

Do University Students Intend to Use Facebook to Build Social Capital? A PLS-SEM Approach

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ABSTRACT

Social networking sites are powerful tools for forming relationships, enhancing cooperation, and facilitating the learning process. Today, students need to form associations and linkages with many people. It is essential to identify what encourages university students in Pakistan to use social media sites, in particular the popular platform Facebook. This article asks whether and how university students develop an intention to use Facebook and build social capital. Smart PLS was used for data analysis, and PLS-SEM was employed to assess measurements and structural models. It is argued that Facebook use intensity, perceived playfulness, bridging social capital, and bonding social capital all have positive and substantial effects on students developing an intention to use Facebook, which provides a valuable platform for formal and informal interactions. This article fulfills a gap in literature on higher education and social media. It explains the importance of social capital building through Facebook to the lives of university students. In addition, other factors are included for an in-depth understanding of students' intention to continue using Facebook in Pakistan, which is a developing country where the internet and social media are increasing in popularity.

Keywords: Facebook, Social capital, Social networking, University students, Smart PLS.

INTRODUCTION

In the twenty-first century, the internet has become a universal source of interaction and has revolutionized the meaning of communication, allowing the transmission of information from and to wherever individuals are, thereby altering

their manner of living and means of exchanging information (Reyna et al., 2018). The emergence of web technology provides a unique combination of attributes and services in the form of networking platforms, online journals, internet forums, and instant messages, which attract a large number of individuals (Goggin, 2020).

As a result of its massive utilization and technological competencies, Facebook has become a platform attracting analysts and assisting people to maintain associations with others (Ellison et al., 2007). Facebook is a site which provides opportunities to maintain old and make new connections through actions such as commenting, posting, and private messaging (Ellison et al., 2013; Raza et al., 2020a). Facebook is considered to be a channel for collecting and accessing relevant information, forming associations, and allowing individuals to form communities (Gershuny, 2002). Websites like Facebook also impact users' social capital (SC), its formation and preservation (Habes et al., 2021).

Analysts describe SC as intangible assets developed through associations between individuals (Coleman, 1988; Ellison et al., 2013; Jin, 2013; Johnston et al., 2013). It can also be regarded as the merger of universally acknowledged social networks and the efforts of individuals in those networks. Moreover, SC is supposed to strengthen links and connections (Fukuyama, 2001). As stated by Lin, it is "an investment in social relations with expected returns in the marketplace" (2002, p. 3). These investment-yields relate to awareness, shifts, viewpoints, messages, and attitudes. Putnam (2001) further bifurcates SC into 'bridging' and 'bonding' SC.

Bridging social capital (BRS), according to Adler & Kwon (2002), stresses external interactions, concerning untied networks among individuals. Such untied or loosely tied bonds assist individuals in sharing appropriate information and diverse viewpoints with one another, without giving much emotional support (Ali Aksar et al., 2020; Ellison et al., 2007). Counter to BRS, bonding social capital (BOS) emphasizes internal nexuses between individuals who are emotionally involved with one another, such as close friends, family, and valued connections (Habes et al., 2021). According to this view, BOS is compatible with close interpersonal relations which provide emotional uplift.

SC, furthermore, is also supposed to have a link with behavioral intention, possibly leading to continuous usage. Incorporating technology in one's life is first explained by intention (Jasimuddin et al., 2017). Many studies have been conducted on the role of intention in technology usage (Al-Emran et al., 2020; Alshurideh et al., 2020; Hsu & Lin, 2008; Jasimuddin et al., 2017), information systems (Hariguna et al., 2017; Hsu, 2021), social networking sites (Chang & Zhu, 2012; Rauniar et al., 2014; Rad et al., 2019; Raza et al., 2020b), and SC building (Jin, 2013; Habes et al., 2021), however, the influence of perceived SC in developing an intention to continue to use social media websites has barely been investigated (Chang & Zhu, 2012), especially in developing countries.

Pakistan has had internet services since 1990. However, today, the use of the internet is increasing tremendously. In January 2021, internet users in Pakistan numbered 61 million, marking an annual increase of 11 million (21 percent) from 2020 to 2021. In January 2021, Pakistan had 46 million social media users. Between 2020 and 2021, the number of social media users in Pakistan grew by 9 million (24 percent). This

accounted for over 20 percent of the country's entire population (Kemp, 2021). World Bank data from 2020 also shows the percentage of the Pakistan population using the internet is increasing (The World Bank, 2022). Facebook stated that by the end of 2020 there were 2.8 billion monthly active users of its platform, with 1.8 billion of them using it daily-(Meta Investor Relation, 2020). Facebook and other social media platforms are important means for students to gather information in developing countries, and therefore, they are essential. Yet, little research exists on how students of higher education in developing countries develop an intention to continue using Facebook (ICU), or how the Technology Acceptance Model (TAM) and SC impact such use.

This article investigates the variables impacting university students' ICU in Pakistan. It finds that a broadened social circle of students and the collection of information affect this intention. The article proceeds in several sections. First, the theoretical background and hypotheses are discussed. Second, the research methodology is detailed, followed by an analysis and then discussion of the results. The final section concludes the study and notes its theoretical and practical implications. Future recommendations for scholars are then discussed.

LITERATURE REVIEW

TAM is the primary standardized acceptance theory used in the domain of technology to investigate extrinsic features affecting decisions concerning acceptance, used extensively (Awa et al., 2011; Benbasat & Barki, 2007; Davis, 1989; Davis et al., 1992; Lee et al., 2007; Venkatesh & Davis, 2000; Venkatesh et al., 2002). Bourdieu (1986) and Coleman (1988) produced the theory of SC, which can be described as the potential of people to share updates with acquaintances in their community. This capital is further modified into human and intellectual capital (Resnick, 2001). This study uses a redesigned model of TAM (Davis, 1993; Venkatesh & Davis, 2000) and SC (Bourdieu, 1986; Coleman, 1988; Putnam, 2001).

Several scholars have explored the impact of TAM on social media, instant messaging, online gaming, the internet, e-mail, and e-commerce (Gefen & Straub, 2000; Gefen et al., 2003; Hsu et al., 2005; Lu & Su, 2009; Moon & Kim, 2001; Rauniar et al., 2014). It has also been used to study impacts on the creation of SC (Jin, 2013) as well as the effect of SC along with TAM variables in the creation of intentions (Chang & Zhu, 2012; Lin & Lu, 2011).

TAM analyzes the attitude of an individual towards technology usage (Davis, 1989). TAM is taken further by the Theory of Reasoned Actions (TRA) (Fishbein & Ajzen, 1975) which analyzes people's behavior via their intentions, which are further divided into a person's attitudes and beliefs. The main concern of TAM is to determine the adoption of technology along with the attitude towards its use, while TRA deals with the behavior of humans (Davis et al., 1989).

Numerous studies (Davis, 1993; Chang & Zhu, 2012; Venkatesh & Davis, 2000) have modified the model of TAM by incorporating variables in accordance with different contexts. Additional characteristics such as perceived playfulness (PP) Facebook intensity, BRS, and BOS with perceived ease of use (PEOU), and perceived usefulness (PU), can predict whether or not people will continue to use Facebook.

