# Adoption of Social Media Technologies and their Impact on Students' Academic Performance: The only Way for Future Survival of Distance Education Students in Pakistan

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**This study aims to investigate the adoption of social media technologies and their impact on academic performance of distance education students at Allama Iqbal Open University (AIOU), Islamabad-Pakistan.**
**This study opted Combined-Technology Acceptance Model and Theory of Planned Behavior (C-TAM-TPB; Taylor & Todd, 1995) as theoretical model. Descriptive survey was administered to collect data with the help of self-reported structured questionnaire on 365 students, randomly selected from the targeted population. The response rate was 84.6%.**
**Majority of the respondents were familiar and using the social media technologies frequently such as Facebook, YouTube and WhatsApp whereas Twitter was rarely used, also the students were having poor knowledge about the technology. Similarly, majority of the respondents were having average knowledge and familiarity in using Skype. The results of t-Test disclosed that gender difference existed in opinion towards frequency to use Facebook, Twitter, Wikipedia and WhatsApp only. The regression analysis also revealed that perceived usefulness, perceived behavior control, attitude towards use helped to enhance the students' actual use of social media technologies. However, perceived ease of use and subjective norms did not contribute in the use of the technologies. Furthermore, distance students' academic performance was increased by using the technologies.**
**This study is delimited to five social media technolo-gies; Facebook, Twitter, YouTube, Wikipedia, WhatsApp, and Skype only.**
**To our best knowledge, this is first comprehensive study in distance education perspective which may provide guidelines to offer off-campus students services through effective utilization of the social media technologies.**

**Keywords:** C-TAM-TPB; Social Media; Facebook; Twitter; YouTube; Wikipedia; WhatsApp; Skype; Distance Education; AIOU; Pakistan.

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## Introduction: Social Media

The development of the Internet paved the way in transforming conventional communication media into digital communication media. Due to fast development in Internet based technologies, one of the most rapid growing digital communication media is the social media. The use of social media technologies is growing and penetrating in personal and professional lives that is why everyone can easily communicate, participate, share, and form a network online that can disseminate their own content (Harsono & Suryana, 2014). The term social media has been defined in many ways in the literature. Based on a literature review, Kaplan and Haenlein (2010) explain that "social media is a group of Internet-based applications that is built on the ideological and technological foundations of Web 2.0, and allow the creation and exchange of user generated content (p. 61)". Now universities realize that distance students should use social media to support their learning needs and this trend most likely will continue to grow as Internet users develop greater familiarity with the

range of technologies and resources available and accessible online (Andrews, Tynan & Backstrom, 2012)

## Background of the Study

Realizing the significance of Information and Communication Technologies (ICTs), Federal Government of Pakistan framed National IT Policy and Action Plan in August, 2000 to improve telecom sector in the country (Pakistan Ministry of Science & Technology, IT and Telecommunications Division, 2000). Later on, the Government also introduces many lucrative offers to business community through Telecom Policy 2015 and Pakistan Vision 2025 due to which many telecom companies invested billions of dollars to provide economical and easy access of Internet based services in the country. Resultantly, incredible growth in the telecom sector improved ICTs infrastructure and brought economic benefits during the last decade (Pakistan Telecommunication Authority, 2015).

To provide fast speed Internet services and access to world renowned online databases access in public sector universities and research and development (R&D) organizations in the country, Higher Education Commission of Pakistan (HEC) launched three key projects: (1) Pakistan Educational Research Network (PERN); (2) PERN2; and (3) National Digital Library based on world renowned online databases and e-books). In result of the developments, currently 150 universities and R&D organizations are interconnected and benefiting from the services (Pakistan HEC, 2015). Moreover, HEC is also promoting distance education to cater the educational needs in far-flung and deprived areas of the country. As a result of HEC's initiatives, research culture has been promoted in the universities and their research outcomes have been increased significantly. Furthermore, these projects have paved the way and promoted Web-based services in higher education sector of Pakistan (Warraich & Tahira, 2014). Now users consider that library websites are important sources of information (Mairaj, 2013) and library professionals were in favour of open access to their digitized contents (Rafiq & Ameen, 2012). The study's findings of Arshad and Ameen (2015) also disclosed that the students were more inclined to use open access resources as compared to HEC subscribed databases. Thus, it seems that using and retrieving information from online sources is increasing among

users in the country.

