# Factors Influencing Usage of Social Media among Students for Academic Purposes- A Case Study in Begum Rokeya University, Rangpur, Bangladesh

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Abstract: The objective of this study is to explore significant factors affecting behavioral intention and actual use of social media by the university students for educational purposes. Technology acceptance model (TAM) was employed as a research framework in this study. The study examined the research framework by structural equation modeling (SEM). The framework was experimented with the data obtained from 142 students of Begum Rokeva University, Rangpur, Bangladesh. The findings of this research suggested that a) attitude(AT) and perceived usefulness(PU) have a direct and positive influence on behavioral intention(BI) to use social media by students for academic purposes, b) perceived usefulness (PU) and perceived ease of use(PEOU) have a direct influence on Attitude (AT) to use social media by students for academic purposes, and c) behavioral intention(BI) significantly influence on Actual System Use (AU) to use social media by students for academic purposes. The findings have a practical implication for educational institution to enhance the effective use of social media among the students for various educational purposes.

Keyword: TAM, Social Media, Behavioral Intention, Actual System Use, Internet

## I. INTRODUCTION

#### 1.1 Background

Today, social media has become an indispensable part of our everyday lives. Over the last decade, the exponential growth of social media has revolutionized the way we live. It is now widely used media not only among working people but also among students. In Bangladesh, more or less 40 million people have been using social media. Most university-level students have at least one social media account like Facebook, Twitter, Instagram, YouTube, etc. Students not only use this social media for entertainment, but also, they have been using it for their academic purposes. Students are now more into participatory digital culture. Social media allow students to obtain more helpful information and connect with learning making education more convenient. Social groups, media enable students, faculty, and institutions to build an educational community to share information and resources. Although the use of social media for academic purposes is prevalent in the developed world, however, this concept is largely new in Bangladesh. Therefore, this new innovative approach will undoubtedly pose a challenge to students in terms of the effective use of social media in the academic space. Hence, it is essential to understand certain factors that would influence the acceptance of social media among students for educational purposes.

# 1.2 Problem Statement and Objectives:

Two problems led the authors to do this research- a) deficiency of investigation concerning the factors affecting the use of social media for academic purposes among students and b) lack of framework examining the factors that influence user behavioural intent and actual use toward adopting social media, especially for educational reasons among university students. In the current study, Technology Acceptance Model (TAM) is used as a research framework, because it is one of the best frameworks for investigating factors that influence users' behavioral intent toward adopting particular technology application. TAM suggests that when people are faced with a recent technology, the decision to accept or deny them depends on several factors. TAM can investigate how user's perception affect the intention to use a technology or actual use a technology. The objective of this study is to find significant factors affecting behavioral intent and actual use of social media for academic purposes.

#### II. LITERATURE REVIEW

## 2.1 Concept of Social Media

Social media is currently being considered major component of internet usage. Even in the case of research, social media is becoming increasingly popular over the internet among researchers. Since the social media is changing rapidly in terms of its characteristics, it would hardly provide a proper definition. In 2008, Leader-Chivée & Cowan referred social media to the fundamental nature of 'Web 2.0' which pointed out a switch in user proclivity and movement regarding online self-publishing and content collaboration(Leader-Chivée & Cowan, 2008). Kaplan & Haenlein defined social media as a type of Internet-based applications framed on the philosophical and technological underpinnings of Web 2.0. Social media facilitate consumers to produce and share the self-generated content (Kaplan & Haenlein, 2010). Henderson et al also referred to the social media as Web 2.0. Social media is pooled of internet-based

applications that accentuate user involvement, content generation, connectivity, and information sharing(Henderson & Bowley, 2010). Recently, Sloan et al described social media as online based services which permit users, groups and institution to work together, unite, cooperate, and make community by creating, modifying, engaging user generated content(Sloan & Quan-Haase, 2017). In a study, Carr and Hayes mentioned some contemporary examples of what social media is and what is not, exhibited in the below Table-1(Carr & Hayes, 2015).

