

enhance learning through the development of student-teacher relationships, social learning support, and student-focused and active learning (Hartstone and Ajjan, 2009; Taylor, et al 2012). Academic performance tools for students have potential benefits and instructional merits, but most lecturers and students are reluctant to utilize them for online access, according to specialists in this field (Hartstone and Ajjan, 2009; Stanciu, et al 2012; Karki et al., 2021).

Taylor et al. (2012) found that when students communicate and discuss academic challenges with professors through official ties, they are hesitant to use social media. Numerous educational institutions are now able to benefit from students' academic performance activities because to social media's increasing possibilities (Tinmaz, 2012). Faculty and students can now communicate more efficiently by utilizing this technology to provide better services (Al-Mukaini 2014; Shrestha et al., 2022). This is due to the abundance of educational opportunities provided by social media technology. It can improve educational activities by promoting cooperation, communication, critical thinking, active engagement, and the sharing of knowledge and resources (Al-Rahmi and Zeki, 2017; Mazman and Usluel, 2010).

Argan and Akyildiz (2010) assert that students seldom ever use social networking to advance their education. Furthermore, social media is used by students more for social contacts than for teamwork or learning (Al-Rahmi et al 2019; Moran et al., 2010, Shakya et al., 2024). Additionally, students have a strong commitment to teamwork, communication, and knowledge of modern technology; as a result, their individuality could lead to people mistakenly believing that social media endorses these activities (Zoghi, et al 2010). Research has shown that they have a negative impact on relationships amongst students (Sibona and Choi 2012).

Social media has an effect on students' educational experiences when they move from school to university, which could be detrimental to their academic achievement (Dahistrom 2012). Thus, the purpose of this study was to assess students' academic performance based on communication and teamwork standards.

This study fills in knowledge gaps and offers research recommendations by offering three fresh perspectives on how students' goals to use social media for collaborative learning and online communication are changed. These insights are obtained by: (i) identifying the variables that influence students' behavioral intent to use social media for online communication and collaboration learning; (ii) looking at the relationships between all the variables; and (iii) developing a model on students' behavioral intent to use social media for online communication and collaboration learning to improve their academic performance at higher education.

To put it briefly, the goal of this study is to evaluate and explore students' behavioral intentions to use social media for online communication and collaborative learning in order to improve their academic performance in higher education.

Problem Statement

Using social media and mobile phones caused issues in the classroom, according to Junco and Cotton (2012) and Ghimire and Karki (2022). Social media use has an effect on students' academic performance and Grade Point Average (GPA) (Nemetz, et al, 2012; Al-Tahmi et al., 2019).

Research students utilize social media for studying, which impairs their ability to focus (Kirschner and Karpinski, 2010). Madge et al. (2009) claim that Facebook time allocated to social issues was not utilized for education. Thus, there has been a detrimental effect on students' academic performance (Karpinski, et al 2013; Bhattarai et al., 2024). A study by Haq and Chand (2012) found that Facebook negatively affects academic achievement, more so for male students.

Furthermore, a few Malaysian scholars have looked into the use of social media in higher education, each with their own theories and perspectives. As a result, it is suggested to investigate TAM in combination with teamwork and communication components that influence academic achievement through social media use (Al-Rahmi, et al, 2015; Lee 2013).

Therefore, the main objective of our research is to evaluate students' academic performance using constructivism theory (Vygotsky, 1978; Carlile, Jordon, and Stack, 2004), communication theory (Walther, 1996; Routledge 2013), and the TAM model (Davis, 1989; Ventatesh and Bala, 2008) in order to address the

shortcomings that will arise in these areas and other aspects of higher education in the Malaysian context.

Students' motivational concerns are always reflected in their behavior. Understanding how they use social media requires understanding how they interact and communicate (Sohn, 2014; Chang and Hsiao, 2014). According to Cao et al. (2013), an inquiry approach from previous social media researchers was employed; nonetheless, the results showed a complex apparent risk of utilizing social media for time wastage and a loss of motivation for learning. There is still concern that using social media excessively can cause motivation to decline.

Review of the Literature

The literature that has been examined and characterized by earlier investigations is included into and presented in this section of the study. It identifies the relationships between the study variables and includes definitions for the variables used in the investigations.

