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Analysis of Time Spent by Youngsters on Social Media

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ABSTRACT:

In today's digital world, social media has a big impact on the daily lives of young people. Platforms like Instagram, WhatsApp, Facebook, and Snapchat help them communicate, connect, and have fun. They also shape opinions, actions, and lifestyle choices. While these platforms offer many benefits, too much use raises concerns about their negative effects on students' mental health, school focus, and physical well-being. This study looks at how much time young people spend on social media and how it affects their overall development.

To gather information, we surveyed over 100 students from different academic years. We examined daily online time, favorite platforms, behavior differences by gender, and perceived health impacts. We organized the data using Tableau. We used various visualization methods, including bar charts, heatmaps, bubble charts, box plots, and KPI indicators, to show patterns and trends. We also created interactive dashboards for a dynamic view of social media use based on age group, gender, academic year, and use frequency.

The analysis indicates that many students spend 2 to 4 hours a day on social media, with Instagram being the most popular platform among those surveyed. The study finds a strong link between heavy use and negative outcomes, such as lower academic performance, mental exhaustion, and higher stress levels. These problems were especially noticeable in specific age groups and among students who frequently exceeded moderate usage limits.

The results underline the need to raise awareness among students, educators, and policymakers about the importance of balanced social media use. By understanding young people's digital habits and recognizing the risks of overuse, this study adds to the discussion about promoting healthier online behaviors and finding ways for mindful engagement with social media.

Keywords: Social Media, Youth, Time Spent, Digital Habits, Mental Health, Academic Performance, Instagram, Tableau Visualization, Student Behavior, Online Engagement.

I. Introduction

In today's digital world, social media is a major part of daily life, especially for young people. Platforms like Instagram, WhatsApp, Facebook, and Snapchat are easy to access. Students often use these platforms for communication, entertainment, sharing information, and even for schoolwork. The straightforward use, engaging nature, and worldwide reach of these sites have changed how young people connect, learn, and express themselves. While social media offers benefits like building social connections and quick access to information, overuse can lead to serious issues.

Research shows that spending too much time on social media can negatively affect students' grades, mental health, physical health, and relationships. Common problems include lack of focus, lower productivity, anxiety, sleep issues, and feelings of isolation. Since students are among the most active users of social media, it is important to investigate how much time they spend online, which platforms they prefer, and the possible effects of these habits.

This study, titled "Analysis of Time Spent by Youngsters on Social Media," aims to explore these topics through a detailed analysis of survey data from over 100 students. The data includes important details such as gender, age, academic year, choice of platform, average daily time spent, and a self-reported impact score that reflects how social media affects their lifestyle and health. To make sure the data is reliable and clear, it was cleaned, organized, and analyzed using Tableau, a popular tool for data visualization and analysis.

The project uses interactive dashboards, bar charts, heatmaps, bubble plots, and key performance indicators to provide a thorough look at student behavior and online activity patterns. By revealing trends among different demographic groups and connecting time spent online with perceived impacts, this research aims to provide useful insights for educators, parents, policymakers, and the students themselves. Ultimately, the study emphasizes the need to balance the benefits of social media with mindful use to promote healthier digital habits among young people.

II. Literature Review

The widespread use of social media has led to significant research on its impact on students' academic performance, mental health, and daily life. Previous studies have examined various aspects, such as usage patterns, differences between genders, health effects, and the educational benefits of social networking sites.

Smith and Anderson (2018) [1] surveyed social media use among U.S. youth. They found that people aged 18 to 29 are the most active users, spending their daily time primarily on entertainment and communication. Although the study was thorough, it did not explore academic effects or health outcomes.

Kuss and Griffiths (2017) [2] looked into addictive behaviors linked to prolonged social media use. They identified symptoms like compulsive checking, withdrawal effects, and a drop in productivity. However, their work remains largely theoretical and does not include visual data analysis of student behavior.

Twenge et al. (2018) [3] studied how screen time relates to mental health in teenagers. Their results showed that increased social media use raises the risks of depression and loneliness. However, they mostly focused on psychological effects without considering factors like academic year or gender.

Junco (2012) [4] analyzed how Facebook use affects college students' academic performance. The study found that spending more time on Facebook was linked to lower GPAs. While the findings are valuable, the study only looked at Facebook and neglected other popular apps like Instagram or WhatsApp.

Paul, Baker, and Cochran (2012) [5] compared social media users and non-users, finding that heavy users performed worse academically. The study pointed out distraction as a major factor but did not use visual methods to show trends between groups.