Table 1: Current Examples of Social Media Derived from Carr and Hayes'
Definition

Social Medium	Not a Social Medium
Social network sites (e.g., Facebook, QQ, Google+, YouTube, Yelp, Pheed)     Professional network sites (e.g., LinkedIn, IBM's Beehive)     Chatboards & discussion fora     Social/Casual games (e.g., Farmville)     Wiki "Talk" pages     Inader     Instagram     Wanelo     Yik Yak	Online news services (e.g., NYT online PerezHilton.com) Wikipedia Skype Netflix E-mail Online news SMS/Texts Oovoo Tumblr Wilsper

Fred Cavazza, a French consultant, fragmented social media into ten clusters in his 'social media landscape'. The below Figure-1 exhibited the categories- publishing tools, sharing tools, discussion tools, social networks, micro-publishing tools, social aggregation tools, life, virtual worlds, social games, and massively multiplayer online games (Cavazza, 2008).

# Social Media Landscape



Figure 1: Social Media Landscape

# 2.2 Social Media for Academic Purposes

These days, the use of social media for academic purposes is being observed among students in universities worldwide. The effect of social media on learning and its influencing factors are now widely discussed. Presently, number of studies determining the effect of social media among university students is also increasing (Greenhow et al., 2020; Manca, 2020; Pimmer & Rambe, 2018). Much of those

studies investigated social media tools discretely for academic reasons like Facebook, Twitter or YouTube. A group of researchers has demonstrated that social media not only strengthens the interaction between students and teachers, but also reinforces the evidence base learning environment(Zheng et al., 2015). A symmetrical research in tertiary level education revealed that students are more receptive in the direction of using Facebook along with other social media platforms with greater propensity to enhance learning process compared to others who are using conventional learning techniques(Roblyer et al., 2010).

But even then, there are plenty of hurdles being seen in the way of adopting social media among students for their education. A study, investigating the impact of social media in university level learning, found that teachers are not skilled enough at utilizing social media for educational reasons, though most of the universities have enough infrastructure to do it simpler for their students to utilize the social media for their studies(Tess, 2013). Another study found that as an unofficial learning tool, the acceptance of social media is increasing among university students, however, as a formal tool, the adoption of social media by institutions is still encircled due to deficiency of proper implementation models and framework(Chawinga, 2017).

To encapsulate social media successfully for purpose, it is essential to perceived how it is being utilized in an educational institution(Al-Rahmi et al., 2018). Therefore, there is no other way but to investigate the pertinent studies for consolidating the knowledge and pinpointing the major factors that steered the social media in academic sphere. However, a lot of research such (Aborujilah et al., 2017; Neier & Zayer, 2015) has been found examining students' opinions concerning social media use on education those were not enough for determining the factors influencing usage of social media among students for purposes. Thus, a group of researchers recommended empirical studies for finding numerous factors affecting the use of social media in the academic field(Rahman et al., 2020; Stathopoulou et al., 2019). Recently, Hamadi et al. introduced a framework in an empirical study to determine the factors concerning social media acceptance in higher education(Hamadi et al., 2021)

#### III. RESEARCH MODEL AND HYPOTHESIS

## 3.1 Research Model

In 1989, Fred D. Davis instituted an Information system theory termed Technology Acceptance Model (TAM) which demonstrates how individuals acknowledge and use a technology (Davis, 1989). TAM is an adopted and extending idea of Theory of Reasoned Action (TRA) introduced by Fishbein and Ajzen in 1975(Fishbein & Ajzen, 1975). The below Figure 2 exhibited the TAM model.

