
Analyzing the Socio-Digital Impact of Social Media on Urban Population: A Case Study of Solapur City

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Abstract

The rapid expansion of social media platforms such as Facebook, Instagram, and WhatsApp has significantly transformed communication patterns, social behavior, and lifestyle among urban populations. The present study aims to analyze the socio-digital impact of social media on residents of Solapur City using a statistical approach. Primary data were collected from 120 respondents using a structured questionnaire. The study examines usage patterns, behavioral changes, communication trends, and perceived impacts. Statistical tools such as percentages, mean scores, correlation, and chi-square tests were applied. The findings indicate that social media has both positive and negative effects, including improved communication (78%), increased information access (72%), but also addiction (64%) and reduced face-to-face interaction (58%). The study concludes that while social media enhances connectivity, excessive use may adversely affect social behavior.

Keywords: *Social Media, Urban Population, Statistical Analysis, Solapur, Digital Impact*

1. Introduction

The emergence of social media has revolutionized the way individuals communicate, interact, and access information in urban environments. Platforms such as Facebook, Instagram, and WhatsApp have become integral parts of daily life, particularly among urban populations where internet penetration is high. Over the past decade, social media usage has grown exponentially, influencing not only communication patterns but also socio-cultural dynamics and lifestyle behaviors (Kaplan & Haenlein, 2010). Urban societies, characterized by fast-paced living and technological adoption, are particularly susceptible to digital transformation. According to Boyd and Ellison (2007), social media platforms facilitate the creation of virtual communities that transcend geographical boundaries, thereby reshaping traditional forms of social interaction. This shift has led to increased connectivity but also raised concerns regarding reduced face-to-face communication and social isolation (Turkle, 2011). In the Indian context, rapid urbanization coupled with affordable internet access has accelerated social media adoption. Studies indicate that urban youth and working professionals are the most active users, often spending several hours daily on these platforms (Poushter et al., 2018). While social media enhances access to information and opportunities for networking, it also contributes to issues such as digital addiction, misinformation, and reduced productivity (Kuss & Griffiths, 2017). Furthermore, social media has emerged as a powerful tool for information dissemination, education, and civic engagement. Research by Ellison et al. (2007) highlights that online social networks

can enhance social capital by strengthening both strong and weak ties. However, excessive reliance on digital communication may negatively impact interpersonal relationships and emotional well-being (Primack et al., 2017).

The socio-digital impact of social media is therefore multidimensional, encompassing both positive and negative outcomes. Positive effects include improved communication efficiency, increased awareness, and access to real-time information, whereas negative effects involve addiction, privacy concerns, and behavioral changes (Andreassen, 2015). These contrasting effects necessitate empirical investigation, particularly in rapidly growing urban centers. Solapur City, an emerging urban hub in Maharashtra, presents a suitable case for examining these dynamics due to its diverse population and increasing digital penetration. Despite the growing relevance of social media in such cities, limited research has been conducted to assess its comprehensive socio-digital impact at the local level.

Therefore, the present study aims to systematically analyze the patterns of social media usage and their socio-digital implications among the urban population of Solapur. By employing statistical tools and primary data, the study seeks to provide insights into how digital engagement influences communication behavior, lifestyle, and social interactions. The findings of this study are expected to contribute to the existing body of knowledge and assist policymakers, educators, and researchers in understanding the broader implications of social media in urban contexts.

2. Objectives of the Study

The stated objectives are significant as they provide a structured framework to understand how social media influences the daily lives of urban residents in a measurable way. Analyzing usage patterns helps identify the extent and nature of digital engagement, which is essential for interpreting behavioral outcomes. Examining socio-digital impacts enables the study to capture changes in communication styles, relationships, and social interaction in the digital era. Evaluating both positive and negative effects ensures a balanced and evidence-based understanding of social media influence. Finally, applying statistical analysis enhances the scientific validity of the study by providing reliable, data-driven conclusions useful for researchers, policymakers, and educators. The objective of this study is given as follow

1. To analyze the usage pattern of social media among urban residents.
2. To examine the socio-digital impact of social media on behavior and communication.
3. To evaluate positive and negative effects of social media usage.
4. To perform statistical analysis on social media impact variables.

3. Research Methodology

The present study adopts a descriptive and analytical research design to systematically examine the socio-digital impact of social media on the urban population of Solapur City. The descriptive approach is used to understand the patterns of social media usage, while the analytical component facilitates the evaluation of relationships between variables such as usage behavior and its socio-digital effects.

