



## Impact of self-control on smartphone addiction among adolescents

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### Abstract

This research looks at how teenage self-control affects the tendency to become addicted to their smartphones. Four hundred ninth-graders from Aligarh secondary schools participated in the research. Using statistical methods like Pearson's correlation and multiple regression analysis, we show two sets of findings:

Researchers showed that a lack of self-control was inversely related to smartphone addiction. Addiction to cell phones was also shown to be a strong predictor of adolescent self-control, with this finding holding true across both genders. The significance of these findings for the development of strategies to discourage adolescent smartphone addiction is discussed.

**Keywords:** adolescents, smartphone addiction, self-control

### Introduction

The increasing number of smartphones has entirely altered the digital and communication setting (S. H. Oh, 2013) <sup>[1]</sup>. However, overuse of smartphones can result in mental, physical, and social problems, such as smartphone addiction. Physical issues involve neck discomfort, reduced clarity of vision, and reduced clarity of vision, as well as emotional and psychological problems such as fear and anxiety (H. Y. Kim, 2013) <sup>[2]</sup>. According to H. K. Lee (2012) <sup>[3]</sup>, social issues include forming negative interpersonal relationships and hindering of negative interpersonal relationships and impeding social development. A lack of self-control seems to play a crucial part in reducing the likelihood of cell phone addiction, and studies have shown that a negative outlook toward mobile phones correlates with other behavioral issues in youngsters (Tim Schulz van Enderti, 2021) <sup>[4]</sup>. According to the same study, adolescents devote an average of 3.4 hours a day interacting with digital media, primarily in the form of video content (such as on TikTok and YouTube), social media (such as Facebook and Snapchat), and electronic games (such as PUBG and Minecraft). Due to the COVID-19 epidemic, an unprecedented number of kids are staying indoors, getting their education online, and interacting with their classmates via digital means. While the consequences of these measures differ by country, an increase of 163% in daily usage of screens during the first closure is not uncommon (Schmidt, 2020) <sup>[5]</sup>.

### Literature Review

#### Smartphone Addiction

Addiction to smartphones is a dependency exhibited by individuals with smartphones that causes daily inconveniences (H. S. Hwang, 2011) <sup>[6]</sup>. Another study (J. Y.

Yoo, 2011) <sup>[7]</sup> stated that cellphone-dependent individuals progressively increased their cell phone exposure time and felt apprehensive and tense without their devices. This research shows that dependency on a smartphone is distinct from reliance on the internet and a smartphone. Because of the unique qualities of smartphones, this idea was used to study smartphone addiction. As a result, the difficulties associated with internet addiction, such as withdrawal and tolerance, were included in the degree program for smartphone addiction. On the other hand, although unique concepts like addiction and the chance of a simple accessibility percentage that touched once hindered accessibility, the push function and the variety of apps and content kinds increased availability. The daily life issue, virtual world deliberate behavior, the impacts of withdrawal, and tolerance are the four subfactors that make up the mobile phone addiction test for teenagers that was developed in response to this media trait (Jeongmin Lee, 2015) <sup>[8]</sup>.

According to previous studies, smartphone addiction was associated with mental health issues. Although smartphone addiction can also impair adolescents' self-control, relatively little studies has been conducted on the topic.

#### Self-Control

Self-control is the capacity to regulate oneself without using external forces to strive to behave appropriately without seeking immediate gratification and while imagining what lies ahead (K. N. Lee, 2003) <sup>[9]</sup>. Furthermore, it involves deliberately avoiding undesired reactions (B. S. Min 1991) <sup>[10]</sup>. This indicates that while making choices, self-control is dependent on long-term outcomes. People govern their behavior based on this via conscious modification of automatic activity. This is a

