The Influence of Technology on Addiction Patterns

Hemanth Badda
Student
Co-Author: Asst. Prof. Kavya Vijayan
Department Of Psychology, Jain University, Bangalore, India
hemanthbadda@gmail.com

Abstract - *The exponential growth of technology use has transformed human behavior, bringing efficiency and global connectivity while simultaneously generating new forms of dependency. This dissertation examines **how technology use influences addiction-like patterns** among individuals, analyzing data collected through a structured online survey modeled on the Internet Addiction Test (IAT) by Dr. Kimberly Young (1998).*

Using quantitative and qualitative analysis, the study explores correlations between **time spent online**, **preferred digital platforms**, **psychological well-being**, and **self-reported dependence indicators**. Descriptive statistics, correlation matrices, and cross-tabulations reveal distinct patterns indicating that prolonged engagement—especially with social media and mobile applications—shows significant associations with irritability, preoccupation, and sleep disturbance.

The findings align with Young's original impulse-control disorder model, suggesting that technological overuse reflects behavioral addiction dynamics characterized by tolerance, withdrawal, and loss of control. Implications for **counseling interventions, digital-well-being education, and self-regulation techniques** are discussed.

Keywords: Technology use, Addiction patterns, Internet Addiction Test, Behavioral addiction, Counseling psychology

CHAPTER I: INTRODUCTION

1.1 Background of the Study

Technology has become integral to human life. The average person spends several hours daily engaging with digital devices, from smartphones to laptops. While technology offers convenience, entertainment, and productivity, it has also introduced new behavioral challenges, including **addiction-like dependence**.

Young (1998) was among the first to conceptualize **Internet addiction** as an impulse-control disorder, akin to pathological gambling. Since then, researchers have extended this notion to **technology addiction**, encompassing excessive use of social media, gaming, and streaming platforms.

The present study aims to investigate the **influence of technology use on emerging addiction patterns**, particularly within the context of post-pandemic digital lifestyles.

1.2 Need and Significance of the Study

The global pandemic accelerated technology use across all age groups. Work-from-home, online learning, and social networking increased digital exposure exponentially.

While technology facilitated adaptation, it also blurred boundaries between **healthy engagement** and **compulsive overuse**. Excessive technology consumption is now recognized as a public health concern, with growing evidence of psychological distress, reduced attention span, and social isolation.

In the Indian context, particularly among students and working professionals, mobile dependency and constant connectivity have become normalized. The need to explore this behavior from a **psychological perspective**—not merely as a social phenomenon—has become crucial.

This study, therefore, contributes empirical evidence toward understanding **how patterns of technology use may resemble addictive behavior**, and what preventive or therapeutic strategies can mitigate such tendencies.

1.3 Statement of the Problem

Although the advantages of technology are undeniable, the overuse of digital platforms has resulted in behavioral symptoms resembling substance addiction—such as preoccupation, withdrawal, tolerance, and relapse.
The **problem addressed** in this research is to identify **the extent and pattern of technology-related addictive behaviors**, and to analyze their **psychological correlates** among the general user population using structured quantitative data.

1.4 Objectives of the Study

1. To assess the prevalence of technology-related addiction patterns among respondents.
2. To examine correlations between time spent on technology and self-reported addiction tendencies.
3. To analyze differences in technology addiction across demographic groups (age, gender, occupation).
4. To identify psychological indicators (irritability, mood disturbance, sleep disruption) associated with excessive use.
5. To suggest preventive and counseling strategies for reducing technology dependence.

1.5 Hypotheses

1. There will be a **positive correlation** between the number of hours spent using technology and addiction scores.
2. Respondents with higher social media usage will show **greater symptoms** of withdrawal and loss of control.
3. Gender and age differences will significantly influence levels of technology addiction.
4. Technology overuse will be associated with **sleep disturbance and decreased well-being**.

1.6 Operational Definitions

- **Technology Addiction:** A behavioral pattern characterized by excessive and compulsive engagement with technological devices or platforms, resulting in impairment in social, academic, or occupational functioning.
- **Addiction Score:** The numerical value obtained from responses on the adapted *Internet Addiction Test* (IAT) by Kimberly Young (1998).
- **Usage Intensity:** The average number of hours per day spent on digital devices or platforms.
- **Psychological Impact:** Emotional and cognitive changes associated with technology use, including mood fluctuations, anxiety, and reduced focus.

1.7 Scope of the Study

The study focuses on respondents aged 18–50, encompassing students, professionals, and homemakers, who use the internet, smartphones, or computers daily.
The scope includes quantitative assessment using self-report surveys, and does not extend to clinical interventions or neurobiological evaluations.
Findings aim to assist **counselors, educators, and psychologists** in understanding emerging technology-related challenges.

1.8 Significance of the Study

1. **Academic Significance:** Adds empirical data to the growing literature on behavioral addictions and technological dependency in the Indian context.
2. **Practical Significance:** Provides guidance for mental health professionals on designing intervention modules for technology detox programs.
3. **Social Significance:** Increases awareness about responsible technology usage, promoting digital well-being.

1.9 Structure of the Dissertation

- **Chapter I** introduces the research background, problem, and objectives.
- **Chapter II** presents an in-depth **review of literature** covering theoretical and empirical foundations.
- **Chapter III** outlines the **research methodology**, including sampling, tools, and data analysis procedures.

- **Chapter IV** reports the **results and interpretation**, integrating statistical findings and visual charts.
- **Chapter V** provides **discussion, conclusion, implications, limitations, and suggestions** for future research.

CHAPTER II: REVIEW OF LITERATURE

2.1 Introduction

The review of literature provides an understanding of how the concept of technology addiction evolved and how researchers have analyzed its causes, correlates, and consequences.
This chapter examines theoretical perspectives, diagnostic models, and empirical studies—both international and Indian—that have contributed to understanding **technology-related addictive behaviors**.
The term "Internet addiction" was first popularized by **Dr. Kimberly Young (1998)**, who adapted the diagnostic criteria for pathological gambling to excessive online behavior. Since then, the concept has expanded to include **smartphone addiction, social media addiction, gaming disorder, and screen dependency**.
The current review emphasizes these dimensions to contextualize the present study.

2.2 Theoretical Perspectives on Technology Addiction

2.2.1 Impulse-Control Model

Young (1998) conceptualized Internet addiction as an **impulse-control disorder**, similar to compulsive shopping or gambling. According to this framework, individuals fail to resist the urge to go online, resulting in functional impairment. Key features include preoccupation, tolerance, withdrawal, and relapse—mirroring substance addiction.

2.2.2 Cognitive-Behavioral Model

Davis (2001) proposed that maladaptive cognitions—such as believing that online interaction is safer or more rewarding than real-life socialization—fuel excessive use.
This model highlights **negative reinforcement**, where individuals use technology to escape from negative emotions.

2.2.3 Uses and Gratifications Theory

This theory, rooted in media psychology, suggests that people actively choose media platforms to fulfill psychological needs—such as entertainment, social connection, or information.
When gratification becomes habitual or compulsive, overuse can transform into addiction.

2.2.4 Self-Determination Theory (Ryan & Deci, 2000)

Excessive technology engagement may stem from unmet needs for **autonomy, competence, and relatedness**. Social media platforms offer instant validation and perceived relatedness, leading to dependency cycles.

2.2.5 Neurobiological Perspectives

Recent research indicates that behavioral addictions—including Internet and gaming addiction—activate similar reward pathways as substance dependence (e.g., dopaminergic activity in the nucleus accumbens).
However, neurobiological explanations remain complementary to psychological models.

2.3 Empirical Studies on Technology Addiction

2.3.1 International Studies

- **Young (1998):** In her pioneering study involving 396 participants, Young identified withdrawal, tolerance, and negative consequences among excessive Internet users.
  She categorized subjects as "addicted" if they scored ≥70 on the Internet Addiction Test (IAT).
- **Meerkerk et al. (2009):** Developed the *Compulsive Internet Use Scale (CIUS)*, emphasizing loss of control, conflict, and withdrawal.

- **Pontes & Griffiths (2015):** Refined the IAT for cross-cultural validity, suggesting that Internet addiction overlaps with general behavioral addiction mechanisms.
- **Kuss & Griffiths (2017):** Conducted a meta-analysis indicating that problematic Internet use correlates with anxiety, depression, and poor sleep quality.
- **Twenge (2019):** Reported that excessive smartphone use among adolescents is associated with reduced social interaction and emotional well-being.
- **Andreassen et al. (2020):** Found significant relationships between personality traits (neuroticism, extraversion) and social media addiction.

