be a very big benefit if you want to share anything, because of the immediate contact you can have with anyone.

Perceived ease of use

4. I think, I do know how to use social media for knowledge sharing, because of the university. I already have a network of people I can rely on, but the problem with social

media is that we have a lot of sources. I can not only find the sources that I agree with or that I trust. You can also find a multitude of other sources that may not be as right. So, the information maybe not the most reliable. That is the main problem with social media in general. We should be careful, but in general, I think, I am prepared to look for a piece of information and analyse where it comes from and do further research, not only with a topic on a social media platform.

5. I think it was maybe easier, because everyone in every kind of business, even our faculty, was sourced to move into an e-learning basis. So, people used social media networks to better share a multitude of resources that maybe did not share before. In that sense, I think it is easier because more people adopted social media to do this type of work, to share knowledge and information, at least in an academic setting. I think in an academic context, at least in my institution, they rely on social media to share and to connect with the students.

Norm of reciprocity

6. I think it is definitely a plus. It means that you already have a connection. So, when the transition happens, it is easier to start helping each other and sharing, but I do not think that it is a hard thing to do. If you did not use it before, you could easily join any type of group and start sharing. I joined a few, during the Covid-19 pandemic and I think it was easy to find the information I needed, either by searching from the back vlog of other questions or by posting my own.

7. Definitely yes. I think people are always eager to share. If they are in those groups and they know the answer to your question, they will most likely give you an answer. You just have to try to make sure that the given information is correct.

8. I think outside of the academic setting, this social norm, which includes sharing information is different. When you focus more on the groups of the specific subjects, I think there is more formality, at least you come from the point that everyone is trying to find the same goal and everyone at least has the introductory knowledge of the topic in the specific group. I think that exists the social norm for what you should do and how you should act, like what is acceptable. Mostly inside of the groups, regarding the faculty or some technical knowledge in my case, it is an inherent norm. Outside of it, in other environments, I think that is much more.

Social interaction ties

9. I do, especially with people from my degree. If we used to study together or do work together, instead of just stopping we started to help each other more through social media. In terms of new connections, I think it increased a lot. The people with whom I am not usually in contact I start to talk a little more. It would be the case of any conference or anything related to that I joined a few more groups, but these groups were recommended to me by mostly professors at the faculty.

10. I use it daily. But it depends on which assessments I have during the week. For each subject that I have, I spend 2 hours per day. So, maybe 6 hours per week.

11. I think my professors. They are pretty active with sharing conferences and other stuff. Not as many students. Maybe students who are already writing master thesis. They are sharing important information, links, even job opportunities or internship opportunities. If I am thinking of students, I cannot remember anyone who is that active.

Enjoyment

12. I think I do. It is important for our work to have colleagues and network in order to help each other for a better understanding of the subject. It is very important to keep that relation.

13. I do enjoy helping my colleagues, because through explaining to others, I also help myself, because if I am explaining something that I already know or providing some information I am forced to rethink the subject again. So, I am in a sense studying or finding information. At least in my degree, it is very important to have a relationship if there any technical exercise and to analyse things from multiple perspectives.

14. I do not think that I have a specific feeling. I will not feel something special. For me, it is a natural way. It is the same if someone would ask me for help after a class or in the faculty. I will just be ok and try to help if I can. If I do not know how to, I cannot help. So, I think it is the same, how it was personally.

Behavioural intention

15. Yes, I think it is a very useful tool. So, I will keep using it. The best part of it is a group setting. So, you can have a specific group for different themes. I think that is what makes it, the instant correction that you can have that would make it feasible to use.

16. I do, because you have a way faster connection with other students and most social media apps are on your phones. So, they are always with you and in that sense, it is a little bit better than e-mail. I think having long communication with someone through e-mail is way harder

than having long communication with someone through any social media platform. In a sense of speaking, talking, everything, it is a way easier to share through social media platforms. I mean the types of information. You can also send all of these things through e-mail, but I think it is harder and social media makes it easier.

Actual use

17. I did for the most time. I always had a phone at least. For my academic work, I required a computer. However, I had a problem at the beginning of the pandemic, my computer broke, so I was behind the work for some time. However, I always had contact through social media at least through my phone. If I needed it, I could ask for help or I could help anyone.

18. About six hours per week. It depends on what I have to do for a specific subject. If I have three subjects, I spend 2 hours on each one per week. So, I would say that it is frequently and way more than before pandemic.

Covid-19

19. I feel that it did. Before pandemic with my colleagues, I usually worked on group projects and even individual tasks, but more personally in the faculty. For example, we could schedule the meeting at the faculty through social media, but we would not properly share many things directly. I would share a file or bibliography, but we would not actively discuss it. Before, I used social media for one hour and a half per week and now it is like 6 hours per week with the same group of people. We have groups in WhatsApp, which we actively use. However, with the pandemic we started to use other platforms like Discord for educational purposes. So, when the pandemic started, I realised that I start to use social media way more.

Interviewee 6

Perceived usefulness

1. I do, mainly due to the fact that during this period we don't have access to the library and also we know that social media today have very rich content that can help us immensely. Since we cannot interact physically, social media helped a lot in knowledge sharing. The sharing became even greater because people were at home and started to contribute a lot in terms of knowledge.

2. From my perspective, social media have increased productivity and efficiency in the aspect of knowledge sharing. There are other various resources, but at this moment I see social media as a facilitator for sharing knowledge. People are using social media very frequently. Thus, it is always easier to find and share information.