Tess (2013) [6] investigated the role of social networking in higher education. She noted opportunities for collaborative learning and sharing information on platforms. Despite its positive outlook, the study did not consider the risks of overuse or measure time spent.

Al-Menayes (2015) [7] surveyed university students in the Middle East and found that moderate social media use boosts social connections, while excessive use is linked to stress. Although this regional focus offers valuable cultural insights, it limits the generalizability of the findings.

Cohen and Khalaila (2018) [8] evaluated the effect of social media use on students' sleep quality. They found that using social media at night significantly disrupts sleep patterns, negatively affecting both health and academic performance. However, the study did not categorize usage or examine different demographic groups.

Levenson et al. (2016) [9] explored how using multiple platforms affects behavior. They concluded that frequently switching between sites like Facebook, Twitter, and Instagram correlates with higher anxiety levels. This finding highlights the issue of platform variety, but it lacks a detailed breakdown of how time is allocated.

Bányai et al. (2017) [10] researched social media addiction among high school and university students. They confirmed that heavy usage can lead to internet addiction and reduce offline social interactions. While impactful, this study did not use visual tools to represent behavioral insights.

In contrast, the proposed work builds on these previous studies by combining survey-based data collection with interactive visualization in Tableau. Unlike earlier studies that focused primarily on single platforms (Junco, Paul et al.) or had a narrow focus on mental health (Twenge et al., Cohen & Khalaila), this research integrates various factors such as gender, age, academic year, average time spent, and self-reported impact scores. By using dashboards, heatmaps, and KPI indicators, the study offers a clear and thorough view of social media habits among students. This visualization approach not only confirms existing worries about excessive use but also highlights trends specific to different demographics, providing practical insights for educators, policymakers, and students.

III. Methodology

Existing Methodology

• Manual Survey Analysis

- Data is often collected through traditional surveys, either using paper forms or Google Forms.

- Analysis is limited to Excel sheets or basic charts, which do not provide deep insights.

• Static and Non-Interactive Visuals

- Conventional studies rely on bar or pie charts that don't change.

- Users cannot filter, drill down, or explore data based on demographics.

• No Real-Time Segmentation

- Findings are combined and generalized.

- There is no way to dynamically segment results by factors like gender, academic year, or platform preference.

• Minimal KPI Tracking

- Results usually consist of raw counts and averages.

- There is no detailed calculation of indicators like the number of excessive users, the most popular platform, or the average health impact.

Proposed Methodology (Using Tableau with Navigation)

• Data Collection & Cleaning

- We conducted a survey with over 100 students, capturing details such as gender, age, academic year, time spent, preferred platforms, and self-reported impact.

- The data was cleaned, organized, and imported into Tableau for analysis.

• Interactive Dashboards with Navigation

- We designed multi-page dashboards linked with navigation buttons such as Next and Back for a smooth exploration experience.

- Users can navigate between different sections like usage patterns, impact, and trends in an app-like manner.

• Advanced Visualizations

We used several types of visualizations for more in-depth insights:

- Treemap to show usage intensity.

- Bubble Charts and Boxplots to analyze impact across gender groups.

- Pie Charts to highlight platform popularity.

- Heatmaps to study correlations between age and behavior.

- Bar and Line Charts to track platform usage trends and time distribution.

• Dynamic Filters & Parameters

- We included filters for Gender, Age Group, Academic Year, and Platform.

- Parameters were added to set usage thresholds and change color schemes for better customization.

• KPI Blocks with Summary Metrics

We displayed Key Performance Indicators (KPIs) prominently, including:

- Percentage of Excessive Users.

- Average Daily Time Spent.

- Average Impact Score.

- Most Used Platforms.

• User-Centric Storytelling

- We styled the dashboards with professional design themes, institutional logos, and section headers.

