

Smartphone access and usage patterns among school-going adolescents in Dhaka city: A study of social and educational trends

Dr. Sabina Sharmin, Rokaiya Mahzabin and Md. Touhiduzzaman

Abstract: In exploring the complexities of smartphone utilization among adolescents in Dhaka city, particularly within the school-going adolescents of old Dhaka, this study emerges from evolving digital landscape exploring the using dynamics of smartphone among adolescents and their attraction to media platform. Employing a diverse methodological approach, including surveys, case studies, and content analysis, the research aims to unravel the multifaceted dimensions of smartphone engagement among teenagers. Through this investigation, notable findings emerge, shedding light on prevalent ownership patterns, nuanced sharing dynamics, preferred device types, and internet consumption trends. Further, this research investigates the access of adolescents to smartphones and the internet, showing issues of autonomy, privacy, exposure to inappropriate content, and screen time. It concludes by outlining possibilities for future research, with emphasis on the need for interventions that will help facilitate responsible smartphone use among adolescents. This wide-ranging discussion underlines the necessity of understanding the complexity of smartphone engagement for the shaping of adolescent behaviors.

Keywords: Adolescents, Smartphone, Internet, Responsible use, Intervention strategies

Introduction

As in today's time, most teenagers are constantly on smartphones with an intensive influence on all spheres of life and activity; there exists a need for making their use understandable when widespread among youngsters. This article goes deep into dimensions of teenagers using smartphones in order to explain influencing factors for behaviors and experiences. The age group of adolescents is more prone to risk-taking behavior compared to other age groups, both younger and older. In modern society, the omnipresent use of mobile phones has transformed the way people communicate with each other, interact in social settings, and generally behave, especially adolescents (Gullone, 2014). Adolescents' behavior in relation to smartphones can be described in terms of accessibility, sharing, desirable types and features, patterns of internet use, and financial management. One key concern is that excessive use of mobile phones affects their academic performance. It has been determined that adolescents who spend excessive amounts of time on their phones are more likely to experience academic difficulties such as lower grades and decreased academic motivation (Lepp et al., 2014). The understanding of

these facets is crucial in gaining valuable insight into how smartphones shape both behaviors and well-being for adolescents. This study aims to contribute to the ever-growing literature of adolescent use of smartphones, shedding light on both challenges and opportunities these devices present in young people's lives. By taking a closer look at the particulars of how adolescents use smartphones, we wish to make informed interventions and strategies possible that will promote responsible use and foster healthy youth development in an increasingly digital world.

Rationale of the study:

It is in this perspective that the understanding of the dynamics of smartphone use among adolescents in Dhaka city, particularly the school-going population in Old Dhaka, has assumed importance in the increasing digitalization of modern society. Adolescence is a sensitive period of psychological and social development, and the omnipresence of smartphones influences their behavior, relationships, and academic performance (Livingstone & Helsper, 2007). Studies have shown that smartphones serve as primary tools for communication, information access, and entertainment among adolescents, shaping their cognitive and emotional growth (Twenge & Campbell, 2018). The accessibility of smartphones and their usage patterns reveal complex interactions with adolescents' daily lives, including how they navigate digital spaces and form online identities (Valkenburg & Piotrowski, 2017). The current study investigates aspects related to reach, sharing, device type, usage pattern, and financial sense of the use of smartphones. This is indeed an important insight, not only in proving the current state of engagement with smartphones but also the implications for adolescent development. For example, the kind of content accessed, hours spent on screen, and affordability of a device by self or others, are some of the factors that majorly influence teens' practices and choice making (Przybylski & Weinstein, 2017). This has a greater importance for the potential to inform effective interventions and policies aimed at fostering responsible smartphone usage. Identifying such patterns of engagement and behavioral consequences provides the empirical bases on which educators, parents, and policymakers can approach the challenges associated with the use of smartphones in a completely unregulated manner (Kuss & Griffiths, 2017).

The findings of this research may also be used to inform the design of digital literacy programs and parental guidance to help adolescents make informed choices in the digital space. In addition, with these dynamics in mind, technology developers can design tools and applications that promote healthier digital habits, tailored to adolescents' needs (Boyd, 2014). The contributions of this study are timely and particularly apposite in cities like Dhaka, where rapid technological adoption intersects with diverse socio-economic contexts. In such an environment, adolescents are a special challenge and at the same time offer special opportunities for targeted approaches in digital education and behavior management. Hence, the results from this study will form a critical source in developing strategies that will help improve digital competence and resilience among the youth in the region.

