International Journal of Computer Techniques – Volume 12 Issue 5, September - October - 2025

"Impact of Social Media Usage on the Academic Performance of Undergraduate Students in Assam: A Structural Equation Modeling Approach Using AMOS"

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ABSTRACT

Social media has become an integral part of students' daily lives, influencing how they communicate, learn, and share academic information. This study investigates the impact of social media usage on the academic performance of undergraduate students in Assam by examining five key factors—Usage Frequency (UF), Perceived Usefulness (PU), Perceived Ease of Use (PEOU), Time Management (TM), and Academic Engagement (AE). Data collected from 279 respondents were analyzed using Structural Equation Modeling (SEM) with AMOS (Analysis of Moment Structures) to explore the relationships between these constructs. The results indicate that while excessive usage frequency negatively affects academic performance, PU, PEOU, TM, and AE have significant positive effects, suggesting that effective and purposeful use of social media enhances learning outcomes. Overall, the study highlights that social media, when used with proper time management and academic intent, can serve as a valuable educational tool that fosters engagement, collaboration, and academic success.

Keywords: *Social Media, Academic Performance, Structural Equation Modeling, AMOS, Time Management, Academic Engagement*

1. INTRODUCTION

Social media has become an integral part of daily life for students, reshaping how they interact, share information, and study. As Kaplan and Haenlein [1] defined, social media is "a group of Internet-based applications that build on the ideological and technological foundations of Web 2.0 and allow the creation and exchange of user-generated content." Today, students use platforms such as Facebook, WhatsApp, Instagram, and YouTube both for academic and non-academic purposes. According to Pempek, Yermolayeva, and Calvert [2]"college students spend a substantial portion of their day on social networking sites," which may influence their academic success.

The impact of social media on academic performance has shown mixed outcomes. Junco [3] asserted that "increased usage of social networking sites was negatively related to students' GPA." However, Selwyn [4] emphasized that social media "provides new opportunities for collaborative learning, online

engagement, and academic support." Additionally, Tess [5] argued that social media tools "could be powerful educational platforms when integrated meaningfully into coursework."

Technology Acceptance Model (TAM) variables such as Perceived Usefulness (PU) and Perceived Ease of Use (PEOU) are significant determinants of user adoption. Venkatesh and Davis [6] explained that "perceived usefulness directly influences people's behavioral intention to use technology." Similarly, Davis [7] highlighted that "perceived ease of use influences perceived usefulness and actual system usage."

While social media can facilitate collaborative learning (Hrastinski [8]), it may also lead to time mismanagement and distraction. As Meier and Reinecke [9] noted, "excessive social media use often leads to procrastination and poor academic outcomes." Moreover, students often engage in social comparison while browsing peers' posts. Festinger's [10] social comparison theory suggests that individuals evaluate themselves based on comparisons with others, which, on social media, can lead to reduced academic motivation and increased anxiety.

Given these contrasting perspectives, this study aims to analyze how five independent variables—Perceived Usefulness, Perceived Ease of Use, Collaborative Learning, Time Management, and Social Comparison Orientation—affect social media usage, and in turn, academic performance. Structural Equation Modeling (SEM) using AMOS is utilized to understand the direct and indirect relationships among these variables. As Kline [11] posited, "SEM is a comprehensive statistical approach that allows simultaneous testing of complex relationships between observed and latent variables," making it suitable for this research.

Thus, this study intends to fill the gap in current literature by using SEM to investigate the mediating role of social media usage in the relationship between various determinants and academic performance among college students in Assam.

2. OBJECTIVES OF THE STUDY

- To analyze the effect of social media usage frequency, perceived usefulness, ease of use, time management, and engagement on academic performance.
- To design and test a Structural Equation Model using AMOS software.
- To examine both positive and negative effects of social media use on academic outcomes.

