

Article



# Social Media Influence on Students' Knowledge Sharing and Learning: An Empirical Study

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Abstract: Social media brought new opportunities not only for entertainment and marketing but also for knowledge sharing and learning. This research attempted to examine the effectiveness of social media as an educational tool and its impact on knowledge sharing among college and university students. The study used social cognitive and connective theories to develop a model that examines the influence of personal motivations (such as reputation) and social networking features (such as file sharing and student engagement) on information sharing. The study concluded that social media can promote knowledge sharing and can increase student motivation and performance. The findings suggest that social networking is a valuable method of information dissemination and can be used to encourage student engagement. The article also provides implications, restrictions, and future research directions for using social media in education. This study provides valuable insights for educators and institutions looking to incorporate social media into their teaching and learning strategies.

**Keywords:** social media; learning; education; knowledge sharing; student engagement; motivation; social cognitive theory; connective theory; SEM



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## 1. Introduction

Social media has become a prevalent tool for student communication and information sharing. However, the impact of social media on knowledge sharing among students is an area of ongoing research. The previous studies on the effect of social media on student's performance showed mixed results. Empirical studies have shown that social media can positively and negatively affect student knowledge sharing. Previous studies have shown that social media can facilitate the sharing of information and ideas among students, leading to increased learning and collaboration. Few research studies have found that the excessive use of social media can lead to distractions and decreased face-to-face interactions, which can negatively impact knowledge sharing [1]. Future research is needed to better understand how social media can be leveraged to enhance student knowledge sharing.

Digital technology can enhance academic learning at universities by providing new and engaging ways for students to interact with and understand the course material. According to the ICAP (Instructional Competencies for Academic Programs) structure, digital technology can be especially helpful when used by faculty to encourage active learning rather than passive teaching methods, which can help improve students' overall learning experience and support the United Nation's goal of providing inclusive and equitable education for all. With the shift to online learning in 2020 and 2021, platforms such as Zoom and Google Meet have become crucial tools for communication and instruction, allowing for remote one-on-one consultations and making it easier for students to access educational resources. The current research can be classified as media and communication studies, specifically the intersection of different scientific disciplines in the field. Research was conducted to study the use of social media for educational purposes among nurses in Saudi Arabia. The

study the use of social media for educational purposes among nurses in Saudi Arabia. The research findings showed that a high percentage of healthcare personnel in Saudi Arabia use social media for educational purposes [2]. The participants of the study considered social media to help improve their knowledge, creativity, and decision-making and problem-solving abilities.

Social media usage studies reveal that Facebook, Instagram, LinkedIn, and Twitter are highly popular among higher education students [3]. Khaola et al. [4] aimed to examine the reasons for updating WhatsApp, Instagram, and Facebook "features" among the students and how these reasons relate to academic performance and helping others. The study found that reasons for updating these features include social identity, social networking, social conditioning, transparency, pleasure, and trendy clothing. Additionally, when the epidemic began, nonconformist international students reported using social media more than other categories, providing insight into the unique and diverse experiences of international students. The study also suggested that identifying individual-specific relevance to psychological well-being can add nuance to social compensation theory [5]. The research aimed to complement and expand the knowledge of how students use social media for learning by introducing desirable behaviors that improve academic performance while helping others. This study attempted to understand how social media works by considering its reputation as a personal motivation that influences how students share knowledge and learn. It gives a complete picture of social media and its users.

Few studies have discussed the potential negative impact of social media on students' experiences and knowledge exchange among students [6]. Some studies also highlight the importance of understanding how motivating factors, such as reputation, impact the exchange of information on social media. The study also mentioned that the it aimed to provide perspective by examining social media in terms of function rather than location and to extend previous work on comparisons in developed and developing nations. The southern Indian states are better than other Indian states in terms of human development [7]. The research conducted by NSSO showed that southern Indians are more likely to pursue higher education than those residing in the north.

As a result, the research objectives of this study are as follows:

- To investigate the extent to which document exchange facilitates knowledge sharing among students.
- To examine the relationship between knowledge formation and knowledge sharing.
- To investigate the impact of student engagement on knowledge sharing in educational settings.
- To explore the relationship between reputation and learning performance among students.

This study focused on measuring the use of social media among students at South Indian private universities in document exchange, knowledge creation, student engagement, and reputation. The aim was to understand how social media usage impacts knowledge sharing and how it can benefit student learning.

## 2. Literature Review

Social cognitive theory (SCT) is a psychological approach that emphasizes the importance of the social environment in shaping behavior, knowledge acquisition, and self-regulation. The theory, developed by Bandura, suggests that motivation is driven by an individual's goals and expectations of outcomes [8]. SCT has been widely studied in knowledge management literature, particularly regarding student behaviors such as media exposure, desired learning, interactions, and student engagement. Researchers have also used SCT to study how people use online platforms such as YouTube to share information, finding that factors such as awareness and expectations of outcomes affect how frequently people share their learning. However, questions about the diversity and cultural difficulties,

methodologies, and long-term effects of interventions are essential topics that still need to be addressed in SCT research.

The study by Alexander et al. [9] highlighted the importance of participant observation in understanding the motivations behind individuals' decisions to participate in information sharing on social networking sites. The literature review suggests that there needs to be more research on the impact of social media on knowledge sharing among university students. The study aimed to investigate several SNS user behaviors, including communication, the production of knowledge and informational material, and document sharing. The findings suggest positive relationships between file sharing, information exchange, and offline and online discussions [10]. Previous research also supports the use of social media for collaborative practice and suggests that reputation can be a factor that affects not just aspirations but also cognitive ability and reward outcomes [11]. The meta-analysis findings showed that electronic devices are widely used for learning purposes among veterinary students [12].

