



EVALUATING PERCEPTION TOWARDS THE USAGE OF INFORMATION TECHNOLOGY; PERSPECTIVES FROM UNIVERSITY STUDENTS

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ABSTRACT: The study's primary objective is to analyze the impact of technology benefits and student attitude on student preference. With the use of quantitative research, design data was collected from five universities of Islamabad, Pakistan. Total 250 questionnaires were distributed among the university students and the complete responses received were 201, i.e., 80%. Using SPSS 19, statistical techniques were applied, and the results revealed that benefit and student attitude are positively and significantly associated with student preference.

Keywords: Information Technology, University Students, Technology Benefit, Student Attitude

I. INTRODUCTION

Kvavik and Caruso (2005) describe today's graduates and undergraduates as "Digital Natives" or "Next Generation." They spent their life using a computer, video games, music player, and camera. They are different from their predecessors because of the surrounding in which they grew up. Such a digital environment has changed their thinking ability. They are more mechanical and prefer using technology as a tool in their daily task.

Institutes due to the IT revolution, are emphasizing more towards the usage of technology in education. The combination of education and technology has been considered the primary key to human success (Levine & Donitsa-Schmidt, 1998; Yu & Yang, 2006). Such a learning environment provides university students rapid access to information (Simsik, 2008). They enjoy their digital library access for scholarly research via World Wide Web (Sheeja, 2010). Moreover, students can easily communicate with classmates and instructors and send their assignments while sitting at a distance using the internet.

In the past, education was localized due to each country's different cultures, backgrounds, and traditions. Today it is globalized. Institutions encourage instructors and students to communicate electronically (Li, Kirkup, and Hodgson, 2001), making education borderless. Students from different backgrounds and places come to a single institute for studies. Unfortunately, some are poor, less educated, and lack computer skills, i.e., communication, web surfing, word processing, and online research (Watson, 1998; Bikson & Panis, 1997). This difference is due to (1) unavailability of computer/internet, or (2) difference between the motivation, attitude, and perception of the student associated with the technology (Tapscott, 1998). Therefore, in both cases, universities are required to provide training to the students to motivate them.

Like all other countries, the IT revolution is also seen in Pakistan. Most teenagers and adults are users and technology owners, including computers and cell phones (Aslam, 2000). They widely use computers for the internet, playing games, making assignments, and sending emails, whereas cell phones are the primary source of communication (Kvavik and Caruso, 2005). Technology is viewed favorably by students, but a question arises whether a student finds it valuable? The best explanation is if (1) the students find the technology easy and motivated, and (2) it improves learning and helps communicate with classmates and instructors.

The present researcher explores the effectiveness of information technology in education by evaluating the students' preferences towards Information Technology (IT) depends on the Benefit and Attitude of a student towards the usage of IT in their course work.

II. STUDY BACKGROUND

Information technology is a combination of two words: information and technology. It is defined as “a study, design, development, implementation, support or management of computer-based information systems, particularly software applications and computer hardware” (Wikimedia Foundation, 2010).

Computers were introduced in the mid-20th century (1940-1950), although machines similar to computers existed before (Wikimedia Foundation, 2010). In Pakistan, it was first used by PASTIC in 1968 (Mahmood & Khan, 2007; Haider, 1998). It helped in producing the country's first Union Catalogue of Scientific Periodicals. Profiles of 100 scientists were developed to offer a Selective Dissemination of Information (SDI) service. The researcher described that by the 1980s, agricultural universities and research centers started using computers, e.g., Sindh Agriculture University and the National Agriculture Research Council (NARC) Documentation Centre and other universities and special libraries (Mahmood & Khan, 2007). The cryptocurrency trade significantly influenced environmental sustainability which econometrically confirmed by vector error correction model (Mohsin et al., 2020a). Banking sector symmetrically and asymmetrically effected by volatility of market risk while interest rate and exchange rate shows minor participation in fluctuation of banks returns (Mohsin et al., 2020b). The pandemic outbreak influenced the not only daily activities of life but also the graph of stock market negatively affected by it because of alternation of investors' psychology (Naseem et al., 2021).