EMPIRICAL STUDIES AND HYPOTHESES DEVELOPMENT

ONLINE SOCIAL NETWORKING

According to Toomey et al. (1998) virtual networking sites are groups of people online who share information and accumulate assets in computer-regulated associations. These networks mostly comprise users living in different localities but with mutual interests (Lacka et al., 2021). The internet has gone through tremendous variation over time and is itself the evolution of earlier developments in the field of communication and information, which included phones, television, and libraries (Saubern et al., 2020). At first, the internet was considered only to be a means of getting knowledge, but the appearance of social networking sites has provided a platform for people to communicate with one another conveniently, exceeding expectations for the technology (Aldahdouh et al., 2020). Many people use social networking sites for long periods and continually check their profiles (Stănculescu & Griffiths, 2021).

PERCEIVED USEFULNESS

PU is the level to which one's productivity is increased thanks to a particular technology (Lu et al., 2003; Rauniar et al., 2014). PU provides a lucid view about the variables which impact actual use along with intentions (Awa et al., 2011). According to Rauniar et al. (2014), a person's intention to use a technology is determined by both PU and PEOU. Hence, a hypothesis could be:

H1: PU has a significant impact on ICU.

PERCEIVED EASE OF USE

PEOU describes the ease of using a particular technology or system without effort (Venkatesh & Davis, 2000). When students perceive that social networking sites are easy to use, it strengthens the ability of learning; thus, it increases the intention to use them (Pitafi et al., 2020). Hence, a hypothesis to determine the influence of PEOU would be:

H2: PEOU has a significant impact on ICU.

PERCEIVED PLAYFULNESS

Van der Heijden (2004) considers social media to be a forum which provides amusement and pleasure. According to Stephenson (1964), incorporating fun into work elevates efficiency and performance. Concerning Facebook, PP is regarded as the degree to which Facebook can function as a source of entertainment along with boosting performance (Rauniar et al., 2014). Much existing research shows PP has a major influence on people's attitudes to technology use (Hwang, 2005; Igbaria et al., 1996), the usage of social media (Raza et al., 2017), and on the intention to use mobile

gadgets (Nysveen et al., 2005a; 2005b). Hence, a hypothesis for PP would be:

H3: PP has a significant effect on ICU.

SOCIAL CAPITAL

SC, as explained by Coleman (1988), is an asset collected through associations of people. SC is described differently by discipline and context (Adler & Kwon, 2002) and is formulated as an action and reaction (Resnick, 2001; Williams, 2006). The collection of resources, tangible or intangible, is accumulated by people through their ownership of a lasting network of established associations and recognitions (Bourdieu & Wacquant, 1992, p. 14). The manner in which these assets work depends on the kind of associations people have. Moreover, Adler & Kwon (2002) claim that the impact of SC on society is influential as it is connected with positive societal effects including positive health, reduce criminality, and better economic conditions. Putnam (2001) also observed increased turmoil in society, decreased contributions to community, and a lack of trust in society because of diminishing SC. Some say societies with high levels of SC, for example high dedication and loyalty towards society, make such societies capable of organizing communal movements along with other social benefits. While Helliwell & Putnam (2004) claim that the utilization of SC can be negative, it has a prominent positive influence on the interaction among fellows on a social network.

Cognitive and structural are two different SC varieties. Personal qualities such as beliefs, values, and conventions are all part of cognitive SC (Islam et al., 2006; Qazi et al., 2020) and this SC has been developed as a consequence of religion, rituals, and revealed ancient experiences (Fukuyama, 2001). Structural SC deals with the structures of a community, such as arrangements of communal participation and solidity of social networks (Islam et al., 2006). Both BRS and BOS are addressed further in relation to cognitive SC.

BRIDGING SOCIAL CAPITAL

BRS is mostly concerned with external relationships (Adler & Kwon, 2002) concerning loose bonds between individuals (Putnam, 2001; Qazi et al., 2020). According to Williams (2006), Granovetter (1983), and Ellison et al. (2007), these weak associations provide communication between members but do not include emotional support. Such associations can form among individuals from different environments, cultures and professions (Islam et al., 2006). Donath & Boyd (2004) reveal that BRS or weak associations are created and sustained through social networking sites since they have a low usage cost. Hence, BRS can influence ICU. Thus, the hypothesis can be:

H4: BRS has a significant effect on ICU.

BONDING SOCIAL CAPITAL

BOS, as opposed to BRS, is formed in close associations with members linked together emotionally, such as by family members, best friends, and special relations (Habes et al., 2021). Researchers like Adler & Kwon (2002) Ellison et al., (2007), Islam et al. (2006) and Williams (2006) have considered BOS resulting in emotional attachments that boost individual members of associations.

H5: BOS has a significant effect on ICU.

FACEBOOK INTENSITY

Social networking sites present a platform for people to communicate and associate (Valenzuela et al., 2009). Chen & Haley (2010) suggest that people invest a substantial amount of time on such sites and express their attitudes. According to Fishbein & Ajzen (1975) this then affects their intention to continue using those social networks as attitude influences intention, the notion of a reasoned action being established. As a result, it is possible to speculate that:

H6: Intensity of use of Facebook (FI) has a significant impact on ICU.

INTENTION TO CONTINUE USING FACEBOOK

Whether a technology is used or not is preceded by intention to use (Rauniar et al., 2014). Researchers looked into the relationship between Facebook usage and SC production and discovered that SC is tremendously enhanced by using Facebook (Lou et al, 2005). People sign up to social networks in order to nurture connections (Ellison et al., 2006). Similar research investigates the influence of ICU on the structure of SC, I.e., BRS and BOS (Jin, 2013). This article inspects the reverse, consistent with Carlos et al. (2011), Hu & Kettinger (2008)and Lin & Lu (2011).

METHODOLOGY

Figure 1 depicts the conceptual framework of the research. Three TAM factors, PEOU, PU, and ICU technology, as well as two SC variables, BRS and BOS, make up the framework with the two additional variables of PP and FI.

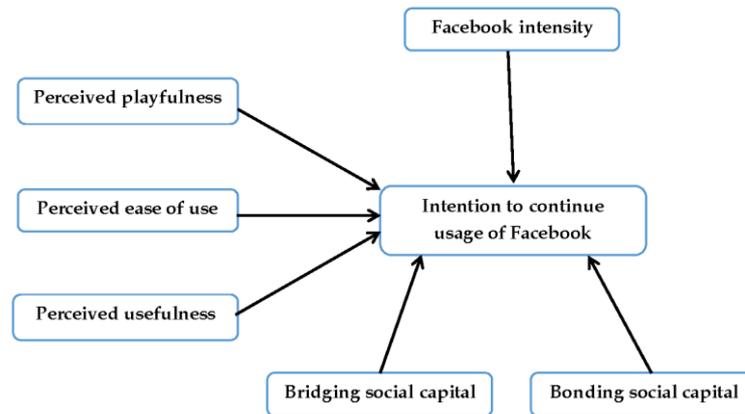


Figure 1. Conceptual framework of the study.