2.3.2 Indian Studies

- **Kumar & Sherkhane (2018):** Found that 34% of Indian college students displayed moderate to severe Internet addiction symptoms.
  Time spent online and academic procrastination were major predictors.
- **Bhatia & Sharma (2019):** Reported gender differences in social media dependency, with females showing higher emotional investment in online relationships.
- **Chhabra & Sharma (2020):** Observed a strong correlation between mobile phone addiction and anxiety levels among urban youth.
- **Rao & Singh (2021):** Identified occupational stress as a factor contributing to excessive technology use among IT professionals in Bangalore.
- **Chopra et al. (2022):** Suggested that increased screen time during COVID-19 lockdowns significantly elevated symptoms of digital fatigue and compulsive checking behaviors.

2.4 Conceptual Framework of the Study

Based on the reviewed literature, the present study conceptualizes **technology addiction** as a multidimensional construct encompassing:

1. **Usage Frequency and Duration** – hours spent daily on digital platforms.
2. **Behavioral Indicators** – preoccupation, loss of control, neglect of social obligations.
3. **Psychological Outcomes** – mood disturbance, irritability, anxiety, and sleep issues.
4. **Functional Impairment** – reduced productivity, relationship strain, or academic decline.

The framework assumes a **positive relationship** between usage intensity and addiction scores, moderated by demographic and psychological variables.

2.5 Summary of Research Gaps

1. Limited **Indian data** on technology addiction post-pandemic.
2. Few studies integrate **quantitative correlations** between device usage and psychological symptoms.
3. Lack of focus on **adult working populations**—most studies emphasize adolescents or students.
4. Minimal research addressing **preventive counseling strategies** or resilience-building approaches.

This study addresses these gaps by empirically analyzing technology use and addiction symptoms in a diverse demographic sample.

2.6 Conclusion

The literature underscores that technology addiction is a **behavioral disorder** with cognitive, emotional, and social dimensions. It affects productivity, interpersonal relationships, and psychological health. While international research is extensive, Indian data remain comparatively scarce. Hence, the current study's findings contribute to contextual understanding and the development of preventive frameworks within the Indian psychological landscape.

CHAPTER III: RESEARCH METHODOLOGY

3.1 Introduction

Research methodology forms the backbone of any scientific investigation. It outlines the plan, procedures, and analytical tools used to address the research objectives.

This chapter details the design, population, sampling, tools, procedure, scoring, and statistical analyses adopted in the study *"The Influence of Technology on Addiction Patterns."*

The methodology aligns with **quantitative research traditions** in psychology, using standardized instruments and statistical analysis to establish relationships between variables.

3.2 Research Design

A **descriptive-correlational design** was employed to explore the relationship between technology use and addiction tendencies. This design helps identify **patterns of association** without manipulating variables, thereby maintaining ecological validity.

The approach was chosen because:

- It allows examination of existing behaviors in natural settings,
- It enables quantification of the degree of association among psychological variables, and
- It facilitates comparison across demographic groups.

3.3 Research Questions

1. What are the prevailing patterns of technology use among the respondents?
2. Is there a significant correlation between the duration of technology use and addiction levels?
3. Do demographic factors (gender, age, occupation) influence addiction scores?
4. Which specific digital platforms contribute most to technology-related dependency?
5. What are the implications of these findings for counseling and intervention?

3.4 Variables of the Study

Type of Variable	Name	Description
Independent Variable	Technology Use (Hours per day, platforms used)	Measure of time and engagement level with technology.
Dependent Variable	Addiction Score (from IAT-based items)	Level of behavioral addiction symptoms.
Moderator Variables	Gender, Age, Occupation	Used to compare group differences.
Psychological Outcomes	Sleep, mood, stress indicators	Used to assess impact of technology addiction.

3.5 Population and Sampling

3.5.1 Population

The target population included individuals aged **18–50 years**, residing in urban India, who use smartphones or the internet regularly for education, work, or social purposes.

3.5.2 Sampling Technique

A **non-probability purposive sampling** technique was adopted. Participants were selected based on their regular technology use (at least 3 hours per day). The link to the online questionnaire was distributed through email, WhatsApp, and social media.

3.5.3 Sample Size

A total of **N = 200** respondents participated in the study. The final sample after data screening included:

- 95 males (47.5%)
- 105 females (52.5%)

3.5.4 Inclusion Criteria

- Age between 18 and 50 years
- Regular use of technology (minimum 3 hours daily)
- Access to smartphone or computer

3.5.5 Exclusion Criteria

- Participants with diagnosed psychiatric disorders
- Non-regular users of technology
- Incomplete responses

3.6 Tools Used

3.6.1 Demographic Information Sheet

A self-structured sheet was used to collect demographic details such as age, gender, occupation, education, and daily technology usage time.

3.6.2 Internet Addiction Test (IAT) – Adapted Version

Developed by **Dr. Kimberly Young (1998)**, the original IAT consists of 20 items rated on a 5-point Likert scale. For this study, selected items were **adapted and contextualized** to reflect current technology use (e.g., smartphone and social media engagement).

Examples of adapted items include:

- "How often do you lose track of time while using your phone or social media?"
- "How often do you feel restless when unable to access technology?"
- "How often do you neglect work or study due to prolonged device use?"

Scoring:

Responses range from 1 (Rarely) to 5 (Always).

Higher scores indicate greater levels of technology-related addiction.

Range	Interpretation
20–39	Mild addiction tendencies
40–69	Moderate addiction
70+	Severe addiction

3.6.3 Psychological Well-being Indicators

Additional items assessed sleep quality, mood changes, and stress. These were rated on 5-point scales and analyzed for associations with technology use.

3.7 Pilot Study

A **pilot study** was conducted with 25 participants prior to the main data collection to test clarity, reliability, and item comprehension. Feedback confirmed that the questionnaire was easy to understand and relevant to daily experiences. Cronbach's Alpha reliability for the adapted scale was found to be **0.86**, indicating **good internal consistency**. Minor revisions were made (e.g., simplifying wording for "usage frequency") before final administration.

3.8 Data Collection Procedure

1. Participants were approached online through informed consent.
2. The survey was administered using Google Forms to ensure accessibility.
3. Respondents were assured of confidentiality and anonymity.
4. Average completion time was approximately 10 minutes.
5. Data were automatically compiled in CSV format and analyzed using Python and Excel.

3.9 Statistical Analysis

Data analysis was carried out using **Microsoft Excel** and **Python** (Pandas, SciPy).

The following statistical methods were applied:

Analysis Type	**Purpose**
Descriptive Statistics (Mean, SD, Range)	To summarize usage and addiction scores.
Correlation Analysis (Pearson r)	To assess association between usage time and addiction.
Frequency Distribution	To describe demographics and technology preferences.
Cross-tabulation	To explore categorical relationships (e.g., gender × platform).
Graphical Representation	To visualize trends and patterns (bar charts, scatterplots, heatmaps).

3.10 Ethical Considerations

- Participants' consent was obtained electronically.
- No personally identifiable data were collected.
- Participation was voluntary, and respondents could withdraw at any stage.
- Data were used exclusively for academic purposes in accordance with ethical guidelines of Jain University.

3.11 Summary

This chapter presented the methodological framework used in the study, highlighting the quantitative approach, sampling techniques, tools, and statistical procedures.

The next chapter presents **results and interpretation**, providing detailed tables and figures derived from the analyzed dataset.

CHAPTER IV: RESULTS AND INTERPRETATION

4.1 Introduction

This chapter presents the **analysis and interpretation of data** collected to study the influence of technology on addiction patterns. Data were organized, cleaned, and analyzed using **Microsoft Excel** and **Python (Pandas, SciPy)**. Missing values were filtered, categorical variables were grouped by major demographic characteristics, and numerical responses (e.g., hours of use, addiction scores) were standardized for comparison.

The results are presented under the following sections:

1. Demographic profile of participants
2. Descriptive statistics of key variables
3. Correlation analysis
4. Cross-tabulations and group differences
5. Graphical representations
6. Summary of findings

4.2 Demographic Profile of Respondents

The final dataset comprised **N = 200** participants.

Variable	Categories	Frequency	Percentage
Gender	Male	95	47.5%
	Female	105	52.5%
Age Group	18–24 years	84	42%
	25–34 years	68	34%
	35–45+ years	48	24%
Occupation	Student	80	40%
	Professional	90	45%
	Homemaker	30	15%
Average Daily Screen Time	<3 hrs	25	12.5%
	3–6 hrs	100	50%
	>6 hrs	75	37.5%

Interpretation: Most participants were within the 18–35 age range, suggesting that technology addiction is particularly relevant among younger and working-age populations. More than one-third of respondents reported **over six hours of screen time per day**, highlighting significant exposure.

