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Impact of Digitalization on Undergrads Entrepreneurs Performance in Sindh, Pakistan

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Abstract

Digitalization is an advanced platform of success for undergrad entrepreneurs. This study aims to explore the impact of social media on undergrad entrepreneur's performance. The paradigm of the technology acceptance model was adapted and modified in this study. A self-administered questionnaire was employed. The sample of the study was three public universities, the University of Karachi, the University of Sindh, and the Institute of Business Administration of Sindh, Pakistan. The data was collected from 1st January 2023 to 31st January 2023. The total 278 respondents were analyzed while using Partial Least Squares, Structural Equation Modeling (PLS-SEM). According to the results, the variables; student entrepreneurs' ability, and perceived usefulness have a significantly positive $p < 0.05$ impact on student entrepreneurs' performance. The results of the study indicated social media play a vital role in the development of young entrepreneurs. Hence, government and non-government organizations play a vital role in fostering online entrepreneurship. This study would support more effective entrepreneurial programs and promote business among students. A similar study can be applied in other universities of the world.

Keywords: entrepreneur's performance, impact, undergraduates, social media, Digitalization.

1. Introduction

Undergrad entrepreneurs have a major concern about the growing economy of the country. The development of undergrad entrepreneurs is a global issue. In developed countries, undergrad entrepreneurs support their economic transformation into a technological knowledge-based economy (Martin-Rojas et al., 2023). Additionally, graduates have a significant opportunity to increase their entrepreneurial activity (Kolbre, Piliste, 2006). However, the majority of undergrad entrepreneurs show a little bit of interest in starting their businesses (Shambare, 2013). However, the accumulation of information regarding entrepreneurship is vital for skills and abilities (Zreen et al., 2019). Another study proposes to evaluate student entrepreneurship performance from multidisciplinary universities (Katz, 2008).

The notion of online entrepreneurship has been highly debated in Pakistan. Since, the country has adopted policies to encourage entrepreneurs, and contribute to economic and social growth to the country (El-Gohary et al., 2023). The current state of business and labor markets in emerging economies has resulted in role transformations and instability. Graduate entrepreneurs learn the skills required to become self-employed and start new businesses. As a result, higher education institutions have changed how they teach students about entrepreneurship (Von Arnim, Mrozewski, 2020).

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Digitalization has generated a new concept of online entrepreneurs (Mohamed Hashim et al., 2022). In Italy, Italian Contamination Labs (CLabs) are effectively accepting emerging digitalization to nurture their entrepreneurship practices among university undergraduates. Digitalization can be defined as ‘social networking, mobile, or embedded devices to facilitate significant business improvements; such as streamlining operations, enhancing customer experience, or creating new business models’ (Fitzgerald et al., 2014). Social media contributes to business. Which is currently one of the key features of digitalization platforms (Fitzgerald et al., 2014). They have found that digitalization is still weakly utilized among undergrads (Secundo et al., 2020), because of less interest, and weak online access to the internet in developing countries (Shambare, 2013). Besides this, the extensive use of the internet has captivated consumers as well as enterprises in the global world. However, the COVID-19 pandemic has explained the advantages and drawbacks of using social media to mitigate the challenges of entrepreneurs (Salam et al., 2021). Social media has proliferated as a powerful tool in marketing, communication, and boosting business in the modern day (Wu, Song, 2019; Veldeman et al., 2017).

Researchers analyzed social media’s impact on student entrepreneurs in academics and other organizations only in Asia, Africa, and Europe (Chatterjee et al., 2022; Oppong et al., 2020; Slutskiy et al., 2023; Song et al., 2022). Nowadays, undergraduate entrepreneurs are using Facebook, Instagram, YouTube, and Snapchat to sell their products (Delbaerre et al., 2021). The study by Katz (Katz, 2008) has recommended further analysis of social media from different perspectives of entrepreneurship. However, there has been very little research examined to determine the usage of social media in the context of undergrad entrepreneur’s performance (Rippa, Secundo, 2019).

In 2020, during the COVID-19 pandemic, ‘The government of Pakistan launched the ‘Ehsaas Emergency Cash Program’, under which Rs144 billion was allocated to twelve million families as daily wage earners (KPMG, 2020). According to the Small Medium Enterprises Development Authority (SMEDA) 920 SMEs were approved in Pakistan, which were not adequate to generate income and revenue during the COVID-19 pandemic (SMEDA, 2020).

Student entrepreneurs have launched new online businesses. Students are more dependent on parents to fulfill their expenditures and needs. They do not have enough time to do their job and study simultaneously. So, students have selected an alternative way to do online entrepreneurship and earn money. Student entrepreneurs encountered significant effects of social media use despite their insufficient financial resources and limited access to outside sponsorship.

The fundamental attempt of this study is to explore the relationship between the impact of social media on student entrepreneurs’ performance. Previous studies have been less found that explored these constructs in a similar mode. Secondly, the purpose of the study is also to analyze the mediating impact of social media use on the TAM model (See Figure 1). Thus, in the context of Pakistan, the present study contributes to the body of knowledge and insight into new theoretical paradigms in existing literature and government youth programs of the country.

Researchers evaluated the mediated impact of social media use on the TAM model. To address the gap and objective of this study, researchers adapted and modified TAM’s model.