Commercial internet is 40 years old. It began in 1969 as an experimental project of the Defense Advanced Research Projects Agency (DARPA) (Ozz, 2002). The internet has become a mass medium and the best distribution channel of voice, television, data, and other media over large geographical areas. Many online activities were conducted through the internet, which includes playing games, writing documents, giving a lecture, communication, daily assignment, office work, social interaction, sending an e-mail, and doing research on the digital library (Ojedokun and Owolabi 2003). Basically, “There appears to be a migration away from courses delivered solely face-to-face to those either supplemented with or completely reliant on online discussion” (Macklin et al., 2002). Hence, the digital era had brought the ICT into every part of the society, where the marriage of computers with telecommunication gave birth to information and communication technology (Adogbeji and Akporhonor, 2005)

In the past, different research has been conducted, showing comparisons among countries regarding IT knowledge. Simsek (2008) reported that much of the United States' research is on using IT tools and Internet resources in the classrooms. However, it was crucial to learn about ICTs tools and ICTs users' attitudes from different social, cultural, and educational settings. Li, Kirkup, & Hogson (2001) investigated the differences in Chinese and British students' usage and attitude toward the Internet and computers. Chinese students were less experienced about the computer and the internet than British students, but shows confidence in their computer skills. This difference is actually due to the cultural and background characteristics of the students in each country. Simsek (2008), cited in Omar (1992), explained college students' attitudes towards using computers in the US and Kuwait and reported that the results of these two groups differed significantly. Students in the US showed more positive attitudes towards computers, whereas their Kuwait counterparts were considerably less positive. (Sarfranz et al. 2018, 2020; Naseem et al. 2020; salam et al. 2020).

Information Technology in Pakistan

The learning style affects the perception of students towards education. Research had found that the rapid introduction and developments in information and communication technology (ICT) had made a great demand for IT in education. Institutes are bound to impart sound IT education to their pupils (Ali and Proctor, 2005) through computers. It is one of the widely used technologies for education, where the internet is a source to conduct online research.

Besides face-to-face learning, E-learning is another type of education where the medium of learning is a computer. Not just universities are going students but also the students seeking education through distance learning benefit from the Information Technology. Universities in Pakistan offer distance education with the help of different programs broadcasted through radio, television, and online. Allama Iqbal Open University (AIU), Punjab University (PU), CASE, and Virtual University (VU) are playing a significant role in providing online distance education. Research had been conducted that AIU offers courses in various subjects at all levels of education through different technologies (Tahir, 2001).

Benefit

In recent years, organizations have been using technology in offices, helping managers and professionals improve organization performance (Fairhead, 1990). Moreover, the technology works as a tool to assists organizations in becoming efficient. Davis, Bagozzi, & Warshaw (1989) reported that a user's help using

technology varies with the difference in its intention. The user prefers that technology is easy to use and helpful (Taylor & Todd, 1995). Moreover, speed is one of the benefits that technology provides to its users (Lindley, 2008) like, students use technology during communication with classmates, listening to lectures, and making assignments. Hence benefiting them by providing prompt services. But along with speed, control is one of the essential factors for users to prefer technology (Langeard, Bateson, Lovelock, & Eiglier, 1981). To evaluate the factors affecting students preference, the following hypothesis is proposed

H1: *Benefit has a positive impact on student preference*

Attitude

Nowadays, most companies invest money in technology by implementing and training, informing, and convincing the users. These companies are highly emphasizing understanding the attitude of the users towards the technology. Liaw (2002) found that the experience influences user attitude towards technology. Attitude helps determine the user's behavioral intention concerning the technology experience and its usage. It explains a good or bad feeling of an individual towards their behavior to use the technology. Findings revealed that attitude has a significant positive effect on individual intention and preference (Kuo and Yen, 2009).