Distance learning is a rapidly emergent segment of the education market with more learners moving to online distance learning every year (Allen & Seaman, 2010). The same trend is depicting an increase in enrollment every year at AIOU, first distance Education University in South Asia, established in 1974 with Federally Charted and having current enrollment 1.3 million with more than half female students. Currently, the University is offering distance learning programs in Sciences, Education, Arabic and Islamic Education, Social Sciences and Humanities, ranging from functional courses to Doctoral level in the country as well as in the selected countries (Saudi Arabia, Kuwait, Qatar, Abu Dhabi, Dubai, Sharjah, Oman, and Bahrain) of the Middle East region. AIOU also offers support services to distance students through regional campuses and website (Allama Iqbal Open University, 2015). Although, the University offers support services to distance students through regional campuses, TV/Radio, social media and website but still the students face problems in academic learning and to solve assignments and preparing themselves for final exams. Thus, the issues may be managed by addressing the factors hindering in the use of emerging social media technologies for quick problem solving without wasting time 24/7.

## Literature Review

Students are inclined extensively towards use of social media because of its easy access to devices such as smart phones, iPhones, BlackBerry, tablets, iPad and laptops which are connected to the internet (Paul, Baker, & Cochran, 2012). With the passage of time, social media usage is increasing among the students (Shahzad, Alwagait & Alim, 2014). It has also been observed that users approach social media for different purposes; some use it for socializing purposes while others use it for academic purposes in order to complement classroom teaching and learning activities (Salvation & Adzharuddin, 2014).

 Social media and higher education

Social media technologies have been penetrating gradually in education with visible impact. Feshchenko (2015) investigated that how students from 25 universities of the Russian Federation (375 participants) use social networks in education? Results of the study showed that 95%  of students use social

media sites in education and spend about 24% of their time for the purpose of learning and remaining time they spend on entertainment (41%), and finding useful information (28%).

Social media plays a variety of roles; (1) Learning, (2) academic achievements, (3) social networking, (4) embracing diversity, and (5) opening up to society, as highlighted in the report (Redecker, 2009) to enhance learning activities and promote innovation in education and training in Europe. In India, Vaidegi and Munshi (2014) examined the utilization of social networking tools, Facebook, YouTube, Twitter, etc., in the learning process by social science students at Aligarh Muslim University. The study's findings demonstrated that many of the students were aware about social networking tools and they were utilizing those tools in their academic learning which provided opportunity to link with their peers through they were clear their doubts, opinions and thoughts about their subject matter. The study (Gupta, 2013) also indicated that majority of the students access various social media tools for information sharing and personal interaction. However, the academic performance of the students is independent of Facebook usage as a social media tool for academic purpose.

## Impact of social media technologies on students' academic performance

Several researchers studied the significance of using social media and its impact on the academic performance of students in higher education. Like other countries, the study of (Iorliam & Ode, 2014) found that social media has gained acceptability and has become a tool for communication and social cohesion amongst university students in Nigeria. Study's findings, based on 1596 students' responses, disclosed that the time spent on social media, the frequency of visit and the total number of online friends has a statistically significant relationship with a student's academic performance. However, the students' academic performance is increased greatly if the use of social media is restricted and controlled. In Malaysia, students formulate group discussions to exchange ideas and communicate with their teachers and request to their friends about assignments on social networking sites. Similarly, teachers share their course related materials with students and create

student groups to collaborate on projects cum communicate with their fellow lecturers from other universities through the sites; Therefore, facilitating teaching and learning process enhance students' academic performance.(Salvation & Adzharuddin, 2014).

