Vol. 10, Issue: 2026

Article ISSN: 2312-2668

International Journal of Information Sciences Management (IJIMS)

Exploring the Use of Social Media Tools among LIS Research Scholars: Usage Patterns, ICT Skills, Research Skills, and Barriers

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Received:
December 30, 2025
Review Process:
February 18, 2026
Accepted:
February 28, 2026
Available Online:
March 17, 2026

The present study investigated the use of social media tools (SMTs) among the Library and Information Science (LIS) research scholars for research activities. The main aim of the study was to examine usage patterns, ICT skills, research skills and perceived barriers. A structured questionnaire was used to collect data from 172 postgraduate (MPhil/PhD) LIS students enrolled in 11 Pakistani Public and Private sector universities using census technique. The results of the study show that the majority of LIS research scholars prefer to use SMTs to conduct research from home and the library was their second most preferred location. The respondents possess an adequate level of ICT skills. Moreover, participants indicated a moderate level of proficiency in research skills. Financial, cultural, health-related issues and a lack of control over content were the main barriers. Inferential tests (one-way ANOVAs and independent-samples t-tests) did not show any significant variation in SMTs' usage by gender, university sector, level of study, mode of enrollment and age. Pearson's r correlations revealed positive relationships between SMTs' usage, research skills, and ICT skills. To optimize the research potential of SMTs, the study suggests improved training in digital literacy and institutional assistance. This study also highlights the critical role of combining ICT and research skills with institutional support to maximize the effective use of SMTs in academic research.

Keywords: SMTs; LIS research scholars; ICT skills; Research skills; Barriers

Introduction

Being social in nature, people want to interact with each other across the globe. Correspondingly, the growth of SMTs supported individuals to fulfill their natural urge to build social relationships with others. Social media tools (SMTs) have significantly influenced LIS research scholars with their rapid growth. Moreover, these tools have changed the ways of conducting research, communication, and dissemination of information, particularly in disciplines like Library and Information Science (LIS). LIS research scholars have used SMTs for

supporting research practices, enhancing scholarly communication, and fostering collaborations as multidisciplinary facilitators of knowledge management (Gupta, 2023). Khan and Raza (2021) reported that, SMTs are recognized as global resources. Scholars are accessing these tools for sharing findings efficiently, reshaping conventional practices, and supporting building networks in academic research like Twitter, ResearchGate, Academia.edu, and LinkedIn.

Certain levels of ICT as well as research skills are required for effective use of SMTs for research purposes. Although these platforms have been beneficial for professional growth and the dissemination of literature, there is a variation in research skills among LIS research scholars, which restricts them from effective use of SMTs (Jeyaraj & Kumar, 2021). Furthermore, scholars face several barriers to effectively using SMTs in their research works, which are a lack of training, a lack of institutional support, and information overload (Sinha & Kaur, 2021). Therefore, it is very important to know where LIS research scholars use SMTs, what their level of ICT and research skills is and what they perceive as barriers to use SMTs effectively.

Information communication skill (ICT) is a technical ability to use the digital devices and online platforms efficiently. Research skills are the competencies for designing studies, analyzing data, synthesizing evidence, and communication of scholarly findings. These constructs are competencies in the research process.

The objectives of the study under discussion are to determine the locations where LIS postgraduate students use SMTs for their research projects and to examine the level of their ICT skills and research skills and to determine the barriers for using SMTs in their research work. Findings of the study under investigation will provide support for using SMTs among LIS research scholars more efficiently. This comprehensive analysis of LIS postgraduate students in Pakistan will also cover the gap through its findings. Besides, the current study will not merely investigate the SMTs usage in research but also examine the basic level of ICT skills and research skills of LIS research scholars. This study will also identify barriers in a combined single framework.

ICT skills, research skills, and perceived barriers are major factors influencing the use of SMTs among LIS research scholars on the basis of present literature. Present conceptual model is integrated with these factors to examine their impact on research skills.

Theoretical Model of the Study

The proposed structural model is used to illustrate the correlation among ICT skills, research skills, and the use of SMTs. So, it is hypothesized that ICT skills and research skills will positively correlate with the use of SMTs by LIS research scholars.

