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Research Article

Social Media and Knowledge Sharing: Impact on Academic Development in Public Universities of Kanpur

Dr. Sanjeev Kumar Singh[1], Dr. Surendra Kumar[2], Saurabh[3], Kavita Singh[4], Shubhi Rastogi[5], Niharika Singh[6]

[1]*Assistant Professor, SBM, Chhatrapati Shahu Ji Maharaj University, India, ORCID Id 0009-0009-0437-4927*

(Corresponding Author: drsanjeevksingh@csjmu.ac.in)

[2]*Assistant Professor, SBM, Chhatrapati Shahu Ji Maharaj University, Kanpur, India*

[3]*Research Scholar, SBM, Chhatrapati Shahu Ji Maharaj University, Kanpur, India*

[4]*Research Scholar, SBM, Chhatrapati Shahu Ji Maharaj University, Kanpur, India*

[5]*Research Scholar, VSSD College, Chhatrapati Shahu Ji Maharaj University, Kanpur, India*

[6] *Research Scholar, SBM, Chhatrapati Shahu Ji Maharaj University, Kanpur, India*

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ABSTRACT

Background Context

Education have been profoundly impacted by social networking, which has completely changed the way we acquire and exchange information. Since social media is interactive, it makes learning more effective by giving people a forum for conversations and information sharing. Social media platforms have significantly influenced how individuals interact and exchange information, impacting educational practices by enabling students to share and access knowledge more effectively. This shift is particularly relevant in academic environments where collaborative learning and resource accessibility are crucial.

Knowledge Gap

Despite extensive social media usage among students, limited research addresses its specific impacts on academic growth in public universities, especially in regional contexts like Kanpur, India. This study seeks to fill this gap by exploring how social media supports academic development, focusing on factors like trust, collaboration, communication, and perceived benefits.

Methods

Using a cross-sectional survey design, data were collected through structured questionnaires from students across three major public universities in Kanpur. Structural Equation Modeling (SEM) was applied to examine the relationships between social media use and academic outcomes, emphasizing mediating factors such as family and technological support.

Key Findings

The analysis shows that social media interactions notably enhance academic development by building trust, fostering collaboration, and promoting effective knowledge sharing. Support from family and access to technology further strengthen these benefits, positively influencing students' academic engagement and performance.

Implications

These findings suggest that educational institutions should consider integrating digital collaboration tools into their academic frameworks and support policies that enhance family and technological access. Such initiatives can help students leverage social media effectively for academic growth, making it a valuable educational resource. Future research might expand on these insights through longitudinal studies to capture evolving academic-social media dynamics.

Keywords: Social value, trust, perceived benefits of sharing knowledge, academic development

INTRODUCTION

In the dynamic landscape of contemporary education, the fusion of technology and academia has given rise to unprecedented avenues for knowledge exchange. Social networking has created new opportunities for information sharing and education. Social media is a useful tool for teaching and learning because of its document exchange, virtual communication, and knowledge generation capabilities. Because of their broad use and beneficial effects on society, modern social media platforms are receiving more attention globally (Haque *et al.,* 2023). Depending on a certain time and place, social interactions between individuals and organisations generate knowledge. When people are joining together and influence the communities they build with their cultural traits, they have the power to shape the formation of organisational culture (Bolat & Korkmaz, 2021). The role of social innovation in contemporary economies and society is growing (Batko, 2023). Face-to-face contact has been impacted by the advent of the internet and the boom in technical innovation (Tadpatrikar *et al.,* 2021). Social media and other technical advancements have, in fact, improved organisations and made a wide range of applications and capacities possible, from developing new business models (Ali-Hassan *et al.,* 2015).

Youngsters with strong social skills are better at interacting with others, fulfilling social obligations, engaging in social situations, adhering to social norms and regulations, and respecting their surroundings (Sapsağlam & Ömeroğlu, 2016; Shinde & Neve, 2021). Personal values can have the potential to be seen as an individual's desired motivational objectives, hobbies, or guiding principles in life. It is also clear that values play a role in shaping a person's social and personal identity (Gamage *et al.,* 2021). Due to social media's widespread use and cultural effects, scholars and practitioners have given it a lot of attention (Filo *et al.,* 2015). The current trend in education is to provide high-quality instruction using technology to assist pupils become globally competitive (Dubey & Sahu, 2021). Academic success is prioritised above all else in an educational system that seeks to improve children's academic growth as well as the macrolevel development of human resources (Vadivel *et al.,* 2023). Beyond digital technology and their use within an organisation, digitalization is a disruptive socio-technical process that encompasses social, institutional, and economic transformation in addition to technological change (Rijswijk *et al.,* 2023). To improve student learning outcomes, motivational factors and the application of learning strategies are essential (Gbollie & Keamu, 2017).

