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Digital entrepreneurial acceptance: an examination of technology acceptance model and do-it-yourself behavior

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Abstract

The study extended the existing literature on digital entrepreneurship, do-it-yourself and technology acceptance models with the help of empirical data. It further aimed to identify the factors associated with the e-entrepreneurial acceptance by examining the integration of do-it-yourself and technology acceptance models. A data sample consisting of 200 questionnaires were collected from small–medium enterprise using the digital platforms for their business activities. Structural equation modeling was applied for testing the association of the models. A robust theoretical framework adopted to validate to use digital entrepreneurship as a standalone or along with the traditional entrepreneurial. The study was only limited to the small–medium enterprises working in the context of Pakistan. A total of 200 respondents were visited to collect the data using convenience sampling technique. The findings of this study concluded that all the variables of technology acceptance model are significantly related to the digital entrepreneurial acceptance. Similarly, factors associated with do-it-yourself behavior had a substantial influence, with the exception of perceived lack of product quality as well as perceived lack of product availability variables, which had no significant impact on digital entrepreneurial acceptance.

Keywords: Digital entrepreneurship, Do-it-yourself, Technology acceptance model, Small and medium-sized enterprises

Introduction

Globally, with the emergence of digital economies countries are putting their efforts forward to harness the benefits of digital commerce, leading to the creation of new economic models (Swamy, 2020). Due to this inevitable shift toward digital settings, existing businesses can completely transform their offline activities to online or run parallel online branches (digital entrepreneurship), (Kraus et al., 2018). Digital entrepreneurship in this study refers to a subcategory of entrepreneurship in which some or all business activities are digitized (Hull et al., 2007).

Entrepreneurial initiatives (Askerov et al., 2018) develop economic and social well-being (Aparicio et al., 2020; Chahine, 2020; Hechavarria et al., 2019; Oumlil & Juiz, 2018; Shah & Soomro, 2017) by improving innovation, productivity, employment prospects,

and economic benefits (Farrukh et al., 2018; Kirkley, 2017; Park, 2017). Governments in LDCs target entrepreneurship to address severe economic and social issues and promote economic growth (Ozaralli & Rivenburgh, 2016). It is evident from the success of Ma Huateng and Jak Ma, who despite limited resources at the start of their companies, Tencent and Alibaba, remain highly profitable companies with market capitalizations of 493 billion and 441 billion US dollars, respectively (Cho, 2018; Turban et al., 2018).

Despite its benefits, many developing countries are still struggling to accept e-commerce (Agren & Barbutiu, 2018). In the instance of Pakistan, the World Bank Group's 'Doing Business 2020' report assessed regulatory improvements and put it among the top 10 business climate improvers internationally, stating that increased functioning of online one-stop shop has made business easier in 2020 (World Bank, 2020). Furthermore, most e-commerce in Pakistan is B2C, which includes online shops like Khaadi, Bareeze, and StoneAge as well as digital merchants like HomeShopping, Shophive, and Symbios and digital businesses, e.g., Daraz and Kaymu (Hamid & Khalid, 2016). However, according to Ahmed (2019), economic, sociopolitical, and cognitive barriers prevent Pakistan from fully utilizing e-commerce. Most digital entrepreneurs encounter risks and difficulties throughout their early stages of business development because of things like scarcity of resources, both materially and monetarily, and a lack of adequate marketing and project management capabilities (Ferretti, 2019; Sarpong & Rawal, 2020). Heavy taxes, privacy and data protection worries, cybercrimes, the absence of e-payment options (like PayPal), a shoddy logistics system, consumer protection issues, strict regulatory restrictions, and overall a dearth of a robust ecosystem for digital entrepreneurship are the main issues associated with the e-commerce in Pakistan (Commerce Division, 2019). These challenges have created greater concerns and risks for the digital entrepreneurs intend to launch entrepreneurial ventures. Concerning this, several studies emphasized the importance of exploring factors to model entrepreneurial intent (EI), (Farrukh et al., 2018; Ozaralli & Rivenburgh, 2016; Shah & Soomro, 2017). Kraus et al. (2018) also urged researchers to focus on finding and modeling quantitative indicators of digital entrepreneurship. Thus, the fundamental purpose of this study is to investigate the characteristics that encourage digital entrepreneurship in Pakistan.

