



Smartphone Dependency and Its Effects on Social Interaction: A Study of Youth Behavior in Digital Society

Dr. Muhammad Zakir¹, Liaquat Ali Khan²

¹ Lecturer, Department Of Sociology, University Of Balochistan, Quetta

Email: zakir.sociology@um.uob.edu.pk

² Department of Innovation Management, University of Saint Petersburg Electrotechnical University LETI "ETU" Russia

Email: lmahar389@gmail.com

ARTICLE INFO

ABSTRACT

Received:

January 29, 2026

Revised:

February 27, 2026

Accepted:

March 16, 2026

Available Online:

March 25, 2026

Keywords:

Smartphone Dependency;
Social Interaction; Digital
Media; Youth Behavior; Media
and Communication; Social
Withdrawal; Digital Society

Corresponding Author:

zakir.sociology@um.uob.edu.pk

The speedy adoption of mobile phones has revolutionized the means of communication and social interaction especially amongst youths. In this study, smartphone dependency and its impact on face-to-face social interactions, interpersonal relations, and social wellbeing are investigated. A cross-sectional study was carried out using 620 university students within the age bracket 18-25 years from 4 universities. The data used were obtained from the structured questionnaire and Smartphone Addiction Scale. Social interaction was assessed on three fronts; Family communication, Peer interaction, and Community involvement.

Findings reveal that 58.4% of the participants showed moderate to high levels of smartphone dependency where they spent an average of 5.7 hours a day on the phone. Social networking and instant messaging applications formed 71.2% of the usage time. The correlation analysis indicated a highly significant negative correlation between smartphone dependency and the quality of face-to-face interactions ($r = -0.63$, $p < 0.01$). The participants with high dependency had 44% less frequent family discussions and 38% less participation in group activities than those with low dependency. Qualitative interviews conducted with 24 subjects revealed experiences of social anxiety, lack of empathy, and preference for online engagement rather than offline engagement. The regression test revealed that smartphone dependency predicted 36.8% of the variance in social isolation. In conclusion, it can be seen that over-reliance on smartphones has a negative impact on social connections in the real world. It is recommended to have initiatives such as digital literacy and media ethics courses as well as campus policy regarding smartphones.

Introduction

Smartphones have brought about dramatic changes in how people interact with each other in social contexts. In recent years, smartphones have evolved from mere communication tools to digital gadgets that combine several features such as social networking, messaging, entertainment, education, financial matters, and collaboration online. Teenagers depend on smartphones for all of their social interaction and educational pursuits. While it is convenient and helpful, there has been growing concern regarding the influence of smartphones on interactions between individuals, patterns of communication, and well-being. Excessive use of smartphones may ultimately result in virtual communications replacing face-to-face social interactions and undermining human connections (Purnama & Asdlori, 2023). It is obvious that young people represent the most active users of smartphone technology because of their close contacts with digital media and social networking sites. Students spend much time using smartphones not only in studying but also for communicating via social media and entertaining themselves. Nevertheless, frequent usage of smartphones results in the development of certain problematic behaviors like compulsive checking of the smartphone, spending too much time online, distraction during interpersonal interactions, inability to concentrate on something, as well as decreased involvement in family and community activities. Such

features have created some problems for traditional forms of communication as virtual communication became preferred to real-life communication. Therefore, it is important to study the influence of smartphone technology on human behavior from the social science perspective.

It has been revealed that smartphone dependency influences the decrease in social connectedness, loneliness, isolation, empathy, and social isolation. Smartphone dependent people tend to prefer virtual communication to face-to-face interactions and therefore, there is less talking in families, poor relationships with friends, and low participation in community activities (Orben et al., 2024).

The digital society has played a role in bringing about the change since it has made constant connections to be part of life. Sites like social networking sites and messaging apps generate constant interaction through notifications and customized contents (Cao et al., 2025). While the use of such technological tools ensures easy flow of information and makes long-distance relations work, too much dependence on them can result in the lack of personal interaction and preference for virtual communication. In this way, the issue of addiction to smartphones has turned out to be more than technological; it is more social and behavioral. It influences education, families, psychological well-being, and community (Cao et al., 2025).