MEASUREMENT INSTRUMENTS

This study employs questionnaires to gather its data. A preliminary test and pilot test were used initially to verify the potential of the methodology. Measures on the questionnaire ranged from “(1) Strongly Disagree” to “(5) Strongly Agree” on a five-point Likert scale. The variables PEOU, PU, PP, FI, BRS, BOS, and ICU were adapted and modified according to the requirements of the research. Data gathered included characteristics such as gender, age and education level. The technique used to gather the data was the non-probability sampling technique or convenience sampling technique.

A total of 615 questionnaires were gathered from students from different universities and business schools in Karachi, and after verification, 560 of these were verified for use in the study. The questionnaire was comprised of 45 items, fulfilling the requirement to have at least 25 items (Hair et al., 2013). Respondents were assured that the data they disclosed would be kept private.

DEMOGRAPHICS

Relevant demographic data of participants is shown in table 1, with 560 questionnaires represented (with ten values missing and excluded). A total of 279 male students and 281 female students took part in the study, roughly proportionate. 73 percent of the participants were between ages of 18 and 25, 21 percent were aged between 26-30, five percent were aged between 31-35. About one percent of the participants were aged 36 years or older. Most students were studying at intermediate or A Levels, accounting for 42 percent, whereas graduates made up 37 percent, postgraduates were 16 percent, and PhDs formed only six percent of the sample. The amount of time spent on Facebook is determined by the total number of friends. According to the data, 14 percent of students had 51-100 Facebook friends, 11 percent had far more than 400 friends, and just eight percent had 11-50 friends. Also, students who usually used Facebook for 10-30 minutes made up 28 percent, while students using Facebook for 1-2 hours constituted only 12 percent of the sample.

Table 1. Demographic profile of questionnaire respondents (N=560).

Demographic items	Frequency	Percentile
Gender		
Male	279	50%
Female	281	50%
Age		
18-25	409	73%
26-30	118	21%
31-35	28	5%
36 or more	5	1%
Education Level		
Intermediate/ A levels	235	42%
Graduate	207	37%
Postgraduate	90	16%
PhD	28	5%
FI (No. of friends)		
10 or less	50	9%
11-50	45	8%
51-100	79	14%
101-150	73	13%
151-200	56	10%
201-250	67	12%
251-300	73	13%
301-400	50	9%
more than 400	67	12%
Facebook Usage (Time Spent on Facebook)		
less than 10 minutes	78	14%
10-30 minutes	158	28%
31-60 minutes	95	17%
1-2 hours	95	17%
2-3 hours	67	12%
more than 3 hours	67	12%

DATA ANALYSIS AND RESULTS

The study employed the SEM in Smart Partial Least Square 3.2.3 as guided by Ringle et al., (2014), as well as the 5000-subsample bootstrap resampling approach (Hair et al., 2011), to analyze its data. PLS-SEM is an effective approach for evaluating a complicated model and is used to analyze measurements and structural models (Hair et al., 2011; 2012; Henseler et al., 2014).

Joreskog & Wold (1982b) and Wold (1975; 1980) propose using PLS. The technique explains the link between dormant factors (Aibinu & Al-Lawati, 2010). PLS is capable of operating with unobserved variables and is also capable of inferring

measurement errors and enhancing unobserved factors (Chin, 1998).

Perception-based measures created on a Likert scale are included in this study, with a demonstrated unknown dispersion and normalcy. The model's efficiency may be assessed using two techniques: convergent validity (Cook & Campbell, 1979) and discriminant validity (Campbell & Fiske, 1959; Qureshi et al., 2022). Standardized loadings (simple correlation) are used to determine single item dependability. For items to be reliable, Tabachnick & Fidell (2007, pp. 402-407) propose 0.55 as the benchmark value, which means 0.55 is the cutoff value. All the items of this study meet these standards as shown in table 2.

Cronbach's alpha and composite reliability and Average Variance Extracted (AVE) were used to determine the convergent validity proposed by Fornell & Larcker (1981). Table 2 demonstrates that all variables met the standards proposed by Tabachnik & Fidell (2007) since the Cronbach's alpha of each variable is greater than 0.55, confirming reliability. All variables involved meet the requirement by Nunnally (1967) that values of composite reliability must be larger than 0.7. The AVE of all the variables should exceed 0.5 in order to regulate convergent validity (Fornell & Larcker, 1981; Guoyan et al., 2021) and table 2 demonstrates that all the variables met this criterion.

Table 2. Measurement model results.

Constructs	Items	Loadings	Cronbach's α	Composite reliability	AVE
BOS	BOS1	0.755	0.762	0.861	0.676
	BOS2	0.847			
	BOS3	0.864			
BRS	BRS1	0.784	0.836	0.884	0.605
	BRS2	0.743			
	BRS3	0.797			
	BRS4	0.800			
	BRS5	0.769			
FI	FI1	0.779	0.828	0.878	0.593
	FI2	0.729			
	FI3	0.821			
	FI4	0.761			
	FI5	0.760			
ICU	ICU1	0.811	0.750	0.857	0.668
	ICU2	0.863			
	ICU3	0.778			
PEOU	PEOU1	0.842	0.853	0.893	0.683
	PEOU2	0.851			
	PEOU3	0.825			
	PEOU4	0.817			
PP	PP1	0.790	0.843	0.894	0.681
	PP2	0.862			
	PP3	0.861			

PU	PP4	0.788			
	PU1	0.818			
	PU2	0.756	0.719	0.832	0.626
	PU3	0.805			

The square root of extracted average variance, heterotrait-monotrait ratio of correlations (HTMT), and cross loadings were examined to control discriminant validity. The correlation matrix shows that the square root of AVE is larger than the correlation of latent variables, satisfying Fornell & Larcker (1981) and shown in table 3.

Table 3. Summary Statistics-Correlation Matrix

Correlation matrix							
	BOS	BRS	FI	ICU	PEOU	PP	PU
BOS	0.823						
BRS	0.498	0.779					
FI	0.364	0.588	0.771				
ICU	0.463	0.629	0.525	0.818			
PEOU	-0.108	-0.366	-0.21	-0.212	0.834		
PP	0.373	0.581	0.457	0.591	-0.357	0.826	
PU	0.365	0.527	0.389	0.459	-0.497	0.472	0.794

Table 4 shows that the cross loadings of each item exceeded the loading of its corresponding variable and the differences between cross loadings is also greater than 0.1, meeting the requirements given by Gefen & Straub (2005).

Table 4. Loadings and cross loadings.