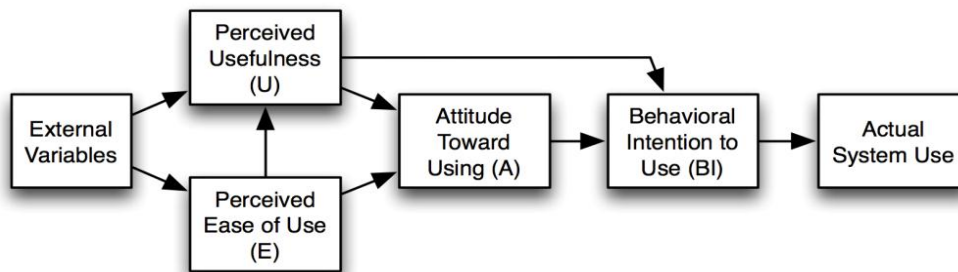


Fig. 1. Technology Acceptance model by Davis (Davis, 1989)

TAM Model focuses on five Indicators: (Indicator 1) Student Entrepreneurs Ability (SEA), (Indicator 2) Perceived Usefulness (PU) (Indicator 3) Perceived Ease Of Use (PEOU), (Indicator 4) the moderating impact of Intention to Use (IU), (Indicator 5) the mediating impact of the Uses of Social Media (USM), and (Indicator 6) the Student Entrepreneurs Performance (SEP). These five

indicators highlighted the impact of social media on the performance of undergrads at entrepreneurship platforms. In the following sections, we discuss TAM's model and use the SEM approach to evaluate a model of adaptation. We tested the model with sampled 278 undergrads. We concluded the paper by discussing our findings, limitations, and suggestions for further research and practice.

Theoretical Framework and Hypothesis: When considering the impact of social media in business contexts. It is critical to address the abilities, uses, and performance of students to accept social media. The purpose of this study is to analyze the mediating impact of social media use among undergraduate entrepreneurs' performance into the well TAM model. The TAM model proposes that the impact of the usefulness of social media and ease of use are fundamental factors in acceptance (Arbaugh, 2000). Scholars choose the technology acceptance model (TAM) when studying new technology adoption by (Davis, 1985), perceived usefulness and perceived ease of use have been identified (De Graaf et al., 2019; Lee et al., 2003). The popularity of the TAM model cannot be declined (Choe, Noh, 2018). In the last two decades, TAM has been regarded as a concise and powerful theory in communication technology (Venkatesh, Davis, 2000). It is a technology-based model that shows how businesses can successfully integrate new communication technology, despite having a cultural diverts population (Chatterjee et al., 2022). This model is highly predictive (De Graaf et al., 2019).

A conceptual research model was suggested in light of the study's goals, literature analysis, and research theory. An overview of the new insights in the model is shown in Figure 2. The first frame of the construct is the Student Entrepreneur's Ability (SEA), secondly, Perceived Usefulness (PU) and Perceived Ease Of Use (PEOU), Intention to Use (IU), and Use of Social Media (USM), last but not least Student Entrepreneur's Performance (SEP). The usage of any social media site is significantly influenced by all the constructs included in this study. By using the TAM model, it will be easier to understand how important social media applications are for Pakistani students' entrepreneurial achievement.

Student Entrepreneur's Ability, Perceived Usefulness, and Perceived Ease of Use: It is the basic requirement for undergraduates to have the ability to start up or run a business successfully (Shaowei et al., 2022). Entrepreneurial knowledge and ability are referred to as entrepreneurial ability (Ma, 2020). The student's exposure to cutting-edge technology and critical thinking, creativity, and integrative learning abilities provide value in the world (Crittenden et al., 2019). Entrepreneurs take entrepreneurial skills and fundamental marketing knowledge to create websites and present items online (Yasir et al., 2021). 'Perceived usefulness is defined as an intangible measurement of an individual perception' (Davis, 1989). 'Perceived usefulness refers to the degree to which a person believes that the use of a system will improve his performance' (Dwivedi et al., 2019). 'Perceived ease of use is viewed as the degree to which a person believes that the use of digital technology will be effortless' (Dwivedi et al., 2019). Thus, perceived usefulness and perceived ease of use are considered two different dimensions (Dwivedi et al., 2019). Research studies have found that student entrepreneur's abilities have a positive relationship with perceived usefulness and perceived ease of use (Dwivedi et al., 2019). In light of this information, thus, we hypothesize that the student entrepreneur's ability can act in the business. So, we propose the following hypothesis:

H1: Student entrepreneur's ability has a significant impact on the perceived usefulness of the undergraduate entrepreneur's performance.

H2: Student entrepreneur's ability has a significant impact on the perceived ease of use to the undergraduate entrepreneurs' performance.

