

Analysis of Social Media use Among Students using Approaches Statistics and Probability

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Social media has become an important part of students' lives as a medium for communication, entertainment, and information seeking. This study aims to analyze social media usage patterns among university students using descriptive statistics and probability approaches. Data were collected through a survey of 30 students using Google Forms. The observed variables included gender, semester level, residence status, duration of social media usage, purpose of use, and Grade Point Average (GPA). The results showed that 76.67% of respondents were female and 50% were second-semester students. Furthermore, 63.33% of students used social media for more than eight hours per day, while entertainment was the primary purpose of use (50%). Probability analysis indicated that the likelihood of a student using social media for more than eight hours daily was 0.633. The findings suggest that social media has become a major necessity for students, requiring proper time management to avoid negative impacts on academic activities.

Keywords: Social Media, University Students, Descriptive Statistics, Probability

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1. Introduction

The development of information and communication technology has brought significant changes to various aspects of life in society, including the way individuals interact, obtain information, and carry out daily activities. One of the most rapid forms of technological development is the presence of social media as an internet-based communication platform that allows users to create, share, and exchange information quickly and without limitations of space and time. Social media not only functions as a means of communication, but has also developed into a medium for learning, marketing, entertainment, and a source of information used by the public, including students. (Kaplan & Haenlein, 2010) The advent of social media has transformed conventional communication patterns into more interactive and efficient digital communication, enabling users to connect with various parties in a relatively short time.

The rapid growth of social media is inseparable from the increasing number of internet users in Indonesia from year to year. According to a report by the Indonesian Internet Service Providers Association (APJII), the number of internet users in Indonesia will reach 221.5 million by 2024, or approximately 79.5% of the total national population. This data shows that internet access has become a vital necessity in modern society. The productive age group, including students, is the most dominant internet user due to their academic, social, and entertainment activities. This condition indicates that internet and social media use have become an integral part of student life, supporting various daily activities. (APJII, 2024).

College students are a group with a high level of adaptability to digital technology developments. As a generation growing up in the digital age, students utilize social media for a variety of purposes, such as communicating with friends and professors, accessing learning materials, seeking academic information, keeping up with the latest news, and even seeking entertainment. According to Nasrullah (2023) Social media makes it easy for users to build virtual social interactions through various features that enable fast and effective two-way communication. Therefore, social media has become one of the most frequently used platforms by students to support both academic and non-academic activities.

On the other hand, the increasing use of social media also raises various issues that require attention. Excessive social media use can reduce learning productivity, disrupt concentration, and cause students to spend more time on entertainment than on academics. Research conducted by Giunchiglia et al. (2020) Studies show that high social media use is associated with changes in student learning patterns and has the potential to impact academic performance. While social media has various benefits in supporting the learning process, uncontrolled use can negatively impact student learning effectiveness and academic achievement.

Furthermore, the proliferation of various social media platforms such as Instagram, TikTok, WhatsApp, YouTube, and X has given students a wide choice of media to choose from, tailored to their individual needs. Each platform offers distinct characteristics and functions, influencing student social media usage patterns. Some students use social media to obtain information and support academic activities, while others primarily use it for entertainment and social interaction. These differences in usage purposes are interesting to analyze further using a statistical approach to identify trends in student social media usage behavior.

In statistics, data obtained from a survey can be processed and analyzed to obtain more meaningful information. Descriptive statistics allow researchers to describe respondent characteristics based on frequency, percentage, average, median, and other statistical measures. (Sugiyono, 2023).

Through descriptive statistical analysis, students' social media usage patterns can be systematically identified, resulting in objective information regarding social media usage habits among students.

In addition to using descriptive statistics, this study also applies the concept of probability to determine the likelihood of an event occurring based on the data obtained. Probability is a branch of mathematics used to measure the likelihood of an event occurring under certain conditions. (Kolhar et al., 2021) In the context of this research, probability is used to calculate the likelihood of students using social media for a specific duration, the likelihood of using social media for a specific purpose, and the likelihood of other characteristics emerging in the survey data. A probability approach can provide a clearer quantitative picture of students' behavioral tendencies in using social media.

Based on the above description, this study was conducted to analyze social media use among college students using statistical and probability approaches. This study is expected to provide an overview of the characteristics of social media users, their usage patterns, and the potential for various phenomena related to social media use among college students. The results of this study are expected to serve as a source of information for students, lecturers, and educational institutions in understanding student digital behavior so that social media use can be directed in a more positive and productive manner.