	BOS	BRS	FI	ICU	PEOU	PP	PU
BOS1	0.75	0.29	0.29	0.31	-0.01	0.26	0.26
BOS2	0.85	0.43	0.31	0.38	-0.06	0.25	0.27
BOS3	0.86	0.49	0.31	0.44	-0.17	0.40	0.36
BRS1	0.40	0.78	0.49	0.53	-0.26	0.51	0.49
BRS2	0.49	0.74	0.40	0.47	-0.27	0.42	0.45
BRS3	0.38	0.80	0.53	0.53	-0.30	0.45	0.36
BRS4	0.37	0.80	0.45	0.48	-0.29	0.41	0.36
BRS5	0.30	0.77	0.40	0.44	-0.31	0.48	0.39
FI1	0.25	0.42	0.78	0.39	-0.31	0.43	0.32
FI2	0.38	0.45	0.73	0.44	-0.07	0.34	0.28
FI3	0.25	0.41	0.82	0.39	-0.22	0.35	0.32
FI4	0.16	0.38	0.76	0.32	-0.09	0.26	0.21
FI5	0.33	0.57	0.76	0.45	-0.12	0.36	0.34
ICU1	0.36	0.52	0.36	0.81	-0.10	0.40	0.30
ICU2	0.45	0.55	0.44	0.86	-0.17	0.51	0.42
ICU3	0.32	0.47	0.45	0.78	-0.25	0.54	0.41
PEOU1	-0.08	-0.30	-0.12	-0.17	0.84	-0.31	-0.38

PEOU2	-0.07	-0.33	-0.19	-0.20	0.85	-0.36	-0.36
PEOU3	-0.13	-0.30	-0.19	-0.14	0.82	-0.23	-0.42
PEOU4	-0.09	-0.29	-0.19	-0.18	0.82	-0.26	-0.51
PP1	0.30	0.50	0.41	0.43	-0.43	0.79	0.48
PP2	0.30	0.45	0.42	0.44	-0.29	0.86	0.40
PP3	0.39	0.54	0.38	0.54	-0.25	0.86	0.41
PP4	0.24	0.43	0.32	0.53	-0.23	0.79	0.28
PU1	0.26	0.40	0.26	0.38	-0.49	0.32	0.82
PU2	0.18	0.29	0.14	0.22	-0.47	0.27	0.76
PU3	0.38	0.51	0.44	0.43	-0.28	0.48	0.81

HTMT results, represented in table 5, have standards less than 0.85 (Henseler et al., 2015; Raza & Khan, 2022). Since all criteria were met, discriminant validity was determined.

Table 5. HTMT results.

	BOS	BRS	FI	ICU	PEOU	PP	PU
BOS							
BRS	0.606						
FI	0.443	0.690					
ICU	0.599	0.788	0.653				
PEOU	0.134	0.432	0.254	0.258			
PP	0.454	0.688	0.544	0.729	0.421		
PU	0.451	0.640	0.446	0.577	0.659	0.580	

PATH ANALYSIS

Path analysis findings are shown in table 6. Figure 2 shows the correlation of all paths with the hypotheses. The hypotheses, among dependent and independent variables are regulated by the sign, size, and effect of the coefficients, in line with Wixom & Watson (2001). Furthermore, coefficient standards show the degree of the latent variable's effect on dependent variables. P-value determines the significance of the hypotheses. It should be less than 0.1 for the hypotheses to be considered significant. So, table 6 and figure 2 show that all the hypotheses are accepted as significant. Similarly, the coefficients of all the paths are positive.

Table 6. Standardized regression weights for the research model.

Hypothesis	Regression Path	Effect Type	SRW	Remarks
H1	PU -> ICU	Direct effect	0.115*	Supported
H2	PEOU -> ICU	Direct effect	0.086**	Supported
H3	PP -> ICU	Direct effect	0.287***	Supported
H4	BRS -> ICU	Direct effect	0.273***	Supported
H5	BOS -> ICU	Direct effect	0.130***	Supported
H6	FI -> ICU	Direct effect	0.161**	Supported

Notes: SRW = Standardized regression weight ***p < 0.01, **p < 0.05, *p < 0.10.

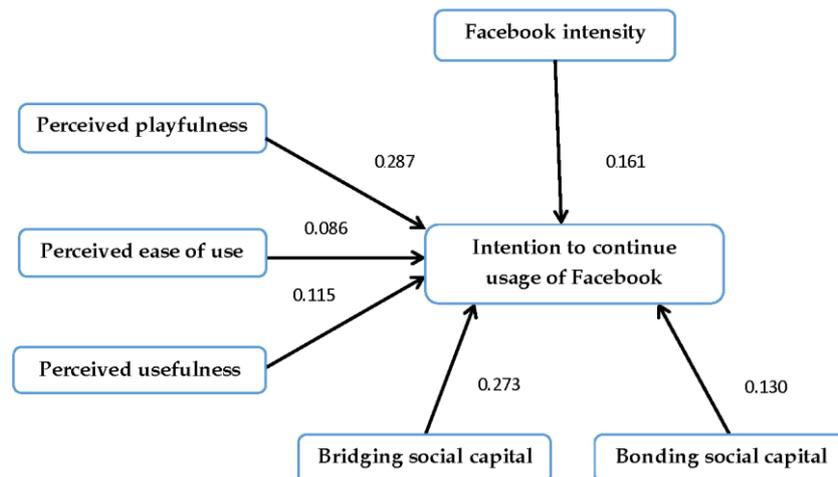


Figure 2. Pictorial results of path analysis.

DISCUSSION

The above results show that all hypotheses were accepted, since their paths are significant. The path connecting PU and ICU is positive and significant ($\beta=0.1158$, $P<0.1$), and henceforth hypothesis (H1) is accepted, producing findings in line with Jin (2013) and Rauniar et al. (2014). PU is one of the basic antecedents in TAM which is described as “the degree to which a person believes that using a particular system would enhance his/her performance and effectiveness” (Davis, 1993; Raza et al., 2017). To & Trinh (2021) argue that greater levels of PU result in elevated levels of behavioral intention to use, in this case, Facebook. This suggests that users’ intention to use a system is swayed by their view of usefulness. Khayati & Zouaoui (2013) also note how PU is similar to performance expectancy in the UTAUT framework and exhibits the improvement in performance that an individual can achieve while utilizing technology.

Hypothesis (H2), represented by the path linking PEOU and ICU, is supported since it verifies as significant and its coefficient is positive ($\beta= 0.0860$, $P<0.1$). The effects specify that PEOU does not impact greatly on ICU and is consistent with a study supported by Unal & Uzun (2021), Rauniar et al. (2014) and Jin (2013). The current literature suggests that students’ understanding of Facebook’s features and the applicability of these features has enriched Facebook and has functioned as a stimulator regarding student’s perception of PEOU, which ultimately affects behavioral intention.

Hypothesis three (H3), demonstrating the path of PP and ICU, is supported. The path is positive and significant ($\beta=0.2879$, $P<0.1$). It shows that PP has a greater impact on ICU, in line with studies by Hoi & Hang (2021), Jin (2013), Kang & Lee (2010), Lin & Bhattacharjee (2008) and van der Heijden (2004). According to Moorthy et al. (2019), when students find joy and pleasure in using Facebook, they develop an intention to keep using it. When discussed with students through interviews, this study’s researchers observed that students enjoy using Facebook mainly due to its secure and relaxing digital environment. Hamid et al. (2015) added that students have

the freedom to express their views while using Facebook. The findings show that ICU is positively influenced by the PEOU, PU, and PP of Facebook users. This accords with Jin (2013) who observed that social media users consider it a provider of knowledge and information, easily accessible, conveniently usable, and immensely entertaining. Therefore, in line with Jin (2013), our findings conclude that social media such as FB is cooperative in assembling and fulfilling the demands of customers thanks to its ease of use, usefulness and entertainment value.