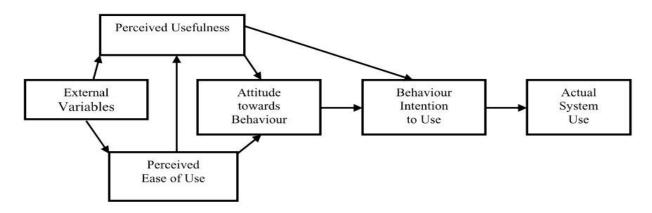


Figure 2: Technology Acceptance Model(Davis et al., 1989)

TAM includes two primary factors which influence user's intention to use new technology- a) Perceived Usefulness, and b) Perceived Ease of Use. Davis described Perceived Ease of Use as the intensity, users think that they can run a specific setup effortlessly (Davis et al., 1989). If a user perceives a system or technology is easy to operate, then the level of Perceived Ease of Use increases. Therefore, the acceptance and usage of those systems will also be high among students. Perceived usefulness is also a major factor which has an immediate influence on student's behavioural intention. Davis categorized PU as the level to which a user thinks that running a system would enhance one's performance (Davis et al., n.d.). Masrom, Venkatesh and Morris emphasized that PU has a positive and considerable impact on users behaviour which control intent of users to use a technology (Masrom et al., 2007; Venkatesh & Morris, 2000). Additionally, several studies have discovered the reciprocal relationship among perceived ease of use, perceived usefulness and behaviral

intention (Davis, 1989; Davis et al., 1989). There is a lot of distinct interpretation of the concept of behavioural intention. Fishbein and Ajzen described that behavioral intention is a subjective probability of how a person will perform the behaviour (Fishbein & Ajzen, 1975) (Ajzen & Fishbein, 1980). Warshaw and Davis claimed that the meaning of intention varies as it is using in regular dialect. They classified behavioral intention as the level to which an individual has made deliberate strategies to perform or not to perform certain imminent behaviour(Fishbein & Ajzen, 1975). The below Figure 3 portrays the original theoretical framework which demonstrates actual use of the system is determined by behavioral intention to use a particular system. One hand, behavioral intention directly determined by users' attitude towards using the sytem, on the other hand, behavioral intention and perceived usefulness jointly influence towards actual use of a system. The below model presented in Figure 3 has been used as the research model for this study.

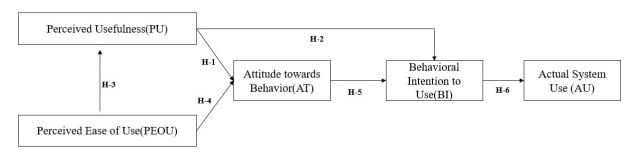


Figure 3: Research Model based on Original TAM

## 3.2 Research Variable and Hypothesis:

For this study, TAM was used as the research framework and all five variables from TAM were used to build the hypothesis. The below Table 2 presented the name and acronym of each TAM variable.

Table 2: Research variable name and acronym

Name of variable	Acronym of variable
Perceived usefulness	PU
Perceived ease of use	PEOU
Attitude towards behavior	AT
Behavioral intention to use	BI
Actual system use	AU

- H-1: Perceived Usefulness (PU) has a direct influence on Attitude (AT) to use social media by students for academic purposes.
- *H-2*: Perceived Usefulness (PU) positively and significantly influence on behavioral intention (BI) to use social media by students for academic purposes.
- *H-3*: Perceived Ease of Use (PEOU) has direct influence on Perceived Usefulness (PU) to use social media by students for academic purposes.
- *H-4*: Perceived Ease of Use (PEOU) has direct influence on Attitude (AT) to use social media by students for academic purposes.
- *H-5*: Attitude (AT) has direct influence on behavioral intention (BI) to use social media by students for academic purposes.
- *H-6:* Behavioral intention (BI) has direct influence on Actual System Use (AU) to use social media by students for academic purposes.

#### IV. RESEARCH METHODOLOGY

In this study, a quantitative method was employed to examine the factors influencing the use of social media among students for educational reason using the formulated hypothesis and research model. The sample of this research incorporated undergraduate and postgraduate students at Begum Rokeya University, Rangpur (BRUR) in Bangladesh. questionnaire was prepared in English and designed in Google Form. And then it was distributed randomly through online to a total 300 students, out of which the researchers received 220 resulting 73% of response rate. 78 forms were discarded because of insufficient data. The questionnaires were formed based on earlier research. However, it was reformed to make appropriate the purpose of this study. A total of 23 questions were divided into three sections- a) section one consisted 3 demographic questions, b) section two composed 5 questions about experiences of using the internet and smartphone, and c) section three accumulated 15 assessment questions. The questions of the assessment section represented five constructa) Perceived Usefulness (PU), b) Perceived Ease of Use (PEOU), c) Attitude (AT), d) Behavioural Intention (BI), and e) Actual Use (AU). A 5-point Likert scale stretched from 1 to 5(strongly disagree to strongly agree) was used to measure the assessment questions. For analysing demographic figure, internet and smart phone experiences, and descriptive statistics, the study used IBM SPSS software. SMARTPLS3 was used for the application of SEM technique to study the research model and hypothesis.