Previous studies in this regard suggested behavioral, normative, and control beliefs in the direction of future research (Vamvaka et al., 2020). According to Matlay and Westhead (2005), ICT investment and digital entrepreneurial commitment are important factors affecting the innovative entrepreneurial process. Furthermore, the technology acceptance model (TAM) is the most commonly studied model for investigating technology acceptance in the corporate setting (Davis et al., 1989). Oumlil and Juiz (2018) used the TAM to investigate the factors affecting investment in tourism IT projects. In the social sciences, TAM is the most extensively used and reported model (Teo et al., 2019). In addition, disenchantment and satisfaction are two post-adoption variables that TAM identified to model technology acceptance behavior (Sun, 2009). In addition to this, the mainstreaming of DIY entrepreneurship in the academic research has been encouraging (Sarpong et al., 2020). Ritz et al. (2019) supported the extension of DIY behavior beyond home improvement products and enlarged the concept of digital legacy distinction between large and small enterprises. The DIY behavior model (Wolf & McQuity, 2013) may be used to attract company owners and managers to join the

digital platform (Nair & Sunil, 2020). In this sense, economic benefit perception, product quality and product availability are all appealing DIY adoption factors (Atkinson, 2006; Watson & Shove, 2008; Williams, 2004, 2008; Wolf & McQuity, 2013). In addition, Third Wave DIY is claimed to be trailblazing for prosumption, innovation, and entrepreneurship (Anderson, 2012; Fox, 2014; Gershensfeld, 2012; Hatch, 2014). The resemblance between DIY enthusiasts, small business owners, and managers justifies its combination with TAM (Ritz et al., 2019). Nair and Sunil (2020) proposed combining DIY behavior with TAM model to explain the adoption of digitalization and its effects.

Although earlier studies by Ritz et al. (2019) and Nair and Sunil (2020) tested the integration of DIY behavior and TAM for digital marketing adoption based on earlier research combining TAM with self serve technology (Chowdhury et al., 2014), the investigation of these models for digital entrepreneurial acceptance represents a promising ground for research. As a result, the purpose of this research is to bridge that gap. Due to the lack of research on the topic (Azhar et al., 2010; Farrukh et al., 2018; Ozaralli & Rive-nburgh, 2016; Shah & Soomro, 2017), this study further intends to investigate both these models specifically in the Pakistani SME sector. Finally, unlike previous studies that only used LISREL 8.80 for hypothesis testing, this study uses AMOS 21 to evaluate both the measurement and structural models of structural equation modeling.

Theoretical support

Various models have been proposed to study users' behavioral intentions, because they represent real behavior (Lepoutre et al., 2011; Tausch & Becker, 2013). According to Ajzen's (1985) theory of planned behavior (TPB), this is due to attitude, subjective norms and behavioral control. Beside this, technology acceptance model [TAM] (Davis et al., 1989), a modified version of theory of reasoned action (Fishbein & Ajzen, 1977), looks in to the factors that influence technology acceptance among users (Muchran & Ahmar, 2019). The model states that a person's attitude toward a technology determines its use (Davis & Venkatesh, 2004; Davis et al., 1989; Venkatesh et al., 2012). Sarpong et al., (2020) added that mainstream research should include DIY entrepreneurship to measure entrepreneurial attitude. The DIY behavior, which represents the concept of prosumption (Toffler, 1980), predicts that in the future, individuals will become increasingly involved in the production of the items they use on a regular basis (Kotler, 1986; Xie et al., 2008).

Hypothesis development and research framework

Aforementioned, the prime goal to kick off this endeavor is to explore the effectiveness of critical motivations for the readiness factors affecting the digital entrepreneurial behavior and the associated outcome factors involved in the same paradigm for thriving launch such projects. Considering the aforementioned discussion, the following hypotheses are proposed to further investigate the identified predictors in the case at hand.

Perceived usefulness (PU) and digital entrepreneurial intention

The earlier studies on the subject area found that perceived usefulness directly influences users' behavioral intention to use technology (Chin & Todd, 1995; Davis, 1989). In addition, the more useful the technology is perceived by the user, the more likely the

user accepts it (Adrian et al., 2005). Ma et al. (2017) also argued that perceived usefulness had a positive effect on consumers' purchase intention using TAM. Tsourela and Nerantzaki (2020) concluded that perceived usefulness influences positive attitude and behavior. Thus, it is assumed;

H1a: Perceived usefulness has significant effect on digital entrepreneurs' intention to use digital entrepreneurship.

Perceived ease of use (PEOU) and digital entrepreneurial intention

PEOU also influences end-user attitude and behavior (Chin & Todd, 1995; Davis, 1989). Many studies on digital business have found the PEOU to be a contributing factor to attitude (Moon & Kim, 2001; O'Cass & Fenech, 2003). Perceived usefulness and ease of use jointly determine users' attitudes toward the system, which affects users' behavioral intention (BI), and BI determines actual system use (Jan & Contreras, 2011). The PEOU has a significant impact on perceived utility, attitude, and purchase intention (Zhao & Wang, 2020). Perceived ease of use predicts attitude, and attitude then predicts behavior (Tsourela & Nerantzaki, 2020). Thus, it is deduced that;

H1b: Perceived ease of use has significant effect on digital entrepreneurs' intention to use digital entrepreneurship.