The path between BRS and ICU in Facebook is also significant and positive ($\beta=0.2732$, $P<0.1$), henceforth, hypothesis four (H4) is supported. This is similar to results obtained in prior studies (Chang & Zhu, 2012; Habes et al., 2021). The study's results imply that when an individual forms associations through sociodemographic or socioeconomic individualities they are more likely to intend to continue using Facebook. High BRS leads to higher ICU of Facebook. Furthermore, the path connecting BOS and ICU shows that hypothesis five (H5) is accepted ($\beta=0.1301$, $P<0.1$). In these networks, members are interconnected because they are familiar with one another and engage in frequent communication (Wong et al., 2022). Thus, higher BOS increases ICU of FB.

The association among FI and ICU is significant and positive ($\beta=0.1619$, $P<0.1$), suggesting that hypothesis (H6) is supported. Similar outcomes were obtained from research conducted by Park & Kim (2014) and Chen & Haley (2010). The results imply that higher FI fosters ICU. This research investigated the role of TAM and SC on the ICU by incorporating two more variables, FI and PP. Since PEOU and PU function as intrinsic motivators, while PP acts an extrinsic motivator (Kim et al., 2007; Lin & Bhattacharjee, 2008; Lu & Su, 2009; Moon & Kim, 2001; Teo et al., 1999; van der Heijden, 2004), they influence ICU.

CONCLUSION AND RECOMMENDATIONS

This research finds that SC building, along with other variables (TAM, I.e., PEOU and PU, and elements of SC, I.e., BRS and BOS, PP, and FI), impact university students' ICU. SC thus stimulates ICU. The results show that Facebook allows students to gather and maintain SC, precisely BRS, with convenience and low cost, which enhances ICU. Moreover, Facebook also allows them to sustain BOS, but at a lower level than BRS.

The positive impact of PEOU, PU, and PP on ICU signifies that Facebook satisfies the demands of consumers. The effect of PP on ICU is strong, in line with other research (Kang & Lee, 2010; Lin & Bhattacharjee, 2008; van der Heijden, 2004). This outcome suggests that playfulness has a significant role in ICU; Facebook is pleasure oriented. Additionally, the ICU of individuals increases when users believe Facebook facilitates sharing information and social connection (Kwon & Wen, 2010). Moreover, the study's outcomes show that both BOS and BRS have positive and significant impacts on ICU, with BRS having a stronger impact. This implies that Facebook gives a valued opportunity for customers to connect with social networks. Congruent with the suggestions given by Donath & Boyd (2004), BRS is increased through Facebook, since it helps to maintain this kind of connection very easily and cheaply. This study offers a new understanding of how young people's interaction with the world, transferring and

utilizing knowledge through social media, could motivate them to increase ICU.

These results should be integrated into promotional programs in order to make them compatible with consumer preferences. The study proposes valuable standpoints to the marketers who are interested in attracting consumers who are new users of social networking sites. Marketers focusing on creating sites which are helpful in building SC will not only attract users but will retain them for longer. The results of this research should encourage social networking sites' marketers to integrate such approaches aiming for individuality and then segment consumers with similar qualities, resulting in an increase in ICU. Furthermore, the development of marketing strategies will intensify the relationship between the marketer and consumer because of positive ICU. Keeping in mind the driving factors of users, marketers can formulate harmonious strategies to enhance marketing interaction and increase consumers' ICU. Also, marketers should make their platforms fun. They should incorporate gamification to further develop ICU. Experts should add useful applications to help users to easily create and maintain weak and strong associations with others. This will broaden their social connections and will ultimately lead to intensified ICU. Practitioners should also make efforts to assist users in building and maintaining BRS. Furthermore, discussions between students through Facebook outside of class inspire their ICU.

In terms of academic research going forward, our findings suggest researchers should focus more on BRS on social networking platforms. This research is useful for higher education faculty and students because lecturers might use Facebook to offer valuable material and assist learners in using material constructively, thereby increasing ICU. In spite of the study's results and consequential inferences, this research contains some limitations. Its findings are not generalizable since the sample was collected from a particular sector and segment: students of higher education in Pakistan, in the same age bracket, with analogous lifestyles. It is recommended that various other factors, such as perceived behavioral control, technology readiness, subjective norms, and satisfaction, are combined in future studies to analyze their influence on ICU. A comparative study could also be carried out on the basis of gender.

REFERENCES

- Aibinu, A. A., & Al-Lawati, A. M. (2010). Using PLS-SEM technique to model construction organizations' willingness to participate in e-bidding. *Automation in Construction*, 19(6), 714-724. <https://doi.org/10.1016/j.autcon.2010.02.016>
- Aldahdouh, T. Z., Nokelainen, P., & Korhonen, V. (2020). Technology and Social Media Usage in Higher Education: The Influence of Individual Innovativeness. *SAGE Open*, 10(1). <https://doi.org/10.1177/2158244019899441>
- Ali Aksar, I., Danaee, M., Maqsood, H., & Firdaus, A. (2020). Women's social media needs and online social capital: Bonding and bridging social capital in Pakistan. *Journal of Human Behavior in the Social Environment*, 30(8), 989-1012. <https://doi.org/10.1080/10911359.2020.1790461>
- Alshurideh, M., Al Kurdi, B., Salloum, S. A., Arpaci, I., & Al-Emran, M. (2020). Predicting the actual use of m-learning systems: A comparative approach using PLS-SEM and machine learning algorithms. *Interactive Learning Environments*.

- <https://doi.org/10.1080/10494820.2020.1826982>
- Awa, H. O., Eze, S. C., Urieto, J. E., & Inyang, B. J. (2011). Upper echelon theory (UET): a major determinant of information technology (IT) adoption by SMEs in Nigeria. *Journal of Systems and Information Technology*, 13(2), 144-162. <https://doi.org/10.1108/13287261111135981>
- Benbasat, I. & Barki, H. (2007). Quo Vadis TAM?. *Journal of the Association for Information Systems*, 8(4), 211-218. <https://doi.org/10.17705/1jais.00126>
- Bourdieu, P. (1986). The Forms of Capital. In J.G. Richardson (Ed.), *Handbook of Theory and Research for the Sociology of Education* (pp. 241-258). Greenwood.
- Bourdieu, P., & Wacquant, L. J. (1992). *An Invitation to Reflexive Sociology*. University of Chicago Press.
- Campbell, D. T., & Fiske, D. W. (1959). Convergent and discriminant validation by the multitrait-multimethod matrix. *Psychological Bulletin*, 56(2), 81-105. <https://doi.org/10.1037/h0046016>
- Carlos Martins Rodrigues Pinho, J., & Soares, A. M. (2011). Examining the technology acceptance model in the adoption of social networks. *Journal of Research in Interactive Marketing*, Vol. 5 No. 2/3, pp. 116-129.
- Chang, Y. P., & Zhu, D. H. (2012). The role of perceived social capital and flow experience in building users' continuance intention to social networking sites in China. *Computers in Human Behavior*, 28(3), 995-1001. <https://doi.org/10.1016/j.chb.2012.01.001>
- Chen, H. & Haley, E. (2010). The Lived Meanings of Chinese Social Network Sites (SNSs) Among Urban White-Collar Professionals: A Story of Happy Network. *Journal of Interactive Advertising*, 11(1), 11-26. <https://doi.org/10.1080/15252019.2010.10722174>
- Chin, W. W. (1998). The partial least squares approach for structural equation modeling. In G. A. Marcoulides (Ed.), *Modern Methods for Business Research* (pp. 295-336). Lawrence Erlbaum Associates.
- Coleman, J. S. (1988). Social Capital in the Creation of Human Capital. *American Journal of Sociology*, 94, S95-S120. <http://www.jstor.org/stable/2780243>
- Cook, T. D., & Campbell, D. T. (1979). *Quasi-experimentation: Design and Analysis for Field Settings*. Rand McNally.
- Davis, F. D. (1989). Perceived Usefulness, Perceived Ease of Use, and User Acceptance of Information Technology. *MIS Quarterly*, 13(3), 319-340. <https://doi.org/10.2307/249008>
- Davis, F. D. (1993). User Acceptance of Information Technology: System Characteristics, User Perceptions and Behavioral Impacts. *International Journal of Man-Machine Studies*, 38(3), 475-487. <https://doi.org/10.1006/imms.1993.1022>
- Davis, F. D., Bagozzi, R. P., & Warshaw, P. R. (1989). User Acceptance of Computer Technology: A Comparison of Two Theoretical Models. *Management Science*, 35(8), 982-1003.
- Davis, F. D., Bagozzi, R. P., & Warshaw, P. R. (1992). Extrinsic and Intrinsic Motivation to Use Computers in the Workplace. *Journal of Applied Social Psychology*, 22(14), 1111-1132. <https://psycnet.apa.org/doi/10.1111/j.1559-1816.1992.tb00945.x>