The study by Eid and Al-Jabri [10] discussed how the Internet has evolved, with social networking sites transforming from a technical hub for socialization to an educational, economic, and social administrative agency. The study focused on the importance of understanding context when researching social media use by college students in Malaysia, a developing country where universities are still in their infancy. The study noted that there needs to be more research on social media in developing markets, and it highlighted the importance of understanding specific social networking platforms such as Facebook, Instagram, LinkedIn, and Twitter. The study also highlighted the recent development of the growth and acceptance of social networking sites or Web 2.0 and how social media use for work can influence how information is shared across an organization. The study suggested that four social media characteristics can alternate approaches to participate in open debates about knowledge. Some techniques have a positive impact, while others have a detrimental impact. Technical factors may affect knowledge sharing among Saudi Arabia's King Fahd University of Petroleum and Minerals students. The study showed a positive association between social media use and student knowledge sharing. The study also highlighted the original study's limitations, practical outcomes, and research potential for future studies [10].

For educators and academics, student participation is a mystery. This work proposes a tentative theoretical paradigm for active learning that mentions electronics as a particularly influential component. The implications for future theory-based research on the relationship between student participation and digital learning were explored, as were suggestions for educators [13], or whenever data is exchanged indirectly (e.g., through the use of technology), knowledge sharing frequently occurs [14]. Goldie stated that connected devices can improve student knowledge and instruction [10]. Yeh et al. [15] claimed that, while people participate in digital speaking activities, learning communities can contribute to knowledge sharing. Furthermore, previous researchers found that when individuals establish organizations, the primary purpose of sharing information is to empower others by empowering themselves or gaining an advantage. He claimed that it was to obtain praise. For example, reputation can foster the desire of virtual groups to share information [16].

The research by Almutairi et al. [17] suggested that various factors, such as geography, demographics, and grade, affect the amount of time nursing students spend on social media. Academic institutions should consider these when developing curricula and delivering instruction. In practice, most nursing students have access to and use social media, which can be easily incorporated into curriculum design [18]. The study suggests that social media can support medical students' intellectual forms and encourages engagement through rapid interaction and collaboration. The rise of social media has also led to the broad ramifications of increased use, with both positive and negative consequences [19]. The research of Manu et al. [20] investigated how pupils perceive social media as a valuable educational tool. It showed how openly social media is being used in education, revealing how and why it is used and has theoretical and didactic significance.

The impact of phone applications and social media on various aspects of education and learning include the balance between subjective enjoyment and utilitarian factors in phone apps and the benefits of social media for knowledge sharing and student engagement. Studies by Akdim et al. [21], Rasheed et al. [22], and Khan et al. [23] support the idea that social media can have positive effects on learning outcomes, mainly through virtual connections with peers and subject matter experts. There is also emphasis on the importance of understanding the role of social media during a pandemic for student career excellence. The definition and sources of all the four dimensions used for the study is presented in Table 1.

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## 2.1. Document Exchange's Impact on Knowledge Sharing

Research has shown that students often use social networking sites (SNS) to share academic content, such as lecture notes, homework, project papers, and instructional videos. Dropbox, WhatsApp, and YouTube are commonly used for document sharing. The passage of notes needs to be fully explored, along with the concept of document sharing within the framework of social networks. When exchanging documents, students save knowledge documents to files and transfer content to files, which is described as engagement shared by learners on one or more SNSs [10].

Much recent discussion has been about the digital document interchange among people working with computers, entertainment, and film. The study aimed to investigate how college students felt about sharing documents, and the finding showed that most of the survey participants use peer-to-peer file sharing and do not consider it illegal or unethical. Saudi Arabia's perception of the company's experience and conduct is not affected by Web 2.0 technology. However, the survey found that some of the most popular Web 2.0 apps include document sharing, chat rooms, and social networking [11]. The other researchers found significant associations with social media. We postulated that document sharing encourages information exchange, consistent with earlier findings. Many traditional methods of information sharing have also been implemented in organizational contexts but need to be examined more in learning settings [24]. As opposed to this, we found a negative implication between system integration and information-sharing trends regarding document sharing in Saudi companies. According to scientists, most technology users waste time and effort. This study addresses a lesser-known relationship between SNS-based document sharing and knowledge sharing. Although the effects of information sharing inside an organization have been extensively studied, the connection between

document sharing and information shared about how to use social networking sites is a subject that has received less attention. By examining how integrating social networking technologies into document exchange impacts student knowledge sharing, this study aimed to close a gap in the literature.

#### **H1:** *Knowledge sharing is strongly correlated with document exchange through social media.*

## 2.2. Knowledge Formation's Impact on Knowledge Sharing

Knowledge is shaped through content generation, yet fresh content is frequently produced and shared on social networking sites [25]. Another research study conducted in Indonesia showed that social interaction in social media groups affects knowledge formation [26]. The outcome became clear that people in the communication service industry could use blogs instead of wikis to generate knowledge [27]. According to scientific literature, groups contributing to social media knowledge production are significantly more likely to enhance knowledge sharing in the community or active learning networks (Barker, 2015 [28]). In direct conflict, independent research concerns, writing or recording lecture notes, expanding and growing concepts in the video, and generating such materials are all examples of how knowledge is formed, according to Nonaka et al. and Takeuchi et al. (1995). It can take the form of postings on social media sites and many other incentives. According to Carter and Nugent [29], individualized learning connections can be established on several social media platforms aimed at knowledge building.

Additionally, Barker [28] argued that social media is widely used in digital groups to help people build knowledge in a highly productive manner. The author hypothesized that knowledge formation is highly related to information sharing and student academic performance, which is consistent with different reinterpretations of previous results, showing that the current era of digitization has led to increased knowledge creation. It is associated with a large number of different activities and platforms. Social media's interactive and collaborative nature has improved student academic performance by providing many meaningful and practical learning opportunities. Knowledge formation and knowledge exchange go hand in hand.