Social Media in Education

With the aid of social networking platforms, users can send emails, create their own profiles, add friends and family, join groups, enhance material, locate other users, and much more (Quan and Young, 2010). The current internet, also referred to as Web 2.0, allows for greater user customisation, affiliation, and participation than the earlier Web 1.0 version (Kaplan and Haenlein, 2010).

The usage of social media by college and university students is a topic of debate among scholars. Several academic studies have demonstrated the impact of social media on educational effectiveness (Elkaseh, Wong, & Fung, 2016). According to Harrison and Thomas (2009), social media can assist students in developing their written and spoken communication abilities, which has been shown in multiple surveys to have a positive impact on training and learning foreign languages. University students see Facebook as a significant, positive online community that supports and enriches English language learners (Kabilan et al., 2010).

Social media can be used to support student-centered learning activities (McQuail, 2010), improve active learning by encouraging interaction between students and instructors (Al-Rahmi et al., 2018), support social learning in the classroom (Buzetto-More, 2012), and promote learning through collaboration and involvement (Al-Rahmi et al., 2018), according to the literature.

Theoretical Model and operational definitions

Research models look at the many facets of constructivism, such as interaction, involvement, and collaboration; TAM looks at students' behavioral intent to use social media as well as perceived utility, enjoyment, and perceived utility; and communication looks at students' motivation to communicate, ease of communication for learning, and online communication. Students' academic performance at Higher Academic Institutes is impacted by these findings (see Figure 1).

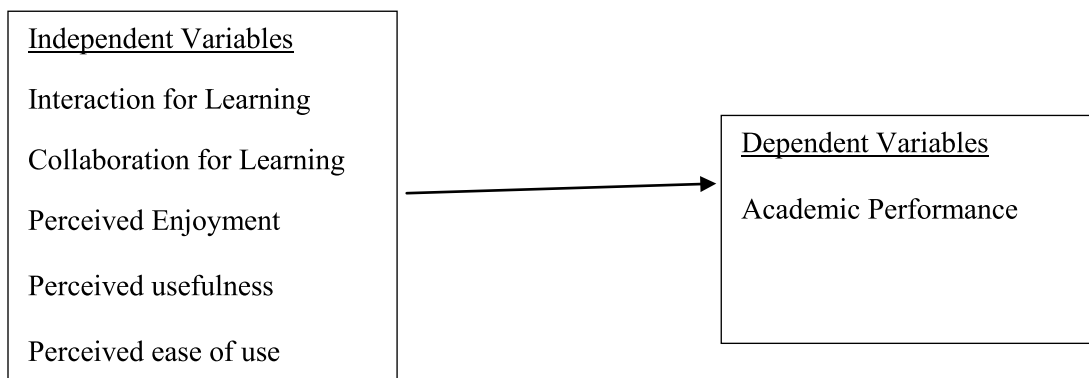


Figure 1

This research will utilize Interpersonal communication (Routledge, 2014), computer-mediated

communication (Walther, 1996), mass communication (McQuaid, 2010), and many other topics are covered in research on communication theory (Putnam, et al, 1987). But certain communication theories are better suited for K–12 learning than others.

Further, learners who help novices build a foundation of knowledge based on social constructivist theory (Vygotsky et al., 1978) that observe in interactive social networks and perspectives of knowledge are unable to find perceptual equilibrium. These learners have already worked to become familiar in order to acquire cognition. Therefore, the learning process will employ constructivism (Vygotsky et al., 1978) to reaffirm a fundamental idea: learning is an active and constructive activity. Furthermore, the TAM created by Davis (1989) and the Unified Theory of Acceptance and Use of Technology (UTAUT) by Vankatesh and Bala (2008) will be combined in our study.

Interaction for Learning

Web-based instruction (WBI) is defined as a media-rich online environment that allows users to engage with others synchronously or asynchronously in distant and collaborative settings (Haradasim, et al, 1995). Traditional learning approaches may cause study group members' pleasant interactions to be interrupted (Cotner, Fall, Wick, Walker, and Baepler, 2008). Thus, learning capacity is impacted by communication (Blasco-Arcas, et al 2013).

Collaboration for Learning

Collaboration is the collection of exchanges intended to support a team of individuals working together, online or off, to accomplish a particular goal or end product. In addition, it is recognized as a philosophy of interpersonal relationships and lifestyle that holds each individual responsible for their own deeds, such as appreciating and learning from the accomplishments and skills of their peers (Panitz, 1999). As such, collaboration for learning is an academic approach to teaching and learning in which a group of students explicitly collaborate to finish a task, find a solution to a particular issue, or produce new work (Laal and Laal, 2012; Al-Rahmi, et al., 2014). Studies have indicated that social media can be a useful instrument in improving kids' academic performance (Arnold and Paulus, 2010).