- Donath, J. & Boyd, D. (2004). Public Displays of Connection. *BT Technology Journal*, 22(4), 71-82. <https://doi.org/10.1023/B:BTTJ.0000047585.06264.cc>
- Ellison, N., Heino, R., & Gibbs, J. (2006). Managing Impressions Online: Self-Presentation Processes in the Online Dating Environment. *Journal of Computer-Mediated Communication*, 11(2), 415-441. <https://doi.org/10.1111/j.1083-6101.2006.00020.x>
- Ellison, N. B., Steinfield, C., & Lampe, C. (2007). The Benefits of Facebook "Friends": Social Capital and College Students' Use of Online Social Network Sites. *Journal of Computer-Mediated Communication*, 12(4), 1143-1168. <https://doi.org/10.1111/j.1083-6101.2007.00367.x>
- Ellison, N. B., Gray, R., Vitak, J., Lampe, C. & Fiore, A.T. (2013). Calling All Facebook Friends: Exploring Requests for Help on Facebook. In *Proceedings of the Seventh International AAAI Conference on Web and Social Media* (pp. 155-164). <https://doi.org/10.1609/icwsm.v7i1.14436>
- Fishbein, M., & Ajzen, I. (1975). *Belief, Attitude, Intention, and Behavior: An Introduction to Theory and Research*. Addison-Wesley.
- Fornell, C., & Larcker, D. F. (1981). Evaluating Structural Equation Models with Unobservable Variables and Measurement Error. *Journal of Marketing Research*, 18(1), 39-50. <https://doi.org/10.2307/3151312>
- Fukuyama, F. (2001). Social Capital, Civil Society and Development. *Third World Quarterly*, 22(1), 7-20. <https://doi.org/10.1080/713701144>
- Gefen, D., & Straub, D. (2000). The Relative Importance of Perceived Ease of Use in IS Adoption: A Study of E-Commerce Adoption. *Journal of the Association for Information Systems*, 1(1), 1-28. <https://doi.org/10.17705/1jais.00008>
- Gefen, D., & Straub, D. (2005). A Practical Guide To Factorial Validity Using PLS-Graph: Tutorial And Annotated Example. *Communications of the Association for Information Systems*, 16, 99-109. <https://doi.org/10.17705/1CAIS.01605>
- Gefen, D., Karahanna, E. & Straube, D. W. (2003). Trust and TAM in Online Shopping: an Integrated Model. *MIS Quarterly*, 27(1), 51-90. <https://doi.org/10.2307/30036519>
- Gershuny, J. (2002). Social Leisure and Home IT: A Panel Time-Diary Approach. *IT & Society*, 1(1), 54-72.
- Goggin, G. (2020). Mobile paradoxes: European emergence of mobile internet, users, and markets. *Internet Histories*, 4(2), 161-177. <https://doi.org/10.1080/24701475.2020.1741968>
- Granovetter, M. (1983). The Strength of Weak Ties: A Network Theory Revisited. *Sociological Theory*, 1, 201-233. <https://doi.org/10.2307/202051>
- Guoyan, S., Khaskheli, A., Raza, S. A., Khan, K. A., & Hakim, F. (2021). Teachers' self-efficacy, mental well-being and continuance commitment of using learning management system during COVID-19 pandemic: A comparative study of Pakistan and Malaysia. *Interactive Learning Environments*, 1-23. <https://doi.org/10.1080/10494820.2021.1978503>

- Habes, M., Alghizzawi, M., Salloum, S. A., & Mhamdi, C. (2021). Effects of Facebook Personal News Sharing on Building Social Capital in Jordanian Universities. In M. Al-Emran, K. Shaalan, & A. E. Hassanien (Eds.), *Recent Advances in Intelligent Systems and Smart Applications* (pp. 653–670). Springer. https://doi.org/10.1007/978-3-030-47411-9_35
- Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2013). *Multivariate Data Analysis*. Pearson Education.
- Hair, J. F., Ringle, C. M., & Sarstedt, M. (2011). PLS-SEM: Indeed a Silver Bullet. *Journal of Marketing Theory and Practice*, 19(2), 139–152. <https://doi.org/10.2753/MTP1069-6679190202>
- Hair, J. F., Sarstedt, M., Ringle, C. M., & Mena, J. A. (2012). An assessment of the use of partial least squares structural equation modeling in marketing research. *Journal of the Academy of Marketing Science*, 40(3), 414–433. <https://doi.org/10.1007/s11747-011-0261-6>
- Hamid, S., Waycott, J., Kurnia, S., & Chang, S. (2015). Understanding students' perceptions of the benefits of online social networking use for teaching and learning. *The Internet and Higher Education*, 26, 1–9. <https://doi.org/10.1016/j.iheduc.2015.02.004>
- Hampton, K., & Wellman, B. (2003). Neighboring in Netville: How the Internet Supports Community and Social Capital in a Wired Suburb. *City & Community*, 2(4), 277–311.
- Hariguna, T., Lai, M. T., Hung, C. W., & Chen, S. C. (2017). Understanding Information System Quality on Public E-Government Service Intention: An Empirical Study. *International Journal of Innovation and Sustainable Development*, 11(2-3), 271–290.
- Helliwell, J. F., & Putnam, R. D. (2004). The social context of well-being. *Philosophical Transactions of the Royal Society B: Biological Sciences*, 359(1449), 1435–1446. <https://doi.org/10.1098/rstb.2004.1522>
- Henseler, J., Dijkstra, T. K., Sarstedt, M., Ringle, C. M., Diamantopoulos, A., Straub, D. W., Ketchen, D. J., Hair, J. F., Hult, G. T. M., & Calantone, R. J. (2014). Common Beliefs and Reality About PLS: Comments on Rönkkö and Evermann. *Organizational Research Methods*, 17(2), 182–209. <https://doi.org/10.1177/1094428114526928>
- Henseler, J., Ringle, C. M., & Sarstedt, M. (2015). A New Criterion for Assessing Discriminant Validity in Variance-Based Structural Equation Modeling. *Journal of the Academy of Marketing Science*, 43(1), 115–135. <https://doi.org/10.1007/s11747-014-0403-8>
- Hoi, V.N., & Hang, H. L. (2021). Understanding students' behavioural intention to use facebook as a supplementary learning platform: A mixed methods approach. *Education and information technologies*, 26(5), 5991–6011.
- Hu, T., & Kettinger, W.J. (2008). Why people continue to use social networking services: Developing a comprehensive model.
- Hsu, C., & Lin, J. C. (2008). Acceptance of blog usage: The roles of technology acceptance, social influence and knowledge sharing motivation. *Information & Management*, 45(1), 65–74. <https://doi.org/10.1016/j.im.2007.11.001>