Social media has become a commonplace communication tool that encourages collaborative learning outside of traditional classroom settings. With the help of social media platforms, students can share academic resources, ideas, and cooperative projects. In the unique learning environment of Kanpur's public universities, particular attention will be paid to determining the effects of these virtual interactions on students' overall academic achievement.

LITERATURE REVIEW

In this globalized era, education is a fundamental necessity, shaping individuals by instilling moral principles, expanding knowledge, and enhancing skills (Afsar et al., 2016; Ahmadi et al., 2021). Many organizations have implemented knowledge management systems to facilitate effective knowledge sharing, ensuring that these processes are more reliable and efficient (Bock et al., 2005; Connelly & Kelloway, 2003). In the field of education, technology has been pivotal in disseminating knowledge rapidly and enabling more efficient communication (Harris & Al-Bataineh, 2016). The application of knowledge-sharing behaviors through virtual communities and social media has become increasingly prevalent (Chiu et al., 2006). These platforms foster collaboration among students and allow for the sharing of resources and ideas, which positively impacts learning outcomes (Arshad & Akram, 2018; Dhir & Khalifa, 2020). Leadership in knowledge management was identified as the most important predictor among the critical success factors in the knowledge management process of Indian nationalized banks (Singh & Singh, 2019).

Studies have shown that trust plays a significant role in online knowledge-sharing behaviors. Trust influences the willingness of individuals to engage in knowledge sharing and collaboration, particularly in virtual communities (Chaudhary & Mitchell, 2005; Jarvenpaa & Staples, 2000). The social and psychological factors associated with trust also have implications for the efficacy of knowledge-sharing initiatives (Cao et al., 2016). Furthermore, knowledge-sharing behaviors are often influenced by perceived benefits and organizational climate. These factors motivate individuals to share their knowledge, fostering an environment conducive to continuous learning and skill development (Chen & Huang, 2007; Ko et al., 2005). In particular, platforms that promote social interaction and collaboration have been shown to enhance the academic performance of students (Darko, 2021).

Knowledge management plays a significant role in the integration of knowledge, which enables knowledge sharing. In the context of the banking sector, knowledge management enhances service quality and addresses dynamic environments (Singh & Singh, 2019).

The use of social media has not only facilitated communication but has also enhanced the overall learning environment by fostering strong interpersonal relationships and promoting collective learning efforts (Bock et al., 2005; Fang & Chiu, 2010). In higher education, institutions have increasingly integrated technology to improve learning outcomes and to encourage active participation in knowledge-sharing activities (Davenport & Prusak, 1998; Ejdys, 2018). Lastly, the role of personal and social values in knowledge-sharing behavior has garnered attention in recent years, with studies emphasizing the impact of intrinsic motivation, workplace spirituality, and environmental passion on the sharing of knowledge (Afsar et al., 2016). These factors highlight the importance of fostering a collaborative environment, where both technological and social aspects intersect to promote academic development and growth (Andriessen, 2006; Dyer & Nobeoka, 2000).

The role of technology in enhancing academic achievement and collaborative learning has been extensively explored. Sharma (2021) emphasized that technology-driven learning environments enhance student interaction, leading to improved academic success. Harris and Al-Bataineh (2015) also found that one-to-one technology significantly boosts students' motivation and academic outcomes. Similarly, (Pulgar et al., 2022) demonstrated that long-term collaboration in hybrid and remote teaching settings, strengthened by friendship ties, leads to better academic performance in high school physics. Additionally, Hurst et al., (2013) emphasized that social interaction, facilitated by technology, plays a crucial role in student learning, enhancing the educational experience. Singh (2014) further supported the integration of empirical knowledge management to foster continuous learning and collaboration in both academic and professional settings.

The influence of social media and technology on knowledge sharing has also been highlighted in academic and professional environments. Chaudhary and Wade (2017) examined how social media use positively affects job performance by enhancing social capital. Procentese et al., (2019) explored the impact of social media on family dynamics, finding that parents' perceptions of social media influence family communication and, by extension, student learning. Ferraris and Karg (2020) noted that trust and privacy are critical factors in technology adoption, suggesting that without trust, the effectiveness of technology in enhancing performance is reduced. Ollier-Malaterre et al., (2019) discussed how technology influences the balance between work and family life, emphasizing the importance of managing digital cultural capital to maintain a healthy balance in the use of technology.

