

RESEARCH ARTICLE

An Analysis of Faculty Members' Engagement with Academic Social Networking Sites of Public University in Bangladesh

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Abstract

Academic social networking sites (ASNS) such as Google Scholar, Academia.edu, and ResearchGate have become increasingly popular among scholars, allowing them to share research, connect with peers, and stay updated on trends. This study analyzed ASNS usage among faculty members at the University of Rajshahi through a structured questionnaire distributed to 97 faculty members.

The findings revealed that most participants had been using ASNSs for three or more years, with daily and weekly visits being common. Faculty members primarily used ASNSs to download articles, network, and promote their research. These platforms significantly enhance research visibility and facilitate collaboration across disciplines. However, challenges such as the unavailability of full-text articles and information overload were also noted, indicating areas for improvement. Despite these obstacles, ASNSs are vital tools in academic settings, supporting research dissemination and professional networking. In conclusion, by addressing these challenges and promoting effective use of ASNS, faculty members at the University of Rajshahi can enhance their research impact and academic success.

Keywords

Academic social networking sites, Research promotion, Scholarly communication, Faculty Members, Digital Scholarship, Technology Acceptance Model (TAM)

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1. Introduction

The advancement of modern technologies has changed our lifestyle. Likewise, with the advent of social networking sites, the way of communication has changed significantly. This technology has broken the physical barrier to communication, allowing users to build social networks or relationships with others who share similar personal or professional interests, hobbies, backgrounds, or real-life connections. In the last decade, there has been an emergence of Academic Social Networking Sites (Bullinger et al., 2010) in the academic world for the betterment of the academic world. In the academic context, Faculty and researchers use academic social networking sites to share their research, communicate with other scholars in their fields (Chaudhuri & Baker, 2019), and collaborate on diverse scholarship matters. Academics are increasingly using social media and are expected to have a professional online presence (Gruzd et al., 2012).

The changing information-seeking patterns of research scholars have introduced groundbreaking tools that offer new ways of scholarly communication, collaboration, knowledge synthesis, and information dissemination. The study might not be able to review all academic social networking sites, but it can review the most popular ones in Bangladesh. Among academic social networking sites, ResearchGate, Google Scholar, and Academia are most commonly used by the faculty members of the University of Rajshahi, but others are also used. These three sites were launched in the late 2000s, including ResearchGate in 2008 (ResearchGate, 2013), Academia.edu, established by Richard Price in 2008 (Duffy & Pooley, 2017), and Google Scholar citations, which had a limited launch in 2011 (Conner, 2011). The choice of the academic social networking site is based on the nature of communication needs (Chaudhuri & Baker, 2019). It also helps scholars with research and learning, finding popular topics, collating and managing resources, downloading articles, raising their own profile, and collaborative and peer-to-peer learning. (D, 2021), impact measurement (Espinoza Vásquez, F. K., & Caicedo Bastidas, 2015). A study conducted by Hagit Meishar-Tal and Efrat Pieterse in 2017 discusses five primary benefits of academic social networks for researchers, including: 1. Online persona management, 2. Dissemination of research 3. Collaboration with others 4. Information management. Impact measurement. Despite the many advantages, users face many problems in using academic social networking sites, including Privacy and security concerns, digital literacy, and unreliable information (Jordan & Weller, 2018). On the whole, ASNSs play an important role in communicating and collaborating with other researchers. Although various surveys have been conducted with university faculty members in other countries, there is scant research on the use of academic social networking sites among university faculty members in the Bangladesh context. As noted above, the current study aims to contribute to the literature on ASNSs, particularly regarding patterns.

Objectives of the Study

The general objective of this study is to explore the usage of Academic Social Networking sites among faculty members of the University of Rajshahi. Particularly, the study's goal is:

1. To assess the level of awareness and usage of academic social networking sites among faculty members at the University of Rajshahi.
2. To explore the behavioral differences in the usage of academic social networking sites (ASNSs) across various academic discipline areas among faculty members.
3. To analyze the perceived benefits and challenges faced by faculty members when using academic social networking sites for academic and research activities.

To provide recommendations for enhancing the effectiveness of academic social networking sites in improving faculty members' research output, professional visibility, and networking opportunities at the University of Rajshahi.

2. Literature Review

A new branch of social networks, known as academic social networking sites (ASNSs), has emerged. The number of members of these online academic social networks is constantly rising.