Understanding why users resist using technology has remained a challenging issue for the researchers. Different theoretical models have been proposed by the researchers regarding adopting technology (Davis, Bagozzi and Warshaw, 1989; Taylor & Todd, 1995). The models were designed to measure users' perception and their acceptance. Davis, Bagozzi, and Warshaw (1989) proposed TAM, one of the widely used models, explaining the impact of users' technology experience towards perceived ease of use, which further affects users' attitude. the following hypothesis is proposed

H2: *Attitude has a positive impact on student preference*

As the researchers examined the relationship between the student's preferences using IT and various factors (Benefit and Attitude), the following research model and research question are developed. The research model used is modified according to different past research (Davis, Bagozzi, & Warshaw, 1989; Taylor & Todd, 1995; Liaw, 2002; Kvakik & Caruso, 2005; Sarrafzadeh et al., 2008; Sarfraz et al. 2018).

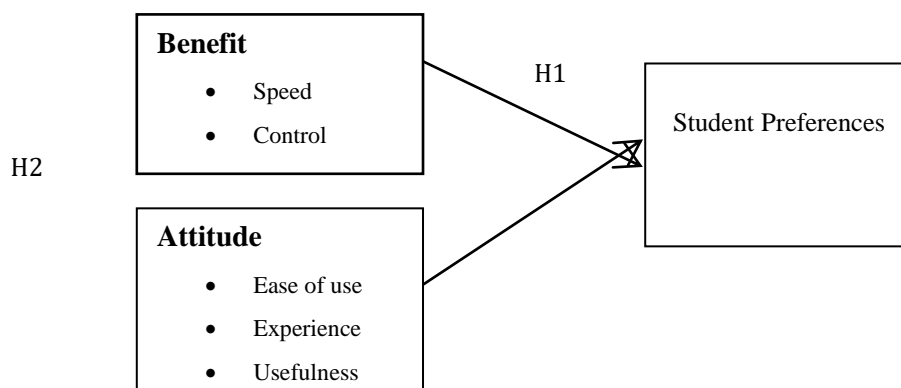


Figure 1: Conceptual framework of student preference towards the usage of IT in coursework

Q1: What is the impact of Benefit and Attitude on students' preferences towards technology in their coursework?

Q2: Is there a significant difference between different universities' students and their IT preferences in the course?

Q3: Which one of the following variables (Benefit and Attitude) has a significant contribution to the students' preferences towards IT?

III. METHODOLOGY

The sample size of 250 students was chosen from five different universities. The response rate was 80%, i.e., 201. Students of various universities were chosen to check their IT benefits in their coursework and about their Attitude and experience. Based on these factors, a preference regarding IT in the course was calculated. The students were asked about their views on whether they were enthusiastic about using IT in their courses or not.

A questionnaire of 30 items was developed from the original concept of kavik & Caruso (2005). It was developed to estimate the preferences of a student towards IT in their course work. The variables were

adapted from the study of ECAR on student and information Technology kavik & Caruso (2005). The first portion of the tool requested demographic information: (a) Age level; (b) universities; (c) electronic device student own and (d) Weekly activities student perform using Computer. Demographic information is taken for comparison. The second portion of the questionnaire included sections: (a) Benefit; (b) Attitude (c) Preference. For each question, a Likert-type scale with the following designations was used: (a) strongly disagree. (b) Disagree. (c) Neither Agree nor Disagree. (d) Agree. (e) Strongly Agree. The questionnaire was personally filled by visiting students of different universities. A proportionate stratified random sampling technique was employed to select the students from five universities. Data were analyzed by using SPSS version 19 for Windows.