This study aims at looking at how smartphone addiction affects the social interactions of young adults aged between 18 and 25 studying in universities. Using quantitative surveys and qualitative interviews, the study explores the connection between smartphone addiction and family, peers, and community communications. The results will provide insights on how the smartphones affect the behavior of youths in the digital society (Shanmugasundaram & Tamilarasu, 2023)

Research Objectives

1. To examine the level of smartphone dependency among university students.
2. To investigate the relationship between smartphone dependency and face-to-face social interaction.
3. To evaluate the effects of smartphone dependency on family communication, peer engagement, and community participation.

Research Questions

1. What is the level of smartphone dependency among university students?
2. How does smartphone dependency affect face-to-face social interaction?
3. What relationship exists between smartphone dependency and family communication, peer engagement, and community participation?

Significance of the Study

Through this study, the researcher intends to make an addition to existing literature on digital behavior since there is limited research done on the topic. Specifically, this research provides information on the social effects of smartphones dependency among youth. This information can be used by educators, parents, government officials, psychologists, and administrators to understand the way excessive use of smartphones affects communication and socialization processes. Also, this research can provide useful insights for designing digital literacy programs aimed at making youth use smartphones responsibly but still engage in face-to-face interactions (Arora & Mehta, 2023).

Literature Review

The research carried out by Lin et al. (2023) examines the connection between adolescents' social relationships and the problem of social media addiction using variable-centered and person-centered analyses. Thus, it was found that the existence of negative interpersonal relationships increases the probability of problems with social media usage, while good relations with families and peers help avoid the dependency on digital platforms. Furthermore, the research shows that individuals who lack social connections try to compensate for it by using virtual communication, which further results in poor interpersonal relationships. Hence, the research proves that the problem of smartphone addiction affects interpersonal communication through replacing physical interactions with virtual ones.

Ahmed (2023), in his paper, studies the psychological impact of social media addiction and interpersonal relations among people in Pakistan. It was found that frequent usage of smartphones and social media results in emotional isolation, the lack of empathy, conflict communication and dissatisfaction with the relationships among young people. The participants who suffered from social media addiction had low family cohesion and misunderstanding in their interpersonal relations.

Mujica et al., (2022) described 'addiction by design,' which refers to the use of technology by the designers of various digital platforms to create designs based on persuasion technologies, like infinite scrolling, recommendation systems, notification alerts and rewards to increase user engagement. Compulsive checking of phones and the long exposure time are linked with difficulty in self-regulating one's behavior in relation to digital products and services. Consequently, it can be claimed that technology-based behavioral reinforcement is one of the major factors contributing to smartphone addiction.

Tullett-Prado et al., (2023) conducted longitudinal network analyses of the association between addiction symptoms associated with social media use and the level of psychological distress of adults. It was found that compulsive checking, fear of missing out, emotional reliance, and loss of behavioral control are significantly related to anxiety and stress and predict poor psychological well-being. It may be assumed that smartphone addiction interferes with normal interaction with people in person, because it decreases people's ability to pay attention to others.

Pellegrino et al. (2022) conducted a thorough bibliometric review of the existing scientific literature on social media addiction and digital problem behavior. In particular, their analysis revealed that the rate of interest among scholars in the issues of smartphone dependency, mental state, communication behavior, and digital well-being was rapidly growing. It was noted that recent publications often explored such aspects as the possible social implications of excessive smartphone usage, such as diminished interpersonal communication, loneliness, limited social involvement, and changed relationships. Multidisciplinary studies were highlighted as important for the deeper understanding of the society of the implications of digital dependency.

The notion of "sofalizing" was suggested by Tosuntaş et al. (2024) and means the substitution of real-life socialization for the online one without leaving the house. According to the findings of the authors, people with stronger symptoms of social media addiction exhibited increased frequency of sofalizing, social isolation, and participation in community life. It was noted that emerging adults were gradually becoming more inclined to communicate via smartphones rather than in person.

Arora & Mehta (2023) conducted a bibliometric analysis in order to identify the research trends related to social media addiction. It was established that technological dependence is an important interdisciplinary area of research as it influences the process of communication, mental condition, academic performance and social interactions. This literature review has revealed that overuse of smartphones is one of the major factors leading to the reduction in personal communication among young people who are using digital platforms as a primary means of communication.

Al-Samarraie et al. (2022) investigated the reasons for social media addiction, its impact and prevention techniques. The findings of the research have revealed that psychological aspects such as the need to belong, entertain, attain social status and be constantly connected with other people are the major determinants of excessive use of smartphones. It has also been revealed that the continuous use of digital devices has a negative effect on academic performance, personal communication, mental state and family life.