significant consideration in mobile and online contexts. The ability to self-control is crucial in the fight against and the management of addiction to mobile devices. Furthermore, among high school students, immediate gratification strongly predicted smartphone addiction, although long-term happiness was not (H. Y. Koo, 2010) <sup>[11]</sup>. Self-control was not shown to significantly influence the smartphone addiction among elementary school kids in the research (S. H. Jang, 2011) <sup>[12]</sup>. In other words, neither immediate nor long-term happiness predicted smartphone addiction. Impact and correlation between self-control and smartphone addiction were investigated in the present study. Adolescents were selected as subjects since there is a dearth of studies focusing on this age group. The findings of the study may be used to develop interventions aimed at preventing adolescent smartphone dependency. Finally, a few studies demonstrate a link between smartphone dependence and low self-control. Given the novelty of the idea of smartphone addiction, empirical research is needed to determine if the pattern described by the literature applies in an environment of addictive smartphone usage, especially among teenagers. It is also pertinent to the discussion over the growing integration of technological devices in classroom teaching and learning as a means of the school's digitalization. As a result, the current research investigates the following two objectives:

**Objectives**

1. To know the correlation between smartphone addiction among adolescents for the male, female and total sample.
2. To find out the predictive value of smartphone addiction to predict the self-control of adolescents for the male adolescents, female adolescents and total sample.

**Hypotheses**

**H<sub>0</sub>1:** There would be no correlation between smartphone addiction and self-control among males, females, and the total sample of adolescents.

**H<sub>0</sub>2:** There would be no significant predictive value of smartphone addiction on self-control of adolescents for the male, female and total sample

**Methods**

The researcher used smartphone addiction as the predictive variable and self-control as the dependent variable. The researcher utilizes a quantitative technique to examine the results, using correlation and regression.

**Population of the Study**

To anticipate the self-control of adolescents in Aligarh, Uttar Pradesh. The researcher tries to determine the correlation and predictive value of smartphone addiction. The population for the current research is thus made up of all adolescents in Aligarh, Uttar Pradesh, India, who are enrolled in secondary schools (9th grade), both public and private.

**Sample of the Study**

The sample for the present study was drawn from various government and private institutions in Aligarh. The researcher collected 400 samples from secondary school students; among them, 190 were male adolescents, and 210 were female adolescents.

**Table 1:** Gender-specific sample distribution

Total Sample	Male Sample	Female Sample
400	190	210

**Tools Used in the Study**

**Smartphone Addiction Scale**

A questionnaire devised by Dr. Vijayshri and Dr. Masaud Ansari Bihar assessed the various levels of smartphone addiction among 14- to 24-year-old students. This scale is a five-point Likert scale with the following points: "Strongly agree, agree, not sure, disagree, and strongly disagree". This scale attained conceptual and criterion-related validity. On this assessment, a higher score indicates a more prominent smartphone addiction.

**Self-control Scale**

It was created by Arun Kumar Singh and Alpana Sen Gupta from Patna, Bihar. It has been designed for children ages 10 to 15 years old. The test is founded on three essential dimensions of self-control: the degree and adequacy of self-regulation, the absence of impulsivity, and the absence of self-centeredness. Higher scores indicate greater self-control.

**Statistical Techniques**

In this study, Pearson's product-moment coefficient of correlation and regression analysis were utilized to determine the correlation and predictive values of the variables under consideration.

**Interpretation and Analysis of Findings**

**Objective 1:** Is there a correlation between smartphone addiction and self-control among adolescent for the male, female and total sample.

**H<sub>0</sub>1:** There is no significant correlation between smartphone addiction and self-control among the male, female and total sample of the adolescents.

**Table 2:** Correlation between Smartphone Addiction and Self-Control among Adolescents

Independent Variable	Dependent Variable- Self-Control		
	Total sample	Male	Female
Smartphone Addiction	-0.533**	-0.550**	-0.525**

\*\*Significant at the 0.01 level (2-tailed).

According to the Table 3, correlation among the independent variable and dependent variable is graphically represented. It indicates the direction and magnitude of the correlation between the variables, namely that it is negative and statistically significant. The table demonstrates that addiction to smartphone has a strong and negative correlation with self-control for the entire adolescent sample. In addition, at the 0.01 level, both variables (self-control and smartphone addiction) are significantly correlated with one another. The null hypothesis H<sub>0</sub>1 is