- The focus is on simplicity and readability, making it easy for non-technical users to understand insights effectively.
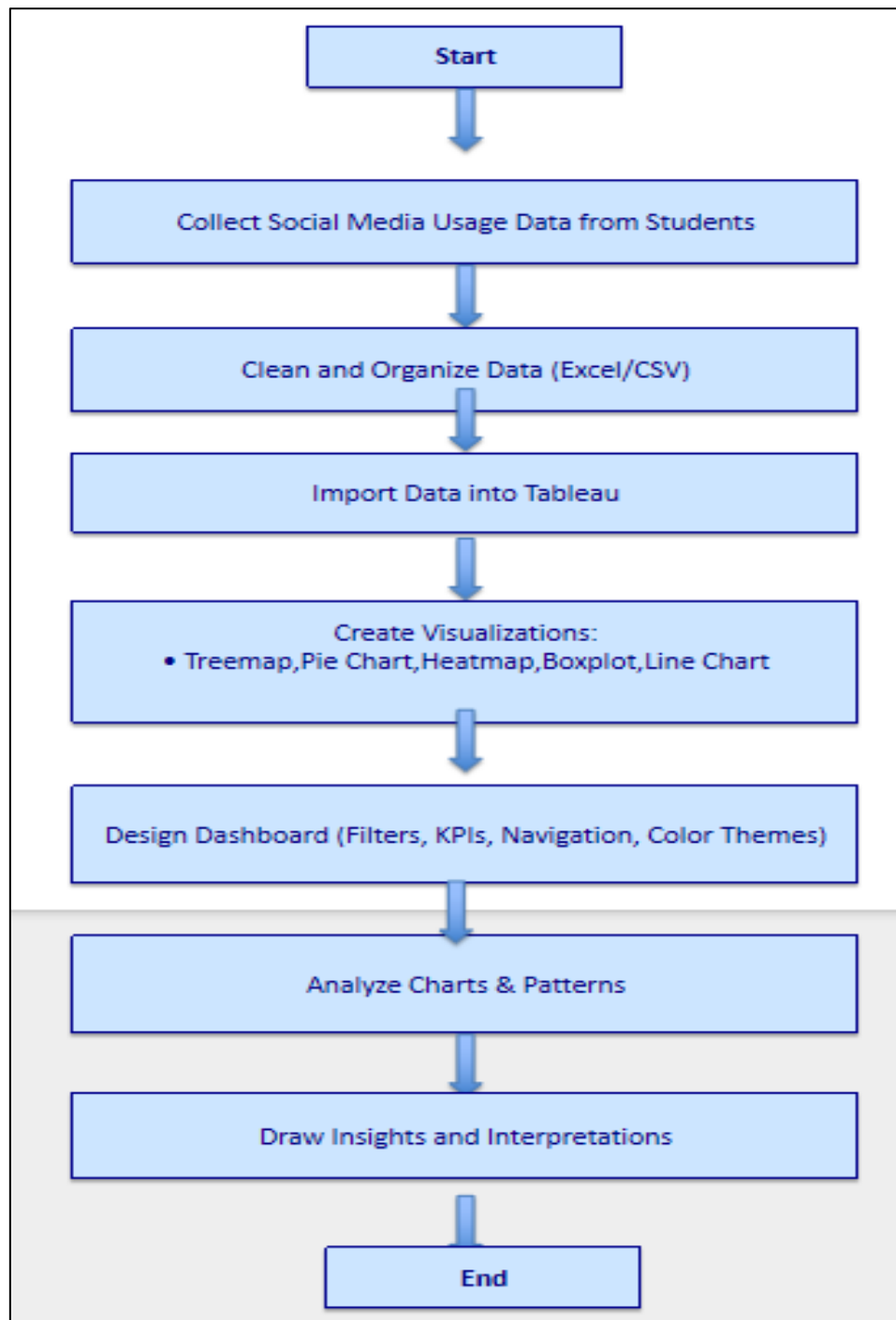
IV. System Design and Architecture

Fig. 1: Conceptual Framework of Time Spent on Social Media by Youngsters

Diagram Overview

1. Start

 - This marks the beginning of the process flow.

2. Collect Social Media Usage Data from Students

 - Collect primary data through surveys about time spent, platforms, and perceived impact.

3. Clean and Organize Data (Excel/CSV)

- Process raw survey data by removing inconsistencies and missing values. Structure it into a usable format.

4. Import Data into Tableau

- Upload the prepared dataset into Tableau for visualization and analysis.

5. Create Visualizations

- Use multiple chart types, including:

 - Treemap (usage intensity)

 - Pie Chart (platform popularity)

 - Heatmap (age vs behavior)

 - Boxplot (impact by gender)

 - Line/Bar Charts (time trends, platform use)

6. Design Dashboard (Filters, KPIs, Navigation, Color Themes)

 - Develop interactive dashboards with filters for gender, age, and academic year. Include KPI blocks and professional styling.

7. Analyze Charts & Patterns

 - Observe patterns across demographics and usage categories.

8. Draw Insights and Interpretations

 - Extract key findings about social media's impact on students' daily lives and well-being.

