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Article

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Enhancing University's Brand Performance during the COVID-19 Outbreak: The Role of ICT Orientation, Perceived Service Quality, Trust, and Student's Satisfaction

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Abstract

The purpose of this study is to examine the effect of information & communication technology (ICT) orientation on university's brand performance along with the mediating role of student's satisfaction and moderating role of trust and perceived service quality in times of COVID-19. To achieve this purpose, a quantitative methodological approach was adopted in which the data was collected online through 417 structured questionnaires from university students of Pakistan. The data was analyzed using SPSS and AMOS in which structural equation modeling was performed for testing hypotheses of the study. Results of the current study indicate that the ICT orientation has a significant positive effect on student's satisfaction and university's brand performance while the student's satisfaction significantly mediates the relationship between ICT orientation and university's brand performance. It has been further found that the perceived service quality acts as a significant but negative moderator in the relationship between ICT orientation and student's satisfaction. Results further reveal that the trust acts as a positive moderator in the relationship between student's satisfaction and university's brand performance. The current study is expected to be an important contribution to the literature and practice as it provides useful implications that how universities can enhance and maintain their brand performance and student's satisfaction during the COVID-19 outbreak by adopting techniques and tools of ICT.

Keywords: information & communication technology (ICT) orientation, perceived service quality, student's satisfaction, trust, university's brand performance, higher education, coronavirus (COVID-19).

1. Introduction

A novel virus that was unknown to people till 2019, named as corona virus COVID-19 has now dramatically affected the whole world. This virus was first detected in China's city named as Wuhan in December, 2019 after which it spread to other countries rapidly and affected more than 180 countries of the world (Duncan & Lyall, 2020). COVID-19 refers to a family of virus, which consists of a single strand of RNA and it mostly affects the mammals, birds, and reptiles. This virus causes flu and affects the respiratory system of the carrier in serious cases. In severe case, this virus leads the patient to enteric and neurological diseases, pneumonia, acute respiratory syndrome, kidney failure, and death (Anthony & Fauci, 2020). This virus spreads through respiratory droplets, contact, and sometimes, through airborne transmission. The incubation of strain from person to person is still not clear but symptoms of virus become prominent in 2 to 14 days (Bouaziz et al., 2020; Callaway & Cyranoski, 2020; Zu et al., 2020). A single person carrying this virus can affect 1.4 to 2.5 people as it transfers to other person by coughing, sneezing and simple interaction (Control & Prevention, 2020). The speedy transmission of virus led government of different countries including Pakistan to put lockdown and close the schools, universities, offices, malls, and other public spots in order to reduce and control the physical interaction and meetings of people. Figure 1 shows that how fast this virus is spreading from one person to others in short span of time.

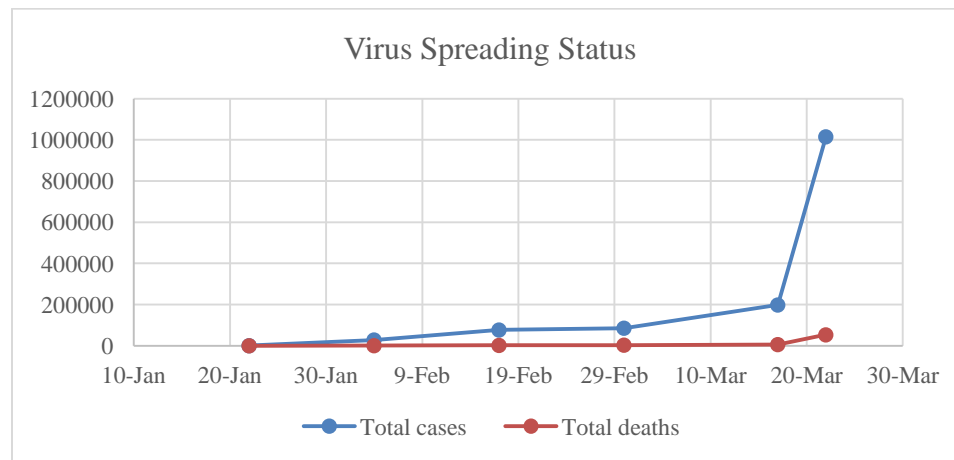


Figure 1: COVID-19 Virus Spreading Status

The COVID-19 has shattered the world drastically as it has largely affected and reshaped various sectors worldwide. This COVID-19 outbreak has substantially altered the educational sector and its operations worldwide (Crawford et al., 2020; Nicola et al., 2020). The educational sector of Pakistan does not get exemption from this outbreak as the lockdown during this pandemic has shifted almost all education activities to online

system. The universities have shifted almost all their academic activities and operations to online system. In this crucial time, universities of Pakistan and other countries are trying to deliver best possible facilities to their pupil through online platforms. For competing, surviving, and succeeding in the market during this COVID-19 outbreak, they have to build and maintain a strong brand for which they need to adopt proper strategies and techniques (Akram et al., 2020; Shahzad, Hussain, Sarwat, Ghani, & Saleem, 2020). Therefore, universities of Pakistan are looking for ways through which they can satisfy their students and enhance their brand performance in the market in order to survive and succeed during this pandemic. The ICT orientation is one of the best way to cope with this pandemic as the physical operations and activities have been largely hindered during this critical time. It means that universities of Pakistan need to adopt proper ICT for the continuity of their operations and educational activities through online platforms and for maintaining their brand performance in the market (Arshad, 2020; Javaid et al., 2020). The branding of the university is its marketing tool, which helps it to capture, involve, and retain students for maintaining the image and performance of university in this competitive era (Wilson & Elliot, 2016). The effective branding helps universities in maintaining their image in the mind of their customer and gaining competitive edge over other universities. (Keller & Lehmann, 2006). Therefore, the current study aims to explain the phenomenon through which universities of Pakistan can improve their brand performance during this COVID-19 outbreak.