Perceived Usefulness (PU), Perceived Ease of Use (PEOU), and Intension to Use(IU). This model aims to predict the user's acceptance of a particular communication technology and to pinpoint the impact that must be made on the system to embrace business performance. According to this concept, perceived usefulness and perceived ease of use are the two key components that affect an individual's decision (Scherer et al., 2019). Perceived usefulness and perceived ease of use are the most effective factors of TAM modeling to identify the acceptance of innovation in communication technology (Gangwar et al., 2015). The definitions of perceived ease of use (PEOU) and perceived usefulness (PU) are given above (Davis, 1989; Dwivedi et al., 2019). Besides this, an individual's perception ascertains the intent to use social media for business purposes. According to Davis (Davis, 1989) and Venktatesh, Davis (Venktatesh, Davis 2000), in the TAM model technology use is determined by an intention to use social media about perceived usefulness and

perceived ease of use. The students believe that using social media would enhance business performance (Fatima, Bilal, 2019).

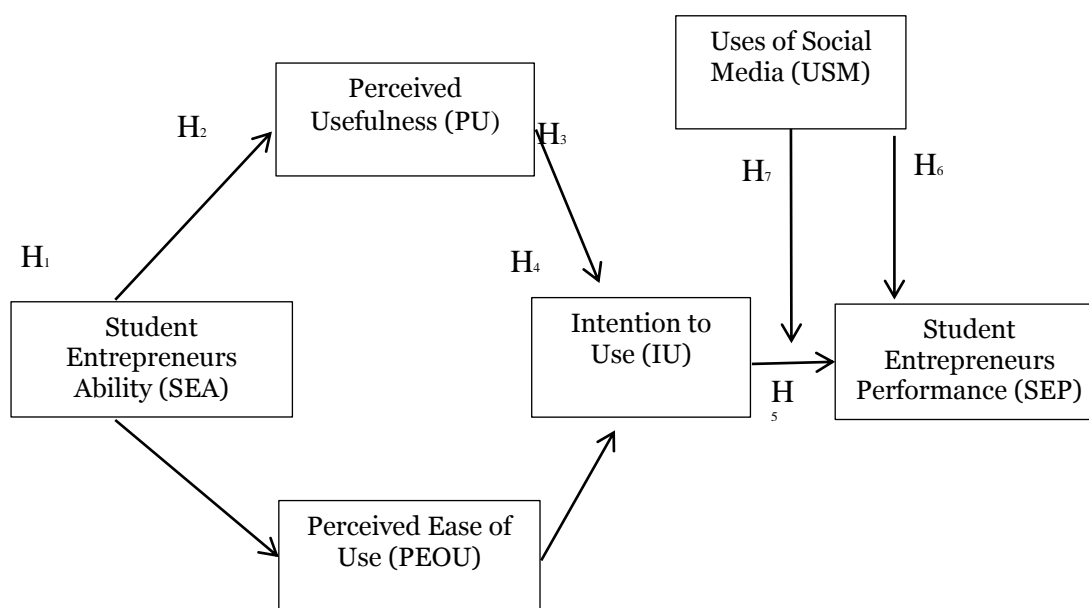


Fig. 2. Adaptive and Modified Technology Acceptance Model

An individual has an intention to utilize a system or new technology, if they perceive it to be simple to use (Chatterjee et al., 2022). According to the study by Kim and Chiu perceived ease of use (PEOU) and perceived usefulness (PU) have a positive relationship between intention to use social media (Kim, Chiu, 2019). The hypothesis is the following.

H3: Perceived usefulness (PU) positively impacts on intention to use social media (IU).

H4: Perceived ease of use (PEOU) positively impacts on intention to use social media (IU).

Moderate impact of Intention to use social media on students' entrepreneurial performance: The model used to understand people's intentions to use new technologies is the technology adoption model (Brando-Jones, Kauppi, 2018; Mahfud, et al., 2020) identify the intention to use social media for the enhancement of the students' entrepreneurial performance by the entrepreneurial perception and atmosphere. Student entrepreneur's performance refereed by Shaowei et al. (Shaowei et al., 2022) 'to the pioneering activities of undergraduates discovering and taking advantage of opportunities, establishing enterprises based on their knowledge, skills, and novel ideas, making decisions, creating wealth, and realizing their self-worth'. To measure in terms of level of success in running the commercial enterprise and output (Huang, Zhang, 2020). Student entrepreneur's performance may also refer to the outcome of an entrepreneur's efforts in the business, the degree of profit, and the volume of sales, among other things, which is influenced by a variety of circumstances (Nneka, 2015). Intention to use while integrating digital technology has a positive relationship with entrepreneurial performance (Siddiqui, Khan, 2019).

Therefore, the hypothesis is as follows:

H5: Intention to use social media (IU) has a significant impact on student entrepreneurial performance (UEP).

Mediate impact of social media usage on student entrepreneur's performance and intention to use: Facebook is a cutting-edge digital platform that is frequently employed in day-to-day Indonesian enterprises (Talukder et al., 2013). Another researchers (Nawi et al., 2019) study found that Facebook is the most popular platform, followed by Twitter and Tumbler among student entrepreneurs. Social media was a component of the fourth industrial revolution, which allowed for the entry of business people (Barrera-Verdugo et al., 2022; Kusumawardhany et al., 2020). Social media as a tool of communication motivates people to succeed in business (Huang, Zhang, 2020). Moreover, this model helps us to understand undergrads intention to use social media. How they feel about social media and how much they value it (Ramkumar et al., 2019). Therefore, the impact of social media usage platforms highly correlates with undergrad entrepreneur's performance.

H6: social media usage has a positive impact on the student entrepreneurs performance.

