Impact of Social Media Usage Patterns on Political Awareness, Political Participation and Voting Behavior of Pakistani Youth

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Abstract

Media is a source of information, political awareness and change in voting behavior. The media significantly influences politics. Social media research is gaining ground across the world, as it has become a mainstay in the field of communication. Spending time online plays no significant role in political participation. The Uses and Gratifications approach is used in this study. The students of Islamabad's universities is the population of study. A sample, 1431 students was selected through multistage probability sampling technique. The data shows that there were 697 male participants, making up 66% of the total sample. There were 359 female participants, making up 34% of the total sample. These results suggest that a significant portion of the participants in the study were young people, with the majority being between the ages of 15-19. The results show the correlations between social media usages (SMU), social media patterns (SMP), social media political awareness (SMPA), social media political participation (SMPP), and social media voting behavior (SMVB).The Pearson Correlation coefficients show the strength of the relationship between the variables. Results of the statistical model show that there is a positive relationship between social media usages (SMU) and political awareness of youth. This indicates that there is a significant effect of social media usages for political awareness. on political awareness of youth. The survey respondents were asked to choose the social media platform that they believe is most effective in creating awareness on political issues. The results indicate that the majority of the respondents, 60.6%, believe that Facebook is the most effective social media tool for political awareness. The most notable findings were that young people who used social media more frequently tended to prefer using social networking apps over in-person interactions with family and friends.

Keywords: Social Media; Political Awareness; Political Participation; Voting Behavior.

Introduction

Media play an important role in increasing political awareness and collecting political views, information, and attitudes about any issue. It is a powerful tool of communication in the developing world and increases awareness about a specified issue and presents the real stage of society. In the era of knowledge and awareness, role of media had increased, when people watch the Television, listen the radio, read different types of books, newspapers, or use the social media, so people collect the information. Nowadays the media has become the information highway and is trying to fulfill the requirements of society (Ali & Kishore, 2020).

Media is a source of information, political awareness and change in voting behavior. Today media play the role of mediator between political realities and politicians. With the advancement of technology over the last few decades, the media and its influence on people has grown rapidly. Initially radio, newspapers, magazines, television, internet, and news media have an impact on society and social relations (Castells, 2011).

The media significantly influences society and is crucial in influencing how the public perceives issues. The media perform a variety of functions to influence public opinion through different ways. The primary and core purpose of the media is to inform the people with the updated news and information. They require news for a variety of decision-making and socializing purposes (M. McCombs, 2013).

Social media is not simply shaping the community opinion but moreover encouraging the public to participate in political system by providing them the spaces to create and share the information regarding different social, economic and political issues. Emerging social media has achieved a significant role in news gathering and shaping process (Lasorsa, Lewis & Holton, 2012).

Youth political participation has continued to be a prominent subject of study around the world because it shows psychological propensity, influence, and orientation toward supporting and adopting new ideas, the youth are a key target group for political parties. As a result, youth participation from the start is critical in determining whether individuals participate in future politics. This is demonstrated in practice by the low rate of voter turnout during elections due to the exclusion of youth from the electoral process (Halim, et al., 2021).

Communication scholars have agreed that a seismic shift is taking place in young people's media and communication behavior. According to a recent review study, most of the Facebook-related research (27 percent) focused on social communication issues. Young people are encouraged to share news and discussion about both public and private issues

due to the advantages and attractiveness of multimedia culture, which integrates audiovisual, informational, and telecommunications services (Acquisti & Gross, 2006).

There are numerous social media sites with various technical outfits that support a wide range of practices and interests. Social media have shaped an internet marvel that has grown in popularity in recent years. Users of social media have the option to send private or group messages to anybody, update their status, post images, videos like, comments and tweets. Now, social media is gaining popularity in a very short period particularly in youth. Most Facebook users are young people aged 18 to 24 (Pempek et al., 2009).

Social media among the region's significant youth population has also offered new insights as a result of this recent development and acceptance. It has been widely accepted that using Facebook for political reasons, especially to promote current affairs, has lowered obstacles to youth participation in political activities while also widening the scope of activities. The relationship between Facebook use, interactions with political personalities, the quality of Facebook content, political interest, and youth offline political participation is not well understood (Mohamad et al., 2018).

Social Media

Social media research is gaining ground across the world, as it has become a mainstay in the field of communication. The introduction of the internet has revolutionized and professionalized various democratic processes around the globe, especially in the political space. The importance of analyzing how social media is impacting our daily lives is underscored by the growing reliance on technology for vital communication. Social media platforms like Twitter, Facebook, and Friendster are changing how people establish, maintain, and cultivate different types of community relationships, from close friendships to casual associates (Khan & Shahbaz, 2015).

Cambridge Dictionaries Online" (2013) define social media as all services, apps, programs etc. which provide interaction facility to its user. Social media outlets provide information or entertainment contrary to traditional methods such as television and newspapers. Social media has many forms and mediums like emails, websites, chat rooms, applications, games, audio video chatting platforms and other alternatives. This new media has brought revolution in the field of communication, as these tools are providing easy, fast and interactive communication facility to its users (Towner &Dulio, 2008).There are numerous issues with social media usage and consumption, including selective consumption, as well as opportunities for knowledge sharing and interpersonal interaction. With technological advancements, it is necessary to provide awareness and proper use of social media. This is important in politics because social media is now widely used in political campaigns and can influence participation and voter turnout. Agendas and even electoral outcomes can be influenced by social media (Shephard, 2016).

Facebook

Facebook is a major social media site which was introduced by Mark Zuckerberg, Dustin Moskovitz, Chris Huges and Eduardo Saverin as a way for students on campus to interconnect, share, and attach through their friends around campus of the dorm rooms of Harvard University in 2004. Now a days it is most common and a powerful influential tool which is having more than 845 million users in December 2011, more than 350 million users can easily log in to their account by using the mobile gadget and it is a unique characteristic of only Facebook. Facebook is used for a wide range of activities, including games, music, applications, discussions, and posting. A further choice is to post a group message on friends' walls. Facebook is about sharing what is happening right now, what is happening in your life, and what you are doing with others who care and want to know (Lampe et al., 2007).

Facebook was conceived with the intention that it provides meaning and content. Facebook has been categorized as the most accessible and permitting. The top five social networking sites are Facebook, LinkedIn, Pinterest, Twitter, and Instagram. 71% of online adults use Facebook, making it the undisputed leader. Facebook users are not only several but also very engaged and active: 40% of Facebook users log in multiple times throughout the day, with 63% of users doing so at least once daily (Pempek et al., 2009).

Twitter

Twitter is known as a microblogging site which was introduced by Jack Dorsey in 2006. It has emerged as a new medium in the family of social media. In the period of five years, it became very popular worldwide, and it attracted more than 180 million users. A tweet with a character limit of 140 about any subject. Most well-known politicians use Twitter to interact with their supporters, conduct campaigns, and express their opinions to the public and the media.

People also tweeted about their daily activities, though these updates didn't offer any new information about politics or increase transparency. Instead, these tweets served as vehicles for self-promotion, suggesting that politicians preferred one-way, top-down communication to actually engaging with the public (Larsson & Moe, 2012).

In comparison, twitter has less no of monthly active users however twitter users are mostly influential people who are either political leaders, journalist, scholars, religious leaders, corporate tycoons. This feature of twitter makes it prominent

among all other available social media . Significant use of twitter by columnist and local journalists increases its significance since individuals related with news media use Twitter to share stories, offer remarks on twitter posts of legislators and individual specialists (Rindfuss, 2009).

Social Media Impacts and Politics

 Now a days public organizations and government agencies have changed their way of interaction with the citizens. Through the exercises, students also develop strong interpersonal skills and learn how to function as valuable and knowledgeable capitals (Muzaffar et al., 2019).