In 21st century, the latest technologies are being adopted in every area of life worldwide. During this century, large progress has been made in ICT so that, people can connect with one another virtually while sitting at home or anywhere in the world. Although people are already rapidly adopting the ICT during this century but the COVID-19 outbreak has significantly accelerated the ICT adoption rate worldwide as people are now relying more on virtual meetings (Allam & Jones, 2020). The temporary closure of universities and other organizations has largely increased the ICT adoption rate in Pakistan because people are unable to travel to and visit their institutions physically during this pandemic. The closure of universities has caused many problems for students and staff members by affecting their schedule. However, ICT adoption and online classes have helped them a lot to cope with this challenge and continue their study activities. Information & communication technology helps in transmission of audio and video processing, media broad casting, telecommunication etc. so, students and teachers are able to have virtual meetings and perform their activities and operations online (Akram et al., 2020; Shahzad et al., 2020). ICT digitally combines people and organization through devices, networking system, and internet applications. It provides people with different modes of communication to manage and control their societal, professional, and interpersonal interactions worldwide. In short, people can now work, learn, and perform their task digitally through ICT.

The COVID-19 has also affected other customer-related and organizational factors as this pandemic has altered the way of thinking and doing things. The attitudes, trust, perceptions, and behavior of customers have been affected by this pandemic largely. For example, people are now less optimistic so, they are less likely to trust brands easily

(Addo, Jiaming, Kulbo, & Liangqiang, 2020; Karpen & Conduit, 2020). The similar is the case with students as the COVID-19 and the pandemic associated with it has disturbed their study activities, planning, and schedule. Therefore, it has become difficult and challenging for universities to attain customer satisfaction and gain and maintain the trust of customers/students during this pandemic without physical interactions because the branding and trust building activities of organizations are totally reliant on online platforms (Addo et al., 2020; Karpen & Conduit, 2020; Limaye et al., 2020). Trust is the belief of customer in the reliability, ability, and capability of the organization to provide best facility to its customers (Ricky & Pratiwi, 2017). As per this situation, it is important to note that the ICT is meeting the standards of perceived service quality and helping universities to keep their students satisfied and confident about the services provided by them. In this way, ICT is contributing towards the brand performance of universities by maintaining student's satisfaction. Customer satisfaction is the main antecedent of university's brand performance. The customer/student's satisfaction refers to the perceptions and feelings of students that the actual services provided by an organization/university are fulfilling his/her expectations associated with those services (González-Mansilla, Berenguer-Contrí, & Serra-Cantalalops, 2019; O'Cass & Viet Ngo, 2011; Saeidi, Sofian, Saeidi, Saeidi, & Saeidi, 2015). Universities need to adopt such practices and strategies through which they can build and maintain trust of students with universities in order strengthen their brand. Service quality is another important factor, which helps the organization in building strong brand. University's performance is viewed by students as the quality of the service provided by them. Based on university's brand performance, customers develop an image and perception of the facilities provided by respective university (Ghobehei, Sadeghvaziri, Ebrahimi, & Bakeshloo, 2019; Sultan & Wong, 2019). It means that it is important to ensure for universities that their services and facilities are meeting the standards of service quality according to the expectations of students through ICT during this pandemic. However, existing studies in the literature do not efficiently address and empirically explain the phenomenon through which universities in Pakistan can maintain and enhance their brand performance and customer satisfaction through ICT orientation during COVID-19. Therefore, it is needed to empirically examine that how the organization/university can achieve and maintain high brand performance through ICT orientation in this pandemic. The current study draws its support from "theory of planned behavior", which suggests that the external stimuli, customers' attitudes, perceptions, and perceived behavioral controls have the potential to direct his/her feelings, behavior and intentions towards a brand (Ajzen, 2015; Chu, Chen, & Sung, 2016; Kalafatis, Pollard, East, & Tsogas, 1999). This study also examines that how the perceptions of students about the service quality and perceived ICT orientation can shape their satisfaction and perceived brand performance. Given the great importance of ICT, customer satisfaction, perceived service quality, and trust in improving the brand performance, objectives of the study include examining the effect of ICT orientation on university's brand performance, evaluating the mediating role of customer satisfaction between ICT orientation and university's brand performance, assessing the moderating impact of perceived serviced quality on the relationship between ICT orientation and customer satisfaction, and analyzing the moderating role of customer's trust on the

relationship between customer satisfaction and university's brand performance during pandemic of COVID-19.

This study is of great significance due to its theoretical and practical importance particularly during this pandemic as its findings will extend the literature about the theory of planned behavior and the role of ICT orientation and customer satisfaction in improving the brand performance. This study addresses a fresh area of research i.e. COVID-19 in terms of its connection with different organizational factors. Therefore, this study will be a value addition to the literature due to its empirical evidence of this phenomenon through which the organization can enhance its brand performance in this pandemic. Practically, this study will help universities of Pakistan to understand that how they can maintain high brand performance by increasing their ICT orientation and improving customer satisfaction during COVID-19 outbreak. Section 2 of this paper reviews the past studies related to the phenomenon and variables under current examination, section 3 covers the methodology adopted for the current study, section 4 analyzes the data, and section 5 discussed the results and concludes the whole study.

2. Literature Review

2.1 ICT Orientation and Student's satisfaction

During this pandemic, ICT is helping universities in meeting the standards of perceived service quality and helping universities to keep their students satisfied and confident about the services provided by them. In this way, ICT orientation of universities seems to contribute towards the student's satisfaction as it enables the university to give feelings to students that the university is concerned about their interests and the actual services provided by an organization/university are fulfilling their expectations associated with those services. The "theory of planned behavior" suggests that the external stimuli, customers' attitudes, perceptions, and perceived behavioral controls shape and direct their feelings, behavior and intentions towards a brand (Ajzen, 2015; Chu et al., 2016; Kalafatis et al., 1999). It means that when customers/students thinks that the university is providing them updated facilities by using latest technology, then they may become more likely to have positive feelings about the university, which increase their satisfaction with the university. Therefore, it is argued here that Information & communication technology orientation effectively plays an important role in increasing the satisfaction of students. Various studies examined the impact of ICT usage on student performance and their satisfaction in the past. For instance, Shinn (2001) recommended that the usage of ICT nowadays improve the student skills, learning, and satisfaction by giving them opportunity to experience advanced and updated education system. Biasutti and Heba (2012) also examined the role of using ICT in education system in improving the student satisfaction, They reveal that using ICT in education system leads to higher student satisfaction as it helps the institution to provide updated facilities and techniques to students. Studies of Endres, Chowdhury, Frye, and Hurtubis (2009), Manochehri and Young (2006), Mitić, Nikolić, Jankov, Vukonjanski, and Terek (2017), and Gray and DiLoreto (2016) also provide indirect support to the current argument that the advanced ICT adopted by organizations/universities can help them to achieve higher customers

satisfaction. However, these studies have not efficiently explained that whether the ICT can directly increase the satisfaction of students with university or not. Therefore, the current study hypothesizes that:

- **H₁:** There is significant impact of ICT orientation on Student's satisfaction

2.2 Student's Satisfaction and University's Brand Performance

When students are satisfied with the facilities and services provided by the university, they tend to have positive perceptions about the brand performance. A study performed by Sultan and Wong (2019) examined the role of student's satisfaction in determining the university's brand performance. They reveal that higher customers' satisfaction with the university leads to higher brand performance of the university. Similarly, Alwi et al. (2019) also suggest that the customer/student satisfaction acts as the key component to project the brand image of the university because the higher customers satisfaction results in higher brand image, which acts as the competitive advantage for the university, and thus contributes towards the brand performance (Panda et al., 2019). Hashim, Mohd Yasin, and Ya'kob (2020) suggest that the satisfaction of the student with the university play an important role in establishing the student-university brand relationship. It means that the customer satisfaction (i.e. student's satisfaction) play an important role in branding of university. Sultan and Wong (2019) examined different antecedents of brand performance of university through which they found that the student's satisfaction acts as an important predictor of university's brand performance. The role of customer satisfaction in determining the brand performance of university is also supported by some other past studies e.g. (Iglesias et al., 2019; Sallam & Wahid, 2015; Susanty & Kenny, 2015). However, most of these studies examine the linkage of customer satisfaction with different branding outcomes e.g. brand loyalty, brand equity, brand love etc. while the direct impact of student's satisfaction on brand performance has been scarcely checked. Based on this discussion of past studies, the current study intends to check the following hypothesis:

- **H₂:** Student's satisfaction has a significant effect on university's brand performance

2.3 ICT Orientation and University's Brand performance

As all the universities in the world are working to serve to students with advanced facilities and modernizations. The usage of ICT is becoming popular in institutes and this facility is continuously enhancing the ways of learning and teaching in universities (Tsai, Shen, & Chiang, 2013). These type of innovations and advanced technologies are effectively helping in increasing the brand performance of universities (Prokopenko, Holmberg, & Omelyanenko, 2018). Annison (2002) revealed that universities which train their teachers with ICT usage have gained favorable results in university performance. Karamti (2016) conducted a study to see the impact of ICT on Tunisia university's performance and found that the influence of ICT on performance is not significant, which may be due to not having the proper understanding of gadgets and software and using them. This mentioned study recommended to conduct further research to check the role of ICT usage in achieving different organizational and brand outcomes. The role of ICT usage in improving the brand performance of the organization is also supported by Malhotra and Majchrzak (2014), Jung, Nam, Yang, and Kim (2018), and Mendoza-Fong

et al. (2018) but these studies do not explain the role of ICT usage in deriving the university's brand performance specifically. Therefore, the current study hypothesizes that:

- **H₃:** ICT Orientation has a significant impact on university's brand performance

2.4 Mediating Role of Student's Satisfaction

It has been discussed in previous sections that the ICT orientation has the potential to satisfy the students with improved and updated facilities and services, and the satisfaction of students ultimately enhances the perceptions of student about the brand performance of university. Therefore, it is argued here that the student's satisfaction tends to mediate the relationship between ICT orientation and university's brand performance. The impact of ICT usage on customer satisfaction is supported by Biasutti and Heba (2012), Endres et al. (2009), Manojehri and Young (2006), Mitić et al. (2017), and Gray and DiLoreto (2016) because they suggest that advanced information and communication techniques and technologies used by the firm help it in gaining satisfaction of customers by providing them best services and facilities. The customer satisfaction in turn increases the brand performance of the university because a number of past studies including Sultan and Wong (2019), Hanson, Bryant, and Lyman (2019), Alwi et al. (2019), Hashim et al. (2020) provide support to this argument. However, not a single past study has empirically addressed the phenomenon through which the student's satisfaction can mediate the relationship between ICT orientation and brand performance of universities in Pakistan. Based on these studies, it is hypothesizing here that:

- **H₄:** Student's satisfaction significantly mediates between ICT orientation and university's brand performance

2.5 Role of Perceived Service Quality between ICT Orientation and Customer Satisfaction

Perceived service quality means that the quality of the service provided by the organization is meeting the expectations of customer associated with the service (Ghobehei et al., 2019; Sultan & Wong, 2019). In the era of e-learning and ICT orientation, student's satisfaction is achieved by improving the positive perception of service quality. The perceived service quality is regarded as an important predictor of brand equity by Soni and Govender (2018) who examined effects of different service quality dimensions on brand equity of universities of South Africa in perspective of students. It means that perceived service quality entails a large important in determining different brand and customer-related outcomes. A study conducted in Vietnam on universities examined that ICT has a direct effect on student's satisfaction and this relationship is moderated by perceived service quality (Pham et al., 2019). It has been examined in another study that perceived service quality does not directly affect the relation of ICT with student's satisfaction. Khan and Fasih (2014) suggest that the perceived service quality has the potential to enhance the customer satisfaction. It means that when students have positive perceptions of the service quality of the university, then ICT orientation is more likely to increase the customer satisfaction. Hence, the presence of positively perceived service quality boosts the effect of ICT usage on brand performance of university. The role of perceived service quality in deriving the customer satisfaction is also

supported by many other studies e.g. (Bei & Chiao, 2001; Chetthamrongchai & Saengchai, 2019; Zaibaf et al., 2013). Given the insights from past literature, it is hypothesized that:

- **H₅:** The perceived service quality acts as a significant positive moderator in the relationship between ICT orientation and student's satisfaction

2.6 Role of Trust between Student's Satisfaction and Brand Performance

An important factor playing crucial role in gaining the satisfaction of students and enhancing the brand performance is the trust of students with the brand because if students have the trust that the university will provide them with best and updated facilities and services, then their satisfaction will lead to positive perception of university's brand performance. The "theory of planned behavior" suggests that the external stimuli, customers' attitudes, trust, and perceived behavioral controls can shape and direct their perceptions and intentions towards a brand (Ajzen, 2015; Chu et al., 2016; Kalafatis et al., 1999). It means that when customers/students have trust on university, then they may become more likely to have positive perceptions about the brand of the university. For instance, Chaudhuri and Holbrook (2001) support the idea that customers' trust on the brand improves their perceptions about the brand performance of the firm. Leninkumar (2017), Erciş et al. (2012), and Afzal et al. (2010) also support the idea that higher trust of the customer with brand has the potential to improve certain brand outcomes so, student's trust with the university can strengthen the brand. Based on these supporting studies, it can be hypothesized that if a student has trust on the university, then his/her satisfaction with the university will lead to higher brand performance of the university.

- **H₆:** Trust acts as a significant moderator in the relationship between student's satisfaction and university's brand performance

2.7 Theoretical framework

Based on the review of literature conducted in previous section, following theoretical framework is developed for the current study in which the ICT orientation is the independent variable, which is measured through dimension named as advantage, compatibility, ease of use, and perception. The dependent variable in this study is university's brand performance. Student's satisfaction acts as mediator between ICT orientation and university's brand performance. The relationship between ICT orientation and student's satisfaction is moderated by perceived service quality while the trust act as moderator in the relationship between student's satisfaction and university's brand performance.

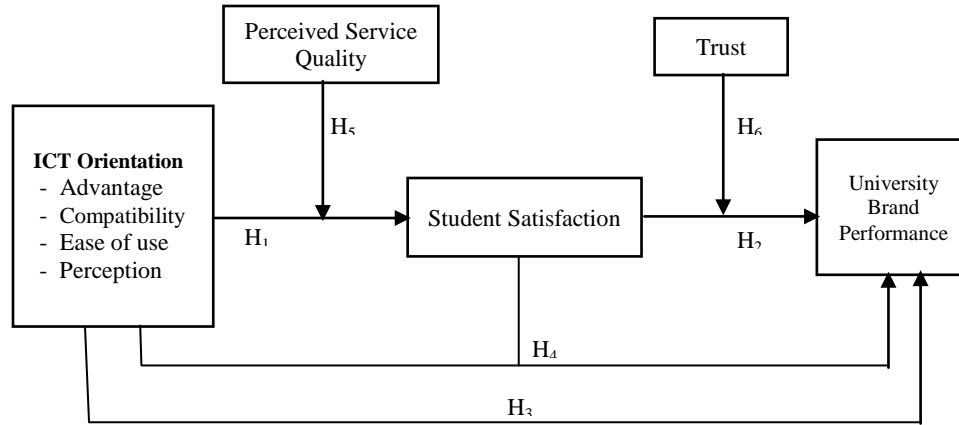


Figure 2: Theoretical Research Model

3. Research Methodology

3.1 Sample, and Population

The methodology explains different aspect about data, collection of data, measure and tool used to run the analysis, and tests applied to evaluate the software output. The current study is a quantitative study, which has been performed with an explanatory approach. The purposive sampling technique has been used to select the sample participants of this study. As the purpose of this study is to evaluate the role of ICT orientation in determining the brand performance of university along with mediation of student's satisfaction and role of trust and perceived service quality in this phenomenon so, students engaged with ICT facility are the appropriate participants for the study because they can provide proper information about their perspective of service quality, trust, satisfaction, and brand performance of university (Bell et al., 2018). The sample size in the current study has been decided according to the guidelines of Kline (2015) who suggested that the appropriate sample size for performing structural equation modeling should be at least ten times of the total number of questions/items in the questionnaire (Amir, Rehman, & Khan, 2020). Hence, the ten times rule has been used to select the sample size in the current study. Keeping the risk of missing and blank responses under consideration, the target of 500 questionnaires was set to obtain data from the students of Pakistani universities through online platforms. The data has been collected in month of April 2020 from university students of Pakistan through online platforms because universities were completely closed for students during this month and the whole education system was running through online system.

3.2 Measures

A self-administrated online questionnaire is used to obtain data from selected sample size. The responses of participants are measured on five-point Likert scale, which ranges from strongly disagree to strongly agree (1-5). All five variables i.e. ICT orientation, perceived service quality, customer satisfaction, trust, and brand performance have been

measured by adopting scales from previous studies. The perceived service quality has been measured by using scale previously adopted and used by (Abdullah, 2006), and (Sultan & Wong, 2019). The student's satisfaction has been measured by using seven items that have been previously used by (Chaudhuri & Holbrook, 2001; Sultan & Wong, 2019). The trust has been measured by using 12 items previously used by past studies (Chaudhuri & Holbrook, 2001; Elena & Jose, 2001; Sultan & Wong, 2019). The variable of ICT has been measured by adopting 21 items from study of Bhat and Bashir (2018) and university's brand performance has been measured by adopting 8 items from the study of Sultan and Wong (2019). Hence, all scales have been adopted from previous studies and responses have been recorded on five-point Likert Scale.

3.3 Data Analysis

Data of the current study collected in the form of close-ended responses and is analyzed using SPSS and AMOS. The structural equation modeling (SEM) has been mainly performed to assess relationships proposed in this study. The normality, reliability, and adequacy of the data is checked through SPSS while the further validity and model fitness is checked through AMOS. The confirmatory factors analysis is also applied to assess the fitness of the current model. After fulfilling all conditions for SEM, finally SEM is applied in AMOS through which the relationships, mediation, and moderation are tested.