H7: social media usage has a significantly moderate impact on the intention to use and student entrepreneur's performance.

TAM is an excellent theoretical technique for determining user acceptance of an entrepreneur's performance, particularly for undergraduates (as you can see in [Figure 2](#)).

2. Materials and methods

A quantitative research methodology has applied in this study, to measure the student entrepreneur's ability, perceived ease of use, perceived usefulness, social media uses, student entrepreneur's performance, and intention to use social media as a digit platform among undergraduate entrepreneurs in Pakistan. A semi-structured close-ended questionnaire was constructed. Each question was designed an unbiased words for the full-time undergraduate entrepreneurs to understand the questions easily. The questionnaires were based on the Likert scale of measurement on five (5) points in all variables, such as strongly agree, agree, neutral, disagree, and strongly disagree. The structure and number of questions have been constructed from the reviews of the previous literature. In this study, the snowball selection of the sampled population comprised students, who run their own business by using social media. In an empirical study, undergrad entrepreneurship research was carried out in three public universities of Pakistan that run entrepreneurship programs and have entrepreneurs incubators. These are the University of Sindh Jamshoro, the University of Karachi, and Institute of Business Administration (I.B.A) Sukkhar (Sindh) Pakistan. A total of 278 samples of questionnaires were collected based on the sampling technique ([Krejcie, Morgan, 1970](#)).

The data was collected from 1st January 2023 to 31st January 2023. Through, face to face interaction with student entrepreneurs at universities. A total of 400 questionnaire forms were distributed to undergraduate entrepreneurs in sampled universities. However, 300 forms were returned. A total of 278 forms were analyzed and 22 forms were excluded due to incomplete data. The questionnaires were based on six dimensions by referring review of the literature. The partial least square (PLS) technique was employed to empirically analyze the data via SmartPLS 3 software to test the hypothesis and measure the valid findings. SmartPLS has been used to find accurate predictions and prominence in the entrepreneurial field ([Rasoolimanesh et al., 2018](#)). SmartPLS is advantageous software to avoid problems with data normality and limited sample size, making it a versatile tool for building models and producing targeted outcomes. The bootstrapping method is used to complete the SmartPLS algorithm and tests the validity and reliability by using loadings, significance levels, and path coefficients ([Rasoolimanesh et al., 2018](#)). The structural model evaluation was examined to assess the measurement model. It is still essential to consider the normal distribution of data while applying inferential statistics. PLS-SEM is a non-parametric analytical approach ([Rasoolimanesh et al., 2021](#)). According to earlier research, when using PLS-SEM, a thorough collinearity test may be employed to ascertain impact by the issue of common method bias. The variation inflation factors (VIFs) were suggested by Kock ([Kock, 2015](#)).

3. Discussion

Young Entrepreneurs in Pakistan: The World Bank reported that real Gross Domestic Product is expected to fall by 0.6 percent in FY23 after increasing by 6.1 percent in FY22 and 5.8 percent in FY21. Additionally, According to the Global Innovation Index ([Global..., 2023](#)) reported that Pakistan ranked 88th out of 132 countries. According to the World Economic Forum 2019, Pakistan ranked 110th out of 140th in economic development ([Adamkiewicz-Drwillo, 2019](#)). However, in the Global Competitiveness Index, 2017-2018 ranked 115th out of 137th (World Economic Forum). In the last decade, Pakistan has not sufficient economic development. In addition to this, Pakistan requires a dynamic digital platform to strengthen the economy and assist in offering new jobs for the two million individuals to establish a competitive digital ecosystem ([Ibrahim, 2017](#)). In Pakistan, approximately 60 percent of it's 220 million population under the age of 15 to 29th provides significant human and intellectual capital ([Sangji, 2022](#)). According to the Global Entrepreneurs Monitoring Report (2012), 'Pakistan's start-up entrepreneurial activity (the sum of the nascent entrepreneurship rate and the new business owner-manager rate) increased 11.57 percent than 9.07 percent in 2011. In 2021, the Ministry of Information Technology and Telecommunication, Government of Pakistan has approved many projects like the Pakistan Sindh Development Program, Higher Impact Skills Boot-camp,

Establishment of I.T Park at Karachi, I.C.T Internship Program, Blended Virtual Education National Center for Research Innovation and Prime minister youth program, Digital youth development centers, national incubation centers and entrepreneurship, and allied technologies in 2020 for the potential of youth entrepreneurship (Minister of Information Technology & Telecommunication). Moreover, many non-government organizations are also working at national and international levels in Pakistan. Surprisingly, rural entrepreneurs do not have the availability of online entrepreneurship, because of a lack of potential, technological devices, and communication networks (SAFWCO, 2021). Their business is based on mobile phones, interpersonal communication, manual mobile communication, and middlemen pass updated information to other groups of people in the village (SAFWCO, 2021). However, the Sustainable Development Goal (SDG) has the effective execution of an entrepreneur, who encourages youth to increase entrepreneur's performance and economic development. Which are components of the basic sustainable development goals 8 (SDG) and 9 (SDG).

The Digital Data Portal (2022) reported that there were 82.90 million internet users in Pakistan. According to the Pakistan Entrepreneurship Ecosystem Report (2022), Pakistani entrepreneurs have mitigated \$322 million in 2022, and \$350 million entrepreneurs were record-breaking in 2021 (Tariq, Younus, 2022).