2. Method

This study uses a quantitative method with a descriptive approach that aims to analyze social media usage patterns among students using statistical and probability approaches. Sugiyono (2023) Quantitative research is a research method used to examine a specific population or sample by utilizing numerical data analyzed using statistical techniques. A descriptive approach was used to describe respondent characteristics and social media usage patterns based on survey data. The research was conducted online in May 2026, utilizing Google Forms as a data collection tool, facilitating the distribution of questionnaires to respondents.

The population in this study were college students who actively use social media in their daily lives. The research sample consisted of 30 students selected using simple random sampling, a sampling technique that provides an equal opportunity for each member of the population to become a research respondent (Sugiyono, 2023). This technique was chosen to minimize bias in respondent selection and obtain data that can describe the general conditions of social media use. The respondents involved came from various semesters with diverse characteristics, thus providing more representative information regarding social media usage habits among college students.

Data collection was conducted through a questionnaire containing questions regarding gender, semester, residence, duration of social media use, social media platform used, purpose of social media use, and Cumulative Grade Point Average (GPA). The data obtained were then analyzed using descriptive statistics and probability. Descriptive statistical analysis was conducted by calculating frequencies and percentages to describe respondent characteristics and social media usage patterns, while probability analysis was used to calculate the probability of an event occurring based on the data obtained. According to Walpole et al. (1993) Probability is a mathematical measure used to determine the likelihood of an event occurring. Through these two approaches, this study is expected to provide an objective picture of social media usage patterns among college students.

3. Results and Discussion

Respondent Characteristics Based on Gender

Table 1. Distribution Of Respondents By Gender

Gender	N	%
Man	7	23.33
Woman	23	76.67
Total	30	100

Based on Table 1, the majority of respondents were female, 23 (76.67%), while there were 7 male respondents (23.33%). These results indicate that female students participated more frequently in the research than male students.

Respondent Characteristics Based on Semester

Table 1. Distribution of Respondents by Semester

Semester	N	%
Semester 2	15	50.00
Semester 3	2	6.67
Semester 4	6	20.00
Semester 5	1	3.33
Semester 6	4	13.33
Semester 7	2	6.67
Total	30	100

Based on Table 2, the majority of respondents, 15 people (50%), were second-semester students. This indicates that the study respondents were predominantly freshman students.

Respondent Characteristics Based on Place of Residence

Table 2. Distribution of Respondents Based on Place of Residence

Residence	N	%
House	11	36.67
Boarding house/contract	19	63.33
Total	30	100

Based on Table 3, most respondents live in boarding houses or rented accommodation, as many as 19 people (63.33%), while 11 people (36.67%) live with their families at home.

Duration of Social Media Use

Table 3. Duration of Social Media Usage per Day

Duration of use	N	%
< 5 hours	4	13.33
5-8 hours	7	23.33
8-11 hours	10	33.33
>11 hours	9	30.00
Total	30	100

Based on Table 4, the majority of students, 19 (63.33%), use social media for more than 8 hours per day. This finding indicates that social media has become an important part of students' daily activities.

Purpose of Using Social Media

Table 4. Purpose of Using Social Media

Purpose of use	N	%
Entertainment	15	50.00
Information/news	7	23.33
Communication	4	13.33
Education	3	10.00
Other	1	3.33
Total	30	100

Based on Table 5, the most dominant purpose for using social media is entertainment, at 50%. Meanwhile, social media use for educational purposes only accounts for 10%.

Distribution of Respondents' GPA

Table.5. Distribution of Respondents' GPA

GPA Range	N	%
< 2.75	1	3.33
2.75 – 3.00	4	13.33
3.01 – 3.50	10	33.33
3.51 – 4.00	15	50.00
Total	30	100

Based on Table 6, the majority of respondents (15 respondents) had GPAs in the 3.51–4.00 range. This indicates that the majority of students in the study had relatively good academic achievement.

Probability Analysis

Table 6. Probability Calculation Results

Incident	Calculatio n	Probabilit y
Students use social media > 8 hours/day	$\frac{19}{30}$	0.633
Students use social media for entertainment	$\frac{15}{30}$	0.500

Based on Table 7, the probability of a student using social media for more than 8 hours per day is 0.633, or 63.3%. Meanwhile, the probability of a student using social media for entertainment purposes is 0.500, or 50%.

A. Discussion

The research results show that social media has become an integral part of college students' lives. The high percentage of students using social media for more than eight hours per day indicates that social media is used not only for communication but also for entertainment, information seeking, and other social activities. This finding aligns with the opinion of Nasrullah (2023) which states that social media has developed into a digital interaction space that allows users to carry out various activities on one platform simultaneously.