Research on knowledge management further reinforces the importance of technology in optimizing academic and professional outcomes. Mitchell (2016) highlighted the significance of knowledge management in supporting educational development. Singh (2014) emphasized that empirical integration is essential for effective knowledge management in organizations. Cropanzano and Mitchell (2005) introduced social exchange theory, explaining that knowledge-sharing behaviors are shaped by reciprocal exchanges within organizations. Darko and Wang (2021) showed that collaborative learning among university students in Ghana is directly linked to academic success, with knowledge-sharing behaviors playing a crucial role. Chaudhary et al., (2021) emphasized the importance of trust and reputation in family businesses, noting that trust facilitates knowledge sharing. Lastly, Hansen et al., (1999) discussed strategies for managing knowledge in organizations, underscoring the importance of structured knowledge-sharing systems for optimizing both academic and professional outcomes.

This literature review underscores the interconnectedness of technology, social interaction, and knowledge management in enhancing academic and professional performance, with trust and collaboration serving as key drivers of successful knowledge sharing and learning outcomes.

2.1. Social Exchange theory

Social exchange theory is one of the most widely accepted frameworks in disciplines such as management, sociology, and social psychology (Chaudhary & Mitchell, 2005). The theory explains that social behavior results from exchanges between parties, where each party seeks to maximize benefits and minimize costs (Assegaff & Dahlan, 2011). These short-term exchanges often lay the foundation for long-term relationships, built on mutual trust and reciprocity (Kim et al., 2023). In the context of knowledge sharing, the theory highlights that an individual's attitude towards social values plays a critical role in influencing their willingness to share knowledge (Haque, 2023). This process is especially relevant in virtual communities, where perceived benefits and trust shape collaborative behaviors (Bock et

al., 2005; Fang & Chiu, 2010). Ultimately, trust is a vital component in fostering effective knowledge sharing, both in professional and academic settings (Chen & Huang, 2007).

2.2. Social values of knowledge sharing in social media in academic development

Social values are essential convictions shaped by individuals' interactions within their communities and organizations (Ahmadi et al., 2021). These values play a crucial role in fostering cooperation, communication, and social relationships, which can significantly influence academic development (Arshad & Akram, 2018). Social media platforms facilitate the development of intellectual and social relationships, positively impacting academic achievement by enabling collaborative learning and the sharing of resources (Haque, 2023). Moreover, social innovations, driven by the values embedded in social media interactions, enhance student engagement and foster a supportive learning environment (Batko, 2023). These values, which guide behavior and decision-making, are vital in promoting a culture of collaboration in academic settings (Sapsağlam & Ömeroğlu, 2016).

2.3. Communication and collaboration and student' academic performance

Communication and collaboration are pivotal for enhancing students' knowledge and academic competencies. Effective collaboration among students often depends on a supportive environment characterized by commitment, trust, and collective decision-making (Bock et al., 2005; Ko et al., 2005). Social media platforms play a key role in modern communication, shaping both academic relationships and family dynamics (Cheng et al., 2017). Additionally, advancements in communication technologies have introduced new uncertainties, as they shift the nature of job stability from employers to employees (Harris & Al-Bataineh, 2016). Collaborative learning within virtual communities fosters the development of high-level academic skills by promoting resource sharing and interaction among students (Darko, 2021; Dhir & Khalifa, 2020).

2.4. Trust of knowledge sharing in social media and academic development

Trust plays a pivotal role in knowledge sharing, particularly in social media environments where the relationship between the trustee and the trustor is crucial (Chaudhary & Mitchell, 2005). Trust fosters a favorable attitude toward sharing knowledge by reducing concerns about opportunism and increasing confidence in the reliability of the information shared (Dhagarra et al., 2020). In academic settings, trust encourages students to openly share resources and collaborate, thereby improving academic development (Ahmadi et al., 2021). Trust in technology also influences the willingness to engage in knowledge sharing, as it ensures the security and effectiveness of digital platforms (Ejdys, 2018). While trust may contribute to stability in knowledge-sharing networks, excessive reliance on it could limit adaptability and exploration of alternative solutions, potentially compromising flexibility (Haque, 2023; Rijswijk et al., 2023).