3. RESEARCH MODEL AND HYPOTHESES FORMULATION

The proposed research model was based on Technology acceptance model originally proposed by Fred Davis in 1986. It was one of the most widely used models to predict user's acceptance of a new

technology or a new system. In our study we have considered five core constructs as dependent variables namely:

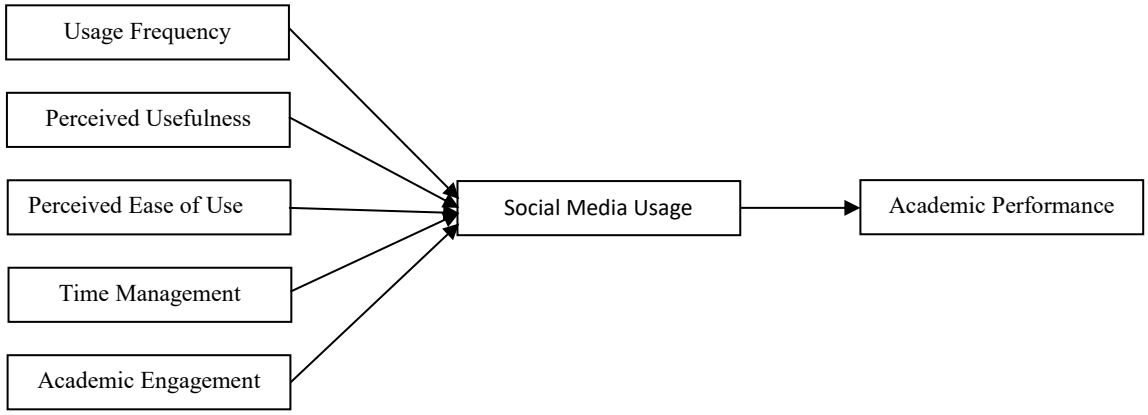

Figure 1: Proposed Research Model

Usage Frequency (UF), Perceived Usefulness (PU), Perceived Ease of Use (PEOU), Time Management (TM) and Academic Engagement (AE). The only dependent variable in the system is Academic Performance (AP).

The core constructs of the proposed research model and related hypotheses are presented below:

Usage Frequency (UF) of Social Media:

Usage Frequency of social media by students plays a significant role in shaping their academic performance. Frequent and prolonged use of social media for non-academic purposes can reduce the time available for studying and may distract students from academic goals. High UF often leads to divided attention, decreased concentration, and procrastination, which can negatively affect learning outcomes. On the other hand, moderate or purposeful use for educational activities, such as group discussions or accessing study materials, can support academic growth. So we have formulated the following hypothesis:

H_1: Usage Frequency (UF) has a negative effect on Academic Performance (AP).

Perceived Usefulness (PU) of social media:

Perceived Usefulness (PU) of social media refers to the extent to which students believe that using social media can enhance their academic performance. When students view these platforms as valuable for accessing study resources, collaborating with peers, and sharing academic information, their learning outcomes can improve. PU influences how students integrate social media into their study habits, making it a motivating factor for academic-related usage. A higher level of perceived usefulness often leads to more purposeful engagement, which can positively impact performance. So we have formulated the following hypothesis:

H_2 : Perceived Usefulness (PU) of social media positively affects Academic Performance (AP).

Perceived Ease of Use (PEOU) of social media

Perceived Ease of Use (PEOU) of social media refers to how simple and effortless students find these platforms to operate for academic purposes. When social media is easy to navigate, students are more likely to adopt it for learning activities such as accessing educational content, communicating with peers, and collaborating on assignments. A high level of PEOU reduces barriers to use and encourages students to focus on learning rather than technical difficulties. This ease can enhance efficiency, save time, and improve overall academic engagement. Therefore, we have formulated the following hypothesis:

H_3 : Perceived Ease of Use (PEOU) of social media positively affects Academic Performance (AP).

Time Management (TM) related to social media use

Time Management (TM) related to social media use refers to how effectively students balance their online activities with academic responsibilities. Poor time management, caused by excessive or unregulated use of social media, often reduces study hours and increases procrastination, negatively impacting academic performance. Conversely, students who manage their time well can limit distractions and allocate sufficient time for learning while still engaging in social media. Effective TM helps students maintain focus, prioritize tasks, and achieve better academic outcomes. Thus, we have formulated the following hypothesis:

H_4: Time Management (TM) related to social media use positively affects Academic Performance (AP).