- Hsu, L. (2021). What makes good LMOOCs for EFL learners? Learners' personal characteristics and Information System Success Model. *Computer Assisted Language Learning*, 1-25. <https://doi.org/10.1080/09588221.2021.1899243>
- Hsu, S. H., Lee, F. L. and Wu, M. (2005), Designing action games for appealing to buyers, *Cyberpsychology & Behavior*, 8(6), 585-591. <https://doi.org/10.1089/cpb.2005.8.585>
- Hwang, Y. (2005). Investigating enterprise systems adoption: Uncertainty avoidance, intrinsic motivation, and the technology acceptance model. *European Journal of Information Systems*, 14(2), 150-161. <https://doi.org/10.1057/palgrave.ejis.3000532>
- Igbaria, M., Parasuraman, S., & Baroudi, J. J. (1996). A Motivational Model of Microcomputer Usage. *Journal of Management Information Systems*, 13(1), 127-143. <https://doi.org/10.1080/07421222.1996.11518115>
- Islam, M. K., Merlo, J., Kawachi, I., Lindström, M., & Gerdtham, U. (2006). Social capital and health: Does egalitarianism matter? A literature review. *International Journal for Equity in Health*, 5(3). <https://doi.org/10.1186/1475-9276-5-3>
- Jasimuddin, S. M., Mishra, N., & Almuraqab, N. A. S. (2017). Modelling the factors that influence the acceptance of digital technologies in e-government services in the UAE: A PLS-SEM Approach. *Production Planning & Control*, 28(16), 1307-1317. <https://doi.org/10.1080/09537287.2017.1375144>
- Jin, C. (2013). The Perspective of a Revised TRAM an Social Capital Building: The Case of Facebook Usage. *Information & Management*, 50(4), 162-168.
- Johnston, K., Tanner, M., Lalla, N., & Kawalski, D. (2013). Social Capital: The Benefit of Facebook 'Friends.' *Behaviour & Information Technology*, 32(1), 24-36. <https://doi.org/10.1080/0144929X.2010.550063>
- Joreskog, K. G., & Wold, H. (1982b). *Systems Under Indirect Observation: Causality, Structure, Prediction*. North Holland.
- Kang, Y. S., & Lee, H. (2010). Understanding the role of an IT artifact in online service continuance: An extended perspective of user satisfaction. *Computers in Human Behavior*, 26(3), 353-364. <https://doi.org/10.1016/j.chb.2009.11.006>
- Islam, M. K., Merlo, J., Kawachi, I., Lindström, M., & Gerdtham, U. G. (2006). Social capital and health: Does egalitarianism matter? A literature review. *International Journal for Equity in Health*, 5(1), 3. <https://doi.org/10.1186/1475-9276-5-3>
- Kemp, S. (2021). *Digital 2021: Pakistan*. <https://datareportal.com/reports/digital-2021-pakistan>
- Khayati, S., & Zouaoui, S. K. (2013). Perceived usefulness and use of information technology: The moderating influences of the dependence of a subcontractor towards his contractor. *Journal of Knowledge Management, Economics and Information Technology*, 3(6), 68-77.
- Kim, H. W., Chan, H. C., & Gupta, S. (2007). Value-based adoption of mobile internet: an empirical investigation. *Decision Support Systems*, 43(1), 111-126.
- Kwon, O., & Wen, Y. (2010). An Empirical Study of the Factors Affecting Social Network Service Use. *Computers in Human Behavior*, 26(2), 254-263.

- Lacka, E., Wong, T. C., & Haddoud, M. Y. (2021). Can digital technologies improve students' efficiency? Exploring the role of Virtual Learning Environment and Social Media use in Higher Education. *Computers & Education*, 163. <http://dx.doi.org/10.1016/j.compedu.2020.104099>
- Lee, M. K. O., Cheung, C. M. K., & Chen, Z. (2007). Understanding user acceptance of multimedia messaging services: An empirical study. *Journal of the American Society for Information Science and Technology*, 58(13), 2066–2077.
- Lin, N. (2002). *Social capital: A Theory of Social Structure and Action*. Cambridge University Press.
- Lin, C. P., & Bhattacharjee, A. (2008). Elucidating individual intention to use interactive information technologies: The role of network externalities. *International Journal of Electronic Commerce*, 13(1), 85-108.
- Lin, K. Y., & Lu, H. P. (2011). Intention to continue using Facebook fan pages from the perspective of social capital theory. *Cyberpsychology, Behavior, and Social Networking*, 14(10), 565-570.
- Lou, H., Chau, P. Y. & Li, D. (2005). Understanding Individual Adoption of Instant Messaging: An Empirical Investigation. *Journal of the Association for Information Systems*, 6(4), 102–129. <https://core.ac.uk/download/pdf/301382862.pdf>
- Lu, H. P., & Su, Y. P. (2009). Factors Affecting Purchase Intention on Mobile Shopping Web Sites. *Internet Research*, 19(4), 442-458.
- Lu, J., Yu, C. S., Liu, C., & Yao, J. E. (2003). Technology Acceptance Model for Wireless Internet. *Internet Research*, 13(3), 206-222.
- Moon, J., & Kim, Y. (2001). Extending the TAM for a World-Wide-Web Context. *Information & Management*, 38(4), 217–230. [https://doi.org/10.1016/S0378-7206\(00\)00061-6](https://doi.org/10.1016/S0378-7206(00)00061-6)
- Moorthy, K., Ting, L. C., Wei, K. M., Zi Mei, P. T., Yee, C. Y., Jia Wern, K. L., & Xin, Y. M. (2019). Is Facebook Useful for Learning? A Study in Private Universities in Malaysia. *Computers & Education*, 130, 94–104. <https://doi.org/10.1016/j.compedu.2018.12.002>
- Nunnally, J. C., & Bernstein, I. H. (1967). *Psychometric Theory*. McGraw-Hill
- Nysveen, H., Pedersen, P. E., & Thorbjørnsen, H. (2005a). Explaining intention to use mobile chat services: Moderating effects of gender. *Journal of Consumer Marketing*, 22(5), 247–256. <https://doi.org/10.1108/07363760510611671>
- Nysveen, H., Pedersen, P. E., & Thorbjørnsen, H. (2005b). Intentions to Use Mobile Services: Antecedents and Cross-Service Comparisons. *Journal of the Academy of Marketing Science*, 33(3), 330–346. <https://doi.org/10.1177/0092070305276149>
- Park, H., & Kim, Y. K. (2014). The role of social network websites in the consumer–brand relationship. *Journal of Retailing and Consumer Services*, 21(4), 460-467.
- Pitafi, A. H., Khan, A. N., Khan, N. A., & Ren, M. (2020). Using enterprise social media to investigate the effect of workplace conflict on employee creativity. *Telematics and Informatics*, 55, 101451.
- Putnam, R. D. (2001). *Bowling Alone: The Collapse and Revival of American Community*. Simon and Schuster.