In the present day, social media sites such as Facebook, blogs, and Twitter foster more activism and social movements, which is reflected in political socialization. The use of social media is increasing at an alarming ratio in both young and old citizens, and research shows that most of the youth and teenagers use social media for political socialization. Social media helps to maintain pre-existing social networks while also connecting strangers based on shared interests, political views, or other activities (Mahmud & Amin, 2017).

Social media is the most significant source of political information and a significant catalyst for political activity. Spending time online plays no significant role in political participation. Time spent on social media and the different online activities have an impact on how likely people are to take part in community life. But it's crucial to note that some online behaviors are unmistakably and strongly linked to offline political engagement (Mahmud & Amin, 2017).

These days, all of the political parties that are now in existence and the individuals who belong to them have Facebook accounts that invite the public to contact them there. Politicians are communicating with the public in a two-way process through which the public can now speak with them directly. The public may speak to the party's representatives in their local regions, though even that was challenging. The situation is altering as a result of the social media wave that has swept the nation, particularly in the area of politics (Khushi & Scholar, 2013).

Social media and Political Awareness

It is referred in broad perception that includes political knowledge, values, and trends that enable a citizen to be well aware about the country affairs and problems in his or her society, analyze them, and form an opinion about them in order to change and develop it. Since it is so simple to transmit speculations, false information, conspiracy theories over the Internet, it may actually lower the bar for news quality and aid in the spread of false information (Andı et al., 2020).

Political knowledge includes details on the government, what it accomplishes, its leaders, as well as game rules, political parties, issues, and history. Media plays a key role in how youth acquire political knowledge, which leads to political participation. A large number of studies have examined the correlation between political participation and political information, as well as the relationship between political involvement and political knowledge.

Social media has emerged as a significant and effective political platform for voter education, political activism, and the rapid broadcast of information. A person without a social media account is viewed as being out of date by society. Indeed, social media has taken over both our personal and professional life. Most of voters take decision about their vote casting due to the influence of social media which play a key role to shaping their voting behavior (Toba Paul, 2019a).

Voting is a crucial aspect of the democratic process for citizens to participate in a democratic system. Voting helps us to select our representatives as well as voice our political views, the will of the people, and in some situations, directly pass new legislation. Voting helps us to select our representatives as well as voice our political views, the will of the people, and in some situations, directly pass new legislation (Curry, 2000).

Objectives Of The Research.

1) To find out the relationship between times spent on social media and political activities of youth.
2) To find comparative effectiveness of Facebook and twitter while seeking political information.
3)

Research Questions

The study addresses the following questions.

1) Which type of social media site is mostly used for political activities by youth.
2) Which social media site Facebook or Twitter is more influential in creating political awareness, political participation and voting behavior of youth.
3) To find out the relationship between time spent on social media and political awareness.

Literature Review

The literature review is a springboard for further research studies. It is a review of research that has been conducted in a certain area of study. For the suggested research, it is the selection and efficient evaluation of the materials that are already available.

According to Hargittai (2007) those logical variations exist between those people who are users of social media and others who do not use it. This difference is based on social networking site users' interpretations, with a key focus on Friendster, Myspace, Facebook, and YouTube. Gender, race, culture, and parental learning environment are all significant variables that are linked to a person's consumption. Those with greater access and discretion tend to use these social media platforms.

Santovea-Casal (2019) investigated the various features of Facebook that have a significant influence on young people. The main objective of the study was to examine the relationship between social media use and academic performance. Student engagement has been found to increase when social media is used in the classroom, but some studies contend that the networks formed in this environment do not represent stable communities of practice because students stop using the social networking site once the academic activity is finished, at which point the teacher stops taking part in the conversation. Decentralized configurations provide the user more control over the data that appears in their personal feed.

Quan-Haase (2007) conducted research and found that Students who live in homes are less likely to use Facebook, whereas those who live alone are more likely to use it. Students who communicate frequently with their parents and have few friends in educational settings tend to have less interest in using online social networks, whereas students who regularly interact with their friends are more active on these networks, notably Facebook. Students who live on campus are also more in touch with their classmates in person and have more online connections as a result of their use of Facebook.

A study found that high school students who utilise social networking sites like Myspace are better equipped to develop the skills required for the twenty-first century, especially in terms of technological proficiency and digital citizenship (Greenhow, 2011).

The young generation, such as schoolchildren and college or university students, make up a large segment of Pakistan's population. Thus, of the 180 million people who make up the entire population, youth make up about 60%. According to the data, 50 million young people are between the ages of 18 and 29, while 36 million are between the ages of 20 and 24. The students of the world utilize are users of social media sites and online communication tools the most. The creation of defined guidelines and moral standards for the use of social networking sites in educational institutions can lead to the creation of a positive learning environment (Waqas et al., 2016)

According to a study, the use of social media by the federal and state governments, regulatory agencies, political parties, and other organizations can all be used to gauge the penetration trends of social media in Pakistan. Twitter and Facebook have evolved into a message booth where announcements are made in order to inform the public and get their quick reply. They encountered problems with internet bandwidth and load shedding/power outages. It was determined that social media was essential for increasing public awareness of Pakistan's many challenges and political turmoil (Hussain, 2012). Social networking has arisen as a platform with the ability to revitalize democracy and electoral involvement as the communication environment grows more complex and participative. Researcher opinion on the usefulness of SNSs in politics is still divided. According to the study's findings, while social media do not appear to have a significant direct influence on users' political preferences (Kamau, 2017).

A study claims that one way to determine the trends in social media adoption in Pakistan is to look at how the federal and state governments, regulatory bodies, political parties, and other organizations use social media. Twitter and Facebook have transformed into a kind of message booth where announcements are delivered for the public to hear and may be quickly responded to. They experienced issues with power outages, load shedding, and internet bandwidth. Social media was shown to be crucial for raising public awareness of Pakistan's myriad difficulties and political unrest (Leong, 2015).

Chou and Fu (2017) explored that the number of voters increased due to the usage of social media and having strong positive effect of political participation. Furthermore, they explored different impacts of the Chinese version Facebook during the election in Taiwan. It has been examined about the diffusion and adoption of social media. Now a day's communication method has completely changed from traditional to dynamic, helping users to connect with others due to technological advancement and social media has become a public sphere. The findings of the research showed that the high penetration rate of social media in Taiwan and political power changed so the ruling party lost an election.

A study has been conducted on the gender gap in Political Knowledge. The study was conducted in the context of social science, and it indicates that women are less knowledgeable about politics. The gender gap in Political Knowledge, according to the researcher, is the result of a complex set of political, social, and psychological factors. Gender, while appearing to be as simple as male or female, represents more than just one's anatomy. The study found that knowledge levels differ between men and women depending on the culture of the state in which they live (Kenski, 2007).

Khan and Shahbaz (2015) investigated the role of social media in politics. Politicians and political parties used social media to promote their agendas and gain public support for their political campaigns. Because of its direct and interactive nature, it offers an alternative path for political communication. Social media campaigns provide an advanced laboratory for the development of political representatives in terms of spreading their ideas, capturing development issues, and

forming an assistance group in society such as volunteers. Social media is mostly used for political purposes. As a result, it has a significant impact on young people.

Kugelman (2012) investigated the role of social media in youth in Pakistan. He explored that social media is a powerful tool and it was used by five different ways; stories breaking, mobilizing people, promoting, and coordinating, humanitarian, activist, and speedy communication. Using of social media for political purpose is a new phenomenon for Pakistani people about their political socialization.

Political involvement is described as activity that has the ability to affect how the government acts, either directly by affecting the implementation of public policies or indirectly by influencing the elections of political actors who develop those policies. Traditionally, participation has involved voting, submitting petitions for issues, working on political campaigns, getting in touch with elected officials or media sources, going to town hall meetings, and contributing to political campaigns. Deliberate engagement in politics is when citizens voice their opinions or discuss political topics (Kushin & Yamamoto, 2010).