Academic Engagement (AE) via social media

Academic Engagement (AE) via social media refers to the active participation of students in learning-related activities through digital platforms. Social media can promote engagement by enabling collaboration, group discussions, sharing of academic resources, and interactive learning experiences. Higher AE through these platforms often fosters motivation, knowledge exchange, and deeper understanding of academic content. When students use social media for meaningful academic purposes, it can strengthen their focus and improve performance. Therefore,

H_5: Academic Engagement (AE) via social media positively affects Academic Performance (AP).

4. RESEARCH METHODOLOGY

This study was based on primary data, which were analyzed using Structural Equation Modeling (SEM) with the help of SPSS AMOS version 23. SEM was employed to test the proposed research model through a two-step approach. In the first step, Confirmatory Factor Analysis (CFA) was conducted to assess and refine the measurement model by establishing its reliability and validity. In the second step, the structural model was evaluated to test the formulated hypotheses.

The overall model fit for both the measurement and structural models was assessed using widely accepted fit indices, including the Goodness of Fit Index (GFI), Adjusted Goodness of Fit Index (AGFI), Normed Fit Index (NFI), Relative Fit Index (RFI), Comparative Fit Index (CFI), Tucker–Lewis Index (TLI), Root Mean Square Error of Approximation (RMSEA), and Root Mean Square Residual (RMR). These indices provided a comprehensive evaluation of the adequacy and robustness of the proposed model.

4.1 Development of the Measurement Instruments

A quantitative research design based on survey methodology was employed for this study. Primary data were collected using an online questionnaire developed through Google Forms. This method was selected as it allowed the researchers to reach a large number of respondents efficiently, reduce costs associated with data collection, and provide flexibility for respondents to complete the survey at their convenience. The self-designed questionnaire consisted of 24 items distributed across six constructs (five independent, one dependent): Usage Frequency (UF), Perceived Usefulness (PU), Perceived Ease of Use (PEOU), Time Management (TM), Academic Engagement (AE), and Academic Performance (AP). Each construct was measured using four items. Responses were recorded on a 5-point Likert scale, labeled as '5 for strongly agree', '4 for agree', '3 for neutral', '2 for disagree' and '1 for strongly disagree'.

4.2 Data Collection

For the present study, data were collected from undergraduate students belonging to two districts of Assam, namely Kamrup Metro and Kamrup Rural. These districts were selected because they represent both urban and semi-urban student populations, thereby providing a diverse sample for the analysis. A total of 279 responses were obtained through an online questionnaire designed using Google Forms, which was circulated among students via email and social media platforms. The use of an online survey method enabled wider reach and ensured cost-effective data collection within a limited time frame. The participants were selected using a convenient sampling approach, allowing the inclusion of students from diverse academic backgrounds within the two districts. The collected responses formed the primary dataset for examining the impact of social media usage on academic performance and were subsequently analyzed using SEM with AMOS.

5. DATA ANALYSIS AND RESULT

Data was analyzed using AMOS through SEM. The following analyses were conducted.

5.1 Suitability Data for Factor Analysis

The Kaiser-Meyer-Olkin (KMO) test is used to check if the data is suitable for factor analysis. It evaluates the proportion of variance among variables that might be common variance, indicating how well-suited the dataset is for structure detection. A KMO value ranges from 0 to 1, where values closer to 1 suggest

that the data is highly suitable for factor analysis, while values below 0.5 indicate unsuitability. Kaiser [12] classified KMO values into categories such as “marvelous” (0.90 and above), “meritorious” (0.80–0.89), “middling” (0.70–0.79), “mediocre” (0.60–0.69), “miserable” (0.50–0.59), and “unacceptable” (below 0.50). From table 1the Kaiser-Meyer-Olkin Measure of Sampling Adequacy is .819. Hence the degree of common variance among variables was meritorious. The test is often used alongside Bartlett’s test of sphericity to check the interrelationship among variables. From table 1, Chi-Square (279)=6090.922 and $p < 0.01$, So Bartlett's Test of Sphericity is also significant and hence the interrelationship exists among variables to proceed with factor analysis [13].