## **H2:** The sharing of knowledge and knowledge formation go hand in hand.

## 2.3. Student Engagement Impact on Knowledge Sharing

Partnership actions necessitate the utilization of thoughts, the exchange of information, and, indeed, the comprehension of other points of view (Barron, 2003 [30]). The widely utilized social media platforms give information on how people connect through knowledge sharing, which might integrate online contact into daily life. The article gives an overview of the study on implementing digital media by instructors throughout the past ten years, according to Hepplestone et al. [31]. According to the researchers, technology can improve student engagement with evaluations that covered situations in which an adaptable releasing strategy was used. Students must provide the implementation plan depending on their input. According to Kuh et al. [32], technological advancements have been shown to increase student involvement. According to several researchers, enhanced thinking is a crucial concept in learning that might ultimately result in student involvement. According to Kirschner [33], student engagement utilizes different instructor-focused communication with the participatory student-focused teaching style, increases exam scores, and fosters students' enthusiasm and drive in learning [34–36]. A recent study in Bangladesh showed a connection between students use of social media and platforms to share their knowledge and students' overall development [37]. The utilization of social media platforms has also been linked to favorable student engagement experiences, according to published research (e.g., (Lockyer and Patterson [38]; Baird and Fisher [39]). The spotlight is still on social media networks, seen as technological platforms that significantly improve outcomes and experiences through perceptual engagement and interpersonal communication [38]. Numerous research studies have noticed the potential benefits of using web technologies in the classroom environment, including increased cooperation and peer engagement.

**H3:** *Knowledge sharing and student engagement go hand in hand together.* 

## 2.4. Impact of Reputation on the Performance of Learning

In social networks, many more tasks are typically completed without payment. Students are further inspired to contribute to such events if they believe that sharing their expertise and information with an online community would enhance their standing and reputation with their peers [40]. In a digital setting, knowledge sharing must be motivated rather than forced. Knowledge sharing that is implemented when competitors recognize that their communication may be rewarded with benefits such as an improved reputation [41]. Since knowledge is an immaterial resource typically obtained through networking or skill development, knowledge transmission via digital platforms may be more challenging in situations with no financial reward [42]. In a study, Singh and Malik concluded that social media users have a significantly higher learning motivation than the nonusers [43]. The results showed that views toward blogging were positively connected with information sharing (reputation) and simplicity of use, which accounted for 78% of the variation. A blog participant's intention to continue using blogs was significantly influenced by social characteristics such as volunteer recognition and blogging stance [40]. A preliminary opinion or assessment of a person given in response to a specific assignment that an effort has been made to complete or is still being made can be regarded as having a good or unfavorable reputation [41]. The study by Yan et al. [41], which demonstrated that students' knowledge-sharing behavior rose in response to the reputation of online prescribers, lends credence to this notion. As a result, the researcher believed that reputation and information sharing are related. However, the degree of credibility required for information exchange is noteworthy to increase significantly and may vary depending on the context. Therefore, it is vital to consider the context when assessing the link between sharing information and reputation. The research framework of the study is presented in Figure 1.

**H4:** *The sharing of knowledge is positively correlated with reputation.* 



Figure 1. Research framework.

Construct	Definition	Item	Source
Document exchange	Document exchange via social media refers to the sharing and exchanging of digital documents between two or more people through online communication platforms, such as emails, blogs, websites, chatrooms, and forums.	3	Eid and Al-Jabri (2016) [10]; Al-Rahmi et al. (2018) [11]
Knowledge formation	Knowledge formation via social media defines social media as "digital technologies that facilitate the production and sharing of information, ideas, and other forms of expression through virtual communities and networks."	5	Jadin et al. (2013) [25]; Carter and Nugent (2010) [29]
Student engagement	The use of social media for student engagement is growing in popularity as a way for them to communicate with their classmates and stay current on course topics.	5	Barron (2003) [30]; Hepplestone et al. (2011) [31]; Lockyer and Patterson (2008) [38].
Reputation	According to this study, reputation motivates people to share significant knowledge, information, and experience in online communities to boost their status or image of themselves.	4	Arenas-Gaitan et al. (2013) [40]; Yan et al. (2016) [41]; Hoseini et al. (2019) [42]

Table 1. Definitions and sources for dimensions.

## 3. Research Methodology

## 3.1. Instrumentation

The study used a survey questionnaire on a five-point Likert scale to measure social media functions, such as document exchange, knowledge formation, student engagement, and the motivational factor of reputation. The questionnaire prepared the scale items from previous a researcher's questionnaire. The details of the scale items and their sources are presented in Appendix A.

## 3.2. Data Collection Techniques and Steps

The data collection for this study was focused on South India, as the region has a significant concentration of the nation's top private universities. The top 53 out of 100 educational institutes listed in the NIRF ranking are from South India [44]. A non-probability sampling method was adopted, as not all private colleges provide student information. The snowball sampling strategy was chosen, as recruiting willing participants in the general population was difficult. Surveys were sent out to students at various universities, and responses were requested. The data collection for this study was conducted by choosing the top 10 south Indian universities based on NIRF ranking. The snowball sampling strategy, a non-probability sampling method, was adopted, and surveys were sent to working professionals at various universities. Before distributing the surveys, a pilot test was conducted with 50 participants to improve the questionnaires. In the final study, 510 questionnaires were distributed, and 461 were returned, representing a response rate of over 90%. Fifty-four questionnaires were eliminated due to incomplete responses, resulting in a final dataset of 407 usable questionnaires for further analysis.

## 3.3. Common Method Bias or Variance

This research applied the procedural and statistical approaches suggested by Kock et al. [45] to address concerns regarding common method bias or variance. The study used a questionnaire to gather data from working professionals in various educational programs at top universities in South India. The survey included questions about social media functions, knowledge formation, student engagement, and reputation. Additionally, Harman's single-factor test was used to ensure that the variation indicated by the first component was well

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below the maximum threshold of 50% [46]. The final data set used for analysis was derived from 407 usable questionnaires, with a response rate of over 90%.