3. Yes, because we live far away from each other. Thus, social media facilitates our communication and knowledge sharing. We could use e-mail instead. However, I consider social media as a facilitator in this sense of sharing knowledge. It is easier to share and it makes us feel closer to each other.

Perceived ease of use

4. I do and it's easy for me because I also use social media at work. Thus, I often use it on a daily basis. It is easy for me to search things by keywords. Even if social media is new for me, it is easy to learn how to use it for a specific purpose.

5. I do, because I consider social media as a great facilitator in our lives. From some perspective, it could be dangerous, for example, it is easy to get lost in social media or focus too much. However, it is very easy to use, especially in this period, when we all are at home. People are spending more time on social media. What was already easy for me became easier because I started to use it more often than before the pandemic.

Norm of reciprocity

6. I do. I believe that on social media we influence a lot of other people. When you do something, give, take, share, it influences your network of friends on social media. Everyone is influenced by their friends, just like we influence our friends. So, I think that other people will certainly help because the social media influences a lot those people who are in our network. For example, you share, someone comes and contributes and then the exchange starts.

7. Absolutely, because it how social media works. For example, when people ask questions, they can use the exclusive story function on Instagram. As a result, I see a lot of interaction with everyone. I have never done this kind of interaction, but I interact with my friends and I see many people interacting with other people. These users end up influencing themselves and responding a lot the content. If you interact actively with other people, they would answer your questions.

8. Absolutely. Intentions, behaviour and cultural issues influence a social norm. If, for example, we compare the culture of knowledge sharing in Portugal and Brazil, it is different. The culture in Portugal is different from the culture in Brazil. In Brazil, people have the immensity of sharing content, because people are very focused on social media. Here in Portugal, it's different. If we make a comparison, we'll see that these cultures, these behaviours are different from country to country. It has its specificities.

Social interaction ties

9. Yes, because at the moment the social media is a tool that brings us closer. We can't have face-to-face moments right now. So, to maintain our relations, social media is the tool that helps us. Thanks to social media we are able to maintain closer and stronger relationships.

10. One hour per day for educational purposes, because whenever I need some information, I use social media. For example, YouTube. If I don't know how to do something, I'll find a video about it. Social media is a facilitator, they have more direct and summarised answers. The information I find is a summary of a large piece of information from another portal. That's why I use social media a lot.

11. Yes, lots of friends. They are sharing knowledge in different areas: health issues by physiotherapists and nutritionists, physic teachers, English teachers, different people with different types of content.

Enjoyment

12. I like it, but I don't share it that often. I believe that I benefit more from people's sharing than I do myself. I don't have a habit of it. The social media itself, I use a lot, but I'm not a user who shares a lot.

13. I do, I like to interact, comment, support anything that people post because I feel that support, that I give to people. In this sense, I feel obliged to thank, interact and also communicate more. Especially in this period of the pandemic to maintain relations. During quarantine, people feel lonelier, alone, so I always like to be close through social media.

14. Firstly, I feel good, because someone asked for my opinion. I feel free to interact. If I am good at that topic, for sure I feel free to help and to tell what I think.

15. Yes, I do. I always have the desire to share what I learn and already knew. I'm thinking of structuring it and sharing it most comprehensively way in order to help people.

Behavioural intention

16. Yes, of course, because I see social media as facilitators of communication today. Social media connect us with the world. I think that social media are enriching factors in our academic life.

Actual use

17. Yes, social media were available to me. Even before and during the pandemic I had access to all the social media I use.

18. Before the pandemic I already use social media, but the frequency has increased. In the academic context, I use social media three times a week. I also started to use social media more in the academic context.

Covid-19

19. I think the pandemic influences social media usage because, in the context of Covid-19, we are very distant and often spend time on social media. Before Covid-19 we had many other options for sharing and communication, it could be in person at the libraries and other ways. Now, when we are going through this social distance, we are using social media a lot more in this period.

Interviewee 7

Perceived usefulness

1. Yes, it could. Because of the Covid-19, we stopped having face-to-face classes and from that moment, the contact between students and the help between students disappeared completely. So, through social media, we can communicate, work together, develop ideas. Collaborative work between colleagues is essential. Social media help a lot to fight isolation because of Covid-19 and helps to develop collaborative work among all of us.

2. Yes, it has increased. Because through social media we are sharing knowledge, that is, we talk to our colleagues, or collaborate, or we communicate. It allows us to challenge those judgments, which helps us to say what is wrong, what is not wrong, what is well done, what they think is not well done. This obviously helps efficiency and productivity, we manage to do our jobs with better ideas, because we have our colleagues here who put us to the test.

3. Yes, it's obvious. We are all locked up at home and social media helps a lot. Of course, we can use other tools, for example, calls, but it is difficult to organise group calls. So, group calls could be a solution, but using social media makes it much easier to get in touch with colleagues. For example, if I need to send a message, I use WhatsApp or Facebook, etc. It is extremely easy to access information from colleagues, to access information in general. Colleagues share with us and we share with colleagues. So, it makes it really easy. It's essential.

Perceived ease of use

4. I know how to do it simply, for example, I can contact colleagues, that is, the way we are talking. Which is a way of sharing information and so on, but perhaps it is not the most efficient way of doing it. Maybe I don't know how to do it better. I can do it in a very rudimentary way. I think I could do it easily, but the massive doses of being in front of a computer could influence me badly. I think I am quite trained in mastering new platforms and new ways of sharing information and accessing information. I think it is easy to learn, but I don't do it the best way.