Additionally, entrepreneurs and potential consumers communicate and engage through social media also promotes awareness of marketing expertise and client attitudes (Park et al., 2017). Gilani et al. (Gilani et al., 2020) reveal in their study that the use of social media has a significant relationship with young entrepreneurial leadership. Moreover, social media users account for 49.4 percent of the variation in entrepreneurial leadership (Gilani et al., 2020).

In light of the above studies, it has been assumed that young entrepreneurs' use of digitalization, such as social media, for the goal of entrepreneurship, might result in profitable businesses. Young entrepreneurs have the potential to significantly contribute to the rapid economic growth of a country like Pakistan. Students in higher education frequently utilize social media (Shi et al., 2022). Social Media Uses among Entrepreneurs: Much researches have evaluated the uses, adoption, and invention of communication technology. These factors influence social media usage among entrepreneurs in the developing countries (Kimuli et al., 2021; Titko et al., 2020). Undergraduates of universities are widely using social media platforms (Muhamad, et al., 2009; Shi, et al., 2022), in respect of social and academic (Slutsky et al., 2023; Shaikh et al., 2023). Undergrads chose social media apps to connect and read the content (Shi et al., 2022).

They mostly prefer Facebook, Instagram, and YouTube and Twitter are the least selected. Most of the students use YouTube for self-education purposes (Holden, Rada, 2011; Zreen et al., 2019). They have gained knowledge from their university studies by turning that knowledge into profit-generating new products and services with the aid of cutting-edge technology (Bailetti, 2011). Higher exposure to various social media sites is associated with improved entrepreneurial attitudes and perceptions. This association varies by gender and age group (Barrera-Verdugo, Villarroel-Villarroel, 2022). Facebook greater favorable associations in younger and male students, but Whatsapp and YouTube show more positive correlations in older and female students (Barrera-Verdugo, Villarroel-Villarroel, 2022). Social media are Web 2.0 platforms for exchanging user-generated content (Kusumawardhany, Dwiarta, 2020), and can be utilized effectively to promote a value-based perspective toward international relations (Chelysheva, 2021). Hence, business performance is improved through social media at the international level (Rideout, Gray, 2013). The primary subjects of entrepreneurship study include social media's economic benefits and business applications (Nawi et al., 2019). Social media usage shows a significant response to the students' entrepreneurs, with the 'affordable technology and knowledge required to produce a media content' (Khajeheian, 2017), and positive relationship with entrepreneurs (Emmanuel et al., 2022).

4. Results

Demographic Profile of Respondents: A descriptive analysis has provided in the demographic profile of respondents. As can be seen in Table 1 the majority of the participants 192 (69.1 %) were male, while females accounted for 86 (30.9 %) remaining. The data shows that males find more opportunities than females. The three universities (University of Sindh Jamshoro, University of Karachi, and I. B. A Sukkur) were equally represented. Each university has comprised approximately one-third. For the study mode, the highest level of education of undergraduate entrepreneurs had 97 (34.9 %) BSIV, 69 (24.8 %) BSIII, 62 (22.3 %) BSII, and BSI 50 (18 %).

The participant's largest age group was between 21 to 25 years 187 (67.3 %), followed by less than 20 years 81 (29.1 %), and above 26 years 10 (3.6 %). Meanwhile, 197 (70.9 %) participants were from urban areas, and the remaining 81 (29.1 %) belonged to rural areas. Regarding fields of study reported were business administration, commerce, information communication technology, and social sciences 99 (35.6 %), followed by multidisciplinary 82 (29.5 %) and art & humanities 23 (8.3 %). Notably, the majority of respondents have less than 2 years of business experience 193 (69.4 %), while 73 (26.3 %) have 2 to 4 years of business experience, and only 12 (4.3 %) have 4 to 7 years of business experience. Moreover, the majority of student entrepreneurs had more than 16000 (130, 46.8 %) of the distribution of monthly income, followed by less than 5000 (53, 19.1 %), 6000 to 10000 (47, 16.9 %), and 11000 to 15000 (48, 17.3 %). For business startup finance, 215 (77.3 %) student entrepreneurs used personal capital, 18 (6.5 %) used debt finance from government organizations 18 (6.5 %) used debt finance from private organizations. Moreover, the majority of participants operated their business solo 132 (47.5 %), while 91 (32.7 %) had two partners, 44 (15.8 %) had three to four partners, and only 11 (4 %) had more than five partners. In addition to this, most respondents had worked part-time 217 (78.1 %), remaining 61 (21.9 %) full-time. Additionally, the more time-consuming business operations via digitalization were 3 to 6 hours 121 (43.5 %), followed by less than 2 hours 75 (27 %), more than 6 hours 60 (21.6 %), and 22 (7.9 %) participants consumed digitalization all day. See [Table 1](#) for details.