#### 4. Results and Analysis

## 4.1. Reliability

McDonald's omega and Cronbach's alpha were calculated to assess the construct reliability of the scale. These measures indicate the consistency and internal reliability of the items within a scale. A scale is considered dependable if its Cronbach's alpha is more significant than 0.70 and adequate if it is greater than 0.60. Table 2 below displays the scale reliability statistics.

Table 2.	Item re	liability	statistics.
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Itoma		If Item Dropped		
items	Item-Kest Correlation	Cronbach's Alpha	McDonalds's Alpha	
DE1	0.444	0.859	0.863	
DE2	0.423	0.860	0.864	
DE3	0.517	0.856	0.859	
REP1	0.541	0.855	0.858	
REP2	0.407	0.861	0.864	
REP3	0.553	0.854	0.858	
REP4	0.447	0.859	0.862	
REP5	0.585	0.852	0.856	
KF1	0.524	0.856	0.858	
KF2	0.486	0.857	0.860	
KF3	0.431	0.859	0.862	
KF4	0.450	0.859	0.862	
KF5	0.537	0.855	0.858	
SE1	0.512	0.856	0.859	
SE2	0.481	0.858	0.861	
SE3	0.503	0.856	0.860	
SE4	0.446	0.859	0.862	
Scale		0.864	0.867	

#### 4.2. Respondents Profile

Table 3 infers that the current study employed survey data to examine how three social media site features and one motivating component affected the improvement of student data exchange. To ensure the generalizability of student enrollment, the author collected information from the top 10 private universities in South India. Statistics from our poll indicate that education is necessary for jobs. SSC students use social media at a rate of 0.4%, whereas undergraduate and intermediate students use it at rates of 48.7% and 41.6%, respectively. This finding indicates that social media plays a significant role in students' lives, especially at higher levels of education. Our sample comprises busy professionals from the public and corporate sectors and foundation and undergraduate, and postgraduate students. Specifically, men (100.0%) responded slightly more to the survey than women (35). Most respondents (77.2%) who used social networking sites were between the ages of 17 and 21, and 48.7% of respondents indicated that they were undergraduate students, 1.2% indicated that they were enrolled in foundational or diploma programs, and 6.2% indicated that they were enrolled in postgraduate programs. The survey results indicates that, although there was a more excellent representation of males than females, many female participants used social networking sites.

Socio-Demographic	Characteristics	Ν	Percentage
	Female	258	53.42%
Gender	Male	225	46.58%
	17–20	373	77.2%
	21–23	92	19.0%
Age	24–27	4	0.8%
	28–31	7	1.4%
	32–above	7	1.4%
	SSC	2	0.4%
	Intermediate	201	41.6
Education	Diploma	6	1.2%
Education	UG	235	48.7%
	PG	30	6.2%
	Ph.D.	9	1.9%
	100,000-300,000	273	56.5%
	300,001–600,000	87	18.0%
Income	600,001–900,000	66	13.7%
	900,001-1,200,000	30	6.2%
	1,200,001–above	27	5.6%
	Student	430	89.0%
	Professional	9	1.9%
Occupation	Entrepreneur	6	1.2%
companion	Public Sector	6	1.2%
	Private Sector	24	5%
	Homemaker	8	1.7%

Table 3. Socio-demographic characteristics of respondents.

## 4.3. Exploratory Factor Analysis

EFA factor loading was refined using Oblimin rotation and low residual extraction. With  $X^2 = 253$ , DF = 80, and p.001, factor loading of less than 0.32 was employed; this indicated the availability of workable correlation coefficients that differed considerably from an exact solution. This refinement of factor loading helps identify the most vital correlation sources between different variables. A significant Bartlett's test of sphericity was conducted using the "minimum residual" extraction method and an "Oblimin" rotation,  $X^2$  = 2604, DF = 139, p = <0.001. The finding revealed a workable correlation coefficient that significantly deviated from an equation connecting the conceptual model to the final four-factor solution. The Kaiser-Meyer-Olkin method of sampling adequacy (KMO MSA), with a value of 0.839, determined that the simple random sample size was sufficient for this study. The sample test results show that according to specific theories, RMSEA levels under 0.05 are considered good, those between 0.05 and 0.08 are considered acceptable, those between 0.08 and 0.1 are considered marginal, and those over 0.1 are considered poor (Kim et al., 2016). Moreover, as per the EFA analysis, the RMSEA value of the data was 0.0775. The significant Bartlett's test supported the Oblimin rotation and extraction of four latent factors, which were subsequently tested for construct validity.

## 4.4. Confirmatory Factor Analysis

Confirmatory factor analysis is a factor analysis that evaluates the degree to which a proposed model accounts for the data under observation. Every one of the elements could satisfy the CR (>0.400) and AVE (>0.283) requirements. Knowledge formation, or KF, was determined to have an acceptable CR value (3.353). However, DE had the lowest AVE value among the factors (0.283), indicating that although it may strongly influence all items in the measurement, this needs to be better reflected in individual item scores. Document exchange (DE) was used when evaluating the AVE with the lowest score (0.283). Next, we obtained an RMSEA of 0.0661, a Chi-Square of 149, and a Relative Chi-Square (2/df) of 3.10. With these results, the research author concluded that KF was the strongest factor influencing the measurement. However, document exchange (DE) was found to have a strong influence on all items within it; the author hypothesized that the items in DE would be more accurate when evaluating the AVE. The researcher obtained a better model fit for our confirmatory factor analysis by deleting some items.