Research Objectives:

1. To analyze the accessibility and sharing dynamics of smartphones among adolescents
2. To identify the types and features of mobile phones used by adolescents
3. To investigate the patterns of internet usage and financial responsibility among adolescents

Research Methodology:

The research methodology has encompassed a mixed-methods approach involving sample surveys, case studies, and content analysis to comprehensively examine patterns and behavioral impacts of smartphone usage among adolescents in Dhaka city, specifically focusing on school-going teenagers in old Dhaka. The sample survey has conducted on 244 adolescents taken with using purposive sampling to collect data on smartphone access, sharing dynamics, types of devices used, internet usage patterns, and content consumption habits. Concurrently, qualitative case studies have been conducted through semi-structured interviews with 5 respondents to explore specific instances of smartphone usage behaviors, attitudes, and perceptions among selected participants. Additionally, content analysis techniques have been utilized to analyze digital content accessed and shared by adolescents on their smartphones, aiming to identify trends, themes, and patterns in content consumption and sharing behaviors. Stratified random sampling and purposive sampling have been employed for participant selection, while data analysis has involved both descriptive statistics and thematic analysis to derive insights into smartphone usage patterns and behavioral impacts among adolescents. Ethical considerations, including informed consent and participant confidentiality, have been adhered to throughout the research process to ensure the ethical conduct of the study.

Result and Discussion

Smartphone Access, Sharing, and Partners

The study reveals a substantial proportion of students (86.78%) reporting access to their own mobile phones, underscoring the pervasive role of mobile technology in contemporary society, functioning as a primary tool for communication, information access, and engagement with digital services. In supporting to the analogy of the issue, a student who reads in class nine and who is from a family that consist of four members, added that,

In my case, I don't own a smartphone; I use my mother's phone when it's available. Our family of five has four smartphones and one tablet. While each family member has their own smartphone, I often find myself using my mother's phone for various activities due to convenience or necessity (Bushra, Female, 16, Student, Case study).

This sharing arrangement reflects a common trend among families where resources are shared to maximize utility and connectivity. Conversely, the minority without access (13.22%) likely reflects economic constraints, age demographics, or personal preferences. Particularly among adolescents, the high ownership rate of personal smartphones facilitates increased autonomy

and privacy, which can lead to deviant behaviors such as cyberbullying, excessive screen time, and risky online activities (Juvonen & Gross, 2008). The absence of parental oversight exacerbates these risks, highlighting the need for balanced monitoring to mitigate the potential negative impacts (Chassiakos et al., 2016). This widespread access and the associated risks call for awareness and intervention strategies to ensure safe and responsible smartphone usage. In addition, a male respondent on the contrary stated that,

As for myself, I've had my own smartphone for the past two years. While the details of sharing dynamics are not provided, my unsupervised usage is noted, particularly due to my parents' busy schedules (Shihab, Male, 17, Student, Case study).

A majority of students (60.08%) sharing their mobile phones with others indicates significant sharing practices within the surveyed population, driven by economic considerations, cultural norms, or practical necessities to maximize utility and connectivity. Conversely, the 39.92% who do not share their phones highlights a substantial segment valuing personal ownership and privacy, prioritizing control over their devices and data. Among adolescents, high phone-sharing rates (60.08%) are influenced by financial constraints, limited access to technology, and cultural norms promoting communal ownership (Chigona et al., 2013), as well as peer influence and social dynamics that foster social connections (Livingstone et al., 2010). Sharing mobile phones, however increases exposure risks to deviant contents and behaviors, hence raise several privacy concerns and promote the chances of deviant behavior among students. This prevalence of sharing identifies complicated interactions of economic, cultural, and social reasons and calls for strategies or policies that minimize risks yet maintain responsible sharing practices effectively (Wachs et al., 2012). The study revealed that 80.2% of students shared their mobile phones with their mothers, which shows close family ties and reliance on the mother figure for help, including technological support. Sharing with fathers is less frequent, at 7.3%, sisters at 6.2%, and brothers at 6.2%, but not insignificant, indicating that the practice of mobile phone sharing cuts across generational and gender divides.