According to scholar Twitter gives reliable data to analyze the pulse of the society. Most of the Twitter messages can be accessed by Twitter's application interface (API) as Twitter messages are in the public domain and they are not protected The number of tweets reflects the view of the people and is very similar to how offline polls measure popular opinion. Therefore, Twitter can be an authentic, real-time beacon of political atmosphere in the country (Gayo-Avello et al., n.d.).

Gayatri Wani and Nilesh Alone (2014) made a study of the impact of social media on India's electoral system. The research was conducted in the context of the 2014 Lok Sabha elections, which happened to be the first in Indian political history. They observed, when subjected to the demands of true forward-looking electoral forecasting, that all known forecasting methods based on social media have failed. In short, the researchers believe that social media does not, and probably never will, provide a consistent, unbiased, and representative picture of the electorate.

Theoretical Framework

According to Kerlinger (1973) theory can be expressed "as it is a set of the interrelated constructs, definitions and propositions that present a systematic view of the phenomenon by specifying the relations among different variables, with the purpose of explaining a natural phenomenon". This study has utilized three theories to provide a systematic way. Two theories were applied in this study.

The goal of the current study is to determine how to best meet the media demands of young people, who frequently use social media, chat, music, games, television, radio, and newspapers for informational, educational, entertaining, and other purposes. The researcher selected the "Uses and Gratification" theory as the best fit of this study's theoretical framework to respond to the research questions because of the variety of ways in which teenagers use various media outlets to satisfy their media requirements.

Uses & Gratification Theory

There is no question that a strong theory can help scientists researching a particular phenomenon anticipate the findings or conclusions of their work since it offers real-world context for the phenomenon. We can choose a study design, create research questions and hypotheses, and predict the outcomes of any investigation with the help of the theory. Although there are many different types of theories utilized in communication studies, the use and pleasure theory was most closely related to and appropriate for this research, therefore it is a facilitator of the research process. Uses & satisfaction is a concept that is employed in media research to pinpoint people's innermost needs and satiate them.

The Uses and Gratification hypothesis, which contends that media consumers use the various media outlets for their own advantage or to gratify their desires, was first put out by Elihu Katz. The idea that media audiences are active rather than passive was tested and expanded by Elihu Katz, Michael Gurevitch, and Jay Blumber in the 1970s, which sparked the growth of the perspective of the uses and pleasure. The Uses and Gratifications approach dominated the development of television from the late 1950s through the 1970s. To better understand the phenomenon of uses and gratifications, Katz and his colleagues released a collection of essays titled "The Uses of Mass Communication" in 1974. Blumer and Katz argued for a more humanistic perspective and advised media consumers to select the medium(s) that best meet their needs, especially if they have access to alternative media (Blumler & Katz, 1974).

The major objectives of developing the theory of the uses and gratification are as under:
1) To investigate how people use media in order to fulfil their media requirements.
2) To investigate why people, utilize different media outlets and for what reasons.
3) To investigate and highlight the negative and positive effects and outcomes of people's use of various media outlets.

Research methods

Research paradigms are established models that guide a researcher about a research area. It leads to the research that one should conduct research with what degree or his involvement. It is quantitative research and survey method was adopted . The research design served as a blueprint for the data collection methods, scales, and result interpretation. In order to ascertain students' perceptions of the impact of social media on Pakistani youth, a close-ended, modified questionnaire was used in the survey.

Population

The students of Islamabad's public sector universities is the population of study, and it is due to its political importance because the students at Islamabad universities belong to all parts of the country.

Sample Size

A sample " is a set of data resources, which are drawn from a larger population of a potential data resource". Therefore, the population according to characteristic of generalizable was drawn a sample, 1431 students was selected through multistage probability sampling technique. This adopted method was most suitable because it provides the opportunity to ask questions which are concerning the research. The study was carried out with various variables like age, gender, and education. According to the statistical information unit of HEC, there were 16 universities recognized by HEC in Islamabad (HEC, 2013) and there were 129985 students enrolled to acquire their degrees. Therefore, sample size for this study is 1431 students of Islamabad universities.

Selection of Universities

There were 16 educational institutions in Islamabad that were designated as public sectors universities, according to HEC (2013). These 16 universities served as the study's sampling frame, as was previously mentioned. The researcher had to first choose universities from the sampling frame in order to get information from the students. The researcher decided to exclude one-half of the study's universities from the total sampling frame. After determining how many universities would need to be surveyed for this research, the researcher used a simple random procedure to select eight universities. The sampling technique used was a simple random and lottery method. The distribution of sample size to the chosen universities came next after the selection of the universities. Equal distribution of the sample is not feasible in this situation. As a result, the researcher assigned sample sizes to each chosen university using a proportional allocation formula.

Inclusion and Exclusion criteria for the respondents

After distributing the sample among the various universities, the next stage was to establish the criteria for excluding respondents from this study. The researcher excluded those students from the study that had the following characteristics:
a) Students who did not have use internet.
b) Students who did not have social media account.
c) Respondents who refuse to participate.

This research was based on social media use and the researcher was interested to see its relationship with manifestation of politics.

Data Collection

The participants were shown a structured questionnaire so that objective responses free of any outside influence could be acquired. Data analysis is the process of the research which requires the researcher to systematically apply the statistical approaches to the collected data. Sample size was calculated through Survey Monkey methods. Consequently, the estimated sample size consisted of 1431 students that was further allocated to each university through proportional allocation. However, the response rate remained 85 % and the data were collected from 1216 respondents. Overall, the researcher was not able to get data from 215 students.

Results Discussion

The center of attention of the study was to find out the impact of social media in creating political awareness. Investigation emphasized that how this awareness leads towards the participation and this participation finally mold the behavior of the youth and they take final action as voting behavior. In this part of the study, already collected data is presented in descriptive form. Moreover, the data analyzed through SPSS as per objective of our study to find out the answers of the study.

Table 1.
Gender of the Respondents

			Gender		
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Male	697	66.0	66.0	66.0
	Female	359	34.0	34.0	100.0
	Total	1056	100.0	100.0	

The frequency table shows the distribution of gender in a sample of 1056 individuals. Out of the total sample, 697 individuals (66%) are male, while 359 individuals (34%) are female. These results suggest that the sample has a higher representation of male participants compared to female participants. The data shows that there were 697 male participants, making up 66% of the total sample. There were 359 female participants, making up 34% of the total sample.

Table 1.2 Age of Respondents

			Age		
		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	15-19	881	83.4	83.4	83.4
	20-24	175	16.6	16.6	100.0
	Total	1056	100.0	100.0	

The results show that the majority of the participants in the study were between the ages of 15-19, with 83.4% of the participants falling within this age range. This is followed by 16.6% of participants who were between the ages of 20-24. The total number of participants in the study was 1056. The valid percent of the age categories adds up to 100%, which means that the sample represents a complete representation of the population under study.

These results suggest that a significant portion of the participants in the study were young people, with the majority being between the ages of 15-19. This is in line with the trend of increased political awareness and engagement among young people, particularly through the use of social media. These findings highlight the need for policymakers and stakeholders to engage and address the concerns of this young demographic in order to promote political engagement and civic participation.

Table 3.

Social Media Usage and Political Activities

		Correlations				
		SMU	SMP	SMPA	SMPP	SMVB
SMU	Pearson Correlation	1				
	Sig. (2-tailed)					
SMP	Pearson Correlation	.087**	1			
	Sig. (2-tailed)	.005				
SMPA	Pearson Correlation	.104**	.793**	1		
	Sig. (2-tailed)	.001	.000			
SMPP	Pearson Correlation	.080**	.837**	.860**	1	
	Sig. (2-tailed)	.009	.000	.000		
SMVB	Pearson Correlation	.065*	.642**	.732**	.840**	1
	Sig. (2-tailed)	.035	.000	.000	.000	

 **. Correlation is significant at the 0.01 level (2-tailed).
 *. Correlation is significant at the 0.05 level (2-tailed).