Although CFA and EFA are linked (item weights and factor loadings are latent variables and factors, respectively), CFA does not share some of EFA's drawbacks regarding bias studies. Instead of the correlation matrix, it uses the means and the variance-covariance matrix. Thus, it can identify both uniform and nonuniform bias. Additionally, its parameters may be statistically tested because it is an inferential model. Confirmatory factor analysis for one factor, the one-factor model, which assumes that a single common factor causes covariance (or correlation) between items, is the simplest basic model in CFA. The researchers used the same assumption in exploratory common factor analysis, that total variance may be divided into ordinary and unique. Moreover, after conducting the EFA with all the components, the researcher excluded some of the factors in the CFA to obtain a decent model fit.

#### 4.5. Path Diagram

There was no covariance link in the first model. The final model was created using the suggested covariance connections provided by the program (Figure 2). The CFI and TLI values were more than 0.9 when the final model fit indices were assessed and were less than 0.05 for the RMSEA (Hair et al., 2021 [46]). The inventory was at an acceptable level according to the CFA results.



Figure 2. Structural equation model.

## 4.6. Structural Equation Model

A structural equation model (SEM) was used to determine the model fit. According to Hair et al. [46], this method can evaluate many dependence correlations concurrently in a sequence, mainly when the model's components exhibit direct and indirect impacts. The first step in interpreting SEM findings should be to look at the coefficient of determination index, which shows how well the model matches the data in the suggested model. To ensure that the hypothesized linkages exist, the researcher assessed the structural model's goodness of fit. The Bentler-Bonett Non-normed Fit Index (NNFI) of 0.983, the Bentler-Bonett Normed Fit Index (NNFI) of 0.983, the Bentler-Bonett Normed Fit Index (NFI) of 0.748 can all be used to evaluate a model. Other metrics, including the Chi-Square  $X^2$  of 253, the relative Chi-Square  $X^2$  of 3.16, and the Root Mean Square of Error Approximation (RMSEA) of the structural model, were regarded as having a good fit since all values of the goodness of fit indices in Table 4 were within the acceptable range.

Table 4. Goodness of fit indices.

Indices	Model	Fit Indices
Root Mean Square of Error Approximation (RMSEA)	0.067	Values less than 0.07 (Steiger, 2007).
Chi-Square (χ2)	(253).	Low $\chi 2$ relative to degrees of freedom with an insignificant <i>p</i> -value ( <i>p</i> > 0.05)
Relative Chi-Square ( $\chi^2/df$ )	3.16	2:1 (Tabachnik and Fidell, 2007) 3:1 (Kline, 2005)
Comparative Fit Index (CFI)	0.987	Values greater than 0.95
Tucker-Lewis Index (TLI)	0.983	Values greater than 0.95
Bentler-Bonett Non-normed Fit Index (NNFI)	0.983	NNFI of 0.96 or higher
Bentler-Bonett Normed Fit Index (NFI)	0.981	Values greater than 0.90
Parsimony Normed Fit Index (PNFI)	0.748	Values >0.50
Bollen's Relative Fit Index (RFI)	0.976	Values close to 1
Bollen's Incremental Fit Index (IFI)	0.987	Values greater than 0.90
Relative Non-centrality Index (RNI)	0.987	Values above 0.9

#### 4.7. Interpretation for Structural Equation Model

An analysis of the relationships between variables uses a structural equation model to determine how one variable affects another. Jamovi used a structural equation model to explain how different variables (using social media to exchange documents, create knowledge, and engage students) relate to the individual motivation factor, i.e., reputation aids in identifying the areas that need more research to fully understand this subject, as well as how the variables interact with one another, which is an examination of how social media affects the exchange of documents. It is essential to comprehend how documents are shared and traded today and whether using social media boosts student engagement. It is critical to examine how social media affects student engagement and fosters collaboration to comprehend its role in document exchange. It is necessary to study how students participate in knowledge creation through social media and find the motivation factor (reputation) that affects them. The findings support H1, H2, and H4 since they show that knowledge development, document sharing, and reputation improve student knowledge. It is fascinating that document sharing positively impacts student performance, followed by knowledge acquisition and reputation. This implies that students know the value of acquiring new knowledge and communicating information, particularly regarding actions that improve reputation. In this aspect, our findings are consistent with the claims made by students that using social media boosts knowledge development, document sharing, and reputation [10,11]. Researchers need to stop ignoring the plausible contributions of non-significant results; the prior finding contradicts the phrasing of previous discussions

that otherwise have spearheaded the understanding that certain variables exert a significant influence on knowledge sharing.

## 5. Discussion and Implications

This study examined the relationship between social media use, personal motivation, and knowledge sharing among university students. The SEM analysis showed that the social media function of knowledge formation (0.58) strongly affects knowledge sharing. The study also provides new insight into how social media use and student learning motivation influence knowledge sharing among university students. According to Hosen et al. [42], social media is expected to become a powerful tool for learning and teaching in higher education, which allows for knowledge exchange through document sharing, student engagement, and knowledge growth. Studies have shown that using social media in education can positively impact student success. However, research on the specific effects of knowledge sharing on social networking sites still needs to be completed. A study by Eid et al. [10] found that the use of social media in education can lead to the creation of instructional material, file sharing, enjoyment, and amusement among students in Saudi Arabian educational institutions. A study by Abbas et al. [47] looked into the negative impact of social media use on 831 university students in Pakistan. Similar findings reported by the authors of this study found that frequent interruptions and wasted productive time were responsible for the negative impact on student academic performance. They also found that knowledge generation, document sharing, and student interaction are crucial for students to share information in the digital age. However, the authors also pointed out that when social media is used moderately for educational purposes, there are several positive consequences, such as more opportunities for personal and professional growth, improved engagement and confidence-building, and expanded access to global knowledge and resources.