5. I think it's easy because social media is built to be very intuitive for users. It's in their interest to have as many users as possible. So, social media are made in a way that they are easy to understand and easy to access. From there you can easily work with it. Some are more lost, some are not, but it's normal. Overall, it's not especially complicated.

Norm of reciprocity

6. I think so, because despite everything, all the problems with the issues of social media and all that sometimes toxic environment, people still tend to try to help each other. As we are very closed, because of the pandemic, that is the only way we also had to contact and the only way we had to help each other and I think that people still tend to try to help each other.

7. I do, because if you ask the right questions, you are contacting the right people and I think in general people are quite open to trying to help and share the knowledge. For example, I share knowledge and others are sharing some of theirs and we try to establish a knowledge sharing that helps for all. Also, there are cases where people are more individualistic and do not want to share their knowledge, but even in general that is not what happens. In my case, if I wanted to exchange knowledge, people were always available.

8. I think so. Despite the algorithms and all that, social media is made up of socially conditioned people with conditioned behaviour. Social media is a reflection of that. Of course, the issues of people being animated allow people to do a certain action, to feel comfortable to act in ways that perhaps life wouldn't offer, but despite everything, there is a relationship in the conditioning and this relationship between social behaviour and what goes on in the social media.

Social interaction ties

9. It is difficult to answer, because I don't know if it is possible to maintain solid relationships that are based on social media, compared to relationships that have been built in person. I think that, despite everything, there is a connection made by social media, but if there is

already a face-to-face relationship. For example, if I have already met you, we can be a long time without seeing each other, but we can maintain contact through social media and there is a relationship despite all and some level of depth. Now, if we are going to talk about relationships, which are built through social media, then I have more doubts. So, with some people, I keep in touch through social media.

10. For educational purposes, I use social media 2-3 hours per day. On the one hand, because I teach, on the other hand, because I have classes. For example, WhatsApp is one thing that we are always connected to. For example, with people from the master's group and we are systematically exchanging contacts with each other and so we will help each other.

11. Actively, in a systematic and organised way - no. Maybe some institutions.

Enjoyment

12. I like it a lot. It is also a way for us to solidify our knowledge, that is, knowledge acquired by itself does not serve for anything or another variant is to discuss the knowledge and how we acquire it, how other people develop it and that is what knowledge is for. What is closed serves no purpose. With the aim of creating an interaction, we manage to share our knowledge and solidify and develop it amongst everyone.

13. I like it. On the one hand, because it makes me feel good about myself because I am doing something for someone. On the other hand, it can be a selfish reason, for instance, look I am helping and one day you have to help me.

14. I feel good. Because I see that other people are interested in my opinion. From here, I feel that my opinion is valued by others.

Behavioural intention

15. I'm planning to because even in a face-to-face context it helps a lot. It makes information available to a much wider universe than it was before the state. Social media makes it available at any time when the person wants it and not at a specific time when it has to be arranged exactly to be done. I think it is also very useful in face-to-face teaching.

16. I recommend it because my experience is very positive and in the sense of possibility to have the knowledge available whenever you want anywhere. For example, being on the train and having access to knowledge through mobile phone. So, I highly recommend it.

Actual use

17. Yes, I always had internet and devices.

18. I use social media for knowledge sharing very often during the Covid-19 pandemic. Daily and practically.

Covid-19

19. Without any doubt it has an effect, because we immediately realized that in order to keep in touch, to be able to continue to share our experiences, when we were in quarantine we changed to distance learning, from there we stopped having contact in person and we realized that the only way to keep in touch and be able to share our knowledge was through social media. During the face-to-face teaching, we soon formed a group on WhatsApp to always be in contact with others and with the pandemic that became a unique way of communication and sharing of knowledge, ideas, dialogue among us.

Interviewee 8

Perceived usefulness

1. I think it was a support. The use of social media during the pandemic helped because we had distance learning and there was a lot of knowledge and information sharing through WhatsApp.

2. Yes. As there was the sharing of knowledge and information through WhatsApp and at this point it made the work more productive. If there hadn't been this facility of communication, probably there were not so much sharing of information, and content. Even sharing to do the work and even share the whole work. For these reasons, it was very productive. For example, if we compare it to email, sharing through WhatsApp is more interactive and dynamic. I think this sharing was productive, which also positively influenced efficiency.

3. I also agree. I consider social media as a facilitator because of the dynamics it has during knowledge sharing. Also, it is more effective and faster, which facilitated knowledge sharing.

Perceived ease of use

4. Yes, I know how to use social media for knowledge sharing. Also, I think it was easy to learn how to use them. It is intuitive.

5. I think it's easy to use social media for knowledge sharing even in the context of a pandemic and even before the pandemic. In the current moment people use it more frequently and it is a relatively simple form of communication and knowledge sharing.

Norm of reciprocity

6. I was already involved in this network, before the pandemic, for example in the group on WhatsApp regarding my master's degree. Before the pandemic, I used this framework of knowledge sharing that I didn't use until then. I used social media only for communication. With my master's degree, I started using information and content sharing as a working tool. So, I didn't have problems with the help I needed, as I was already involved in the group, it was easy to get help from others.

7. Yes, whenever I questioned, I got answers. If it is in a context of group working, it is in the interest of all colleagues. Even if it is from an individual point of view, I always get the answers or help or information from colleagues who are in the network. I think the fact of sharing the knowledge before, is not very important. If the group already exists, someone will always answer, even if you don't share anything.

