



## Research article

## Teachers' attitudes towards social media (SM) use in online learning amid the COVID-19 pandemic: the effects of SM use by teachers and religious scholars during physical distancing

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## ABSTRACT

The adoption of physical distancing and quarantine amid the COVID-19 pandemic to contain virus spread has left the world with schools' closure. In response, schools have shifted into online learning in developed societies while the developing world struggles to opt for online learning due to limited infrastructure and capacity and religious beliefs, in some communities, that discourage online learning. However, there has been a significant increase in the use of Social Media (SM) observed across developing and developed societies and religious communities amid physical distancing. This study was conducted to explore the possibility of SM use in online learning by exploring teachers' attitudes in relation to the effects of physical distancing and increased SM use, SM knowledge and religious leaders' SM use. In a quantitative investigation method, the researchers used a questionnaire as a primary tool to collect the data from 252 teachers of both public and private schools. Partial Least Square Structural Modeling (PLS-SEM) was used as an analysis method to assess and measure the proposed model. The findings are significant to inform how physical distancing amid the pandemic has influenced teachers' attitudes to opt for social media use in online learning. The findings have implications for teachers worldwide, particularly in developing countries, to switch to online learning using SM under challenging situations like the COVID-19 pandemic.

## 1. Introduction

There has been frequent use of social media (SM) observed globally during the Covid-19 pandemic (Cinelli et al., 2020; Haman, 2020; Hus-sain, 2020; Limaye et al., 2020). SM's effectiveness in natural calamities such as earthquakes, tsunami, floods, or any other human-made disasters like wars or riots is well known (Panagiotopoulos et al., 2016; Rosenberg et al., 2018; Saroj and Pal, 2020). During such situations, according to Dufty (2012), people have used smartphones, tablets, and other devices, to reach SM for real-time information and social exchange. Likewise, SM has remained integral to access to information and social interaction during the Covid-19 pandemic. However, the more critical is knowing its use in online learning to cater to students' learning needs during school

closure amid the Covid-19 pandemic. Research finds the use of SM effective to support active students' engagement, teachers' professional development and developing communities of learners (Anasi, 2018; Beemt et al., 2019; Buus, 2012; Harris and Rea, 2009; Manca and Ranieri, 2013, 2016; Vie, 2015). Porto et al. (2011) also believe that SM's instructional use promotes teachers' ICT integration skills and inspires and encourages their students to continue learning using technologies. Its use in online learning may bring in a large proportion of 70% student population, which, according to UNESCO (2020), are affected due to school closure amid the pandemic. Countries with nationwide closures have left 91.3% of their students out of learnings, as UNESCO reports. The absence of online learning may worsen the situations globally, particularly in countries like Pakistan, which according to Abbas (2020),

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already suffers from 22.8 million out of school children in the age group of 5–16.

In response to preventing students' deprivation from learning, schools in developed societies have moved to online learning, as reported by the [World Economic Forum \(2020\)](#). However, SM use has not been well established despite its electronic communication and learning capability, as argued by [Ige \(2020\)](#). Schools in developing countries, like Pakistan, have been struggling to switch to online learning due to their incapability and non-supportive infrastructures such as ICT resources, internet connectivity and teachers' incapacity ([Adegun, 2003](#); [Adnan and Anwar, 2020](#); [Ismail et al., 2020](#)). Certain religious and cultural beliefs are also perceived to support or hinder social media use in online learning. [Almenayes \(2014\)](#) also finds more religious individuals less likely to substitute online interaction for face-to-face interaction. The reasons consisted of fear of unfiltered expression and the interpretation of being immoral, and fear of reprisal for religious expression from the nonreligious in that space ([Woodward and Kimmons \(2018\)](#)).

Consequently, some countries, according to [Shirazi \(2009\)](#), adopted content filtering policies. In contrast, in some countries, religious leaders encourage social media use ([Brunet, 2014](#)). Most importantly, as [Ibahrine \(2020\)](#) reports, there is increased use of SM observed amongst the religious scholars of Muslim communities amid the Covid-19 pandemic. The same could be highly influential on teachers' attitudes regarding SM use in online learning and cannot be ignored.