Table 1. Demographic Profile of Respondents (n = 278)

Items	Frequency	Percentage
<i>Gender</i>		
Male	192	69.1
Female	86	30.9
<i>Universities</i>		
University of Sindh	93	33.5
University of Karachi	93	33.5
I.B. A Sukkhar	92	33.1
<i>Education</i>		
BS - I	50	18.0
BS-II	62	22.3
BS - III	69	24.8
BS - IV	97	34.9
<i>Age Group</i>		
less than 20	81	29.1
21 to 25	187	67.3
Above 26	10	3.6
<i>Area of Living</i>		
Urban	197	70.9
Rural	81	29.1
<i>Major field of Study</i>		
BBA/Commerce/IT	99	35.6
multidisciplinary	179	69.4
<i>Business Experience</i>		
less than 2 years	193	69.4
2 to 4 years	193	26.3
2 to 4 years	12	4.3
<i>Monthly Income</i>		
less than 5000	53	19.1
6000 to 10000	47	16.9
11000 to 15000	48	17.3
more than 16000	130	46.8
<i>Business Start-up Finance</i>		
Finance from the concerned university	27	9.7
Finance from Government Organization	18	6.5
Finance from a private organization	18	6.5

Personal Finance	215	77.3
<i>Number of Partners</i>		
Solo	132	47.5
2 Partner	91	32.7
3 to 4 partner	44	15.8
more than 5 partner	11	4.0
<i>Employment Status</i>		
full time	61	21.9
part-time	217	78.1
<i>Time consumption</i>		
Less than 2 hours	75	27.0
3 hours - 6 hours	121	43.5
More than 6 hours	60	21.6
All Day	22	7.9
<i>Main Product in Business</i>		
food service	51	18.3
selling of fabric	42	15.1
Accessory	48	17.30
Digital Contents	28	10.1
Others	109	39.2

Regarding the main product in the business noted 109 (39.2 %) teachers, and content writing followed by food service 51 (18.3 %), accessories 48 (17.30%) such as cosmetics and jewelry, selling of fabric 42 (15.1 %), and digital content 28 (10.1 %) such as video graphic and photographic. See [Table 1](#) for details.

Using Smart Partial Least Squares (SmartPLS) for data analysis, the PLS-SEM was used to test the hypotheses because of its sophisticated estimates in the entrepreneurial field ([Rasoolimanesh et al., 2018](#)). The study has been constructed and described through a supporting model. The bootstrapping method is used to complete the SmartPLS algorithm, and it tests the validity and reliability by using loadings, significance levels, and path coefficients ([Rasoolimanesh et al., 2021b](#)). The structural model assessment evaluates the measurement model.

Table 2. Confirmatory factor analysis and reliability (Calculation based on SmartPLS)

Constructs	Items	Factor Loadings	Alpha	rho_A	CR	AVE
SEA (Students entrepreneurs ability) (Shaowei et al., 2022 ; Bosma et al., 2004 ; Fatoki, 2011).			0.748	0.757	0.833	0.501
	SEA1	0.682				
	SEA3	0.587				
	SEA4	0.798				
	SEA5	0.727				
	SEA6	0.73				
PU (Perceived usefulness) Fred D. Davis, Jr. (1980), Davis, F.D. (1989).			0.837	0.839	0.878	0.507
	PU1	0.688				
	PU2	0.781				
	PU3	0.725				
	PU4	0.689				
	PU5	0.708				
	PU6	0.732				
	PU7	0.654				
PEOU (Perceived ease of use) Fred D. Davis, Jr. (1980), Davis, F.D. (1989).			0.488	0.502	0.741	0.491
	PEOU1	0.722				

	PEOU6	0.608				
	PEOU8	0.763				
IU(Intention of Use Digitalization) (Sieger et al., 2019)			0.801	1.801	2.801	3.801
	IU4	0.793				
	IU5	0.875				
	IU6	0.868				
SEP (Students' entrepreneurs performance) (Hasan, Almubarak, 2016).			0.757	0.768	0.836	0.507
	SEP1	0.728				
	SEP2	0.695				
	SEP3	0.732				
	SEP4	0.786				
	SEP5	0.608				
USM(Uses of social media) (Hawamdeh et al., 2022; Davis, Jr., 1980; Constantinides, Romero, Boria, 2009)			0.69	0.69	0.812	0.519
	USM4	0.669				
	USM6	0.682				
	USM7	0.762				
	USM8	0.764				
	USM x	1				
	IU	1				