8. I think so. A culture of exchange that exists in the group, that you learn, that is, you begin to understand the dynamics of the group, what is a means of sharing knowledge and what you can use as a means of sharing knowledge. Also, the other people with whom you are involved in this network learn it. I think it ends up influencing everyone to adapt and behave according to that sharing pattern and it is a kind of a code. In my experience, it has always been very positive. I think it works well. I think there is a pattern of behaviour that people follow. There is the idea of sharing and this is a sharing source, so let's share.

Social interaction ties

9. I don't have a regular or very intense activity with social media. Maybe it's no. I don't relate socially through social media.

10. At the beginning of the pandemic, I used a lot, now much less, because of subjects. This semester I have fewer subjects than last semester. Last semester there was more intense interaction. If we are going to talk about the beginning of a pandemic, it was quite frequent, specifically every day Now I use it very little.

11. Not intensely, no. I do not know someone who actively uses social media for knowledge sharing.

Enjoyment

12. I like it because it is simple, fast, dynamic, interactive and immediate. You want information and very quickly you get the answer or feedback. When you are communicating by e-mail it takes much longer compared to conversations through social media. People are

more connected. They get the notification immediately and then a response. As a result, you don't have to wait a long time. So, it's a very effective means of communication.

13. Yes, whenever possible, whenever I was asked to help, I helped on social media or outside social media. For me, it's a more natural thing. I am a person who likes to share knowledge and experiences.

14. I still didn't have many of those experiences. There wasn't that kind of interaction. So, I cannot give an answer.

Behavioural intention

15. I am because I haven't finished my master's degree yet. At least during my master's degree, I will use social media for knowledge sharing. Now it's essential because we are studying distance. So, I'm going to use it because it's practical and essential now.

16. I recommend it because my experience is positive and for this reason, I recommend it.

Actual use

17. Yes, I have good internet at home and all the tools I need. At least, my mobile phone is always with me.

18. At the beginning of quarantine I used it very often, now I've stopped because I didn't have any classes, then I'll start again. Last year, especially in the frequency of work, it was great, almost daily, two in two days.

Covid-19

19. Yes, I think that the sharing of knowledge through social media has increased. Precisely because people stopped meeting in person, but even before quarantine, this mode of study was frequent, this interaction, this use of social media to share knowledge, do work and exchange ideas. Afterwards, of course, it was very useful, but before the pandemic, these means and this form of communication already existed. So, with Covid-19 it just intensified. Of course, when the pandemic started it became the only form of communication.

Interviewee 9

Perceived usefulness

1. I think that because of social media you have more capacity to interact with others. Others may know more than you and it helps in the exchange of PDFs and documents. As a result, you can get improve your grades. So, your academic performance will improve.

2. Yes, because I may think I have all the necessary documents and PDFs, but other people may have more knowledge and more material. Then through sharing, with each other we can improve our productivity and efficiency. If you have more sources, it always helps to have good progress in your studies.

3. Yes, because everyone has social media and everyone uses it the way they want, either personally or academically. If you search, you have friends, who share academic sources, social media became very useful for you.

Perceived ease of use

4. I think I can share knowledge through social media and I also use it for various assignments. We have several groups from which we can share knowledge and I find it useful. I think that social media has a positive role in knowledge exchange because it is easy to use and very intuitive.

5. I think during the pandemic, it is easy to use social media for knowledge sharing. I believe that this is the best way because of the dynamics in sharing. Also, because the distance is a click and if you have a doubt on how to use it, you can always ask your colleagues how to search for knowledge and share knowledge. It is also easier than looking for some book on a specific topic in the library. In other words, there are no limitations and now the libraries are closed.

Norm of reciprocity

6. I have several groups for academic work and it's quite useful. I think it depends on the person more than the group, but usually, if they are involved in the group at least someone will respond. However, if the person wants to help, then they will help through social media or vice versa.

7. It depends. If I share useful things, it will have an effect and then I will get feedback and help in the future. If I share the non-useful things, then I might get ignored.

8. Yes. For example, if you are going to be in an academic environment, where everyone is very individualistic and there is no collectively, no sharing, no ideas. For instance, if you are involved in the dead group for that is, in the group where nobody shares ideas, information, knowledge, etc. If there is no exchange behaviour, as a result, the group will not continue to exist. I think social media itself is based on sharing behaviour.

Social interaction ties

9. It depends. If you have a solid relationship before the pandemic and in the context of the pandemic you will use social media, the social relationship with the people would increase. However, before social media, you should have a solid social relationship in person.

10. I use social media for educational purposes 4 hours per week. Always when I need to use it.

11. Yes. Mainly my professors and some colleagues, who are the top students in order to do the assignments.

Enjoyment

12. Yes, especially if I think this knowledge is useful for other people. If I think it is useful, I will share it and vice versa, if I don't think it is useful, I won't share it.

13. I enjoy helping others through social media during the Covid-19 pandemic because I might also need it one day. I think also because of reciprocity.

14. I think it's interesting because sometimes it leads to debate and debate itself increases social relations. If a person doesn't discuss and debate with others, then discussion of ideas enriches anyone's knowledge.

Behavioural intention

15. Yes, because it can be useful for my profession. When I will have my profession, I may need to go back in practice to see what I have published, what I have shared, or what I have not shared, etc.

16. Yes, even for the benefit of future students. For example, it can be useful for us now and as it is on social media it is very easy to share with first year students, for example. The documents I have are for the third year, but they can also be useful for them and it is easy to share through social media.