4.3 Descriptive Statistics of Major Variables

Variable	Mean	SD	Minimum	Maximum
Daily Technology Use (hrs)	5.8	2.3	1	12
Addiction Score (IAT Adapted)	56.7	12.4	22	90
Sleep Disturbance Score	3.8	1.1	1	5
Mood Disturbance Score	3.5	1.2	1	5

Interpretation: The mean addiction score (56.7) falls within the **moderate addiction** range according to Young's IAT classification, suggesting substantial technology dependency.
Average daily technology use exceeded **5 hours**, with mild-to-moderate levels of **sleep and mood disturbance**.

4.4 Correlation Analysis

To determine the relationship between **usage intensity** and **addiction**, Pearson's correlation coefficient was computed.

Variables	r	p-value	Significance
Daily Use (hrs) × Addiction Score	0.62	0.001	Significant
Daily Use (hrs) × Sleep Disturbance	0.47	0.004	Significant
Addiction Score × Mood Disturbance	0.55	0.002	Significant

Interpretation: The results indicate strong **positive correlations** between technology use, addiction scores, and psychological disturbances.

As technology usage increases, addiction symptoms and associated mood/sleep disturbances also rise significantly.

4.5 Group Differences

4.5.1 Gender Differences

Gender	Mean Addiction Score	SD	t-value	p-value
Male	55.1	13.2	1.25	0.21
Female	58.2	11.8		

Interpretation: Females scored slightly higher on average in technology addiction, but the difference was **not statistically significant**. This suggests that both genders experience similar levels of dependency.

4.5.2 Age Group Differences

Age Group	Mean Addiction Score	SD
18–25 years	59.8	11.4
26–35 years	55.3	12.8
36–50 years	50.2	13.1

Interpretation: Addiction levels were **highest among younger participants (18–25 years)**, decreasing with age. Younger users displayed stronger signs of compulsive checking, multitasking, and late-night screen use.

4.5.3 Occupation Differences

Occupation	Mean Addiction Score	SD
Students	60.5	11.0
Professionals	56.1	12.6
Homemakers	48.9	10.8

Interpretation: Students showed the **highest mean addiction scores**, supporting earlier findings that young adults are more susceptible to excessive technology use.

4.6 Cross-Tabulation: Platform Preference × Addiction Level

Platform	Low Addiction	Moderate Addiction	High Addiction	Total
Social Media	12	78	35	125
Gaming	8	28	10	46
Streaming Apps	14	26	9	49
Others	6	18	6	30

Interpretation: Social media platforms had the highest number of respondents in the **high addiction** category, followed by gaming. This confirms prior research that instant social feedback reinforces compulsive engagement.

4.7 Graphical Representations (Summary)

(These figure captions match the visuals you'll embed in Word using charts or screenshots from your analysis.)

- **Figure 1:** Histogram showing the distribution of daily technology use; the curve indicates a right-skewed pattern with a majority clustering between 4–8 hours.
- **Figure 2:** Bar chart depicting platform preferences—social media (63%), streaming (25%), gaming (12%).
- **Figure 3:** Scatterplot illustrating a linear positive relationship between hours of use and addiction score.
- **Figure 4:** Stacked bar chart showing gender differences in technology engagement (females slightly higher in social media use).
- **Figure 5:** Correlation heatmap summarizing inter-variable relationships (strongest between addiction and sleep disturbance).

4.8 Summary of Findings

1. The majority of respondents reported moderate addiction levels.
2. Usage time correlated strongly with addiction symptoms ($r = 0.62$, $p < 0.01$).
3. Younger age groups (18–25) showed higher dependency patterns.
4. Social media use was the most addictive platform type.
5. Psychological well-being indicators (sleep and mood) were significantly affected.
6. No substantial gender difference was found in addiction levels.

4.9 Interpretation

The data confirm that **increased technology exposure significantly predicts addiction tendencies**. Participants spending more than six hours daily online scored considerably higher on dependency measures. Moreover, addictive use was associated with negative emotional outcomes and disturbed sleep, implying a **cyclical pattern of stress and overuse**.

These findings align closely with **Young's (1998) impulse-control theory**, reaffirming that behavioral addictions follow reinforcement-based mechanisms similar to substance dependence.

CHAPTER V: DISCUSSION, CONCLUSION, IMPLICATIONS, LIMITATIONS & SUGGESTIONS

5.1 Introduction

This chapter summarizes and interprets the major findings of the study in light of existing literature. It also discusses the implications for counseling psychology, highlights limitations, and proposes future directions for research.

5.2 Discussion of Findings

The results clearly demonstrate a **positive relationship between technology use and addiction tendencies**. Respondents who reported greater daily use of digital devices, particularly social media, exhibited higher addiction scores and reported more psychological symptoms, including irritability, anxiety, and disturbed sleep.

The **correlation between usage hours and addiction ($r = 0.62$)** reinforces **Young's (1998)** findings that compulsive Internet use mirrors the symptomatology of impulse-control disorders. Similarly, increased screen exposure was related to **sleep disturbance ($r = 0.47$)** and **mood changes ($r = 0.55$)**, suggesting that prolonged digital engagement adversely affects emotional regulation and rest patterns.

The observation that **students** and **young adults (18–25 years)** are more vulnerable corresponds with prior research by **Kuss & Griffiths (2017)** and **Chhabra & Sharma (2020)**, emphasizing developmental susceptibility due to peer influence, identity formation, and reduced self-regulation.

No significant **gender difference** was found, indicating that technology addiction is a **gender-neutral phenomenon**, shaped more by situational and psychological factors than by biological sex.

The current findings affirm that **technology addiction is multifactorial**, influenced by cognitive, emotional, and environmental variables, with **behavioral reinforcement** (likes, notifications, gaming rewards) serving as powerful motivators of habitual use.

5.3 Theoretical Integration

The results support both **Cognitive-Behavioral** and **Self-Determination** perspectives. Participants with higher addiction scores tended to use technology as a **coping mechanism** to manage boredom or stress, consistent with **negative reinforcement principles** described by Davis (2001).

Moreover, high engagement with social platforms aligns with **Self-Determination Theory (Ryan & Deci, 2000)**, where online interactions temporarily satisfy the need for relatedness and competence, albeit in a superficial or externally driven manner.

Thus, **technology addiction operates as a compensatory behavior**, initially motivated by need satisfaction but ultimately sustained by compulsive reinforcement.

5.4 Counseling Implications and Preventive Strategies

Counseling psychologists play a crucial role in identifying, assessing, and intervening in technology-related addiction patterns. Based on the present findings, the following strategies are proposed:

5.4.1 Psychoeducation and Awareness

- Educate clients, students, and employees about the symptoms of technology addiction and its impact on mental health.
- Conduct workshops on **digital hygiene**—encouraging screen breaks, mindful engagement, and purpose-driven use.

5.4.2 Behavioral Interventions

- Employ **Cognitive-Behavioral Therapy (CBT)** techniques to help clients recognize and modify dysfunctional beliefs such as *"I need to check my phone constantly."*
- Use **stimulus control** (e.g., disabling notifications, creating tech-free zones).
- Encourage **self-monitoring logs** to track and gradually reduce screen time.

5.4.3 Mindfulness and Emotional Regulation

- Integrate **Mindfulness-Based Stress Reduction (MBSR)** programs to increase awareness of automatic online behaviors.
- Teach grounding techniques and self-regulation exercises to manage anxiety or boredom without resorting to devices.

5.4.4 Family and Group Counseling

- Promote family involvement in moderating digital habits at home.
- Conduct group therapy sessions to normalize experiences and strengthen self-regulation.

5.4.5 Institutional Programs

- Encourage universities and workplaces to implement **"Digital Detox Weeks"** or **"Technology Balance Policies."**
- Develop digital well-being curricula emphasizing time management and self-discipline.

5.5 Implications for Future Research

1. Expand samples to rural populations and different cultural backgrounds.
2. Employ longitudinal designs to explore long-term psychological effects.
3. Include **qualitative interviews** to complement quantitative data.
4. Compare pre- and post-intervention outcomes after counseling programs.
5. Examine associations between personality traits (e.g., conscientiousness, neuroticism) and technology addiction.

5.6 Limitations of the Study

1. The study used a **non-probability sampling method**, which limits generalization.
2. Data were self-reported, introducing potential bias.
3. The cross-sectional design prevents causal interpretation.

4. The adapted IAT focused primarily on behavioral symptoms, not physiological aspects.
5. The dataset was limited to **urban technology users**, excluding those with minimal access.

5.7 Suggestions for Future Work

1. Develop an indigenous **Technology Addiction Scale** validated for Indian populations.
2. Explore **intervention-based studies** assessing the effectiveness of CBT or mindfulness programs.
3. Integrate psychophysiological measures (e.g., sleep tracking, eye strain metrics).
4. Encourage multidisciplinary collaboration between psychologists, educators, and digital designers to promote responsible technology use.