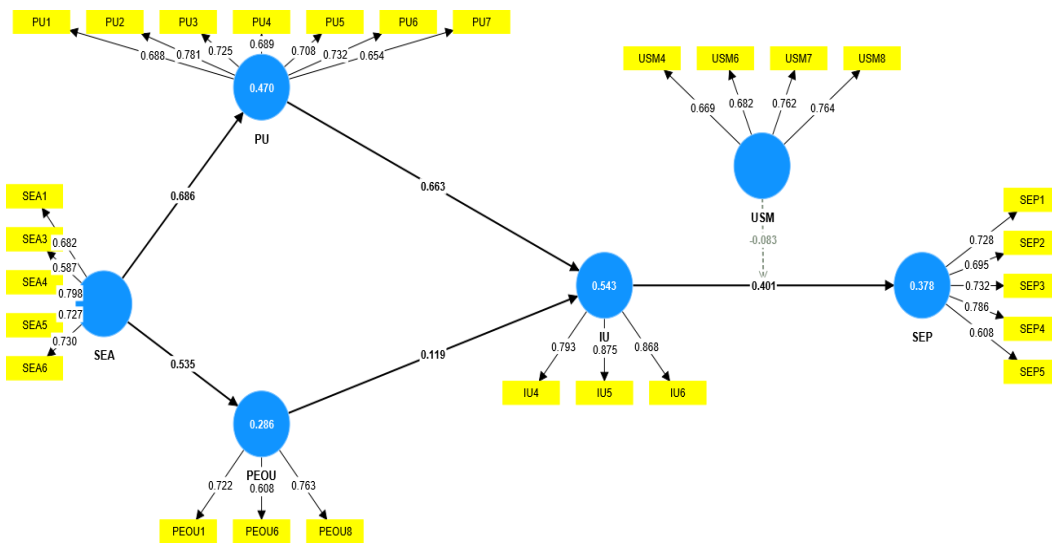


Fig. 3. Measurement Model Assessment

Measurement model Assessment: as you can see in Table 2 the factor loadings, Cronbach's alpha, composite reliability, and average variance extracted (AVE) were used to assess the measuring model and convergent validity. Tables 2, 3 and Figure 3 show that, with a few exceptions, the loadings were higher than the advised value of 0.60. In a similar vein, Table 3's Cronbach's alpha and composite reliability (CR) values were often higher than the suggested value of 0.70 (Hair et al., 2017). The variables' average variance extracted AVE values were higher than the suggested level of 0.50 in exceptional cases of PEOU and IU. The factor loadings were the lowest (<0.50) for the eliminated items. To assess the validity and reliability of the data, the heterotrait-monotrait (HTMT) ratio is a new criterion that was developed in discriminate validity (See Table 3 for details). Consequently, the HTMT ratio assesses the notions' discriminate validity. Discriminate validity is present when values are less than 0.9 (Hair et al., 2017).

Structural Model Assessment: Following the evaluation of the measurement model, the structural model assessed the hypotheses for validity and reliability. Indicators of the model's relevance were the standard errors, path coefficient, and t-value. Based on the path coefficient value as a basis, SmartPLS's bootstrapping technique determines, if the hypotheses are supported (Ringle et al., 2005). The structural model was also evaluated after the measurement assessment.

The result formulated seven hypotheses, out of which five are concerned with the moderating of SEA, PU, PEOU, and IU on H1, H2, H3, H4, H5, H6 and H7. The results depict SEA, PU, PEOU, and IU as having an impact on SEP with the moderator of USM.

Table 3. Discriminant validity (HTMT ratio)

	IU	PEOU	PU	SEA	SEP	USM
IU						
PEOU	0.774					
PU	0.887	0.883				
SEA	0.805	0.867	0.864			
SEP	0.689	0.89	0.815	0.812		
USM	0.629	0.805	0.732	0.826	0.677	

Table 4 represented that student entrepreneurs' ability impacts perceptual usefulness significantly, hence H1 is supported ($\beta = 0.686$, $SD = 0.036$, $t = 18.898$, $P < 0.05$). Moreover, the impact of students entrepreneurs ability on perceived ease of use, hence H2 supported ($\beta = 0.535$, $SD = 0.047$, $t = 11.37$, $P < 0.05$). Thus, H2 is supported. A statistically significant impact of perceived usefulness on intention to use digitalization was revealed, therefore H3 is supported ($\beta = 0.663$, $SD = 0.053$, $t = 11.37$, $P < 0.05$). The impact of perceived ease of use on intention to use social media was significant and therefore H4 is supported ($\beta = 0.119$, $SD = 0.059$, $t = 2.034$, $P < 0.05$). Meanwhile, the intention to use social media positively impacted student entrepreneurs' performance ($\beta = 0.401$, $SD = 0.067$, $t = 5.957$, $P < 0.05$), thus H5 is supported. Secondly, last, the impact of the uses of social media on student entrepreneur's performance is insignificant ($\beta = 0.312$, $SD = 0.061$, $t = 5.145$, $P < 0.05$), thus H6 is non-supported. Lastly, the impact of uses of social media and intention to use digitalization was indirectly presented as insignificant impact on students entrepreneurs performance ($\beta = -0.083$, $SD = 0.062$, $t = 1.332$, $P > 0.05$), hence indicating H7 is non-supported. Furthermore, the direct hypothesis was tested for further empirical analysis (See Table 4, 5 for details and Figure 2).

Table 4. Path Coefficient Indirect Effect

H	Relationship	Original sample (O)	Sample mean (M)	Standard deviation (SD)	t values	P values	Decisions
H1	UEA -> PU	0.686	0.689	0.036	18.898	0	supported
H2	UEA -> PEOU	0.535	0.541	0.047	11.37	0	supported
H3	PU -> IUSM	0.663	0.663	0.053	12.553	0	supported
H4	PEOU -> IUSM	0.119	0.123	0.059	2.034	0.042	supported
H5	IUSM -> SEP	0.401	0.407	0.067	5.957	0	supported
H6	USM -> SEP	0.312	0.316	0.061	5.145	0	supported
H7	USM x IUSM -> UEP	-0.083	-0.085	0.062	1.332	0.183	significant