The results have significant implications for higher education institutions and support the idea that social media can be effectively used for knowledge sharing in academic settings. The study highlights the importance of considering student learning motivation and social media use when designing initiatives to facilitate more effective knowledge sharing. Overall, the study contributes to the understanding of university students' knowledgesharing behavior and the potential of social media to support it. This study found that reputation and personal motivation significantly influence knowledge-sharing behavior among university students in the South Indian context. The researchers also discovered positive connections between social media use and student learning motivation. Our research provides a fresh conceptual framework for understanding the role of social media in academic settings. It offers suggestions for higher education institutions to consider when designing initiatives to facilitate more effective knowledge sharing. Our findings also suggest that using social media platforms can be beneficial for promoting knowledge sharing among students. However, it is vital to consider the specific features of the platform and how they align with the individual student's motivation. Additionally, our study highlights the need for higher education institutions to consider the effects of social media on student learning and knowledge sharing when implementing initiatives related to social media use in academic settings.

The study's methodology offers a comprehensive framework for integrating social media into university life, presenting the potential for faculty, staff, and students to promote knowledge-sharing practices that boost engagement among students and academic success. The digitization of the world and the rising use of social media make it a valuable resource for colleges to enhance student achievement. Current research provides a deeper understanding of the complex relationship between social media and knowledge sharing among university students. It offers valuable insights for educators and administrators when incorporating social media into their teaching and learning strategies.

## 6. Conclusions

The results of our study indicate that social media platform features, such as utility and aesthetic appeal, significantly impact the knowledge-sharing behavior of students. Higher education institutions should consider these findings when developing social media initiatives to promote knowledge sharing. Furthermore, our research provides a framework for examining the influence of social media on student learning and motivation, which can be applied in future research studies. Overall, our study adds to the growing body of literature on using social media in higher education and provides valuable insights for educators and practitioners seeking to enhance student learning outcomes through social media. The study used exploratory and confirmatory factor analysis to determine the presence of workable correlation coefficients and to evaluate the fit of the proposed model. The results show that knowledge formation and reputation significantly influence students' knowledge-sharing behavior. Social media use and student learning motivation are crucial in facilitating effective knowledge sharing.

The authors concluded that social media could provide both challenges and opportunities for students and that it is up to them to make the most of this technology to enhance knowledge exchange among peers. However, the study also found that students can become easily distracted by the recreational and commercial features of the site. The study's results contradict the assumption made by other researchers that social media use is detrimental to college students' performance in learning. Instead, the analysis revealed that social media features such as document sharing could facilitate student participation, improve student knowledge formation, and offset the potential distractions and adverse effects of the more entertaining features of social media.

The study also highlights the importance of considering different types of social media tools and their roles in knowledge sharing. Institutions should focus on student learning motivation and social media use when designing initiatives to promote student knowledge sharing. Additionally, the study suggests no significant correlation between a reputation for information sharing and student academic performance. Overall, this research advances our understanding of how social media and personal motivation influence knowledge sharing among university students and provides valuable insights for higher education institutions to consider. The research findings show how social media use affects knowledge sharing and found that when students post their papers on social media, they tend to contribute more. This suggests that social media can be a valuable tool for students to collaborate and share information while studying, which enhances their knowledge development.

#### Implication for Future Research

The study's findings have significant implications for private institutions in South India. However, the research only covered private institutions in South India, and the results may not accurately reflect the behavior of other private or public universities in South India. Therefore, more research should be conducted to assess the differences between private and public universities in South India regarding their attitudes toward university governance. Future research could extend the work to explore how specific learning styles match preferences for using social media tools in education.

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## Appendix A

Table A1. Construct Items and Sources.

Construct	Items	Source
Document exchange	DE1 Students use social media platforms to exchange documents to enhance their academic learning. DE2 Students commonly use social networking services (SNS) for knowledge sharing. DE3 Social networking services have remarkable eventuality for supporting knowledge operating conditions.	Eid and Al-Jabri, 2016 [10]; Al-Rahmi et al. (2018) [11]; Ozlati, et al. (2012) [24]
Knowledge formation	<ul> <li>KF1 The creation of content in social media facilitates knowledge formation among students.</li> <li>KF2 Knowledge sharing is characterized by collectively contributing and creating new knowledge among peers.</li> <li>KF3 Developing study materials by the respective students and sharing them on social media will facilitate knowledge formation.</li> <li>KF4 Students use social media information to prepare for their seminars, projects, class presentations, etc.</li> <li>KF5 The usage of social media by faculty members to enhance knowledge sharing improves the student's academic performance.</li> </ul>	Jadin et al. (2013) [25]; Carter and Nugent (2010) [29]
Student engagement	SE1 Social media offers active interaction between students and faculty for knowledge sharing through virtual communication. SE2 Students' use of social media may increase their interest in learning through active engagement. SE3 A strategy for student engagement is creating exciting content/information through social media. SE4 Social media has characteristics that allow two-way communication between students and faculty, which facilitates student engagement.	Barron, 2003 [30]; Hepplestone et al., 2011 [31]; Lockyer and Patterson, 2008 [38]
Reputation	REP1 Students' knowledge sharing might be rewarded with benefits such as reputation. REP2 The students share their ideas and knowledge and expect rewards and recognition. REP3 The university's reputation will improve if students actively participate in social media. REP4 The students share their ideas and knowledge and expect rewards and recognition. REP5 If students can help create knowledge, exchange documents, and communicate virtually, then the people who use social media will respect them enough.	Arenas-Gaitan et al., 2013 [40]; Yan et al., 2016 [41]; Hoseini et al., 2019 [42]