The results show the correlations between social media usages (SMU), social media political patterns (SMP), social media political awareness (SMPA), social media political participation (SMPP), and social media voting behavior (SMVB).The Pearson Correlation coefficients show the strength of the relationship between the variables. The significance (Sig.) level (2-tailed) indicates the likelihood of observing a correlation between the variables by chance.

The results show that social media political patterns (SMP) and social media political awareness (SMPA) have a significant positive correlation with social media political participation (SMPP) ($r=0.837$, $p=0.000$ and $r=0.860$, $p=0.000$

respectively). This suggests that an increase in social media political awareness and activism leads to an increase in social media political participation.

Additionally, there is a significant positive correlation between social media political participation (SMPP) and social media voting behavior (SMVB) (r=0.840, p=0.000). This suggests that social media political participation leads to an increase in social media voting behavior.

There is also a significant positive correlation between social media political awareness (SMP) and social media voting behavior (SMVB) (r=0.642, p=0.000). This suggests that an increase in social media political awareness leads to an increase in social media voting behavior.

The results suggest that social media has a significant impact on youth's political awareness, activism, participation, and voting behavior. It is important to note that these correlations do not imply causality and further research is needed to establish causal relationships between these variables. The first row shows the correlation between SMU and SMP. The correlation coefficient of .087 is positive, which means that as the use of social media increases, the level of social media political engagement also increases. However, the significance level of .005 indicates that this relationship is not statistically significant at the 0.05 level (2-tailed).

The next row shows the correlation between SMU and SMPA. The coefficient of .104 indicates a moderate positive relationship between these two variables, and the significance level of .001 shows that this relationship is statistically significant at the 0.01 level.

Table 1.4 Relation between Social Media Use and Political Awareness

	Model	Sum of Squares	df	Mean Square	F	Sig.
		ANOVA				
1	Regression	6.397	1	6.397	8.021	.005b
	Residual	840.600	1054	.798		
	Total	846.997	1055			

a. Dependent Variable: SMP
b. Predictors: (Constant), SMU

The results of the statistical model show that there is a weak positive relationship between social media usages (SMU) and political awareness of youth. The coefficient of determination (R Square) is 0.008, which means that only 0.8% of the variance in political awareness can be explained by social media use. The adjusted R Square is also 0.007, which indicates that the model is slightly overfitting. The standard error of the estimate is 0.89305, which is the average difference between the actual and predicted values. The change statistics show that the introduction of social media use as a predictor improves the model fit by 0.008. The F change statistic is 8.021, with a significance level of 0.005. This indicates that there is a significant effect of social media usages on political awareness of youth. The degrees of freedom for the first and second models are 1 and 1054, respectively.

Overall, these results suggest that social media use has a small but significant impact on political awareness of youth. However, it is important to note that other factors beyond social media use may also be contributing to the political awareness of youth, and further research is needed to explore these relationships. The model summary provides a statistical summary of the linear regression model that was fit to the data. In this case, the model has only one predictor variable, which is labeled "SMU." The summary provides several measures of the goodness of fit of the model, including the R value, R Square, and Adjusted R Square. The R value, which is the coefficient of correlation, measures the strength of the linear relationship between the predictor variable (SMU) and the dependent variable (the variable being predicted). In this case, the R value is 0.087, which indicates a weak positive relationship between SMU and the dependent variable. Finally, the change statistics provide information about the significance of the predictor variable in the model. The F Change value, which measures the overall significance of the model, is 8.021, which is significant at the 0.05 level (p < 0.05). The df1 and df2 values are the degrees of freedom for the numerator and denominator of the F ratio, respectively. The Sig. F Change value is the significant level of the F Change, which in this case is 0.005, indicating that the predictor variable is a significant predictor of the dependent variable.

Table 1.5 : Effective Social Media Tool for Political Awareness

		Frequency	Percent	Valid Percent	Cumulative Percent
		Which Social Media tool is Effective for Political Awareness			
Valid	Facebook	640	60.6	60.6	60.6
	Twitter	307	29.1	29.1	89.7
	Others	109	10.3	10.3	100.0
	Total	1056	100.0	100.0	

The table above shows the results of the survey related to the effective social media tool for political awareness. The survey respondents were asked to choose the social media platform that they believe is most effective in creating awareness on political issues.

The results indicate that the majority of the respondents, 60.6%, believe that Facebook is the most effective social media tool for political awareness. This could be due to the vast range of features that Facebook offers, including groups, pages, and events, that allow users to interact with political organizations and stay updated on political issues. The platform also offers a wide range of news sources and allows users to share political news and information with their network, thus promoting political awareness.

Twitter was considered the second most effective social media tool for political awareness, with 29.1% of the respondents choosing it. Twitter is known for its quick and concise messages, and its hashtag feature, which allows users to easily find and join conversations related to political issues. Twitter is also used by political organizations to engage with their followers, share political news and updates, and promote their campaigns.

The survey results also reveal that a small percentage, 10.3%, of the respondents consider other social media platforms to be effective for political awareness. It is not clear which platforms were included in the "others" category, but this could suggest that there are other emerging platforms that are gaining traction in terms of political awareness. The survey data shows that Facebook is considered the most effective social media tool for political awareness, with 60.6% of respondents indicating that they rely on Facebook for political awareness. This suggests that Facebook is a powerful platform for sharing information and opinions related to political events and issues.

Twitter is also seen as an effective tool for political awareness by 29.1% of the respondents, which highlights the importance of micro-blogging in political communication. Twitter's emphasis on brevity and the ability to quickly disseminate information through hashtags make it an effective platform for political discussions and debates. The data also shows that a small proportion of respondents, 10.3%, use other social media sites for political awareness.

Discussion

In the current digital age, social media has become an invaluable tool for raising political awareness and engaging citizens in active political discourse. On platforms such as Twitter, Facebook, and Instagram, people are able to share their opinions, get involved in debates, and stay up to date on the latest news and developments in the political world. This has allowed more people to become aware of current political issues and to engage in meaningful dialogue about them. A recent survey found that over 70% of people rely on social media to get their information about politics and current events. This is a huge increase from the 25% of people who used to get their information through in traditional media sources such as television and newspapers. Social media has made it easier for people to get involved in political discussions and to connect with like-minded people. Social media has also allowed people to become more aware of political events, campaigns, and elections. By following the accounts of political figures and organizations, people can get real-time updates on the latest news and developments. This keeps them informed and able to engage in more meaningful conversations about the topics that matter most to them. The availability of social media also allows for rapid information dissemination and for the news to spread quickly. This allows more people to become aware of what is happening in their local and regional political scene. This can help to increase civic engagement and to encourage people to take part in the political process. Finally, social media has made it easier for people to become active in the political process. This has been an invaluable tool in bringing attention to important issues and giving people the power to make a difference.

One of the most significant effects of social media on political awareness in Pakistan is the fact that it has opened up new avenues for political discourse and debate. With social media, citizens can now easily access information and engage in discussions about political events and issues. This has enabled citizens to become more informed and involved in politics, as they can now easily access a wide range of information and engage in debates with people from all over the world. Furthermore, social media has enabled citizens to voice their opinions more openly and freely. It has become a platform for people to express their political views without fear of censorship or retribution. This has allowed citizens to become more aware of the activities and views of their elected representatives, as well as other political figures from around the world.

Conclusion

The study comes to the conclusion that social networking sites are generally used to share academic news, such as exam schedules and results, but that academic conversation does not typically take place on these sites. In Pakistan, social media may serve as an effective learning tool, much like it has in Western nations. The primary cause is that social networking sites and apps are still regarded as entertainment rather than instructional tools. The academicians and the students are attempting to use it for academic purposes, however the utilization is quite limited. Teachers and professors in higher positions used it to give pupils access to books and reading materials. On the other hand, students don't use it for academic debate; instead, they typically use it to exchange news and announcements about their classes and other university activities.