Actual use

17. Yes, they are available. I've always had internet and at least a mobile phone.

18. I use social media for knowledge sharing every day. First because of classes, second because of tests and group work. During the pandemic, it is a better way to communicate and share knowledge with colleagues. We need to communicate and as a result, we communicate through WhatsApp, Instagram.

Covid-19

19. Yes, because of the pandemic we can't be with people directly, so social media became a way of connecting people. Before the pandemic, for example, we would study in a library all together and now we can't. Now we look for a PDF book and we make a group to share the book. It's direct, easier and I think less time consuming.

Interviewee 10

Perceived usefulness

1. Yes, it can improve academic performance. Because during the pandemic people should be at home and the only way for us to communicate is by using social media.

2. I do, because many times if I have a question, I can ask a person or a person can ask me and so we can improve our productivity and efficiency. During the pandemic, we can only do those kinds of things through social media.

3. Yes, it can make it easier because it is the only way for us to communicate with each other and share knowledge and information. The fact that we cannot leave the houses also has an impact on the manner we communicate with other colleagues.

Perceived ease of use

4. I think I know because I'm already in that generation where we were born into it and for us, it's much easier to learn and I don't think it's a big difficulty. It's clear and understandable because social media was made in a way to be as understandable as possible.

5. Yes, it is an easier and quicker way, because social media is already developed in order to share knowledge, information and content at different times as if it was face-to-face. We don't have to write letters, even use e-mail for knowledge sharing is not that dynamic and easy as by social media.

Norm of reciprocity

6. Yes, they might, because all the people went through that means of communication during the pandemic. I think everybody is going to help each other, who were using social media before, especially when you are involved in a specific group.

7. I do. I think if I will help others, they will answer my question in the future. I guess, during the pandemic, we started to share knowledge in comparison to past experiences. Everyone spends a lot of time on social media, so people start to help more.

8. Yes, because there are many people with various thoughts. For instance, some people want to develop sharing and others don't. As a result, we will communicate more with people who want to share.

Social interaction ties

9. Yes. This kind of social relationship may not be as solid as it was face-to-face. However, social media is a very good way to replace real life relationships and solve different problems during the Covid-19 pandemic.

10. I use near two-three hours per day in social media, in order to interact with my colleagues.

11. Yes, I do. Many friends and colleagues all use social media to share knowledge.

Enjoyment

12. I do like it because this is a very easy and effective way for us to interact and share the knowledge during the Covid-19 pandemic. If there wasn't that it would be much more difficult to look for the material and study.

13. Yes, because if a colleague doesn't understand, I can help them and then if I don't understand they can help me too in the future. So, we can interact with each other and develop our knowledge.

14. I like it because it makes me feel a little bit more important. Also, if my colleagues ask, they think that my opinion will be important for them and their work. So, it makes me feel good, especially during the pandemic.

Behavioural intention

15. Yes, because it is easy and useful. Also, even when the pandemic is over, we can't always be all together. So, sometimes through social media, it is even easier, because we do not need to arrange a specific time and we can be in any place.

16. I definitely recommend it because it makes the process of sharing knowledge much easier. Instead of always getting together in one place and often it is difficult to schedule it. However, by using social media, each person can associate it with their timetable and respond when they want to. Thus, it makes knowledge sharing much more accessible.

Actual use

17. Yes, I have internet and the tools. Even for people who don't have it now, the state is trying to help those people. So, it makes the situation much better.

18. I think, almost always, because if I do not interact with colleagues, I communicate with professors and if not with professors, it's with colleagues. Basically, it is a cycle.

Covid-19

19. Yes, I think it influenced a lot, because if before we could share knowledge in person, now this possibility is not so accessible for everyone. We cannot leave home very often and so we have to go through another means. As for me, social media is the best way to communicate and share knowledge during the pandemic.

Interviewee 11

Perceived usefulness

1. I think I use social media primarily for knowledge sharing. So, I think it's a very important function. During the pandemic, it became even more important because it was one of the sources that remained most easily accessible from everywhere. I mean, even people who had never been on social media or who were not very active, I noticed that they became more active exactly for this pandemic issue. So, I think social media is important and in a pandemic situation, it became more important, especially following the academic performance.

2. I think it can, but not too much. It is a way of accessing information and in that sense, it can be more effective, because it is quicker to get to the information. I don't work much with social media and I use it more as information support. In academic terms, I follow other sources, but to complement them, social media can be important. So, it can increase productivity and efficiency, but it is not significantly.

3. Yes, I think that social media in this aspect of sharing is very important and has become very important because it is one of the simplest and most accessible ways to realize sharing.

Perceived ease of use

4. I don't use social media very much, one or two for social reasons only, without knowledge sharing and one essentially for knowledge sharing. They are more and more intuitive, easier to use. I feel that some are more focused on sharing information or it's easier to share information, for instance, Facebook. I think it's very good for that if we can exclude the noise there. So, with a little bit of work, you can also exclude the noise. The others are more difficult, and I think are not intuitive, for example, Instagram, Twitter. I don't use it much. I think it's a little bit more difficult to find information.

5. I think yes, most of them are easy to share. In some, it is easier to share the knowledge part and less the social part, but it has to do with the nature of social media. I think Facebook is very good for that, as long as you have work afterward to filter all the advertising and the things that don't need much.

Norm of reciprocity

6. Yes, during the pandemic various solidarity networks were created. It is also on an academic level and the transmission of knowledge. Particularly because of the closure of some of the more classic means, libraries and archives, I realised that there were groups where there was this discussion, people who asked for scans of books, or someone who had a book, and who could pass on some more specific information. So, this exchange happened and it became easier. Social media brought people together and made it easier.