In their study on the changing patterns of interpersonal communication in the modern age, Amelia and Balqis (2023) found that technologies like smartphones have changed the nature and frequency of interpersonal communication. Despite the fact that digital communication technology is beneficial in terms of accessibility and convenience, overreliance on the smartphones can have negative impacts on interpersonal communication as far as it will be detrimental to non-verbal modes of communication, emotional expression, and social interaction. Overall, in the concluding part of their article, the authors highlight the significance of striking the right balance between online and offline communication to maintain healthy interpersonal relations in the modern society.

Cao et al. (2025) provide a socio-technical system perspective on the causes of social media addiction. The authors demonstrate that the phenomenon of smartphone dependency depends on the interactions between the technology itself and its users along with the social environment around them. Based on the findings of the study, one could argue that addictive behavior depends not only on the individual's characteristics, but also the platform algorithm, connectivity, and reinforcing social mechanism.

Research Methodology

The study was conducted based on a mixed-method research design in order to analyze the effects of smartphone addiction on social interactions of the university students in the digital society. The quantitative research design employed cross-sectional survey design whereas the qualitative one used semi-structured interview to have an overall understanding of the behavioral change caused by excessive usage of smartphones. The subjects of the study included students enrolled in four different universities, both undergraduates and postgraduates. Altogether 620 students ranging from 18-25 years old were surveyed using stratified random sampling technique.

Primary data was collected using a questionnaire comprising two sections. First section of the questionnaire included demographics information of the subjects, their daily usage time of smartphone, and preference of the apps. Second section of the questionnaire included SAS-based set of questions in order to measure the level of addiction and questions assessing three aspects of social interactions, namely communication with family, peer interaction, and community participation (Metzler & Garcia, 2024).

Collection of Quantitative data was done via SPSS 27. Descriptive statistics including frequencies, percentage, mean, and standard deviation were utilized to describe demographic variables and smartphones behaviors. Correlation analysis was done to establish whether there is any association between smartphone dependency and face-to-face interaction. Multiple regression analysis was conducted to establish the influence of smartphone dependency on predictability of social withdrawal. Thematic analysis of interviews was done to establish the patterns and perception of digital communication (Ahmed et al., 2024).

This research followed ethical considerations where participation in the research was voluntary. All participants granted their informed consent to take part in the research. They remained anonymous and private during the process of data collection and analysis. The mixed methods research approach was used to increase the validity of results.

Results and Analysis

Table 1. Demographic Profile of Respondents (n = 620)

Variable	Category	Frequency	Percentage (%)
Gender	Male	302	48.7
	Female	318	51.3
Age	18–20 Years	241	38.9
	21–23 Years	267	43.1
	24–25 Years	112	18.0
Universities	Four Universities	620	100

Table 2. Smartphone Usage Characteristics

Variable	Result
Average Daily Screen Time	5.7 Hours
Moderate–High Smartphone Dependency	58.4%
Social Media & Messaging Usage	71.2%
Educational Usage	18.5%
Other Applications	10.3%

The results reveal high smartphone use by university students. The social media and messaging applications made up more than two-thirds of all smartphone use time, showing that communication and networking are the main reasons for long hours of being on screens (Bojic, 2022).