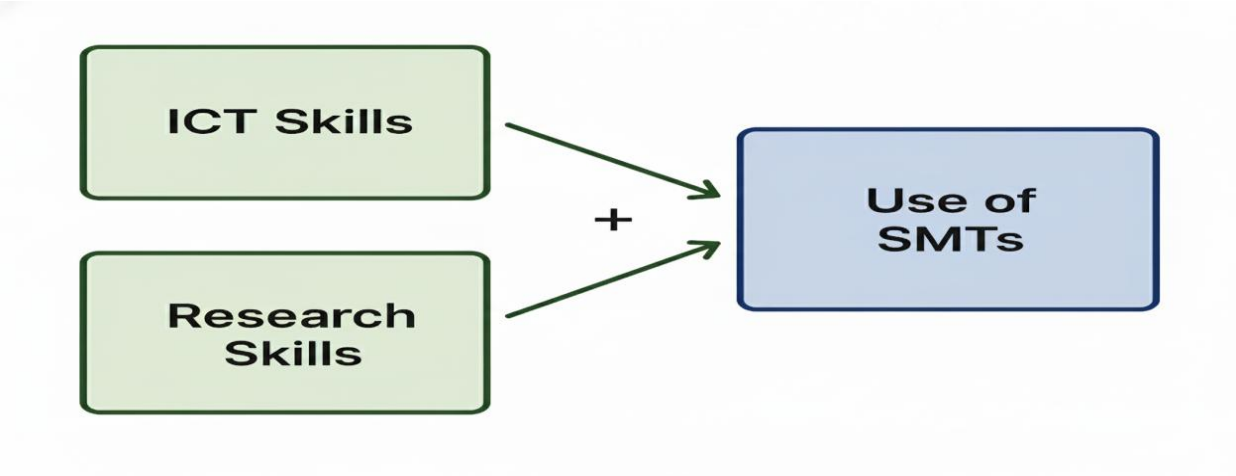

Figure 1: *Theoretical model of the study*

Literature Review

SMTs have enabled researchers to communicate, collaborate and share information worldwide. Social media tools like ResearchGate, LinkedIn and Twitter have enabled researchers to construct professional personas, publish research, interact with peers, and disseminate results across the world (Khan & Raza, 2021). Sharma (2022) stated that LIS research scholars used SMTs for professional collaboration, publishing research findings, and academic communication worldwide. Channels for the presentation of educational material have increased with YouTube and Podcasts. SMTs have increased professional and personal engagement as well as interdisciplinary collaboration among scholars. Moreover, Lee and Lee (2022) observed that these tools also provide access to valuable resources, including datasets, articles and ongoing research projects. However, according to Jeyaraj & Kumar (2021), the use of SMTs depends on personal technological skill and institutional support.

Use of SMTs for research is linked with research skills of scholars, like handling, disseminating, and critically evaluating information, as revealed by previous studies. Research scholars can use SMTs for academic research effectively with their research skills of data handling, scholarly communication, and bibliometric analysis (Yadav and Agarwal, 2022). However, many LIS research scholars do not have the expertise to deal with the digital skills that are required to effectively use SMTs for their research work. Recently, the research of Hu et al. (2024) revealed that digital literacy skills empowered higher education students to use SMTs for their academic activities more frequently. In Africa, Kutu and Kutu (2022) conducted a study on postgraduate students. The author found that higher education students were competent in digital communication but deficient in advanced digital skills. Moreover, Asghar et al. (2022) stated that the use of SMTs can be significantly improved through the research competency of scholars by enhancing their communication, collaboration, data-handling and information management skills. Researchers with excellent research skills can retrieve valuable information, interact with fellow scholars, and collaborate efficiently. However, a certain level of skills is required for effective use of these tools in research (Nwangwa et al., 2014; Ogedengbe & Quadri, 2020). Lack of such skills could restrict scholars from effective use of SMTs for research dissemination and communication (Sinha & Kaur, 2021).

More recently, Al Mulhim & Ismaeel (2024) also discovered that postgraduates perceived SMTs for improving writing academically. This reflects ICT skills more than searching for information to enable higher-order acts of research. Another recent comparative study among Polish students (2018–2024) revealed that effective use of SMTs was linked with higher ICT skills for scholarly communication and evaluation of online content.

Although there are some significant advantages of SMTs' use in research, however, LIS research scholars are confronted with several barriers to using them. Recently, Folabit and Jita (2024) identified financial costs, poor infrastructure, and low faith in digital platforms as major barriers to African university students. Likewise, Madu, Odenigbo and Okechukwu (2025) also told copyright limitations, poor mentoring and insufficient policy support were major barriers that restricted postgraduate students to interact with SMTs. Besides this, a research study conducted by Nawaz and Samdani (2021) among Pakistani LIS research scholars claimed that postgraduate students used SMTs frequently. They also observed that SMTs were perceived useful for communication and collaboration. They also revealed that SMTs are perceived supportive for organizing research data, disseminating research findings and identifying research opportunities. These findings show that SMTs are not merely used for social connections but also for daily research activities. In addition, digital literacy is also a significant hurdle. It was also observed by Dinesh and Haritha (2020) that many LIS research scholars do not have sufficient skills to use SMTs for their research purposes. It showed the absence of formal training programs in higher education institutions (Jeyaraj & Kumar, 2021). There is another barrier of information overload. Sinha and Kaur (2021) also stated that Twitter and Facebook are distracting scholars with information overload. These SMTs are limiting their ability to choose the right information they require. Yadav and Agarwal (2022) suggested that a key skill required to overcome these challenges was effective management of information. On the other side some scholars face the issue of time management. Many scholars can face difficulty to balance active engagement in the use of SMTs with conventional research activities (Singh & Kaur, 2021). Credibility and disinformation are also widespread issues. Spread of unverified information by SMTs, such as Facebook and Twitter, poses threats to scholarly integrity (Bala & Gupta, 2022). Such issues can dissuade the use of SMTs for researchers, especially for those who may have accuracy and reliability as priorities. Privacy and data protection are Ethical constraints, which also restrict the use of SMTs in research within academia (Gupta, 2023).

Literature review reveals that effective exploitation of SMTs depends on ICT skills, research skills and organizational support. Use of SMTs among LIS research scholars may be increased by overcoming barriers such as digital divides, information overload and credibility issues. On the basis of the previous literature findings, the present study focuses on SMTs' usage patterns, ICT skills, and barriers. Although studies have been conducted to explore the use of social media tools in academic research, other than Pakistan however only a few studies are available from Pakistan, particularly in the discipline of Library & Information Science (LIS). Moreover, the main aims of previous studies were to examine either ICT skills, research skills, or barriers separately, but not on their combined impact on academic research practices. This limitation of comprehensive exploration has left a significant gap in understanding how LIS research scholars use SMTs in Pakistan for their research purposes.

This research study is based on theoretically establishing the technology adoption and digital literacy frameworks of Technology Acceptance Model (TAM) and the Unified Theory of Acceptance and Use of Technology (UTAUT).

These frameworks are foundational ways to understand use of Social Media Tools (SMTs) among scholars in research activities.

Extended Conceptual Model Incorporating Barriers

The extended conceptual model is designed to show the correlation among the use of social media tools (SMTs), ICT skills, research skills, and barriers among LIS research scholars descriptively rather than statistically. Moreover, potential barriers such as finance, culture, health issues, lack of control over content, privacy and lack of institutional support are expected to limit the use of SMTs.

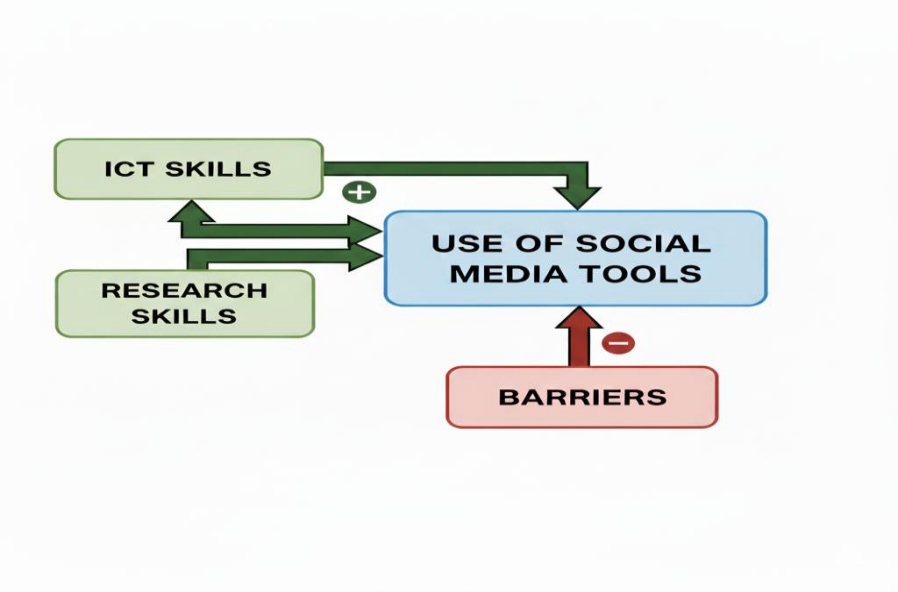

Figure 2: *Extended Conceptual Framework Incorporating Barriers*

After reviewing the relevant literature and the extended conceptual model, as shown in Figure 2, it is clear that ICT and research skills enhance research scholars' use of SMTs. Nonetheless, several barriers limit this relationship. The next section outlines the objectives and hypotheses from this framework.

Objectives

1. To investigate how SMTs are used by LIS research scholars for their research purposes.
2. To identify LIS research scholars' level of research skills.
3. To determine LIS research scholars' level of ICT skills.
4. To identify the barriers perceived by LIS research scholars for their research.

Hypotheses

$H_0$1: There is no significant variation in the use of SMTs among LIS research scholars based on gender.

$H_0$2: There is no significant variation among LIS research scholars based on the university sector.

$H_0$3: There is no significant variation in the use of SMTs among LIS research scholars in the level of degree.

$H_0$4: There is no significant variation in the use of SMTs among LIS research scholars in the mode of enrolment.

$H_0$5: There is no significant variation in the use of SMTs among LIS research scholars in age groups.

$H_0$6: There is no significant relationship between SMTs use in research and research skills of LIS research scholars.

Methodology

A quantitative research technique was employed, based on the census survey method, to achieve the research objectives of the present study. LIS research scholars (M.Phil. and Ph.D) from 11 Pakistani Public and private sector universities (N=247) were the population of this survey. Heads/Chairpersons of Library & Information Science/Information Management, schools/departments were approached to collect data from the respondents and ethical clearance was obtained. 172 scholars voluntarily responded out of 247. This paper is abstracted from a Ph.D thesis. The participants were given an online questionnaire that had been reviewed and evaluated before its distribution (Table 1). A questionnaire was administered online (on Google Docs) to gather data. Beside parametric tests, normality of assumptions and variance homogeneity were also tested. The collected data were aligned with assumptions to support the t-tests, ANOVA, and Pearson correlation analysis.

Table 1.
Measurement Tool

SN	Domains	Items	Scale used	CA*
1	Demographic Information:			
	Gender, age, level of study, mode of enrolment:	6	Categorical	--
2	Research skills of LIS research scholars:	5	5 point likert scale	0.81
3	ICT Skills of LIS research scholars:	3	5 point likert scale	0.75
4	Barriers to using SMTs in research:	18	5 point likert scale	0.86

* CA= Cronbach Alpha

The survey instrument's construct, face, and content validity were ensured with the assistance of subject-matter specialists and library professionals. Additionally, the reliability and internal consistency of three domains, comprising a total of 26 scaled items, were examined using Cronbach's alpha (CA) reliability test. Coefficient alpha values in the above table for research skills (0.81), ICT skills (0.75), and barriers (0.86) show acceptable reliability for each domain (George & Mallery, 2014). The gathered data were analyzed using SPSS version 22. To ensure suitability for independent samples t-tests and one-way ANOVA, the data were reviewed before conducting inferential analyses and the assumptions required for these tests were considered acceptable.

Demographic Profile of Respondents (gender, age, level of study, mode of enrollment)

Table 2 shows the sample's demographic characteristics. According to gender distribution out of the 172 survey respondents, male respondents (n=108, or 63%) represented the majority, as compared to female respondents

(n=64, or 37%). The findings also showed that the majority of respondents (n=87, or 51%) were between the ages of 31 and 40, with n=40, or 23%, being under 30. According to the level of study statistics, (n=130, 76%) of the respondents were enrolled in an MS/M.Phil program.

Table 2.
Participant Profile (N=172)

SN	Gender	n	Percentage (%)
1	Male	108	63
2	Female	64	37
Age			
1	Up to 30	40	23
2	31 to 40	87	51
3	41 to 50 or above	45	26
Level of Study			
1	MS/M. Phil	130	76
2	PhD	42	24
Mode of Enrollment			
1	Full Time	84	49
2	Weekend	88	51

Exploring where LIS Research Scholars Used SMTs for Research

The respondents were asked to express their opinions on how and where they prefer to use SMTs for research. In this survey questionnaire, only two statements were asked. Their preferred location is illustrated in Figure 3, where LIS research scholars prefer to conduct academic research work. The results revealed that most LIS research scholars (n = 117) like to perform research work at home, and their second preferred place was the library (n=40).