The study (Mingle & Adams, 2015) revealed that majority of the students used WhatsApp and Facebook for making friends and chatting in Ghana. There have been mixed responses from academics and researchers with regard to the impact of social networks on academic performance. They also pointed out that the participation of students on social networks may have both positive and negative impact on their academic performance.

## Use of social media technologies among students in higher education of Pakistan

During the last decade, popularity of social media has been recognized and accepted a mode of communication among students in Pakistan. In 2008, Shaheen investigated three universities students' information seeking behavior regarding the use of social networks and political activism on Internet during the emergency imposed by the Government of Pakistan in 2007. The findings, based on 420 respondents; 72.23% response rate, disclosed that majority of the students used social networking websites to promote democracy, freedom of expression and awareness about their rights during the political crisis in the country. In another study by Arshad, Akram, Arshad and Nazir (2014) explored the use of social media by the students in higher education and found that students utilize their time on social networking sites and considered that the websites are beneficial and useful in their studies. Also, the websites motivate them to share their academic resources and integrate with each other.

It has been established that social networking websites impact students' performance in an academic environment in Pakistan. In a study conducted by Khan (2011) to explore the impact of social networking websites on university students, it was found that majority of the students used the social websites for knowledge followed by entertainment, communication, and time killing. From the results of the study, extracted from 168 randomly selected

communication, and time killing. From the results of the study, extracted from 168 randomly selected students, it was also found that the students can use social networking websites due to social influence.

The study (Shafique, Anwar & Bushra, 2010) on exploitation of social media among Islamia University of Bahawalpur students reported that many social media websites such as CiteULike, Technorati, Connotea, Blogger, Twitter and Wikis etc. were frequently used by the responded students for communication, research work, online learning and making social contacts. Moreover, the acceptance by Pakistani students towards the use of social media for learning was seemed positive. However, the findings of the study limited to 95 master level student enrolled at Geography Department of the University.

Like other professions, social media is being utilized heavily in medical field as well. In a recent study, Javed and Bhatti (2015) examined the use of social media by medical and dental students at Nishtar Medical College, Multan, Pakistan. The study's findings disclosed that the majority of respondents use Facebook and YouTube as compared to other social media sites and considered important in order to improve academic performance while most of the respondents use social media for getting information and to keep in touch with their friends. Findings of the study also recommended that social media should be used for discussing issues related to health, patient care, and treatment.

In distance education, the use of social media among distance students is also gaining popularity in developing countries like Pakistan. Sultana (2012) studied the use of Facebook as best practices for optimizing the learning at Allama Iqbal Open University, Islamabad-Pakistan. For this study, she selected 200 students and 50 tutors registered, through purposive sampling, at Ph.D., M.Phil. and MS level in different programs of AIOU. It was found that Facebook was helpful to promote the culture of sharing knowledge, assisted the students and faculty about their academic, professional and institutional administrative matters. The use of the social media technology also enhanced the capacity building of the users to resolve their educational and professional issues adequately and timely.

## Statement of the Problem

It has been disclosed that a few studies have been reported in the literature focusing on the use of social media among formal and distance learning students in higher education sector of Pakistan. Therefore, there is clear need for more research on the nature and impact of social media outside formal educational settings, which provides new opportunities for innovating and modernizing education and training. Thus, this study investigates the adoption of social media technologies and their impact on distance education students' academic performance at AIOU.

## Aim of the Study

The study is aimed to address the following research questions:

RQ1: How frequently are students using social media technologies?

RQ2: To what extent are students familiar with the use of social media technologies?

RQ3: What is difference between the opinion of male and female students regarding frequency to use social media technologies?

RQ4: Which factors do affect students' use of social meOdia technologies?

RQ5: What is the impact of social media technologies use on students' academic performance?

## Research Methodology

### Research method

A survey based approach was employed to investigate adoption of social media technologies and their impact on students' academic performance. The survey research is used to provide a quantitative description, explanation, or comparison of attitudes, beliefs, and behaviors (Creswell, 2009).

### Population and sample

The target population of the study consisted of 4122 master level distance education students from all over the country enrolled in autumn 2015 at five departments; (1) business administration,

(2) economics, (3) library and information science, (4) mass communication, and (5) gender and women studies, within the Faculty of Social Sciences and Humanities at AIOU, Islamabad-Pakistan. Yamane's (1967) formula was used, with 95% confidence level and 5% margin of error, to select sample size which is equal to 365. Systematic random sampling technique was employed to select subjects of the study. The systematic random sampling is easier and faster than simple random sampling (Conway & Powell, 2010).

**Development of Instrument, data collection and analysis procedures**

Since the theoretical framework of this study based on C-TAM-TPB (Taylor & Todd, 1995) model as shown in Figure 5; therefore, C-TAM-TPB and the relevant literature (Aifan, 2015; (Iorliam & Ode, 2014; Al-Rahmi, & Othman, 2013) was used to develop data collection tool. The instrument was pilot tested on a sample of 20 students on voluntary basis at AIOU main campus, Islamabad-Pakistan. Minor modifications; sequence of questions and grammatical mistakes in the questions, as suggested in the pilot testing were incorporated to prepare the final study's instrument.

The survey tool consisted of three sections: (i) using pattern of social media technologies; (ii) factors (based on C-TAM-TPB) affecting the use of social media technologies; and (iii) demographic information of the sample survey. The social media technologies were limited to Facebook, Twitter, YouTube, Wikipedia, WhatsApp, and Skype only. A five-point Likert type scale (1 for strongly disagree to 5 strongly agree) was applied on scale items.

For data collection, survey was administered to a sample of 365 students during August-September, 2015. For this purpose, the survey questionnaire was sent through registered postal service along with self-addressed envelope; e-mail, and followed by personal visits. Statistical Package for Social Sciences (version 20.0) for Windows was used for data analysis. To analyze the data, descriptive statics, t-Test and linear regression were performed. The overall instrument's reliability was found 0.846. According to Frankfort-Nachmias and Nachmias (2008), a high reliability scores greater than 0.70 indicates a strong connection between items on a scale.

**Data Analysis**

**Gender and age wise response rate**

A total of 365 self-reported structured questionnaires were distributed to the target sample of the study and 329 responded the survey. From the response, five questionnaires were filled improperly and 15 respondents did not use the social media technologies, were excluded during data analysis. Hence, the analysis was made on the data collected from 309 valid responses. The analysis revealed that large number, 68% (209), of the respondents were male while 32% (100) respondents were female. Figure 1 shows that the majority of male and female respondents (male=77. female= 45) were in age group of 26-30 years followed by 21-25 years in which 57 were male while 20 were female. A few respondents were belonging to age bracket less than 20 years and above 40 years.
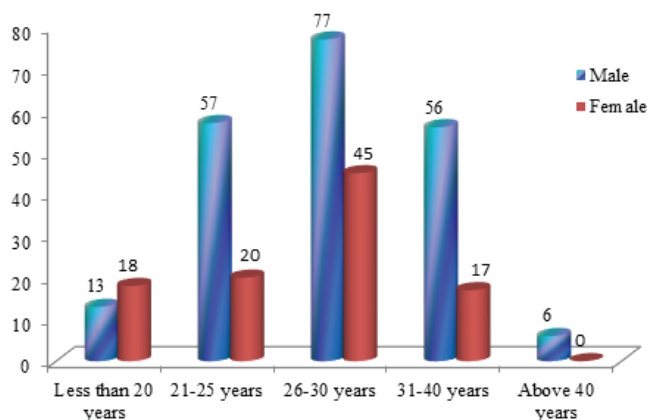


Figure1: Gender and age distribution of respondents

## Students' enrolment wise response of respondents

As the study sample was comprised the students from all over Pakistan. Therefore, it seems important to have a look on the respondents' profile in reference to their area of enrollment. The results depict that majority of the respondents (n=143) belong to the province of the Punjab; being the biggest province with respect to population, of the country followed by 50 from Khyber Pakhtunkhwa (KPK), 48 from Baluchistan, 40 from Sindh, 23 from Federal Capital. While a small number of respondents (n=5) were representing Gilgit Baltistan (Figure 2).
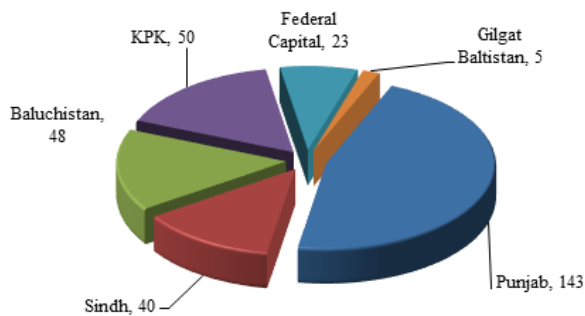


Figure2: Location of Enrollment of respondents

## Frequency distribution of social media technologies use

The respondents were asked to highlight their use of social media technologies (RQ1). Figure 3 illustrates two social media technologies; Facebook (n=158) and WhatsApp (n=133), were being used by the respondents in several times a day. A large number of respondents were using YouTube, Wikipedia and Skype just once a week. However, Twitter (n=231) was found rarely used technology. On the whole, the respondents were using the technologies with different frequencies.

## Familiarity with the use of social media technologies

Figure 4 demonstrates respondents' familiarity level with the use of social media technologies (RQ2). Interestingly more than half of the respondents were having good familiarity level with the use of Facebook, YouTube and WhatsApp. The respondents were having poor knowledge and familiarity with the use of Twitter and Wikipedia. However, majority of the respondents were having average knowledge and familiarity in using Skype.
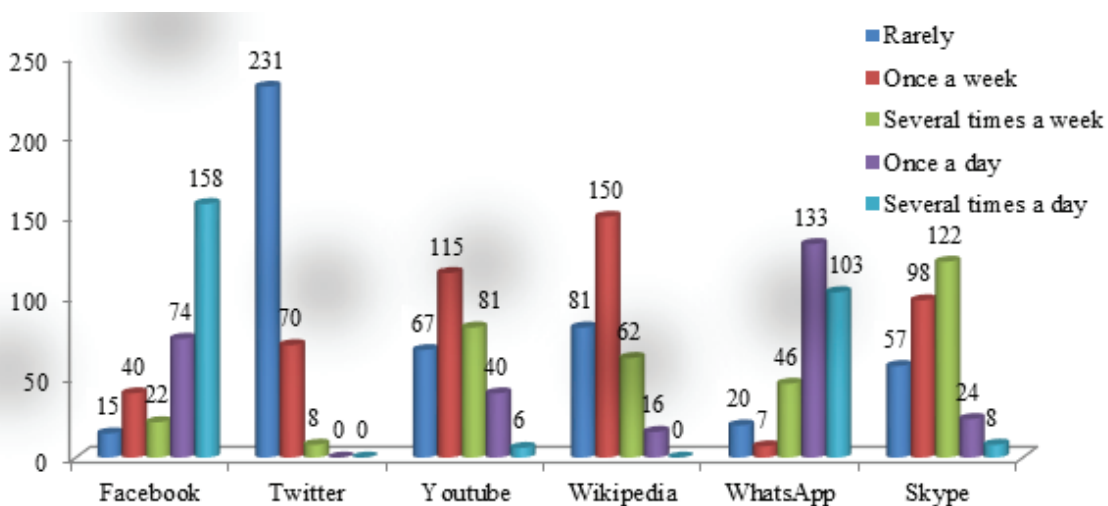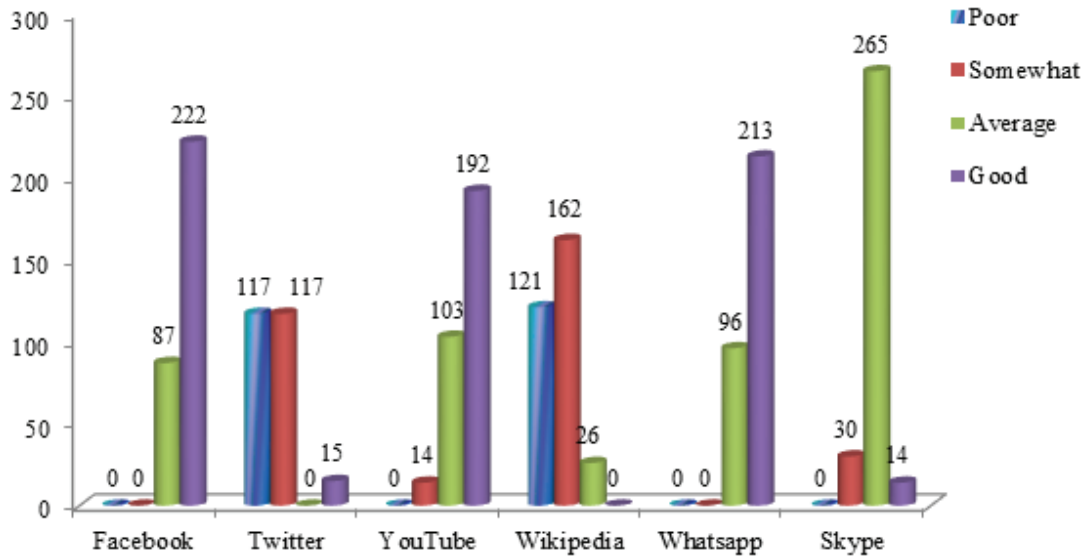


Figure 3: Frequency to use social media technologies

Figure 4: Frequency distribution of familiarity with the use of social media technologies

**Gender wise difference in frequency to use social media technologies**

In order to answer RQ3: What is difference between the opinion of male and female students regarding frequency to use social media technologies? t-Test was performed. Table 1 shows that there are signifincat differences in the frequency to use Facebook, Twitter, Wikipedia and WhatsApp while no difference was found in the the frequency to use YouTube in respect of male and female.

Table 1: t-Test statistics for gender verses freuency to use social media technologies

| Frequency to use | Gender | Mean | T | Sig. |
|---|---|---|---|---|
| Facebook | Male | 3.48 | 4.726 | .038 |
|  | Female | 2.86 |  |  |
| Twitter | Male | 2.02 | 1.400 | .008 |
|  | Female | 1.74 |  |  |
| YouTube | Male | 2.60 | 2.539 | .074 |
|  | Female | 2.13 |  |  |
| Wikipedia | Male | 2.00 | -5.554 | .000 |
|  | Female | 3.08 |  |  |
| WhatsApp | Male | 3.25 | -.437 | .000 |
|  | Female | 3.30 |  |  |
| Skype | Male | 2.29 | -1.346 | .269 |
|  | Female | 2.52 |  |  |

*Note. Significant at ≤ .05

Table2: Descriptive statistics of factors affecting to use of social media technologies

| Factor | Items | Mean | SD | Cronbach's Alpha |
|---|---|---|---|---|
| Perceived Ease of use | 4 | 3.70 | 0.676 | 0.816 |
| Perceived Usefulness | 5 | 3.87 | 0.498 | 0.723 |
| Perceived Behavior Control | 3 | 3.78 | 1.01 | 0.882 |
| Attitude Towards use of Social Media Technologies | 3 | 3.77 | 0.859 | 0.675 |
| Subjective Norms | 3 | 3.03 | 1.01 | 0.871 |
| Actual use of Social Media Technologies | 2 | 3.63 | 1.06 | 0.925 |

Scale: 1 = Strongly Disagree, 2 = Disagree, 3 = Neutral, 4 = Agree, 5 = Strongly Agree

**Factors affecting to use social media technologies**

RQ4 addresses the factors which affect students' use of the social media technologies. The descriptive statistics and linear regression analysis were run to answer the question.

Table2 revealed that the respondents were using the social media technologies for their studies (M=3.63, SD=1.06). The mean value of perceived usefulness (M=3.87, SD=.498) indicated that respondents were agreed that the social media technologies are useful for their studies and easy to use (M=3.70, SD=0.676). Majority of respondent agreed that they possessed necessary resources and knowledge to use social media technologies (M=3.78, SD=1.01). However, mean value of subjective norms (M=3.03, SD=1.01) indicated that the respondents were slightly impressed by the closely associated persons in respect of the social media technologies use.  Factors affecting to use social media technologies
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agreed that the social media technologies are useful for their studies and easy to use (M=3.70, SD=0.676). Majority of respondent agreed that they possessed necessary resources and knowledge to use social media technologies (M=3.78, SD=1.01). However, mean value of subjective norms (M=3.03, SD=1.01) indicated that the respondents were slightly impressed by the closely associated persons in respect of the social media technologies use.

Figure 5 depicts that perceived usefulness (β=.616, p=.000<.05) was found significant in measuring the attitude towards use of social media technologies while perceived ease of use (β=.018, p=.761>.05) was not significant in measuring the attitude toward use of the technologies. Overall, perceived useful and perceived ease of use measured 40% (R2=.40) attitude towards use of the social media technologies. Perceived behavior control (β=.695, p=.000) was found the strongest factor, contributed 69.5%, followed by attitude towards use of social media technologies accounted for 24.7% (β=.247, p=.002<.05) change in actual use of the social media technologies. However, subjective norms were found insignificant factor (β =.020, p=.627>.05) in measuring the actual use of the technologies. In sum, perceived behavior control, attitude towards use, and subjective norms predicted significantly change, 48% (R2=.48), in the actual use of the social media technologies (Figure 5).