IV. DATA ANALYSIS AND DISCUSSION

According to the analysis, the total number of respondents involved in this study was 240; 80% responded. The questionnaires were equally distributed among the students of five universities of Islamabad, Pakistan, and the responses were: University 1=44; University 2 =41; University 3 =37; University 4=40; University 5=39; (Figure: 2)

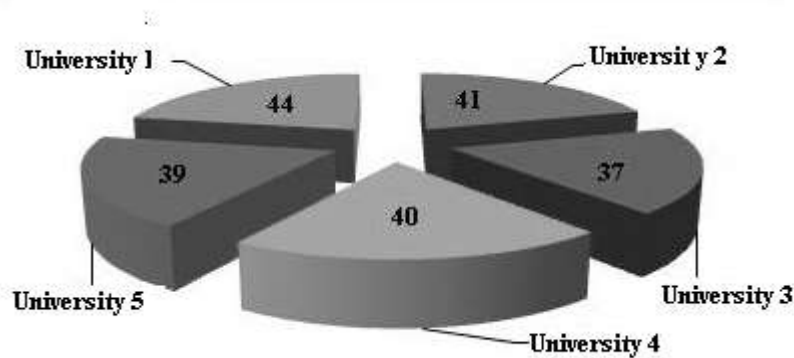


Figure 2. Number of students from each University responded

Figure 3 depicts the percentage of student own an electronic device. Out of 201 students, 165 own Cellphones, 105 own Desktop, 86 laptops, 25 own Wireless Adaptors and IPOD, and nine own PAD. Hence, it shows more students use cellphones that are convenient to communicate in a shorter and faster way.

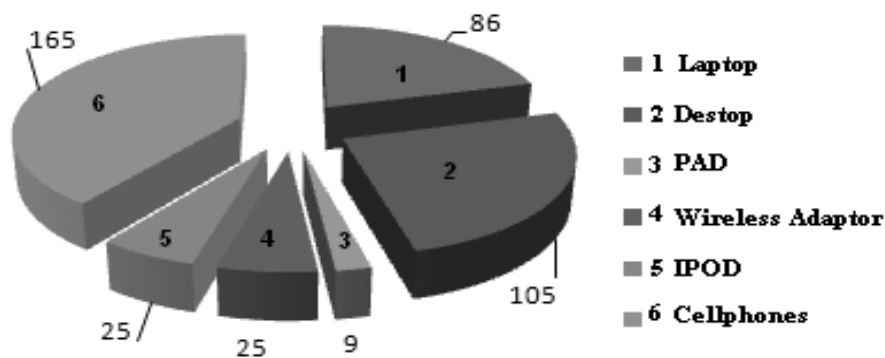


Figure 3: Electronic devices owned by the Student

Figure 4 depicts weekly activities performed by the student on the computer. It shows that the “Internet for coursework” achieves a high percentage. One hundred sixty-seven students prefer using the internet for their course work, making assignments, solving queries, and communicating with the classmates and instructor. On the contrary, online shopping and watching movies are at a low level, i.e., approximately 34 students perform this activity in a week.