Recommendations:

- First, it is important to be aware of the potential for the spread of misinformation on social media. Fake news and false information is often spread quickly on social media and can lead to confusion and mistrust of political information. It is important to be aware of the potential for social media to be used to promote violence and

hatred and to take steps to ensure that it is not used to spread such messages. Social media platforms are often used to target vulnerable individuals and groups, and it is important to be aware of this potential and to take steps to ensure that individuals and groups are not targeted in this way. In conclusion, it is important to be aware of the potential risks associated with using social media for political awareness. It is important to be aware of the potential for misinformation, manipulation of public opinion, hate speech and violence, and targeting of vulnerable groups. It is important to take steps to ensure that social media is used responsibly and effectively, and to seek out accurate and reliable sources of information.

- Utilized Facebook for a variety of objectives, which had a nearly equal impact on their academic and social surroundings. Regarding their social surroundings, the respondents utilized Facebook to connect with as many friends as they knew or liked, engage in social and cultural debates, participate in other social activities, and stay informed about religion and politics.
- Young people who used social media more frequently tended to prefer using social networking apps over in-person interactions with family and friends.

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Effectiveness of Continuing Professional Development Programs in Enhancing Teacher Educators' Technology Competencies

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Abstract

This study explores the effectiveness of continuing professional development programs in enhancing the technology competencies of teacher educators. Partial Least Square-Structural Equation Modeling (PLS-SEM) was employed to assess the effects of Continuous Professional Development (CPD) on teacher educators' technology competencies. Primary data were collected from 150 teacher educators using an online questionnaire through Likert scale items adapted from two sources in the existing literature. The findings of statistical analysis applied in this study revealed that teacher educators' need for continuing professional development and their high level of engagement with continuing professional development activities, in particular, collaborative continuing professional development activities are the powerful predictor for enhancing their technology competencies. However, the current practice of continuing professional development activities was noted as a weak predictor for enhancing teacher educators' technology competencies. The findings are important as it addresses the gap by analyzing the predictors of enhancing teacher educators' technology competencies within the context of continuing professional development that was not previously analyzed through PLS-SEM.

Keywords: Continuing Professional Development, Teacher Educators, Prospective Teachers, Technology, Competencies, Collaborative CPD Activities.

Introduction

In this global education scenario, continuing Professional Development (CPD) of teacher educators is the demand, expectation, and requirement of their professional life. Recently, due to the immense increase in online and blended learning models in both public and private teacher education institutions globally and in Pakistan particularly, the need for technology-competent teacher educators has increased. Consequently, teacher educators are required to equip with technology competencies to survive in this changing environment. Moreover, in an increasingly educational competitive world, by improving technology knowledge, skills, and attitude through CPD, the precious asset of the teachers' workforce can be transformed into a productive resource to achieve the goal of quality education for social and economic development. Therefore, teacher educators are required to possess technology competencies and good performance by involving in continuing professional development programs actively. The most significant factor of CPD stresses on the fact that competent teacher educators can improve the experience and achievement of future teachers in a positive way (Menlo & Poppleton, 1990). CPD for teachers offers all the activities required to enhance the skills and capabilities of in-service teachers. Okolie (2003) suggested that there is a need for every staff regardless of their pre-service training level, to enhance their capabilities to meet with the demand of the emerging world. Additionally, Etim (1998) opined that Teachers should participate in this transformation through CPD paired with professional standards because the digital world is changing the dynamics of education worldwide as they create a professional environment to assure best practices and high operational quality (Krishnaveni, & Anitha,2007).

The importance of Continuing Professional Development for teachers' job performance is highlighted by many researchers. According to Abell et al., (2013), "the cognitive progress of instructors is a continuing process in which instructors get latest insights and motivation related the potential of latest teaching ways and materials to improve student's learning." Furthermore, in the process of CPD, teachers look for developing themselves not only professionally but also socially and personally all together. Nevertheless, the preparation of quality teacher educators through CPD programs must enhance the technology competencies of teacher educators who make prospective teachers ready to teach with technology (King & South, 2017).

Similarly, the studies that focus on CPD have taken its effects on just pedagogical knowledge (Gopang & Zarif, 2016; Khan & Ahmed, 2015) irrespective of any consideration of the technical competencies to implement that knowledge effectively by teachers. Interrogating the effects of CPD as an undifferentiated whole can be misleading. Second, this study clarifies the role of CPD in enhancing the technology competencies of teacher educators. The literature is inconclusive on the role of CPD in Teacher educator's technology competencies. Thus, the majority of existing research exhibits the need for more researches in the field of CPD for developing technology competencies among in-service teacher educators. Therefore, it is essential to place the focus of research to know the effectiveness of CPD on teacher educators' technology competencies growth taking the implementation of teacher's standards and educational policy into

account that foster the learning process.
The findings are beneficial for the academia and policy makers to understand the transmission and transformation of CPD for improving teacher educators' technology competencies.

Literature Review
This section considerably contributes to the literature interconnected with the theoretical framework.

Continuous Professional Development [CPD] in Education
The term continuing professional development (CPD) in education refers to professional training or formal education to enhance competence, professional knowledge, and required skills of the in-service educational community such as teachers, teacher educators, administrators, etc. (Darling-Hammond et al., 2017). In an increasingly competitive world, continuing professional development is considered an essential and valuable undertaking for all professionals. Similarly, in the field of teacher education, CPD has been recognized as the most vital factor for teacher educators. Continuing Professional Development (CPD) is essential for teachers to maintain and improve their teaching skills, stay up-to-date with new educational trends, and professionalize their practice in a constantly changing landscape. CPD provides an opportunity for teachers to expand their knowledge and skills, build their confidence and competence, and reflect on their performance. It is also essential for keeping up with changes in educational policy, as well as for developing new approaches to teaching and learning. CPD is also important for professional recognition and career progression, as it gives teachers the chance to build their professional networks and gain recognition for their work

Teacher educators' need for CPD is a lifelong learning process to gain knowledge of new technologies skills and attitudes through CPD. As technology is considered a powerful tool for transforming learning, there is a need to design technology-infused professional development activities to equip teacher educators with technology competencies (Bostancioglu,2018) Moreover, the principles and examples provided in The National Education Technology Plan (NETP) are also aligned with such activities that support the effective use of technology in educational settings (Thomas, 2016). NEPT is a policy document that focuses on digital literacy and digital learning. NETP focuses on how technology can help learners unlock some of the most powerful learning principles ever discovered. Consequently, the ultimate goal for teacher preparation programs is to address the need of teacher educators for technology-infused programs based on international curriculum (Kormos, 2019). To achieve this goal of CPD there are numbers of ways to organize CPD programs where teachers can actively collaborate and discuss issues of mutual concern in a technology-infused environment. (Varank & Ilhan, 2013). However, the needs still exist or even more emerging due to globalized education. Although, several types of research showed the need for CPD for teachers in national (Gopang & Zarif, 2016; Khan & Ahmed, 2015; Mahmood & Iqbal, 2010) and international (Stokes-Beverley & Simoy, 2016; Utami et al., 2019) context what makes CPD effective to fulfil the technology-oriented needs of teacher educators is found as a gap in the existing literature. The present research provides insight into an effective CPD programme that makes it a need for teacher educators.

Effectiveness of CPD for Teacher Educators
Continuing professional development is mandatory for education professionals more specifically for teacher educators around the world as it develops the personal and professional qualities required to perform in 21st-century teaching and learning environment effectively (Thurm et al., 2015).
As the CPD process engages teacher educators in such activities which maintain and extend their knowledge, skills and attitudes related to the best teaching practice, that's why it is considered a need for teacher educators to provide quality education (Allen et al., 2019). Since the use of technology is increasing in today's learning environment that has made teacher educators more collaborative to extend their learning by creating learning communities composed of experts in various discipline around the world. This enhanced collaboration, enabled by technology demands continuous professional development to support teacher educators in accessing and using needed technology within learning communities effectively. (Kopcha, 2012). The National Center for Educational Statistics showed the apparent gap between the amount of technology need to be used and teachers' use of that technology for instructional purposes (Terman et al., 2019). The result of just providing knowledge without practice does not result in a change in practice and that there is a gap between what is known and what is practised (King & South, 2017). Furthermore, many studies just focused on evaluating (Mahmood & Iqbal, 2010; Khan & Ahmed, 2015; Saeed & Akhtar, 2017) the overall gains attained after a professional development effort rather than examining the effectiveness of CPD to fulfill the needs of teacher educators more specifically related to technology competencies. This gap has motivated the researcher of this study to investigate the effectiveness of continuing professional development programs in enhancing teacher educators' technology competencies by developing insight about effective CPD models and activities referred to in the national and international

context of CPD.

CPD Models
 There are different CPD models found in the literature that are prominent in the literature (Kennedy, 2014) including training, award-bearing, deficit, cascade also known as transmission CPD model, standards-based, coaching/mentoring, the community of practice, is recognized as transitional CPD models whereas in transformative CPD models include action research. Recently the most appropriate CPD models used for technology competencies development are the TPACK model, Mentoring models and Communities of practice model (Parrish & Sadera, 2019). Notably, all three models assess the teacher educators' professional development related to technology competencies.

The existing literature (Kennedy,   2014; Parrish & Sadera, 2019; Ping et al., 2018) showed that the majority of CPD models focus on the goal of CPD within a sole development of the different competencies, but unable to describe how to support the teacher educators in using and modeling those competencies in ways that positively impact the development of technology competencies of all teacher educators. It was noted that recently collaborative CPD (Darling-Hammond et al., 2017; Purnamasari, 2019) has effective integration with all the above-mentioned models and due to its collaborative characteristics, it specifically explores the effectiveness of CPD in enhancing technology competencies of teacher educators under the theoretical framework of the current study and thus found to be useful in conceptualizing the reasoning behind the effectiveness of technology-infused CPD for teacher educators.

Teacher Educators' Technology Competencies and CPD
According to Uerz et al., (2018), "an individual's skills and knowledge, as well as attitudes and beliefs, are known as competencies." To use technology to facilitate prospective teachers, teacher educators required additional knowledge and skills that are expected to build in CPD programs using technology development models such as TPACK. (Taimalu & Luik, 2019). Moreover, US National Educational Technology Plan. (U.S. Department of Education, Office of Educational Technology, 2016 a) has recommended for teacher educators a common set of technology competencies (knowledge, skills, and attitudes) that is needed to support teacher educators as they prepare the prospective teacher to become technology-using teachers (Foulger et al.,2017).To achieve the purpose of enhancing technology competencies of teacher educators now the TETCs clarify the competencies required of teacher educators; and they provide a framework to evaluate CPD programs(King & South, 2017). There are several studies on CPD for competencies development (Ping et al., 2018; Allen et al., 2019) but they are based on a systematic literature review. Therefore, still, there is a need for research that not only focuses exclusively on empirical studies but also includes theoretical and philosophical publications that discuss what competencies teacher educators need for teaching and learning with technology.

Conceptual Framework and Hypothesis Development
The theoretical basis for this study is rooted in the competence theory (Mulder,2017).In addition, the conceptual framework of this present study made it easier for the researcher to easily specify and define the concepts within the problem of study. The relationship hypothesized in the figure of the conceptual framework has some empirical relevance with several studies including (Gopang & Zarif, 2016; Khan & Ahmed, 2015; Mahmood & Iqbal, 2010; Saeed & Akhtar, 2017) which have concluded that CPD can positively influence teacher educators' performance (Bostancıoğlu & Handley, 2018; Foulger et al., 2017; Ping et al.,2018). This relates principally to teacher educators' engagement with CPD (Dilshad et al.,2019; Stokes-Beverley & Simoy, 2016; Uerz et al.,2018). The aforementioned studies have been discussed the impact of CPD on in-service teachers' teaching skills rather than particularly on technology competencies of teacher educators such as technology knowledge, skills and attitude. They have also been conducted in different settings to the current research; the intention here is to examine the effectiveness of CPD in enhancing teacher educators' technology competencies within the context of teacher education institutions in Pakistan. As such, this study has generated four hypotheses in this fashion. Figure 1 depicts the relationships among the variables in the proposed model.

 H_1: Teacher educators' need for CPD has a significant positive relationship with the enhancement of their technology competencies.
 H_2: The current practices of traditional CPD activities exert a positive effect on teacher educators' technology competencies (technology knowledge, skills and attitude).
H_3: Teacher educators' low level of engagement with different types of CPD programs has a negative effect on their technology competencies (technology knowledge, skills and attitude).
H_4: There is a significant and positive relationship between collaborative CPD activities and teacher educators' technology competencies (technology knowledge, skills and attitude).

Figure 1.
Conceptual Framework
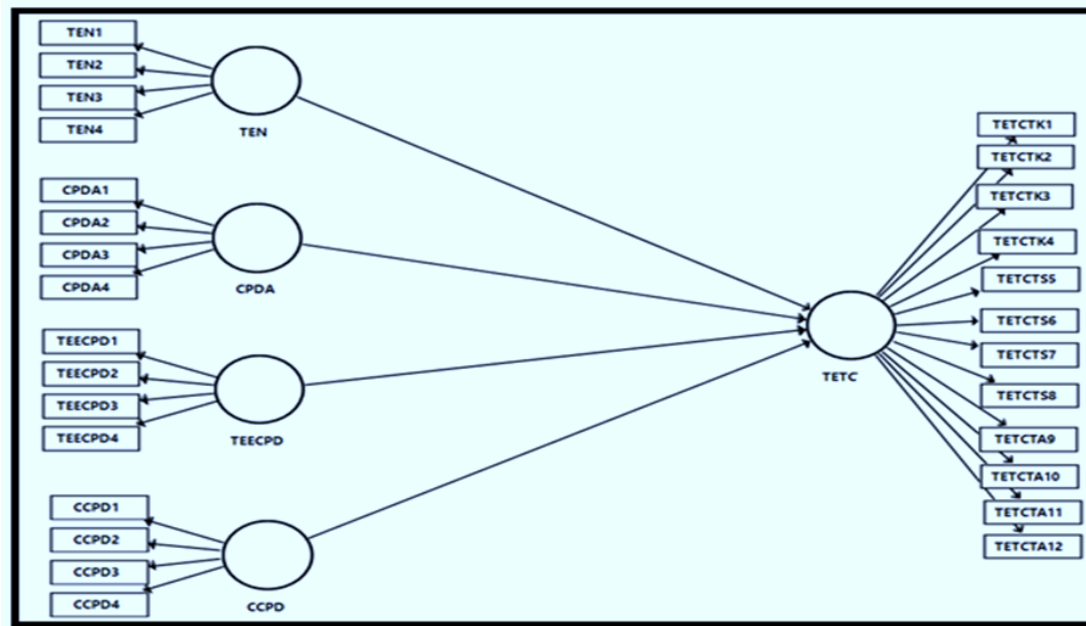
Key for variables: *teacher educators' need (TEN), *CPD activities (CPDA),
*teacher educators' engagement with CPD (TEECPD), * collaborative CPD (CCPD)
* teacher educators' technology competencies (TETC)

Method
This study adopts the quantitative research method accompanied by a deductive approach to explaining the causal relationship between independent and dependent variables. This study used a survey strategy, which allows for the economical collection of online quantitative data from a large population that can then be statistically analyzed (Saunders et al., 2009). Moreover, the instruments of measurement, sampling and data collection method are given in the following sections.

Measurement and Sampling
The measurement tool for the survey was employed in the form of an online questionnaire that consists of five-point Likert scale items. The online questionnaire was consisting of 28 items that were adapted from two sources (Bostancıoğlu & Handley, 2018; Dilshad et al., 2019) to address the 4 proposed hypotheses of the research. The target population of this study comprises all 870 teacher educators who are teaching in 67 teacher education institutions of province Sindh. The minimum sample size was calculated by performing G*power analysis and based on the minimum sample size the medium sample size (n=150) suggested by Ding et al., (1995), for Structural Equation Modeling was deemed appropriate for the present study. Table 1 displayed the demographic distribution of the respondents.

Table 1.
Demographic Profile of the Respondents

Category	Number of Respondents	Category	Number of Respondents
Gender		**Type of Institution**	
Male	37	Public	29
Female	113	Private	121
Total	**150**	**Total**	**150**

Experience		Professional Qualification	
1-5years	44	B.Ed.	78
6-10years	48	M.Ed.	34
11-15years	36	M.Phil. in Education	32
More than15years	22	PhD.in Education	6
Total	150	**Total**	150

Note: *n=150*

Data Analysis Technique

For this study, Partial Least Squares-Structural Equation Modeling (PLS-SEM) was deemed appropriate statistical analysis for testing the variables. The reason to select PLS-SEM for the current study is its ability to handle a small sample size and to assess complex structural and measurement models which are manifested in the method's greater statistical power. Another important reason to use PLS-SEM is its ability to analyze several constructs in an integrated model at once that provides a useful insight into the conceptualization of constructs and theories to test them empirically. (Hair et al., 2016). Thus, these characteristics of PLS-SEM made it a deemed appropriate selection for the current research.

Results

After building the model successfully in smart PLS software, the process of measurement model (outer model) evaluation was done by running the PLS algorithm (300 maximum iteration, path weighting scheme) for estimating the essential statistics.

Validity and reliability

First of all, the measure of outer loading is analyzed to assess the reliability of the indicators (items). The common rule of thumb for standardized outer loadings is 0.708 which shows more than 50% of the variance in a construct is explained by the items (Hair et al., 2017). However, outer loadings less than 0.60 should be considered for removal, only if the deletion leads to an increase in composite reliability and AVE above the suggested threshold value (Byrne, 2016 as cited in Hair et al.,2019). The result of outer loadings of indicators showed that most of the values of the factor loadings were above the minimum cut of point, 0.70, except for few items i.e. TEN 1 which has a loading of 0.554, TEECPD 2 which has a loading of 0.183, TEECPD 3 which has a loading of -0.025, CPDA3 which has a loading of 0.579, CPDA4 which has a loading of 0.338, TETC 9 which has a loading of 0.59, TETC 11 which has a loading of 0.492& TETC 12 which has a loading of 0.534. Due to less outer loading than the cut of point these items had been deleted from the model to increase in composite reliability and AVE. There was an item TEECPD 4 which has a loading of 0.423 but it is retained as a measure that already meets the criterion of CR and AVE. Nevertheless, overall the result showed satisfactory indicator reliability as exhibited in table II.

Table 2.
Factor Loadings

Item Code	Factor Loadings	Item Code	Factor Loadings
Collaborative CPD		**Teacher Educators' Need**	
CCPD1	0.842	TEN2	0.687
CCPD2	0.876	TEN3	0.870
CCPD3	0.849	TEN4	0.851
CCPD34	0.766		
Teacher Educators' Engagement With CPD		**CPD activities**	
TEECPD1	0.998	CPDA1	0.849
TEECPD4	0.423	CPDA2	0.720
Teacher Educators' Technology Competencies			
TETC1	0.719	TETC2	0.720
TETC3	0.767	TETC4	0.766
TETC5	0.774	TETC6	0.724
TETC7	0.706	TETC8	0.686
TETC10	0.652		

In this study, the convergent validity is compared by using composite reliability (CR), and average variance extracted (AVE) rather than Cronbach's alpha that produces lower values than composite reliability and that's why it is considered as a conservative measure since the items are unweighted (Werts et al.,1978). To assess the internal consistency reliability of the constructs, the measure of composite reliability (CR) should be higher than 0.7 whereas the average variance extracted (AVE) should be higher than 0.50. Table III illustrates the convergent validity of the measures.

Table 3.
Convergent Validity

Constructs	CR	AVE
Collaborative CPD (CCPD)	0.901	0.696
CPD activities (CPDA)	0.763	0.619
Teacher Educators' Engagement with CPD (TEECPD)	0.584	0.513
Teacher Educators' Need (TEN)	0.810	0.596
Teacher Educators' Technology Competencies (TETC)	0.909	0.525

In the current study, discriminant validity was assessed by Fornell and Lacker criterion. As per the Fornell and Lacker criterion, the measurement model shows discriminating validity when the square root of the AVE of construct exceeds the inter-item correlation. In the current study, the discriminant validity criterion of Fornell and Lacker has been met as the square root of AVE exceeded the off-diagonal values in rows and columns which are represented by the bold item values in table IV.

Table 4.

Inter Correlation Matrix of Constructs as per Fornell-Larcker Criterion

	1	2	3	4	5
Collaborative CPD (CCPD)	**0.834**				
CPD activities (CPDA)	0.209	**0.787**			
Teacher Educators' Engagement with CPD (TEECPD)	0.196	0.275	**0.716**		
Teacher Educators' Need (TEN)	0.346	0.338	0.090	**0.772**	
Teacher Educators' Technology Competencies (TETC)	0.352	0.291	0.268	0.414	**0.725**

Table 5.

Structural Model's Results and Hypotheses Testing

Hypotheses	β	t-value	p	Decision
TEN -> TETC	0.297	2.883	0.002	Supported
CPDA -> TETC	0.102	1.173	0.121	Not supported
TEECPD -> TETC	0.175	1.821	0.034	Supported
CCPD -> TETC	0.194	2.446	0.007	Supported

Figure 2.

Hypothesized Structural Model
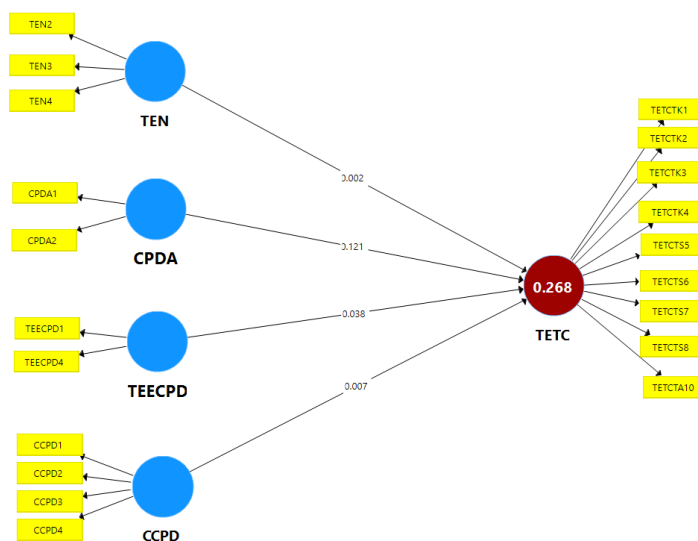
Note: *The main diagonal shows the square root of the AVE of every multi-item construct.*

 The hypothesized structural model is exhibited in Figure 2 that displays the three paths i.e TEN -> TETC, TEECPD -> TETC & CCPD -> TETC that were found to be significant (p <.05) and one path (i.e CPDA -> TETC) was found non - significant (p>0.05). The results of both structural model and hypotheses testing have been explained in more details in table V.

Table V depicted the results of hypotheses testing. The results showed a positive and significant (β =0.297; p=0.002) relationship between teacher educators' need for CPD and teacher educators' technology competencies. The negative effect of the low level of teacher educators' engagement with CPD on teacher educators' technology competencies was found significant and positive (β = 0.175; p=0.034,) supporting H3. It was hypothesized that collaborative CPD had a significant and positive relationship with teacher educators' technology competencies that is accepted as collaborative CPD is proven to have a significant and positive (β = 0.194; p=0.007)relationship with teacher educators' technology competencies. However, CPD activities (β = 0.102; p=0.121) had a non -significant but positive relationship with teacher educators' technology competencies. Thus, out of four hypotheses; three (H1, H3&H4) were supported and only one (H2) was not supported.

Discussion
This study examined the effectiveness of continuing professional development (CPD) programs in enhancing the technology competencies of teacher education in Pakistan. The constructs were presented as exogenous variables (i.e. teacher educators' need, CPD activities, teacher educators' engagement with CPD, collaborative CPD) and endogenous variable (teacher educators need teacher educators' technology competencies) which led to the development of a comprehensive theoretical model which further consists of two models i.e. measurement and structural model of the study. The survey research strategy was adopted and the data were collected through an online questionnaire. PLS-SEM data analysis techniques were used to establish the reliability and validity of the research model. For this study, four hypotheses were developed and tested. Among them, three were supported theoretically and empirically and only one hypothesis of this study was rejected. The findings of the proposed hypotheses are discussed below.

The result of hypothesis H1 is confirmatory and consistent with the previous literature which shows a positive relationship between CPD needs and teachers' improvement (Kopcha, 2012; Thurm, et al., 2015; Valdmann, et al., 2016). The results of this hypothesis established that teacher educators' need towards CPD will most likely develop their technology competencies to survive in the rapidly changing learning environment as proved in previous studies by Foulger et al.(2017), Stokes-Beverley, et al.,(2016) and Ng'ambi, et al., (2016).

The result of hypothesisH2 does not support a handful of studies conducted by Foulger et al., (2017), Tondeur et al., (2013) and Valdmann, et al., (2016) that showed the positive effects of professional development activities on teacher educators to assist them with technology integration. However, the findings are consistent with some of the previous studies conducted by (Cheok et al., 2016; Heba et al., 2015; King & South, 2017; Taimalu & Luik 2019) that have focused on the negative association between CPD and teacher educators' technology competencies. The findings of this study showed the negative effect of current CPD practices on enhancing teacher educators' technology competencies. Therefore, CPD organization need to improve the quality of CPD activities which lead to a high level of engagement of teacher educators with CPD.

The findings of hypothesis H3 is inconsistent with previous literature as several studies (Dilshad et al.,2019; Stokes-Beverley & Simoy,2016; Uerz et al.,(2018) concluded that teacher educators need to participate in CPD to improve their job performance but did not reveal the consequences of their low participation, however, this important aspect has been examined in the present study.

The result of H4 is consistent with the previous literature (Darling-Hammond et al.,2017; Purnamasari, 2019) which shows collaborative CPD has a positive relationship with teachers' performance. According to the past studies findings, collaborative CPD is considered a highly valued and prevalent learning experience within wider professional networks. The research conducted by Uerz et al., (2018) concluded that in recent years, a new paradigm for PD has emerged that known as collaborative CPD which provides entirely different from one day, short term workshops models. An effective CPD embeds collaborative learning that is supported by technology.

Limitations and Future Research Directions
Likewise, all researches, this present study also has some limitation that provides direction to the future researcher to

research in the field of education.

Firstly, the present study was conducted in only one city of Pakistan; Karachi, due to time and resources constraints. Therefore, future research can be conducted in more than one city of Pakistan to generalise the findings to the whole country.

Secondly, the study has used the quantitative research method due to the theory and empirical research-driven model. However, to develop a deep understanding of effective CPD for teacher educators a qualitative study can be conducted which might give new insight into the effectiveness of CPD for the education community.

In this thesis, the cross-sectional research design was selected instead of longitudinal due to the time and cost constraints. The future researcher could test the effectiveness of continuing professional development through an experimental study that is the longitudinal research design. This could yield more robustness in the results.

Other future research directions could include the study of factors that could also influence the teacher educator's technology competencies. This could include the role of teacher education institutions and the role of the National Accreditation Council for Teacher Education (NACTE) in Pakistan to improve the current practices of teacher education institutions for the continuing professional development of teacher educators in Pakistan. These constructs have not been incorporated in this study. Future research could also consider the inclusion of these constructs.

Another future research direction relates to the data collection method. As per the requirement of research, an online questionnaire was administered to collect data from the research participants who were all teacher educators rather than to access them physically. Future research could consider physical access to research participants in a form of observations and interviews for data collection to have deep insight into research participants' perception and their practices for enhancing technology competencies through CPD programs.

Recommendations

This study proposes the following recommendations or guidelines for teacher educators, teacher education institutions and policymakers based on research findings.

1. The results of this study indicated that a low level of engagement with CPD programs has negative effects on teacher educators' technology competencies. Therefore, it is recommended that teacher educators should own their continuing professional development rather than depending on education authorities. Teacher educators should initiate and support their CPD and keep developing professionally.

2. Teacher education institutions should identify the professional needs of teacher educators related to technology competencies by using National Professional Standards for Teachers in Pakistan (NPSTP) and studies conducted with particular reference to teacher educators 'performance in technology integration. It is recommended that to satisfy the CPD needs of teacher educators, teacher education institutions should collaborate with both public and private CPD entities including Sindh Teacher Education Development Authority (STEDA), Provincial Institute of Teacher Education (PITE), British Council and United States Agency for International Development (USAID) of Pakistan to provide free of cost access to all teacher educators to technology-assisted CPD opportunities.

3. The study shows that teacher educators' technology competencies depend on their level of engagement in CPD. Therefore, it is recommended for teacher education institutions to increase the level of engagement of their faculty with CPD by making their promotion and appraisal conditioned with their high level of engagement with CPD. In addition, the management of teacher education institution should encourage and motivate teacher educators by giving monitory rewards and technology resources e.g. laptop, smartphones etc. for showing a high level of engagement with technology-assisted CPD programs.

4. The result has shown that collaborative CPD programs are highly valued and prevalent for teachers' educators as they appreciated the opportunities to collaborate with mentors and also to have external expertise and sources of CPD within teacher education institutions. Thus, it is recommended that teacher education institutions should pay careful attention to learning design and implementation approaches that include a range of opportunities for varied collaborative CPD activities.

5. It is recommended that policymakers of CPD entities e.g. STEDA, PITE, British Council and USAID etc. should design competency-based education and training programs for concentrating on the technology skills required to secure the jobs of teacher educators in an increasingly competitive world.

Conclusion

In the existing literature on CPD, there are considerable evidence regarding the impact of CPD on teacher performance however very limited quantitative researches involving the constructs of teacher educators' need, teacher educators' engagement, collaborative CPD and teacher educators' technology competencies have been conducted to analyze the effectiveness of CPD in the educational research context. This gap was realized and then addressed by the present study by testing the relationship between the aforementioned variables relevant to the teacher education discipline. Examining

the relationship between these variables also expanded the current research theory; competence theory application in the field of education because it is recognized as linguistic theory. Whereas, the empirical findings of this research could be used by CPD policymakers, practitioners, teacher education institution and most importantly by teacher educators for taking their professional development initiatives and ownership.

The result of empirical data of this study confirmed the effectiveness of collaborative CPD predictor to satisfy teacher educators' need for technology competencies as collaboration among communities of practice is made possible by technology. Hence, this study proved the strong relationship between collaborative CPD and the enhancement of teacher educators' technology competencies.

Thus, it can be concluded that the present study findings have addressed the gap in the literature regarding the effectiveness of CPD and proved an addition to the body of knowledge.

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