To briefly explore the problem under investigation literature suggest that the innovation diffusion and technology acceptance studies used satisfaction variable, disenchantment factor and intentions to continue use construct as outcome variables (Bianchi & Andrews, 2012; Jin et al., 2010; Son & Han, 2011; Sun, 2013).

Intention to use scale (IS) and DIY behavior

Wijaya and Budiman (2019) pointed out in his study on SMEs that intention to adopt a technology is considered to be the desire of an individual to use technology for different kinds of purposes like information systems, business processes and especially in the business management for major decision making. The adoption of technological solutions for the implementation of DIY business idea can accelerate the process of new business venture. Nair and Sunil (2020) thought that digitalization is undertaken as DIY behavior by business professional in the context of technological acceptance in the business environment.

H1c: Intention to use digital entrepreneurship has significant effect on digital entrepreneurs using digital entrepreneurship.

Disenchantment (DIS) and digital entrepreneurial intention

Disenchantment discontinuance with IS use causes discontinuance (Parthasarathy & Bhattacharjee, 1998; York & Turcotte, 2015). Discontinuance refers to a user's decision to stop using a technological innovation (Parthasarathy & Bhattacharjee, 1998), and is a key outcome in information system (IS), research (Bhattacharjee, 2001; Buchwald et al., 2015; Fan & Suh, 2014). According to Bhattacharjee and Premkumar (2004), disconfirmation occurs when users' original expectations and actual performance differ; causing

negative perceptions and dissatisfaction with IS using (Bhattacharjee, 2001). Its disappointments may only increase technological disenchantment (Belk et al., 2021). Therefore, it is assumed that;

H2a: The quantity of digital entrepreneurial activities has significant effect on disenchantment discontinuance to use of digital entrepreneurship.

Satisfaction scale (SC) and digital entrepreneurial intention

The term "satisfaction with technology usage" refers to a valid disparity between a person's expectations and actual system use (Bhattacharjee, 2001). To put it another way, it may be conceived of as an emotive arousal with a certain valence (Briggs et al., 2008). Users' positive perceptions and satisfaction with their use of the information system will increase as a result of the positive confirmation, resulting in continued use of the information system (Bhattacharjee, 2001). As a result, increased usage may result from user satisfaction with a technology (Shih & Venkatesh, 2004). The pleasure derived from using technology may lead to an increase in its use in the future (Nair & Sunil, 2020).

H2b: The quantity of digital entrepreneurial activities has significant effect on satisfaction to use digital entrepreneurship.

Along with TAM, scholars tested DIY behavior in their study on e-marketing adoption with the aforementioned variables with the below mentioned observations (Nair & Sunil, 2020; Ritz et al., 2019).

Perceived economic benefits (PECB) and DIY behavior

According to Wolf and McQuitty (2013), the prospective economic benefits of DIY practices are weighed to the purchase of comparable items and services. It is also used to evaluate the relative economic benefits of DIY projects goods and services (Wolf & McQuitty, 2011). Previous literature in the subject domain recommends economic gain as the motivator to engage in DIY behavior (Wolf & McQuitty, 2013). In addition, Nair and Sunil (2020) also reported that comprehended economic gain is mainly significantly related to digital market behavior. One of the strong measures to embark on DIY endeavors decision is the need for saving and economically affluence (Wolf & McQuitty, 2013). Although mostly studies confirm a positive association between DIY activities and income (Bogdon, 1996; Bush et al., 1987), contrarily (Pollakowski, 1988; Swartzlander & Bowers, 1989; Williams, 2004) reported negative associated between them. This contradiction requires further inquiry thus the following hypothesis is established for the purpose. Hence, it is assumed that

H3a: Perceived economic benefits have significant effect on digital entrepreneurs using digital entrepreneurship.

Lack of product quality (PLOQ) and DIY behavior

Individuals may be more likely to do it themselves if the goods and services are of poor quality (Wolf & McQuitty, 2013). One of the motivations for starting an e-commerce business is a lack of quality in existing services or products; such opportunities can

influence DIY decisions to self-develop goods or perform self-service (Brown et al., 2005; Lusch et al., 1992). Lack of product quality, perceived economic advantage, and product accessibility were discovered to predict willingness to adopt DIY behavior (Nair & Sunil, 2020). According to a German institute study, 60% of DIYers believe their own product quality is superior to those already on the market, implying that poor quality is a significant factor in DIY behavior (Institut für Freizeitwirtschaft, 1999). Wolf and McQuitty (2013) suggested further research to confirm this relationship as it was not significant in their study.

H3b: Lack of Product quality has significant effect on digital entrepreneurs using digital entrepreneurship.