This study highlights SM as an appropriate instructional approach amid the Covid-19 pandemic, as proposed by [Fedock et al. \(2019\)](#). Its capability of developing social interaction and enabling teachers to devise curriculum objectives and students' needs, as suggested by [Hajji et al. \(2013\)](#), makes SM use in online learning very much relevant and timely. However, its use could be better investigated by knowing teachers' attitudes and concerns ([Jomezai et al., 2018](#)). Because, as [Beemt et al. \(2019\)](#) posit, it is often the attention to teachers' responses and attitudes that could make social media integral to teaching and learning. This study aimed to examine teachers' attitudes towards SM use amid the COVID-19 pandemic by looking into the impacts of physical distancing and social media use during the pandemic and teachers' SM knowledge. The study also looked into the impact of religious scholars' use of SM in this regard.

## 2. Literature review and hypothesis development

### 2.1. Theory of Reasoned Action

Looking into teachers' attitudes toward SM use amid the COVID-19 pandemic, the study used [Fishbein and Ajzen \(1975\)](#) Theory of Reasoned Action (TRA) as a theoretical framework. The theory encompasses the links between behavioral intention, behavioral attitudes, and subjective norms. The theory has been widely used as a useful predictor of one's attitudes about networking use and SM's information sharing capability ([Peslak et al., 2011](#); [Anasi, 2018](#); [Lin et al., 2013](#)). Research has found the TRA relevant when the study intends to know about one's attitudes towards their behaviour.

This study has conceptualized TRA in connection with teachers' attitudes of opting for online learning influenced by physical distancing while staying at home amid the COVID-19 pandemic. SM use by religious scholars amid the pandemic was also conceptualized to affect teachers' knowledge and SM integration in online learning. The study did not aim to explore teachers' intentions and behaviour resulting from their attitudes towards SM use for online learning. SM use for online learning has been conceptualized, influencing teachers' online learning attitudes amid the COVID-19 pandemic.

### 2.2. Social media

Social Media is a Web 2.0 based real-time communication utilizing multi-media formats and several platforms ([Mangold and Faulds, 2009](#)).

Social media, as [Kaplan and Haenlein \(2010\)](#) state, allows users to generate content. [Ngai et al. \(2015\)](#) attribute the "social" component as the activities performed among the people, whereas "media" as the medium or platform, including internet-enabled tools and technologies while conducting those activities. Social media has been interchangeably used with social networking, social computing, Web 2.0, and virtual social universes in terms of terminology. SM are collaborative online applications and technologies, enabling user-generated participation, connectivity, information exchange, and collaboration among the user community ([Henderson and Bowley 2010](#): p. 239). According to [Kaplan and Haenlein \(2010\)](#), SM is a group of internet-based applications based on Web 2.0's ideology and technology foundations that enable user-generated content to be created and exchanged. Facebook, YouTube, Flickr, and LinkedIn are examples of existing social media platforms. They are perceived as inexpensive and, more often than not, completely free to use.

### 2.3. Online learning

Often referred to as online education ([Wellman and Wortley, 1990](#)), web learning is a critical component of e-learning and distance learning, aiming to enhance users' knowledge and improve learning quality ([Davis, 1989](#)). The personalization opportunity, according to [Davis \(1989\)](#), is an essential dimension of e-learning. There also exists the initiatives of e-learning that provide learning resources to facilitate technological content and interactions ([Darch and Lucas, 2002](#)). Interactions through e-learning lead to online learning communities wherein knowledge sharing exists amongst individuals, including friends, families, communities, and organizations.

In this respect, as [Ngai et al. \(2015\)](#) point out, SM plays a pivotal role in facilitating knowledge sharing in online communities. [Fedock et al. \(2019\)](#) also suggest that teachers use it in online learning. [Fasae and Adegbilero-Iwari \(2016\)](#) and [Hussain \(2012\)](#) inform SM's capability in students' online learning. Research has found the use of SM very much useful in creating and disseminating collective knowledge for academic purposes ([Na'ndez and Borrego, 2013](#)). They revealed that most students were eager to have the knowledge needed to use and apply SM.

### 2.4. Teachers' attitude of using SM in online learning amid physical distancing

Individuals' attitudes and social behaviour explain their involvement in specific applications, guidelines, and principles for designing and implementing a social media system ([Ngai et al., 2015](#)). Similarly, individuals' attitudes towards SM use in online learning remains phenomenal ([Prescott, 2014](#)). According to [Brown \(2012\)](#) and [Rogers-Estable \(2014\)](#), the use of social media is determined by teachers' attitudes and expectations. They consider their pedagogical beliefs and current practices integral to teachers' social media use in teaching and learning. Research considering teachers' attitudes related to SM use remains limited as most studies in this regard have looked into students' attitudes and SM use ([Bennett et al., 2012](#); [Karvounidis et al., 2014](#)).