2.5. Perceived benefit of knowledge sharing in social media and academic development

Perceived benefits of knowledge sharing in social media and academic settings reflect students' belief that engaging in technology-enhanced learning can optimize their studies in terms of time, effort, and cost (Dubey & Sahu, 2023). Research suggests a strong connection between learning outcomes and student involvement, with active engagement playing a critical role in helping students achieve their educational objectives (Darko, 2021). Particularly in virtual communities, the perceived advantages of sharing knowledge are shaped by students' expectations of receiving valuable insights and support from their peers, which fosters a collaborative learning environment (Haque, 2023). Additionally, the trust and interaction within these platforms further enhance students' perceived benefits, encouraging continuous knowledge sharing (Fu & Chu, 2019).

2.6. Academic development

Academic development is a dynamic and continuous process aimed at preparing individuals not only as experts in their fields but also as competent participants in a rapidly globalizing world. It requires educators to engage in reflective practices, adapt to a wide range of challenges, and cultivate a deep understanding of diverse subject areas (Goh, 2002; Singh & Gupta, 2014). Successful academic development should integrate key elements such as personal qualities, including talents, abilities, and values, as well as adaptability and a commitment to learning objectives (Haque, 2023; Ahmadi et al., 2021). The ability to make informed decisions, foster innovation, and communicate effectively are also critical to academic success in today's complex environments (Hsu et al., 2007; Bock et al., 2005).

2.7. Family and technological support as a mediating role

Family and technological support play a crucial mediating role in shaping an individual's success, particularly in a rapidly evolving digital environment. These elements provide a foundation for development, connectedness, and resilience, supporting both personal and academic growth (Haque, 2023; Ejdys, 2018). The ecocultural approach posits that the home serves as a critical learning environment where social and technological resources, intertwined with cultural values, are transmitted through family interactions (Cheng et al., 2017; Dhir & Khalifa, 2020). Moreover, educational institutions must implement programs aimed at enhancing parental education and awareness, fostering an environment where family and technology work synergistically to enhance academic performance (Vadivel et al., 2023; Darko, 2021).

On the basis of above discussion following hypothesis is formulated:

H_1: There is a significant positive relationship between students' social value of knowledge sharing in social media and their academic development.

H_2: A significant positive relationship exists between communication and collaboration in knowledge sharing through social media and students' academic development.

H_3: A positive relationship exists between trust in knowledge sharing on social media and academic development.

H_4: There is a significant positive relationship between the perceived benefits of knowledge sharing in social media and academic development.

H_5: There is a positive relationship between students' families and technological support for knowledge sharing on social media and academic development.

H_6: The mediating role of family and technological support exists in the relationship between the social value of knowledge sharing on social media and academic development.

H_7: The mediating role of family and technological support exists in the relationship between communication and collaboration in knowledge sharing on social media and students' academic development.

H_8: The mediating role of family and technological support exists in the relationship between trust in knowledge sharing on social media and academic development.

H_9: The mediating role of family and technological support exists in the relationship between the perceived benefits of knowledge sharing on social media and academic development.

RESEARCH DESIGN

This study utilized an exploratory, conclusive, descriptive cross-sectional research design to provide a comprehensive understanding of the research landscape. This approach allows for both detailed analysis of phenomena and the derivation of definitive insights. A multistage sampling technique was employed, targeting students from Chhatrapati Shahu Ji Maharaj University, Kanpur, Chandra Shekhar Azad University of Agriculture & Technology, Kanpur, and Harcourt Butler Technical University, Kanpur. A total of 480 questionnaires were distributed, with 160 allocated to each university. Out of these, 467 (97.29%) completed questionnaires were returned, forming the dataset for analysis. The primary sampling unit consisted of students from the aforementioned universities. Conceptual model is reflected in Figure 1.