Academic Social Networking Sites Usages

According to previous research, the majority of respondents said that their main reason for using social media was to expand their networks of relationships with other academics, students, and people outside of academia (Lupton, 2014). Anyim (2021) highlighted that the social media networking platform connects millions of people daily who want to share and explore their activities and interests with others. In the same way, Aliz & Richardson (2018) see Academic Social Networking Sites as a vehicle for scholars to promote their research and communicate with other scholars in their field. A recent study by Sumathi Sripathi (2024) found that awareness and use of ASNS platforms among female faculty members and research scholars in India were remarkably high, with Google Scholar and ResearchGate emerging as the most frequently used platforms. Similarly, recent scholarship has emphasized the evolving role of ASNSs beyond simple profile creation. Studies suggest that these platforms now support broader academic functions, including research collaboration, academic branding, citation monitoring, and alternative impact measurement through altmetrics (Majumdar, 2022). Chakraborty (2012) reported that 'almost 70% of respondents (majority are from the social science background) claim SNS as a research tool; on the contrary, the remaining 30% of respondents (majority are from the pure science background) think that SNS has no role in research and education. Despite social networking sites having an impact on research, according to Meishar-Tal & Pieterse (2017), academic social networking sites (ASNS) have grown in popularity among academics and other researchers. Scholars also posit that Academic Social Networking Sites serve as current research information systems, widely used to access accurate, up-to-date research information (Mathelus et al., 2012). Sheikh (2016) shows in his study that most of the respondents (faculty members of CIIT) are members of more than one academic social network. Ali & Richardson (2018) conducted a survey of five universities in Karachi (Pakistan) among social science academics and found that, in most of them, access to ASNSs was available for searching for articles. Sheikh (2016) conducted a study to investigate the level of awareness, usage, and perceptions of CIIT faculty members towards the top five academic social networking websites (ASNWs), namely ResearchGate, Academia.edu, LinkedIn, Mendeley, and Zotero. The study found that faculty members were highly familiar with these platforms, visiting them twice a week for approximately 30 minutes each time.

Purposes to Use:

This table presents some reasons why scholars use academic social networking sites (ASNS)

Table 1: Reasons for Using Academic Social Networking Sites (ASNS)

Purposes	Items	Source/s
Academic Profile Management and Citation Tracing	Academic social networking sites are a good way of promoting my own academic publications and managing the citation of work.	Almoussa, O. (2011) Maria Menendez, Antonella de Angeli and Zeno Menestrina, (2012), Ali, M. Y., & Richardson, J. (2018).

Collaboration	Academic social networking sites are a useful way to support working in collaboration with other researchers and peer-to-peer learning	Jung Sun Oh and Wei Jeng, (2011) Sheikh (2016) Asmi, N. A., & Madhusudhan, M. (2015)
Sharing Information	Researchers primarily utilize ASNS for sharing information disseminate	Sheikh (2016), Hailu, M., & Wu, J. (2021) Nández, G., & Borrego, Á. (2013).
Stay Up to Date	Researchers also engage in following other scholars and being followed by them on ASNSs, indicating a mutual interest in connecting and keeping up to date with the work of other researchers.	Sheikh (2016) Nández, G., & Borrego, Á. (2013).
Information Consumption	Researchers actively participate in information consumption by downloading full-text articles from ASNSs.	Meishar-Tal and Pieterse (2017) Asmi, N. A., & Madhusudhan, M. (2015) Ali, M. Y., & Richardson, J. (2018), Nández, G., & Borrego, Á. (2013).

Benefits and Challenges

Researchers benefit from academic social networking sites (ASNS), but these benefits vary from person to person. (Espinoza Vásquez, F. K., & Caicedo Bastidas, 2015) identified five broad benefits that ASNS sites provide: “1) collaboration, 2) online persona management, 3) research dissemination, 4) documents management, and 5) impact measurement”. Making connections and developing networks, openness and sharing, self-promotion, research, teaching, and support were identified as benefits (Lupton, 2014). Rad et al. (2014) developed a conceptual model to identify factors that influence the adoption of SRNS among researchers for collaboration; however, it has yet to be tested. A study (Brandtzæg & Heim, 2009) conducted in Norway, within the broader context of social network sites, found that people typically derive several benefits from using SNSs; the major purpose was to create, maintain, and cultivate social interactions.