9. End

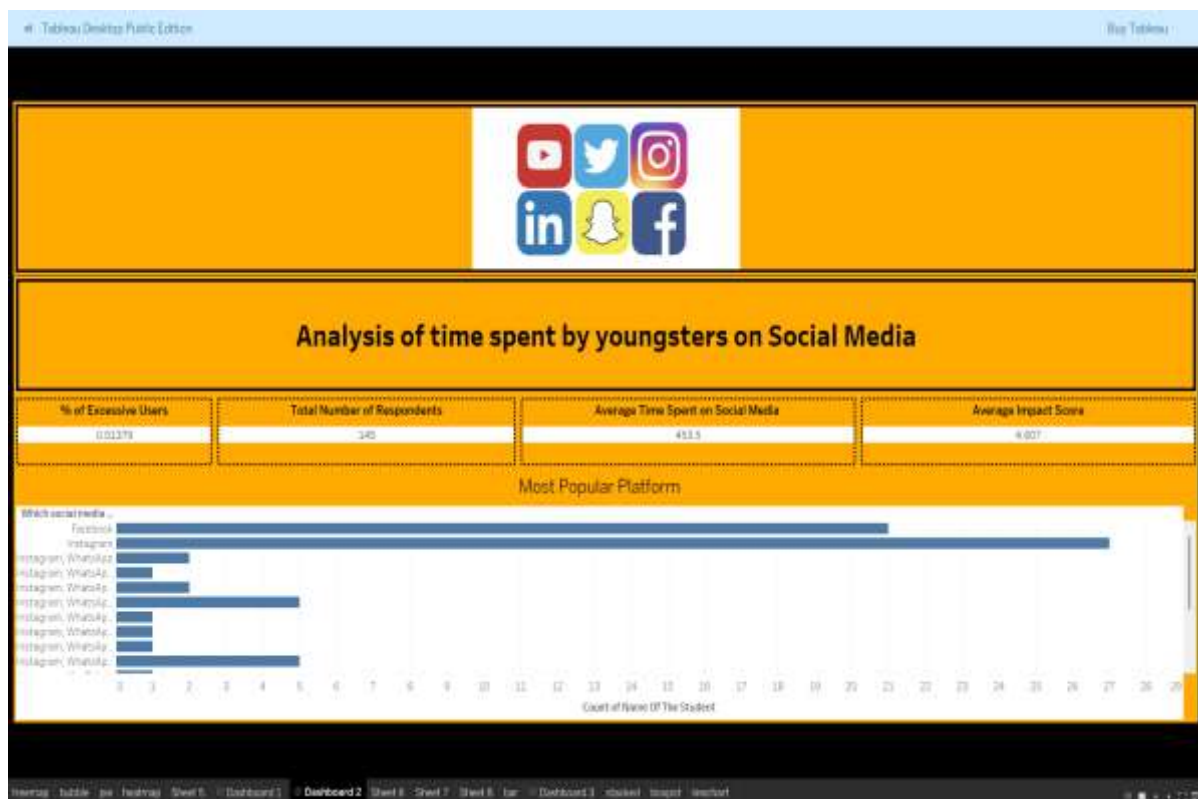 - This marks the completion of the methodology workflow.

V. Implementation

Fig 2: Home page

KPI Dashboard, Overview of Social Media Usage

Description

This dashboard offers a summary of the dataset with key performance indicators (KPIs) listed at the top, including:

• Percentage of excessive users

• Total number of respondents

• Average time spent on social media

• Average impact score

It also features a bar chart that displays the most popular platforms among students, with Instagram and WhatsApp as the top choices.

Key Factors/Features

• Quick overview of the dataset using KPI blocks.

• Helps identify dominant platforms and average usage time.

• Aids decision-making by showing important statistics at a glance.