Perceived Enjoyment

Perceived enjoyment, according to Van der Haijden (2014), is the degree to which learning management system (LMS)-provided activities or services are regarded as pleasurable in and of themselves, regardless of possible performance consequences. As a result, this study defines perceived enjoyment as a student's belief that utilizing social media will help them succeed academically. If they love the process, users of social networking websites are more likely to participate. The study conducted by Lee et al. (Lee, et al, 2005) explored the appropriate behavior for students to engage in on Internet-based learning media (ILM) by combining motivational theory with a TAM model.

Perceived Usefulness for learning

Perceived usefulness, according to Davis (1989), is the extent to which an individual thinks that utilizing specific systems increases their efficacy at work. Therefore, the degree to which a learner believes using social media would help their academic accomplishment is defined as perceived utility in this study. Perceived usefulness, as defined by Davis (1989), is the probability that a system application utilized in an organization will enhance a user's productivity at work.

Users make this subjective assumption. (Davis, 1989; Adams, Nelson, and Todd, 1992) discovered that use behavior and purpose or intention was significantly influenced by perceived usefulness. Later research employing a different set of data from two different technologies supported this theory (Subramanian, 1994). Their structural equation modeling (SEM) demonstrated that perceived usefulness directly influenced use behavior. Al-Ammary et al (2014) found in their recent research on social media use that perceived utility has a significant influence on purposeful behavior.

Perceived Ease of Use

When someone feels that a certain approach should only require minimal effort to utilize, that scenario is referred to as perceived ease of use (Davis, 1989). Accordingly, our research defines perceived ease of use as the extent to which a student believes social media to be user-friendly and will enhance their learning performance. According to literature, perceived ease of use describes how much a person believes utilizing a specific scheme won't require any effort (Davis, 1989; Venkatesh and Bala, 2008).

Perceived ease of use is defined in this study as the extent to which a learner believes using social media won't need any effort on their behalf. According to Davis et al. (1989) (p. 2), "An application perceived to be easier to use than another is more likely to be accepted by users." Accordingly, a connection between behavioral use intention and perceived ease of use is suggested by this study. Specifically, a number of studies that examined this association and discovered a positive relationship between these dimensions were empirical TAM assessment-focused (Al-Rahmi et al., 2019; Al-Rahmi et al, 2015; Adams et al., 1992).

The relationship between attitude components and perceived ease of use has been assessed and verified in the IT literature through the application of the empirical technique. A few researches (Adams et al., 1992; Burton-Jones and Hubona, 2012) have assessed usage using alternative metrics, and their findings are consistent with those obtained in TAM, indicating a substantial positive correlation between attitude and the two TAM beliefs.

Academic Performance of the Students

Academic achievement can be attributed to any learner, instructor, institution, or student who has met their learning objectives (Dunning, et al. 2008). Social media continues to affect students' academic performance across all research disciplines, claim Junco and Cotton (2012). In fact, it has been seen that the formation of Facebook-focused social groups aids in students' development.

There are still a few unique situations, though, where research indicates a favorable correlation between Twitter and Facebook [Al-Rahmi et al. (2018), Al-Rahmi, et al (2015), Al-Rahmi, et al. (2019), Junco and Cotton (2012), . Kaplan and Haenlein (2010) suggest integration to enhance learning Al-Rahmi and. Zeki (2017). Roblyer et al. (2010) state that social media supports interaction, communication, and collaboration between research students and the instructors in their department. Additionally, according to Oradini and Saunders (2008), social media has little to no impact on students' academic achievement.

Furthermore, Kirschner and Karpinski (2010) made an effort to look at the connection between students' academic success and Facebook. Their research revealed a significant negative correlation between students' academic performance and Facebook use. Students reported spending less time each week on regular study sessions than nonusers. According to the majority of students who responded, they use Facebook at least once a day. This is in line with Canales, et al (2009) as well as Junco and Cotton (2012). According to studies looking at how social media use affects students' academic performance, all students think it's okay for their mentors to use Facebook, which allows for social interaction between teachers and students (B. Baran, 2010). Furthermore, social media use contributes to the development of a positive correlation between students' academic success and their degree of enjoyment. (Al-Rahmi, et al. (2018), Al-Rahmi, et al (2018), Al-Rahmi, et al. (2019), Al-Rahmi and Zeki (2013).