Greenhow (2009) and Weintraub (2012) report in their studies that the ways in which ASNSs' services are used by academics are less well documented in the literature than the benefits they can bring to researchers. Positive features include providing members with a place to create profile pages, share papers, track views, and downloads, and discuss research' (Lupton, 2014) and with the ability to both 'provide measures of academic impact' (Gruzd et al., 2012) and 'build meaningful and lasting collaborative partnerships' (Brandtzæg & Heim, 2009) A conducted on LIS faculty members of Northeast India by Chetry and Dey (2019) highlighted poor internet connectivity as a major problem associated with ASNS usage among faculty members. Mohammad, M., Lazim, Y. M., & Rosle, S. (2018) discussed challenges related to ASNS, including data quality assessment and the development of efficient algorithms.

Theoretical Framework

This study is grounded in the Technology Acceptance Model (TAM), originally proposed by Fred Davis (1989), which explains how users adopt and use new technologies. According to TAM, two key factors: Perceived Usefulness (PU) and Perceived Ease of Use (PEOU) influence users' attitudes and behavioral intentions toward technology adoption (Davis, 1989). In the context of Academic Social Networking Sites (ASNS), perceived usefulness refers to faculty members' beliefs that platforms such as ResearchGate, Academia.edu, and Google Scholar improve research visibility, collaboration, and scholarly communication. Perceived ease of use reflects how easily faculty can navigate and utilize

these platforms. Therefore, TAM provides an appropriate theoretical lens to understand faculty members' adoption and engagement with ASNS.

Research Gap: No deep study has been done on the use of academic social networking sites by university faculty members in Bangladesh. In conjunction with the academic use of ASNSs in Bangladesh, another area that has not been fully explored is which of the three mentioned academic social networking sites is more preferred by different faculties (study area). This paper is intended to help address these gaps.

3. Methodology

Research Approach: A quantitative approach was considered appropriate because it enables the systematic collection of structured data and supports statistical analysis for identifying patterns, relationships, and differences in ASNS usage behavior among faculty members. The study was theoretically grounded in the Technology Acceptance Model (TAM) proposed by Fred Davis (1989), which explains users' acceptance and adoption of technology through two principal constructs: Perceived Usefulness (PU) and Perceived Ease of Use (PEOU). These constructs informed the development of survey items related to awareness, adoption behavior, usage patterns, perceived benefits, and barriers to ASNS engagement.

Sampling Technique: The study targeted all 856 full-time faculty members at the University of Rajshahi. Purposive sampling was used to focus on faculty actively involved in teaching, research, and scholarly communication, who were more likely to engage with Academic Social Networking Sites (ASNSs). Participants were drawn from six faculties: Social Sciences, Science, Arts, Business Studies, Agriculture, and Engineering, and invited via email, Facebook, and WhatsApp. Out of 150 distributed questionnaires, 96 complete responses (64% response rate) were included, representing 11.21% of the total faculty. This sample size was sufficient for exploratory institutional-level analysis to capture patterns, perceptions, and associations across disciplines. A pilot study assessed the questionnaire's reliability. Cronbach's alpha for the Likert-scale items was 0.82, exceeding the 0.70 threshold, confirming satisfactory internal consistency for quantitative analysis.

Data Collection Method: Data were collected using a web-based online questionnaire created through Google Forms. The questionnaires were distributed via email, Facebook, and WhatsApp to ensure a wide reach among faculty members. The survey was conducted over three months, from February 2024 to April 2024.

Data Collection Tool and Responses

Data were collected using a structured self-administered online questionnaire developed through Google Form. The questionnaire was designed based on prior literature and aligned with TAM constructs to ensure conceptual relevance. The instrument consisted of four sections: demographic information; ASNS awareness and usage patterns; perceived benefits and barriers; and recommendations for improving ASNS use. Multiple item formats were employed, including multiple-choice questions, ranking items, five-point Likert-scale statements, and open-ended responses to capture both quantitative trends and contextual insights.