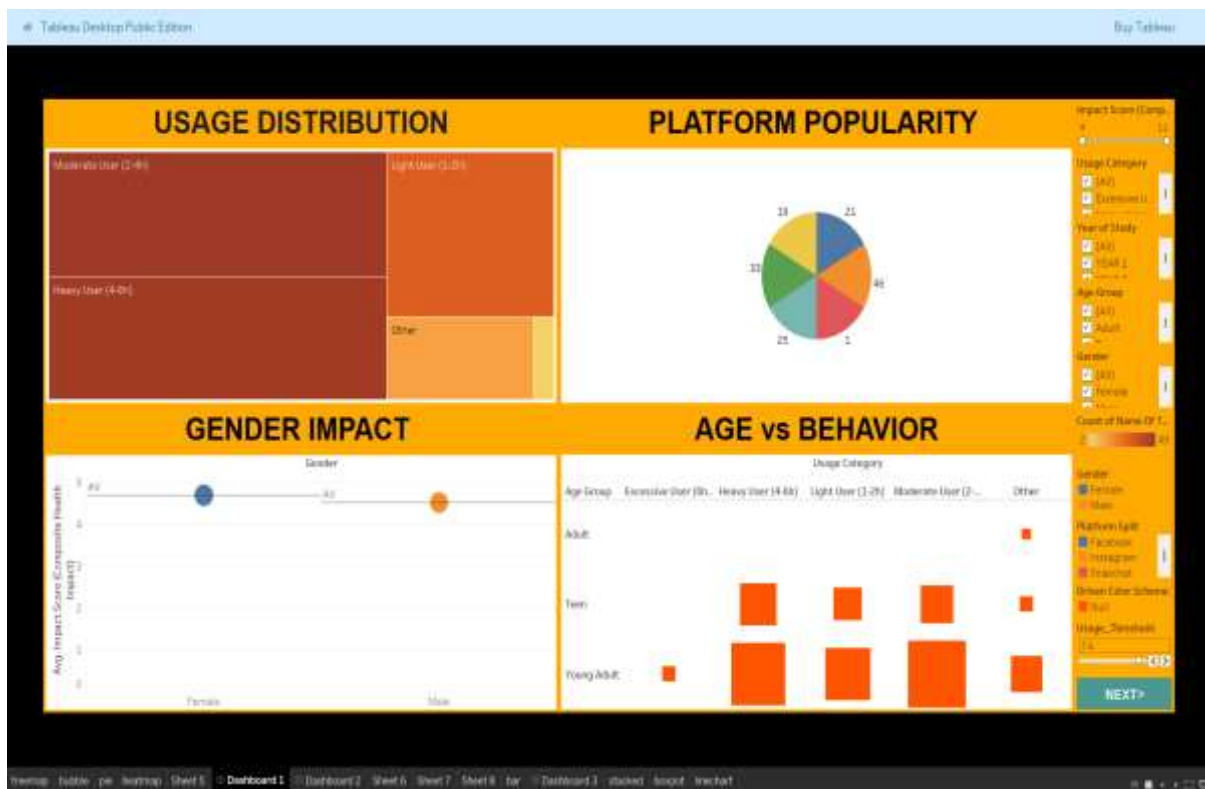• Professional design with logos, branding, and highlights to engage viewers.

Fig 3: Dashboard 1

Multi-Dimensional Dashboard, Usage & Behavior Analysis

Description

This dashboard examines various aspects of social media usage with four interactive visualizations:

• **Treemap,** which categorizes users as light, moderate, or heavy based on daily hours spent.

• **Pie Chart,** which shows platform popularity.

• **Bubble Chart,** which illustrates the gender impact on perceived health scores.

• **Heatmap**, which reveals the relationship between age groups and usage behavior.

Key Factors/Features

• It allows comparisons across demographics, such as age, gender, and year of study.

• Interactive filters enable customized exploration of platforms, gender, and usage categories.

• It highlights behavioral patterns, like heavy usage among certain age groups.

• It provides insights into distribution, popularity, and health impact from multiple angles.

Fig 4: Dashboard 2

Advanced Dashboard, Gender, Year, and Time Analysis

Description

This dashboard provides a deeper look through comparative and trend-based visualizations:

• **Boxplot**, Shows the impact score distribution across genders.

• **Stacked Bar Chart**, Illustrates social media usage broken down by year of study and platform.

• **Line Chart**, Displays changes in time spent on social media throughout the survey period.

Key Factors/Features

• Gender comparison of health impact, male vs female.

• Yearly breakdown of platform usage helps understand differences at the academic level.

• Trend analysis of time spent highlights usage spikes or irregularities.

• Combines statistical, behavioral, and temporal views in one dashboard.

VI. Results and Discussion

1. Daily Usage Patterns

The analysis shows that most young people spend 2 to 4 hours each day on social media. A large number also reported spending 4 to 6 hours, showing that digital interaction is a big part of their daily lives. This means social media is no longer just for occasional use; it has become vital for communication, entertainment, and gathering information.

• **Key Finding:** Frequent logins suggest that social media platforms are addictive. Users are often drawn in by notifications, trends, and peer interaction.