The study is based on primary data collected from a sample of 120 respondents, representing urban residents of Solapur City. A simple random sampling technique was employed to ensure that each individual in the target population had an equal chance of being selected, thereby minimizing sampling bias and enhancing the representativeness of the data.

Data were collected using a structured questionnaire, carefully designed to capture information on demographic characteristics, social media usage patterns, behavioral changes, communication trends, and perceived positive and negative impacts. The questionnaire included both closed-ended and scaled questions to facilitate quantitative analysis.

For data analysis, appropriate statistical tools were applied to derive meaningful insights. Percentage analysis was used to summarize and interpret the distribution of responses. The mean was calculated to assess the average level of social media usage and its perceived impact. The Chi-square test was employed to examine the association between categorical variables, such as demographic factors and usage patterns. Additionally, correlation analysis was conducted to determine the strength and direction of relationships between key variables related to socio-digital impact.

Thus, the adopted methodology ensures a systematic, objective, and scientific analysis of the research problem, enabling the study to generate reliable and valid conclusions.

4. Data Analysis and Results

This section presents the analysis and interpretation of data collected from 120 respondents regarding the usage patterns and socio-digital impact of social media among urban residents of Solapur City.

Category	Variable	Respondents	Percentage
Time Spent	< 1 hour	15	12.5%
	1–3 hours	52	43.3%
	3–5 hours	35	29.2%
	> 5 hours	18	15.0%
Purpose of Use	Communication	94	78%
	Entertainment	88	73%
	Education	65	54%
	News & Awareness	72	60%
Positive Impact	Improved Communication	94	78%
	Access to Information	86	72%
	Learning Opportunities	70	58%
	Networking	68	56%
Negative Impact	Addiction	77	64%
	Reduced Face-to-Face Interaction	70	58%
	Time Wastage	82	68%
	Mental Stress	55	46%
Behavioral Change	Positive Change	52	43%
	Negative Change	48	40%
	No Change	20	17%

The consolidated results provide a deeper quantitative insight into social media usage patterns and their socio-digital consequences among the 120 respondents from Solapur City. The analysis of time spent

indicates that 52 respondents (43.3%) fall in the 1–3 hours category, representing the largest group and suggesting moderate engagement. However, a significant 35 respondents (29.2%) spend 3–5 hours and **18** respondents (15.0%) spend more than 5 hours daily. Together, this means 53 respondents (44.2%) spend more than 3 hours on social media, which is nearly equal to moderate users, highlighting a substantial proportion at risk of excessive usage. Only 15 respondents (12.5%) reported usage below 1 hour, indicating that minimal usage is relatively uncommon.

In terms of purpose, social media is predominantly used for communication, with 94 respondents (78%) reporting this as a primary function. This is followed by entertainment with 88 respondents (73%), indicating that leisure and engagement activities are also major drivers. Additionally, 72 respondents (60%) use social media for news and awareness, while 65 respondents (54%) utilize it for educational purposes. These figures demonstrate that more than half of the population relies on social media not only for social interaction but also for informational and academic needs, reflecting its multifunctional role in urban life.

The positive socio-digital impacts further reinforce these findings. A majority of 94 respondents (78%) acknowledged improved communication, which aligns with the primary usage purpose. Similarly, **86** respondents (72%) reported enhanced access to information, indicating the platform's effectiveness as an information-sharing medium. Moreover, 70 respondents (58%) identified learning opportunities, and 68 respondents (56%) recognized networking benefits, suggesting that more than half of the respondents experience constructive outcomes from social media engagement.

However, the negative impacts are equally significant. The highest reported issue is time wastage, affecting 82 respondents (68%), followed by addiction among 77 respondents (64%). This indicates that nearly two-thirds of the population face challenges related to excessive use. Furthermore, 70 respondents (58%) reported reduced face-to-face interaction, pointing to a shift from traditional communication methods to digital interaction. Mental stress was reported by 55 respondents (46%), which, although lower compared to other factors, still represents nearly half of the sample and cannot be overlooked.

Behavioral change analysis shows a mixed outcome. While 52 respondents (43%) experienced positive changes such as improved awareness and connectivity, a closely comparable 48 respondents (40%) reported negative behavioral changes, including reduced social interaction and increased dependency. Only 20 respondents (17%) indicated no noticeable change, implying that 83% of respondents experienced some form of behavioral impact, either positive or negative.

Overall, the numerical evidence clearly suggests that social media has a dual impact on urban populations. While a majority benefit from improved communication and information access, a nearly equal proportion is affected by negative consequences such as addiction and time wastage. The close percentages between positive (43%) and negative (40%) behavioral changes further emphasize that the influence of social media is highly variable and dependent on individual usage patterns.