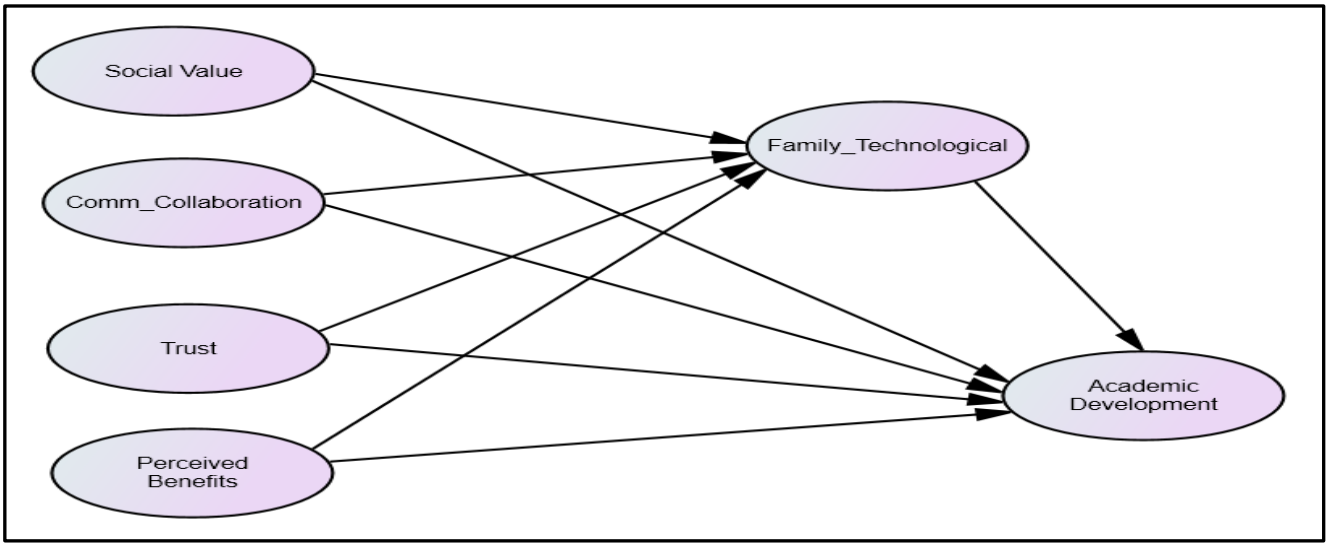

Fig1: conceptual model

RESULTS ANALYSIS

The age distribution of respondents reveals that 41.33% fall within the 18 to 21 age range, while 34.47% are aged between 21 and 25. Additionally, 24.20% of participants are over the age of 25. Regarding gender, 42.40% of the respondents are female, and 57.60% are male. Educational qualifications show that 46.89% of the participants hold a Bachelor's degree, 36.19% have obtained a Master's degree or higher, and 16.92% fall under other educational categories. The Confirmatory Factor Analysis (CFA) demonstrated that the five-factor model aligned well with the data, with fit indices of $\chi^2/df = 2.177$, CFI = .957, TLI = .951, GFI = .908, NFI = .923, and RMSEA = .050. The factor loadings for the five dimensions were all significant, exceeding 0.60, confirming that these dimensions are part of the same construct (Singh & Gupta, 2014).

4.1 Convergent and discriminant validity

Composite reliability (CR) reflects the internal consistency of the construct. Values above 0.7 are generally considered acceptable, indicating reliable constructs. In the table, all CR values are above 0.85, indicating strong reliability for each construct (Table 1). Further, Average variance extracted (AVE) indicates the average amount of variance captured by the construct in relation to the total variance. An AVE above 0.5 is acceptable. In this case, all constructs have AVE values above 0.6, demonstrating adequate convergent validity. Discriminant validity shows how distinct a construct is from other constructs in the model. Measures the extent to which a construct shares variance with other constructs. MSV should be lower than AVE to confirm discriminant validity. All constructs have AVE > MSV, confirming discriminant validity. The off-diagonal cells represent the correlations between constructs, while the diagonal values represent the square root of AVE for each construct. To satisfy discriminant validity, the square root of AVE (on the diagonal) should be greater than the correlations between constructs (off-diagonal). This condition is met, indicating good discriminant validity.

Table 1

Convergent and discriminant validity

Particulars	**CR**	**AVE**	**MSV**	**MaxR (H)**	**TR**	**SV**	**FT**	**CC**	**PB**
Trust	0.894	0.678	0.350	0.896	**0.824**				
Social Value (SV)	0.918	0.653	0.090	0.920	0.300	**0.808**			
Family & Technological Support (FT)	0.919	0.693	0.148	0.922	0.332	0.258	**0.833**		
Communication and Collaboration (CC)	0.885	0.608	0.112	0.890	0.303	0.185	0.308	**0.780**	

Perceived Benefits (PB)	0.903	0.609	0.350	0.910	0.592	0.285	0.385	0.335	**0.780**

Trust (TR) shows strong internal consistency with a CR of 0.894 and AVE of 0.678, exceeding its MSV (0.350), indicating good discriminant validity. The square root of its AVE (0.824) is higher than its correlations with other constructs (0.300-0.592). Social Value (SV) also exhibits high reliability (CR = 0.918) and discriminant validity, with its AVE square root (0.808) exceeding its highest correlation (0.300). Family & Technological Support (FT) has a CR of 0.919 and AVE of 0.693, with its AVE square root (0.833) surpassing correlations (0.332). Communication and Collaboration (CC) and Perceived Benefits (PB) demonstrate similar reliability, supporting both convergent and discriminant validity. Standardized regression weight is reflected in Fig 2.