Research Method:

Using a causal comparative and exploratory research methodology, the aim of this study is to investigate, analyze, and assess the impact and relationship of the variables being discussed. The entire student body enrolled in master's and graduation programs in the Kathmandu Valley was considered the population. Non-probability judgmental sampling techniques were employed to choose the sample. To meet the study's requirements, 250 sample responses were compiled using Google Drive after emails were gathered via Facebook, Messenger, the phone, and other methods. Depending on the particular requirements of the study, statistical tools such as the mean, t-test, factor analysis, and correlation have been employed.

Reliability of the data

Interaction for leaning		Collaboration for Learning		Perceived Enjoyment		Perceived usefulness		Perceived ease of use		Academic performance		Total	
Alpha	No	Alpha	No	Alpha	No	Alpha	No	Alpha	No	Alpha	No	Alpha	No
.912	6	.947	6	.942	7	.929	7	.954	7	.871	7	.981	40

The survey questions were presented and administered in an easy-to-understand manner so that students could comprehend them. The formulation of the five Likert-scale surveys was based on the literature. The alpha tests of factors (variables) found minimum 87 percent and highest 98 percent. The alpha test of overall factor is 0.985, which is used to measure reliability. About 98 percent of the variables are explained by these questionnaires, demonstrating their great reliability.

Presentation and analysis of data

Table 1. Association of the Variables Study Variables

Correlation Matrix

Particular		IL	Col L	P. Enjo	P. Usefull	Easefor using	A perfor
Interaction for Learning	Pearson Correlation	1					
	Sig. (2-tailed)						
Collaboration for Learning	Pearson Correlation	.957**	1				
	Sig. (2-tailed)	.000					
Perceived Enjoyment	Pearson Correlation	.889**	.931**	1			
	Sig. (2-tailed)	.000	.000				
perceived usefulness	Pearson Correlation	.780**	.819**	.872**	1		
	Sig. (2-tailed)	.000	.000	.000			
perceived ease of use	Pearson Correlation	.641**	.643**	.653**	.803**	1	
	Sig. (2-tailed)	.000	.000	.000	.000		
Academic Performance of the students	Pearson Correlation	.581**	.548**	.598**	.718**	.953**	1
	Sig. (2-tailed)	.000	.000	.000	.000	.000	

The relationship between the variables under investigation is displayed in Table 1. According to the table, every connection has a strong positive correlation at the 0.000 level of significance in two-tailed analysis. The aforementioned chart, which ranges from 0.548 lowest to 0.958 highest, shows that all of the variables are positively correlated with one another.

Table 2. Principal Component Analysis of Interaction for Learning

Component	Initial Eigen value			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
Online environment allows me to interact with others	4.140	69.003	69.003	4.140	69.003	69.003
Communication impact on students learning capabilities	.884	14.734	83.737			
Networking in social media create efficient bases for learners	.403	6.719	90.455			
E-learning converts students to active learners creating enthusiasm	.318	5.293	95.748			
it creates bigger enthusiasm to learn knowledge beside nurturing better quality	.209	3.477	99.225			

Component	Initial Eigen value			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
it creates bigger enthusiasm to learn knowledge beside nurturing better quality	.047	.775	100.000			

Extraction Method: Principal Component Analysis

Table 2 shows that I can communicate with people in an online settings 69.003 percent weighted, meaning that this component accounts for 69 percent of the variables, whereas the influence of communication on students' learning capacities accounts for 14.734 percent. Nearly 83% of the variables can be explained by these two factors. As a result, the primary components are two of the elements. The weightings of the remaining components are 16.3%.