# V. DATA ANALYSIS AND DISCUSSION

#### 5.1 Demographics and Experiences

The online survey was conducted on 300 students who are studying at Begum Rokeya University. Of these, 220 students participated in the survey. 78 forms were canceled due to

incomplete responses. In the end, 142 of the forms (64.55%) were used for the data analysis of this study. At first, the research analyzed the demographic profile of respondents by IBM SPSS software. The Table 3 demonstrated that more than 67% of the students participating in the survey were male whereas only around 32% of female. Among the attendees, the predominance of age group below 25 years was found to be higher, around 90%. Similarly, the participation of graduate first year students was seen to be higher, more than 35%.

Table 3: Demographic Profile of Respondents

Demographic Profile (N=142)	Frequency	Percentage (%)
Gender		
Female	46	32.4
Male	96	67.6
Age		
26-35	15	10.6
Below 25	127	89.4
Study Year		
1st Year (Bachelor)	50	35.2
2nd Year (Bachelor)	14	9.9
3rd Year (Bachelor)	22	15.5
4th Year (Bachelor)	36	25.4
Masters	20	14.1

This section examined the data about the level of experience students possessed on social media and information technology. The below Table 4 unveiled that close to 70% of the participants have been utilizing social media for more than 3 years. Around 60% of students have at least one smartphone; the number of students having no ICT gadget is only 1.4%. The analysis revealed that the use of WIFI and mobile data is the most popular among the students. The study found that 92% of students feel comfortable using social media and more than 99% of them think that social media is beneficial for academic purpose.

Table 4: Social Media & ICT Experiences

Demographic Profile (N=142)	Frequency	Percentage (%)
Student's experience level in using Social Media		
1-3 years	33	23.2
3-6 years	66	46.5
Less than 1 year	10	7
More than 6 years	33	23.2
Type of ICT devices owned by students		
Computer/Laptop	5	3.5
Computer/Laptop, SmartPhone	40	28.2
Computer/Laptop, Smart Phone, Tablet	8	5.6
None	2	1.4

Smart Phone	86	60.6
Tablet	1	0.7
Type of Internet used by students		
Mobile Data	58	40.8
Mobile Data, WiFi	62	43.7
WiFi	22	15.5
Comfortability using Social Media		
No	11	7.7
Yes	131	92.3
The usefulness of Social Media for educational purposes.		
No	1	0.7
Yes	141	99.3

#### 5.2 Descriptive Analysis

In order to understand the characteristics of the sample, the study analysed descriptive statistic in IBM SPSS. The result shown in the Table 5 that the mean is stretched from 3.92 to 4.11 for all five variables. The values of standard deviation ranged from 0.59 to 0.76. The value of mean and standard error indicated that the data were distributed normally, and it was concentrated around the mean. Consequently, the data were less disseminated.

Table 5: Descriptive Statistics

	PU	PEOU	AT	BI	AU
N	142	142	142	142	142
Mean	3.94	4.11	3.92	3.92	4.00
Std. Deviation	0.74	0.59	0.76	0.74	0.68
Minimum	1.67	2.33	1.33	1.33	1.67
Maximum	5.00	5.00	5.00	5.00	5.00

#### 5.3 Measurement Model:

In this data analysis section, convergent and discriminant validity tests were used to measure the research model. These tests were performed to examine the sufficiency of the construct used in the model.