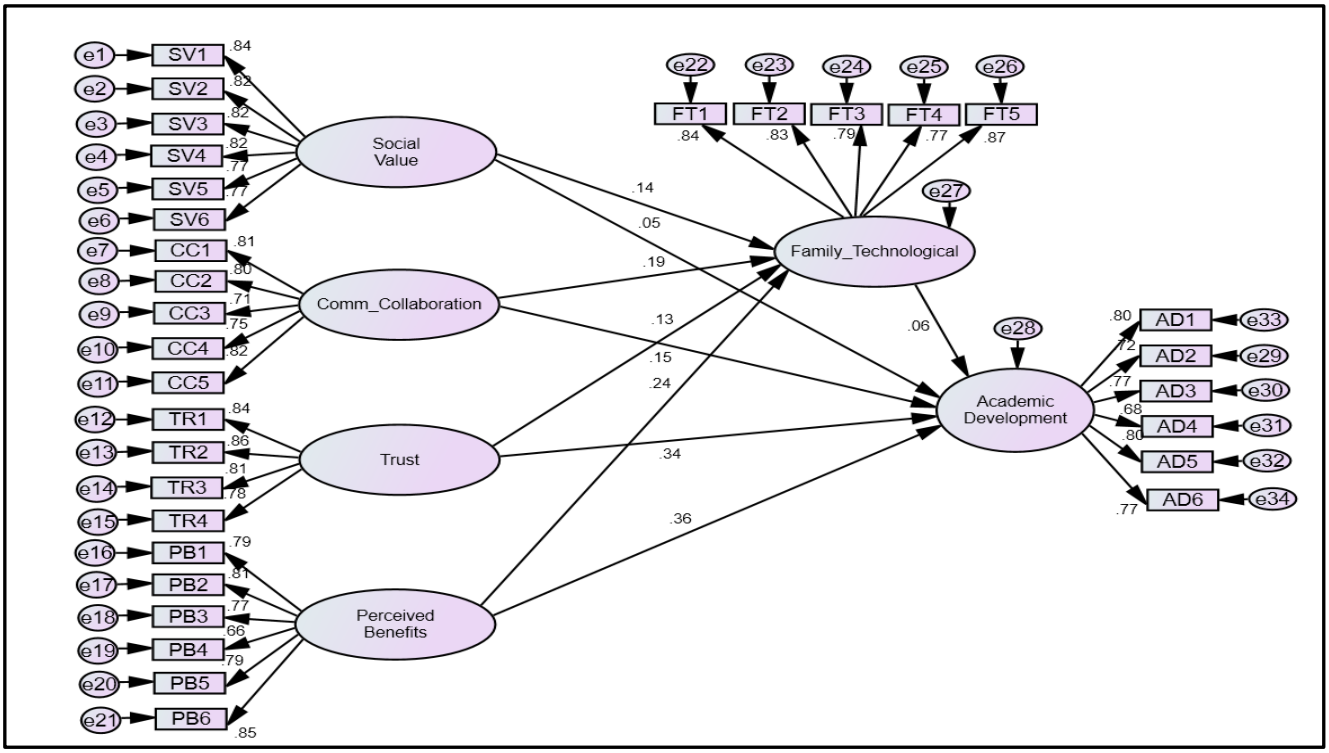

Fig2: standardized regression weight

4.2 Analysis of hypotheses testing

Table 2 presents the results of hypothesis testing, assessing the significance of relationships between variables. The first hypothesis (H_{01}) yielded an estimate of 0.046 with a critical ratio (C.R.) of 1.071 and a p-value of 0.284. Since the p-value exceeds 0.05, this hypothesis was rejected, indicating no significant relationship. In contrast, the second hypothesis (H_{02}) had an estimate of 0.144, a C.R. of 2.943, and a p-value of 0.003, signifying statistical significance and leading to the hypothesis being accepted. The third hypothesis (H_{03}) showed a substantial effect with an estimate of 0.290, a C.R. of 5.842, and a highly significant p-value (indicated by ***), meaning it was also accepted. Similarly, the fourth hypothesis (H_{04}) had a strong estimate of 0.285, a C.R. of 6.008, and a significant p-value, supporting its acceptance. However, the fifth hypothesis (H_{05}) had an estimate of 0.040, a C.R. of 1.143, and a p-value of 0.253, leading to its rejection due to the lack of statistical significance. In summary, hypotheses H_{02}, H_{03}, and H_{04} were accepted, indicating significant relationships, while H_{01} and H_{05} were rejected, showing no significant effects.