4. Empirical Findings

This section gives details about the analysis and tests applied on the data to generate results. On the basis of results, hypotheses are accepted or rejected. Out of 500 questionnaires, only 417 questionnaires were filled completely and properly by respondents so, 417 responses have been used for this analysis. Results of demographic analysis reveals that the percentage of data collected from students having age less than 25 years is 30.9%, students of age ranging from 26 to 30 years is 42.4%, students of age ranging from 31 to 35 years is 22.8%, and students of more than 35 years is 3.8%. The results regarding the marital status reveal that single students make up the 52.5% of the current sample while married students make up the 47.5% of the current sample. The frequency distribution of the education factor reveals that 22.1% respondents are bachelor's students, 48.7% respondents are master's students, 25.4% respondents are MPhil/PhD students, and 3.8% respondents are students in other degree programs.

Table 1: Descriptive Statistics

	No of Items	Deleted Items	Min	Max	Mean	SD	Skewness
Student's Satisfaction	7	1	1.00	5.00	3.1523	.93337	.085
Service Quality	5	0	1.00	5.00	3.1103	.95097	-.341
Trust	12	3	1.00	5.00	3.1990	.94153	-.242
Brand Performance	8	2	1.00	5.00	3.2312	.92493	-.277
ICT	15	0	1.20	5.00	3.1657	.82009	-.182

The figures in table 1 illustrate about normality, total items, minimum, maximum and mean value of data. The total number of items selected for student's satisfaction were 8 but due to low factor loading, one item has been deleted and 7 items are included for this variable. Five items have been selected for service quality, 15 items have been selected for ICT, 12 items have been selected for trust, and 8 items have been included for brand performance. Remaining items of each variable have been deleted due to low factor loadings. The further descriptive analysis shows that the mean of all five variable is falling within the minimum and maximum range of data i.e. 1 and 5. It means that there is no outlier in the current data and all values fall within the normal range. The standard deviation of each variable is also around $1/3^{\text{rd}}$ of the mean so, the adequacy of the current data is confirmed. The normality of the data has been further proved through skewness of each variable, which is ranging between -0.5 and +0.5 so, the current data is normal and adequate.

4.1 Discriminant and Convergent Validity

To assess the reliability of the current data, the parameter of composite reliability (CR) is used. It can be seen in table 2 that CR of all five variable is greater than 0.7 so, the reliability of the data has been proved. It means that items used to measure each variable are accurately measuring the respective variable. The convergent validity of the data has been checked through average variance extracted (AVE) and MSV. The value of AVE against all five variables is greater than 0.5 and each MSV against respective AVE is smaller than AVE so, the convergent validity of the current data is confirmed (Kline, 2015; Wong, 2013).

Table 2: Discriminant Validity and Convergent Validity

	CR	AVE	MSV	TR	SS	SQ	ICT	BP
TR	0.924	0.574	0.445	0.758				
SS	0.938	0.716	0.175	0.107	0.846			
SQ	0.870	0.572	0.445	0.667	0.222	0.756		
ICT	0.802	0.518	0.175	0.257	0.418	0.284	0.720	
BP	0.909	0.626	0.340	0.583	0.233	0.575	0.246	0.791

Table 2 further reveals that the current data possesses discriminant validity as well because the correlation of each of five variables with itself is highest among all its correlations with other variables. It means that each variable is highly correlated (having correlation value near to 1) with itself and no correlation of a variable with any other variable is higher than its correlation with itself. Hence, the data of all five variables shows the discriminant validity (Afthanorhan, 2013; Kline, 2015).

4.2 Confirmatory Factor Analysis

The fitness of the current model is assessed by applying confirmatory factor analysis (CFA), which is a multi-variate arithmetic process to prove that studied constructs are

good enough to signify figures of variables. Five key indicators are used to interpret the results of model fitness (CFA). Table 3 provides results for the CFA of the current data.

Table 3: Model Fit Indices and KMO

CFA Indicators	CMIN/DF	GFI	IFI	CFI	RMSEA	KMO
Threshold Value	≤ 3	≥ 0.80	≥ 0.90	≥ 0.90	≤ 0.08	0.6 – 1.0
Observed Value	1.873	0.854	0.945	0.944	0.046	0.917

The table 3 is representing that the value of CMIN/DF is 1.873 which should be less than or equal to 3. The GFI should be greater than or equal to 0.80 while the GFI in the current case is 0.854. Furthermore, the value of IFI is 0.945 which should be greater than or equal to 0.90. The value of CFI is 0.944, which should be more than 0.90. The RMSEA should be less than or equal to 0.08 while the observed valued of RMESA is 0.046, Hence, all five indicators of CFA are giving excellent and acceptable values so, the fitness of the current model is confirmed (Amir & Chaudhry, 2019). Furthermore, the value of KMO should be more than 0.6 while the observed value is 0.917 (Kline, 2015; Wong, 2013). It means that the fitness of the current model and suitability of the data has been proved by these results. Following is the figure of confirmatory factor analysis of all variables performed in AMOS, which is showing that four dimensions of ICT orientation consisting of 15 items altogether have been included in the current model, six items have been included to measure student's satisfaction, six items have been included to measure brand performance, nine items have been included to measure student's trust, and five items have been included to measure perceived service quality. This figure is showing the excellence of the measurement model of the current study.