# 5.3.1 Convergent validity:

Three measures recommended in assessing the converging validity- a) composite reliability, b) item reliability and c) average variance extracted (Fornell & Larcker, 1981). Reliability is a test of examining the level of consistency among the variables and this evaluation must be made before examining its validity (Hair, J. F., Black, W. C., Babin, B. J., & Anderson, 2018). to investigate the internal consistency among the constructs, the study relied on the value of Cronbach's alpha( $\alpha$ ). There are four level of alpha- a) 0.90 and more denotes excellent reliability, b) 0.70 to 0.90 denotes high reliability, c) 0.50 to 0.70 denotes moderate reliability,

and 0.50 and less denotes the low reliability (Hinton, P. R., Brownlow, C., McMurray, I., & Cozens, 2014).

Table 6: Convergent validity

	Cronbach's Alpha(α)	rho_A/Factor Loading	CR	AVE
PU	0.752	0.782	0.859	0.673
PEOU	0.727	0.751	0.846	0.650
AT	0.825	0.832	0.896	0.741
BI	0.816	0.818	0.891	0.731
AU	0.652	0.658	0.812	0.591

The above Table 6 demonstrated that the alpha value of all variables varied from 0.652 to 0.825. Thus, all four showed high reliability except the AU which scored 0.652 with moderate reliability. For evaluating the item reliability, factor loading method was used. 0.5 or higher value considered as significant measurement recommended by Hair et al (Hair, J. F., Black, W. C., Babin, B. J., & Anderson, 2018). As appeared in the above Table 6, all the value ranged from 0.658 to 0.832 which demonstrate higher item reliability for each construct. Additionally, the AVE value of each constructs must be higher than 0.5 for being accepted (Fornell & Larcker, 1981). The earlier Table 6 showed that all value complied the acceptance level. Thus, it is proved that every constructs of this research model were adequate.

# 5.3.2 Discriminant validity:

Discriminant validity is usually tested by squared correlations between two separate weighs in either construct and that should be less than the variance shared by the measures of a construct (Fornell & Larcker, 1981). The following Table 7 represents that shared variance by same construct was larger than all shared variance by separate construct. The final value of each row was greater than others value in same row. Thus, the discriminant test proved that the constructs of this model did not relate highly each other.

Table 7: Discriminant validity

	AT	AU	BI	PEOU	PU
AT	0.861				
AU	0.643	0.769			
BI	0.688	0.686	0.855		
PEOU	0.646	0.675	0.706	0.806	
PU	0.559	0.477	0.690	0.694	0.820

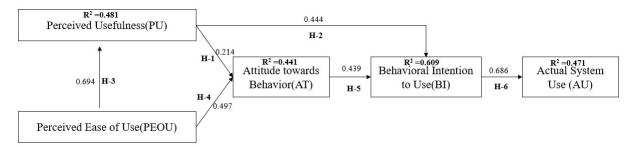
# 5.4 Statistical Analysis and Hypothesis Testing

# 5.4.1 Structural Model

A structural model was built in this section to investigate the correlation among the variables. Two methods were taken in this study for evaluating the underlying model- a) hypothesis testing, and b) predictive strength testing. For testing the

hypothesis, the study used standardize path efficient. Moreover, compute of R2 or coefficient of determination was utilized for determining the predictive strength.PLS and

Bootstrapping analysis were used in SmartPLS3 to get the result.



Value on path: standardized coefficients (β) R<sup>2</sup>: Coefficient of determination

Figure 4: Structural Model

The above Figure 4 unveiled that the R2 value for perceived usefulness (PU), attitude towards behavior (AT), and actual system use (AU) are 0.481, 0.441 and 0.471, respectively denoting a moderate effect size to predict the variable. The R2 value for behavioral intention to use (BI) is 0.609 determining a strong level of predictive power in the context of using the social media for academic purposes.