Nevertheless, teachers' attitudes toward SM use in online learning amid schools' switching to online mode due to the Covid-19 pandemic remains pivotal. More importantly, the increased SM use during the pandemic, reported by [Limaye et al. \(2020\)](#), is perceived to have positively influenced teachers' attitudes towards SM use in online learning. [Ajjan and Hartshorne \(2008\)](#) strongly believe that teachers' attitudes drive social media use in teaching and learning. [Kormos and Nijakowsk \(2017\)](#) also posit that participants' frequent engagement in online learning communities positively influenced their attitudes. [Lin et al. \(2013\)](#) [Anasi \(2018\)](#) also inform about a significant moderate positive relationship between attitude towards SM use and frequency of use of SM. Therefore, their attitudes toward SM use in online learning remain noteworthy in the time of school's closure during the pandemic, with the majority of the students deprived of learning. Considering this crucial

aspect of SM in the pandemic, it is essential to know if the physical distancing, reportedly having increased teachers' engagement with SM, has influenced teachers' use of SM and consequently influenced their attitudes toward its use in online learning. The same was hypothesized as follow:

**H1.** The physical distancing, as a result of the COVID-19 pandemic, has positively affected the use of SM among schoolteachers.

**H2.** The use of SM amid the COVID-19 pandemic has a positive effect on teachers' attitudes toward using SM in online learning.

**2.5. Teachers' knowledge of social media use in online learning**

Teachers' experience of using SM in their instructions when configured with fear due to limited knowledge, according to [Beemt et al. \(2019\)](#), influences their attitude. Social media's implementation demands the transformation of teachers' roles and instructional strategies ([Hoyos, 2014](#)). Therefore, teachers must know and support the use of social media in their instructions. [Buus \(2012\)](#) also emphasizes teachers' knowledge about social media use in instructions, such as online learning very much essential. They need to be continuously learning to be able to use SM in online learning effectively. [Cochrane and Narayan \(2012\)](#) realizing teachers' related knowledge and skills, suggest that teachers' learning strategies include peer mentoring, and experts demonstrated technical aspects. Though teachers' knowledge of SM use is imperative, their participation in online communities in increased SM use amid the physical distancing remains phenomenal. Teachers can interact with their colleagues through social media to create new knowledge ([Hajli et al., 2013](#)). That is why there is an emphasis on the online knowledge sharing to shape attitudes and learning ([Wenger et al., 2011](#)).

The online forums for exchanging information are also configured as communities of practice, where teachers' participation and the subsequent learning are organized around shared goals, collaborative activities, and mutual understanding among the participants. [Hood \(2017\)](#) believes that teachers' engagement is defined mainly by the knowledge they require and the practices they need. However, according to [Moran et al. \(2011\)](#), teachers' lack of SM related knowledge has demotivated them to use SM in online learning. The current spike of SM use during the pandemic, as observed by [Limaye et al. \(2020\)](#), is considered to have increased teachers' knowledge of SM use in online learning as they are assumed to have regular interactions with SM. The researchers considered it worthy of knowing if teachers' regular use of social media during the pandemic influences their knowledge and, consequently, impacts their attitudes toward its use in online learning. The same has been hypothesized as below:

**H3.** The use of SM amid COVID-19 has a positive effect on teachers' knowledge of SM use in online learning.

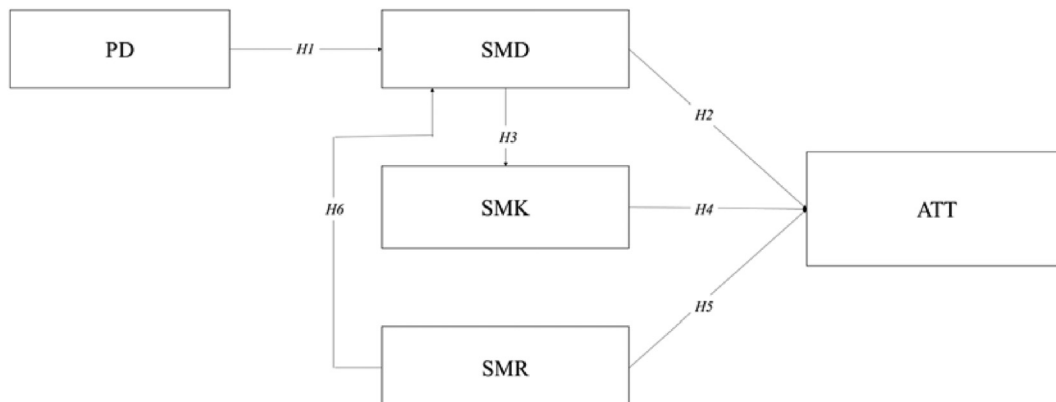
**H4.** There is a positive effect of Teachers' knowledge of SM use in online learning on their attitudes towards SM use in online learning.