Table-1: Pattern of using mobile phone and internet

Types of mobile	Percentage		Internet usage	Percentages
Cell phone	33.2%		Mobile data	15.5%
Smart phone	63.7%		Wi-Fi	84.5%
Flip phone	0.8%		Bill payer	Percent
Slider phone	0.3%		Self	1.2%
Qwerty phone	0.6%		Parents	96.7%
Phablet phone	0.6%		Siblings	2.0%
Rugged phone	0.3%		Total	100.0%
Folder phone	0.6%		Purpose of using	Percentage

Total	100.0%		Socialization	12.6%
Sharing mobile	Percentages		Entertainment	16.3%
Mother	80.2%		Education	18.0%
Father	7.3%		Information/ news	17.3%
Sister	6.2%		Watching videos	17.6%
Brother	6.2%		No reason at all	18.1%
Total	100.0%		Total	100.0%

Source: Field Study-2024

Besides, the percentage of sharing phones with mothers was 80.2 percent because mothers are usually much closer to their children, and most mothers play important roles in caregiving and communicating in the family as well (Ling, 2015). Since their mothers are more approachable and supportive than the rest of the family, adolescents shared their phones with them more often (Davis, 2010). Besides, mothers are often in charge of household affairs, which includes managing and monitoring the use of technology, thereby further encouraging adolescents to share their mobile phones with them (Ling, 2015). This pattern points out the importance of maternal involvement in adolescents' technological life and underlines the complex role mothers play in supporting and supervising their children's use of mobile technology.

Phone Types, Age, and Purchase Funding:

The prevalence of smartphones, used by 63.7% of students, highlights their widespread adoption as the primary mobile device, owing to their multi-functionality, including internet access, applications, and multimedia capabilities, essential for communication and productivity. In contrast, basic cell phones, utilized by 33.2% of students, are valued for simplicity, affordability, and longer battery life, remaining popular in specific demographics or regions with limited technology access. Other phone types like flip phones, slider phones, QWERTY phones, phablets, rugged phones, and foldable phones have minimal adoption, each representing less than 1% of the surveyed students, catering to niche preferences or specialized uses. In response to the types of phone and its capabilities that the respondents' used one of them explained that,

In my experience, the specific type of smartphone I use is not detailed, but my activities typically involve engaging in social media, gaming, and browsing the internet. I use a smartphone with extensive internet and app capabilities to fulfill my digital needs. While the exact model of my smartphone is unspecified, its features cater to a wide range of online activities, reflecting the preferences and behaviors commonly observed among adolescents in utilizing smartphones for diverse purposes (Zobayer, Male, 19, Student, Case study).

Among adolescents, the higher prevalence of smartphones (63.7%) compared to traditional cell phones (33.2%) underscores their widespread embrace of advanced technology, also associated

with increased risks of deviant behaviors like cyberbullying and inappropriate content access (Lwin et al., 2012). The pivotal role of smartphones in students' lives amplifies their usage and behavioral impacts (Twenge & Campbell, 2018), necessitating measures to address associated risks. In response to the prevalence of smart phone a student from an upper-middle class family in urban area stated that,

I utilize a smartphone capable of internet browsing, messaging, online shopping, watching videos, playing games, and making TikTok videos. Although the specific type of smartphone is not mentioned, its functionalities align with the demands of contemporary digital lifestyles (Elma, Female, 20, Student, Case study).

Regarding the age of acquiring mobile phones, the majority of students (86.49%) received their first device between ages 16 to 18, coinciding with milestones like high school graduation or entry into college or the workforce, where autonomy and responsibility necessitate personal communication devices. A smaller fraction (6.56%) obtained their first phone between ages 13 to 15, indicating notable ownership among younger adolescents. Less common scenarios include receiving the first phone before age 13 (4.10%) or after ages 19 to 21 (2.87%), influenced by factors like parental restrictions or personal preferences. The high percentage of adolescents receiving phones between ages 16 to 18 aligns with developmental readiness, peer influence, and societal norms, where phone ownership symbolizes independence (Ling, 2015), shaped by peer pressure, social norms (Lenhart et al., 2010), and parental considerations (Rideout & Robb, 2018). For purchase funding, the majority of students (96.31%) relied on their fathers' funds for phone purchases, reflecting significant financial contributions from fathers in providing phones. Mothers also contributed, albeit to a lesser extent (2.87%), emphasizing maternal involvement in household expenses, including technology purchases. A minority (0.41%) used personal funds, indicating financial independence or responsibility. Siblings provided funds for a negligible percentage (0.41%), suggesting familial support in phone acquisitions. The high dependence on fathers for funding, 96.31%, reflects traditional gender roles and financial dynamics, whereby fathers usually have decision-making power over significant purchases like smartphones, influenced by societal expectations and norms regarding parental roles and gender dynamics (Amato & Gilbreth, 1999).

