Social Media Influence on Academic Performance among University Students

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Abstract
This study is a quantitative analysis of the social media influence on academic performance of Universiti Teknologi MARA (UiTM) Negeri Sembilan branch Seremban Campus students. This study is intended to look up whether there is an association between social media usage on academic purposes and students' academic performance. Other than that, the researcher wanted to investigate the factors that affect the academic performance of students. To measure the main factors that influence academic performance, 374 students from three faculties were sampled through an online survey using a simple random sampling technique for this study. The main objectives of this study was solved using Multiple Linear Regression(MLR) and Chi-Square Test of Independence analysis. The results show that the use of social media on academic purposes has an association on the academic performance of the students in Universiti Teknologi Mara Negeri Sembilan Branch Seremban campus. The study also discovered that students who spent more time on social media and constantly checking on the notifications tend to have lower CGPA.
Keywords: Academic Performance, Social Media Influence, Multiple Linear Regression, Chi-Square Test of Independence

Introduction
With the use of social media, individuals are able to create, share, and exchange content, ideas, and information in real time. It has completely changed how individuals engage with one another and how people communicate, work together, and build connections with others. There are many different sorts and shapes of social media on the internet, but Facebook, Twitter, Path, Instagram, You tube, Line, and blogs, among others, are the most popular and well-known, (Kamuh, 2014). Students' use of social media can impact them in both good and bad ways. For instance, students utilize social media to access or share educational resources, engage with project team members, and connect with lecturers to

have in-person discussions about lecture topics. However, students may also suffer consequences from excessive social media use.

The research objectives of the study are:

1. To determine the association between social media usage on academic purposes and students' academic performance.
2. To investigate the factors that affect the academic performance of students.

Literature Review

This section discusses the important variables related to the above study.

Time Spent On Social Media

Digital users around the world now spend 1 hour and 58 minutes every day on social networks and messaging. Since 2012, this amount has gone up by more than 20 minutes (Akakandelwa & Walubita, 2018). Al-Menayes et al (2015) found that the students' academic performance suffers as a result of how much time they spend on social media. One's academic performance drops with the amount of time they spend on social media. This implies that the time spent on social media was probably time that should have been spent on studies. Because they do not devote enough attention to it, heavy users of social media are more likely to perform poorly on tests and assignments. Research done by Shen (2019) shows that biology undergraduate students in Chinese universities spend an average of two to three hours each day on social media websites, which cuts down on study time and could be one reason why the students' GPA is low.

Social Media Platforms

The rise and widespread use of social networking sites (SNS) is a major development of Web applications over the past ten years, known as Web 2.0. SNS include sites like Myspace, Facebook, LinkedIn, Twitter, Flicker, Instagram, WhatsApp, Tango, Line, Yahoo, Hike, WeChat, Skype, Imo, BBM, and Viber, among others (Akakandelwa & Walubita, 2018). The research by Otu (2015) revealed that all the respondents have multiple social media accounts. Among students, WhatsApp was found to be the most widely used social media site, with 99.5% of respondents using it. Facebook, Twitter, Instagram, and Skype were listed in that sequence after that. Other social media networks including Snapchat, LinkedIn, Telegram, IMO, Google+, kik, WeChat, and Snapchat were also mentioned by a few of the respondents. The most popular platform, according to Alomari (2019), was Instagram, which was then followed by Facebook, Snapchat, Twitter, YouTube, iFunny, Group Me, Discord, and Pinterest.

Social Media Friends

The connections or contacts you have on social networking sites like Facebook, Twitter, Instagram, LinkedIn, and others are referred to as "social media friends". According to Nurudeen et al (2023), students that have a large number of social media friends typically have lower GPAs. This finding is due to the famous Fear of Missing Out (FOMO) theory. The research also shows that students who struggle with anxiety or depression as a result of trying to stay in touch with friends online may see a drop in their GPAs or academic performance.

Social Media Groups

Social media groups can impact on students' academic performance and overall educational experience in both positive and negative ways. On the negative sides, engaging in social media groups can be a major distraction for students, which can cause them to pay less attention to

their academic work and have trouble managing their time. According to a study by Nurudeen et al (2023), students who participate in a lot of social media groups typically have lower GPAs. The FOMO theory can be used to justify this finding. Students who participate in numerous social groups have the risk of becoming anxious or depressed because they may get preoccupied with trying to fit in or becoming someone they are not (Nurudeen et al., 2023).

Social Media Notifications
Social media notifications can be very distracting, taking students' attention away from their studies and making it harder for them to concentrate on their academic work Sagabala et al (2023) pointed out that flash notifications caused class interruptions because students' attention were as quickly disturbed by social media pop-up alerts as they were by flash notifications. Nurudeen et al (2023) also found that Students who constantly check their social media notifications have been found to have lower GPAs. Limiting the amount of time spent on social media and turning off notifications while studying can help students reduce the negative effects of social media notifications.