Table 1: Kaiser-Meyer-Olkin (KMO) and Bartlrtt’s Test

KMO and Bartlett's Test		
Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.819
Bartlett's Test of Sphericity	Approx. Chi-Square	6090.922
	Df	276
	Sig.	.000

5.2. Measurement Model Validity and Reliability

Confirmatory Factor analysis (CFA) is used to analyze the validity and reliability of the measurement model to ensure the accuracy and consistency of latent constructs.

Table 2: AMOS output: Reliability and Validity Analysis

Constructs	Measurement Items	Standardized factor loading	Cronbach’s α	CR	AVE
UF	uf1	0.92	0.94	0.95	0.83
	uf2	0.87			
	uf3	0.85			
	uf4	0.92			
PU	pu1	0.78	0.78	0.87	0.62
	pu2	0.65			
	pu3	0.82			
	Pu4	0.70			
PEOU	peou1	0.62	0.79	0.86	0.61
	peou2	0.80			
	peou3	0.68			
	peou4	0.75			
TM	tm1	0.95	0.85	0.90	0.69
	tm2	0.83			
	tm3	0.77			
	tm4	0.64			
AE	ae1	0.77	0.79	0.87	0.62
	ae2	0.65			
	ae3	0.92			
	ae4	0.83			
AP	ap1	0.78	0.80	0.84	0.57
	ap2	0.88			
	ap3	0.76			
	ap4	0.69			

Validity refers to how well the observed indicators represent the latent variables, while reliability assesses the internal consistency of the measurement items.

In this study, the measurement model validity was assessed by examining factor loadings and the Average Variance Extracted (AVE). Factor loadings were calculated to determine the strength of each indicator in explaining its underlying construct. Fornel and Lacker [14] has suggested that to ensure convergent validity of a measurement model , factor loading for all individual measurement item should be more than 0.07 but 0.60 is considered to be an acceptable level and average variance extracted (AVE) for each construct should be greater than 0.05. The standardized factor loadings of each measurement items and AVE for each latent construct are presented in table 2. All items demonstrated satisfactory loadings, confirming that the indicators reliably represented their respective constructs. Again each latent construct achieved an AVE above this benchmark, thereby establishing adequate convergent validity. Together, these findings confirm that the measurement model is valid and suitable for further structural analysis.

The reliability was made by assessing the internal reliability and composite reliability. Internal reliability means how strong the measuring items are bundled together in measuring the respective latent construct. The internal reliability of the measurement model was evaluated using Cronbach's α value. Schmitt [15] suggested that a scale is considered to be reliable where Cronbach's α is greater than 0.70. All constructs in this study achieved Cronbach's α values (ranges from 0.78 to 0.94) higher than the recommended level, confirming a high level satisfactory internal reliability among the measurement items and therefore the survey are considered as reliable instruments. In addition, CR was computed to further validate the reliability of each construct. CR values above 0.70 indicated that the constructs were measured with good reliability. Thus, the results confirmed that the measurement model demonstrated strong reliability and was suitable for further analysis.

5.3. Measuring Model Fit using CFA

After measuring the validity and reliability of the Measurement Model, Confirmatory factor analysis (CFA) was conducted to evaluate the model fit of the Measurement Model to confirm the hypotheses of the Structural Model by using SPSS AMOS v.23.

5.3.1. The Measurement Model

The measurement model, comprising six core constructs, is illustrated in Figure 2. Each construct is measured using four measurement items. These measurement items are regressed into their respective latent constructs, which are inter-correlated with one another. The reliability of the measurement model is influenced by the random measurement error associated with each measuring item.