rejected as a result of the calculated correlation coefficient. In addition, the researcher came to the conclusion that the outcome of the first objective indicated that any variation in the degree of the independent variable might result in a variation in the level of the dependent variable. If the prevalence of smartphone addiction among teenagers continues to rise, the overall degree of self-control shown by all of the adolescents in the sample will fall, and vice versa. A negative connection of -0.533 has been found between self-control and addiction to using a smartphone. In addition to this, the researcher sought to determine the categorical link that exists between the variables of the study for both male and female teenagers. For the purpose of this research, almost equal numbers of male and female teenagers were selected for the sample. As can be shown in Table 3, there is a statistically significant inverse link between addiction to smartphones and the self-control of male samples. The

correlation coefficient measured between these two variables is -0.550\*\*, regarded as extremely high. This value is significant at the 0.01 level of significance. The correlation was weakened but still substantial for female adolescents, with a value of -0.525\*\*, indicating a negative relationship. This value has a significant level of 0.01. Consequently, regardless of gender, adolescents' self-control of adolescents will be reduced if their cell phone addiction rises.

**Objective 2:** To find out the predictive value of smartphone addiction to predict the self-control of adolescents for the male, female and total sample.

**H02:** There would be no significant predictive value of smartphone addiction on self-control of adolescents for the male, female and total sample.

**Table 3 (a):** Smartphone Addiction and Self-Control Regression Analysis for Total Sample

Model	Predictive Variables	Criterion Variable- Self-Control					
		Df	R	R <sup>2</sup>	R <sup>2</sup> Change	F Change	Sig. of F Change
1	SmartphoneAddiction	398	0.283	0.281	0.283	157.196	0.000

**Table 3 (b):** Regression Coefficients Analysis

Model	Predictive Variables	Unstandardized Coefficients			Standardized Coefficients			t	Sig.
		B	Std. Error		Beta				
1	(Constant)	123.573	3.949				31.296	0.000	
	Smartphone Addiction	-1.633	0.130		-0.532		-12.538	0.000	

Dependent Variable: Self-Control

**Results**

The researcher attempted to verify the null hypothesis H02 using SPSS's stepwise multiple regression analysis. The researcher measured the significance of smartphone addiction and the gender to predict adolescents' self-control for the entire sample. According to Table 3, the test results shows that addiction to smartphone had considerably contributed to predicting adolescents' self-control (R<sup>2</sup> change = 0.281 and F = 157.196). While other variables, such as gender, have no effect because they were not

included in the regression analysis. The investigator interpreted this to mean that Smartphone Addiction contributes 28.3% to the variance of Self-Control and that its p-value is less than 0.01. According to the table of coefficients, the regression coefficient ( $\beta_{1} = -0.532$ ) was found to be statistically significant ( $t = -12.538, p < 0.01$ ). This means that a one-unit change in Smartphone Addiction will result in a -0.283-unit change in adolescents' Self-Control.

**Table 4:** Regression Analysis between Smartphone Addiction and Self-Control for Male Adolescents

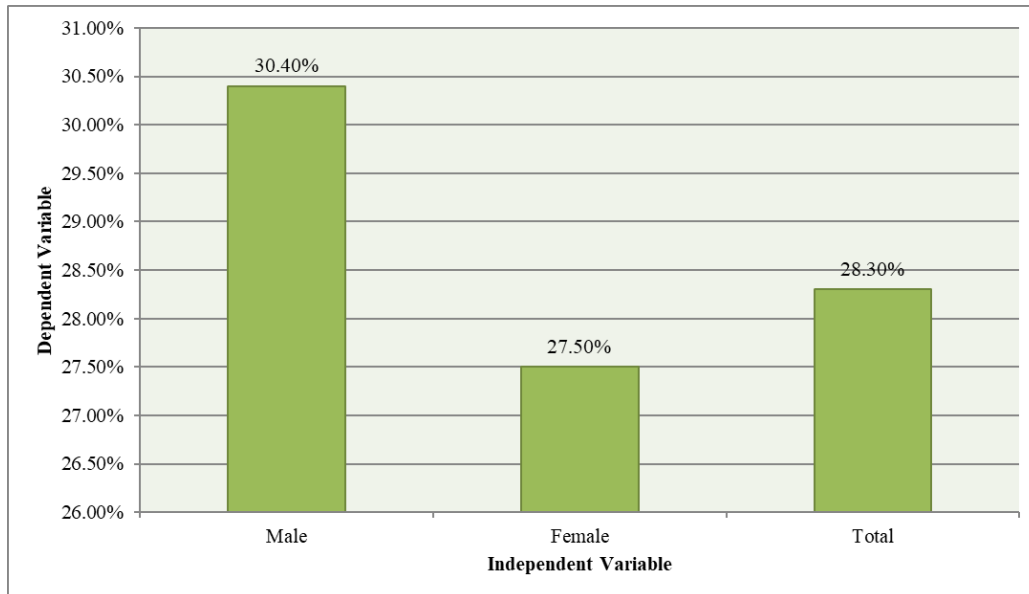
Model	Predictive Variables	Criterion Variable- Self-Control					
		Df	R	R <sup>2</sup>	R <sup>2</sup> Change	F Change	Sig. of F Change
1	Smartphone Addiction	187	0.551	0.304	0.304	81.587	0.000