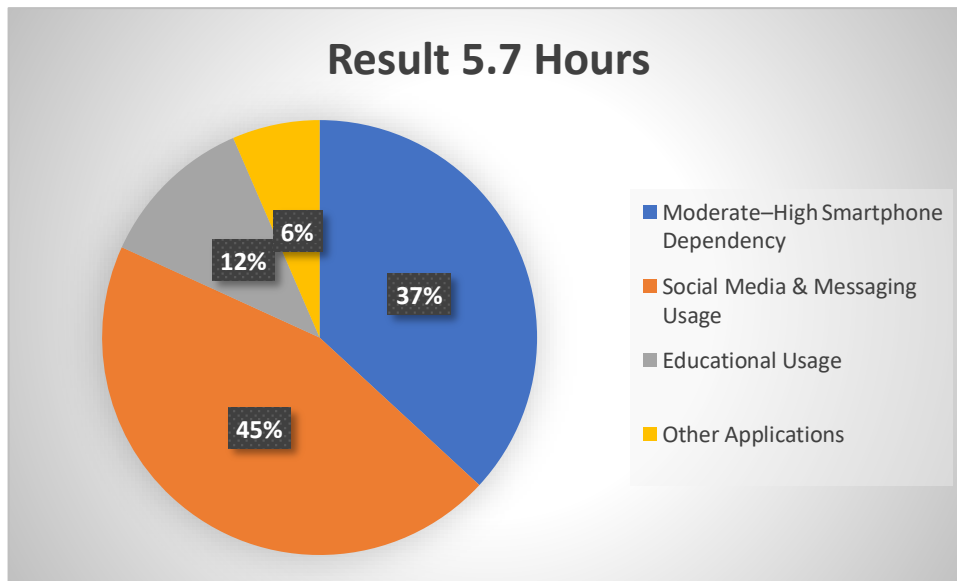
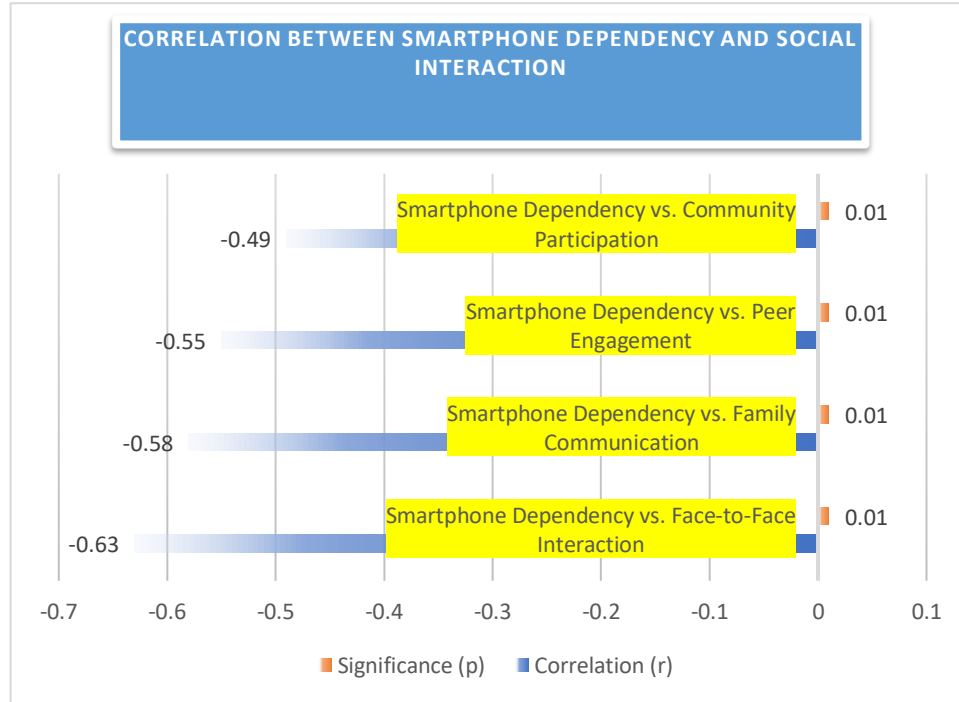


Table 3. Correlation between Smartphone Dependency and Social Interaction

Variables	Correlation (r)	Significance (p)
Smartphone Dependency vs. Face-to-Face Interaction	-0.63	0.01
Smartphone Dependency vs. Family Communication	-0.58	0.01
Smartphone Dependency vs. Peer Engagement	-0.55	0.01
Smartphone Dependency vs. Community Participation	-0.49	0.01

**Table 4. Changes in Social Interaction among High-Dependency Users**

Social Indicator	Low Dependency	High Dependency	Change (%)
Weekly Family Discussions	8.2	4.6	-44%
Participation in Group Activities	6.1	3.8	-38%
Face-to-Face Meetings per Week	7.4	4.2	-43%
Daily Social Interaction Score	78.5	56.3	-28.3%

The students who were more dependent on smartphones were found to be less involved in family and group conversations as well as direct interactions. It seems clear that over-reliance on smartphones hampers real-life communication chances (Tanhan et al., 2024).