Table 2

Result of Hypotheses Testing

Hypotheses	Estimate	S.E.	C.R.	P Value	Result
H_{01}	.046	.043	1.071	.284	Rejected
H_{02}	.144	.049	2.943	.003	Accepted
H_{03}	.290	.050	5.842	***	Accepted
H_{04}	.285	.047	6.008	***	Accepted
H_{05}	.040	.035	1.143	.253	Rejected

4.3. Role of financial technological support as mediating variable in affecting relationship of different construct with Academic development

Table 3 explores the mediating role of Family & Technological Support (FT) in the relationships between various constructs and academic development (AD). The sixth hypothesis (H_{06}) examines the impact of social value (SV) on academic development (AD), both directly and through FT as a mediator. The direct effect was 0.178, while the indirect effect via FT was 0.062. Both effects had a p-value of 0.000, indicating significant mediation. The seventh hypothesis (H_{07}) focused on communication and collaboration (CC) and its impact on AD. The direct effect was 0.299, and the indirect effect through FT was 0.073, both with a significant p-value of 0.000, confirming the mediating role of FT. In the eighth hypothesis (H_{08}), the relationship between Trust (TR) and AD was tested. The direct effect was 0.662, and the indirect effect through FT was 0.070, both showing significant p-values (0.000), supporting FT's role as a mediator in this relationship. Finally, the ninth hypothesis (H_{09}) examined the link between perceived benefits (PB) and AD, with a direct effect of 0.443 and an indirect effect of 0.044 through FT. The p-value for the indirect effect was 0.003, indicating significant mediation by FT. In summary, family & technological support (FT) significantly mediates the relationships between social value, communication and collaboration, trust, and perceived benefits and academic development. All indirect effects through FT were significant, highlighting FT's essential role in influencing academic outcomes.

Table 3

Role of FT as mediating variable in affecting relationship of different construct with AD

Hypothesis	Constructs	Mediator	DV	Direct Effect	Indirect Effect	p-value	Hypotheses
H_{06}	SV →	FT →	AD		0.062	0.000	Accepted
	SV	→	AD	0.178		0.000	Accepted
H_{07}	CC →	FT →	AD		0.073	0.000	Accepted
	CC	→	AD	0.299		0.000	Accepted
H_{08}	TR →	FT →	AD		0.070	0.001	Accepted
	TR	→	AD	0.662		0.000	Accepted
H_{09}	PB →	FT →	AD		0.044	0.003	Accepted
	PB	→	AD	0.443		0.000	Accepted

DISCUSSIONS

The findings of this study are consistent with existing literature that highlights the critical role of trust, collaboration, and perceived benefits in academic success. Trust (TR) and Communication and Collaboration (CC) have been repeatedly shown to influence knowledge sharing and performance outcomes in both organizational and educational contexts. For instance, Hsu et al. (2007) and Ali-Hassan et al. (2015) have demonstrated how trust fosters stronger relationships, leading to better communication and collaboration, which, in turn, positively impacts academic development. This supports the observed significant relationship between these constructs and academic performance. Furthermore, technology's role in education continues to expand, supporting the argument that Family and Technological Support (FT) can act as a mediator in the relationship between various constructs and academic

development. Haque et al. (2023) highlighted how family support and access to technology facilitate academic achievement, particularly when students leverage these resources for learning and collaboration. The mediation effect observed in this study aligns with Dhir and Khalifa (2020), who pointed out that social ties and informational benefits in virtual communities contribute to knowledge-sharing behavior, indirectly enhancing performance outcomes.

While Social Value (SV) was not found to significantly impact academic development directly, this is consistent with previous studies that suggest that while social values shape broader societal interactions, they may not have a direct influence on academic outcomes, particularly in highly structured environments like public universities. Bolat and Korkmaz (2021) similarly observed that while social values are important in shaping organizational culture, they do not always translate into immediate performance gains, especially when other factors such as trust and collaboration take precedence. The role of perceived benefits (PB) in fostering academic development is also well-documented in the literature. Dubey and Sahu (2023) emphasized that students' perceived advantages of using technology in learning significantly enhance their satisfaction and academic success. This is consistent with the results of the present study, where perceived benefits were significantly linked to academic development, mediated by Family and Technological Support (FT). Furthermore, Gamage et al. (2021) highlighted the role of personal and social values in shaping learning behaviors and outcomes, which aligns with the indirect influence of family and technological resources on students' academic performance observed in this research.