Lack of product availability (PLPA) and digital entrepreneurship

Nair and Sunil (2020), in their study on digital marketing acceptance discovered that the perceived lack of availability of digitalization opportunities is associated with the subject's behavior in a positive way. The continuous or long unavailability of products in the market place promotes dissatisfaction among consumers which may result in product switching or may turn into positive business opportunity. It is, therefore, supposed that

H3c: Lack of product availability has significant effect on digital entrepreneurs using digital entrepreneurship.

The output variables of DIY behavior model are self-improvement, self-control and excitement and fun, according to (Atkinson, 2006; Nair & Sunil, 2020; Watson & Shove, 2008; Williams, 2004, 2008; Wolf & McQuitty, 2011, 2013), which present insights about identity and experience of creating digitalization as a DIY behavior.

Self-improvement (SOI) and digital entrepreneurship

Individuals with entrepreneurial competences are better able to take risks, address problems, set challenging goals with a can-do attitude to grasp the opportunities and as a result, sensing more meaningful and improved life (Seikkula-Leino & Salomaa, 2021). They can boost their self-esteem and self-belief using innovative knowledge and talent in their DIY projects to make a better impression on those around them (Wolf & McQuitty, 2013). Khademi and Bujdosó (2020) stated the ability to express and realize one's own personality and worth through a variety of innovative behaviors is the most important aspect of DIY. It is thus assumed that;

H4a: Involvement in digital entrepreneurship by digital entrepreneurs is significantly linked to a sense of self improvement.

Sense of control (SOC) and digital-entrepreneurship

The entrepreneurs of a complete DIY project are seen as individuals with unusual or unusual behaviors who can control their own environment to some extent (Csikszentmihalyi & Halton, 1981). This characteristic signifies the ability to attain personal goals and impact personal conditions (Lusch et al., 1992; Skinner, 1996). The participants felt empowered by DIY activities in the study of Wolf and McQuitty (2011). Unlike

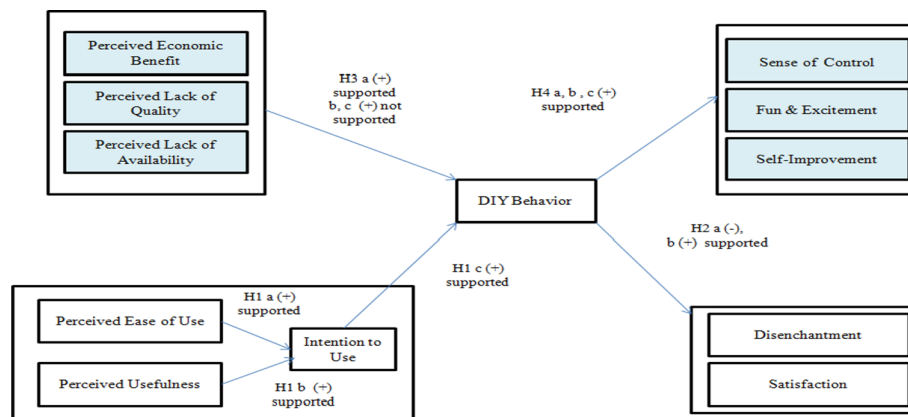


Fig. 1 TAM and DIY digitalization model

traditional markets, DIY activities give perpetrators more control over their own destinies (Wolf & McQuitty, 2013). Nair and Sunil (2020) discovered a link between digital marketing and a sense of control.

H4b: Involvement in digital entrepreneurship is significantly tied with sense of Control.

Sense of fun and excitement (SOFE) and digital entrepreneurship

The satisfaction of achieving one's goals and the enjoyment of the experience gained in the process lead to feelings of joy and excitement (Holbrook, 2006; Wicks et al., 2005). Involvement in activities for the sake of enjoyment provides psychic benefits (Lusch et al., 2007). Self-improvement, control, and excitement are all related to digital marketing behavior (Nair & Sunil, 2020). In addition, people who design their own products can enjoy the process, which improves the outcome (Schreier, 2006).

H4c: Involvement in digital entrepreneurship by digital entrepreneurs is significantly tied with sense of fun and excitement.

Based on the above discussion the TAM and DIY digitalization model is presented below (Fig. 1).

Research methodology

To investigate TAM and DIY behavior in the context of digital entrepreneurship the proposed models and established hypotheses were tested by an organized analysis plan.

Research design

It has been found that small enterprises have different technology trends and acceptance pace relatively to large businesses (Harrigan et al., 2011; Nguyen et al., 2015). In addition, the small businesses face challenges of limited funds as well as related to technical, financial, managerial, and temporal than large enterprises with the implementation of digitalization (Nair & Sunil, 2020). Apart from lacking of knowledge about available opportunities in the market, accepting technological change is also an obstacle (Kamalian et al., 2011). Considering these factors this phenomenon needs further significant

investigation of SMEs' technology acceptance intention. Therefore, evidences were collected from 215 SMEs organizations having at least 10 and a maximum of 250 employees (SMEDA, 2018).

Study settings

The study adopts positivistic descriptive analytical and quantitative approach. Cross-sectional research design was used to collect data from maximum number of respondents at a time on one point in a non-contrive settings.

Data collection

A survey research method was used to collect the data using an adopted context manipulated questionnaire (Antioco & Kleijnen, 2010). Following the study of Ritz et al. (2019) all the measures of DIY behavior and outcomes scales were selected and adopted from (Wolf & McQuitty, 2013), while the scales related to TAM were adopted from Davis (1989).

All of the items were chosen after a thorough review of the literature, and a five-point Likert scale (with 1 strongly disagree and 5 strongly agree) was used for measurement, including the intention measure from (Kleijnen et al., 2007), which used a semantic differential scale with pairs such as unlikely to likely, improbable to probable, impossible to possible, uncertain to certain, and definitely would not use to definitely would use, while multiple act criterion scale (Epstein, 1980; Lastovicka & Joachimsthaler, 1988) was used for the DIY measure based upon the study of (Wolf & McQuitty, 2013).

Results

This section discusses the statistical analysis from the findings of this initiative prior to moving the structure equation modeling (SEM), section. Out of 240 distributed questionnaires, 215 were submitted back and 15 among the submitted were discarded due to inappropriateness or partially filled. The percentage of valid data collection was 83% that represents 200 useful questionnaires for further data analysis.

Table 1 contains the descriptive statistics which show the profile characteristics of the sample. The data were collected from more than 07 cities from different provinces (KPK = 33%, Punjab = 38%, Sindh = 15% and other = 14%). The male participants accounted for 78.5%, while the female participants accounted for 21.5%. Furthermore, Table 1 also exhibits the profile summary of the participants showing that 78.5% of male, while 21.5% of female participated in the study.

Moreover, 32% of SMEs belong to KPK (Peshawar = 21.5%, Mardan = 11.5%), 38% Punjab (Gujranwala = 13.5%, Lahore = 11%, Rawalpindi = 13.5%), 15% Sindh (Karachi = 15%) and 14% of SMEs belong to other regions of the country. The table illustrates that 18.5% of SMEs are working in servicing industry, 20.5% in manufacturing, 24% in sale, 18.5% in marketing and the rest of 18.5% belong to other industries. Finally, 33.5% of the SMEs have more than 10 to 50 employees, 40.5% have 51 to 100, 15% have 101 to 150, 07% have 151 to 200 and 03.5% have 201 to 250 number of employees.

Table 1 Profile summary of the SMEs and respondents

Description	Frequencies	Percentages
Gender		
Male	156	78.5
Female	43	21.5
Region		
KPK		
Peshawar	43	21.5
Mardan	23	11.5
Punjab		
Gujranwala	27	13.5
Lahore	23	11.5
Pindi	26	13.0
Sindh		
Karachi	28	15.0
Other	30	14.0
Industry type		
Servicing	37	18.5
Manufacturing	41	20.5
Sale	48	24.0
Marketing	37	18.5
Other	37	18.5
No. of employees		
10–50	67	33.5
51–100	81	40.5
101–150	30	15.0
151–200	15	07.5
201–250	07	03.5

Source: Authors own document

Confirmatory factor analysis (CFA)

In the first step to check the model fit, the CFA was conducted using AMOS 21. The covariances between questionnaire items were satisfactory which resulted in acceptable fit. The indices ($CMIN/DF = 1.314$, $CFI = 0.954$, $SRMR = 0.046$, $RMSEA = 0.040$ and $PClose > 0.05$), altogether corresponds a desirable model fit.

The major parts of the SEM techniques include assessment of measurement model and structural models.

Measurement model evaluation

Anderson and Gerbing (1988) proposed two step methods for the assessment of measurement model. First, the convergent validity and reliability must be ensured (Fig. 2).

Composite reliability (CR), and average variance extracted (AVE), were used to examine the convergent validity. As shown in Table 2 all the factors loaded, respectively, on their constructs with values greater than 0.5 (Bagozzi & Yi, 1988). There was no construct reported having CR below the cut off value of 0.7 (Bagozzi & Yi, 1988). All of the

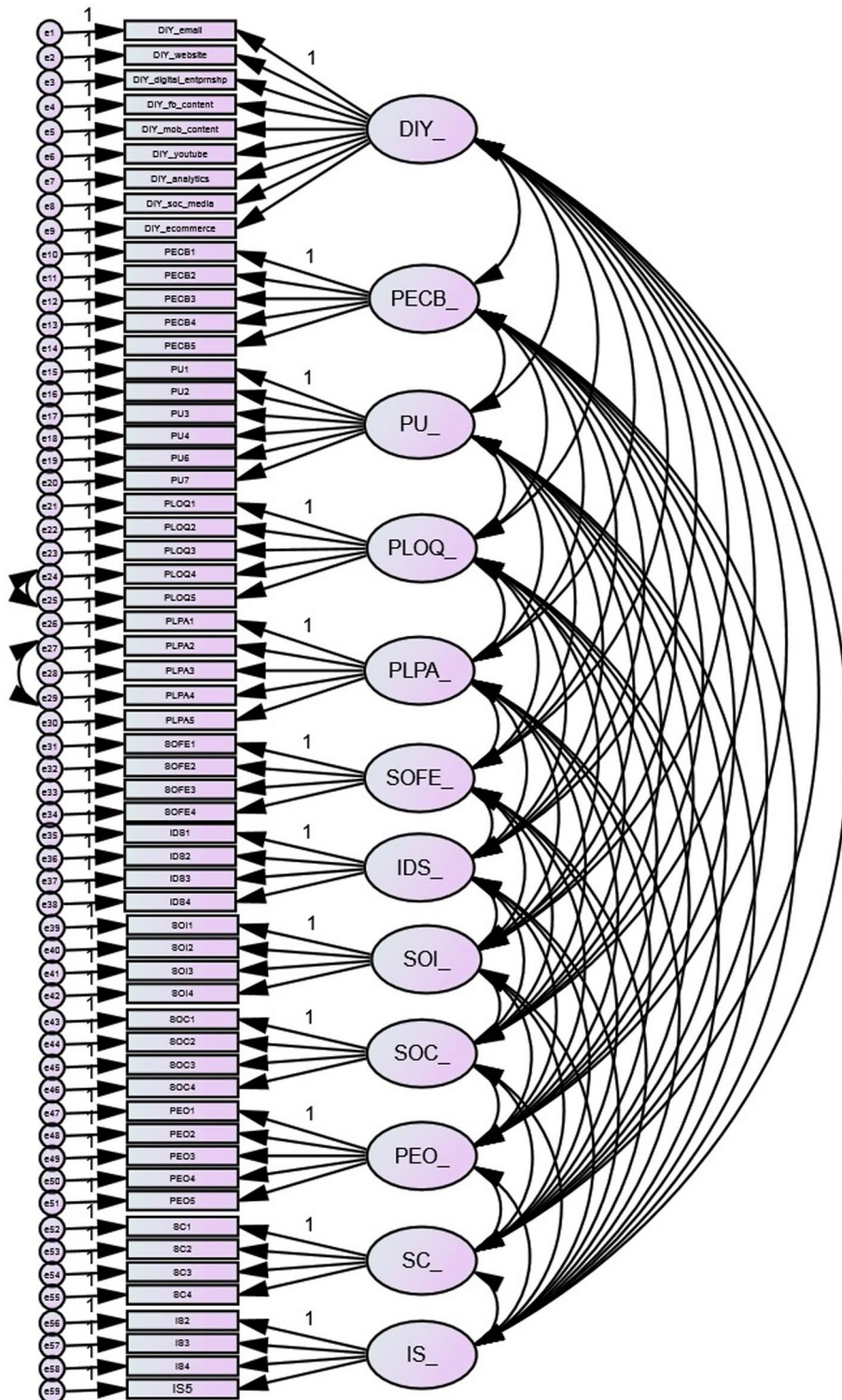


Fig. 2 Measurement model

Table 2 Statistics of construct items

Variable	Items	Factor loading	Cronbach's	CR	AVE	Mean	S.D.
DIY	DIY_email	0.80	0.94	0.95	0.72	3.80	0.78
	DIY_website	0.80					
	DIY_digital_entprnshp	0.85					
	DIY_fb_content	0.90					
	DIY_mob_content	0.84					
	DIY_youtube	0.79					
	DIY_analytics	0.89					
	DIY_soc_media	0.88					
	DIY_ecommerce	0.84					
PLOQ	PLOQ1	0.72	0.89	0.89	0.61	3.61	0.72
	PLOQ2	0.84					
	PLOQ3	0.83					
	PLOQ4	0.77					
	PLOQ5	0.74					
PU	PU1	0.84	0.91	0.91	0.65	3.79	0.74
	PU2	0.79					
	PU3	0.78					
	PU4	0.74					
	PU6	0.82					
	PU7	0.84					
	PLPA	PLPA1					
PLPA2		0.84					
PLPA3		0.79					
PLPA4		0.82					
PLPA5		0.71					
PECB	PECB1	0.78	0.89	0.89	0.63	3.82	0.77
	PECB2	0.78					
	PECB3	0.78					
	PECB4	0.79					
	PECB5	0.83					
PEO	PEO1	0.79	0.89	0.89	0.64	4.01	0.72
	PEO2	0.83					
	PEO3	0.80					
	PEO4	0.73					
	PEO5	0.82					
IS	IS2	0.73	0.83	0.83	0.56	3.78	0.69
	IS3	0.75					
	IS4	0.80					
	IS5	0.70					
	IS5	0.70					
SC	SC1	0.86	0.90	0.90	0.69	3.74	0.82
	SC2	0.83					
	SC3	0.78					
	SC4	0.85					
SOI	SOI1	0.87	0.89	0.89	0.68	3.70	0.85
	SOI2	0.84					
	SOI3	0.76					
	SOI4	0.82					

Table 2 (continued)

Variable	Items	Factor loading	Cronbach's	CR	AVE	Mean	S.D.
SOFE	SOFE1	0.82	0.90	0.90	0.70	3.71	0.81
	SOFE2	0.83					
	SOFE3	0.82					
	SOFE4	0.86					
DIS	DIS1	0.83	0.91	0.91	0.73	3.99	0.90
	DIS2	0.81					
	DIS3	0.90					
	DIS4	0.88					
SOC	SOC1	0.84	0.89	0.89	0.69	3.72	0.78
	SOC2	0.85					
	SOC3	0.77					
	SOC4	0.82					

Source: Authors own document

Table 3 Criteria for discriminant validity

	1	2	3	4	5	6	7	8	9	10	11	12
SC	0.83											
DIY	0.75	0.84										
PECB	0.55	0.72	0.79									
PU	0.67	0.8	0.69	0.8								
PLOQ	0.69	0.69	0.6	0.64	0.78							
PLPA	0.49	0.5	0.41	0.5	0.37	0.77						
SOFE	0.59	0.66	0.47	0.63	0.61	0.31	0.83					
DIS	0.05	0.16	0.05	0.07	0.07	0.08	0.07	0.86				
SOI	0.55	0.59	0.4	0.54	0.34	0.5	0.41	0.2	0.82			
SOC	0.71	0.75	0.62	0.63	0.66	0.39	0.66	0.05	0.45	0.82		
PEO	0.68	0.79	0.76	0.72	0.68	0.5	0.59	0.14	0.51	0.71	0.8	
IS	0.62	0.73	0.66	0.65	0.61	0.42	0.51	0.01	0.53	0.63	0.71	0.74

The diagonal row highlighted in bold represents the square roots of the AVE

constructs satisfactorily had higher AVE value than 0.5 (Fornell & Larcker, 1981). Hence, convergent validity was achieved.

The internal consistency of items and composite reliability ensures the reliability. Table 2 clearly demonstrates that CR and Cronbach's value of all the variables were above the cutoff value of 0.7, thus reliability is achieved by the model.

In the second step, the discriminant validity was confirmed by the square root values of AVE, shown diagonally and highlighted as bold in Table 3 which were higher than the rest of correlation values.

Structural model evaluation

This section of SEM model assesses the association between latent variable or between exogenous and latent variables. The resulting estimates (CMIN/DF = 1.378, CFI = 0.953, TLI = 0.930, IFI = 0.0934, SRMR = 0.063, RMSEA = 0.044 and PClose = 0.993), displayed

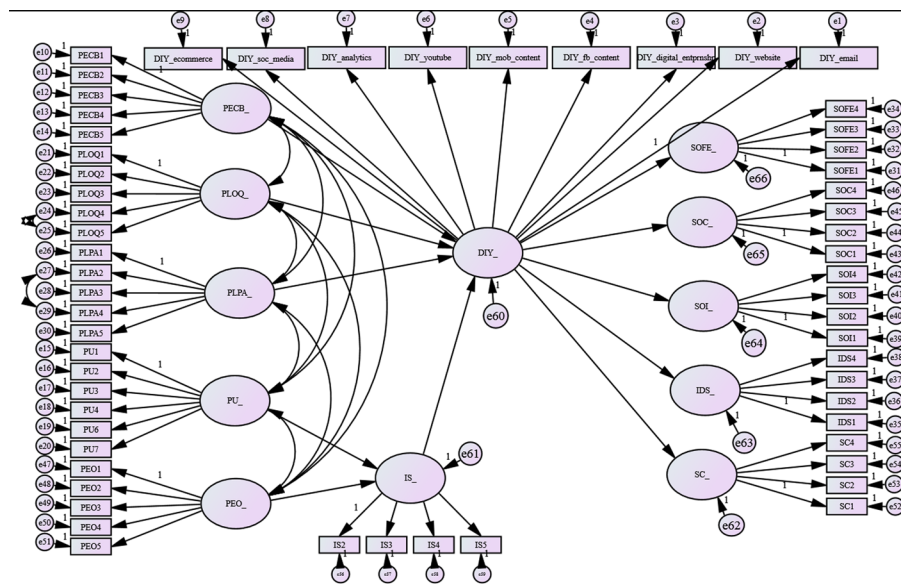


Fig. 3 Structural model

Table 4 Summary of hypotheses

Path	Estimate	S.E	C.R	P	Hypothesis	Decision/Result
IS < --- PU	0.19	0.07	2.43	0.01	H1a	Accepted
IS < --- PEO	0.56	0.09	5.88	0.00	H1b	Accepted
DIY < --- IS	0.37	0.06	3.12	0.00	H1c	Accepted
DIY --- > DIS	- 0.10	0.03	3.26	0.00	H2a	Accepted
DIY --- > SC	0.14	0.05	2.45	0.01	H2b	Accepted
DIY < --- PECB	0.21	0.05	3.68	0.00	H3a	Accepted
DIY < --- PLOQ	0.04	0.07	0.69	0.48	H3b	Rejected
DIY < --- PLPA	0.05	0.06	0.86	0.38	H3c	Rejected
DIY --- > SOC	0.13	0.06	2.24	0.02	H4b	Accepted
DIY --- > SOFE	0.15	0.05	2.94	0.00	H4c	Accepted
DIY --- > SOI	0.85	0.03	1.88	0.05	H4a	Accepted

by the model represent a good fit which provides a solid ground for further consideration of hypothesis testing of this study (Fig. 3).

Table 4 shows positive relation of perceived usefulness (PU), and perceived ease of use (PEO), with intension scale ($\beta = 0.19, p < 0.05$; $\beta = 0.56, p = 0.01$), respectively. These findings established hypotheses H1a and H1b. In addition, intension scale has been reported to have significant relation with DIY behavior ($\beta = 0.208, p < 0.05$), supporting H1c. Furthermore, the perceived economic benefit of DIY model was identified to have substantial positive relationship. ($\beta = 0.21, p = 0.01$), unlike other two variables, i.e., perceived lack of product quality and perceived lack of product availability having positive but insignificant relation ($\beta = 0.048, p > 0.05$; $\beta = 0.056, p > 0.05$), with DIY behavior. On the basis of these results hypothesis H3a is accepted, while H3b and H3c are rejected, respectively. Considering the post adoption factor of TAM model, negative relationship

has been informed by the results of the model between disenchantment discontinuance scale and DIY behavior ($\beta = -0.103$, $p < 0.05$), establishing hypothesis H2a. On the other hand, significant relationship has been established between satisfaction scale (SC), and DIY behavior ($\beta = 0.208$, $p < 0.05$) supporting hypothesis H2b. Moreover, the post adoption factors of DIY model, i.e., sense of control (SOC), sense of fun and excitement (SOFE), and self-improvement (SOI), showed significant relationship with DIY behavior ($\beta = 0.135$, $p < 0.05$; $\beta = 0.156$, $p < 0.05$; $\beta = 0.072$, $p < 0.05$). Thus, hypotheses H4a, H4b and H4c are accepted.

Discussion

This study aimed to examine the TAM and DIY model in the context of digital entrepreneurship acceptance while exploring the contributing factors in the subject matter. The research findings based on the empirical evidences collected from SMEs suggest that model fit rules are satisfied by the proposed model to study digital entrepreneurial acceptance. The perceived usefulness and perceived ease of use both are highly contributing factors toward DIY behavior via e-entrepreneurial intention. The post acceptance factors of TAM, i.e., satisfaction scale and disenchantment were confirmed to have significant positive and negative relationship, respectively, in the conceptual model. Moreover, the perceived economic benefit is also an important predictor of e-entrepreneurial acceptance; however, the other factors of the DIY model, namely, perceived level of quality and perceived level of product availability, showed no significant relationship. In addition, the post adoption factors self-improvement, sense of fun and excitement and self-control established a positive considerable relationship with the digitalization of entrepreneurship as a DIY behavior. These findings are consistent with and supported by the earlier studies as demonstrated in Table 5.

Conclusion

This research synthesized and broadened the literature on two distinct domains of study: digitalization and entrepreneurship, the former using the TAM and the latter using the DIY behavior model. As a result, it is interdisciplinary, incorporating both technological and managerial domains. The research mainly established a good relationship between TAM, DIY model and e-entrepreneurial acceptance in the SMEs sector of Pakistan. The results concluded that firms which are comfortable with using digital entrepreneurial platforms are more likely to embrace it. Beside this, businesses who find the digital platform to be beneficial are more likely to use it. Despite any discomfort encountered as a result of usage, firms with digital entrepreneurial expertise stated a commitment to maintain their digital presence. Apart from the technological background, the findings of the study revealed additional aspects for consideration in the field of digital entrepreneurial adoption in Pakistan's SME sector. The results declared that small businesses like to embark on digital entrepreneurial activities for the sake of economic benefits. Moreover, firms with a digital entrepreneurial experience enjoy such activities establishing a fact that people involved in the DIY initiatives have a lot of fun and enthusiasm doing them. