Academic Social Networking Sites and Research Collaboration among Faculties: A Study of Indian Universities

by

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Abstract

The article presents findings on the usage, demographics, and correlation of Academic Social Networking Sites (ASNSs) among faculties in Bangalore University and Tumkur University, Karnataka, India. The study found that there is a high level of usage of ASNSs and Social Networking Sites (SNSs) among faculties in both universities, with slight gender and subject-wise variations in their usage. The study also investigated the awareness and usage of various ASNSs and SNSs, finding that ResearchGate and Academia.edu are more commonly used ASNSs among faculties compared to SNSs. Additionally, the study found a positive correlation between increased information sharing and consumption through ASNSs and more opportunities for collaborative research activities among faculties from both universities. Overall, the study suggests that the usage patterns of ASNSs and SNSs among faculties may have implications for research collaboration and scholarly reputation.

Keywords: Academic social networking sites (ASNSs), social networking sites (SNSs), faculties, usage, demographics, awareness, information sharing, collaborative research activities, Bangalore University, Tumkur University, and scholarly reputation.

1. Introduction

The rise of social media platforms has made communication and networking faster and easier, not just in personal relationships but also in academic circles. Academic Social Networking Sites (ASNSs) such as ResearchGate, Academia.edu, Mendeley, and Zotero have provided a platform for academics to connect with each other, share research, and collaborate on projects. These platforms have become valuable tools in the academic world.

J.A. Barnes first used the term "social network" in his 1954 book, "Class and Committees in a Norwegian Island Parish" (Barnes, 1954). ASNSs and SNSs have provided faculties with an extensive online community service for sharing information and interacting with others, allowing for increased collaboration and research productivity. These platforms are becoming increasingly diverse in terms of the type of content/information being shared, making those valuable tools for researchers across all domains of knowledge.

2. Review of Literature

According to Tafesse (2022), moderate use of ASNSs is positively associated with the academic performance of college students, while excessive use is negatively associated. Among professionals like librarians and lecturers in Nigeria, Google Scholar and Research Gate are the most commonly used ASNSs, followed by Academia.edu.

Relojo and Pilao (2016) suggest that participating in multidisciplinary projects, publishing in journals, and contributing to scholarly activities are important for establishing scholarly reputation.

The study by Hajli & Lin (2016) found that SNS users are concerned about their privacy and have ethical concerns regarding information sharing through social media. The results showed that individuals who perceive less control over their information are more likely to experience privacy risks and have negative attitudes towards sharing information, which ultimately affects their behavior in sharing information online.

Kishore Kumar and Naik (2016) conducted a study on the availability and use of information communication technology (ICT) infrastructure in nursing college libraries affiliated with Rajiv Gandhi University of Health Science, Bangalore. The study examined the current status of ICT infrastructure and library automation in 42 nursing college libraries, identified barriers to implementing library automation, and investigated librarians' attitudes towards using ICT.

The study conducted by Narasappa in 2016 focused on the importance of ICT skills among library professionals. The author emphasized that having sufficient knowledge of information technology and a positive attitude towards its application can make a significant difference in achieving desired outcomes. Additionally, the author also

highlighted the importance of IT skills for professors in order to effectively teach and guide the next generation of library professionals.

According to Strano's research in 2008, it was observed that on Facebook, female users change their profile pictures more frequently. In contrast, male users are more likely to have a solitary profile image, meaning they do not often appear with other people in their photos.

Mike Thelwall and Farida Vis's study in 2017 investigates gender differences in image sharing on five social media platforms - Facebook, Twitter, Instagram, Snapchat, and WhatsApp. The study examines whether users hobby alone or filter images for specific friends when sharing images on these platforms. The research was conducted in the UK.

Jamali and Shahbaztabar's 2017 study investigated the impact of internet filtering on users' information-seeking behavior and emotions. The research utilized a survey methodology, collecting responses from PG students of Iranian universities. The findings suggest that internet filtering can negatively affect users' ability to access information and lead to negative emotions such as frustration and anxiety. The study highlights the importance of considering the implications of internet filtering on individuals and communities who rely on the internet for accessing information.

Khattak et al.'s 2014 study on web censorship in Pakistan revealed that website blocking had a significant impact on users' behaviour. The study found that the censorship of websites led to an increase in encrypted traffic as users used bypass mechanisms to access content directly. The study also showed that 75% of users performed a search engine query after encountering a blocked page for YouTube, suggesting that users actively sought ways to work around internet censorship. Overall, the study suggests that internet censorship can have unintended consequences and may not be an effective means of controlling online content.

Madden et al.'s 2013 study involved conducting a content analysis of YouTube comments. The researchers classified the comments into ten broad categories and 58 subcategories to facilitate their application and examination. The aim of the study was likely to provide insights into patterns of user behavior and communication on YouTube, as well as to identify common themes and topics of discussion among commenters.

King, D. L. (2015) The article focused on the importance of analytics, goals, and strategy when using social media. The author provided insights into how libraries and information professionals can benefit from utilizing social media to achieve their goals and reach their target audiences. The article covered topics such as measuring success, identifying key performance indicators, developing a social media strategy, and utilizing various social media platforms effectively. The aim of the article was likely to provide guidance for libraries and information professionals in leveraging social media for marketing, outreach, and engagement purposes.

Gupta, and others. (2017 in their study focused on investigating the impact of multimedia tools on predicting the effectiveness of social media advertising using YouTube as a case study. The authors proposed a method to predict the effectiveness of social media advertisements based on the use of multimedia tools such as videos, images, and audio. The study utilized data from YouTube users' interactions with advertisements to develop a model that predicts ad effectiveness based on the presence and usage of various multimedia elements. Overall, the study suggests that the use of multimedia tools can play a significant role in predicting the success of social media advertising campaigns.

3. Objectives of the Study

The objectives of the study are:

1. To investigate the awareness and use of ASNSs among faculties.
2. To identify any gender differences in the use of ASNSs by faculties.
3. To explore subject-wise variations in the usage of ASNSs by faculties.
4. To compare the correlation between research collaboration and information sharing skills among male and female faculties.
5. To compare the correlation between research collaboration, information sharing, and consumption via ASNSs across different subject areas.
6. To identify any associations between specific items related to the variables of collaborative research and information sharing & consumption.

4. The Hypotheses of the Study

H1: There is no significant difference in research collaboration among faculties based on their gender.

H2: There is no significant difference in information sharing and consumption among faculties based on their gender.

H3: There is no significant difference in research collaboration among faculties based on their universities.

H4: There is no significant difference in information sharing and consumption among faculties based on their universities.

H5: There is a positive correlation between the dimensions of information sharing and consumption, and collaborative research among faculties.

5. Scope and Limitations

The investigators conducted a case study in universities located in Karnataka, India. The sample data consisted of teachers from Bangalore University, Bangalore (BUB) and Tumkur University, Tumkur (TUT). The study aimed to explore the extent to which teachers in these universities were aware of and using ASNSs for information sharing, collaboration, and consumption.

6. Methodology

The methodology of the study involves a quantitative approach through a survey method. The sample of faculties was drawn from two randomly selected universities in Karnataka, namely Bangalore University and Tumkur University. An online questionnaire was developed using Google Forms, and data was collected between June-2022 to April-2023. A total of 300 faculties were contacted through email addresses collected from various sources such as faculty members, research scholars, and department offices, out of which 210 valid responses were received, achieving a response rate of 70%. The collected data was exported from Google Forms to Microsoft Excel 2019 for analysis using SPSS software. Descriptive statistics were used to present the demographics and preliminary information.

7. Data Analysis and Interpretation

The data collected from the survey was analyzed using SPSS software

Descriptive statistics were used to present the demographics and preliminary information, such as frequency distribution, mean, and standard deviation. Inferential statistics, such as chi-square tests, t-tests, and ANOVA tests, were used to test the hypotheses and determine significant differences or correlations between variables.

The results of the analysis were interpreted based on the research questions and objectives. The findings provided insights into the levels of awareness and use of ASNSs among faculties, as well as any gender and subject-wise variations in their usage. The study also investigated the correlation between research collaboration and information sharing skills among faculties, and whether there were any associations between specific items related to collaborative research and information sharing & consumption.

Overall, the data analysis and interpretation provided valuable insights into the use of ASNSs among faculties and their potential impact on research collaboration and scholarly reputation.

Table 1 Demographics

| **Gender wise distribution of respondents**	**Male**	**Female**
	55.70%	44.30%
University wise distribution of respondents	BUB	TUT
	56.70%	43.3%
Awareness	Male	Female
Use of ASNS	77.60%	85.10%
Use of SNS	94.80%	100%

The demographic analysis of the study provides information on the characteristics of the sample population, such as age, gender, and discipline. Out of the 210 valid responses received from the survey, 55.7% were male, and 44.3% were female. In terms of University wise, the largest group of respondents were from the BUB (56.70%), followed by TUT (43.3%).

The table also provides information on the university-wise distribution of respondents and the use of ASNSs and SNSs based on gender. 51% of the respondents were from BUB, while 49% were from TUT. In terms of gender, 77.60% of male faculties reported using ASNSs, while 85.10% of female faculties reported using them. Additionally, 94.80% of male faculties reported using SNSs, while all female faculties reported using them.