The measurement model in this study consists of 24 observed variables. Based on the formula $\left[\frac{p(p+1)}{2}\right]$, where p represents the number of observed variables, a total of $\left[\frac{24(24+1)}{2}\right] = 300$ distinct pieces of information were available for parameter estimation. Within the model, 18 regression weights, 15 covariances, and 30 variances were specified, resulting in a total of 63 parameters to be estimated. With 300 distinct sample moments and 63 parameters, the model yields 237 degrees of freedom, which is positive. This indicates that the proposed measurement model is an over-identified model, allowing for its empirical testing and validation.

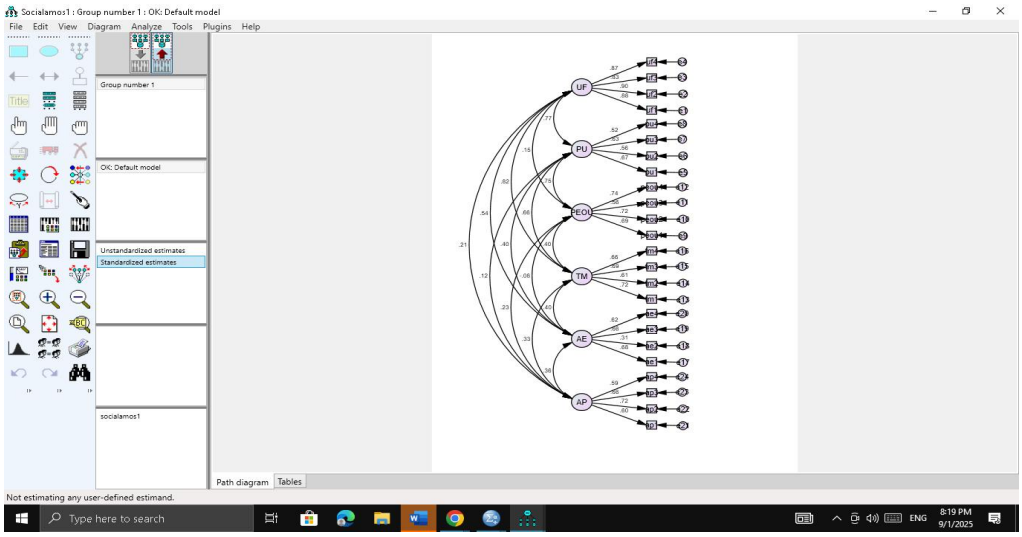

Figure 2: The standardized measurement model

Table 3: AMOS output: Computation of degree of freedom

Number of distinct sample moments	300
Number of parameters to be estimated	63
Degree of freedom (df) (300-63)	237

The goodness-of-fit statistics were assessed to evaluate the adequacy of the measurement model. The chi-square value was 1622.78 with 237 degrees of freedom and a significance level of $p = 0.000$. Although the chi-square is significant, this result is common in large sample sizes, and therefore alternative fit indices are more reliable indicators of model adequacy. The chi-square/df ratio was 4.847, which is below the recommended threshold of 5.0, indicating an acceptable fit.

The absolute fit indices showed mixed results. The Goodness of Fit Index (GFI) value of 0.95 exceeded the recommended cutoff of 0.90, suggesting strong model fit. However, the Adjusted Goodness of Fit

Index (AGFI) was 0.87, which fell slightly below the recommended threshold, indicating a minor limitation in the adjusted model fit.

The incremental fit indices generally demonstrated satisfactory performance. The Normed Fit Index (NFI = 0.92), Relative Fit Index (RFI = 0.95), Comparative Fit Index (CFI = 0.98), and Tucker–Lewis Index (TLI = 0.96) all exceeded the recommended threshold of 0.90, confirming strong incremental validity. Similarly, the Incremental Fit Index (IFI) achieved 0.90, which is exactly at the acceptable cutoff.

The parsimonious fit indices also reflected favorable results. The Root Mean Square Error of Approximation (RMSEA = 0.03) and Root Mean Square Residual (RMR = 0.002) both fell well below the recommended threshold of 0.05, indicating excellent model fit with minimal error.