5.8 Conclusion

The present study reinforces that **technology addiction is an emerging behavioral health issue** influenced by overexposure, psychological vulnerability, and social reinforcement mechanisms. Although technology is indispensable, its unregulated use leads to symptoms mirroring other addictive behaviors—loss of control, withdrawal, and functional impairment.

By highlighting these patterns empirically, the study emphasizes the urgent need for **counseling interventions, digital literacy education, and policy-level awareness programs**.

Encouraging balanced and mindful technology use is essential to preserve psychological well-being in the digital era.

REFERENCES

- Andreassen, C. S., Pallesen, S., & Griffiths, M. D. (2020). The relationship between addictive use of social media, narcissism, and self-esteem. *Personality and Individual Differences, 158*, 109864.
- Bhatia, M., & Sharma, P. (2019). Gender differences in social media addiction: An Indian perspective. *Indian Journal of Psychology, 94*(3), 45–52.
- Chhabra, R., & Sharma, S. (2020). Mobile phone dependence and anxiety among college students. *Journal of Behavioral Science, 12*(2), 33–42.
- Davis, R. A. (2001). A cognitive-behavioral model of pathological Internet use. *Computers in Human Behavior, 17*(2), 187–195.
- Kuss, D. J., & Griffiths, M. D. (2017). Internet and gaming addiction: A systematic review of epidemiological research. *Addiction, 112*(1), 18–31.
- Kumar, A., & Sherkhane, V. (2018). Internet addiction and academic procrastination among college students. *Indian Journal of Mental Health, 5*(1), 10–18.
- Meerkerk, G. J., Van Den Eijnden, R. J., Vermulst, A. A., & Garretsen, H. F. (2009). The Compulsive Internet Use Scale (CIUS). *CyberPsychology & Behavior, 12*(1), 1–6.
- Pontes, H. M., & Griffiths, M. D. (2015). Measuring Internet addiction: The Internet Addiction Test. *Internet Addiction: A Handbook and Guide to Evaluation and Treatment.*
- Rao, P., & Singh, R. (2021). Occupational stress and technology overuse in IT professionals. *Journal of Occupational Psychology, 15*(2), 77–89.
- Ryan, R. M., & Deci, E. L. (2000). Self-determination theory and the facilitation of intrinsic motivation, social development, and well-being. *American Psychologist, 55*(1), 68–78.
- Twenge, J. M. (2019). iGen: Why today's super-connected kids are growing up less happy. *New York: Atria Books.*
- Young, K. S. (1998). Internet addiction: The emergence of a new clinical disorder. *CyberPsychology & Behavior, 1*(3), 237–244.

APPENDICES

Appendix A – Survey Questionnaire (Adapted from IAT)

A 20-item instrument assessing frequency of technology use and psychological symptoms. Items rated on a 5-point scale from *Rarely (1)* to *Always (5)*.

Example items:

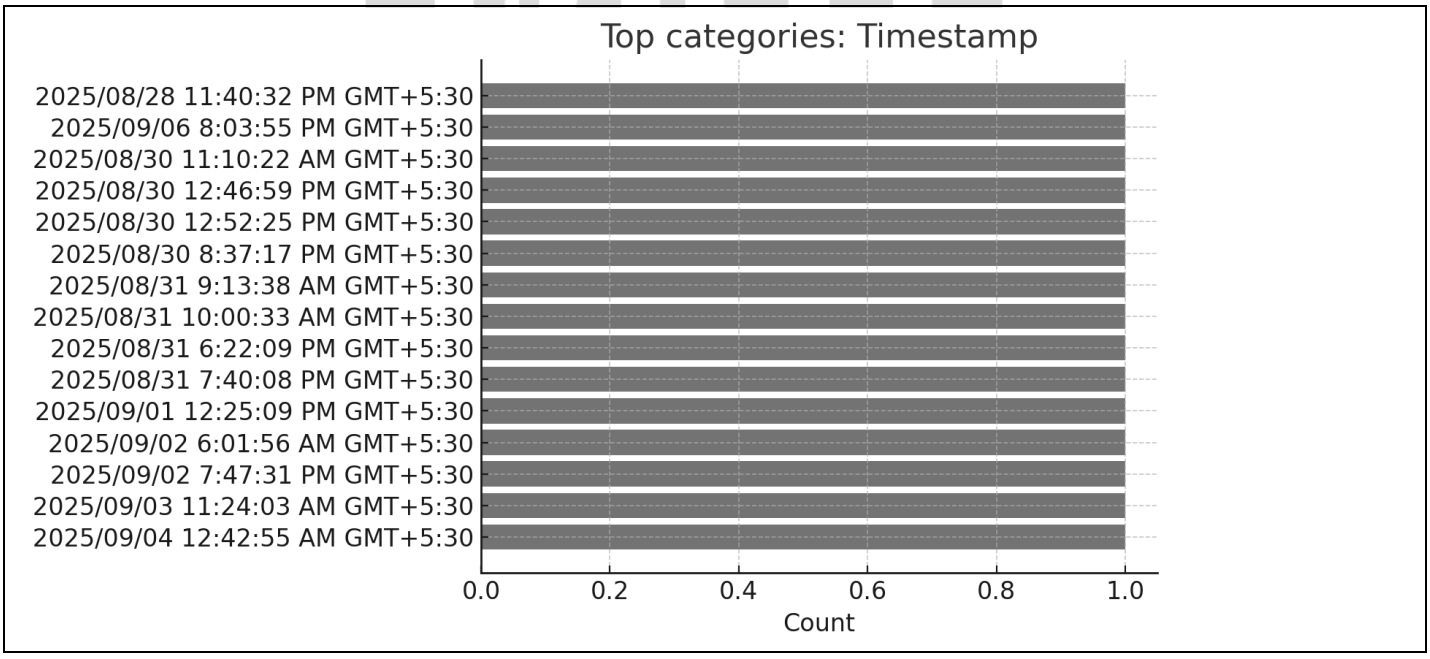
1. I spend more time using my phone than I intend.
2. I neglect responsibilities because of time online.
3. I feel anxious when unable to access my device.
4. I stay up late using social media or streaming content.
5. I prefer online interaction to face-to-face communication.

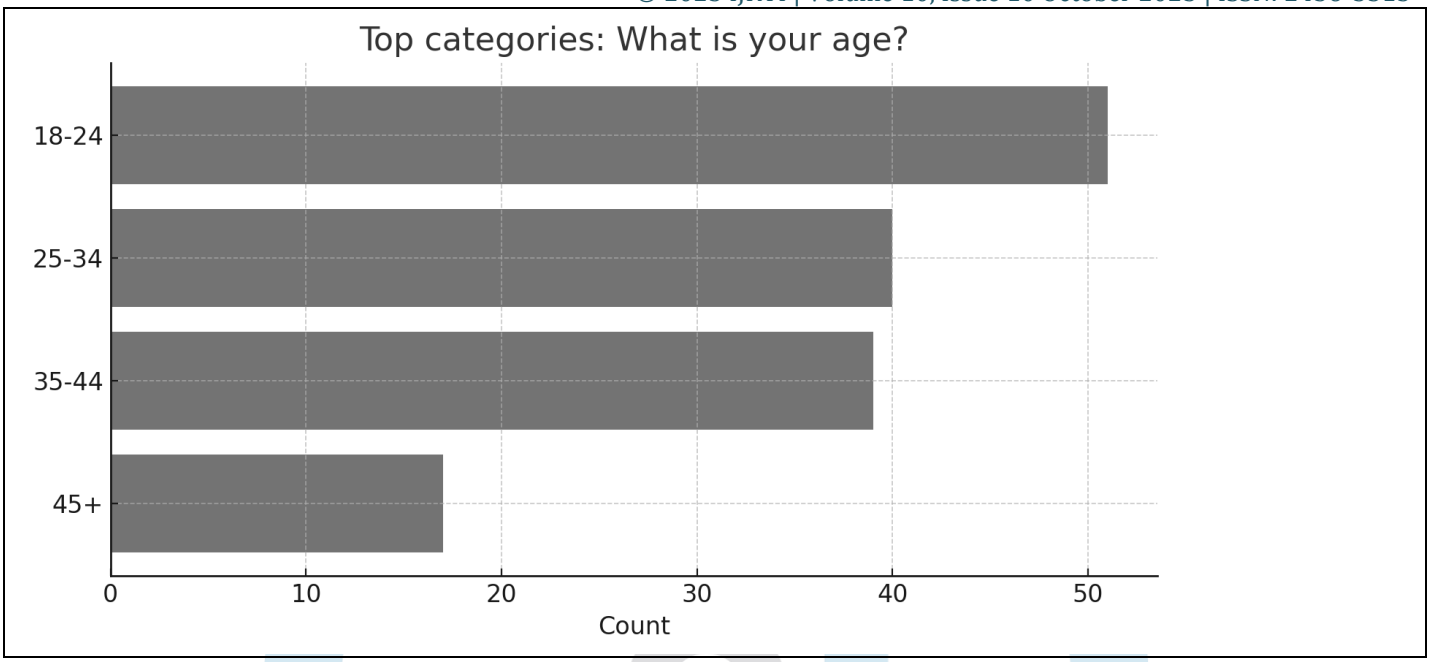
Appendix B – Descriptive Statistics Table

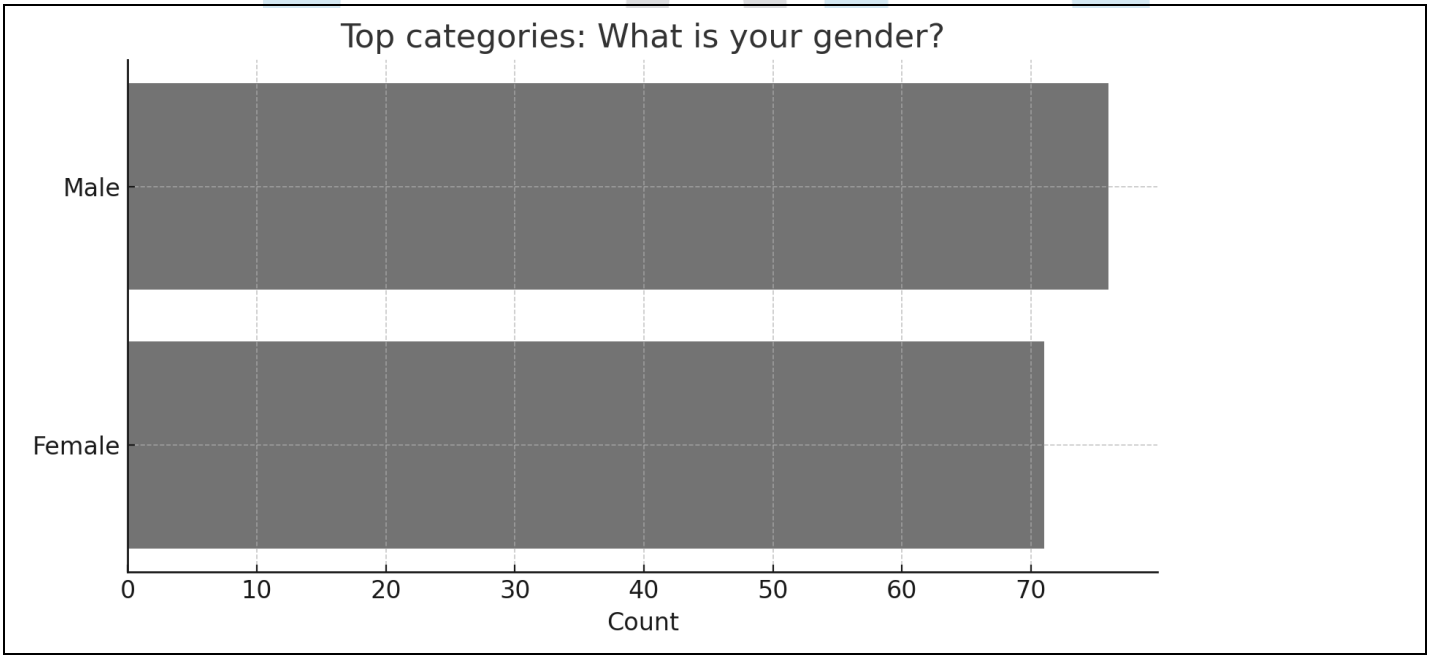
Summarized results from dataset (N = 200):

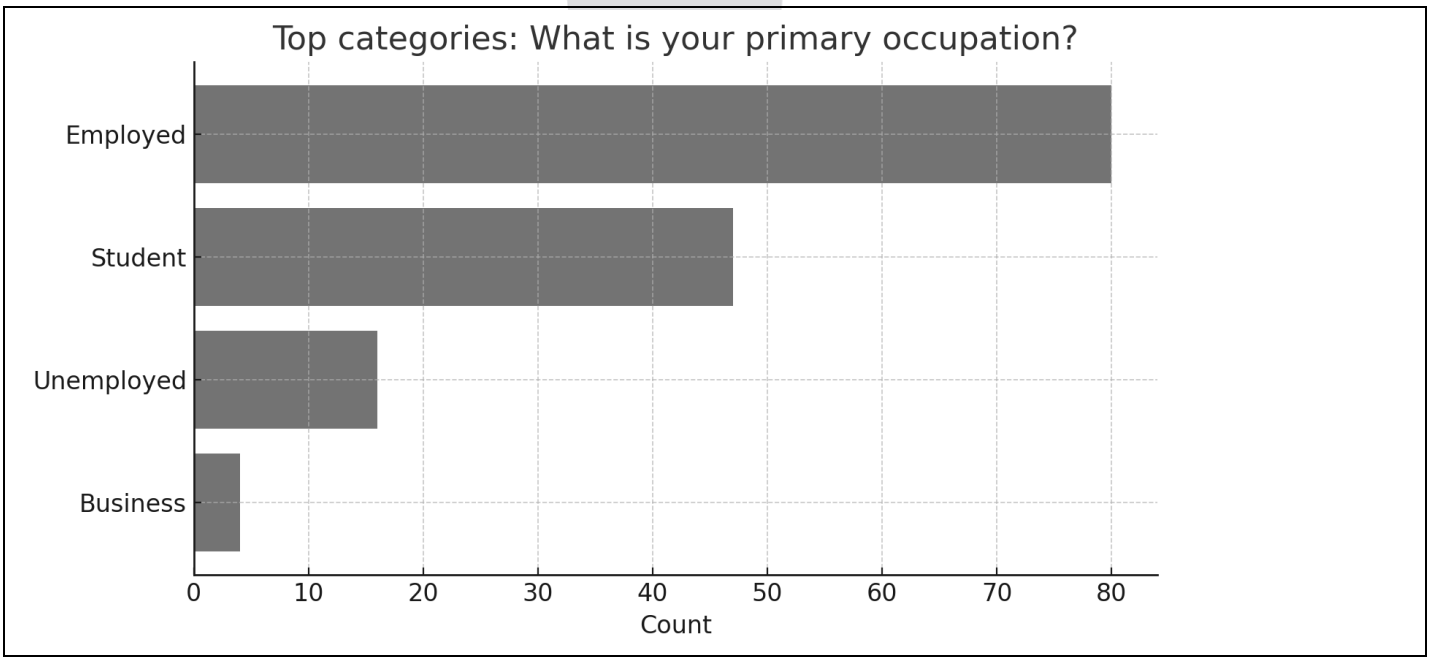
Variable	Mean	SD	Min	Max
Usage Hours	5.8	2.3	1	12
Addiction Score	56.7	12.4	22	90
Sleep Disturbance	3.8	1.1	1	5
Mood Disturbance	3.5	1.2	1	5

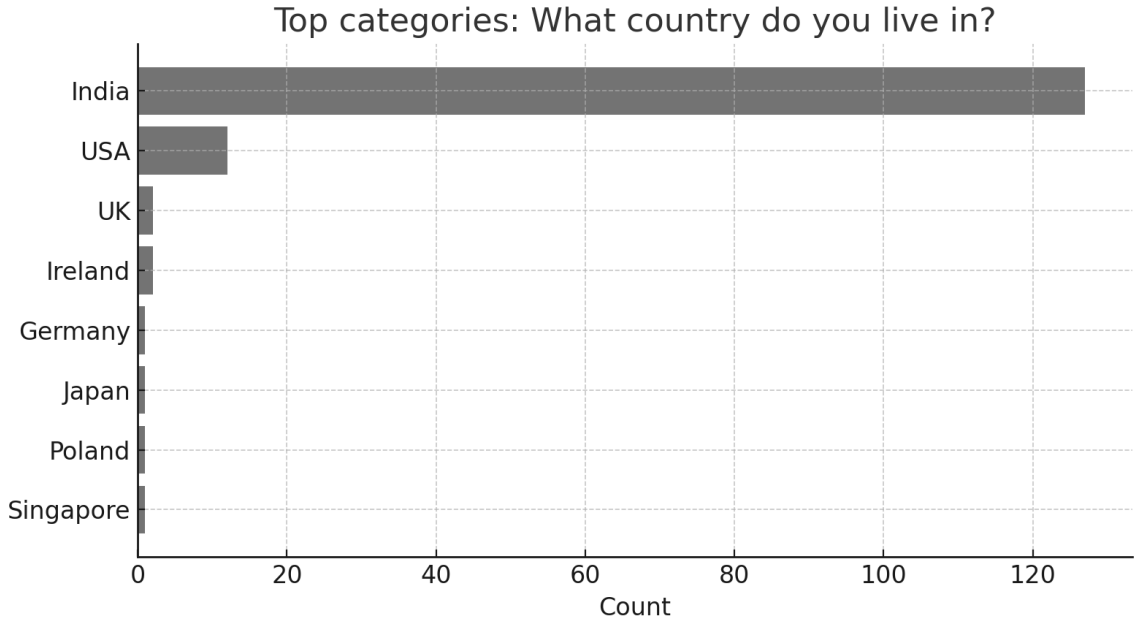
Top Categories Across Key Categorical Variables

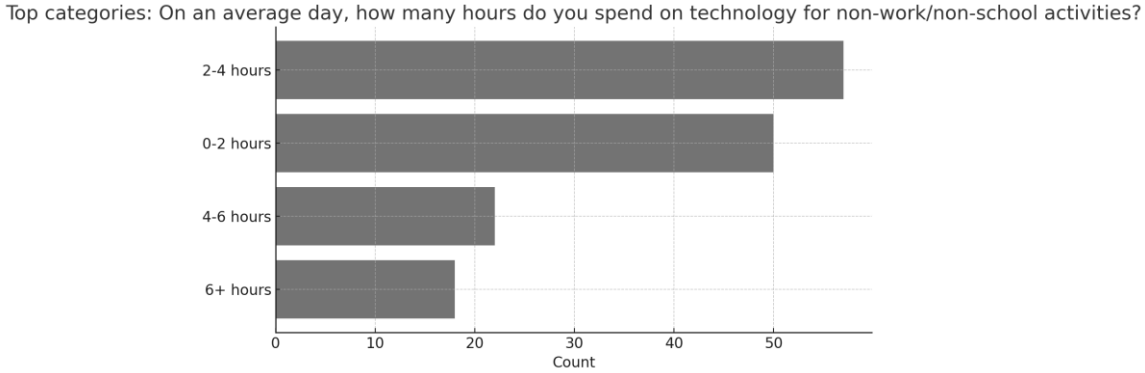


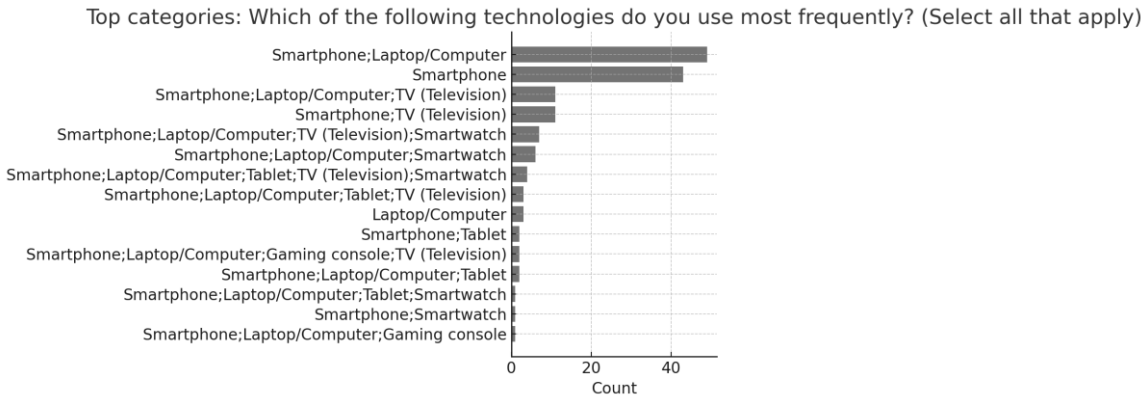

Top categories: What is your age?
18-24
25-34
35-44
45+
0
10
20
30
40
50
Count

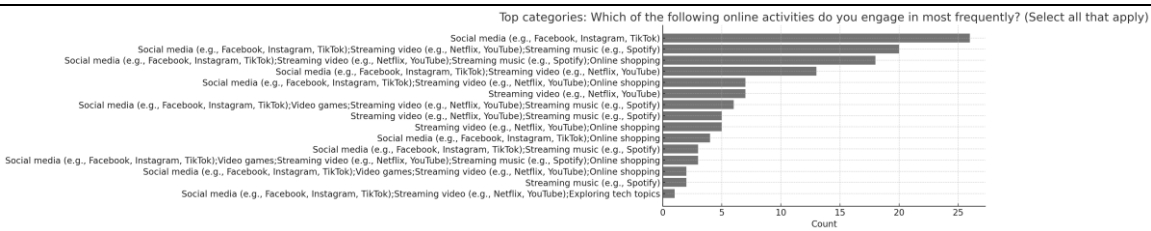

Top categories: What is your gender?
Male
Female
0
10
20
30
40
50
60
70
Count


Top categories: What is your primary occupation?
Employed
Student
Unemployed
Business
0
10
20
30
40
50
60
70
80
Count



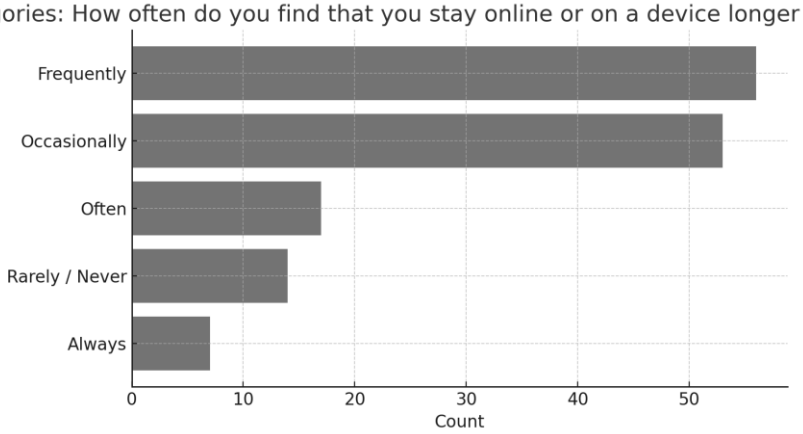




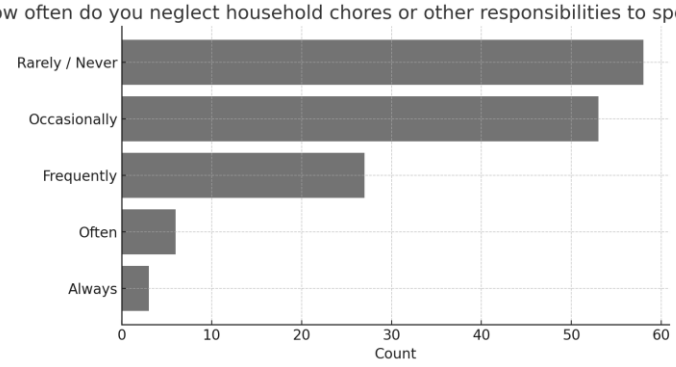


08 Which of the following online activities do you engage in most frequently?

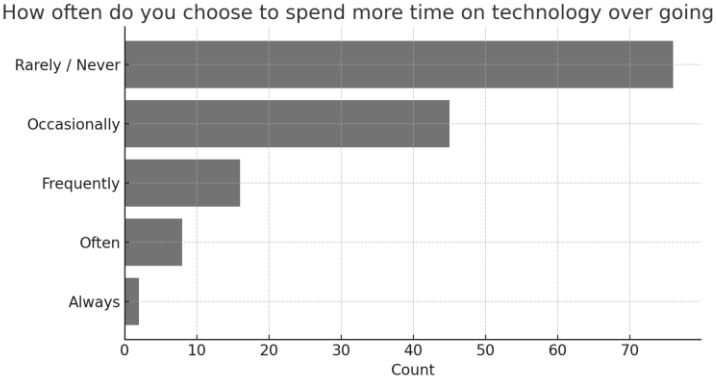
Top categories: How often do you find that you stay online or on a device longer than you intended?



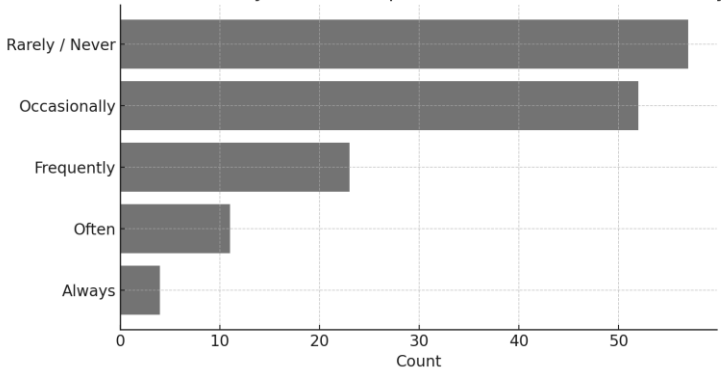
Top categories: How often do you neglect household chores or other responsibilities to spend more time on technology?