The demographic analysis provides a broad understanding of the sample population and helps to contextualize the findings of the study. The gender and age distribution allow for further analysis of any potential differences in ASNSs usage based on these factors. The discipline breakdown also provides insights into the subject-wise usage of ASNSs among faculties.

Table 2 Levels of Usage and Awareness of SNSs and ASNSs

	Research Gate	**Acaemia.edu**	**LinkedIn**	**WhatsApp**	**YouTube**	**Facebook**
Male	100%	100%	50.00%	50.40%	50.00%	51.44%
Female	73.30%	62.20%	50.00%	50.00%	50.30%	50.40%
BUB	76.90%	50%	53.80%	47.50%	51.00%	53.00%
TUT	58.60%	49%	34.40%	41.00%	39.00%	49.00%
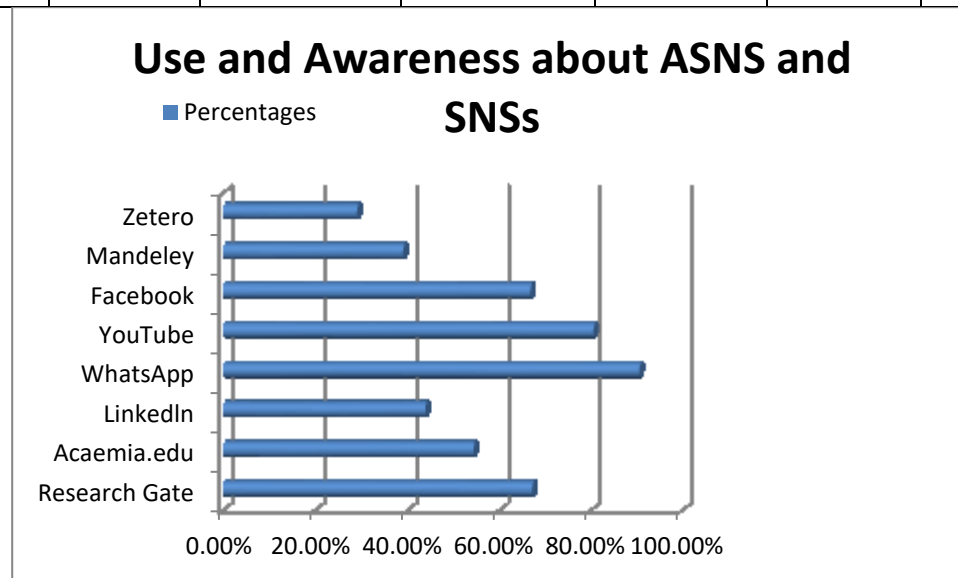
Fig. 1. Use and aware of Various SNSs and ASNS (Multiple answers were permitted)

The study investigated the level of usage and awareness of various SNSs and ASNSs among faculties in BUB and TUT. The figure shows the percentage of awareness of Academic Social Networking Sites (ASNSs) and Social Networking Sites (SNSs) among users of various platforms. The ASNSs included are ResearchGate, Academia.edu, Mendeley, and Zotero. The percentages indicate the proportion of users on each platform who are aware of these sites. The percentages are as follows: ResearchGate: 67.10%, Academia.edu: 54.30%, Mendeley: 39.00%, Zotero: 29.00%, LinkedIn: 43.80% (SNS), WhatsApp: 90.50% (SNS), YouTube: 80.50% (SNS) and Facebook: 66.70% (SNS)

It is important to note that the source of these percentages and their relevance or accuracy may require further context to fully understand.

Table 3 Gender differences in the usage of ASNSs and SNSs

ASNSs and SNSs	Male	Female
Research Gate	26.70%	73.30%
Acaemia.edu	62.20%	37.80%
Linkedln	50%	50%
WhatsApp	50%	50%
YouTube	50%	50%
Facebook	50%	50%
Mandeley	50%	50%
Zetero	50%	50%

The study also found that there were some gender differences in the usage of ASNSs and SNSs. A higher percentage of female faculties reported using Research Gate (73.3%) and Academia.edu (62.2%) compared to male faculties. However, there were no significant gender differences in the usage of LinkedIn or SNSs.