Section	Research Objective	Description of Items	Question Type	Question Numbers
Demographic Information	N/A	Gender, academic rank, faculty affiliation, department, and years of teaching/research experience	Multiple Choice	1–5
Awareness and Usage of ASNSs	Objective 1	Familiarity with ASNS platforms, frequency of use, purposes of use, and platform preferences	Multiple Choice, Ranking	6–10
Perceived Benefits and Barriers	Objective 2 & 3	Perceptions regarding research visibility, collaboration, accessibility, networking opportunities, and challenges	Five-point Likert Scale	11–14
Recommendations and Suggestions	Objective 4	Respondents' opinions and recommendations regarding institutional support and platform improvement	Open-ended	15–21

To ensure the validity of the research instrument, the questionnaire was evaluated by academic experts specializing in information science, digital scholarship, and survey research. Their feedback helped improve the relevance, clarity, and appropriateness of the questionnaire items. A pilot study was conducted before the final data collection phase to assess the instrument's reliability and consistency. Internal consistency reliability was assessed using Cronbach's alpha coefficient. The obtained reliability score exceeded the acceptable threshold of 0.70, indicating satisfactory instrument reliability for quantitative analysis. Ethical considerations were carefully maintained throughout the study. Participation in the survey was entirely voluntary, and respondents were informed of the research's purpose and objectives prior to participation. Informed consent was obtained from all participants, and anonymity and confidentiality of responses were strictly ensured.

Method of Analysis: The collected data were coded, organized, and analyzed using IBM SPSS Statistics and Microsoft Excel for statistical analysis and data visualization. Both descriptive and inferential statistical techniques were employed to analyze the data. Descriptive statistics, including frequencies, percentages, means, and standard deviations, were used to summarize demographic information, awareness levels, usage patterns, and perceptions regarding ASNSs. Inferential statistical analyses, including one-way Analysis of Variance (ANOVA) and chi-square tests, were conducted to identify significant differences in ASNS engagement across disciplinary groups and demographic categories. Prior to inferential analysis, assumptions of normality and homogeneity of variance were examined to ensure the suitability of parametric statistical tests. Statistical significance was determined at the 0.05 significance level. The findings were presented using tables, charts, and graphical representations to enhance clarity, interpretation, and comparative analysis.

4. Findings

The analysis of data collected from 96 respondents, focusing on their demographic profiles, involvement in academic social networking sites (ASNSs), usage patterns, perceived benefits, and challenges faced.

Demographic Profile of Respondents

The demographic profile reveals that the majority of respondents were male (75.0%), with the highest representation from the Social Science & Arts faculty (31.3%).

Table 2: Demographic Profile

Demographic Variable	Category	Frequency	Percentage
Gender	Male	72	75.0%
	Female	24	25.0%
Faculty	Social Science & Arts	30	31.3%
	Science	25	26.0%
	Business Studies	15	15.6%
	Agriculture	26	27.1%
Academic Rank	Professor	22	22.9%
	Associate Professor	31	32.3%
	Assistant Professor	39	40.6%
	Lecturer	4	4.2%
Smart Devices	Laptop	85	88.5%
	Desktop	77	80.2%
	Smartphone	95	99.0%

In terms of academic rank, Assistant Professors constituted the largest group (40.6%). Regarding smart device use, laptops (88.5%) and smartphones (99.0%) were the most commonly used devices among faculty members, indicating a strong reliance on technology for academic activities.

Involvement in ASNSs

Discipline	Google Scholar	ResearchGate	Academia.edu	Total	Percentage
Science	25	20	5	25	26.0%
Social Science & Arts	30	25	10	30	31.3%
Business Studies	15	10	5	15	15.6%
Agriculture	26	10	15	26	27.1%
Total	96	65	35	96	100.0%

Analyzing the involvement in ASNSs, the data shows varied usage across disciplines. The most frequently used platform was Google Scholar, with 26.0% of respondents from the Science discipline reporting its use, while the Social Science & Arts faculty had the highest overall participation (31.3%) across all platforms. ResearchGate and Academia.edu were also utilized, highlighting the importance of these networks in academic research.

ANOVA Test for Differences in ASNS Usage Across Disciplines

Discipline	Mean ASNS Usage	Sum of Squares	df	Mean Square	F	p-value
Science	3.95					
Social Science & Arts	4.20					
Business Studies	3.40					
Agriculture	4.10					
Total		12.75	3	4.25	5.43	0.002

An ANOVA test was conducted to assess differences in ASNS usage across disciplines. The results indicated significant variations in mean ASNS usage ($F(3, 92) = 5.43, p = 0.002$). Social Science & Arts faculty reported the highest mean usage (4.20), while Business Studies had the lowest (3.40). This suggests that faculty engagement with ASNSs is influenced by academic discipline.