- Qazi, W., Raza, S. A., & Khan, K. A. (2020). The Contradiction Between Self-Protection and Self-Presentation on Knowledge Sharing Behaviour: Evidence From Higher Education Students in Pakistan. *International Journal of Knowledge and Learning*, 13(3), 246-271.
- Qureshi, M. A., Khaskheli, A., Qureshi, J. A., Raza, S. A. & Khan, K. A. (2022). Factors influencing Green Purchase Behavior Among Millennials: The Moderating Role of Religious Values. *Journal of Islamic Marketing*, forthcoming. <https://doi.org/10.1108/JIMA-06-2020-0174>
- Rad, M. S., Nilashi, M., Dahlan, H. M., & Ibrahim, O. (2019). Academic researchers' behavioural intention to use academic social networking sites: A case of Malaysian research universities. *Information Development*, 35(2), 245-261. <https://doi.org/10.1177/0266666917741923>
- Rauniar, R., Rawski, G., Yang, J., & Johnson, B. (2014). Technology Acceptance Model (TAM) and Social Media Usage: An Empirical Study on Facebook. *Journal of Enterprise Information Management*, 27(1), 6-30. <https://doi.org/10.1108/JEIM-04-2012-0011>
- Raza, S. A., Qazi, W., & Umer, A. (2017). Facebook is a Source of Social Capital Building Among University Students: Evidence from a Developing Country. *Journal of Educational Computing Research*, 55(3), 295-322.
- Raza, S. A., Qazi, W., Shah, N., Qureshi, M. A., Qaiser, S., & Ali, R. (2020a). Drivers of intensive Facebook usage among university students: An implications of U&G and TPB theories. *Technology in Society*, 62. <https://doi.org/10.1016/j.techsoc.2020.101331>
- Raza, S. A., Qazi, W., Umer, B. & Khan, K. A. (2020b). Influence of social networking sites on life satisfaction among university students: a mediating role of social benefit and social overload. *Health Education*, 120(2), 141-164. <https://doi.org/10.1108/HE-07-2019-0034>
- Raza, S. A., & Khan, K. A. (2022). Knowledge and innovative factors: how cloud computing improves students' academic performance. *Interactive Technology and Smart Education*, 19(2), 161-183. <https://doi.org/10.1108/ITSE-04-2020-0047>
- Reyna, J., Hanham, J., & Meier, P. (2018). The Internet explosion, digital media principles and implications to communicate effectively in the digital space. *E-learning and Digital Media*, 15(1), 36-52.
- Resnick, P. (2001). Beyond Bowling Together: SocioTechnical Capital. In J. M. Carroll (Ed.), *HCI in the New Millenium* (pp. 247-272). Addison-Wesley
- Ringle, C. M., Wende, S., & Becker, J. M. (2014). *SmartPLS 3*. SmartPLS.
- Saubern, R., Urbach, D., Koehler, M., & Phillips, M. (2020). Describing increasing proficiency in teachers' knowledge of the effective use of digital technology. *Computers & Education*, 147. <https://doi.org/10.1016/j.compedu.2019.103784>
- Stănculescu, E., & Griffiths, M. D. (2021). Anxious attachment and Facebook addiction: The mediating role of need to belong, self-esteem, and Facebook use to meet romantic partners. *International Journal of Mental Health and Addiction*, 1-17. <https://doi.org/10.1007/s11469-021-00598-9>
- Stephenson, W. (1964). *The Play Theory of Mass Communication*. Transaction Publishers.
- Tabachnick, B. G., & Fidell, L. S. (2007). *Using Multivariate Statistics*. Pearson.

- Teo, T. S., Lim, V. K., & Lai, R. Y. (1999). Intrinsic and Extrinsic Motivation in Internet Usage. *Omega*, 27(1), 25-37.
- The World Bank. (2022). *Individuals using the Internet (% of population) - Pakistan*. <https://data.worldbank.org/indicator/IT.NET.USER.ZS?locations=PK>
- To, A. T., & Trinh, T. H. M. (2021). Understanding Behavioral Intention to Use Mobile Wallets in Vietnam: Extending the TAM Model with Trust and Enjoyment. *Cogent Business & Management*, 8(1). <https://doi.org/10.1080/23311975.2021.1891661>
- Toomey, L., Mark, G., Tang, J. C., & Adams, L. (1998). Designing virtual communities for work. *ACM SIGGROUP Bulletin*, 19(3), 6-7. <https://doi.org/10.1145/307736.307751>
- Unal, E., & Uzun, A. M. (2021). Understanding university students' behavioral intention to use Edmodo through the lens of an extended technology acceptance model. *British Journal of Educational Technology*, 52(2), 619-637.
- Valenzuela, S., Park, N., & Kee, K. F. (2009). Is there social capital in a social network site?: Facebook use and college students' life satisfaction, trust, and participation1. *Journal of Computer-Mediated Communication*, 14(4), 875-901.
- Van der Heijden, H. (2004). User Acceptance of Hedonic Information Systems. *MIS Quarterly*, 695-704. <https://doi.org/10.2307/25148660>
- Venkatesh, V., & Davis, F. D. (2000). A Theoretical Extension of the Technology Acceptance Model: Four Longitudinal Field Studies. *Management Science*, 46(2), 186-204.
- Venkatesh, V., Speier, C., & Morris, M. G. (2002). User Acceptance Enablers in Individual Decision Making About Technology: Toward an Integrated Model. *Decision Sciences*, 33(2), 297-316. <https://doi.org/10.1111/j.1540-5915.2002.tb01646.x>
- Williams, D. (2006). On and Off the'Net: Scales for Social Capital in an Online Era. *Journal of Computer-Mediated Communication*, 11(2), 593-628.
- Wixom, B. H., & Watson, H. J. (2001). An Empirical Investigation of the Factors Affecting Data Warehousing success. *MIS Quarterly*, 25(1), 17-41.
- Wold, H. (1975, August 21-26). *Modelling in Complex Situations with Soft Information* [Paper presentation]. Third World Congress of Econometric Society, Toronto, Canada.
- Wold, H. (1980). Model construction and evaluation when theoretical knowledge is scarce. In J. Kmenta & J. B. Ramsey (Eds.), *Evaluation of Econometric Models* (pp. 47-74). National Bureau of Economic Research.
- Wong, J., Ho, K. K., Leung, T. N., & Chiu, D. K. (2022). Exploring the Associations Of Youth Facebook Addiction with Social Capital Perceptions. *Online Information Review*, forthcoming.