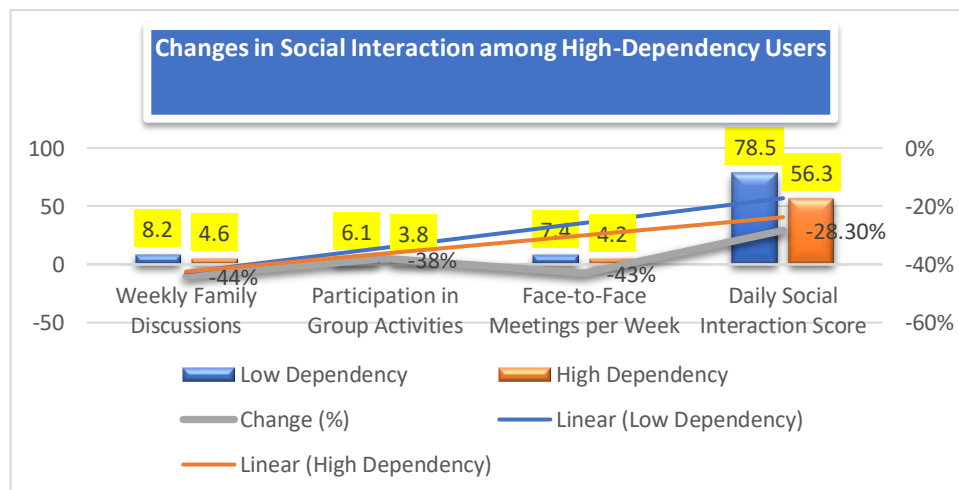
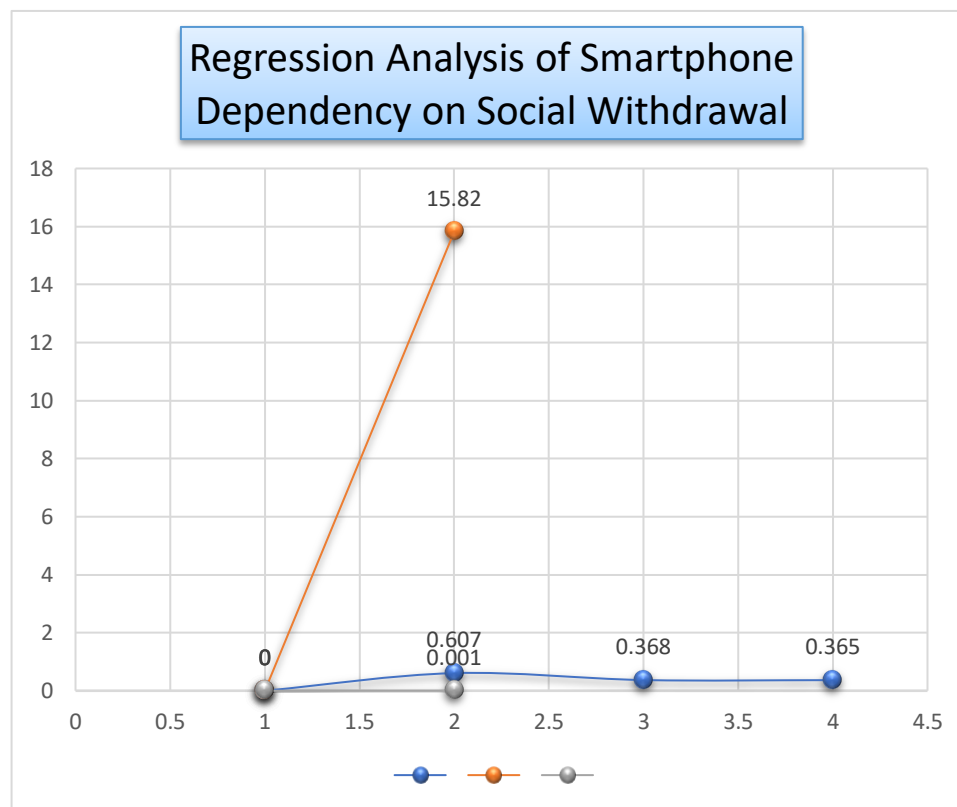


Table 5. Regression Analysis of Smartphone Dependency on Social Withdrawal

Variable	β	t-value	p-value
Smartphone Dependency	0.607	15.82	0.001
R ²	0.368		
Adjusted R ²	0.365		

The results of regression analysis show that smartphone dependency accounts for 36.8% of the variation in social withdrawal. The positive and statistically significant regression coefficient implies that higher smartphone dependency predicts reduced social interactions and increased social withdrawal (Purnama & Asdlori, 2023).