Longevity of ASNS Usage

Duration of Use	Frequency	Percentage
Less than 1 year	2	2.1%
1-3 years	31	32.3%
4-6 years	35	36.5%
More than 7 years	28	29.2%

The data indicate that a significant portion of faculty members have been using ASNSs for an extended period. Specifically, 36.5% of respondents reported using these platforms for 4-6 years, while 32.3% reported using them for 1-3 years. Only a small minority (2.1%) have engaged with ASNSs for less than one year, suggesting a high level of familiarity and experience with these tools within the academic community. This longevity indicates a sustained engagement with ASNSs, likely contributing to their integration into research and professional activities.

Frequency of ASNS Usage

Usage Frequency	Frequency	Percentage
Multiple times a day	21	21.9%
Daily	26	27.1%
Weekly	36	37.5%
Monthly	13	13.5%

The data reveal a high level of engagement among faculty members with academic social networking sites. 37.5% of respondents reported using ASNSs weekly, while 27.1% reported using them daily, indicating that many faculty members actively incorporate these platforms into their research and professional routines. Additionally, 21.9% of respondents use ASNSs multiple times a day, reflecting a strong commitment to utilizing these tools for academic collaboration and networking. Conversely, only 13.5% use ASNSs monthly, suggesting that most faculty members prefer more frequent engagement with these platforms.

Perceived Benefits of ASNSs

Benefits	Mean	Std. Deviation
Measuring the Impact of Research	4.32	0.609
Fostering connections and networks	4.28	0.778
Self-promotion as a researcher	3.86	1.007
Support in finding related literature	4.47	0.593
Support for teaching-related activities	4.16	0.858

Respondents identified several benefits of using ASNSs. The highest mean scores were for "Support in finding related literature" (4.47) and "Measuring the Impact of Research" (4.32), underscoring the value of ASNSs in enhancing research visibility and connectivity. Other perceived benefits included fostering networks (4.28) and supporting teaching-related activities (4.16).

Challenges of Using ASNSs

Challenges	Mean	Std. Deviation
Unavailability of Full text	4.28	0.794

Information overload	3.95	0.789
Unwanted Messages and Notifications	3.86	1.007
Poor Internet Connection	3.59	0.919
Digital Distraction/Lack of Digital Literacy	3.78	1.072

Despite the benefits, respondents also faced challenges. The most notable challenges included the "Unavailability of Full Text" (mean = 4.28) and "Information Overload" (mean = 3.95). Other concerns involved receiving unwanted messages and notifications (mean = 3.86) and dealing with poor internet connections (mean = 3.59). These challenges highlight areas for improvement in the use of ASNSs for academic purposes.

5. Discussion

The higher engagement of Social Science and Arts faculty with ASNSs can be attributed to the nature of scholarly practices in these disciplines. Social sciences and humanities often emphasize publication visibility, collaborative research, and access to diverse sources of literature, making ASNS platforms critical tools for maintaining academic presence and networking. Faculty in these areas may also face greater pressure to disseminate research to broader audiences, including interdisciplinary scholars, thereby increasing reliance on platforms like Google Scholar and ResearchGate. In contrast, the lower usage of Academia.edu may reflect both perceived platform utility and academic norms. While Academia.edu offers networking and article sharing, it is less integrated with citation tracking and research metrics than Google Scholar and ResearchGate. Faculty members may prioritize platforms that provide measurable academic impact, institutional recognition, and seamless integration with existing research workflows. This aligns with global trends, in which researchers prefer ASNSs that enhance visibility, citation potential, and collaboration efficiency (Shehabat & Mryyan, 2026).

Discipline-specific patterns indicate that ASNS adoption is not uniform across faculties. STEM fields (Science, Engineering, Agriculture) may rely more on journal databases and institutional repositories, while Social Science and Arts faculty leverage ASNSs to complement traditional literature searches. These differences suggest that perceived usefulness, as outlined in the Technology Acceptance Model (TAM), is influenced by disciplinary needs. Social Science and Arts faculty perceive ASNSs as highly beneficial for networking, collaboration, and research dissemination, whereas other disciplines may find limited utility, which explains the varying adoption rates. Overall, these findings highlight that both platform characteristics and disciplinary research cultures shape ASNS engagement. Addressing barriers such as full-text access and information overload could further enhance adoption across faculties, particularly for those disciplines currently underutilizing these tools. Future interventions could include institutional support for platform integration, targeted training, and improved access to full-text resources to promote equitable adoption across all academic disciplines.