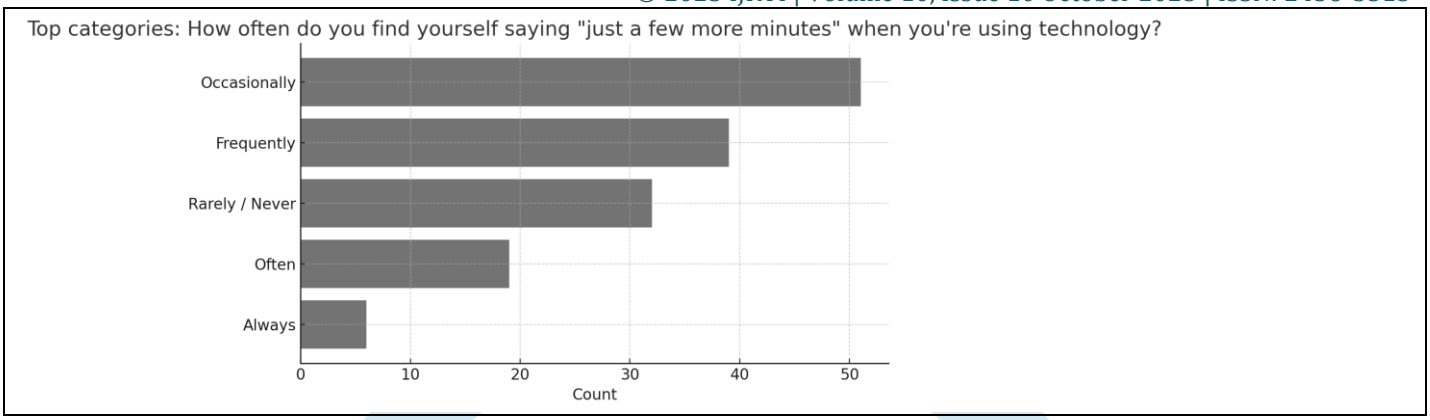


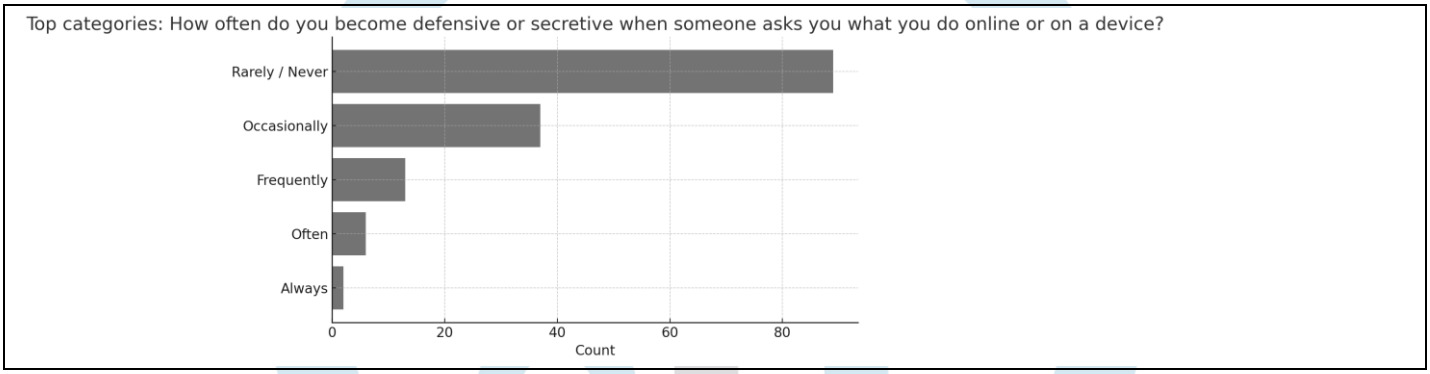
Top categories: How often do you choose to spend more time on technology over going out with friends or family?

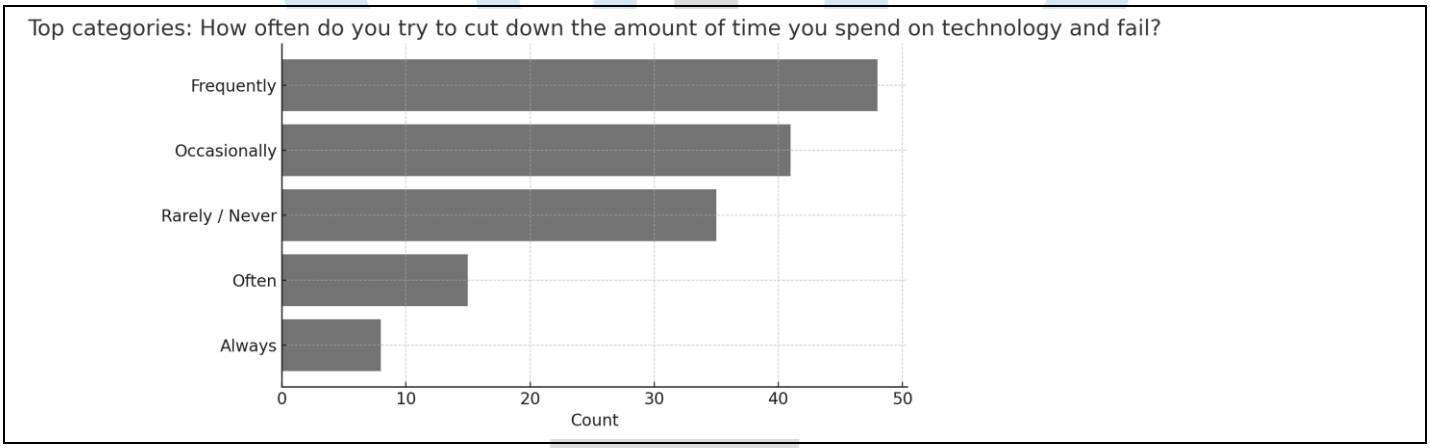


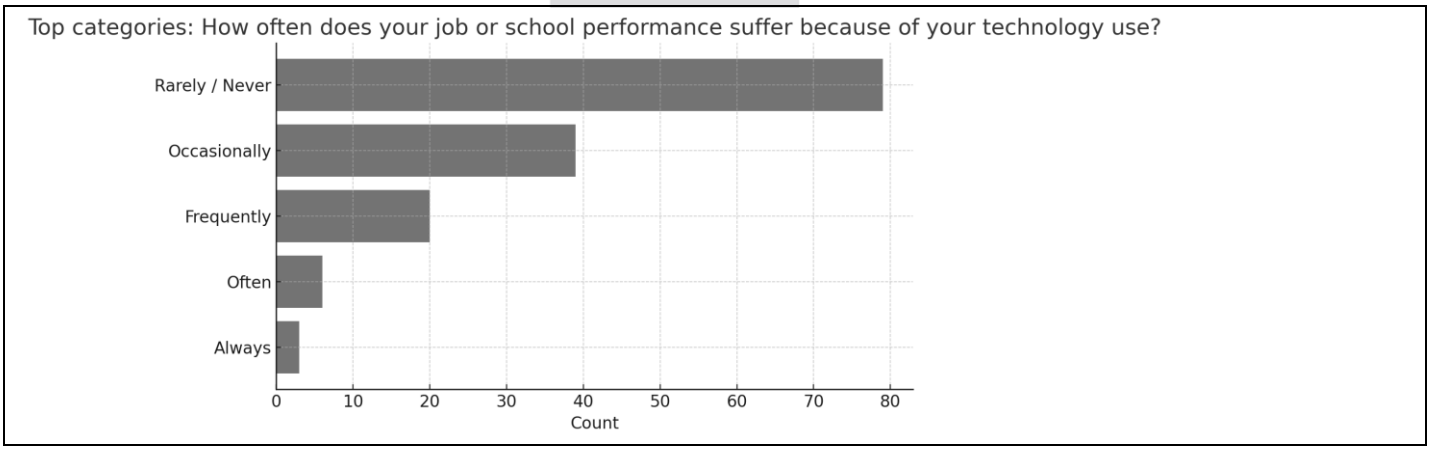
Top categories: How often do others in your life complain about the amount of time you spend on technology?