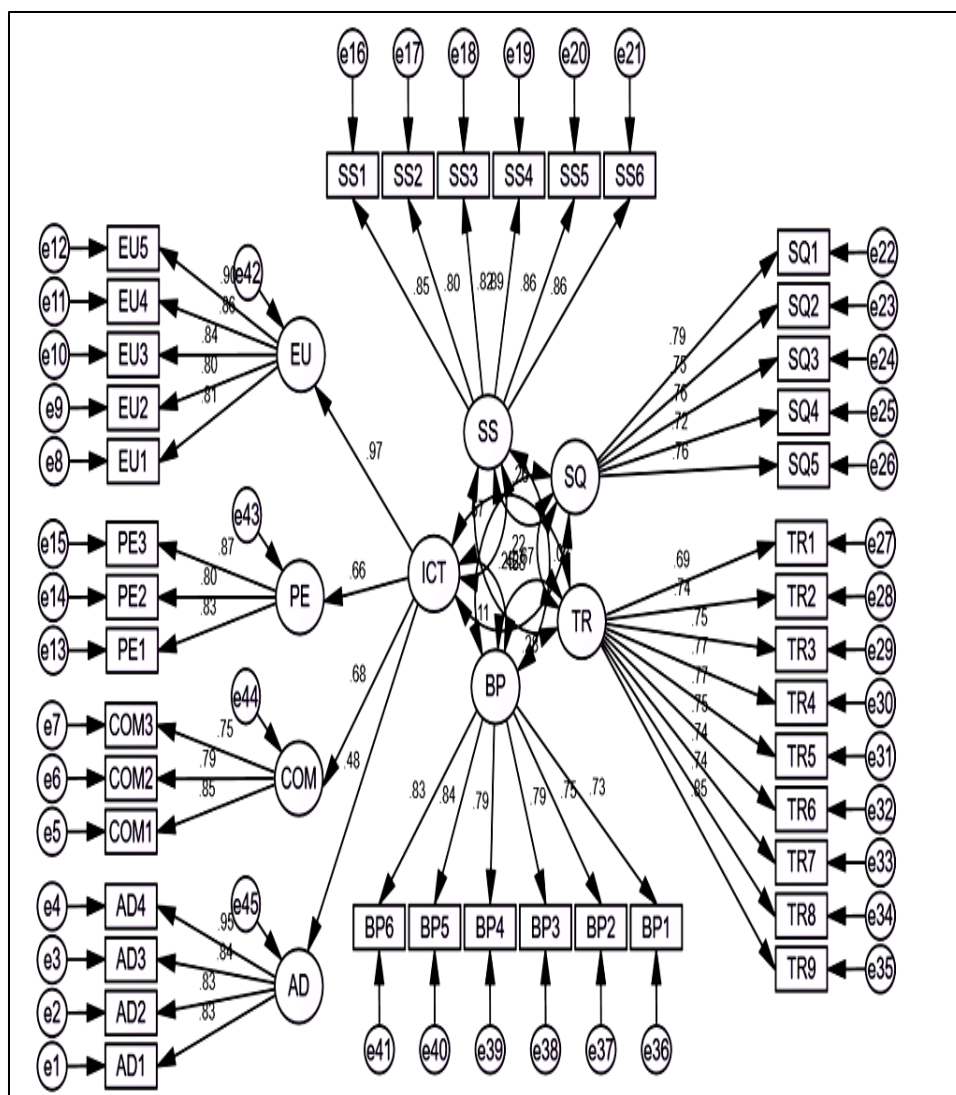


Figure 3: CFA Model

4.3 Structural Equation Modeling

The relationships have been checked by applying SEM on the data which have been presented in table 4. This table shows the effects, significance against these effects, and status of hypothesis test according to results.

Table 4: Structural Equation Modeling

Hypothesis	Coeff.	SE	Sig.	Status	Hypothesis	Decision
<i>Direct Effect</i>						
ICT→SS	.369	.115	.000	Significant	H ₁	Accepted
SS→UBP	.150	.051	.004	Significant	H ₂	Accepted
ICT→UBP	.176	.105	.002	Significant	H ₃	Accepted
<i>Mediating Effect</i>						
ICT→SS→UBP	.055	.020	.010	Significant	H ₄	Accepted
<i>Moderating Effect</i>						
ICT*PSQ→SS	-.107	.046	.021	Significant	H ₅	Rejected
SS*Trust→UBP	.102	.046	.022	Significant	H ₆	Accepted

The significance of results in table 4 has been determined based on the P-value. The effects with P-value <0.05 have been considered significant and hypotheses against those effects have been accepted. However, effects with P-value >0.05 have been considered as insignificant. The table 4 shows that ICT orientation has a significant and positive effect on university's brand performance. Findings show that impact of ICT orientation on Student's satisfaction is positive and significant as one unit change in ICT causes 36.9% increases in Student's satisfaction. Student's satisfaction has also shown a significant and positive effect on university's brand performance as one unit change in satisfaction causes 15% increase in brand performance. ICT optimistically and significantly influences the university's brand performance and causes a variation of 17.6% in brand performance. The mediating effect of student's satisfaction between ICT orientation and brand performance is also positive and substantial. It has been found that ICT causes a 5.5% significant and positive effect on university's brand performance through student's satisfaction. Results regarding the moderating roles show that the trust of student with the university has a significant and positive moderating influence on the relationship between student's satisfaction and university's brand performance. However, the positive moderating role of perceived service quality between ICT orientation and student's satisfaction has not been significantly proved by the current findings because perceived service quality negatively moderated the relationship between ICT orientation and student's satisfaction in the current data. Therefore, this hypothesis is rejected. Following figure 2 shows the mediation effect of student's satisfaction between ICT orientation and university's brand performance. It shows that the customer satisfaction is the significant mediator between ICT orientation and university's brand performance. Furthermore, the ICT is a significant positive predictor of university's brand performance.