## References

- 1. Chen, M.; Xiao, X. The Effect of Social Media on the Development of Students' Affective Variables. *Front. Psychol.* **2022**, *13*, 1010766. [CrossRef] [PubMed]
- Hurajova, A.; Kollarova, D.; Huraj, L. Trends in Education during the Pandemic: Modern Online Technologies as a Tool for the Sustainability of University Education in the Field of Media and Communication Studies. *Heliyon* 2022, *8*, R713–R715. [CrossRef] [PubMed]
- Hosen, M.; Ogbeibu, S.; Giridharan, B.; Cham, T.-H.; Lim, W.M.; Paul, J. Individual Motivation and Social Media Influence on Student Knowledge Sharing and Learning Performance: Evidence from an Emerging Economy. *Comput. Educ.* 2021, 172, 104262. [CrossRef]
- Khaola, P.P.; Musiiwa, D.; Rambe, P. The Influence of Social Media Usage and Student Citizenship Behaviour on Academic Performance. *Int. J. Manag. Educ.* 2022, 20, 100625. [CrossRef]

- Chen, Y.A.; Fan, T.; Toma, C.L.; Scherr, S. International Students' Psychosocial Well-Being and Social Media Use at the Onset of the COVID-19 Pandemic: A Latent Profile Analysis. *Comput. Hum. Behav.* 2022, 137, 107409. [CrossRef]
- Jabeen, F.; Tandon, A.; Azad, N.; Islam, A.K.M.N.; Pereira, V. The Dark Side of Social Media Platforms: A Situation-Organism-Behaviour-Consequence Approach. *Technol. Forecast. Soc. Chang.* 2023, 186, 122104. [CrossRef]
- Financial Express. Why South Indian States Spend More on Tertiary Education. Available online: https://www.financialexpress. com/opinion/why-south-indian-states-spend-more-on-tertiary-education/1619079/ (accessed on 13 July 2023).
- 8. Bandura, A. Social Foundations of Thought and Action: A Social Cognitive Theory; Prentice-Hall: Hoboken, NJ, USA, 1986.
- Alexander, D.S.; Cao, C.; Alfonso, M.L. Examining Whether the Social Cognitive Theory Concepts Predict Childhood Obesity Prevention Outcome Expectations. *Int. Q Community Health Educ.* 2021, 41, 143–151. [CrossRef]
- 10. Eid, M.I.M.; Al-Jabri, I.M. Social Networking, Knowledge Sharing, and Student Learning: The Case of University Students. *Comput. Educ.* 2016, *99*, 14–27. [CrossRef]
- 11. Al-Rahmi, W.M.; Alias, N.; Othman, M.S.; Marin, V.I.; Tur, G. A Model of Factors Affecting Learning Performance through the Use of Social Media in Malaysian Higher Education. *Comput. Educ.* **2018**, *121*, 59–72. [CrossRef]
- Muca, E.; Cavallini, D.; Odore, R.; Baratta, M.; Bergero, D.; Valle, E. Are Veterinary Students Using Technologies and Online Learning Resources for Didactic Training? A Mini-Meta Analysis. *Educ. Sci.* 2022, 12, 573. [CrossRef]
- 13. Bond, M.; Bedenlier, S. Facilitating Student Engagement through Educational Technology: Towards a Conceptual Framework. *J. Interact. Media Educ.* **2019**, 2019, 11. [CrossRef]
- Naeem, M.; Khan, M.J. Do Social Networking Applications Support the Antecedents of Knowledge Sharing Practices? VINE J. Inf. Knowl. Manag. Syst. 2019, 49, 494–509. [CrossRef]
- 15. Yeh, Y.; Huang, L.; Yeh, Y. Knowledge Management in Blended Learning: Effects on Professional Development in Creativity Instruction. *Comput. Educ.* 2011, 56, 146–156. [CrossRef]
- Chang, H.H.; Chuang, S.-S. Social Capital and Individual Motivations on Knowledge Sharing: Participant Involvement as a Moderator. *Inf. Manag.* 2011, 48, 9–18. [CrossRef]
- 17. Almutairi, M.; Simpson, A.; Khan, E.; Dickinson, T. The Value of Social Media Use in Improving Nursing Students' Engagement: A Systematic Review. *Nurse Educ. Pract.* **2022**, *64*, 103455. [CrossRef]
- Cathala, X.; Ocho, O.N.; Watts, P.N.; Moorley, C. International Student Nurses' Use of Social Media for Learning: A Cross Sectional Survey. Nurse Educ. Today 2021, 107, 105160. [CrossRef]
- 19. Aljuboori, A.F.; Fashakh, A.M.; Bayat, O. The Impacts of Social Media on University Students in Iraq. *Egypt. Inform. J.* 2020, 21, 139–144. [CrossRef]
- 20. Manu, B.D.; Ying, F.; Oduro, D.; Boateng, S.A. Student Engagement and Social Media in Tertiary Education: The Perception and Experience from the Ghanaian Public University. *Soc. Sci. Humanit. Open* **2021**, *3*, 100100. [CrossRef]
- Akdim, K.; Casaló, L.V.; Flavián, C. The Role of Utilitarian and Hedonic Aspects in the Continuance Intention to Use Social Mobile Apps. J. Retail. Consum. Serv. 2022, 66, 102888. [CrossRef]
- 22. Rasheed, M.I.; Malik, M.J.; Pitafi, A.H.; Iqbal, J.; Anser, M.K.; Abbas, M. Usage of Social Media, Student Engagement, and Creativity: The Role of Knowledge Sharing Behavior and Cyberbullying. *Comput. Educ.* **2020**, *159*, 104002. [CrossRef]
- Khan, M.N.; Ashraf, M.A.; Seinen, D.; Khan, K.U.; Laar, R.A. Social Media for Knowledge Acquisition and Dissemination: The Impact of the COVID-19 Pandemic on Collaborative Learning Driven Social Media Adoption. *Front. Psychol.* 2021, 12, 648253. [CrossRef] [PubMed]
- 24. Ozlati, S. Motivation, Trust, Leadership, and Technology: Predictors of Knowledge Sharing Behavior in the Workplace. Ph.D. Thesis, Claremont Graduate University, Claremont, CA, USA, 2012. [CrossRef]
- Jadin, T.; Gnambs, T.; Batinic, B. Personality Traits and Knowledge Sharing in Online Communities. *Comput. Hum. Behav.* 2013, 29, 210–216. [CrossRef]
- Haryanti, D.A.; Margianti, E.S.; Prihantoro, E.; Ohorella, N.R. The Effect of Knowledge Sharing and Benefits on Sharing Intentions Through Social Interaction in Social Media Groups. *Int. J. Sci. Res. Sci. Technol.* 2021, *8*, 310–324. [CrossRef]
- Gurteen, D. Leading Issues in Social Knowledge Management; Academic Publishing International Limited: Manchester, UK, 2012; ISBN 978-1-908272-38-6.
- Barker, R. Management of Knowledge Creation and Sharing to Create Virtual Knowledge-Sharing Communities: A Tracking Study. J. Knowl. Manag. 2015, 19, 334–350. [CrossRef]
- Carter, T.; Nugent, J.S. Personal Learning Networks: Implications for Self-Directed Learning in the Digital Age. In *Encyclopedia* of Information Communication Technologies and Adult Education Integration; IGI Global: Hershey, PA, USA, 2011; pp. 226–240. [CrossRef]
- 30. Barron, B. When Smart Groups Fail. J. Learn. Sci. 2003, 12, 307-359. [CrossRef]
- 31. Hepplestone, S.; Holden, G.; Irwin, B.; Parkin, H.J.; Thorpe, L. Using Technology to Encourage Student Engagement with Feedback: A Literature Review. *Res. Learn. Technol.* **2011**, *19*, 117–127. [CrossRef]
- 32. Kuh, G.D.; Hu, S. The Relationships between Computer and Information Technology Use, Selected Learning and Personal Development Outcomes, and Other College Experiences. J. Coll. Stud. Dev. 2001, 42, 217–232.
- 33. Kirschner, P.A. Using Integrated Electronic Environments for Collaborative Teaching/Learning. *Learn. Instr.* 2001, 10, 1–9. [CrossRef]