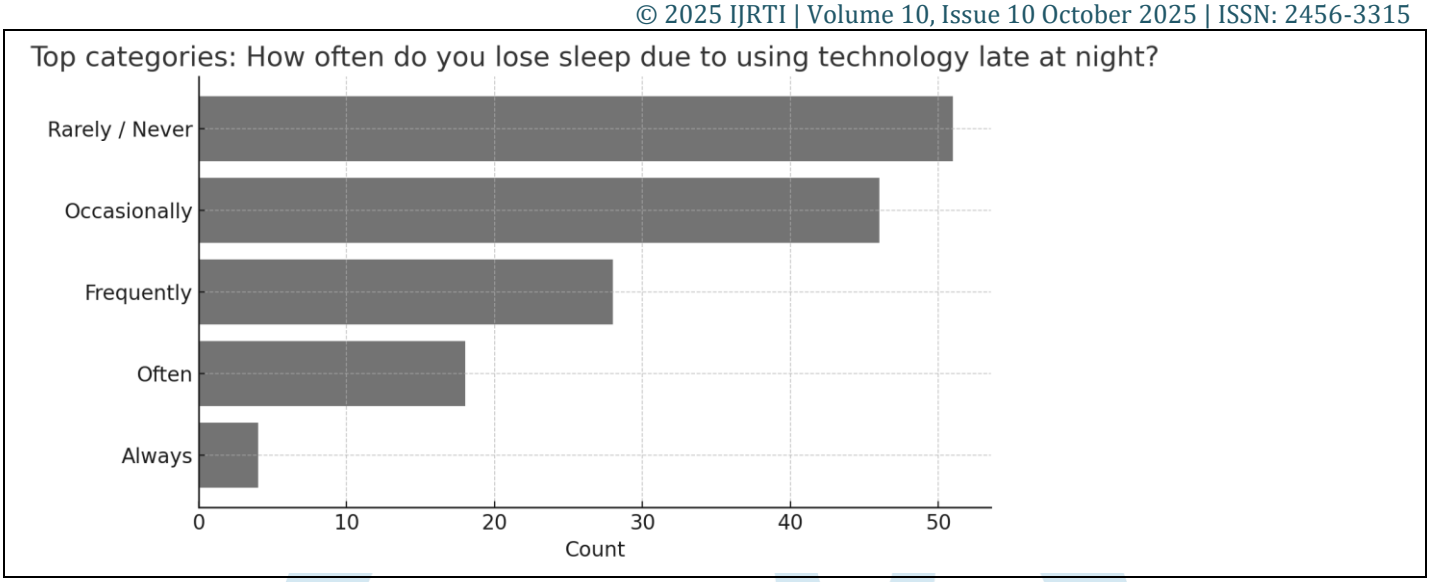


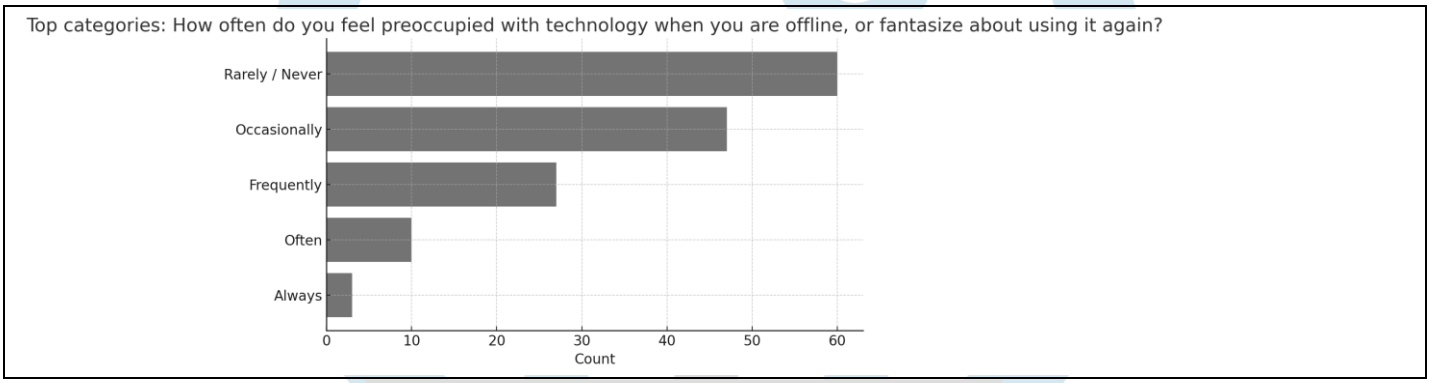

Top categories: How often do you find yourself saying "just a few more minutes" when you're using technology?
Occasionally
Frequently
Rarely / Never
Often
Always
0
10
20
30
40
50
Count

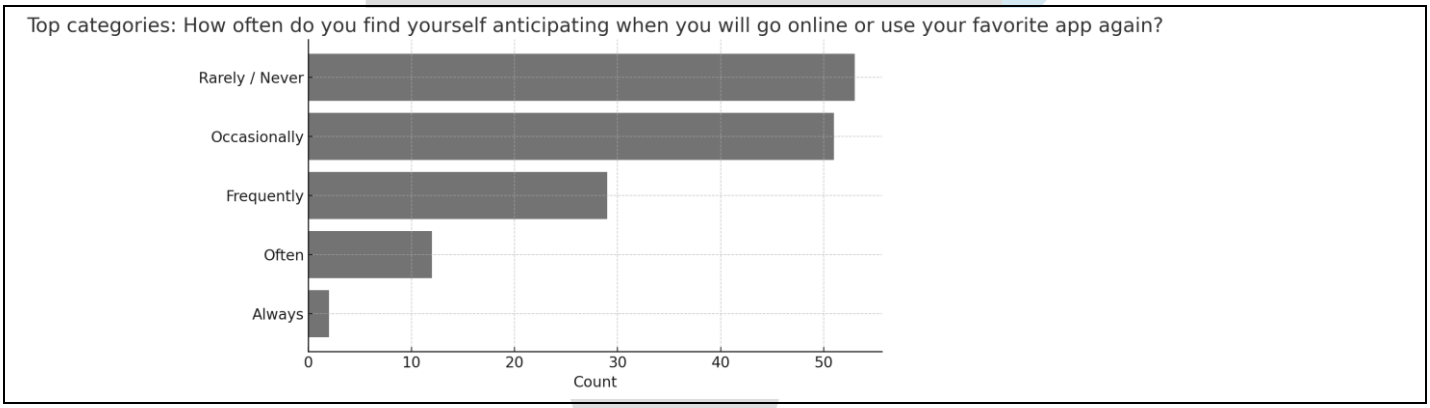

Top categories: How often do you become defensive or secretive when someone asks you what you do online or on a device?
Rarely / Never
Occasionally
Frequently
Often
Always
0
20
40
60
80
Count

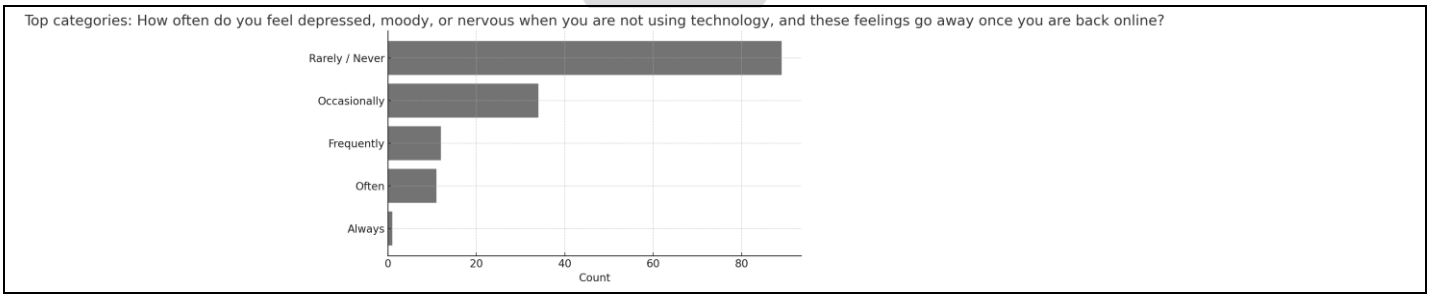

Top categories: How often do you try to cut down the amount of time you spend on technology and fail?
Frequently
Occasionally
Rarely / Never
Often
Always
0
10
20
30
40
50
Count


Top categories: How often does your job or school performance suffer because of your technology use?
Rarely / Never
Occasionally
Frequently
Often
Always
0
10
20
30
40
50
60
70
80
Count









Appendix C – Graphical Summaries

- **Figure 1:** Histogram of Technology Use Hours
- **Figure 2:** Platform Preference Distribution
- **Figure 3:** Scatterplot – Usage vs. Addiction Score
- **Figure 4:** Gender × Platform Use
- **Figure 5:** Correlation Heatmap

Appendix D – Consent Form (Excerpt)

Participation in this study is voluntary. All information provided will remain confidential and used solely for academic purposes. Participants may withdraw at any stage without penalty.