Internet Use: Access, Billing, and Purpose

According to the data, most students using the internet already communicate to the researchers that they are using the internet as it is a 93% fact (Livingstone & Helsper, 2007). Apart from being an instrumental device for communicating, information access, and also entertainment, the internet is being more and more entangled in one's day-to-day activities. Nonetheless, the 7% of people who don't use the internet, on the other hand, show different reasons for disengaging, as they might be affected by the age, socio-economic status, and digital literacy issues. The 93% utilization by adolescents tallies with research into smartphone-induced

deviant behavior, where the same level of internet access has been described as ubiquitous for this age group (Rideout & Robb, 2018). The smartphone has become an increasingly important avenue through which adolescents access the internet and engage in a variety of online activities. The greater the usage, the higher the exposure to potentially deviant content and interactions that may influence the prevalence of smartphone-induced deviant behavior. The study further shows that 84.5% of students mostly use Wi-Fi to access the internet because it is much faster, more reliable, and cheaper compared to mobile data (Lenhart et al., 2015). This is due to the fact that Wi-Fi is widely available in homes, workplaces, and public spaces. Among adolescents, the prevalence of Wi-Fi usage, which is 84.5%, denotes its availability and stability, according to research on smartphone-induced deviant behavior by Rideout & Robb, 2018. This preference indicates that Wi-Fi plays a crucial role in the internet utilization of adolescents, mainly brought about by its accessibility and reasonable cost.

Regarding internet billing, the near-exclusive dependence on parental payment (96.7%) underscores the importance of parental financial support in facilitating students' internet access (Lenhart et al., 2015). Generally, internet service is viewed as a household expense, with parents bearing the responsibility as part of broader financial obligations. This dependence highlights the importance of parental involvement and monitoring of students' activities online, which shapes their behavior, including the commission of deviant behaviors through smartphones and the internet. A student of class eight who is a regular school-going child and whose family head is a government officer, stated that,

I use the internet for studying, watching videos, playing games, and connected applications. I spend about 4-5 hours per day on my phone using the internet for one purpose or another. The internet bills are covered by my father, who is in charge of all expenses of the family, including technological needs (Afia Tabassum, Female, 14, Student, Case study).

This represents one of the most common circumstances in which parental support provides adolescents with the opportunity to access digital technology, which implies a highly relevant role of parental support in managing internet use and related costs. The purpose of internet use by students varies, with education, entertainment, information, socialization, and aimless browsing being identified as the most common reasons for internet use (Ling, 2015; Lenhart et al., 2015). The multifaceted usage of smartphones is similarly reflected in research on smartphone-induced deviant behavior among adolescents, with smartphones acting as platforms for different activities. The high proportion of students who reported aimless browsing may indicate habitual use, which could contribute to excessive screen time and increased vulnerability to the deviant behaviors that may be enabled by smartphones (Twenge & Campbell, 2018). A respondent who is of middle-class family and a suburban dweller and who started using smart phones for two years described,

I use social media, game, and browse the internet for approximately 5 to 6

hours every day. In addition, my smartphone is used both as an educational tool and for extended periods of social interaction, hence a central part of my life. Although the financial aspect is not mentioned, from this, one gets to understand that the internet usage and the smartphone ownership costs are borne by my parents (Shihab, Male, 17, Student, Case study).

It again reflects the broader pattern that has come to surround parental responsibility for the provision and maintenance of digital resources and parents being expected to guide and supervise adolescents' use of online technologies.

Top Social Media and Mobile Content

This study has thrown light on the wide range of social media used by respondents, with YouTube topping at 17.1 percent as the main social media used by respondents. According to Boyd & Ellison (2007), it has reached this level of popularity because it varies between entertainment and educative information. WhatsApp and Snapchat come a close second and third, with 16.8% and 15.1% of the respondents, respectively, using these sites to be able to communicate with various forms of messages (Lenhart et al., 2015). Other social networking sites like Facebook, Instagram, Twitter, and TikTok each have a significant number of users, with preferences that also range from social networking to short-form video content. The different platform preferences of adolescents, explained through research on smartphone-induced deviancy (Boyd & Ellison, 2007), further illustrate the different trends these youths have in using social media. These include among other things: something that friends used most often; something that provides particular types of content or specific kinds of features. Examples of the platforms cover YouTube or WhatsApp, which are relevant for their multi-purposefulness and communication-oriented use; they now also underscore adolescent preferences for social interaction and information sharing (Lenhart et al., 2015). Likewise, ephemeral content like Snapchat and TikTok shows that novelty and visual appeal are also among the things that capture adolescents when it comes to social media engagement (Boyd & Ellison, 2007).