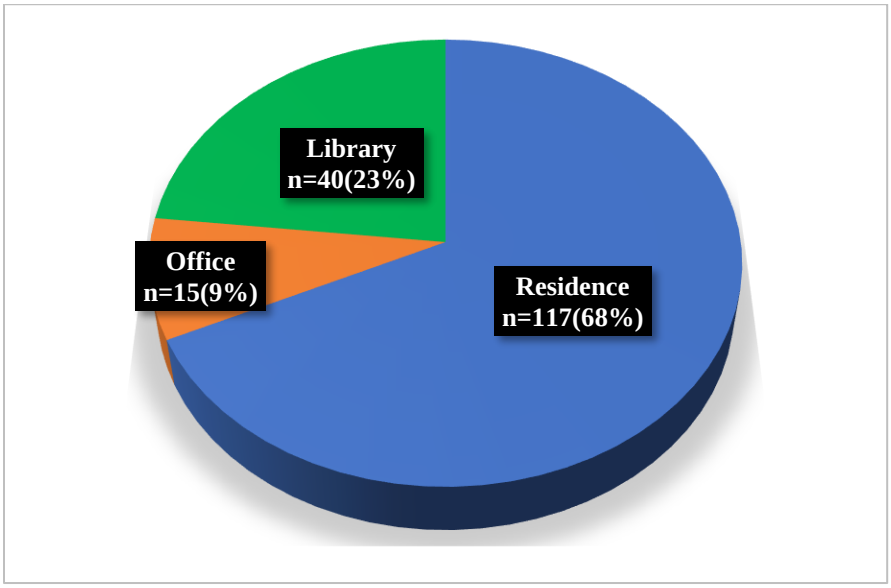

Figure 3: *Locations of LIS research scholars to conduct academic research*

Level of ICT Skills

Table 3.
ICT Skills of LIS Research Scholars

SN	ICT Skills: I have skills for	M	SD
1	Writing, processing applications, and operating a computer (PowerPoint, MS Word, Excel, etc.)	3.48	0.88
2	Browsing the internet, websites, search engines, searching databases, etc.	3.63	0.77
3	Using digital tools for communication (emails, social media, online multimedia, etc.)	3.88	0.89

To rate their level of ICT skills, the respondents were asked on a (1-5) scale. The results revealed that LIS research scholars had an adequate level of ICT skills. Writing and processing applications and operating computers (hardware and software) (M=3.48, SD=0.88).

Determining the Level of Research Skills of LIS Research Scholars

A multi-item question on a 1-5 scale was employed to evaluate the fundamental research skills of LIS research scholars, focusing on their levels of agreement or disagreement. Figure 4 illustrates the research capabilities of LIS research scholars in relation to the use of SMTs. The results indicated that the majority of LIS

research scholars demonstrated a moderate level of research skills (M=3.37, SD = 1.08).

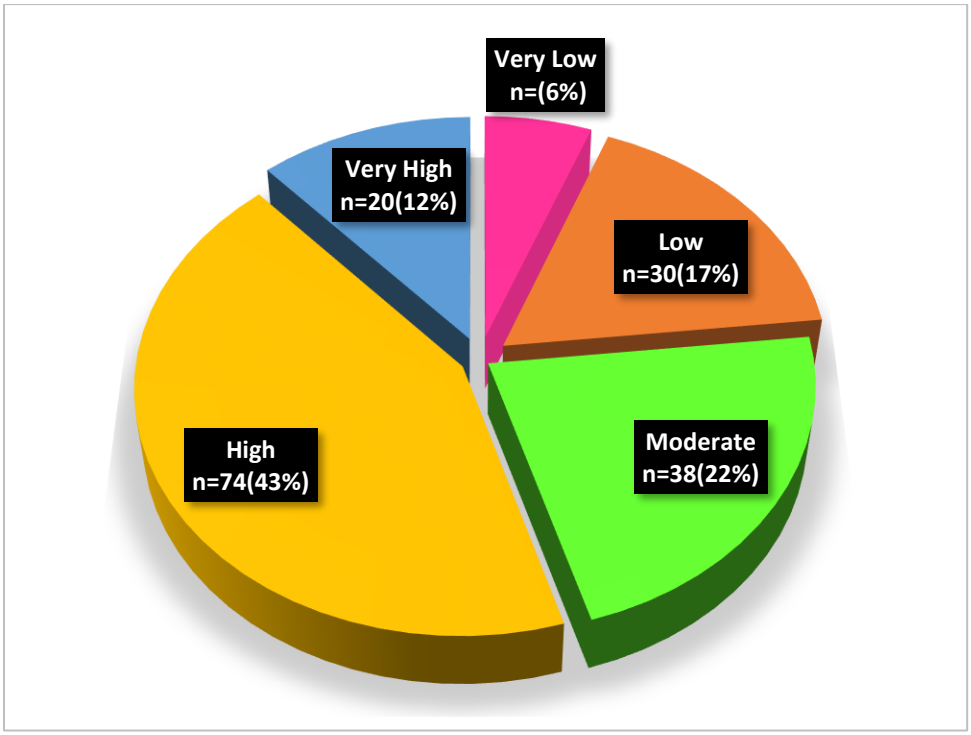

Figure 4: *Research Skills of LIS research Scholars*

Identifying the Barriers to Use SMTs for Research

To achieve the research objective of identifying the barriers to using SMTs in research, a survey questionnaire was administered to respondents to rate their agreement or disagreement with 18 statements on a (1-5) scale. As shown in Table 4, the respondents showed that they faced barriers during the use of SMTs for their research work.

The findings revealed that most of the respondents found issues of finance (M=2.23, SD=1.31) and culture (M=2.23, SD=1.18) as their main barriers, issues related to health (M=2.22, SD=1.15), and their issues of limited control over the content (M=2.19, SD=1.17), as mentioned in Table 4. Moreover, the results indicated that the majority of LIS research scholars knew how to use SMTs in research. In this way, the barrier of limited knowledge about the use of SMTs showed the lowest mean score (M=1.88, SD=1.14).