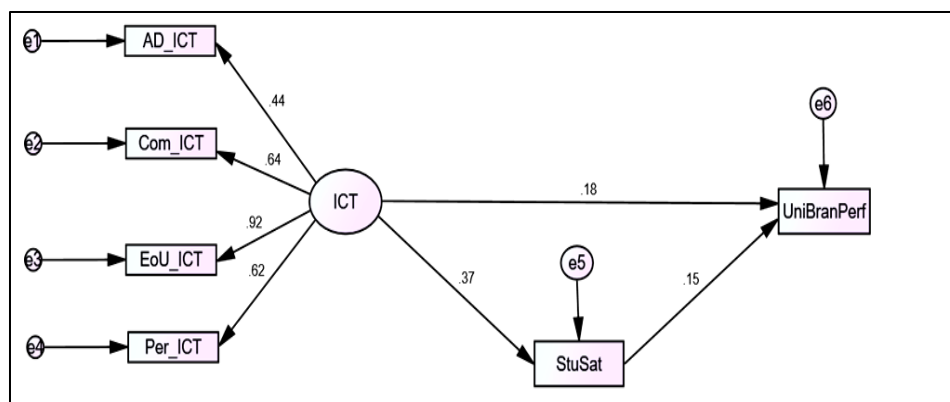
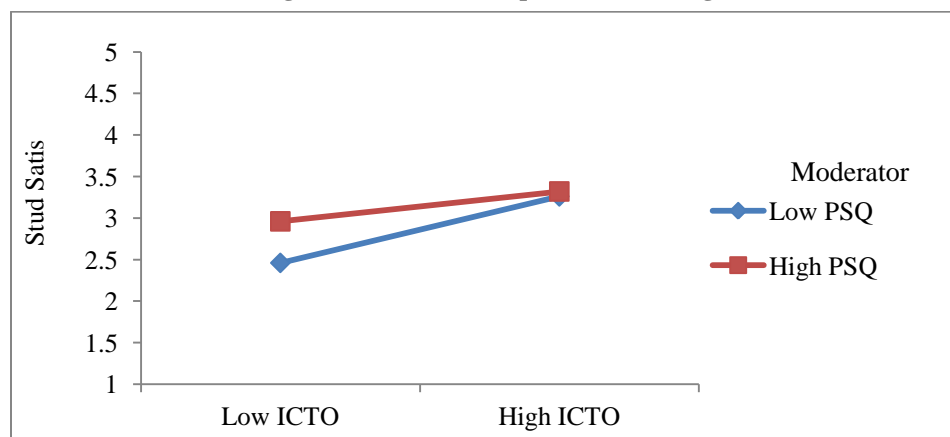
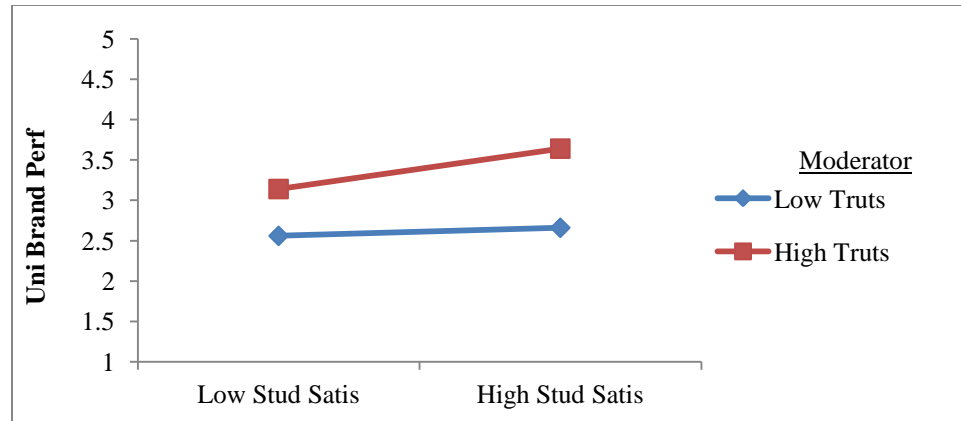


Figure 4: Structural Equation Modeling



Graph 1: Moderating Effect of PSQ between ICT Orientation and Student's Satisfaction

The graph 1 shows the moderating effect of perceived service quality between ICT orientation and student's satisfaction. The moderating effect of perceived service quality is significant because two lines are not parallel to each other. However, this effect is negative. It is showing that the presence of perceived quality reduced the impact of ICT on student's satisfaction.



Graph 2: Moderating Effect of Trust between Student's Satisfaction and University's Brand Performance

The graph 2 shows the moderating effect of trust on the relationship between student's satisfaction and university's brand performance. The results show that moderating influence of trust in this relationship is positive and significant because two lines are not parallel to each other. It means that the presence of trust significantly increased the impact of student's satisfaction on the university's brand performance.

5. Discussion and Conclusion

5.1 Discussion of Findings

The current study examined the effect of ICT orientation on university's brand performance, mediating role of student's satisfaction between ICT and university's brand performance, moderating role of perceived service quality on the relationship between ICT and students' satisfaction, and moderating impact of trust in the relationship between student's satisfaction and university's brand performance through SEM. In response to the H₁, results of this study have revealed that ICT orientation has a significant and positive influence on student's satisfaction. Therefore, this hypothesis is accepted. These results are in line with suggestions and findings of Biasutti and Heba (2012), Endres et al. (2009), Manochehri and Young (2006), Mitić et al. (2017), and Gray and DiLoreto (2016) as they also supported positive role of the advanced ICT adopted by organizations/universities in achieving higher customers satisfaction. Based on these findings, it is suggested to universities that they should increase their focus on ICT so that, they can satisfy their students and achieve certain positive brand outcomes.

In response to the H₂, results of this study have revealed that student's satisfaction has a significant and positive influence on university's brand performance. Therefore, this hypothesis is accepted. These results are aligned with suggestions of Sultan and Wong (2019), Alwi et al. (2019), and Hashim et al. (2020) who supported the positive contribution of student's satisfaction towards the brand of the firm. Therefore, it is recommended to universities that they need to focus on student's satisfaction during this pandemic so that, they can develop positive image and perceptions of their brand in minds of students. In response to the H₃, results of this study have revealed that ICT

orientation has a significant and positive influence on university's brand performance. Therefore, this hypothesis is also accepted. These results are consistent with findings of Prokopenko et al. (2018), Annison (2002), Karamti (2016), Malhotra and Majchrzak (2014), Jung et al. (2018), and Mendoza-Fong et al. (2018) who supported in different studies that ICT adoption supports the brand performance of the firm. Therefore, it is suggested to universities that they should adopt latest ICT tools and techniques for improving their services and facilities so that, they can strengthen their brand during COVID-19. In response to the H₄, results of this study have revealed that student's satisfaction has a significant positive mediating role between ICT orientation and university's brand performance. Therefore, this hypothesis is also accepted. These results find theoretical support from previous studies including Biasutti and Heba (2012), Endres et al. (2009), Manojehri and Young (2006), Mitić et al. (2017), Gray and DiLoreto (2016), Sultan and Wong (2019), Alwi et al. (2019), and Hashim et al. (2020) who support the positive contribution of ICT towards the customer satisfaction and positive contribution of customer satisfaction towards brand performance of firm in separate studies. Therefore, it is suggested to universities that they can improve their brand performance during COVID-19 outbreak by increasing their focus on ICT so that, they can satisfy their students and strengthen their brand in this pandemic.