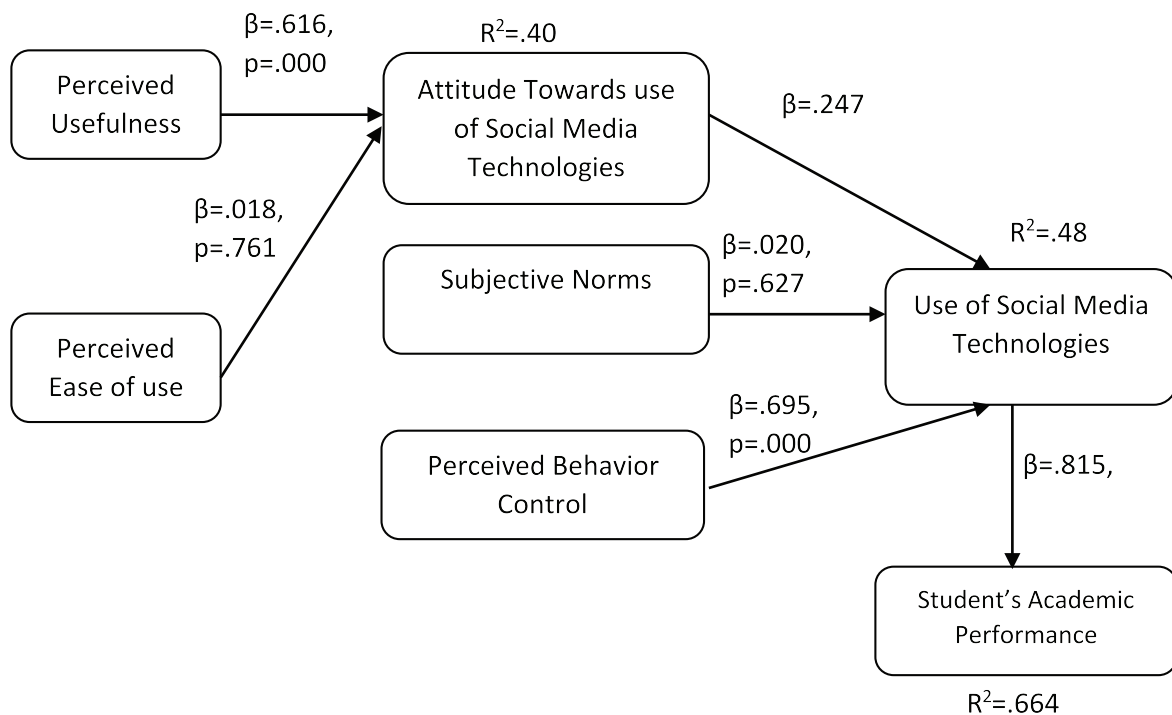Figure5: Results of research model

**Impact of social media technologies usage on students' academic performance**

Linear regression was performed to address RQ 5. The results indicated that the actual use of the social media technologies impacted significantly, 66.4% ($R^2$=.664), on the students' academic performance (Figure 5).

**Discussion of Findings**

The social media has become one of the most vital communication means in recent years. In this study context, the results reveal that distance education students use social media technologies and have good familiarity level with the use of the technologies like other students in formal education (Shafique, Anwar & Bushra, 2010). Likewise, social media technologies proved to be effective means of communication channels in higher education. As found, distance education students use social media technologies like Facebook, YouTube and WhatsApp and have good familiarity level with the use of the technologies. The studies (Javed & Bhatti, 2015; Khan, 2011; Sutana, 2012) also disclosed that Facebook and YouTube are very popular among university students for getting information and to keep in touch with their friends,

research work, online learning, making social contacts and even do communication in political crisis in Pakistan (Shaheen, 2008). Findings of this also disclosed that majority of the respondents were having poor familiarity with Twitter and Wikipedia which leads the distance students towards less usage of the technologies. To overcome the challenge, AIOU administration should encourage academic departments to initiate digital information literacy programs for students, tutors and regional campuses staff members of the University located all over the country.

The factors such as perceived usefulness, perceived behavior control, attitude towards use helped to enhance the actual use of social media technologies among distance students but perceived ease of use and subjective norms did not do the same, why? As majority of the respondents have familiarity level with the technologies specifically Facebook, YouTube and WhatsApp which are commonly used by the students, thus the students may not face any difficulties to use. About subjective norms impact, as the study population is dispersed all over the country and the students may not have opportunities to interact with

each other frequently, so there is no influence of the associated persons is natural. In Pakistan, teachers and parents discourage students, as they feel students waste more time and gain less academically by using the technologies. There may be two reasons behind gender difference in use of the technologies; (1) male are more literate and well privileged as compare to female in the country; and (2) majority of the study's population consisted of male respondents. Thus more of use of the technologies by the male respondents may be justified.

As findings reports that distance education students' academic performance is increased by using the technologies and similarly, the studies (Javed & Bhatti, 2015; Arshad, Akram, Arshad & Nazir, 2014), also found that use of social networking websites improve students' academic performance in Pakistan. Iorliam and Ode (2014) indicated that the students' academic performance is increased greatly if the use of social media is restricted and controlled.

## Conclusions

According to the Pew Research Center (2015), 74% of the Internet users use social networking sites worldwide. Social media also provide fast and vibrant means of communication to learn and collaborate among distance community irrespective of time and space. The review of literature and findings of this study reveal that social media technologies are blessing more than curse and enhance learning as well as academic performance along with socialization among the students. Redecker (2009) indicated that the potential of social media for innovating learning practices and transforming educational institutions is inevitable. Hence, the use of social media impact is quite visible in personal life as well as in professional life of distance students. Above of all, these are the only valuable technologies which may be helpful to create new knowledge by bridging gap in digital divide through sharing of personal knowledge and resources in the developed and developing countries.

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