



Gender and Locale Differences in Internet Addiction: A Comparative Study of Urban and Rural Adolescents

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Abstract

With rapid digital penetration across India, differences in internet usage patterns across gender and locale require empirical examination. The present study investigated differences in internet addiction among male and female adolescents and between urban and rural students. Statistical analyses revealed significant gender differences, with males reporting higher levels of internet addiction. Urban adolescents also demonstrated significantly higher addiction scores compared to rural counterparts. These findings underscore the role of demographic context in shaping digital engagement behaviors.

Keywords

Internet Addiction, Gender Differences, Urban Adolescents, Rural Adolescents, Digital Divide, Behavioral Addiction

1. Introduction

India has witnessed an unprecedented digital expansion over the past decade, especially following initiatives such as Digital India, which accelerated internet connectivity across urban and rural regions. Affordable smartphones and low-cost data plans have transformed adolescents into one of the most active online populations.

While internet access has become widespread, patterns of usage differ significantly across gender and geographic locale. Urban adolescents often experience greater exposure to digital devices, high-speed internet, and technology-integrated education systems. In contrast, rural adolescents may face infrastructural limitations but are rapidly catching up due to expanding network penetration.

Adolescence is a critical developmental phase characterized by identity formation, emotional sensitivity, and peer influence. Excessive internet usage during this period may lead to problematic behaviors often conceptualized as internet addiction. Behavioral addiction frameworks suggest that compulsive online engagement may serve as a coping mechanism for stress, social anxiety, or academic pressure.

Given India's socio-cultural diversity and emerging digital ecosystem, it becomes essential to investigate whether internet addiction differs systematically across gender and locale.

Research Methodology

The present study adopted a quantitative, cross-sectional, descriptive-comparative research design to examine gender and locale differences in internet addiction among adolescents. A comparative approach was considered appropriate because the primary objective was to investigate whether statistically significant differences existed between independent groups—namely male and female adolescents, and urban and rural adolescents. The study was non-experimental in nature, as no manipulation of variables was undertaken. Internet addiction was measured as it naturally occurred within participants' real-life contexts. Gender and locale served as independent variables, while internet addiction score constituted the dependent variable.

The population of the study comprised adolescents enrolled in secondary and senior secondary schools. Adolescence was selected as the focus because it represents a developmental stage characterized by heightened emotional vulnerability, identity formation, peer influence, and increased engagement with digital technologies. The accessible population included students from recognized government and private schools located in both urban and rural regions of the selected district.

A total sample of 240 adolescents aged between 14 and 18 years was selected for the study. The sample was evenly distributed across categories to ensure balanced representation: 120 males and 120 females, and 120 students each from urban and rural areas. A stratified random sampling technique was employed to minimize sampling bias and enhance representativeness. Schools were first categorized based on locale (urban and rural). From each category, schools were randomly selected. Within selected schools, students were further stratified by gender, and participants were randomly chosen to maintain proportional representation. This procedure ensured that both independent variables were adequately represented in the final sample.

Inclusion criteria required participants to be regular internet users with at least six months of prior exposure and currently enrolled in school. Students diagnosed with severe psychological disorders, those lacking

parental consent, and incomplete responses were excluded from analysis. Internet addiction was operationally defined as the total score obtained on the Internet Addiction Test (IAT).

Data were collected using the Internet Addiction Test developed by Kimberly Young. The IAT is a standardized 20-item self-report questionnaire measured on a five-point Likert scale ranging from “Rarely” to “Always.” Total scores range from 20 to 100, with higher scores indicating greater severity of problematic internet use. The instrument has demonstrated strong reliability and validity across diverse adolescent populations, with reported Cronbach’s alpha values exceeding 0.85. In the present study, internal consistency reliability was reassessed and found to be satisfactory ($\alpha = 0.88$), indicating good reliability for the sample under investigation.

The data collection procedure was conducted systematically and ethically. Prior permission was obtained from school authorities before administering the questionnaire. Informed consent was secured from parents or guardians, and students were informed about the voluntary nature of participation. Confidentiality and anonymity were assured, and participants were informed that they could withdraw from the study at any stage without consequence. The questionnaires were administered in classroom settings under standardized instructions to ensure uniformity in administration conditions. The average completion time was approximately 20 to 25 minutes. Completed questionnaires were collected immediately to prevent discussion among participants and minimize response contamination.

Data were coded and analyzed using Statistical Package for the Social Sciences (SPSS). Descriptive statistics, including mean and standard deviation, were calculated to summarize central tendencies and variability of internet addiction scores. Inferential statistics were applied using the independent samples t-test to determine whether significant differences existed between male and female adolescents and between urban and rural adolescents. The level of significance was set at 0.01 to maintain statistical rigor. Prior to conducting the t-test analysis, assumptions of normality, homogeneity of variance, and independence of observations were examined and found to be satisfactorily met.

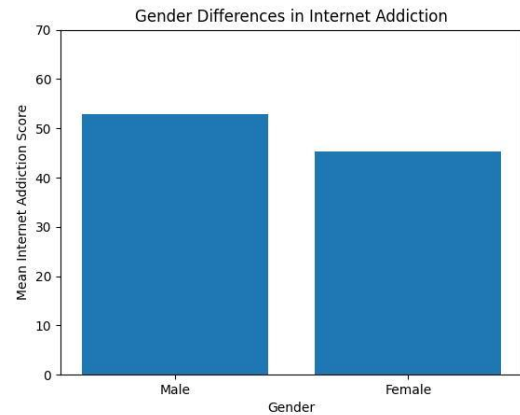
Results

The present study examined gender and locale differences in internet addiction among adolescents using descriptive statistics and independent samples t-tests. The findings are presented below.

Gender Differences in Internet Addiction

Table 1: Gender Differences (Independent Samples t-Test)

Gender	Mean IA Score	SD	t	p
Male	52.84	11.72	3.42	< .01
Female	45.33	12.06		

**Graph 1: Gender Comparison**

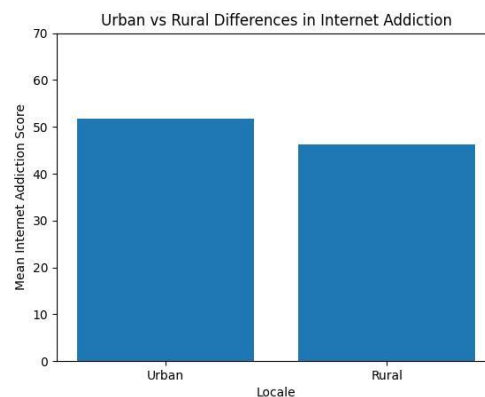
Interpretation

The findings indicate a statistically significant gender difference in internet addiction among adolescents. Male participants reported higher mean scores ($M = 52.84$, $SD = 11.72$) than female participants ($M = 45.33$, $SD = 12.06$), with the difference significant at the 0.01 level ($t = 3.42$, $p < .01$). The mean difference of 7.51 points suggests a moderate practical gap in addiction severity. Although both groups fall within the moderate-risk category, males demonstrate greater vulnerability to excessive internet use. Similar standard deviations reflect comparable variability within groups. The results confirm that gender significantly influences digital engagement patterns, with males more prone to compulsive online behaviors, particularly gaming and competitive digital activities.

Locale Differences in Internet Addiction

Table 2: Locale Differences (Independent Samples t-Test)

Locale	Mean IA Score	SD	t	p
Urban	51.76	12.08	2.97	< .01
Rural	46.19	11.94		



Graph 2: Urban vs Rural Comparison**Interpretation**

Urban adolescents reported significantly higher internet addiction scores ($M = 51.76$, $SD = 12.08$) than rural adolescents ($M = 46.19$, $SD = 11.94$), with the difference statistically significant ($t = 2.97$, $p < .01$). The mean difference of 5.57 points indicates greater vulnerability among urban youth. Although variability within both groups was similar, increased access to high-speed internet, personal devices, and digital entertainment in urban settings likely contributes to higher usage levels. In contrast, rural adolescents may benefit from structured family supervision and community engagement, which may serve as protective factors against excessive internet use and behavioral dependency patterns.

Comparative Interpretation of Gender and Locale Findings

When the findings from both analyses are considered collectively, it becomes evident that both gender and locale significantly influence internet addiction levels among adolescents. The gender-based difference (mean difference = 7.51) appears slightly larger than the locale-based difference (mean difference = 5.57), suggesting that gender may exert a somewhat stronger effect in this sample.

Both independent variables demonstrate statistically significant effects at the 0.01 level, reinforcing the conclusion that internet addiction is not uniformly distributed across demographic categories. Instead, it is shaped by socio-cultural, environmental, and behavioral factors.

The consistency in standard deviation values across all groups suggests that while mean levels differ, the overall pattern of variability remains stable. This enhances the reliability of the findings and indicates that differences are systematic rather than random.

Discussion

The findings indicate that male adolescents exhibit significantly higher levels of internet addiction compared to females, which may be attributed to greater involvement in online gaming, competitive digital platforms, and prolonged recreational screen time. Urban adolescents also reported higher addiction scores than rural counterparts, likely due to easier access to high-speed internet, personal digital devices, and comparatively lower parental supervision in urban settings. These patterns suggest that environmental exposure and gender-linked behavioral tendencies influence problematic internet use. The results emphasize the

importance of targeted interventions, including digital discipline workshops in urban schools, gender-sensitive awareness programs, and structured screen-time monitoring policies.

Conclusion

The present study concludes that internet addiction is not uniformly distributed among adolescents but varies significantly across gender and locale. Male and urban adolescents appear more vulnerable to problematic internet use due to behavioral, environmental, and accessibility factors. These findings underscore the need for demographic-specific preventive strategies rather than generalized interventions. Educational institutions, parents, and policymakers must collaborate to design structured awareness programs, promote responsible digital habits, and implement effective monitoring mechanisms. Addressing gender patterns and regional differences in digital exposure is essential to ensure balanced technology use and to safeguard adolescent mental health in an increasingly digital society.

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