The dominance of social media use for entertainment purposes indicates that students use it more as a means of relaxation and to fill their free time than as a learning tool. This research finding aligns with the findings of Kircaburun et al. (2020) which states that one of the main motivations for students in using social media is to obtain entertainment and fill their free time (passing time). In addition, Kolhar et al. (2021) also found that most students use social media for non-academic activities, such as entertainment and social interaction, rather than for learning. This indicates that social media has a high appeal because it can provide a variety of interesting, easily accessible content that is tailored to users' needs and interests.

Therefore, it is not surprising that entertainment is the most dominant social media use purpose among students in this study.

Interestingly, despite the high frequency of social media use among respondents, the majority of students still had good GPAs. 83.33% of respondents had GPAs above 3.00, and half of them had GPAs in the 3.51–4.00 range. These findings suggest that high social media use does not always negatively impact academic achievement. These results support research. Giunchiglia et al. (2020) which states that the impact of social media on academic achievement is greatly influenced by the purpose of use, time management skills, and the level of student discipline in organizing learning activities.

From a probability perspective, the probability of students using social media for more than eight hours per day is 63.3%. This probability value indicates that high-duration social media use is a fairly common phenomenon among students. Furthermore, the probability of using social media for entertainment purposes, at 50%, indicates that half of students use social media as their primary source of daily entertainment. This condition indicates that social media has a strong influence on student activity patterns in the digital age.

Overall, the research results show that social media has become a primary need for students. While it offers various benefits, such as ease of communication and access to information, excessive social media use still needs to be managed properly to prevent it from disrupting academic activities. Therefore, students need to improve their time management skills and utilize social media more productively so that the benefits gained can support their learning and self-development processes.

4. Conclusion

Based on the results of research on social media use among university students using statistical and probability approaches, it can be concluded that social media has become an important part of students' daily lives. The analysis results show that the majority of respondents are second-semester students and are predominantly female. Most respondents use social media with high intensity, with 63.33% of students accessing social media for more than eight hours per day. These findings indicate that social media not only functions as a means of communication but has also become a primary medium for obtaining information, entertainment, and social interaction.

The study also showed that the most dominant purpose of social media use was entertainment, at 50%, followed by information seeking, communication, and education. Although most respondents had a high duration of social media use, the majority of students still had a good Grade Point Average (GPA), ranging from 3.01 to 4.00. This indicates that high social media use does not always negatively impact academic achievement if students are able to manage their time and use social media wisely.

Based on probability analysis, the probability of a student using social media for more than eight hours per day is 0.633, or 63.3%, while the probability of a student using social media for entertainment purposes is 0.500, or 50%. These results indicate that high-duration social media use for entertainment purposes is a common phenomenon among students. Therefore, awareness is needed in managing social media usage time so that the benefits obtained can support academic activities and self-development without reducing learning productivity.

5. References

- APJII. (2024). *Survei Penetrasi Internet Indonesia 2024*. Asosiasi Penyelenggara Jasa Internet Indonesia. <https://survei.apjii.or.id/>
- Giunchiglia, F., Zeni, M., Gobbi, E., Bignotti, E., & Bison, I. (2020). Mobile social media usage and academic performance. *Computers in Human Behavior*, 82, 177–185.
- Kaplan, A. M., & Haenlein, M. (2010). Users of the world, unite! The challenges and opportunities of Social Media. *Business Horizons*, 53(1), 59–68.
- Kircaburun, K., Alhabash, S., Tosuntaş, Ş. B., & Griffiths, M. D. (2020). Uses and gratifications of problematic social media use among university students: A simultaneous examination of the Big Five of personality traits, social media platforms, and social media use motives. *International Journal of Mental Health and Addiction*, 18(3), 525–547.
- Kolhar, M., Kazi, R. N. A., & Alameen, A. (2021). Effect of social media use on learning, social interactions, and sleep duration among university students. *Saudi Journal of Biological Sciences*, 28(4), 2216–2222.
- Nasrullah, R. (2023). Media sosial: Perspektif komunikasi, budaya, dan sosioteknologi. *Bandung: Simbiosis Rekatama Media*, 2016, 2017.
- Sugiyono, P. D. (2023). Statistika untuk penelitian. *Bandung: CV. Alfabeta*, 21.
- Walpole, R. E., Myers, R. H., Myers, S. L., & Ye, K. (1993). *Probability and statistics for engineers and scientists* (Vol. 5). Macmillan New York.