Furthermore, mean score of barriers reported below midpoint of the scale but they represent the significant challenges related to other factors. Therefore they are reflected as perceived rather than severe barriers.

Table 4.
Identifying the Barriers to Use SMTs in Research

SN	Barriers	M	SD
1	Issues of finance	2.23	1.31
2	Issues of culture	2.23	1.18
3	Issues of Health	2.22	1.15
4	Issues of limited control over content	2.19	1.17
5	Issues of privacy	2.13	1.20
6	Limited SMTs for research	2.12	1.27
7	Downloading restrictions	2.12	1.27
8	Limited support from the library staff	2.11	1.39
9	Information Distraction	2.07	1.11
10	Distancing from social media	2.04	1.31
11	Issues of connectivity	2.04	1.41
12	Limited facilities for computers in universities/institutes	1.97	1.22
13	Lack of knowledge to find related information	1.94	1.10
14	Limited time to get the skills	1.93	1.15
15	Issue of information credibility	1.91	1.19
16	Unable to use a computer/laptop	1.91	1.11
17	Issues of electricity	1.89	1.26
18	Limited knowledge about the use of SMTs	1.88	1.14

Table 5.
Summary of Hypotheses Concerning Demographic

SN	**Hypothesis**	Result
Results of an independent sample t-test		
$H_0$1:	There is no significant variation in the use of SMTs among LIS research scholars based on gender.	Accepted
$H_0$2:	There is no significant variation among LIS research scholars based on the university sector.	Accepted

$H_0$3:	There is no significant variation in the use of SMTs among LIS research scholars in the level of degree.	Accepted
$H_0$4:	There is no significant variation in the use of SMTs among LIS research scholars in the mode of enrolment.	Accepted
Results of one-way ANOVA		
$H_0$5:	There is no significant variation in the use of SMTs among LIS research scholars in age groups.	Accepted

Results of Independent Sample t-Test

An independent sample t-test was conducted in SPSS to examine the differences according to the demographic characteristics. The results of Table 6 revealed no significant variation were found between both the gender groups [t(170) = -1.36, p > 0.05]; university sector [t(170) = 1.83, p > 0.05]; level of study [t(170) = -.29, p > 0.05]; and mode of enrolment [t(170) = 1.58, p > 0.05] in the use of SMTs.

Table 6.
Results of the Independent sample t-test

SN	Groups	*Use of SMTs in research work*				
Gender		n	M	SD	*t(170)*	*p*
1	Male	108	2.08	0.95	-1.36	.175
2	Female	64	2.30	1.14		
Level of Study						
1	MS/M. Phil	130	2.15	1.03	-.29	.765
2	Ph.D	42	2.20	1.03		
Mode of Enrollment						
1	Full time	84	2.28	1.01	1.58	.116
2	Weekend	88	2.04	1.03		
University sector						
1	Public	96	2.29	1.02	1.83	.069
2	Private/Semi-government	76	2.00	1.02		

Difference is Significant at p ≤ 0.05.

Independent sample t-test's results showed that all the groups were using SMTs equally in their research works, which *supported the hypotheses* (**$H_0$1, $H_0$2, $H_0$3,** and **$H_0$4**) presented in Table 5.

Results of one-way ANOVA

To assess the variations in demographic characteristics, including age, a one-way ANOVA was conducted with a 95% confidence level and a 5% margin of error.

Table 7.

Results of One-way ANOVA

SN	Groups			*Use of SMTs in Research Work*			
Age		n	M	SD	*df*	$F_{(2,170)}$	*p-value*
1	Up to 30 years	40	2.08	0.92	2		
2	31-40 years	87	2.26	1.11		.902	.408
3	41-50 years & above	45	2.03	0.94			

In Table 7 findings showed that no significant variations were found among the LIS research scholars' three age groups at [f(169)= .902, p > 0.05]. Based on age the results of one-way ANOVA could not reveal significant variations, which supported the hypotheses (H01 to H05) presented in Table 7.

Relationship among Use of ICT Devices, Research Skills, and Use of SMTs in Research

To assess the hypotheses listed in Table 8 and determine the relationship between research skills, ICT device use, and SMT use in research, Pearson's correlation analysis was performed. According to Table 8 findings, every factor had a perfect correlation with itself (Pearson's r = 1).

Table 8.

Correlation among ICT Devices, Research Skills, and Use of SMTs

SN	Factors	M	SD	1	2	3
1	Use of ICT Devices (mobiles, computers)	3.49	1.13	1		
2	Research skills	3.37	1.08	.214**	1	
3	Use of SMTs	2.16	1.03	.232**	.191*	1

**. Correlation is significant at p ≤ 0.01.; *. Correlation is significant at p ≤ 0.05.

Additionally, a modest and positive correlation was found between the LIS research scholars' research skills and their usage of SMTs in research work [r = 0.191, p < 0.05]. Similarly, there was a significant correlation between the LIS research scholars' usage of ICT devices and their employment of SMTs in their research study [r = 0.232, p < 0.01]. The correlation values indicate a small but positive correlation among the variables.