Discussion

The results of this research prove that smartphone addiction has become an important variable impacting social interactions among university students. Indeed, the survey indicated that 58.4% of participants had moderate to high levels of smartphone addiction, and the average screen time was 5.7 hours per day, showing that smartphones occupy much of the daily routine of young people. A significant negative correlation ($r = -0.63$, $p < 0.01$) between smartphone addiction and face-to-face interaction proves that the more smartphones are used, the less interpersonal communication occurs.

The results are consistent with Shanmugasundaram & Tamilarasu (2023) who found out that heavy digital technology usage has a negative impact on cognitive processes, attention, and interpersonal communication skills. Orben et al. (2024) also explained that long-term social media interaction increases psychological vulnerability leading to the poor quality of social relationships in real life. The current results support Tanhan et al. (2024) stating that social media addiction leads to the emergence of phubbing which impacts the quality of communication in face-to-face interactions.

From the qualitative interviews, the respondents were found to have lessened empathy, enhanced social anxiety, reduced attention span, and an inclination for virtual communication rather than physical interaction. These findings are consistent with those of Laestadius et al. (2024) where emotional reliance on digital platforms was identified as another emerging cause of the decline in human interaction. Similarly, Purnama & Asdlori (2023) indicated that although digital communication offers a platform for exchanging information, over-reliance on it may have detrimental effects on the social perception and communication ability of the learners (Laestadius et al., 2024).

From the regression analysis, it was observed that smartphone dependency accounted for 36.8% of variations in social withdrawal, indicating that over-reliance on smartphones is greatly contributing towards a reduction in family discussion,

peer interaction, and community participation. These results are backed by the claims of Metzler & Garcia (2024), which indicate that algorithmic-based digital world encourages perpetual engagement leading to the gradual replacement of the offline relationship. Additionally, Ahmed et al. (2024) confirmed that through AI-based digital platforms that promote healthy digital usage, excessive reliance on smartphones could be discouraged and healthy human interactions could be promoted (Orben et al., 2024).

Conclusion

In this research work, the effect of smartphone dependency on the social interaction of the university students in the digital society has been analyzed. From the results obtained, it can be concluded that there is a marked reduction in the level of face-to-face interaction, family interactions, peers' interaction, and social activities among those who excessively depend on smartphones (Shanmugasundaram & Tamilarasu, 2023). The majority of the participants were found to have moderate to high smartphone dependency. At the same time, through the statistical analysis, the negative effect of smartphone dependency on the level of interpersonal communication has been proved. Moreover, from the qualitative results, changes in behaviors have been identified in the form of low empathy levels, social anxiety, and virtual communication preference (Cao et al., 2025).

Recommendations

1. There should be courses related to digital literacy and responsible usage of smartphones to help students adopt healthy practices.
2. Educational organizations should encourage in-person collaborative activities, sporting events, and community participation to foster interpersonal connections.
3. Parents and teachers should set appropriate rules concerning usage of smartphones so that they can communicate and interact socially without phones.
4. Social media sites should have some features that help users maintain digital well-being, like time tracking and usage reminder.
5. Governments should organize national-level campaigns regarding proper use of smartphones.
6. Further research should be conducted on the long-term impact of smartphone addiction among people of different ages and cultures.

References

1. Yang, S. Y., Wang, Y. C., Lee, Y. C., Lin, Y. L., Hsieh, P. L., & Lin, P. H. (2022, May). Does smartphone addiction, social media addiction, and/or internet game addiction affect adolescents' interpersonal interactions?. In *Healthcare* (Vol. 10, No. 5, p. 963). MDPI.
2. Tetik, S., Popescu, C., & Akkaya, B. (2025). Social media addiction and social skills: Implications for societal learning systems, technology, social economy, and societal challenges. *Systems*, 13(7), 501.
3. Lin, S., Mastrokourou, S., & Longobardi, C. (2023). Social relationships and social media addiction among adolescents: Variable-centered and person-centered approaches. *Computers in Human Behavior*, 147, 107840.
4. Ahmed, M. (2023). Psychological impact of social media addiction on interpersonal relationships in Pakistan. *International Journal of Psychology*, 8(4), 53-65.
5. Mujica, A. L., Crowell, C. R., Villano, M. A., & Uddin, K. M. (2022). Addiction by design: Some dimensions and challenges of excessive social media use. *Medical Research Archives*, 10(2), 1-29.
6. Tullett-Prado, D., Doley, J. R., Zarate, D., Gomez, R., & Stavropoulos, V. (2023). Conceptualising social media addiction: A longitudinal network analysis of social media addiction symptoms and their relationships with psychological distress in a community sample of adults. *Bmc Psychiatry*, 23(1), 509.
7. Pellegrino, A., Stasi, A., & Bhatiasavi, V. (2022). Research trends in social media addiction and problematic social media use: A bibliometric analysis. *Frontiers in psychiatry*, 13, 1017506.