Table 4: Fit Statistics of Measurement model

Fit Idices	Recommeded value [14], [16], [17]	Model Value
Chi-Square	-	1622.78 with p=.000
Degree of freedom	-	237
Chi-Square significance	$p < 5.0$	0.000
Chi-Square/df	< 5.0	4.847
GFI	> 0.90	0.95
AGFI	> 0.90	0.87
NFI	> 0.90	0.92
RFI	> 0.90	0.95
CFI	> 0.90	0.98
IFI	> 0.90	0.90
TLI	> 0.90	0.96
RMSEA	$< .05$	0.03
RMR	$< .05$	0.002

Overall, despite the slightly lower AGFI value, the majority of the fit indices supported the adequacy of the measurement model, confirming that it provides a reliable and valid representation of the data.

5.3.2. Structural Model path

The structural model, illustrated in Figure 3, demonstrates the interrelationships among the six latent constructs. These constructs are incorporated into the structural model based on the formulated hypotheses. The model consists of a total of six variables, which include 24 observed variables (namely $uf1, uf2, \cdots\cdots\cdots, ap4$) and several unobserved variables. Among these unobserved variables 30 variables namely, $UF, PU, PEOU, TM, AE, e1, e2, \cdots\cdots, e25$ are exogeneous where $UF, PU, PEOU, TM, AE$ are exogenous latent variables, while e1 to e24 denote the measurement errors associated with each observed variable, and e25 represents the residual error term linked to the endogenous latent construct AE. The measurement errors (e1–e24) indicate inaccuracies in capturing the underlying factors, whereas the residual term (e25) reflects the prediction error of the endogenous latent construct based on the exogenous constructs. In the structural model, the unidirectional arrow symbol (→)

represents the structural regression coefficients, indicating the impact of one latent construct on another. As shown in Figure 3, a one-way arrow pointing toward the endogenous latent construct *AP* implies that the exogenous latent construct *UF* influences *AP*. Such causal relationships between constructs are established through the testing of the formulated hypotheses.

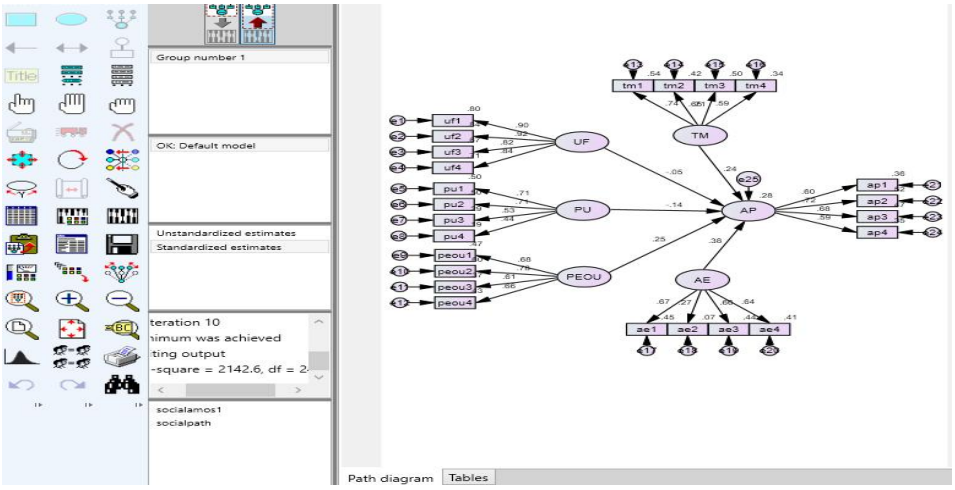

Figure 3: The standardized structural model

The common model-fit indices recommended by Fornell and Larcker [14], Hu and Bentler [16], and Hancock and Muller [17] were used to assess the fitness of the structural model. The recommended values and the corresponding model values are presented in Table 5. All the model-fit indices are within the acceptable range of the recommended values, except for the AGFI value, which is slightly below the threshold. Therefore, it can be concluded that the proposed model demonstrates a reasonable fit.