Results of Pearson's coefficients revealed a significant positive correlation was found among research skills and use of SMTs. In this way, hypothesis (H06) as presented in Table 9 is rejected by Pearson's correlation results.

Table 9.
Summary of Hypotheses Based on Correlations

SN	Hypothesis	Result
$H_0$6:	There is no significant relationship between SMTs use in research and research skills of LIS research scholars.	*Rejected*

Discussion

Demographic Differences in Use of SMTs

The current study revealed that there was no impact of demographic variables on the use of SMTs among Lis scholars including gender, level of degree, mode of enrollment, or university sector. The results of this study were corroborated by earlier empirical studies that examined how researchers and postgraduate students used SMTs and academic SNSs. Manca & Ranieri's (2017) study found no significant gender differences in SMTs utilization, although this study found variances by discipline.

Furthermore, no significant variations were observed in the usage of SMTs in research activities among LIS research scholars with respect to age. In the same manner, Sago (2015) also opined that the difference involved in the usage of SMTs among researchers was insignificant against age in some previous studies. Therefore, the current study revealed that the SMTs usage in research was not significantly affected by demographic characteristics among LIS research scholars. Furthermore, our investigation is in line with Al Mulhim and Ismaeel (2024) study conducted among Saudi postgraduate students, which found that there was no significant variation based on gender and age regarding SMTs use. The researchers claimed that postgraduate students give preference to academic requirements over demographic factors. Likewise, Oyedokun et al. (2022) observed that institutional culture and discipline had a greater impact on SMTs' use than individual characteristics. These results aligned with the current study's conclusion, which revealed that demographic characteristics have an insignificant impact on the use of SMTs among LIS research scholars.

Location of Using SMTs in Research

The results of the present study revealed that LIS research scholars give preference to their homes for using SMTs for research as compared to other locations. The current study is aligned with the research of Divya and Sudhier (2019), conducted at the University of Kerala, which also revealed that postgraduate students prefer to use SMTs from their homes/hostels as compared to their department or libraries. Likewise, Islam and Habiba (2022) observed that Bangladeshi postgraduates used SMTs from their homes due to the comfort and reliability of their personal devices as compared to the institutional internet. Similarly, Kutu and Kutu (2022) also found in their study that African research students preferred to use SMTs from home for scholarly activities due to unstable internet connectivity within the libraries of the campus. These findings are congruent with the present study, where, irrespective of technical advancements, the selection of locations of SMT use by researchers is guided by convenience and connectivity.

ICT Skills of LIS Research Scholars

As revealed by the results of this study, LIS research scholars possessed an average level of ICT skills, with the manipulation of the computer, internet searching, and using electronic communication being relatively good. Results of this study are aligned to previous studies that ICT

skills are necessary for efficient use of social media tools in academic purposes (Supardi et al., 2021). Palla and Sheikh (2021) also stated that effective use of SMTs is associated with ICT skills (Nawaz & Hussain, 2025).

Taken together, these studies indicate that although the LIS research scholars in this study possessed adequate ICT skills, future demands in research will require more advanced digital abilities, including AI literacy, ethical handling of social media data, and proficiency in analytical tools.

Research Skills of LIS Research Scholars

The current research outcomes showed that LIS research scholars possess an adequate level of research skills for using SMTs. Past studies also recommended that research students must be equipped with research skills. The higher education students should be well aware of information sources available by social networking sites that could undermine their research findings (Nwangwa et al., 2014). In the same way, the study of Peter (2015) suggested that students must possess the requisite skills for effective and productive use of SMTs in their research work to avoid their misuse. On a general note, the students are required adequate research skills to evaluate the information sources they came across through SMTs to formulate research ideas and compose scholarly research based on SMTs (Nwangwa et al., 2014).

Additionally, according to their research interests, students would have the necessary research skills for searching research topics and ideas through SMTs like Facebook, Academia.edu, LinkedIn, etc. To contribute actively, analyze critically, disseminate relevant information on academic SNSs, and foster beneficial contact and collaboration, they also needed research skills. Otherwise, scholars may encounter difficulties in generating fruitful research ideas when utilizing SNSs for their studies (Ogedengbe & Quadri, 2020). Current research shows that adequate research skills are still necessary to use SMTs. According to Hu et al. (2024), higher digital and research literacy among postgraduate students improved their ability to use SMTs for idea generation and assessing the reliability of material. To effectively use SMTs in academic research, LIS research scholars need to cultivate research skills, as these findings support the conclusions of the current study.