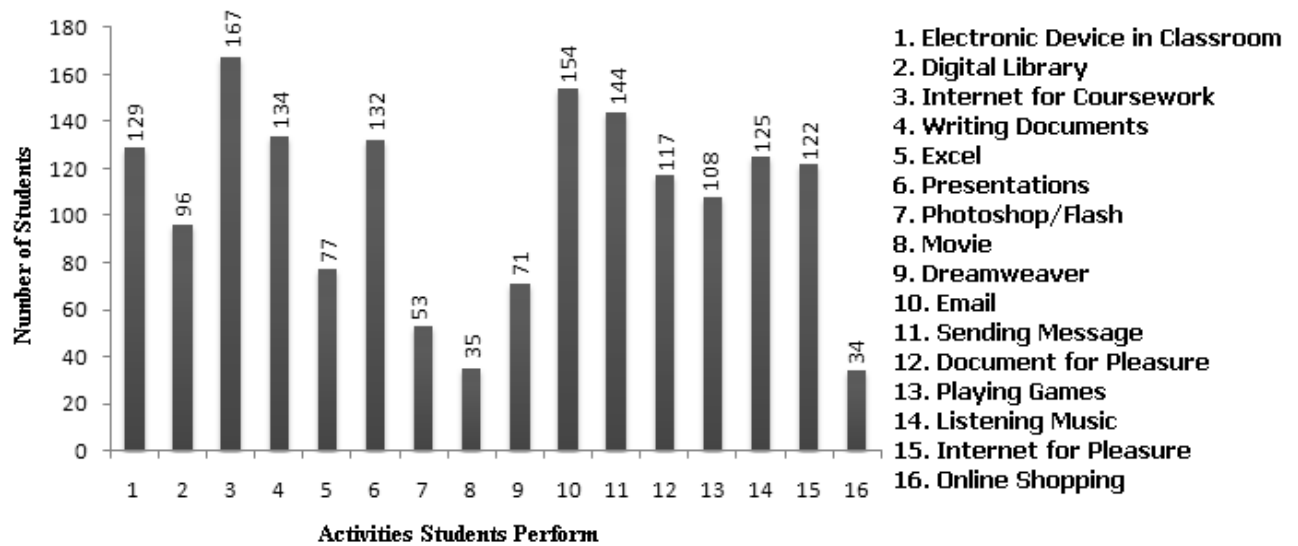


Figure 4: Different Activities student perform in a week for about 4-5 hours

Reliability analysis is conducted to ensure that the scale used for evaluating the research is providing consistent results overtime or not. Cronbach's Alpha calculated is 0.879, representing data is reliable (George and Mallery 2003), and so further tests can be applied.

Regression was employed for investigating the relationship between independent and dependent variables. It shows the value of $R^2=0.463$, which tells us that skill level, attitude, and benefit can account for 46.3% variation in preference of the student using IT. In other words, if we are trying to explain why some students do not prefer IT in their course work, there might be many different reasons. Still, this model depicts that the student's skill level, attitude, and benefit by using IT can explain 46.3% of it. Figure 5 depicts that if the Beta value of attitude increases by one unit, preference increases by 0.113 units, and benefit preferences increases by 0.196 units.

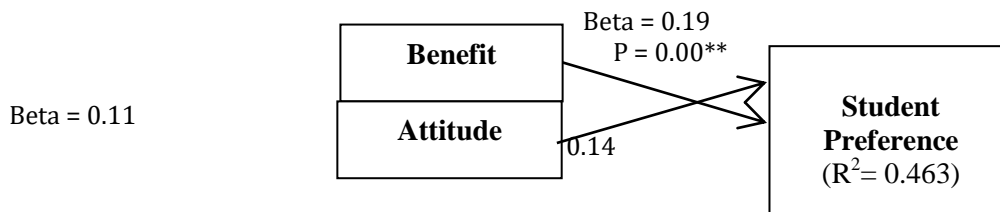


Figure 5: Solution of Regression

The smaller the value of significance, the greater the contribution of that variable to the model. In present study benefit has a significance level = 0.00 i.e. < 0.05 and so has a significant impact on preferences, whereas Attitude = 0.14 i.e. > 0.05, has no impact on the preferences. The results indicate that students prefer technology because they find it beneficial, but as they lack experience and find it difficult to use technology, their preference level decreases. In the present study, the sample has been taken from different universities, and students belong to different disciplines, so their experience and preference vary. As the study is conducted to examine the student's preferences from different universities, a Statistical test ANOVA is used. ANOVA is employed for investigating the significant difference between multiple groups, i.e., Universities. In the present study, insignificant or unclear differences exist among the attitude ($F = 2.784, P = 0.167$) of students from different universities. In contrast, students find technology beneficial ($F = 5.54, P = 0.00$); a significant difference exists among them because they use technology concerning their needs and requirement. The overall model depicts that because of the benefits of technology, it has a significant impact on students' preferences towards IT in coursework.