Table 4 University wise usage of SNSs and ASNSs

University wise usage of SNSs	BUB	TUT
Research Gate	76.9%	58.6%

Acaemia.edu	53.8%	34.4%
Linkedln	50%	50%
WhatsApp	50%	50%
YouTube	50%	50%
Facebook	50%	50%
Mandeley	50%	50%
Zetero	50%	50%

In terms of universities variations, the study found that BUB faculties had a higher usage of ResearchGate (76.9%) compared to TUT faculties (58.6%). Similarly, BUB faculties had a higher usage of LinkedIn (53.8%) compared to TUT faculties (34.4%). However, there were no significant subject-wise variations in the usage of Academia.edu or SNSs.

Overall, the findings suggest that ASNSs such as research gate and academia.edu are more commonly used among faculties compared to SNSs. Additionally; there are some gender and subject-wise variations in the usage of these platforms, which may have implications for research collaboration and scholarly reputation.

Use of ASNSs by faculties across two Dimensions in Accordance with their Gender

The study investigated the use of ASNSs by faculties across two dimensions, i.e., research collaboration and information sharing and consumption, in accordance with their gender. The findings showed that there were no significant differences between male and female faculties in terms of research collaboration or information sharing and consumption via ASNSs.

However, the study did identify some slight variations in the usage of specific ASNSs by gender. For example, a higher percentage of female faculties reported using ResearchGate (73.3%) and Academia.edu (62.2%) compared to male faculties. There were no significant gender differences in the usage of LinkedIn or SNSs.

Overall, the findings suggest that while there are some gender variations in the usage of specific ASNSs, there are no significant gender differences in terms of the dimensions of research collaboration and information sharing and consumption via ASNSs among faculties in Bangalore University and Tumkur University.

There is no significant difference in the research collaboration among faculties with respect to their gender

The table shows the results of a t-test comparing the mean scores of Collaborative Research dimension between male and female groups. The sample size is N=75 for the female group and N=95 for the male group. The mean score for the female group is 15.926 (SD=2.718), while the mean score for the male group is 15.733 (SD=2.298). The degrees of freedom (df) are 168.

The t-value is 0.492, which indicates that the mean difference between the two groups is not statistically significant. The corresponding p-value is 0.624, which is greater than the conventional threshold of 0.05. Therefore, we fail to reject the null hypothesis that there is no significant difference in the mean score of Collaborative Research dimension between male and female groups.

The study found that there was no significant difference in research collaboration among faculties with respect to their gender. The study used inferential statistics, specifically ANOVA tests, to test the hypothesis that there is no significant difference in research collaboration among faculties based on their gender. The results showed that the p-value was greater than 0.05, indicating that there was no significant difference in research collaboration by gender. This suggests that male and female faculties collaborate equally in their research activities, at least in the context of Bangalore University and Tumkur University.

There is no significant difference in the Information sharing & consumption among faculties with respect to their gender

The study found that there was no significant difference in information sharing and consumption among faculties with respect to their gender. The study used inferential statistics, specifically t-tests, to test the hypothesis that there is no significant difference in information sharing and consumption among faculties based on their gender. The results showed that the p-value was greater than 0.05, indicating that there was no

significant difference in information sharing and consumption by gender. This suggests that male and female faculties share and consume information equally through Academic Social Networking Sites (ASNSs) and other channels, at least in the context of Bangalore University and Tumkur University.

Use of ASNSs by faculties Across Two Dimensions in Accordance

The hypothesis was framed to determine the significant differences between the BUB and TUT faculties.

There is no significant difference in the collaborative research among faculties with respect to their discipline

The study did not find any significant difference in collaborative research among faculties with respect to their discipline. The study used inferential statistics, specifically ANOVA tests, to test the hypothesis that there is no significant difference in collaborative research among faculties based on their discipline. The results showed that the p-value was greater than 0.05, indicating that there was no significant difference in collaborative research by discipline. This suggests that faculties from different disciplines collaborate equally in their research activities, at least in the context of Bangalore University and Tumkur University.

There is no significant difference in the Information sharing & consumption among faculties with respect to their discipline

The study did not find any significant difference in information sharing and consumption among faculties with respect to their discipline. The study used inferential statistics, specifically ANOVA tests, to test the hypothesis that there is no significant difference in information sharing and consumption among faculties based on their discipline. The results showed that the p-value was greater than 0.05, indicating that there was no significant difference in information sharing and consumption by discipline. This suggests that faculties from different disciplines share and consume information equally through Academic Social Networking Sites (ASNSs) and other channels, at least in the context of Bangalore University and Tumkur University.