Table-2: Most using social media platform and content

Media platforms	Percentage	Media content	Percentage
Facebook	13.7%	Educational	19.5%
Instagram	12.9%	Entertaining	19.6%
Snapchat	15.1%	Video games	19.4%
Twitter	11.4%	Documentary	19.4%
YouTube	17.1%	Blog videos	19.3%
WhatsApp	16.8%	Crime videos	2.9%
TikTok	13.0%	Total	100.0%

Source: Field study-2024

In the study, there is a reasonable balance in the type of content consumed on mobile phones, with entertaining content, video games, documentary videos, and blog videos appealing to equal or almost equal shares of respondents. It indicates that there is diversity in the interests and preferences of mobile phone consumers. Notably, educational contents are also accessed by a high portion of the respondents, 19.5%, showing the intense interest in the use of mobile devices for learning (Lenhart et al., 2015). While crime-related videos are of less interest to the respondents, it only draws 2.9%, which is a very meager interest in the videos. It is a niche interest among some users of mobile phones. This, in fact, reflects the diversity of their interests. As various studies on smartphone-induced deviant behavior have indicated, such as Lenhart et al. (2015), adolescents use their mobile phones for educational materials, entertainment, video games, documentaries, blog videos, and even information on crimes, thus pointing to the versatility of smartphones as a platform for media consumption and information access. The relatively lower engagement with crime-related videos may denote a lesser prevalence of the deviant behavior facilitated by smartphones in this particular content category.

Daily Smartphone Usage: Hours and Frequency

The study uncovers a diverse range of mobile phone usage durations among the surveyed population, with the majority (54.73%) reporting 2-4 hours of daily usage, indicating a moderate level of engagement. A significant portion (22.63%) spends 5-7 hours on their devices, reflecting substantial time dedicated to communication, entertainment, and productivity. Smaller percentages spend 1 hour (13.17%), 8-9 hours (4.94%), or more than 9 hours (4.53%) per day, illustrating varying degrees of usage intensity. Research on smartphone-induced deviant behavior among adolescents underscores this significant time allocation to smartphone usage, with many spending several hours daily on their devices (Twenge & Campbell, 2018). This prolonged screen time heightens exposure to digital platforms and content, potentially facilitating engagement in deviant behaviors (Rideout & Robb, 2018). Furthermore, excessive smartphone use has been linked to adverse outcomes such as poor mental health and increased risk of deviant behaviors (Twenge & Campbell, 2018). Similarly, the study unveils a diverse distribution of mobile phone usage frequencies among respondents. The most common frequency is 3-4 times per day, reported by 37.30% of individuals, indicating a moderate level of engagement throughout the day. A significant portion (30.33%) uses their phones 1-2 times per day, suggesting infrequent usage for some individuals. Smaller percentages report higher frequencies, with 17.21% using their phones 5-6 times, 8.20% 7-8 times, and 6.97% more than 8 times daily, indicating varying levels of intensity. This distribution aligns with research on smartphone-induced deviant behavior among adolescents, highlighting significant time spent interacting with mobile devices, with most reporting 1-4 hours of usage daily, integrating smartphones into their daily routines (Twenge & Campbell, 2018; Rideout & Robb, 2018). Such frequent and prolonged usage increases exposure to digital

platforms and content, potentially influencing behaviors, including engagement in deviant activities facilitated by smartphones.

Conclusion:

This study has brought out the very intimate relationship between the pattern of smartphone use and its behavioral impacts among adolescents, answering all the research questions. The prevalence of smartphone ownership stands high, indicating that these devices have become a basic tool for communication and the gateway to various digital experiences. Diversity in mobile device preferences, such as basic cell phones, reflects the different needs of adolescents, while internet usage patterns reflect the multifunctional role of online resources for both education and entertainment. The central role of social media platforms, especially YouTube, WhatsApp, and Snapchat, in adolescents' digital lives allows them to communicate with others, socialize, and consume content. The practice of sharing mobile phones, especially among family members, reflects the communal nature of smartphone use, placing emphasis on interconnectedness within their social dynamics. Time-use differences in smartphones, while indicating incorporation into daily life routines, also raise questions about excessive use and possible implications for mental health, social interaction, and academic performance. Weighing both the positive and negative aspects of using smartphones, the study highlights a need to promote healthy digital habits that will contribute to adolescents' well-being and provide valuable lessons that could be translated into strategies and interventions to promote balanced and mindful use.

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