Table 3: *Principal Component analysis of Collaboration for Learning*

Component	Initial Eigen value			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
Media have ability for managing course activities increase resources along with information	4.733	78.886	78.886	4.733	78.886	78.886
Media motivates and makes them involve through interactivity or collaboration	.642	10.702	89.588			
collaboration facilitates to achieve a particular goal or end result	.231	3.845	93.433			
collaboration helps to increase respective action like learning and respect the capabilities	.166	2.774	96.207			
it is an academic approach for learning and teaching that encompasses learner's group to solve particular problems	.142	2.361	98.567			
collaboration help finishing a task producing a new task	.086	1.433	100.000			

Extraction Method: Principal Component Analysis

According to Table 3, the ability of media to manage course activities, increase resources, and provide information has a weighted percentage of 78.886 percent, meaning that this factor accounts for 78.886 percent of the variables. Additionally, media motivates and involves them through collaboration facilities or interactivity to achieve a specific goal or end result, accounting for approximately 10.702 percent of the variables. Nearly 89% of the variables can be explained by these two factors. As a result, the primary components are two of the elements. The weightings of the other elements are 11.0 percent.

Table 4: Principal Component analysis of Perceived Enjoyment

Component	Initial Eigen value			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
Social media is working as a positive means and shown to improve student's academic performance	5.297	75.668	75.668	5.297	75.668	75.668
collaboration for learning utilize social media like face book, twitter, and Email etc	.521	7.441	83.109			
social media enable students for learning or knowledge sharing between students teachers and instructors in practical life	.471	6.732	89.841			
E-learning propose the volume of perceptive work imposes on students cognitive capability	.285	4.065	93.906			
Social media support in collaboration for learning	.264	3.778	97.684			
The team perceived enjoyment serves or action affected by learning management system	.102	1.452	99.136			
It is supported to be pleasurable by its consequences	.061	.864	100.000			

Extraction Method: Principal Component Analysis

Table 4 demonstrates that social media is a useful tool that has been demonstrated to enhance students' academic performance. Its weightings of 75.668 percent indicate that this factor accounts for nearly 76 percent of the variables, while collaboration for learning through social media platforms such as Face book, Twitter, and email accounts for example accounts for 7.441 percent of the variables. Nearly 83% of the variables can be explained by these two factors. As a result, the primary components are two of the elements. The weightings of the remaining elements are 17%.

Table 5: Principal Component Analysis of perceived usefulness

Component	Total Variance Explained			Extraction Sums of Squared Loadings		
	Initial Total	Eigen value % of Variance	Cumulative %	Total	% of Variance	Cumulative %
The enjoymentenrich performance of learning	5.237	74.809	74.809	5.237	74.809	74.809
Online social media site is likely to enjoyment perceived from the processes	.671	9.588	84.396			
Internet base learning mediums enable investigation in determining the behavior to adopt in students behavior	.429	6.135	90.531			
Social media motivates us in learning	.313	4.473	95.004			

Component	Initial Eigen value			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
The study through investment is considered enjoyment as a core catalyzer	.198	2.832	97.836			
Perceived usefulness effect significance in influencing the attitude of Students	.107	1.529	99.365			
Perceived enjoyment factor in the study of technology acceptance of users affect intention to learn	.044	.635	100.000			

Extraction Method: Principal Component Analysis.

Table 5 shows that the components that contribute to learning performance are 74.809 percent weighted, meaning they account for 69 percent of the variables. Additionally, online social networking sites are expected to contribute to the enjoyment that users derive from the procedures, accounting for approximately 9.588 percent of the variables. Nearly 84% of the variables can be explained by these two factors. As a result, the primary components are two of the elements. The weightings of the remaining components are 16 percentages.

Table 6: *Principal Component Analysis of perceived ease of use*

Component	Initial Eigen value			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
Causal relation between media use and perceived enjoyment have positive relation	5.589	79.838	79.838	5.589	79.838	79.838
Perceived usefulness utilizing certain systems boost his/her work performance	.423	6.048	85.885			
Social media use increases the usefulness that enrich performance	.384	5.490	91.375			
Perceived usefulness means probability subjected by users system application to increase the job	.213	3.040	94.415			
Perceived usefulness as a critical factor support for purpose or intention or behavior of students	.182	2.605	97.020			
Utilizing the distinct set of data from distinct technologies influence behavior	.132	1.882	98.902			
Study on social media possess networking impact on intentional behavior	.077	1.098	100.000			

Extraction Method: Principal Component Analysis

According to Table 6, there is a positive causal relationship between media use and perceived enjoyment that is 79.838 percent weighted. This means that this factor accounts for nearly 80 percent of the variables, while

the perception that using specific systems improves one’s ability to perform at work accounts for about 6.048 percent of the variables. Nearly 86% of the variables can be explained by these two factors. As a result, the primary components are two of the elements. The weightings of the other elements are 14.00 percent.

Table 7: *Principal Component Analysis of Academic Performance of the students*

Component	Initial Eigen value			Extraction Sums of Squared Loadings		
	Total	% of Variance	Cumulative %	Total	% of Variance	Cumulative %
Circumstance have an individual think like utilizing a specific procedure could require a minimal effort	4.973	71.047	71.047	4.973	71.047	71.047
Use of social media is easy in increasing academic performance	.700	10.002	81.050			
Social media support that certain schemes usage would not involve any effort to increase performance	.549	7.844	88.893			
Using social media would require no effort	.304	4.344	93.237			
An application perceived to be easier to use than another is more likely to be accepted by users	.237	3.387	96.624			
attitude towards media learning and perceived ease use have positive association	.183	2.617	99.241			
Ease of use in study purpose affect learning attitude	.053	.759	100.000			

Extraction Method: Principal Component Analysis

Table 7 shows that circumstances that make someone believe that using a particular process could require little effort have a weight of 71.047 percent, meaning that this factor accounts for 71 percent of the variable and using social media to improve academic performance is simple and accounts for roughly 10.002 percent of the variation. Nearly 81% of the variables can be explained by these two factors. As a result, the primary components are two of the elements. The weightings of the other factors are 19.00 percent.

Table 8: *Mean and Standard Deviation by Gender*

Gender/Variables	Male		Female		Total	
	Mean	SD	Mean	SD	Mean	SD
Interaction for Learning	3.26	1.113	3.73	.866	3.55	.990
Collaboration for learning	3.20	1.252	3.76	.996	3.55	1.129
Perceived Enjoyment	3.07	1.230	3.54	1.014	3.36	1.121
perceived usefulness	3.29	1.157	3.66	.854	3.52	.992
perceived ease of use	3.38	1.201	3.62	.865	3.53	1.008
Academic Performance of the students	3.29	1.195	3.47	.878	3.41	1.009

Source: Google survey

The mean value response for both male and female respondents is displayed in Table 8. The variable interaction for leaning is lower for male respondents than for female respondents (male mean = 3.26, female

mean = 3.73). According to this number, both sexes concurred that they use social media for communication and education. Female respondents had higher mean values than male respondents for the other factors, but both sexes concurred that they utilize social media for academic achievement, learning cooperation, perceived enjoyment, perceived utility, and perceived ease of use.

Table 9: Mean and SD (Standard deviation) by Academic Qualification

Gender/Variables	Bachelor		Master		Total	
	Mean	SD	Mean	SD	Mean	SD
Interaction for Learning	3.66	.935	3.22	1.084	3.55	.990
Collaboration for learning	3.66	1.092	3.23	1.192	3.55	1.129
Perceived Enjoyment	3.45	1.092	3.11	1.179	3.36	1.121
perceived usefulness	3.54	.918	3.00	1.166	3.41	.992
perceived ease of use	3.60	.933	3.28	1.131	3.52	1.008
Academic Performance of the students	3.66	.915	3.14	1.175	3.53	1.008

Source: Google survey

According to Table 9, the majority of students concur that they use social media in a positive way, which is supported by the mean response value (all means are greater than 3). The mean values of master's degree students are lower than those of bachelor's degree students. While master's students had the greatest mean value (3.28), all bachelor's degree students' mean value replies are greater than 3.41. Compared to bachelor's students, master's students believe in perceptions a little less than 3.28. Masters students have little less believe on the perception than bachelors' students.

Conclusion

All of the study's variables have a positive correlation, according to the information gathered and administered. Students that use social media in their studies fare better academically. Social media can be used for a variety of reasons, but it helps students do better academically. The factors under investigation have an impact on one another, and the two-tailed correlation matrix is significant. The principal components employed in this study account for over 60% of the variables, according to the factor analysis, while two components—the major components identified by the principal components analysis—explain over 75% of the variables. The outcome unequivocally demonstrates that the components studied under this study has given the fair results. According to the study, women are more agreeable with the variables and use social media more than men, as shown by the higher mean value of the female respondents. Additionally, they were more likely than male respondents to agree that utilizing social media improves their performance. Bachelor students feel that utilizing social media improves their performance; that shows the bachelor's degrees comparatively use it more frequently than master's students. According to the responses, master's students utilize social media less frequently than bachelor's students. As a result, they less agree with others who think social media can improve academic achievement.

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