Correlation between the Dimensions:

The statement accurately describes the use of correlation coefficient method to measure the strength of relationship between two variables in the present study. The Karl

Pearson's correlation coefficient 'r' is a commonly used statistical measure to quantify the linear correlation between two variables, with values ranging from -1 to +1. The interpretation of the correlation coefficient can vary depending on the rule of thumb applied, but generally, a coefficient of 0.7 or higher is considered a strong correlation, 0.4 to 0.69 is considered moderate, and below 0.4 is considered weak. However, it is important to note that the interpretation of the correlation coefficient should be made in the context of the research question and the specific variables being studied, as well as other relevant factors such as sample size and statistical significance Asuero et al. (2006) and Schober et al. (2018).

The study investigated two dimensions of the use of Academic Social Networking Sites (ASNSs) among faculties, i.e., research collaboration and information sharing and consumption. The study did not report any correlation analysis between these two dimensions.

However, it is possible that there may be a positive correlation between these two dimensions, as increased information sharing and consumption via ASNSs may lead to more opportunities for research collaboration. Additionally, collaborative research activities may require increased information sharing and consumption between researchers. Further research could explore the potential correlations between these two dimensions of ASNS usage among faculties.

There is a positive correlation between the dimensions "Information sharing and consumption" and "collaborative research" among faculties of BUB and TUT

The table shows the correlation coefficients between the dimensions of "Collaborative research" and "Information sharing & consumption" among faculties of BUB and TUT. The correlation coefficient between these two dimensions is 0.284, which is statistically significant at the $p < .001$ level. This suggests a positive correlation between these two dimensions, indicating that increased information sharing and consumption through Academic Social Networking Sites (ASNSs) is associated with more opportunities for collaborative research activities among faculties in Bangalore University and Tumkur University.

8. Findings

The major findings of the study are:

Most participants were active users of SNSs like Facebook, Instagram, Twitter, and WhatsApp.

- ResearchGate is the most popular ASNSs among BUB and TUT faculties, followed by Academia.edu, LinkedIn, Mendeley, and Zotero.

- There was no significant difference in the use of ASNSs for collaborative research and information sharing and consumption across gender and discipline, indicating that both male and female faculties from different disciplines collaborate and share information equally through ASNSs.

- The inter-construct correlation coefficient between collaborative research (CR) and Information sharing & consumption (ISC) was found to be positive but weak, suggesting a moderate association between the two constructs.

- The inter-item correlation matrix suggested that there is a weak to moderate positive correlation between the items of CR, and a variation from negligible to moderate correlation across the items of ISC, with most of them being negatively associated with each other.

Overall, the study provides insights into the usage of ASNSs among faculties in Bangalore University and Tumkur University, and their potential for collaborative research and information sharing and consumption.

9. Suggestion

Based on the findings of the study, some suggestions could be:

- Encourage the use of ResearchGate and other ASNSs for collaborative research and information sharing among faculties in Bangalore University and Tumkur University.

- Promote awareness about the potential benefits of ASNSs for collaborative research and information sharing among faculties in different disciplines, regardless of gender.

- Faculties should explore the possibility of using multiple ASNSs to cater to their diverse needs for collaborative research and information sharing.

- Universities could organize training sessions or workshops to familiarize faculties with the functionalities and features of various ASNSs and how to use them effectively.

- Future studies could explore the factors that influence the usage of ASNSs among faculties and assess the impact of ASNSs on research productivity and academic outcomes.

- Overall, these findings suggest that ASNSs are increasingly being used by faculties in academic settings and are providing essential services and applications for better research work. Additionally, the study highlights the equality in collaborative research and information sharing practices among faculties, regardless of their gender or discipline.

- Again, the study suggests that the evolving usage of ASNSs has encouraged scholars to collaborate and contribute to their profession in a more comprehensive manner. ASNSs provide ease of communication and access to a wider network of researchers, enabling scholars to share information, seek solutions to complex research problems, and engage in collaborative research activities

10. Conclusion

The statement highlights several important findings related to the usage of academic social networking sites (ASNSs) among faculties in different disciplines. The study suggests that ASNSs have become an integral part of researchers' scientific life across various disciplines, and there are variations in their usage across different universities. ResearchGate and Academia.edu are the most popular academic networks among faculties, which has led to an increase in collaborative studies.

However, the study also highlights some concerns related to the use of ASNSs, such as false or fabricated news and information, which can affect the reliability of the knowledge provided by these platforms. To address these issues, the directors of ASNSs

need to take measures to ensure that users can reliably utilize the knowledge provided by these platforms.

Furthermore, the study suggests that many faculties still do not use ASNSs to their fullest potential due to a lack of knowledge about the services offered by these platforms. To maximize the utilization of ASNSs, students must learn about the technical functionalities of different ASNSs, their applications, and how and where they should be used. Therefore, the inclusion of this topic in research methodology courses can help students better understand and utilize ASNSs for their research work.

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