In response to the H₅, results of this study reveals that perceived service quality does not significantly positively affect/moderate the relationship between ICT orientation and student's satisfaction. Rather, the perceived service quality has negatively moderated this relationship. Therefore, H₅ is rejected. These results are contrary to a number of past finding e.g. Pham, Limbu, Bui, Nguyen, and Pham (2019) and Khan and Fasih (2014). These mentioned studies supported the positive contribution of perceived quality towards the customer satisfaction while the current findings have shown the negative moderation of perceived service quality on the student's satisfaction. This contradiction of findings may be due to the difference of context of studies because previous studies did not explain the role of perceived service quality in universities of Pakistan while the current results are limited to Pakistani universities and times of COVID-19. It means that the perceived service quality may be less or not important for improving the satisfaction of students during the COVID-19 outbreak in Pakistani universities. Therefore, the difference of findings of this study from previous studies can be attributed to the difference of context and COVID-19 outbreak. In response to the H₆, results of this study have revealed that trust acts as a significant and positive moderator in the relationship between student's satisfaction and university's brand performance. Therefore, this hypothesis is also accepted. These results also find support from previous studies including Chaudhuri and Holbrook (2001), Leninkumar (2017), Erciş et al. (2012), and Afzal et al. (2010) who support the idea that higher trust of the customer with brand has the potential to improve certain brand outcomes. Therefore, it is suggested that building higher trust of students with the university can help universities to enhance the positive role of student's satisfaction in increasing their brand performance during COVID-19 outbreak.

5.2 Conclusion

The study assessed the effect of ICT orientation on university's brand performance with role of student's satisfaction between ICT and university's brand performance, moderating effect

of trust on the relationship between student's satisfaction and university's brand performance, and moderating effect of perceived service quality on the relationship between ICT and student's satisfaction. Quantitative research has been performed in which the data is collected from students of universities of Pakistan through online questionnaire. The data analyzed through different testing approaches of AMOS and SPSS reveals that the ICT orientation significantly and positively affects the university's brand performance. The utilization of e-learning increases the brand performance of universities. Results further prove that the student's satisfaction is positively and substantially reliant on ICT orientation because it facilitates students with time, new mode of learning, advanced facilities etc. during COVID-19 outbreak. It has been further found that the student's satisfaction in turn, improved the brand performance of university because higher the satisfaction of student with the university, better image of the brand will be developed in mind of student regarding the university. Therefore, it is concluded that the student's satisfaction plays a significant mediating role between ICT orientation and brand performance of universities of Pakistan during this COVID-19 outbreak. Therefore, universities of Pakistan should increase their focus on ICT so that, they can provide up-to-date facilities to its students for satisfying them and achieving higher brand performance. Results of this study have further revealed that the perceived service quality reduces the effect of ICT orientation on student's satisfaction as it acts as a negative moderation between ICT and student's satisfaction. However, the trust of the student positively and significantly moderates the relationship between student's satisfaction and brand performance of the university. Therefore, universities need to enhance their focus on customer satisfaction and student's trust for achieving higher brand performance during their pandemic of COVID-19.

5.2.1 Research Implication

The main concern of this study is to emphasize the use of technology in academic field during COVID-19 outbreak so that, universities of Pakistan can maintain their brand performance effectively. This study entails great significance due to its theoretical and practical contributions to the theory and practice particularly during this pandemic. The findings of this study are expected to enhance the literature about the theory of planned behavior and the role of ICT orientation and customer satisfaction in improving the brand performance during this COVID-19 outbreak. It will enhance the limited literature about the COVID-19 in terms of its connection with university's performance and branding. Therefore, this study will be a value addition to the literature, as it will provide an empirical evidence and theoretical guidelines to researchers that how the COVID-19 has affected the educational sector and how the brand performance of universities can be maintained during this pandemic. This study also tends to make significant practical contributions as the findings and guidelines of this study will help universities of Pakistan to realize the need for ICT orientation in order to maintain and enhance their brand performance and customer satisfaction during this COVID-19 outbreak. In this way, they will be better able to make strategies about ICT adoption and branding so that, they can achieve branding and performance outcomes for the university. The policymakers will also get useful assistance from the guidelines and findings of this study as they will come to know that how much the ICT orientation is important in the educational sector. Hence, they will be able to come up with better policies about the educational sector of Pakistan.

5.2.2 Limitation and Further Suggestion

This study highlights the importance of ICT during this COVID-19 outbreak but there are a few limitations in this study that can hinder the applicability of these findings to other sectors, countries, or situations. First, these findings are purely related to the COVID-19 outbreak so, the role of ICT orientation, customer satisfaction, and other variables included in this study in determining the brand performance may be different during other times or crisis. Secondly, this research and its findings are particularly limited to university students of Pakistan while the results may be different in perspective of college or school students or students of other countries during this pandemic. Therefore, future researchers are recommended to perform cross-sector and cross-country studies in order to enhance the findings. The ICT adoption rate in university sector of Pakistan is comparatively less than that in many other countries so, findings can vary from country to country. Lastly, future researchers are directed to evaluate the moderating role of perceived service quality between ICT orientation and student's satisfaction in further detail in order to address the inconsistency with previous studies.

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