Table 5: Fit Statistics of Structural model

Fit Idices	**Recommeded value [14], [16], [17]**	**Model Value**
Chi-Square	-	2142.6 with p=.000
Degree of freedom	-	247
GFI	> 0.90	0.92
AGFI	> 0.90	0.86
NFI	> 0.90	0.92
RFI	> 0.90	0.93
CFI	> 0.90	0.96
IFI	> 0.90	0.90
TLI	> 0.90	0.93
RMSEA	< .05	0.05
RMR	< .05	0.002

5.3.3. Testing Structural Relationship

After satisfactory fit of both measurement and structural model we test the structural relationship of the latent constructs of the model i.e. studied path coefficients of the structural model to test the formulated hypotheses. The

Regression Coefficient (Standardized path coefficients), Standard error, Critical ratio (Z - value) with respective probabilities and results are summarizes in below table 6

Table 6: Summary of the hypotheses testing (Structural relationship of latent variables)

Hypothesis	Relationship	Regression Coefficient (β)	Standard Error	Critical Ratio ($z - value$)	Probability ($p > \|z\|$)	Results
H_1	$AP \leftarrow UF$	**0.325**	0.165	2.234	0.015	supported
H_2	$AP \leftarrow PU$	-0.282	0.058	3.718	0.003	supported
H_3	$AP \leftarrow PEOU$	0.423	0.243	5.158	0.000	supported
H_4	$AP \leftarrow TM$	0.215	0.085	3.853	0.018	supported
H_5	$AP \leftarrow AE$	0.558	0.134	8.285	0.008	supported

The standardized regression coefficient (β) values obtained from the hypothesized paths are compared with their corresponding probability (p) values. By examining both the standardized regression coefficient and the probability value, each formulated hypothesis is evaluated to determine whether it is statistically significant and therefore supported, or not significant and thus not supported.

The interpretation of the result is given below:

- The analysis indicates that Usage Frequency (*UF*) of social media shows a negative effect on the Academic Performance (*AP*) of students i.e. the hypothesis H_1 is supported (as β*=0.325 with* p*=0.015*). This implies that as students spend more time frequently using social media platforms, their academic outcomes tend to decline. The result suggests that excessive social media engagement may distract students from their studies and reduce the time available for academic activities. Therefore, higher usage frequency appears to hinder academic performance rather than support it.
- The findings reveal that Perceived Usefulness (*PU*) of social media has a positive effect on Academic Performance (*AP*) of students i.e. the hypothesis H_2 is supported (as β=- 0.282 *with* p*=0.003*). This indicates that when students perceive social media as a helpful tool for learning, communication, and knowledge sharing, their academic outcomes improve. The positive relationship suggests that social media can serve as an effective platform for academic support and resource accessibility. Hence, students who recognize the usefulness of social media are more likely to enhance their academic performance.
- The results indicate that Perceived Ease of Use (*PEOU*) of social media positively affects the Academic Performance (*AP*) of students i.e. the hypothesis H_3 is supported (as β= 0.423 *with* p*=0.000*). This means that when students find social media platforms simple, user-friendly, and convenient to use, they are more likely to utilize them for academic purposes. The ease of navigation and accessibility encourages students to engage with educational content and

collaborative learning through these platforms. Therefore, higher perceived ease of use contributes to improved academic performance among students.

- The analysis shows that Time Management (*TM*) in relation to social media use has a positive effect on the Academic Performance (*AP*) of students i.e. the hypothesis $\boldsymbol{H_4}$ is supported (as β= 0.215 *with p=0.018*). This suggests that when students manage their time effectively while using social media, they can balance academic tasks with online engagement. Proper time allocation prevents excessive distractions and allows students to benefit from the academic resources available on social platforms. Hence, good time management in social media usage leads to better academic performance.
- The findings indicate that Academic Engagement (*AE*) through social media has a positive effect on the Academic Performance (*AP*) of students i.e. the hypothesis $\boldsymbol{H_5}$ is also supported (as β= 0.558 *with p=0.008*). This means that when students actively participate in discussions, share knowledge, and collaborate on academic activities via social media, their learning outcomes improve. Social media platforms provide opportunities for interactive learning and peer support, which enhance understanding and knowledge retention. Therefore, higher academic engagement on social media contributes to better academic performance among students.