Methodology
The study employs the quantitative methodology of research under which a descriptive survey was used to the determine main factor of social media usage that affect the academic performance of Universiti Teknologi Mara Negeri Sembilan Branch Seremban Campus students. The population of this research was 5804 students of UiTM Seremban campus registered for March –July 2023 intake. The sample size of 374 students was calculated by using the formula of Yamane to be representative of the population as shown in equation below:

$$n = \frac{N}{1+Ne^2}$$ (Equation 3.1)

where

        n = sample size
        N = population size ; 5804
        exp2 = error (0.05) reliability level 95%

The sampling method used was simple random sampling. A set of questionnaire was distributed virtually to the respondents. The questionnaire consists of four sections, of which section A is for the respondent's consent and section B is for demographic information where the respondents was asked about their background such as gender, age, faculty and current CGPA.

Upon getting the results the data was analyzed using the methods namely Chi Square Test of Independence and Multiple Linear Regression. According to Kremelberg (2011), the chi-square statistic is used to show whether or not there is a relationship between two categorical variables. In order to apply the Multiple Linear Regression few assumptions must be fulfilled. According to Tranmer and Elliot (2008) the assumptions are shown below:
        1.Linearity
        2.Independence
        3.Homoscedasticity
        4.Normality
        5.Multicollinearity
A multiple regression model is represented by the following equation (Lee & Song,

2021) :

$Yi = \beta0 + \beta1X1 + \beta2X2 + \beta3X3 + \beta4X4 + \beta5X5$

(Equation 3.2)

where:

Yi = Students academic performance (CGPA)

$\beta0$ = y-intercept

X1 = Times

X2 = Friends

X3 = Groups

X4 = Platforms

X5 = Notifications

Results and Discussion

Table 4.1 provides an illustration of Chi-Square test of Independence between the variables Students' academic performance and social media usage on academic. Using chi-square tests, the researcher can determine if there is an association between two categorical variables. Based on the difference between the expected and observed frequencies, it compares the expected distribution of frequencies in a contingency table with the observed distribution.

The chi-square statistic is significant at the 10% level. Since all the chi-square significant values are lower than 0.1, hence the researcher reject the null hypothesis and concluded that the use of social media has an association on the academic performance of the students in Universiti Teknologi Mara Negeri Sembilan Seremban campus.

Table 4.1

Chi-Square Test Value for Each Variable towards Students' Academic Performance

Variable	Question	p-value	Significance level
Social Media Usage	The usage of social media (Wikipedia, Google Scholar and etc) for research has helped improve my grades	0.083	0.1
	Engaging in academic forums on Google reduces my rate of understanding.	0.001	0.1
	I use materials gotten from blogging sites to complement what I have been taught in class.	0.001	0.1
	I will not perform well in my academics even if I stop using social media.	0.050	0.1

With the MLR the researcher discovered the factors that affects significantly students' academic performance were time and notifications. This is because the researcher observed the p-values of variables Time and Notifications were less than 0.05. Hence the analysis produced the following results:

$$SAP = 3.465 - 0.147T_3 - 0.200N_4 - 0.256N_5 + \epsilon \ (Equation \ 4.1)$$

Where:

SAP = Students' Academic Performance
T_3 = Time (5-6 hours)
N_4 = Notifications (About 30 times)
N_5 = Notifications (About 40 times and more)
ϵ = the model's error term

With equation 4.1, we are able to predict the students' CGPA. From the Equation 4.1, if the time spent on social media is 5 to 6 hours, the estimated CGPA of the students is decreased by 0.147 unit. It also indicates that if the students constantly checking their notifications for about 30 times, the estimated CGPA of the students is decreased by 0.200 unit. Meanwhile, if the students constantly checking their notifications for about 40 times and more, the estimated CGPA of the students is decreased by 0.256 unit.

Conclusion
The results can be presented clearer with a table shown below.

Table 5.1
Summary of the study's conclusions

Objective	Analysis Method	Results
To determine the association between social media usage on academic purposes and students' academic performance.	Chi Square test of Independence	The use of social media has an association on the academic performance of the students in Universiti Teknologi Mara Negeri Sembilan Seremban campusat 10% significance level.
To investigate the factors that affect the academic performance of students based on social media usage	Multiple Linear Regression	The factors that affects significantly students' academic performance based on social media usage were time and notifications at 5% significance level.

As a results, students are advised to manage their time wisely and not so disturbed with the notifications received.

Recommendation
A similar study can be conducted on a different group of students in a different country and a different measurement can also be included to measure the academic performance of the university students. Besides different data collection method such as personal interview and data analysis method could be used to have a more compressive results. Other factors maybe included to see the effect of social media usage on academic performance as well as social and emotional aspects.

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