Table 5. Path Coefficient Specific Indirect Effect

	Original sample (O)	Sample mean (M)	Standard deviation (STDEV)	T statistics (STDEV)	P values	Results
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UEA -> PU -> IUSM -> UEP	0.182	0.187	0.04	4.591	0	supported
PEOU -> IUSM -> UEP	0.048	0.051	0.028	1.725	0.085	non-supported
UEA -> PEOU -> IUSM	0.064	0.067	0.033	1.914	0.056	non-supported
PU -> IUSM -> UEP	0.266	0.27	0.049	5.402	0	supported
UEA -> PU -> IU	0.454	0.458	0.049	9.245	0	supported
UEA -> PEOU -> IUSM -> UEP	0.026	0.028	0.016	1.61	0.107	non-supported

5. Conclusion

This study has found the significant impact of social media on undergrad entrepreneur's performance with the effects of social media use during study at three public universities in Sindh, Pakistan. Moreover, the previous literature was reviewed, focusing on social media as a new communication technological impact among undergrad entrepreneurs. Besides this, the proposed TAM model has a significant modification, which focuses on the association between student entrepreneur's ability, perceived usefulness, perceived ease of use, social media use, and intention to use social media among undergraduates for the enhancement of their entrepreneurship performance. The results of the structural model are shown in [Figure 2](#).

Overall, the significant association between SEA, PU, IU, USM, and SEP was strongly shown by the model except PEOU (See [Table 5](#)). This demonstrates how undergrads are motivated to utilize social media for business as determined by SEA and PU. Because of the perceived ease of use (PEOU), flexibility, and accessibility of the Internet students can run their businesses with social media. A significant association between perceived usefulness and the uses of social media in terms of learning outcomes was also found by Al-Rahmi et al. ([Al-Rahmi et al., 2018](#)).

Using structural equation modeling, this study investigated seven hypotheses. It is worth noting that this analysis supports all seven hypothesis-stated possibilities with a perfect model fit, reliability, and validity. The first and second hypotheses of the study reveal that SAE has a beneficial effect on PU and PEOU (H1 & H2 supported). This finding supports earlier research ([Davis, 1989](#); [Dwivedi et al., 2019](#); [Ma, 2020](#); [Shaowei et al., 2022](#); [Yasir et al., 2021](#)). When using social media as a marketing channel for their businesses, students understand the possibility of bad consequences and take risks. Perceived usefulness (PU) and perceived ease of use (PEOU) have also been found a significant and positive effect on the intention to use social media disclosing that hypothesis (H3 & H4 supported) has been confirmed and supported in a review of the literature ([Gefen et al., 2003](#)). Another variable is the intention to use social media has been found a positive and significant impact on the undergrad entrepreneur's performance in Pakistan (H5 supported). The results support the literature that undergrad entrepreneurs have realized the advantages and fun related to the uses of social media on entrepreneur platforms ([Guo, 2015](#)). This can be revealed despite the lack of information that many young entrepreneur owners have non-availability of technology and institutional frameworks that support the beneficial impact of social media as a business platform ([Nawi et al., 2017](#)). Despite the favorable impact noted among the undergrad entrepreneurs. The impact of social media use on students' entrepreneurial performance to apply intention to use social media is statistically significant. Hence H6 and H7 are supported.

As you can see in [Table 6](#) the path coefficient was found to be a non-supported and indirect support of student entrepreneurs' ability towards perceived ease of use (PEOU), intention to use (IU), and student entrepreneurs performance (SEP). This could be due to the most of the undergrad entrepreneurs belong to rural areas of the country and have a lack of facilities in their hometowns ([Nawi et al., 2017](#)).

A further question in the study was whether adding additional components of use of social media (USM) and a mediator to the TAM could help explain the phenomena in the study's setting more effectively. The findings as they have been described thus far can be seen as a partial endorsement of the study's paradigm. Except for one item perceptual ease of use, all of the factors were able to discern the comprehension of undergrads entrepreneurs towards social media as a

tool of digitalization. Additionally, it demonstrates the promise of social media as seen by students and their potential will lead to usage and acceptance.

The majority of undergrad entrepreneurs know about the uses of social media in their business. Such as Facebook, WhatsApp, YouTube, Snapchat, and Instagram are the popular apps of social media, mostly used by undergrad entrepreneurs to do their online business.

In a nutshell, the application of social media has empowered youngsters by giving them benefits and opportunities. However, undergrad entrepreneurs have flourished as food services, fabric sellers, jewelers, accessories, content writers, teachers, audio-video graphics, and photographers. They are still discovering new opportunities for economic development. However, student entrepreneurs are intelligent enough to promote their businesses to the global world. The social media platform makes self-reliance and confidence in progressing their business and abilities.

There are a few limitations in this study. At first, this study evaluated the usage of social media only among undergrad entrepreneurs in only three universities in the Sindh state of Pakistan. The study has applied TAM, which was adapted and modified to carry out further research. This study was focused only on public universities of Sindh state of Pakistan, where poor students belonging to rural regions already lack information technologies, facilities, and knowledge of using new innovative technologies. Nevertheless, they are making the possibilities of startups of entrepreneurs in critical circumstances. Thus, it would accumulate a more constructive model or apply the same modeling in various geographical and cultural settings with the large sample size of the study for more generalization, and understanding of social media's impact on young entrepreneurs.

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