- Sharan, S. Cooperative Learning in Small Groups. Recent Methods and Effects on Achievement, Attitudes, and Ethnic Relations— Shlomo Sharan. *Rev. Educ. Res.* 1980, 50, 241–271. Available online: https://journals.sagepub.com/doi/10.3102/00346543050002 241 (accessed on 28 May 2023).
- 35. Pollock, S.J. Transferring Transformations: Learning Gains, Student Attitudes, and the Impacts of Multiple Instructors in Large Lecture Courses. *AIP Conf. Proc.* 2006, *818*, 141–144. [CrossRef]
- Caldwell, J.E. Clickers in the Large Classroom: Current Research and Best-Practice Tips. CBE—Life Sci. Educ. 2007, 6, 9–20. [CrossRef]
- Haque, M.A.; Zhang, X.; Akanda, A.K.M.E.A.; Hasan, M.N.; Islam, M.M.; Saha, A.; Hossain, M.I.; Rahman, Z. Knowledge Sharing among Students in Social Media: The Mediating Role of Family and Technology Supports in the Academic Development Nexus in an Emerging Country. *Sustainability* 2023, 15, 9983. [CrossRef]
- Lockyer, L.; Patterson, J. Integrating Social Networking Technologies in Education: A Case Study of a Formal Learning Environment. In Proceedings of the 2008 Eighth IEEE International Conference on Advanced Learning Technologies, Santander, Spain, 1–5 July 2008; pp. 529–533.
- Baird, D.E.; Fisher, M. Neomillennial User Experience Design Strategies: Utilizing Social Networking Media to Support "Always on" Learning Styles. J. Educ. Technol. Syst. 2005, 34, 5–32. [CrossRef]
- Arenas-Gaitan, J.; Javier Rondan-Cataluña, F.; Esteban Ramírez-Correa, P. Social Identity, Electronic Word-of-Mouth and Referrals in Social Network Services. *Kybernetes* 2013, 42, 1149–1165. [CrossRef]
- Yan, Z.; Wang, T.; Chen, Y.; Zhang, H. Knowledge Sharing in Online Health Communities: A Social Exchange Theory Perspective. *Inf. Manag.* 2016, *53*, 643–653. [CrossRef]
- 42. Hoseini, M.; Saghafi, F.; Aghayi, E. A Multidimensional Model of Knowledge Sharing Behavior in Mobile Social Networks. *Kybernetes* **2018**, *48*, 906–929. [CrossRef]
- 43. Singh, V.; Malik, V. Impact of Social Media on Learning Motivation. Curr. Trends Inf. Technol. 2021, 11, 20–25.
- 44. The South First, NIRF Rankings 2023: 53 Colleges from South India in the Top 100. Available online: https://thesouthfirst.com/ sf-specials/nirf-rankings-2023-53-colleges-from-south-india-in-the-top-100/ (accessed on 6 July 2023).
- 45. Kock, F.; Berbekova, A.; Assaf, A.G. Understanding and Managing the Threat of Common Method Bias: Detection, Prevention and Control. *Tour. Manag.* 2021, *86*, 104330. [CrossRef]
- 46. Hair, J.F.; Hult, G.T.M.; Ringle, C.M.; Sarstedt, M.; Danks, N.P.; Ray, S. (Eds.) *An Introduction to Structural Equation Modeling*; Classroom Companion: Business; Springer International Publishing: Cham, Switzerland, 2021; ISBN 978-3-030-80519-7.
- 47. Abbas, J.; Aman, J.; Nurunnabi, M.; Bano, S. The Impact of Social Media on Learning Behavior for Sustainable Education: Evidence of Students from Selected Universities in Pakistan. *Sustainability* **2019**, *11*, 1683. [CrossRef]

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