6. CONCLUSION

This study concludes that social media usage significantly influences the academic performance of undergraduate students, both positively and negatively, depending on how it is utilized. The findings reveal that while excessive usage frequency tends to hinder academic achievement due to distractions and time wastage, factors such as Perceived Usefulness, Perceived Ease of Use, Time Management, and Academic Engagement have a positive and meaningful impact on learning outcomes. Students who perceive social media as easy to use and beneficial for academic purposes are more likely to engage effectively in educational activities, leading to improved performance. Moreover, proper time management allows students to balance their social and academic responsibilities efficiently, reducing the adverse effects of overuse. Academic engagement through social media enhances collaboration, motivation, and knowledge sharing, which strengthens students' learning experiences. Overall, the study emphasizes that responsible and purposeful use of social media can transform it into a powerful academic tool rather than a source of distraction.

7. RECOMMENDATION, LIMITATIONS, AND FUTURE SCOPE

Based on the findings of the study, it is recommended that educational institutions encourage students to adopt social media platforms for academic purposes such as collaborative learning, resource sharing, and

communication with peers and teachers. Students should be guided to manage their time effectively and limit non-academic social media activities to minimize distractions and improve academic outcomes. Institutions may also integrate social media tools into formal learning systems to enhance academic engagement and participation. However, the study is limited by its use of a convenience sampling method and data collection restricted to two districts in Assam, which may limit the generalizability of results. Additionally, the study relies on self-reported data, which may be influenced by personal bias or inaccurate responses. Future studies could expand the sample size to include students from multiple regions or academic disciplines for broader applicability. Researchers may also consider longitudinal studies to observe the long-term effects of social media on academic performance. Moreover, exploring additional psychological or behavioral variables such as digital literacy, motivation, or social comparison tendencies can further enrich the understanding of social media's academic impact.

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APPENDIX

Questionnaire Development

A. Usage Frequency (UF)

(Linked to H1: Negative effect on Academic Performance)

1. I spend several hours daily on social media platforms.
2. I frequently check social media during study hours.
3. I tend to prioritize social media over academic activities.
4. My study schedule is often interrupted by social media notifications.

B. Perceived Usefulness (PU)

(Linked to H2: Positive effect on Academic Performance)

5. Social media helps me find academic information and resources quickly.
6. I use social media to collaborate on assignments and projects.
7. Social media enhances my understanding of academic topics.
8. Social media supports my learning by enabling access to expert opinions and communities.

C. Perceived Ease of Use (PEOU)

(Linked to H3: Positive effect on Academic Performance)

9. It is easy to use social media for academic activities.
10. I can easily share academic materials through social media platforms.
11. Social media is a convenient tool for academic discussions.
12. Learning to use social media for educational purposes is simple.

D. Time Management (TM)

(Linked to H4: Negative effect on Academic Performance when excessive)

13. I spend more time on social media than on academic tasks.
14. I postpone academic work due to social media engagement.
15. Social media usage often reduces my study efficiency.
16. I find it difficult to manage time between academics and social media use.

E. Academic Engagement (AE)

(Linked to H5: Positive effect on Academic Performance)

17. Social media motivates me to participate in academic discussions.
18. I use social media to clarify doubts related to my studies.
19. I actively engage in academic groups on social media.
20. Social media increases my participation in collaborative learning.

F. Academic Performance (AP) [Dependent Variable]

21. My grades reflect consistent academic performance.
22. I perform better academically when I use social media for learning.
23. Social media has helped improve my academic results.
24. Overall, social media contributes positively to my academic success.