In relationships of variables, although some effect sizes were small and their practical impact may be limited, however their findings should be interpreted with appropriate caution.

Identifying the Barriers to Use SMTs in Research

According to this study, the major barriers that LIS research scholars faced while using SMTs were a lack of control over content, culture, health, and finance. The use of SMTs in research is restricted by these issues for LIS research scholars. These results are consistent with Khamali and Thairu's (2018) and Folabit & Jita's (2024) findings that students faced several obstacles when using SMTs. Among the barriers were a lack of trust, a lack of funds to purchase data packages, a lack of privacy, a poor network, a negative attitude, and technical problems. The barriers also included a lack of trust, poor communication skills, a lack of managerial support and technical difficulties. According to Anderson (2019), the main reason why students don't use SMTs is a lack of privacy. However, Mngwengwe & Dlamini (2020) claimed that a lack of trust prevents students from using SMTs to their full potential. The issue of students not having sufficient funds to pay for SMTs was agreed upon by Ifeanyi (2023). Financial, privacy, network, confidence, and technology were the biggest barriers to South Carolina students' adoption of SMTs, according to another recent study (Mngwengwe & Dlamini, 2020). These

findings are consistent with the current investigation, demonstrating that the successful implementation of SMTs in research is limited by both personal and systemic issues.

Some research studies have additionally highlighted several problems that prevent students from using SMTs for academic communications in areas such as security and privacy, health, skills, confidence, time constraints and fear for misuse of their personal information among other problems (Gruzd et al., 2012; Mohamed & Sumitha, 2011). In addition, some of the main obstacles hindering postgraduate students from accessing SMTs for their research are technical support, lack of guidance, security and copyright issues, etc. (Ashraf & Haneefa, 2016; Madu, Odenigbo & Okechukwu, 2025). A review-based study conducted in Pakistan by Sadaf (2018) also supports our findings in which revealed that research students were hindered by health issues, internet connections, privacy issues, and power cuts during the use of social media tools. Therefore, it can be concluded that a key to overcoming these challenges and fully realizing the potential of SMTs in research is the provision of institutional motivation, necessary training, and proper digital literacy skills are required.

Theoretical Implications

Frameworks for Digital literacy and technology adoption can further explain the current study's findings. According to Davis' (1989) Technology Acceptance Model (TAM), people's acceptance of technology will be greatly influenced by their opinions about its use and usability. According to the current research, LIS research scholars' research skills improve the perceived value of SMTs for academic pursuits, while ICT proficiency raises the perceived usability of SMTs. Furthermore, the foundation of technology usage behavior is identified by the Unified Theory of Acceptance and Use of Technology (UTAUT) (Venkatesh et al., 2003) as performance expectancy, effort expectancy, and facilitating conditions. The use of SMTs is positively correlated with ICT and research skills, suggesting a higher degree of effort and performance expectancy, while financial, cultural, and institutional challenges are limiting factors. These interpretations are also aligned with the digital literacy models (UNESCO, 2018; Jeyaraj & Kumar, 2021), which identify proficiency with digital tools and information management as a prerequisite for effective use of SMTs in research activities. Consequently, combining TAM, UTAUT, and digital literacy models exposes the behavioral and environmental processes in LIS research scholars' use of SMTs for research activities.

In the perception of barriers among LIS scholars some mean scores are slightly below the scale midpoint, but are contextually relevant. However, in academic context, even some moderate perceived constraints like financial limitations and institutional support can have meaningfully influence on technology adoption behaviors.

Conclusion

The existing research study explored the use of SMTs among LIS research scholars for research in Pakistan. It investigated the usage behavior, research skills, and barriers. Results of this study showed that the majority of LIS research scholars preferred to use SMTs from their homes for research activities. They possessed moderate level research skills and experience. Money, cultural and health issues are perceived as their main barriers. On the other hand, no differences were found based on gender, level of study, mode of enrollment, age. Besides, positive correlations were found between SMTs' use, research skills, and the use of ICT devices. The ongoing study findings suggest that ICT skills are required for effective use of SMTs for research.

Research Limitations and Future Directions

After the interpretation of the findings, the current study has some limitations. Data were collected using self-administered surveys, which could be biased. Another limitation is the population of the study, which included only LIS research scholars at Pakistani universities. Therefore, the findings could not be applied to other countries or domains. Moreover, causal inferences among variables of SMT utilization, research skills and ICT skills are prevented by the cross-sectional design.

The above-mentioned limitations may be addressed in the future by examining the evolution of SMTs' use over time using a mixed-method or longitudinal research approach. More variations for evidence would be found in the use of SMTs from multi-disciplinary, multi-institutional, and multi-national comparative studies. The qualitative research method could also be applied to the cultural, institutional and individual constraints on SMTs' use in research.

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