8. Tosuntaş, Ş. B., Karadağ, E., Emirtekin, E., Kircaburun, K., & Griffiths, M. D. (2024). Sofalizing and its relationship with social media addiction and psychosocial factors: A new phenomenon among emerging adults. *The Social Science Journal*, 61(2), 378-390.
9. Arora, S., & Mehta, M. (2023). Love it or hate it, but can you ignore social media?-A bibliometric analysis of social media addiction. *Computers in Human Behavior*, 147, 107831.
10. Al-Samarraie, H., Bello, K. A., Alzahrani, A. I., Smith, A. P., & Emele, C. (2022). Young users' social media addiction: causes, consequences and preventions. *Information Technology & People*, 35(7), 2314-2343.
11. Ishfaq, U., Batool, S., Salahuddin, S., Alam, M. M., & Abid, S. NEXUS BETWEEN PERFORMANCE MEASUREMENT SYSTEMS AND PSYCHOLOGICAL EMPOWERMENT IN THE PHARMACEUTICAL INDUSTRY.
12. Amelia, L. T. D., & Balqis, N. R. (2023). Changes in communication patterns in the digital age. *ARRUS Journal of Social Sciences and Humanities*, 3(4), 544-556.
13. Cao, X., Yu, L., Yu, Y., & Cheng, B. (2025). Understanding the mechanism of social media addiction: A socio-technical systems perspective. *Information Development*, 41(1), 75-91.
14. Ullah, M., Fida, F., Khan, Y., Ishfaq, U., Farooq, S. U., & Alam, W. (2021). Charismatic Leadership And Employee Satisfaction: A Case Of Banking Sector Of Pakistan. *Ilkogretim Online*, 20(4), 3285-3294.
15. Shanmugasundaram, M., & Tamilarasu, A. (2023). The impact of digital technology, social media, and artificial intelligence on cognitive functions: a review. *Frontiers in Cognition*, 2, 1203077.
16. Laestadius, L., Bishop, A., Gonzalez, M., Illeňčík, D., & Campos-Castillo, C. (2024). Too human and not human enough: A grounded theory analysis of mental health harms from emotional dependence on the social chatbot Replika. *New Media & Society*, 26(10), 5923-5941.
17. Orben, A., Meier, A., Dalgleish, T., & Blakemore, S. J. (2024). Mechanisms linking social media use to adolescent mental health vulnerability. *Nature Reviews Psychology*, 3(6), 407-423.
18. Purnama, Y., & Asdlori, A. (2023). The role of social media in students' social perception and interaction: Implications for learning and education. *Technology and Society Perspectives (TACIT)*, 1(2), 45-55.
19. Tanhan, F., Özok, H. İ., Kaya, A., & Yıldırım, M. (2024). Mediating and moderating effects of cognitive flexibility in the relationship between social media addiction and phubbing. *Current Psychology*, 43(1), 192-203.
20. Bojic, L. (2022). Metaverse through the prism of power and addiction: what will happen when the virtual world becomes more attractive than reality?. *European Journal of Futures Research*, 10(1), 22.
21. Metzler, H., & Garcia, D. (2024). Social drivers and algorithmic mechanisms on digital media. *Perspectives on Psychological Science*, 19(5), 735-748.
22. Ahmed, O. O., Islam, S. I. T., Hamdan, S. I., Al-Rajab, M., Alqatawneh, I., Al-Sartawi, A., & Kanan, M. (2024). Quality Pointpal: AI-enhanced redefinition of social networking for sustainable digital usage and genuine human connections. *Operational research in engineering sciences: Theory and Applications*, 7(1).



2026 by the authors; Journal of Journal of Accounting, Finance & Business Insights (JAFBI). This is an open access article distributed under the terms and conditions of the Creative Commons Attribution (CC-BY) license (<http://creativecommons.org/licenses/by/4.0/>).