5. Statistical Analysis

5.1 Descriptive Statistics (Time Spent on Social Media)

Variable	N	Mean	Std. Deviation	Minimum	Maximum
Time Spent (Hours per Day)	120	2.90	1.21	0.5	6.0

The average time spent on social media is 2.90 hours per day, with a standard deviation of **1.21**, indicating moderate variability among respondents.

5.2 Chi-Square Test

Test	Value	df	Asymp. Sig. (p-value)
Pearson Chi-Square	12.45	3	0.006
Likelihood Ratio	11.98	3	0.007
Linear-by-Linear Association	9.87	1	0.002
N of Valid Cases	120		

The p-value ($0.006 < 0.05$) indicates a statistically significant relationship between time spent on social media and socio-digital impact. Hence, the null hypothesis is rejected.

5.3 Correlation Analysis

Variables	Time Spent	Negative Impact
Time Spent (Hours per Day)	1.000	0.620**
Negative Socio-Digital Impact Score	0.620**	1.000

Correlation is significant at the 0.01 level (2-tailed)

There is a moderate positive correlation ($r = 0.62$) between time spent and negative impact, indicating that higher usage is associated with increased negative effects.

The study results confirms that:

- Social media usage is moderate on average (Mean = 2.9 hours)
- There is a statistically significant association between usage and socio-digital impact
- A moderate positive correlation exists between time spent and negative consequences

6. Discussion

The findings of the present study clearly indicate that social media exerts a dual and multidimensional impact on the urban population of Solapur City. The descriptive results show that a majority of respondents (43.3%) engage with social media for 1–3 hours daily, while a substantial proportion (44.2%) spend more than 3 hours, reflecting a shift toward higher digital engagement. This increasing usage pattern is strongly aligned with the observed socio-digital outcomes.

From a functional perspective, social media is predominantly used for communication (78%), followed by entertainment (73%), news and awareness (60%), and education (54%). These findings highlight that social media has become an essential tool for both social interaction and information exchange in urban settings. The positive impacts reported—such as improved communication (78%), access to information (72%), learning opportunities (58%), and networking (56%)—demonstrate its significant contribution to enhancing digital connectivity and knowledge dissemination.

However, the study also reveals considerable negative consequences associated with excessive usage. A large proportion of respondents reported time wastage (68%), addiction (64%), and reduced face-to-face interaction (58%), indicating that prolonged engagement may disrupt traditional social structures and daily routines. Additionally, 46% of respondents experiencing mental stress suggests potential psychological implications of overuse.

The behavioral analysis further supports these observations, with 43% reporting positive changes and 40% reporting negative changes, indicating a nearly balanced impact. Importantly, the statistical analysis strengthens these findings. The Chi-square test ($\chi^2 = 12.45$, $p < 0.05$) confirms a significant association between time spent and socio-digital impact, while the positive correlation ($r = 0.62$) indicates that increased usage is moderately associated with higher negative effects.

Overall, the discussion highlights that while social media serves as a powerful medium for communication and development, its excessive use can lead to adverse behavioral and social consequences. The impact is therefore not uniform but varies depending on the intensity and purpose of usage.

7. Conclusion

The present study concludes that social media has a significant and measurable socio-digital impact on the urban population of Solapur City. The findings reveal that social media plays a crucial role in enhancing communication, improving access to information, and providing learning and networking opportunities. A majority of respondents benefit from these positive aspects, indicating its importance in modern urban life. At the same time, the study identifies several challenges associated with its excessive use, including addiction, time wastage, reduced interpersonal interaction, and mental stress. The statistical results, particularly the significant Chi-square test and positive correlation ($r = 0.62$), confirm that higher levels of social media usage are directly associated with stronger socio-digital impacts, especially negative outcomes. Thus, the study emphasizes that social media is neither entirely beneficial nor harmful; rather, its impact depends on the extent and manner of use. Therefore, promoting balanced and responsible usage is essential to maximize its advantages while minimizing adverse effects. The findings of this study can be useful for researchers, educators, and policymakers in designing strategies to enhance digital well-being and encourage healthy social behavior in urban populations.

8. Suggestions

The study suggests that awareness programs should be conducted to promote responsible use of social media among urban populations. Digital well-being education needs to be encouraged, particularly among students, to develop healthy online habits. Efforts should also be made to promote offline social interaction to maintain strong interpersonal relationships. Additionally, adopting effective time management strategies can help reduce excessive usage and its negative consequences.

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