Recommendation

Given the findings, several recommendations can be made to enhance the effectiveness of ASNSs for faculty members.

1. Enhance full-text access by collaborating with publishers and institutions to improve the availability of scholarly literature. This can involve negotiating licensing agreements or promoting open-access initiatives.
2. Manage Information Overload: Develop tools and features within ASNSs that help researchers filter and manage information overload. It may include personalized recommendation systems, advanced search filters, and customizable notification settings.

3. **User Experience:** Enhance the user interface and overall user experience of ASNSs to make them more intuitive and user-friendly. This can involve conducting user research, gathering user feedback, and continuously iterating on the platform's design.
4. **Foster Collaboration:** Encourage and facilitate collaboration among researchers on ASNSs by providing features that facilitate networking, group discussions, and project collaboration. This can help researchers connect with colleagues from diverse disciplines and initiate collaborative research efforts.

Develop digital literacy skills: Provide training and support resources to help researchers navigate and utilize ASNSs effectively. The training can include workshops, tutorials, and online guides on using ASNSs for academic purposes.

6. Conclusion

Academic social networking sites have become increasingly popular over the last decade as a means for scholars to share their research and connect with peers in related fields. These sites have been beneficial for scholarly collaboration, providing researchers with an easy way to connect with peers and find potential collaborators. They have also been a great resource for students to connect with experts in their field of interest. Overall, academic social networking sites have been a major boon for research and education, allowing researchers to collaborate more easily and students to find mentors and guidance. However, this study focused on a single institution, and findings may vary across universities with different academic cultures and technological infrastructures.

References

- Acquah, B., & Partey, P. A. (2014). The influence of co-curricular activities on students' performance in economics.
- Ahmad, M., Rahman, M. F., Ali, M., Rahman, F. N., & Al Azad, M. A. S. (2019). Effect of Extra Curricular Activity on Student's Academic Performance. *Journal of Armed Forces Medical College, Bangladesh*, 11(2), 41–46. <https://doi.org/10.3329/jafmc.v11i2.39822>
- Aliu, J., & Aigbavboa, C. (2023). Reviewing the roles of extracurricular activities in developing employability skills: a bibliometric review. *International Journal of Construction Management*, 23(10), 1623-1632.
- Batool, A., & Ahmad, S. (2020). Correlation between Co-Curricular Activities and Academic Achievement of Students. *Journal of Education and Practice*, 11(1), 15-19.
- Bergen-Cico, D., & Viscomi, J. (2012). Exploring the association between campus co-curricular involvement and academic achievement. *Journal of college student retention: Research, theory & practice*, 14(3), 329-343.
- Demir, S. (2022). Comparison of normality tests in terms of sample sizes under different skewness and Kurtosis coefficients. *International Journal of Assessment Tools in Education*, 9(2), 397-409.
- Doyle, E. (2011). Career development needs of low socio-economic status university students. *Australian Journal of Career Development*, 20(3), 56-65.
- Foong-ming, T. (2008). Linking Career development practices to turnover intention: The mediator of perceived organizational support. *Journal of Business and Public affairs*, 2(1), 1-16.
- Guo, G. Q., & Liem, G. A. D. (2023). The impact of co-curricular activities on youth development: a self-determination theory perspective. *Trends in Psychology*, 1-26.
- Hitchcock, S., Seno-Alday, S., & Chandra, P. (2024). Missing the Mark: lessons From Failing to Foster Learner Engagement in a Co-Curricular Program. *Journal of Management Education*, 48(6), 1032-1053.
- Jackson, D., & Rowe, A. (2023). Impact of work-integrated learning and co-curricular activities on graduate labour force outcomes. *Studies in Higher Education*, 48(3), 490-506.
- Kanar, A. M., & Heinrich, B. (2024). The impact of university co-curricular activities on competency articulation proficiency: A mediated model. *The Career Development Quarterly*, 72(3), 231-242.
- Kariyana, I., Maphosa, C., & Mapuranga, B. (2012). The influence of learners' participation in school co-curricular activities on academic performance: assessment of educators' perceptions. *Journal of Social Sciences*, 33(2), 137-146.
- Kausar, S., Malik, M. A., Iftikhar, M., & Bagum, M. (2024). Co-curricular Activities and Students' Confidence Building: A Co-Relational Study at Elementary Level. *Contemporary Journal of Social Science Review*, 2(04), 596-617.
- Lahti, E. (2013). Women and leadership: factors that influence women's career success: female leaders' reflections on their career development and leadership.
- Marais, P. (2011). The significance of student teachers' involvement in co-curricular activities. *International Journal of e-learning security*, 1(3/4), 81-88.
- McIlveen, P. (2009). Career development practice and career counselling in Australia. *Asian Journal of Counselling*, 16(2), 113-132.
- McIntyre, D. J. (1998). *The role of career development in relation to the developmental contextual position of young people in New Zealand: considerations for policy development and career services in New Zealand secondary schools: thesis presented in partial fulfilment of the requirements for the degree of Doctor of Philosophy in Education* (Doctoral dissertation, Massey University).
- Miles, J. (2008). *The impact of a career development programme on career maturity and academic motivation* (Doctoral dissertation, University of Fort Hare).
- Mundy, M. A., Kupczynski, L., Ellis, J. D., & Salgado, R. L. (2012). Setting the standard for faculty professional development in higher education. *Journal of Academic and Business Ethics*, 5, 1.