**Table 5:** Regression Analysis between Smartphone Addiction and Self-Control for Female Adolescents

Model	Predictive Variables	Criterion Variable- Self-Control					
		Df	R	R <sup>2</sup>	R <sup>2</sup> Change	F Change	Sig. of F Change
1	Smartphone Addiction	209	0.524	0.271	0.275	79.192	0.000

Earlier in Table 3, the researcher determined that gender plays no significant role in predicting adolescents' self-control. Assessing the predictive value of an independent variable in this instance, he employed a straightforward linear regression technique. According to Table 4, the independent variable, namely smartphone addiction, is highly predictive of male adolescents' self-control. The measured value shows smartphone dependency (R<sup>2</sup> change - 0.304 and F value - 81.587). It contributes negatively to

30.47 % of the variance in adolescents' self-control, and its p-value is less than 0.01. Table- 5 indicates that the researcher discovered, for the female sample as well, that smartphone addiction has a significant impact on predicting self-control, although at a relatively low intensity (R<sup>2</sup> change- 0.275 and F value- 79.192). It contributes 27.5% of the variance in adolescents' self-control in a negative direction (value of  $p < 0.01$ ).



**Fig 1:** Contribution of Smartphone Addiction to Predict the Self-Control for the male, female and total sample.

### Discussion

Table 2 shows that smartphone addiction strongly affects teenagers' self-control. This research showed that smartphone addiction differs from internet and mobile addiction. Smartphone addiction testing included smartphone-specific distinction (H. M. Nam, 2001) [14]. Smartphone addiction stages comprise internet addiction's withdrawal, tolerance, and everyday living difficulties. While innovative concepts were addiction possibilities with a short access frequency that touched once, the push function and many app and content kinds increased portability and accessibility. Using media characteristics, the cellphone addiction test for teenagers has four subfactors: trouble with daily life, online intentionality, withdrawal, and tolerance.

The research examined whether smartphone addiction is a major predictor of self-control in teenagers, including male and female pupils. Smartphone addiction inversely affects Self-Control. Smartphone addiction decreased teenage self-control, and vice versa.

Thus, self-controlled students won't become smartphone addicts. Keeping personal standards foretold negatively about smartphone addiction. This result corroborates the findings of an earlier investigation (Y. M. Lee, 2009) [15], indicating that learners who adhere to norms are more likely to use smartphones in a responsible manner and predict smartphone addiction negatively. Therefore, we ought to come up with a program to enhance self-control through education. For instance, we can conduct training sessions for instructors during summer break and implement a program to combat smartphone addiction.

### Educational Implications of the Research

- Initiatives such as collaborations between the CBSE and FACEBOOK to promote digital security, virtual reality in the school's curriculum to encourage cyber safety, defense against identity fraud, and digital well-being, among others, must be supported.
- Policymakers in the education sector must take smartphone addiction into account when formulating policies for instructors.

- In association with the school administration, a number of workshops and seminars can be held to educate students about the potential dangers posed by the unrestricted and irresponsible use of smartphones, as well as methods to use them more responsibly.

