

## **Impact of Social Media on the Learning of University Students in Pakistan**

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### Abstract

Clicking, posting and scrolling are not the only purpose of social media. Social media has become multipurpose forum for the people. In the educational sector, the use of social media as interactive tools which motivate students towards learning. The aim of this research is to investigate the impact of social media on students' learning in Iqra University, Karachi. Researchers conducted a complete review of the impact of social media for university students' learning, identified the significant factors and deliberated on new models which were based on different research studies. By using random sampling technique, students were selected for data collection. Questionnaire was used as an instrumental tool for collection of data. IBM SPSS and Smart PLS were used for analyzing the data. Results of this research study state that social media creates a positive and significant impact on the learning of the students. As a part of this research, three platforms (Facebook, Twitter and WhatsApp) were discussed in this study. In future studies, researchers can add some more or different variables to study this phenomenon in more detail.

**Keywords:** social media, students learning, smartpls, Facebook, Twitter, whatsapp

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**Introduction**

Social media are online technology platforms that build relationships among people. Social media is rapidly spread all over the world. This technology is totally computer-based, and it facilitates the sharing of thoughts, ideas and most important information. Students have social media as a very important thing in their lives and that is why they are spending their most of their time on these forums. It also serves to expose students to different tools that contribute towards their educational process. The interaction of young people through social media helps them to connect with their peers for information and entertainment purpose (Boyd, 2007).

Hawi and Samaha (2016) suggest that there is no positive connection or association with social media and satisfaction and self-esteem of life. For this study, the researchers were of the view that the students who belong to the university, spend a lot of time on surfing social media for the entertainment purpose and it may cause the distraction from the work and a negative effect on the life. According to Amin, Mansoor, Hussain and Hashmat (2019) suggest that students share their thoughts with other using technology. Acheaw and Larson (2015) conducted a study, which concludes that social networking negatively influence the academics of the students, researchers recommend introducing novels and other information resources that helps students in academic achievement.

We define social media in these words “Social media is online technology that helps people to connect together. It is used to build relationships among people” while in this study social media is a web-based technology which helps people to connect with each other. It’s also helpful for education purposes students share information related to their studies.

The term learning is defined “learning is defined as information gaining process, values, knowledge and skill in this study learning also involves understanding, relating the ideas and making a strong connection between previously available and newly added knowledge, and social media enables to transfer all that knowledge in different ways and new context as well.

Martin(2008) and Lusk(2010) both suggest that similar idea about the use of Blogs, Twitter, LinkedIn, Facebook, and MySpace for exchanging ideas not in only words but pictures and videos as well and these forums are used for communication purposes too. This research focused to check the influence of social media on learning of students in Pakistan. Social media is utilized for sharing concepts, sharing study material like videos, and lectures to help students with their studies.

Accordingly, the previous study they only discussed the two main variables, those variables were just Twitter and Facebook. But this research aims to fill the gaps by developing a new model for research the role of social media and adding another variable adding to it (Twitter, Facebook and WhatsApp) which has significant effect on students learning. And contributions overall in this research are as follow:

The excessive impact on social media is not a local phenomenon but it is now a worldwide situation as well from the past few years. It was just a hobby during initial times but now it is turned into lifestyle and social norm. Social media forum is a technological platform that helps to connect people together from everywhere and from either they are far or near. Its basic purpose is to develop relationships among people around the globe. Social media is also a helping hand for the students to get information quickly and important which is possible at that time when he has social media in his access. One thing which is helping students in their daily life and academic life, and that is social media. There is another side of the picture where people are using it for entertainment purposes.

As per our best knowledge previous studies are done with lesser variables, these are the reasons, previous studies don't provide a better picture as this investigation shows. Current study includes an important social media forum which is WhatsApp and most of the people most of the time are using it for communication purposes so it can be very helpful for exchanging ideas with their teachers and as well as their classmates.

## **Literature Review**

### **Theoretical Background**

Social media is now everyone's important part of life. Social means society where people interact, exchange their ideas and spend so much time surfing the social media forums. Being educationists, we are focusing students here as they are an important part of society. So, it is important to know how these digital natives are using these forums nowadays. To investigate these things, we adapted a questionnaire (Amin et al.) 2016 with more variables to get more information about different social media forums. Facebook, Twitter & WhatsApp are used as independent variables to check their effect on students' learning.

Adulkareem and Alkamel (2020) has investigated the impact of social media particularly YouTube creating a positive impact on children in Canada. Mostly the students spend their time on using social media apps and they watch different videos related to their studies, which helps

students in their learning. According to this study 68% children agreed social media helps them during the difficult task. Social media also helps children to connect with each other and it also increases the confidence level in children. Further, the researchers believes that social media acts as a tool which is helpful for students in their learning process.

Sonawane (2020) explored that the social media has not much impact on performance of students. This use of social media under the strict supervision may support to enhance the performance of students. 223 students were selected from various faculties. The sample size consists of 123 boys and 100 girls from Undergraduate and Post Graduate level. Stratified Random Sampling method was used. The study found that social media usage under the supervision had created the great impact of students' academic performance.

Khan, Sultan and Alsamarai (2019) examined the social media adversarial effects like Twitter and Facebook etc. On the academics of the students of Erbil. For this purpose, the survey method was applied so they can collect the data from the respondents. So, for that motive the total number of respondents is 197. Those respondents were the learners from Iraq from Erbil city and for data analysis with correlation among variables, ANOVA and Regression test with SPSS software. This research found that that social media is the factor of issues in the students like distraction, waste of time and reducing the expertise on language resulting in bad affect on students' academics.

Amin, Mansoor, Hussain and Hashmat (2019) conducted an investigation on the students' usage of social media sites and its impact of their academics and for this an approach which is used is quantitative research. Targeted population for data collection is four educational sectors of Pakistan, on these basis 300 students selected for data collection. Random sampling is used. The result of this research is to find out the students' outcome which they spend most of the time using social media. Research shows that there are two main variables discussed and there are some other variables included also which affects the student's performance in their academics.

Samad, Nilashi and Ibrahim (2019) explored how social media sites are affecting students' academic progress and social wellbeing. They gave short reviews on the using social networking sites for the learning process to identify their impact and with the help of this learning researcher build a new model. This research is conducted in Malaysia from only female students. The outcomes of this study show that there is a progressive link between the social existence of students' social wellbeing and their academic performance.

Kumar (2019) conducted research to examine the influence and usage of social media on students at different colleges and universities located in India. Purpose of study to know that when, who, where, what, why and the way students use social media and this study also aimed to explore how the students at colleges and universities use social media apps for their academic and learning purpose. So this descriptive exploratory research utilized random sampling method of (N=50) consists of male =26 and females=22 who were administered, and asked that as a student's what are their views about that in what way social media effects on undergraduate, postgraduate, M.Phil and Ph.D. students studying in different colleges Upardahan degree college, Allahabad university, Handiya postgraduate university, VBS Purvanchal university and CSJM university Khanpur. Results found in this study research showed that social media influence a lot on the child's life. Social media creates many new types of communication with friends and others as well. This also includes an individual's self-concept.

Aljuboori, Fashakh and Bayat (2019) conducted research to explore use of social media in different aspects. In this research use of social media like (Facebook and YouTube) in business, politics and the most common for academic purpose in the Iraq university students. Researchers focus on the three main universities in Iraq Karbala University, Baghdad University and West Iraq University. Data should be categories in four sections like general, academic, political and business. The usage of social media can be both; either in a positive way or in negative way that impacts according to business purpose mostly people use social media for buying and selling the product and they can avail different discounts. Most political people also use social media for their advertisement purpose but most of it creates a negative impact. For the academic purpose social media helps students in their learning as well as they increase student's confidence level, but researchers can't overlook the negative way of using social media in student lives. This also affects child health and their eyes because Social media is an addiction the students spend their most of time on social which also impacts the students' health as well. In the future we extend this study to increase the stakeholder like staff members, teacher to improve their performance for the usage of social media.

Abbas, Aman, Nurunnabi and Bano (2019) conducted a study for workable education the influence of social media on behavior related to learning. For proof, the student was selected from the universities which were situated in Pakistan. Study targets to check both factors, either those that are constructive and adverse that have impacts on the student's

brains and how these forums assist the students in how they can share their negative and positive sides with others. Investigators of this study targeted the university students and distributed questionnaires and successfully collected 831 responses, and students' age brackets are ranging from 16 to 35 years. Mixed methods sampling technique is used in this research and to know most impactful factors like SD and mean score which is also denoted as (M) was used to represent every characteristic. To testify the consistency of the respondent's data t-test and ANOVA is used. And the technique they used for sampling was cluster sampling. The results show that in Pakistan the more usage of social media usage is negatively affecting the behavior of the students more negatively while comparing that they are using it for productive purposes like learning etc. Here we can say one thing very important that outcomes are not generalized to the whole student's community as we know that these results are specific to the targeted respondents only from where data was collected. And they suggest that investigations shall be conducted in future and should also investigate and research the effects of different social media forums, including WhatsApp, Twitter. Furthermore, researches which have similarities can be conducted by different age groups so we can see more clear pictures and also different students by investigating different areas or provinces, by doing these changes results may vary and we can compare them with these results and by analyzing these we can get better results.

Ahmed, Dar, Tahir & Masood (2018) investigated in this quantitative study the how social media is creating an impact of student's academics. To conduct the study the survey methodology was used so they can collect the data from the students studying at Koforidua Polytechnic during the lecture timings and in their 2nd semester of session 2013/2014. A group of researchers composed a survey so they can collect the data and after designing this survey they collected data from 1300 students. Data collection is no doubt a tough job but after collecting it data was analyzed in SPSS (Social Sciences Statistics Package) and the results found in percentages and relating frequency. The conclusion of this study is showing that the most candidates have cell phones, have internet access and they are also familiar with social media too. Current research has shown the usage of media (social) extensively that performance of students is affected. Social media websites are not just facilitating students to have new friends, but they also can release some academic pressure while being on social media.

Acheaw and Larson (2015) examined how usage of media socially is affecting the academical presentation of institution children which are

situated in Ghana while focusing on Koforidua Polytechnic students. Total number of copies of questionnaires which were distributed among those university students was (1578), out of those distributed copies of questionnaires (1508) copies returned back to the investigator and this response return date is 95.5%. This study shows that most students had mobile phones along with an internet connection on them and they also have knowledge of different social media forums as well. The research is also suggesting that students who have mobile phones with internet facilities, must be encouraged to use the smartphone as a supplement for doing their research other work while working in the library and for other academic purposes rather than traditional ways it is such a useful tool for doing these tasks. Students must be empowered to control their time on social media sites as per daily routine it may convince them on this point that rather substitute that time to improve knowledge while reading novels and other stuff like these.

Maqableh, Rajab, Quteshat, Masa'deh1, Khatib, Karajeh (2015) investigates how and what amount the use of social media is affecting students' academically performance. The targeted population is the large number of Jordan University's undergraduate students. Random sampling is used. 366 students were answered the survey questionnaire for different facilities of the university. Data analysis t- test and ANOVA were used for data analysis. Study showed insignificant relation between usage of social media with students' age and academic performance. Finding of this study is future strategies which can enhance student's time management and multitasking activities so they can improve their skills and academics.

Sharqi, Hashim and Kutbi (2015) investigated social behavior of students towards social media. Researchers select two groups, one science and the other one is an art group. Both groups divide the social media in three categories one for entertainment purpose, second one is searching for information and the last one is to acquire skills in both fields which are discussed above. Data collection was done by the questionnaire from 2605 of both genders male and female, and different age groups. For analysis z-test, t-test, correlation, regression and ANOVA is used as well as Cronbach's Alpha is also used in this process. The finding of this paper is different for science and art student's science students mostly focus the opinion of other rather than art students focus the freedom of expression, the common advantages of both; impact of media and acts (behavior) of students in a positive way they easily communicate with each other's, improve open mindedness and they also focus the different style of thinking. The excess usage of media develops

the undesirable effect on societal behavior. It increases the distraction of study as well as it affects the mental ability in a student's life.

Mingle (2015) conducted a study to check the relationship between influence of social media with students' academic performance. Research shows, social media impacts on academic performance of students in two totally different ways and it depends on usages of social media networking sites whether it's used for academic purpose and for the wastage of time too. In this study investigator used only two independent variables Facebook and WhatsApp. This survey design provides a quantitative study and used a mixed method design too. Population for current this study was (5249), in senior high schools. Questionnaire was used as a tool for data collection. The stratified sampling method utilized to collect the data in this research. For Social Sciences research the Statistical Package SPSS was used as data analysis software. The investigated applied factor analysis as analytical tool and Kendall's coefficient of concordance conduct this study. Data which was collected while doing an interview from the participant were also analyzed & organized according to the objectives of this research. The results of current research show that social media affects negatively on students' educational performance. The lots of students spend their most precious time on using internet. It affects the poor grammar and spelling and moreover the late submission of their class tasks, as most of their time is at social media to interconnect with their friends. The study suggests to first promote in students how social media is beneficial for the academic purpose, counsel the students how its social media networking sites use for the educational purpose.

Kaya and Bicen (2014) examined and investigated how social media affects the behavior of children. Social media builds a positive as well as negative impact on student's behavior. The sample size 362 high school students selected, 202 female and 160 male students. Questionnaire was used for data collection. For data analysis SPSS is used and to observe the students' behavior, one way ANOVA, t-test and mean. The result of this study is that people take Facebook as a communication tool for sharing information ideas, videos and pictures. It creates a positive impact on students' behavior and the securities are those factors which play a role significantly in behavior of students. The further research and investigation is required to find the change in attitudes of university students. In addition, use of different variables (Whatsapp and Twitter) may be researched through a study for its effects on students' behavior. Leelathakul and chaipah (2013) explored the effects of social media in the learning and teaching in the classroom to enhance the students'

performance. With the help of current research researchers examined the influence of Facebook on the 98 pupils of institution in Thailand. Statistical and the mining techniques are used for data analysis. Study found a positive impact of using Facebook on students' learning. Conclusions of this research shows that students pass more time on education related and its effect on the students' grades. The result of this research is to help the learner and teacher to understand the use of social media in productive way.

Selvaraj and Rithika (2013) examined use of media on academic performance of students in India. Researchers examined the different networking like twitter, Facebook, and Orkut which create the positive result on students' academic performance. The sample size is 100 respondents. Judgment sampling has been used for data collection; researchers select primary data collected through a questioner. The questionnaire describes all aspects of social media background in connection with academic performance of students. Result of current article is that social media leads a positive impact on students' learning. They easily share their views and it's also useful in future too but not for wastage of time.

Al-Rahmi and Othman (2012) conducted a research to examine the influence of social media on the educational performance of university students. Social media (Facebook, twitter) surfing positively impacts the educational performance of university students, they can easily connect with their classmates and teachers and discuss the related material towards the study. The usage of social media increases collaborative learning, improves the learning ability, communication abilities in students. 80 undergraduate and postgraduate students were selected as a sample size in the session of 2012-2013. The respondents were between 18 years to 36 years. Data collection used for survey questionnaires, in this study offer information on how social media impacts those students who are studying at university and also share their experiences. For the data analysis Social media impacts on student's collaborative learning and interaction between peers and teachers but manages the time as well otherwise it creates a negative impact on a student's performance. In the future research adds up the more variables to which can get positive results about the learning from social media.

Dawson (2008) conducted a study so he can investigate what kind of relationship exists between social network and sense of community. Quantitative data collected from the students' but on the other side qualitative methodologies like content analysis and case study of postings at a discussion forum were also undertaken in order, so they can

verify those findings those were derived from the quantitative data. So, if we discuss quantitative data, statistical analyses incorporated on basic descriptive, regression analysis and ordinary least squares. After calculating the results from the above tests, they concluded that there is a connection among social networks and pupil's sense of community. Results are also indicating that the SNA measures closeness and positive sense of community. In future qualitative analyses the individual's social network influences the type of support and help to exchange the information then automatically the sense of community is experienced.

### **Objectives of the Study**

The objectives of the study are:

1. Finding the impact of social media (Facebook, Twitter, WhatsApp) on students' learning.
2. To investigate how social media is helping students in their daily academic activities.

### **Methodology**

This part covers the approach of the research, design, variable and methodology on how to collect the data from the population. The main purpose of this paper is to examine the effect of social media on the Iqra University students learning and it is quantitative research. Random sampling technique we distributed questionnaire links among 250 people, and we got 240 responses from them which is 96% response. In this study four variables used. Students' learning as dependent variable, Facebook, Twitter & WhatsApp as independent variable.

5-point Likert scale questionnaire was designed particularly for the purpose. In questionnaire closed-ended questions asked from the target population. Researcher used questionnaire of 20 items to collect the data of 240 students and all those students were from different programs and at different levels like bachelor Master, PhD) of different campuses of Iqra University located in Karachi city of Pakistan

### **Empirical Framework**

This model estimates the effect of social media on student's learning is defined as follows:

$$SL = \alpha_0 + \beta_1 (T) + \beta_2 (F) + \beta_3 (W) + \varepsilon$$

Where SL represents student's learning, T represents the twitter and F represent Facebook and W represents the WhatApps while  $\alpha_0$  is constant,

$\beta_1$  and  $\beta_2$  are coefficients and  $\varepsilon$  is the error term.

This model is estimated by the data collected through a 5-point Likert scale questionnaire designed particularly for the purpose.

### **Descriptive Statistic:**

Table 1

#### *Demographic characteristics of students (N=240)*

Gender	Frequency	%
Male	110	45.5
Female	130	54.5

Table 2

#### *Demographic characteristics of students age (N=240)*

Age	Frequency	%
15 – 30	128	53.3
31 – 45	79	32.9
46 and above	33	13.8
Total	240	100

### **Reliability**

Cronbach's alpha reliability is the first test we used to calculate the reliability of the instrument and data which has been collected from the participant of this research. This measure shows the consistency of different item scales. Basically, Alpha is used for checking every item's correlation of means and average to and other items in the scale. For this research a questionnaire which has been developed it comprises a total 20 questions (also called items). In the reliability test, the accurate value of alpha is greater than 0.5 and the result of the reliability test is shown in Table 3.

The outcome of alpha 0.831 which is indicating that the data we have collected, and instrument is more than 83 percent reliable and trustworthy. Outcomes driven from the reliability test, both data and instrument are further used for estimation and calculation.

Table 3  
*Determined standards of Cronbach Alpha*

Variables	Items	Cronbach's alpha
Facebook	5	0.826
Students	5	0.755
Twitter	5	0.780
WhatsApp	5	0.785
Overall	20	0.831

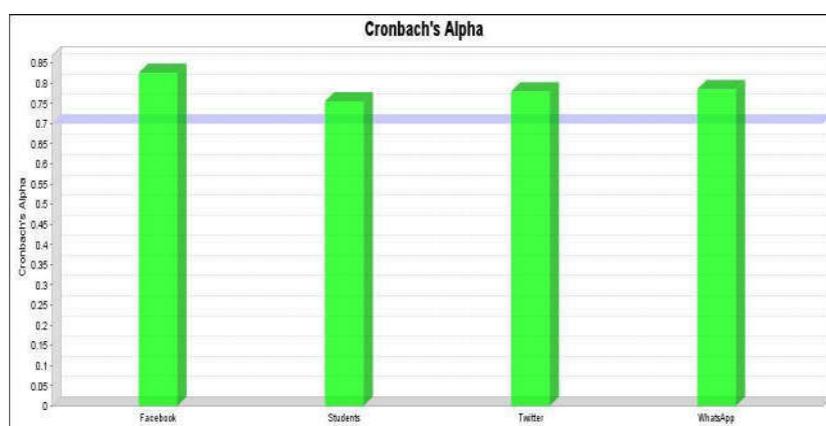


Figure 1. Reliability value of research tool

Table 4  
*Determined standards of AVE (Average Variance Extracted)*

Variables	Items	AVE (Average Variance Extracted)
Facebook	5	0.587
Students	5	0.508
Twitter	5	0.580
WhatsApp	5	0.541
Overall	20	0.554

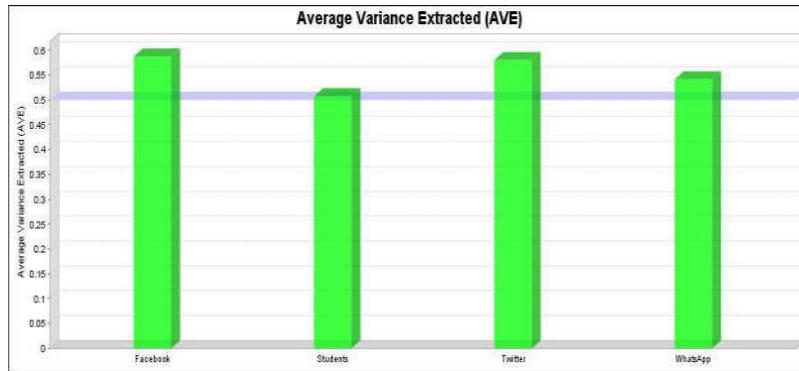


Figure 2. Average variance extracted

Table 5  
Determined standards of rho\_A

Variables	Items	rho_A
Facebook	5	0.848
Students	5	0.772
Twitter	5	0.887
WhatsApp	5	0.789
Overall	20	0.824

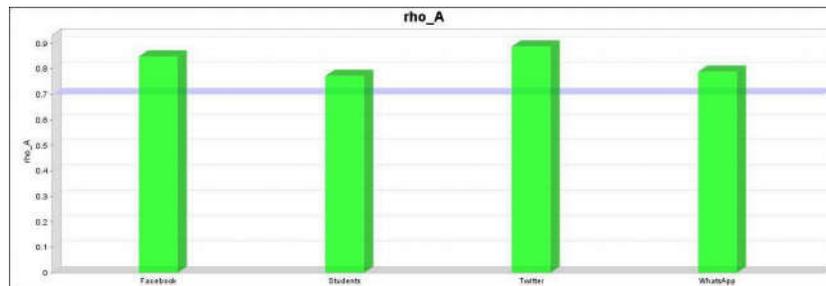


Figure 3. rho\_A

**Factor analysis**

Factor analysis is essential and much useful for better understanding of the outcomes and results of the analysis. These 20 questions can be categorized into four overlying groups of items. The items lying to the highest to the lowest ranges within each factor the ranges of these factors is between -1 to 0 to + 1 because of the loadings the results from an diagonal rotation matrix that show that the each items correlation with their factor. Outcomes of factor analysis are reported in Table 6.

Table 6  
*Factor analysis showing the correlation among the factors*

Heading	Value
KMO Barlett's test of sphericity	0.842
Chi-Square	2158.093
Degree of Freedom	190
Probability	0.000

In Table 7 the items with high loadings taken from every factor must be taken to the examination so we can check that conceptually fit together and that can be named.

Table 7  
*Rotated matrix between social media and students learning (N=240)*

	Component			
	1	2	3	4
T2	.884			
T4	.815			
T1	.789			
F5	.787			
T3	.779			
F4	.759			
F1	.595			

F2	.546		
F3	.519		
W3		.811	
W2		.781	
W1		.741	
W5		.641	
W4		.510	
S2			.737
S5			.725
S1			.693
S4			.675
T5			-.781

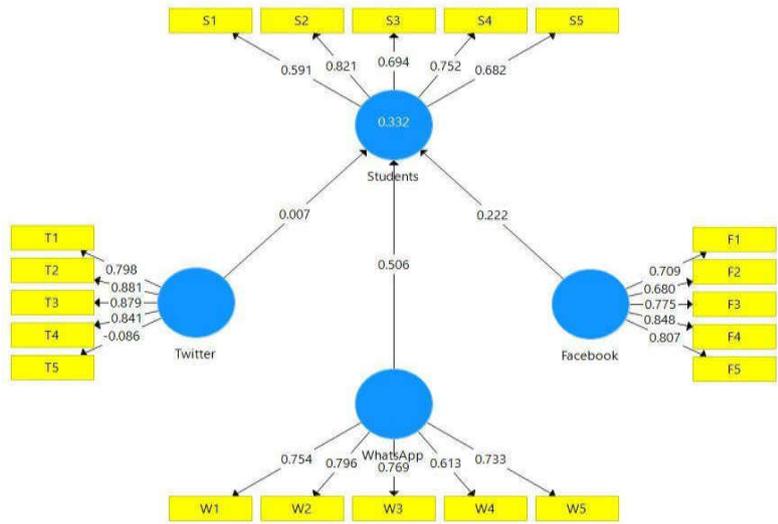
**Regression analysis** Table 8 is showing the findings of regression analysis. Results are indicating the effect of social media has a significant positive effect on students' learning. The coefficient of WhatsApp is 0.506 and that is the highest value among all other variables that were part of our study. It shows that WhatsApp is highly affecting the students' learning coefficient of Facebook is 0.222. So, as we can see, Facebook is the second factor which is most effective for students learning. Twitter is also an important factor which is affecting 0.007 students' learning.

Table 8  
*Using Regression effect of social media on students' learning*

Variable	Coefficient	T- statics	VIF
Facebook	0.222	2.351	1.793

WhatsApp	0.506	8.025	1.053
Twitter	0.007	0.083	1.772
Constant	0.332		---

Adjusted R- square: 0.315; Note: VIF, variance inflation factor



**Discriminant Validity**

The heterotrait-monotrait (HTMT) ratio of correlations, it is a method for finding the discriminant validity in partial least squares structural equation modeling, and that is one of the important building blocks of model evaluation. So, the HTMT criterion significantly outperforms classic approaches to discriminant validity assessment such

as (partial) cross-loadings and Fornell-Larcker criterion, which are mostly not able to detect a lack of discriminant validity.

Table 9  
Cross-loadings

	Facebook	Students learning	Twitter	WhatsApp
Facebook	0.766			
Students Learning	0.284	0.712		
Twitter	0.651	0.133	0.762	
Whatsapp	0.113	0.531	-0.036	0.736

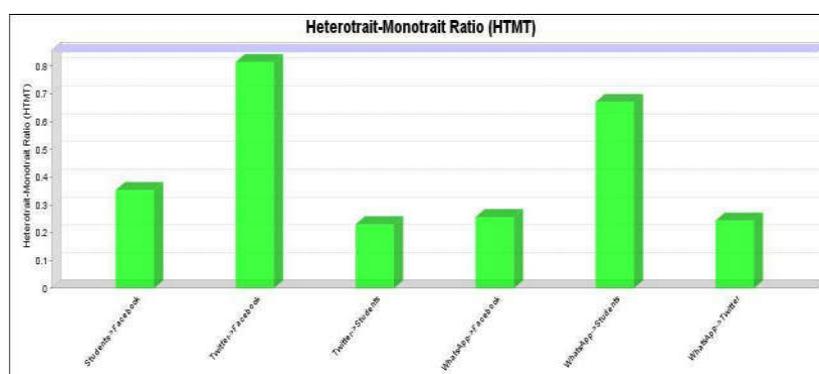


Figure 4. Heterotrait-Monotrait ratio

**Discussion**

This study is all about examining and determining the impacts of the most popular factors in our modern age of social media platforms usage by the students and finding out their impact on the social media on academic performance of students. Investigators took a detailed literature review from previously research done by the researchers related to the study. Data collection used questionnaires as an instrument that contained questions close-ended. So, when we selected the instrument then we identified our targeted population to conduct our study. Our targeted population was the students studying at Iqra University (all campuses) located in Karachi, Pakistan. A selected sample of 240 students finalized for data collection. 250 questionnaires were distributed

and from those 250 questionnaires we got 240 questionnaires back. The data reliability was 0.786, and that is acceptable. After checking the reliability, for data analysis descriptive statistical methods applied for checking test data frequency distribution. Survey shows that respondents most use these social media platforms like Facebook, WhatsApp & Twitter. Majority in the respondents agreed that they are using these social media platforms. They make their assignments well at home and surfing these social media forums encouraged them to concentrate in a better way on their regular studies. Most of the students admits that this is their daily routine to use these social media forums or most of the forum among these, not only they are just using it for the entertainment purpose, or they are not just wasting their time but they were also agreed in this point that these social media forums affecting their academic performance in a positive manner.

### **Conclusion and Recommendations**

As we know that in the previous year's media forums became more popular day by day globally and it is now playing a major role in every field of life as well. Not just common people but now celebrities are now turning towards social media forums to gain their public reputation and popularity. Primary motive behind conducting this research is to check that we can find out that when the majority of our youth are spending their time and energy on internet forums, is this beneficial for them in any way or not? So, findings might be surprising for many of us that studies have found out to be mostly positive because they are capable of generating new ideas and sharing the concepts which are related to their studies and assignments. No doubt they are also using social media for entertainment purposes too which gives them some pleasure in their tough routine. Our youth and students are such an important asset of our country and we must utilize this energy of youth so we can get many better and creative things. With the help of media learning is such fun learning now study is proving that it is providing them better learning to our students and these social media forums helping students to do their academic task with enjoyment.

As we know that usually most of the research has some future scope, and it is also clear that this study is also not free from the future scope. So, we must discuss those future scopes too. First of all, due to limited time and resources we collected a very limited number of samples which is 240, and by increasing sample size finding may vary from this study. We found our outcomes from the three social media forums (Facebook, WhatsApp, Twitter) but future research can add more forums and can

investigate those impacts on students learning too. Future researchers can check the impact of social media on teachers too, how it is creating impacts on their teaching methods. Either they found it a helpful medium of communication with their students for learning or not. By checking these aspects, it is possible that results might be different from our findings.

## References

- Abbas, J., Aman, J., Nurunnabi, M., & Bano, S. (2019). The impact of social media on learning behavior for sustainable education: evidence of students from selected universities in Pakistan. *Sustainability*, *11*(6), 1-23(1683).
- Ahmed, M., Dar, M., Tahir, R. M., & Masood, F. (2018, March). Impact of social media on academic: A quantitative study. In *2018 International Conference on Computing, Mathematics and Engineering Technologies (iCoMET)* (pp. 1-5). IEEE.
- Al-Rahmi, W., Othman, M. S., & Yusuf, L. M. (2015). The role of social media for collaborative learning to improve academic performance of students and researchers in Malaysian higher education. *The International Review of Research in Open and Distributed Learning*, *16*(4), 177-204.
- Al-Sharqi, L., Hashim, K., & Kutbi, I. (2015). Perceptions of social media impact on students' social behavior: A comparison between Arts and Science students. *International Journal of Education and Social Science*, *2*(4), 122-131.
- Amin, Z., Mansoor, A., Hussain, S. R., & Hashmat, F. (2016). Impact of social media of student's academic performance. *International Journal of Business and Management Invention*, *5*(4), 22-29.
- Arop, F. O., Agunwa, J. N., & Owan, V. J. (2019). Tertiary students' social media management attitudes and academic performance in Cross River State. *British International Journal of Education and Social Sciences*, *6*(3), 48-52.
- Dawson, S. (2008). A study of the relationship between student social networks and sense of community. *Journal of educational technology & society*, *11*(3), 224-238.
- Grover, P., Kar, A. K., Dwivedi, Y. K., & Janssen, M. (2019). Polarization and acculturation in US Election 2016 outcomes—Can twitter analytics predict changes in voting preferences. *Technological Forecasting and Social Change*, *145*, 438-460.
- Hawi, N. S., & Samaha, M. (2017). The relations among social media addiction, self-esteem, and life satisfaction in university students. *Social Science Computer Review*, *35*(5), 576-586.

- Kaya, T., & Bicen, H. (2016). The effects of social media on students' behaviors; Facebook as a case study. *Computers in Human Behavior*, 59, 374-379.
- Khan, S., Sultan, A. A., & Alsamarai, S. (2019). Social media and its adverse effect on academic performance of students. *Bulletin of Social Informatics Theory and Application*, 3(1), 38-44.
- Leelathakul, N., & Chaipah, K. (2013, May). Quantitative effects of using Facebook as a learning tool on students' performance. In *The 2013 10th International Joint Conference on Computer Science and Software Engineering (JCSSE)* (pp. 87-92). IEEE.
- Lusk, B. (2010). Digital natives and social media behavior: an overview. *The Prevention Researcher*, 17(S1), 3-7.
- Maqableh, M., Rajab, L., Quteshat, W., Masa'deh, R. E. M., Khatib, T., & Karajeh, H. (2015). The impact of social media networks websites usage on students' academic performance. *Communication and Networks*, 7, 159-171
- Mingle, J., & Adams, M. (2015). Social media network participation and academic performance in senior high schools in Ghana. *Library Philosophy and Practice*, 1, 1-51(1286).
- Nilashi, M., Ahani, A., Esfahani, M. D., Yadegaridehkordi, E., Samad, S., Ibrahim, O., ...& Akbari, E. (2019). Preference learning for eco-friendly hotels recommendation: A multi-criteria collaborative filtering approach. *Journal of Cleaner Production*, 215, 767-783.
- Owusu-Acheaw, M., & Larson, A. G. (2015). Use of Social Media and Its Impact on Academic Performance of Tertiary Institution Students: A Study of Students of Koforidua Polytechnic, Ghana. *Journal of Education and Practice*, 6(6), 94-101.
- Owusu-Acheaw, M., & Larson, A. G. (2015). Use of Social Media and Its Impact on Academic Performance of Tertiary Institution Students: A Study of Students of Koforidua Polytechnic, Ghana. *Journal of Education and Practice*, 6(6), 94-101.
- Rithika, M., & Selvaraj, S. (2013). Impact of social media on students' academic performance. *International Journal of Logistics & Supply Chain Management Perspectives*, 2(4), 636-640.

Sonawane, S. S.(2020). The Impact of Social Media on Students' Academics. *Research Review International Journal of Multidisciplinary*, 5(4), 68-72

Umair, M., Basharat, R.&Bugti, S.M. (2021). Impact of Social Media on the Learning of University students in Pakistan. *Pakistan Journal of Distance and Online Learning*, 7(2), 119-140.