• **Implication:** Using social media excessively may hinder academic performance and impact mental health, as it takes time away from physical activities and face-to-face interactions.

2. Platform Preferences

The results indicate that platforms like Instagram, WhatsApp, and YouTube are most popular among young people. Although Facebook and Twitter are still used, they are less favored by this age group.

• **Key Finding:** Young users prefer platforms that provide visual content, instant messaging, and short videos. These features meet their demand for quick information and interactive experiences.

• **Implication:** The popularity of visual and real-time platforms shows a change in communication styles, where text is often replaced by memes, reels, stories, and voice messages.

3. Purpose of Usage

The findings suggest that social media serves multiple purposes, including entertainment, education, networking, and news updates. While entertainment is the main reason for use, many respondents also mentioned leveraging social media for academic resources, online learning groups, and skill development.

• **Key Finding**: Social media acts as both a learning tool and a distraction, revealing its complex role in the lives of young users.

• **Implication:** Effective time management and targeted engagement with specific platforms could turn social media into an aid for academic success instead of a hindrance.

4. Psychological and Social Effects

The diagrams provide insights into the effects of prolonged usage. Some young individuals reported stress, anxiety, and fear of missing out when they aren't on their devices. However, many also felt more connected and motivated when they engaged online.

• **Key Finding**: Social media has a dual effect; it boosts connectivity but can also lead to mental health problems if not used mindfully.

• **Implication:** Programs focusing on awareness and digital well-being should be implemented to help students balance their online and offline lives.

5. Comparative Observations

• Younger respondents (teenagers) usually spend more time on entertainment-focused apps like Instagram, TikTok, and YouTube, while older respondents (college students) tend to use platforms for career networking and academic activities.

• The amount of time spent also varies by gender and social circles. Female respondents generally lean more towards social networking and communication, while male respondents show more interest in online gaming and streaming services.

Discussion Summary

Overall, the results show that young people's time on social media is increasing, with clear effects on their lifestyles, academics, and mental health. While social media can be a powerful tool for learning, networking, and building global awareness, it also carries risks, including decreased physical activity, shorter attention spans, and dependency.

Thus, the discussion calls for:

• Balanced usage through effective time management.

• Programs to raise awareness about digital well-being.

• Encouraging the constructive and educational use of social media.

VIII. Conclusion

The study on Time Spent on Social-Media by Youngsters provides important insights into how young people use digital platforms. It examines usage trends across various platforms, age groups, and reasons for use. The research indicates that while social media can help people connect, excessive use can negatively impact academics, mental health, and life balance.

Key Findings of the Study:

• Usage Trends: Youngsters spend an average of 3 to 5 hours each day on social media. The most popular platforms are Instagram, WhatsApp, and YouTube.

• Purpose of Use: Young people often use social media for entertainment, communication, and gathering information. They use it less for schoolwork or skill-building activities.

• Impact on Lifestyle: High social media use is linked to lower physical activity, sleep problems, and fewer face-to-face interactions.

• Academic Influence: Students who use social media moderately tend to perform better in school. In contrast, heavy users often struggle to focus and be productive.

• Gender and Age Variations: Female users typically focus more on sharing content and networking, while male users generally engage more with gaming and video platforms.

Contributions of the Study:

• Awareness Creation: It helps people understand how excessive social media use can affect academic performance, mental health, and social connections.

• Data-Driven Insights: The findings provide evidence for educators, parents, and policymakers to raise awareness and support programs that promote digital wellness.

• Balanced Perspective: Unlike earlier studies that mainly highlighted the negatives, this study recognizes both the benefits and downsides of social media, emphasizing the need for moderation.

• Practical Recommendations: It suggests taking breaks from social media, offers guidelines for parental involvement, and recommends workshops to help young people manage their usage.

Comparative Edge:

Previous studies, like Kuss and Griffiths' research on social media addiction in 2017 and Twenge's examination of smartphone effects on teenagers in 2019, mostly focused on psychological effects. This study takes a broader approach by linking time spent on social media to academic performance, lifestyle habits, and social interactions. This wider view offers more helpful insights for different stakeholders.

In conclusion, the research suggests that when used wisely, social media can be a useful tool for learning, networking, and entertainment. However, too much use can harm physical health, mental well-being, and academic success. By balancing online and offline activities and receiving support from schools, families, and digital literacy programs, young people can make social media a positive part of their growth.

IX. Acknowledgement

X. References

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