Figure 6 depicts students' responses from different universities concerning their preferences towards IT usage in their coursework. The result comes in the following order (1). University 1, (2). University 2, (3). University 4, (4). University 5, (5). University 3. University 1 and University 2 highly **prefer** the usage of IT in their course work. This might be due to different statistical analyses, which can be interpreted easily by using statistical software. In University 2, students are well **experienced** and possess a positive attitude (Mean 3.58), hence depicting a positive impact on technology usage. They get **Benefit** (mean=3.52) by using IT in their course work through: (1) communicating with their classmates and instructor; and (2) making assignments. Hence they find it more **beneficial**. University 3 has a mean value of 3.16, depicting that their preference level is very low compared to others. Overall results revealed

that students belonging to the University 2 and University 1 prefer IT; they perform different computer activities, have a good experience, and get much help by using it.

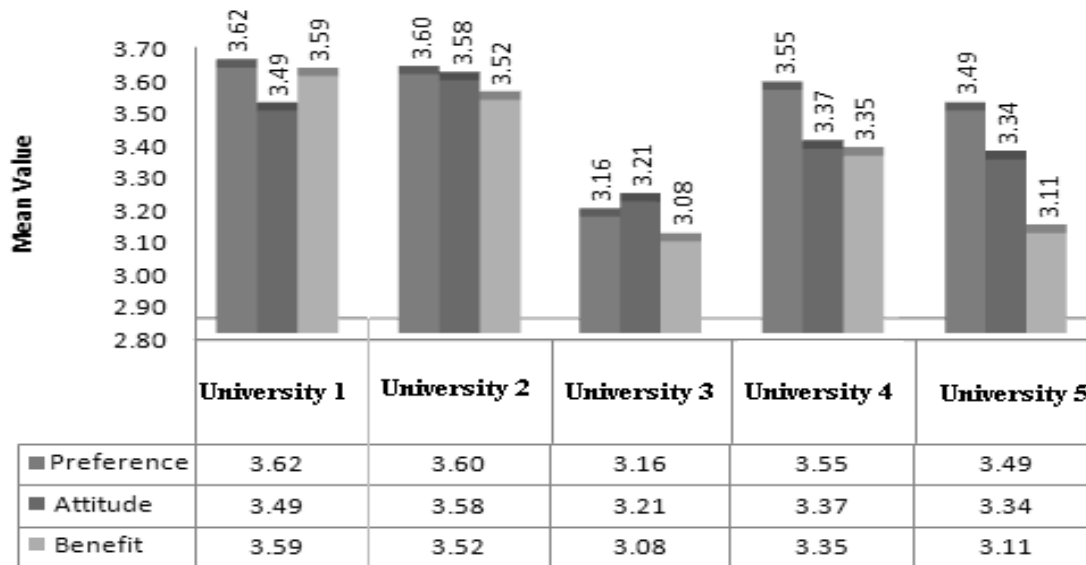


Figure 6: Mean Values: Students Preference, Attitude, And Benefits Associated With Technology In Education

V. CONCLUSION

Nowadays, the usage and importance of computers and the internet are increasing, and Individuals without this knowledge are a failure economically and educationally. In this study, preferences of the student towards IT in their coursework was calculated. Students of five universities were selected to examine the impact of the Attitude and Benefit of IT towards their preference. The results were

1. It was found that benefit related to IT has a highly significant impact towards preference. Students find technology speedy and controllable, helping them in (1) sending assignments, (2) submitting online quiz (3) viewing lectures, and (4) communicating with classmates and instructors.
2. Attitude has a highly insignificant impact on students' preferences. This overall negative influence is because users are unskilled, finding it difficult to use and work on it. But students of University 2 find technology beneficial and are highly skilled.

Students of different universities take technology differently, per their needs and requirement. Overall results depicted that students belonging to the University 1 and 2 prefer IT. They perform various computer activities, have a good experience and get much help by using it.

VI. FUTURE RECOMMENDATIONS

This study is limited by the selected population used, but it raises some significant concerns. Future study is recommended with populations that are more diverse. For example, cross-sectional studies could compare generational and demographic differences, while longitudinal studies could follow a cohort group over time. The role of early socialization to computers and technology and its impact on later experiences and attitudes may help explain some gender and cultural differences. Finally, programs to enhance computer and Internet competency are needed.

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