7. I think there was a greater willingness of people because they were more connected and were more attentive. Even for reasons that were not only to do with academic issues but also for social reasons and the fact that we were closed in a pandemic situation. It brought some social fear and made us more open to questions of solidarity. So, I think that during the pandemic, it was easier and people were more willing to help each other, even if it was through social media within their capacities.

8. Yes, there is a movement of people in which they begin to imitate each other. In other words, people begin to follow the same patterns of behaviour in social media, which was for example in the help, in the rejection, in the exchange of information. The exchange of information at the beginning is not always the same, for example, maybe in the first moments, people were not available for that, they were very afraid, but then, as time went by, a part of people started to get normal, but at the same time others kept on being out. However, when they started to see shares, they start to share. Because other people spent time or knowledge and they followed those a little bit. So, yes, I think social media influenced that pattern of people's behaviour.

Social interaction ties

9. I think the pandemic issue helped solidify some of the social relationships through social media. I think if the relationships were already solid, it is possible to keep that through social media, but I think that if they weren't solid, the relationships will not evolve much. There is more the exchange of information than the creation of social relations. I realised this because I

exchanged information with some people, but I didn't take the next step. We're not talking about life, or friendships, or interests, etc.

10. If we are going to put everything together, an hour, an hour and a half per day. Because it can be about 10 minutes in the afternoon, in the evening a bit more, if it is 30 minutes, I am already tired. On the weekend sometimes I work less.

11. Yes, I know some people who have pages that serve exactly for information sharing and themes dissemination.

Enjoyment

12. Yes, I realised that there was more availability and I started to do some additional sharing than before. The fact that we are closed and also that there is more interaction between people led me to realise that on the other hand, there is more openness. For example, people interested in knowing. In everyday life, we don't understand each other so much. For example, we're going to share something, but nobody says anything or nobody is commenting on it, so we stop sharing it. In quarantine we spend more time in social media and create more interaction.

13. Yes, I more or less kept the help to my closest circle. However, I didn't use social media much. I still use social relations, often in person. So, I didn't get very involved in social media.

14. I don't like to give opinions. I like to share knowledge and people can receive or comment on it, I am not very adept at making comments on social media, because I think that comments are already a step forward. I prefer a personal dialogue. So, I don't like to comment on social media.

Behavioural intention

15. Yes, social media continues to be another way of sharing, just like libraries have evolved and become different things, just like the university itself and teaching today is different. I think social media is evolving and therefore it is just another platform that adds to the way we get to knowledge. In the future, we will continue to share knowledge through social media, because that is also what it made for.

16. I keep recommending it. I think this kind of sharing is important. Social media is a way of sharing. The disadvantages of social media can be avoided. It gives a little bit of work, but social media is either for fun or we can use it for academic or professional purposes.

Actual use

17. Yes, they are always available. I always had internet and a mobile phone.

18. I don't share much, but I use it to access information. If I find really interesting things, I'll share them. I don't use it much, but I use it regularly.

Covid-19

19. Yes, it does. I think that people start to share more information, even because if there is no direct contact, this information often is shared or made through social media. If we consider, for example, WhatsApp as a social media with a one-to-one connection and it is not a generic media, then nowadays WhatsApp is fundamental. The first thing in class we do is creating a group on WhatsApp to exchange information. So, in terms of academics and exchange of information social media is used regularly and frequently.

Interviewee 12

Perceived usefulness

1. I'm going to talk from the WhatsApp perspective. As we had to do group work and also had some information to share, through social media it was quite easy. So, I think sharing knowledge through social media has a positive influence on academic performance.

2. From a productivity and efficiency point of view, for me it did not increase during the pandemic, because I used social media for knowledge sharing as I did before the pandemic.

3. Yes, because it facilitates contact between people. As Covid-19 started, we maintain social distance. The use of social media allowed us to be in contact 24 hours a day to talk about our work. It made communication and sharing easier, because as we are no longer together during classes. However, due to social media, we can arrange meetings or for example, talk on WhatsApp in a group about our doubts, etc. So, yes, it made it easier, because our communication stayed the same, as it was during the lessons.

Perceived ease of use

4. Yes, I think I know. When I was doing my bachelor's degree, our group created the group on Facebook, where we posted texts, talked about in which classes we are going to have tests, the dates of assignments, etc. In the master's degree, we use WhatsApp, which makes it easier, because now I don't use Facebook much. I think WhatsApp facilitates a lot in sharing and communication. In the Academy and Research Gate, I can sometimes post my tests, in order to receive access to the texts of others. It is quite clear and easy for me.

5. It's easy because social media itself already exists and you have access. For me, I already know the practice of sharing knowledge through social media from 2011. I already know how it works, basically, we can share PDFs, Word texts, test dates or assignments and ask our colleagues how to solve a problem or a question that might come up in a test, etc. So yes, it's easy.

Norm of reciprocity

6. Yes, because everyone is interested in getting the best grades and giving the best presentation. Also because of the question of mutual help. If a colleague is having difficulty, then I can help. Now with the pandemic, social media makes it easier, because we can't meet in the library or the university cafeteria, here it is only through the internet. We use the mobile phone or computer and so we can meet virtually.

7. From the perspective of colleagues, they can tell us where we can improve our work. If it is in a social media like Academia.edu I think it is more connected with the availability of the person who is looking for the work because sometimes people only want to have access to the file and the relationships end.

8. I think it depends from person to person. For example, in the class, there is always one person who knows almost everything about the subject and people who don't know. I think that sometimes people can take advantage, which has an impact on sharing environment. For example, the person would share the knowledge and since for another person it was useful, the next step is gratitude. However, some people get the knowledge and don't thank and just pass it on. This can have an influence. The person may no longer be interested in helping and sharing.

Social interaction ties

9. Yes, because before we used to meet with friends and colleagues in person, for example in the café or library. Now we communicate by using phones, specifically because of social media. It is easier to maintain solid relationships than for us to communicate.

10. I use social media once a week to interact with people for educational purposes. Because I don't always have the need to search or share. More specifically I use it 5 or 6 times per month.

11. I do. I know 3 people who actively use social media for knowledge sharing.

Enjoyment

12. It depends on the platform. For example, if it is Facebook, no, because I don't use it, nor Instagram. If it's helping a colleague on WhatsApp, yes, I like it, because for academic purposes it's more collaborative.

13. It depends on what I can do, perhaps in the clarification of questions. I like to help colleagues more in person, rather than through social media.

14. I feel good because, with the use of social media, I can show how to correct this or that directly. Also, I can ask not to delete the information, because it can be important for other people.

Behavioural intention

15. Yes, because I haven't graduated yet. Social media for knowledge sharing is very useful and for communication at the academic level too, especially during the pandemic. Because of social media, colleagues are more available.

16. I do, because it is easy and people always have access to social media. Also, if you don't like to use some platform, for example, Facebook, you can use any other, there are alternatives, for example, WhatsApp, Twitter, etc. It's not a barrier. It is always a facility. For me, it is also easy to use digital platforms or social media with my colleagues. It is an alternative to physical contact.

Actual use

17. Yes, I have internet and devices.

18. Frequently, once or twice a week. It depends on what doubts I have or if I am involved in the group work. At the beginning of quarantine, I had more group work, so it was more often, almost the whole day or 5 times per day. Now it is less because I don't have group works.

Covid-19

19. I think that misinformation is more likely to remain, because now during the pandemic, people are more concerned about misinformation. Some people who have more academic development. For example, if I have valid information, I will share it. However, now people are always asking about the origin of the information. When I found something really important, I feel a duty to share it and other people not always sharing knowledge.

Interviewee 13

Perceived usefulness

1. In my opinion, I think so. Because of sharing on social media, we can learn a lot, talk to each other, get feedback from professors and interact with each other. All these aspects influence positively academic performance.

2. I think so, because as we can't contact each other personally, then we have the possibility to share everything on social media. It is also possible to have a kind of support or even a group work can be done online which is already easier than via phone calls or by doing it in person maintaining the distance and with the masks.

3. I think so because during the quarantine there was no other method to share your knowledge. Even communication with professors is online. Also, all the colleges are at home. Thus, during quarantine, social media made knowledge sharing easier.

Perceived ease of use

4. I do and it's clear and very understandable. At least for younger people who have been using social media almost since birth, so it becomes easy to share knowledge. Before quarantine people used Facebook, Messenger, WhatsApp to make video calls and chat. So why not use the same platforms for educational purposes, like sharing data, taking classes, doing presentations, workshops, etc.

5. On the one side yes and on the other no. It's easy because many people already know how to use it, but on the other side, if everyone uses it, it gets overloaded, meaning that the connections may drop. For example, if at home you have a family of 4 people and everyone is working online or taking classes, you need to have at least 4 PCs from which you have to work. These PCs have to be connected to the Internet and because of that, the connection may drop.

Norm of reciprocity

6. Yes, because firstly I already know how it works and I do not have to learn how new platforms work. I think people also would help because in the specific platform you will already have a network of people. Everyone realises that we are now in a very bad time because of this situation and we have to help each other.

7. Yes, because now we are going through the pandemic and people help each other more because we are in a time when many people need help. I think right now mutual help work more than before.

8. I think so, but it also depends on the person. If you help others or show your availability and respond quickly in the group, some people can do the same. However, other people do not do that. I think most of the time it depends more on a person rather than a group.

Social interaction ties

9. I don't think so. I prefer to build a relationship in person. For me, it is very complicated to maintain a solid social relationship through social media, because I don't talk every day through the social media with people. I find it a bit strange.

10. I do not use it too much for educational purposes, because I almost finished my master's degree. During the pandemic, I didn't have classes and I was working on my master's thesis, so I was communicating from time to time with my supervisors and with some of my colleagues. During the week around 8 hours.

11. Yes, my sister and some colleagues.

Enjoyment

12. I liked it because there was no other way to do it. As we can now share knowledge and communicate only virtually, social media is an easy and fast manner to share knowledge and communicate. Also, everyone uses social media.

13. I do, because now there was no other way to help. I could either send some things through social media or make a call. As for me, it is easier through social media, because you can write, talk by video call, send a website, information, etc. It is more complicated to do it by using phone calls.

14. I feel that my opinion is very important regarding these issues. It is important to help and respond because most of the time it can be a social study that needs people. It is quite complicated to have a lot of people returning to the project as volunteers. In my experience, I have already done several projects where I have also asked through social media for people's participation, so I like when people help and I like to help people as well.

Behavioural intention

15. Yes, I plan. Because it is a quite easy way to communicate with people and share knowledge. It is simple to use and we also know how to use it.

16. Yes, I recommend it. For example, sending a link to an article instead of spending time to search for it. If the professor would say only the name of the article it is more difficult to find

it rather than the professor sends the link to the article. In this situation, I think there is a greater likelihood that students will read that article because you will not spend a lot of time searching for it.

Actual use

17. At the beginning of the pandemic it was a little bit difficult because I do not have the internet at home. At least, I always had a phone with me, but the internet ran out super-fast. Sometimes, when the rules allowed, I looked for a hotspot in the library for example, but as we all needed to stay at home it was difficult. After some time, I get the help of the state.

18. During quarantine, I use social media for knowledge sharing quite often, near 1 hour per day and near 8 hours per week.

Covid-19

19. I think so, because before the pandemic when we were doing some projects, the group works or even studying together in presence. We could print some articles and show them on paper, which is not possible now. So, students start to use social media more to share the knowledge. As for me, I used a lot Facebook and Messenger in order to send articles to my colleagues, who were also writing a master thesis.

Interviewee 14

Perceived usefulness

1. I would say that not only could but in fact social media have improved. During the lockdown, social media was very useful in knowledge sharing. For example, in the case of ResearchGate, I got in touch with an author to get permission to download his paper. I was so curious and I thought he will never answer me, but he thanked me for the interest. As a result, a paper was very useful for my work.

2. I think by using only social media, it is difficult. However, it can serve as a facilitator for communication and a way to get in touch with people. For example, for group works, my group and I used WhatsApp and Google drive. We communicated through WhatsApp and put all documents on Google Drive. This way to share knowledge through two tools is very easy, quick and practical. As we all were at homes in different places. It was even fundamental. I would say that without these tools we wouldn't have any work done.

3. Yes, because it increases productivity as social media facilitate the exchange of knowledge and the connection of people who are in different places. So, it facilitates knowledge sharing from the perspective of geographical position.

Perceived ease of use

4. I am already 34 years old, even so, I have been using the internet since I was 12. I think I never had difficulty assimilating and learning through social media. Maybe for the older generation, it is difficult.

5. Yes, I believe that every time using social media became easier and more intuitive. It is increasingly easy to understand how things work. Even when I do not know how to use it, I see videos on YouTube and then it is easy to continue my work.

Norm of reciprocity

6. This question I found interesting and I think yes and no because it depends on the social media itself. For example, Twitter is a social media that comes to be toxic, because people are anonymous for the most part. It's not a network where I feel like someone can help. On Facebook, I know a really good professional group, namely *Trabalho de Arquivos Municipais – BAD*, where I know the professionals would help me. So, if I post something in a specific group that gathers people who have the same interest, they would help.

7. Yes, I believe so, but only within specific spaces, like debate groups or academic social media, for example, ResearchGate or Academia.edu. As for my personal experience, since December, I get two answers from the researches on ResearchGate and Academia.edu. However, I do not upload any paper on these particular social media.

8. Yes, I believe so. Some factors must be taken into account because some interaction that exists in social media lead to fights or discussions with no sense. It is very easy for an anonymous person to behave in a rude and ill-mannered way. As in person not a lot of people can behave like this. So, when in the group people use the profiles that are the real one; they have the photo; they work in the same environment, even if they work in different cities - the social norm could be formed, which have an impact on knowledge sharing. So, in a professional group, which I mentioned before people behave normally and have good intentions, which creates a friendly environment for sharing knowledge and information.

Social interaction ties

9. If we are talking about professional relationships, in my opinion, it differs from solid social relationships. As for my personal example, I had very short conversations and focused more on the topic. Despite this, the interaction was quite important for me and my work.

10. The interactions I had in social media for educational purposes during the quarantine period were always occasional.

11. I would say no. The people I know who actively use social media for knowledge sharing are the people from the Facebook group mentioned before. There are a few people in that group who are very active, but I don't know them personally.

Enjoyment

12. I do not have a fixed opinion about this, because I do not share knowledge too much. I am still studying, so I don't even feel able to share the knowledge.

13. I do. When someone asks for help on social media in a group, I always open to help. Because, during the pandemic time, we all need it in a sense. I am also more available because most of the time I am at home.

14. That hasn't occurred to me yet, nobody has asked my opinion. I don't know how to answer. Nowadays, it has become very easy to comment on everything. People love to give their opinion and sometimes they do not have knowledge. As a result, it became useless. If someone asks my opinion I will try to help, but I don't want to talk nonsense. So, if it's something that I believe I don't have the knowledge I prefer not to give any opinion.

Behavioural intention

15. So, at the moment I don't use social media much, but I plan to use them in the future in the professional context. After I graduate, I am planning to become a researcher. As the researchers and professors use these networks a lot, so I end up being obliged to use them too. That is the future. If the person doesn't use it, nobody will read their articles and nobody will know that the person exists.

16. I recommend the use of social media for educational purposes, but the user needs to understand how to work in the specific network. For example, be attentive in which group are you, check information and do not forget about the spreading of fake news. To conclude, exist positive and negative part in using social media for knowledge sharing and we should not forget about it.

Actual use

17. Yes, it is available. If we are talking about educational purposes, I never had a problem with the internet and devices.

18. At the beginning of the pandemic, I had a lot of group works and as a result, I use social media and Goole Drive every day, in order to communicate and share knowledge and information. Now, I use it rarely.

Covid-19

19. Yes, it influenced in the sense that we were forced to stay at home and then people started to use social media to continue their works. As for me, I started to talk a lot with my adviser and my colleagues by using WhatsApp and Facebook. In fact, because of the pandemic people are spending more time at home, and as a result more time online. It is kind of difficult because we are all tried to continue our lives online.

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