The partial mediating role of FT, as observed in the relationships between CC, TR, PB, and academic development, supports the idea that technological and familial support do not act in isolation but rather complement other critical factors like collaboration and trust. Tadpatrikar et al. (2021) argued that technology plays a pivotal role in expanding social networks and improving access to learning resources, which is essential for academic growth, thereby supporting the findings of this study. In conclusion, this study reinforces the significance of trust, collaboration, and perceived benefits in enhancing academic development, with Family and Technological Support acting as a crucial mediator. By aligning with established research, these findings highlight the need to foster collaborative and trust-based environments, supported by technology and family involvement, to improve academic outcomes in higher education (Haque et al., 2023; Dhir & Khalifa, 2020).

RESEARCH IMPLICATIONS

The research implications of this study are highly significant, especially in the context of academic development in public universities. The findings indicate that trust, communication & collaboration, and perceived benefits are crucial factors in fostering knowledge sharing through social media, which in turn enhances students' academic outcomes. The study emphasizes the mediating role of family and technological support, suggesting that a supportive environment, both at home and through digital tools, can significantly amplify the positive effects of knowledge sharing on academic performance. These insights have practical implications for educational institutions aiming to improve academic performance. Universities could focus on creating collaborative online platforms, encouraging family involvement, and providing access to technological resources that facilitate knowledge sharing. Additionally, fostering trust among students through transparent communication and collaborative opportunities can further enhance the learning experience. Policymakers and educators should consider incorporating these factors into the design of academic programs to promote a more engaging and supportive learning environment, ultimately leading to better academic outcomes.

CONCLUSIONS

This study highlights the crucial role of communication and collaboration (CC), trust (TR), and the perceived benefits (PB) of knowledge sharing through social media in enhancing academic growth among students in public universities of Kanpur. The findings indicate that these factors, when effectively mediated by family and technological support (FT), significantly contribute to students' academic success. Even though social values (SV) did not show a direct impact on academic development, they remain an important underlying factor, especially when supported by a strong family and technology framework. The mediation analysis underscores that family and technology support act as catalysts, improving communication and collaboration by creating spaces for information exchange and collaborative learning. Trust, when strengthened by the presence of familial and technological resources, fosters a secure and supportive environment for academic achievement. Additionally, the perceived benefits of knowledge sharing become powerful motivational tools for students when nurtured through family involvement and access to

educational technologies. To maximize these benefits, promoting open communication within families about educational objectives is essential. Providing access to educational technologies can further enhance the positive impact on students' academic growth. Encouraging families to participate in collaborative educational activities and fostering interactive learning experiences through technology will significantly amplify academic success. Moreover, building and maintaining trust through transparent communication ensures that family and technological support continue to serve as strong mediators, creating a more conducive environment for learning and development. Thus, integrating family support and technology into the academic process can provide a comprehensive framework for fostering students' long-term academic success.

LIMITATIONS AND FUTURE RESEARCH DIRECTIONS

While this study provides valuable insights, several limitations should be noted. First, the reliance on self-reported data introduces the possibility of bias, as respondents may overestimate or underestimate their knowledge-sharing behaviors and academic achievements. Additionally, the cross-sectional design limits the ability to establish causal relationships between the constructs, restricting our understanding of the temporal dynamics in academic development. Future research should consider adopting longitudinal designs to track changes in communication, collaboration, and the mediating role of family and technological support over time. Another limitation is the lack of focus on specific social media platforms. Different platforms may influence knowledge-sharing behaviors in unique ways, and future studies could examine these distinctions to better understand their impact on academic growth. Expanding the sample to include other universities, regions, or even private institutions could also enhance the generalizability of the findings. Lastly, incorporating more objective measures of academic performance alongside self-reported data would strengthen the validity of future research outcomes, offering a more comprehensive view of the factors driving academic success.

Statements and Declarations

Competing Interests

The authors declare that they have no financial or non-financial competing interests directly or indirectly related to the work submitted for publication.

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Data Availability Statement

The primary data collected during this study is freely accessible to all interested parties. The dataset can be obtained directly from the corresponding author upon reasonable request.

Author Contributions

All authors contributed equally to the study's conception and design. Material preparation, data collection, and analysis were performed and all authors commented on previous versions of the manuscript. All authors read and approved the final manuscript.

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