- Nacházellová, E., & Reissová, A. (2020). Career development preferences of university students. In *EDULEARN20 Proceedings* (pp. 3722-3729). IATED.
- Rahman, S. R., Islam, M. A., Akash, P. P., Parvin, M., Moon, N. N., & Nur, F. N. (2021). Effects of co-curricular activities on student's academic performance by machine learning. *Current Research in Behavioral Sciences*, 2, 100057.
- Sami, A., & Irfan, A. (2020). Academic Achievement of college students based on Co-curricular Activities. *Journal of Management Info*, 7(1), 16-23.
- Shakil, M. H., Mukarram, M., Wilson, R. W., & Tayyab, M. (2024). Educational Enrichment Beyond Academics: Investigating the Impact of Co-Curricular Activities on Cognitive Abilities, Motivation, and Managerial Skills in Students. *Asia-Pacific Journal of Futures in Education and Society*, 3(1), 15-35.
- Shehata, M. H. (2015). Co-curricular activities and their role in supporting experiential learning. *Proceedings of the Canadian Engineering Education Association (CEEA)*.
- Siddiky, M. R. (2019). Developing Co-Curricular Activities And Extra-Curricular Activities For All-Round Development Of The Undergraduate Students: A Study Of A Selected Public University In Bangladesh. *Pakistan Journal of Applied Social Sciences*, 10(1), 61–82. <https://doi.org/10.46568/pjass.v10i1.101>
- Singh, A. (2017). Effect of co-curricular activities on academic achievement of students. *IRA International Journal of Education and Multidisciplinary Studies*, 6(3), 241-254.
- Smith, M., Brooks, S., Lichtenberg, A., McIlveen, P., Torjul, P., & Tyler, J. (2009). Career development practice: Facilitating work-integrated learning in higher education. *Australian Journal of Career Development*, 18(2), 60-64.
- Spiekermann, L., Lyons, M., & Deutsch, N. (2021). A mixed-methods approach to understanding trajectories of mentoring relationship growth. *Journal of Community Psychology*, 49(7), 2250-2263.
- Sung, Y., Turner, S. L., & Kaewchinda, M. (2013). Career development skills, outcomes, and hope among college students. *Journal of career Development*, 40(2), 127-145.
- Vos, S. S., Sabus, A., Seyfer, J., Umlah, L., Gross-Advani, C., & Thompson-Oster, J. (2018). Using continuing professional development to create meaningful co-curricular learning opportunities for all student pharmacists. *American Journal of Pharmaceutical Education*, 82(4), 6270.
- Wallace, M. R. (2009). Making sense of the links: Professional development, teacher practices, and student achievement. *Teachers college record*, 111(2), 573-596.
- Yousaf Zada, N., & Dr. Alamzeb. (2021). The Role of Co-curricular Activities in Leadership Skills' Development among University Students. *Journal of Social Sciences Review*, 1(2), 38–52. <https://doi.org/10.54183/jssr.v1i2.8>
- Yurtseven, N., & Bademcioglu, M. (2016). Teachers' Professional Development: A Content Analysis about the Tendencies in Studies. *Journal of Education and Training Studies*, 4(6), 214-233.
- Zehner, A. (2011). Co-curricular activities & student learning outcomes. *Purdue University, Office of Institutional Assessment*.