### Conclusion

The research examined the relationship between smartphone addiction and self-control prediction. SPSS was used to conduct correlation and stepwise regression analyses on 400 ninth-grade students. Following are the results. First, we determined that self-control and smartphone addiction have a negative and significant correlation. Second, it is found that smartphone addiction is highly predictive of the self-control of adolescents for the entire sample, male adolescents and female adolescents. Therefore, in order to prevent people from being addicted to their smartphones, we need to modify programs that strengthen self-control. Altering the atmosphere in the classroom is another step that has to be taken to improve students' ability to exercise self-control while at school. This study provides guidelines and strategies that could aid in developing a smartphone addiction awareness initiative.

Several limitations affected this investigation. First, the participants were adolescents in Aligarh, Uttar Pradesh, in the ninth grade of secondary school. Therefore, generalizations about adolescents as a whole are challenging to make. The smartphone addiction of pupils of varying ages requires additional research. This research also utilized a self-report questionnaire. To address issues of objectivity, unreliable responses, etc., other qualitative research methods, such as interviews, are required.

### References

1. SH Oh, Kyeon OY. "A Study on Smart Learning Service Model," *The Journal of Korean Institute for Practical Engineering Education*, 2013;5(1):28-33.
2. Kim HY, Jang YB, Jung US, Yoo SH. "A Study the Relationship Among College Students' Construal Level, Self-control and Smartphone Addictive Use," *Journal of Mirae Youth Institute*, 2013;10(2):47-67.

3. Choi HS, Lee HK, Ha JC. "The Influence of Smartphone Addiction on Mental Health, Campus Life and Personal Relations-Focusing on K University Students," *Journal of the Korean Data and Information Science Society*,2012;23(5):1005-1015.
4. Schulz van Endert T. Addictive use of digital devices in young children: Associations with delay discounting, self-control and academic performance. *PLoS ONE*,2021;16(6):e0253058.  
<https://doi.org/10.1371/journal.pone.0253058>
5. Schmidt S, Anedda B, Burchartz A, Eichsteller A, Kolb S, Nigg C, *et al.* Physical activity and screen time of children and adolescents before and during the COVID-19 lockdown in Germany: a natural experiment. *Scientific Reports*,2020;10(1):12.  
<https://doi.org/10.1038/s41598-019-55410-5> PMID: 31913299
6. Hwang HS, Son SH, Choi YJ. "Exploring Factors Affecting Smart-Phone Addiction Characteristics of Users and Functional Attributes," *Korean Journal of Broadcasting and Telecommunication Studies*,2011;25(2):277-313.
7. Yoon JY, Moon JS, Kim YJ, Kim HA, Heo BR, Kim JA, *et al.* "Smart Phone Addiction and Health Problem in University Student," *Journal of Korean Association for Crisis and Emergency Management*,2011;3(2):92-104
8. Jeongmin Lee, Boram Cho, Effects of Self-Control and School Adjustment on Smartphone Addiction among Elementary School Students, *International Journal of Contents*, 2015, 11(3).  
<http://dx.doi.org/10.5392/IJoC.2015.11.3.001>
9. Lee KN. "The Effects of Children's Perception of Communications with Mothers and Self-control on Game Addiction," *Journal of Korean Home Economics Association*,2003;41(1):77-91.
10. Min BS. The Effects of the School Adjustment and Self-conception on School Record, Master's thesis, Hongik University, 1991.
11. Koo HY. "Cell Phone Addiction in High school Students and Its Predictors," *Journal of Korean Academy Child Health Nursing*,2010;16(3):203-210.
12. Jang SH. "The Explanatory of Personal, Family School Variables on Cellular Phone Addiction by the Elementary School Students," *Korean Association for Learner Centered Curriculum and Instruction*,2011;11(1):291-310.
13. Cho MK. "The Relationships among Smartphone use Motivations, Addiction, and Self-control in Nursing Students," *The Society of Digital Policy & Management*,2014;12(5):311-323.
14. Nam HM. "The Effects of Psychological Family Environment, Self-Control and Friends Characteristics of Middle School Students on Their Problem Behaviors," *Journal of the Korean Home Economics Association*,2001;39(7):37-58.
15. Lee YM, Lee SJ, Shin HS. "The Effects of Personal, Familial, School Environmental Variables on Mobile Phone Addiction by Adolescent," *Journal of Korean Home Economics Education Association*,2009;21(3):29-43.