#### 5.4.2 Hypotheses Testing

The following Table 8 demonstrated that all hypothesis H1 to H6. Because all those hypotheses have recommended reference value of P, T, and β. Perceived Usefulness (PU)  $(\beta=0.214, p<0.01)$  has a direct influence on Attitude (AT) and Perceived Usefulness (PU) (β=0.444, p<0.01) behavioral intention (BI) to use social media by students for academic purposes. Therefore, H1 and H2 are supported. Additionally, Perceived Ease of Use (PEOU) (β=0.694, p<0.01) has direct influence on Perceived Usefulness (PU) and Perceived Ease of Use (PEOU) (β=0.497, p<0.01) has direct influence on Attitude towards behavior(AT) to use social media by students for academic purposes. Thus, H3 and H4 are also supported. Attitude (AT) (β=0.439, p<0.01) has direct influence on behavioral intention(BI) and Behavioral intention(BI) (β=0.686, p<0.01) has direct influence on Actual System Use (AU) to use social media by students for academic purposes.

Table 8: Result of Hypothesis

Hyp othes is	Path	Beta	Standard Error	T Statisti cs	P Values	Decisio n
Н1	PU -> AT	0.214	0.098	2.176	0.000	Suppor ted
H2	PU -> BI	0.444	0.102	4.360	0.000	Suppor ted
НЗ	PEOU -> PU	0.694	0.051	13.637	0.000	Suppor ted
H4	PEOU -> AT	0.497	0.110	4.518	0.000	Suppor ted
Н5	AT -> BI	0.439	0.109	4.019	0.000	Suppor ted

Н6	BI -> AU	0.686	0.055	12.541	0.000	Suppor ted
T-value> 2.58, significance at 1%, T-value>1.96, significance at 5%						

#### VI. CONCLUSION

The study relied entirely on technology acceptance model (TAM) for examining the factors that influence the usage of social media for academic purposes among students in tertiary level institutions. The study constructed six hypotheses based on all five variables of TAM-PE, PEOU, AT, BI, and AU. The study data were gathered from 142 students from undergraduate and graduate level students from Begum Rokeya University, Rangpur, Bangladesh. The data analysis unveiled that this research model appeared as internally consistent and reliable. Thus, this research model has a high level of explanatory power. The result showed that BI and PEOU emerged as lead element that significantly influence on AU and PU respectively. AT and BU also appeared as the key factor that has also direct influence on behavioral intention in using social media for academic purposes. Finally, the statistical analysis proved that all hypotheses are supported in this study. In conclusion, the outcome of this study would play a momentous role for the institutions in making their education policy.

#### VII. IMPEDIMENTS AND FURTHER STUDY

The study found some impediment that left unsolved. But this study sheds light on some of the issues that may play a role in overcoming the problems. Nowadays, technologies have been growing exponentially. Therefore, student's perception of perceived usefulness (PU), perceived ease of use (PEOU), attitude towards behavior (AT), behavioral intention to use a system (BI), and actual system use (AU) has been changing rapidly. Hence, the current approach may need revise in future research for obtaining more accurate result. The study investigated the responses from one public university for the time limitation. However, the similar study can be extended to more universities together. Finally, the research conducted

during the pandemic situation which may affect their opinion. As a result, there was a possibility of a mistake in the result. Future research has the potential to correct all these mistakes.

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# Appendix A: Instrument Development

# 1. Perceived Usefulness (PU)

PU1: Using the social media would help me to know academic events more quickly.

PU2: Using the social media would increase my learning performance.

PU3: Using social media would make my academic life more convenient.

# 2. Perceived Ease of Use (PEOU)

PEOU1: Learning to use the social media would be easy for me.

PEOU2: I would find it easy to use the social media to do my academic tasks.

PEOU3: I find using social media require a less of physical effort.

# 3. Attitude towards Behavior(AT)

AT1: Using social media for academic purposes is a very innovative idea to me.

AT2: Using social media for academic purposes is a very positive idea to me.

AT3: Using social media for academic purposes is interesting to me.

# 4. Behavioral Intention to Use (BI)

BI1: If I had access to the social media, I intend to use it.

BI2: I intend to use the social media in the future.

BI3: I will recommend another student to use the social media.

# 5. Actual System Use (AU)

AU1: I use social media very frequently.

AU2: I use social media for various academic purposes.

AU3: Using social media for academic purposes is saving my time.