**2.6. SM use by religious scholars**

The role of religion remains indispensable in overall life orientation encompassing economics, education, and citizenship behaviors ([Christopher, 2011](#); [Kashif et al., 2017](#); [Kutcher et al., 2010](#); [Vinod, 2012](#)). Its influence, according to [Kutcher et al. \(2010\)](#), [Gianisa and De \(2017\)](#), [Gill and Mathur \(2018\)](#), becomes intense in stress, disastrous situations, and natural calamities, and human-created crises. Research informs that religious faith has a critical role in helping people in disasters by giving hope and safety ([Fujiwara, 2013](#); [Stratta et al., 2014](#); [Zaumseil et al., 2014](#)). For example, [Teah and Lwin \(2014\)](#) found that religious beliefs sharpened peoples' charity attitudes of helping their communities amid a crisis. Considering such a prominent role of religious faith in disasters is perceived to have influenced peoples' attitudes during the Covid-19 pandemic, and social media use in online learning may not be an exception.

Pakistan is a Muslim country, and religion remains integral to people's everyday life ([Ysseldyk et al., 2010](#)). The halal accreditation of food, currency, and pharmaceuticals are explanatory of religious integration in their lives as Muslim ([Fadzlillah et al., 2011](#); [Norazmi and Lim, 2015](#); [Siswanto et al., 2020](#)). Similarly, towards science and science-related inventions, there has been a mix of orientation among different sects. At times and during the Taliban regime, as [Laub \(2014\)](#) argue, happened a drastic implementation of a ban on television and music and the related sources. They interpreted such media's use as "Haram". Haram in Islam refers to unlawful or prohibited ([Samori et al., 2014](#)). As [Wang \(2010\)](#) inform, the bordering areas along Pak-Afghan borders were under the deep influence of Talibanization. Such interpretation, consequently, discouraged the use of sources involving any technological tools such as videos, animations and even pictures in teaching and learning. Similarly, in some other countries resulting in adopted content filtering policies ([Shirazi, 2009](#)). [Campbell \(2005\)](#) terms such response as a reaction to globalization and technology from religious fundamentalism.

However, after the fall of the Taliban regime and following the current mass SM influx, these communities have not remained apart as there developed a positive approach towards such teaching and learning tools, maybe, as perceived by [Hardaker et al. \(2017\)](#), Islamization of online resources. In [Bari \(2014\)](#) words, there is a realization of the importance of electronic media, and social media cannot remain excluded by the conservative sects to shape public opinion as desired. Most importantly, the use of SM platforms like Twitter, Facebook, WhatsApp, and others, from religious sects for their religious campaign and teachings has been very apparent ([Ibahrine, 2020](#)). Besides, as [Brubaker and Haighm \(2017\)](#) posits, SM users have been found to obtain spiritual and temporal benefits from faith-based content shared by others.



**Figure 1.** Hypothesized research model of the study.

Research, for example, Weaver and Stansbury (2014) and Al-Mosa (2015) though informs about religion to influence one's attitude and social values, however, it has not explored an indirect influence, such as the use of SM by religious scholars, and its influence on teachers' attitudes of opting it in online learning. The same in times of disasters and pandemic is rare. Since it is assumed that these scholars' interpretation has a more substantial influence on the masses, it would be worth considering whether the same has influenced teachers' attitudes toward MS use in online learning amid the pandemic. In this regard, the following hypotheses have been formulated and tested:

**H5.** The use of SM amid the COVID-19 pandemic by religious scholars have positively influenced teachers' attitude of opting SM for online learning.

**H6.** SM use by religious scholars during the pandemic has a positive effect on teachers' SM use during the COVID-19 pandemic.

### 3. Method

#### 3.1. Sampling and data collection procedures

The quantitative research method remained progressively applicable to depict greater generalizability concerning SM use (Ashraf, 2017). Hair et al. (2017) recommendations of conducting power analysis were employed to identify the sample size. The threshold of the significant test at 0.05 with an expected medium effect size  $f$  (0.30), as suggested by Cohen (1992), indicated 127 participants sufficient to detect large effect sizes at a recommended power of 0.95. A response of 252 remained higher than the minimum requirement of 127 participants (Cohen, 1992). The researchers used a questionnaire, guided by the study framework (Figure 1), as a primary tool to collect data from the schoolteachers. The data were collected during the implementation of the physical distancing (March to April 2020). The researchers used Google Docs to develop an online survey form and shared it with teachers in their respective groups, from public and private schools, through email and different digital platforms like WhatsApp, Messenger, and IMO. The online survey remained appropriate in maintaining physical distancing.

Ethical approval for the study was earned from the Department of Education Balochistan University of Information Technology, Engineering and Management Sciences (BUIEMS). Participants were informed about the purpose of the study and their rights as participants. They were provided access to the survey after they agreed to participate by checking, "I have understood the purpose of the study and my role as respondent and agree to participate in it." A total of 252 agreed and responded to the survey, with 111 (44%) males and 141 (56%) females. The majority of the participants (37.3%) were in the age group of 26–30, while the 36–40 age group consisted of 21.4% of the participants. Demographic data also indicate Facebook (66.4%) and YouTube (21.4%) as mostly used SM platforms while LinkedIn (7.1%) and Instagram (7.5%) as the least used (Table 1).

#### 3.2. Measures and survey instrument design

The researchers developed the measure of the survey. The survey consisted of two sections. Section one had the questions regarding teachers' demographics, such as age groups, gender, and the SM platforms they used (shown in Table 1). Section two recorded teachers' responses to know their attitudes towards SM use in online learning. The section included teachers' responses about physical distancing, SM use during the physical distancing, their knowledge of SM use in online learning and SM use by religious scholars. Physical distancing was measured by asking questions (PD1-PD4) regarding participants staying at home, avoiding public gathering and maintaining, and following physical distancing with others. SMD1-SMD4 aimed to know teachers' SM use during the physical distancing. Teachers' knowledge of SM use (SMK1-SMK-8) encompassed asking about SM integration capabilities as

a pedagogical tool for online teaching. Their attitudes were measured through items (AT1-AT10). SMR1-SMR3 included asking about teachers' response about SM use by religious scholars. Section two used five Likert scales from (1) "Strongly agree" to (5) "Strongly disagree".

### 3.3. Data analysis

#### 3.3.1. Measurement model assessment

It was necessary to identify convergent validity, reliability, and discriminant validity for evaluating the measurement model. Hair et al. (1998) suggest that the overall item loadings need to be above the value of 0.65. They suggest composite reliability (CR) and the average variance extracted (AVE) higher than 0.8 and 0.5, respectively. The results (Table 2) met the suggested range of factor loading showing the factor loadings on all items higher than 0.65. Similarly, CR value in the range of 0.88 and 0.93 and the AVE between 0.657 and 0.791 meets the suggested threshold. Thus, establishing the reliability of the measurement of the model.

The verification of discriminant validity involved using the heterotrait-monotrait (HTMT) ratio criterion following the threshold value of 0.90 suggested by Henseler et al. (2015). As shown in Table 3, the values of HTMT were all lower than the stricter criterion of 0.90. It concludes that both the convergent and discriminant validity of the measurement model is confirmed in this study.

#### 3.3.2. Structural model assessment

The propositions' statistical significance was tested by running bootstrap resampling (Henseler et al., 2009). The relationship of structural model is determined by the path coefficient among the construct of the study (Hair et., al. 2017). Hypothesis testing (Table 4) supported H1, H2, H3, H4 and H6 with a significant impact. The results show that physical distancing (PD) has a significant effect on social media use during the pandemic (SMD) ( $\beta = -0.726$ ,  $t = 19.291$ ,  $P < .05$ ). The results indicate the hypothesis's acceptance and inform that there is a significant effect of maintaining physical distancing (PD) on social media use during the COVID-19 pandemic (SMD). H2 evaluates whether SMD has effects on teachers' knowledge of SM use in online learning (SMK). The results indicate a positive significant impact of SMD on SMK ( $\beta = 0.523$ ,  $t = 7.918$ ,  $p < .05$ ) leading to support the hypothesis. The results ( $\beta = .589$   $t = 3.690$ ,  $P < .05$ ) supports H3 that SMD has a significant impact on teachers' ATT of SM use in online learning during the pandemic. H4 evaluates whether SMK has an impact on the ATT of social media use. The results remain significant in this regard ( $\beta = 0.655$ ,  $t = 7.720$ ,  $P < .05$ ) and support the hypothesis that there is a positive impact of SMK on ATT. The results related to H5 informs about the insignificant impact of SMR on ATT ( $\beta = 0.161$ ,  $t = .918$ ,  $P > .05$ ), and the hypothesis that SMR has a positive impact on ATT is not supported. H6 evaluated the impact the SMR has on SMD. The results were significant ( $\beta = -0.188$ ,  $t = 4.390$ ,  $P < .05$ ) and support the hypothesis that SMR positively impacts SMD.

## 4. Discussion

Results related to using a particular social media platform inform that Facebook (66.4%) was the first, and YouTube (21.4%) was the second-highest used social media platform. These findings are similar to previous studies (Boulianne, 2015). It could be interpreted that teachers may be considering these platforms appropriate for communication and learning (Symthe, 2009). As Manca and Ranieri (2013) point out, they may perceive its instructional possibilities, like the combination of learning resources and information and a blend of various competencies for widening the learning context. Nevertheless, teachers preferred using Facebook and YouTube. It could be interpreted that the use of these preferred social media platforms provides phenomenal support to online learning during crises, such as the Covid-19 pandemic, where face to face learning opportunities are ceased. From the results, it could be

**Table 1.** Sample demographics.

	Frequency	Percent
<b>Gender</b>		
Male	111	44.0
Female	141	56.0
Total	252	100
<b>Age group</b>		
20–25	41	16.3
26–30	94	37.3
31–35	45	17.9
36–40	54	21.4
41–45	17	6.7
46–50	01	0.4
Total	252	100.0
<b>SM platform used</b>		
Facebook	117	66.4
YouTube	54	21.4
Twitter	44	17.5
LinkedIn	18	7.1
Instagram	19	7.5
Total	252	100

interpreted that SM for online learning can help avoid millions of students deprived of learning due to schools' closure.

The study's hypothesized model explained a significant effect of predicting variables (PD, SMD, SMK) on teachers' attitudes towards SM use in online learning as an outcome variable. The study finds no effect of SMR on teachers' attitudes of SM use in online learning; however, it positively impacts teachers' SM use amid the Covid-19 pandemic. The results indicated a significant impact of physical distancing (PD) amid the COVID-19 pandemic on teachers' use of SMD (H1), which means that the respondents were using SM more during the physical distancing. These results support Koeze and Popper (2020) and Limaye et al. (2020), who have reported increased SM use amid the pandemic or crises. More importantly, teachers' use of SM during the pandemic was found associated with an increase in their knowledge of SM use (H3) and influencing their attitudes of SM use in online learning (H2, H4). It means that the more the teachers interact with SM, the more they learn about it, and they remain optimistic about its use for online learning. Teachers' frequent, meaningful engagement with social media may transform their knowledge with time and informing their attitudes. There appears to be frequent interaction of teachers with SM during the pandemic than before, which schools can build upon by encouraging SM's instructional use.

A positive association between teachers' SM use amid the COVID-19 pandemic and their knowledge of SM use in online learning could be further strengthened to cater to classroom instructional modes (Kasens-Noor, 2012). It is quite evident through a significant relationship between teachers' SM knowledge and their attitudes towards SM use in online learning (H4). It could be rightly suggested that teachers must capitalize upon their knowledge about social media use in instructions to further transform their attitude to practical involvement in online learning by SM use Beemt et al. (2019); Buus (2012). Schools, therefore, if expect active involvement of teachers in using SM for online learning, have to focus on how SM in the meantime could be used for teachers' knowledge through developing networks and collaboration with their peers. The results also support Wenger et al. (2011), who found a close relationship between SM use for knowledge sharing and learning. These findings are significant for teachers' learning through knowledge sharing in an online community to form the community of learners (Harris and Rea, 2009). The same could be further strengthened by providing more school-level support, as suggested by Ismail et al. (2020), in helping

teachers improve SM use by aligning it with students learning needs. School's role in supporting teachers' SM use could help strengthen teachers' online collaboration more specific and relevant to their own capacity needs. The analysis is in line with what Anasi (2018) suggests that SM has the potential for teachers' professional growth and development. In particular, teachers in developing countries like Pakistan with minimal ICT integration capacity, found by Ismail et al. (2020), could be supported to overcome their fear and digital anxiety (Beemt et al., 2019; Kormos and Nijakowsk, 2017). Subsequently, enhancing teachers' knowledge and skills of using digital tools and social media platforms, as Hoyos (2014) argue, will need them to understand their new roles in online learning and facilitate students in their learning despite the school closure.

The impacts of SM use by religious scholars remained significant to influence teachers' SM use. It did not have an impact on their attitudes in online learning. The findings support the previous research, such as Fujiwara (2013), Stratta et al. (2014), Teah and Lwin (2014) and Zaumseil et al. (2014), with having observed religious beliefs integral to individuals' certain responses amid the crises like the Covid-19 pandemic. However, the results are limited to affect teachers' increased SM use but not impacting their attitudes of SM use in online learning. There seems to be a positive connotation associated with social media use amongst the teachers, which is heartening in the context of hesitancy to its use due to religious beliefs. However, it is important to note that teachers' need to use it for pedagogical interaction rather than what Woodward and Kimmons (2018) considers as a monologic broadcast that is more one way and less interactive for learning. Teachers considering such monologic use of SM in online learning may not remain useful for their instructional effectiveness and SM learning capability, leaving meaningful online learning apart.

Teachers' attitude being positively related to SM use in online learning amid the COVID-19 pandemic remains of utmost importance. In the context of developing countries, in particular, where research highlights a digital divide or information gulf (Adeogun, 2003), teachers' positive attitude toward SM use in online learning remains of worth because, as Rogers-Estable (2014) stat its one's attitudes that remain decisive. However, their attitudes need to be transformed into practical involvement in online teaching and learning through a systemic method of implementing robust, effective, and target-oriented online learning policies amid the school closure. A non-encouraging response from the government will have severe consequences for students' deprivation from learning and adding further to the school dropouts, which Pakistan, as a developing country, already struggles with.

## 5. Implications

The study has serious implications for schools in crisis, like physical distancing caused by the COVID-19 pandemic. As an online learning tool, social media has implications for schools having students left out from learning because of the pandemic. The implications are profound for countries like Pakistan, already struggling with an alarming number of out of school children and many more deprived of learning due to schools' closure. However, to meet SM use in online learning, teachers' knowledge of and frequent engagement with the SM platforms remains pivotal. Social media's significant effects on teachers' knowledge and attitudes call for supporting and encouraging teachers to use SM in their working environment. School-level support from headteachers in this regard could be of worth (Ismail et al., 2020). Such support will be needed to provide access to necessary digital resources, creating opportunities for teachers' capacity building, continuous feedback, and mentoring (Jomezai et al., 2018; Mulenga and Marbán, 2020).

The current COVID-19 pandemic could give a tough time to those being less aware of online learning than those capable of delivering in times of crises like physical distancing rustling into schools' closure. Online learning as an alternative to conventional face to face learning has severe implications for schools and the overall learning environment.

**Table 2.** Convergent validity.

Construct	Indicator	Survey Questions	Loadings	AVE	CR
Physical Distancing	PD-1	I am staying home amid COVID-19.	0.818	.657	.884
	PD-2	I am keeping physical distance with friends and family amid COVID-19.	0.812		
	PD-3	I avert people's gatherings and corroded areas.	0.759		
	PD-4	I follow physical distancing with others by maintaining a meter distance.	0.850		
SM use during physical distancing	SMD-1	I started using SM during the pandemic.	0.897	.791	0.938
	SMD-2	The purpose of using SM is to socialize with family and friends during the pandemic.	0.900		
	SMD-3	The use of SM during the pandemic is to enhance my learning.	0.861		
	SMD-4	I have started using SM for teaching online during the pandemic	0.900		
SM Knowledge	SMK-1	I find myself capable of using different features of SM for the subject(s) I teach in online learning.	0.718	0.776	.925
	SMK-2	I can conduct interactive lessons through SM use in online learning.	0.892		
	SMK-3	I know how to achieve curriculum objectives by using SM in online learning.	0.923		
	SMK-4	I understand how to achieve lesson objectives by using SM in online learning.	0.954		
	SMK-5	I can choose a suitable SM platform to meet lesson objectives in online learning	0.862		
	SMK-6	I can design collaborative and highly interactive activities in engaging with the content through SM in online learning.	0.931		
	SMK-7	I can deliver collaborative and highly interactive activities in engaging with the content through SM in online learning.	0.830		
	SMK-8	I can provide quick response and meaningful feedback through SM use in online learning.	0.912		
Attitude	ATT-1	The use of SM for online learning amid COVID-19 would be good for me.	0.653	.738	.918
	ATT-2	For me, using SM in online learning would be useful.	0.889		
	ATT-3	believe using SM for online learning amid COVID-19 would be important.	0.888		
	ATT-4	For me, using SM for online learning amid COVID-19 would be easy.	0.921		
	ATT-5	My using SM for online learning amid COVID-19 is likely to increase awareness about online learning amongst the stakeholders.	0.747		
	ATT-6	To me, raising awareness regarding online learning amongst the stakeholders is extremely desirable.	0.880		
	ATT-7	By using SM in online learning, I will be able to improve my knowledge and skills	0.852		
	ATT-8	I will have carrier growth if I use SM in online learning.	0.789		
	ATT-9	To me, career growth is important.	0.914		
	ATT-10	My use of SM in online learning would ultimately result in increased students learning.	0.965		
SM use by Religious Scholars	SMR-1	It is good that religious scholars use social media for religious lectures.	.827	.693	.871
	SMR-2	Religious scholars' use of SM encourages me to opt for social media in online learning.	.837		
	SMR-3	After watching religious scholars' use of SM, I think positive about using it in online teaching and learning.	.833		

**Table 3.** Discriminant validity using HTMT.

	ATT	PD	SMD	SMK	SMR
Attitude-ATT	.848				
Physical Distancing-PD	.400				
SM use During the Physical distancing-SMD	.214	.810			
SM Knowledge-SMK	.793	.381	.523	.881	
SM Use by Religious Scholars-SMR	.216	.037	.214	.172	.832

**Table 4.** Path coefficient and hypothesis testing.

Hypothesis	Path	Path coefficient ( $\beta$ )	T-Value	P-Value	Decision
H1	PD -> SMD	.726	19.291	.000	Supported
H2	SMD -> SMK	.523	7.918	.000	Supported
H3	SMD -> ATT	.589	3.690	.000	Supported
H4	SMK -> ATT	.655	7.720	.000	Supported
H5	SMR -> ATT	.161	.918	.358	Not supported
H6	SMR-> SMD	.188	4.390	.000	Supported

However, the same may have implications for schools to investigate how they can accommodate both face to face and online learning modes concurrently applicable. The same will need schools to focus on teachers' capacity building and resource allocation and provision.

## 6. Limitations and future research recommendations

In SM's actual use, challenges may exist, such as cultural resistance, pedagogical issues, or institutional constraints (Manca and Ranieri, 2016), that may influence teachers' social media use in online learning. This study remains limited in this regard, and future research needs to consider this very aspect. The study is also limited to the country's urban setting because internet connectivity is mostly available to populate urban areas (Kandilov and Renkow, 2010). Therefore, the findings may not be generalized to the other parts. Further research considering the difference in terms of the urban and rural divide could be of interest. Research in other developing countries would be a significant contribution to validate the findings of the study.

## 7. Conclusion

The results confirm that increased SM use amid the physical distancing due to the COVID-19 pandemic has significantly affected teachers' attitudes to use SM in online learning. In addition, the increased SM use also had a measurable effect on their knowledge of SM, which consequently influenced their attitude toward its use in online learning. The influence of religious beliefs, reflected in the use of SM by religious scholars, deems supportive in the integration of SM as an instructional tool. The findings make it clear that there is a possibility of using SM in online learning amid schools' closure during a crisis such as the Covid-19 pandemic. The use of social media could also be beneficial for countries that, according to Attwood et al. (2013), are resource-poor and deprived of adequate ICT-supported facilities. Likewise, in countries like Pakistan, where schools, according to Ismail et al. (2020) and Jomezai et al. (2018), exist with insufficient ICT infrastructure and incapable teachers, SM is phenomenal for online learning. It becomes imperative to positively shape teachers' attitudes of SM use in online learning into practical application through supportive policies to overcome students' deprivation from learning amid the COVID-19 pandemic and similar future crises.

## Declarations

### Author contribution statement

Nazir Ahmed Jomezai, Fozia Ahmed Baloch, Tariq Shah, Muhammad Jaffar, Siraj Bashir, Gulab Khan Khilji: Conceived and designed the experiments; Performed the experiments; Analyzed and interpreted the data; Contributed reagents, materials, analysis tools or data; Wrote the paper.

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Data included in article/supplementary material/referenced in article.

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The authors declare no conflict of interest.

### Additional information

No additional information is available for this paper.

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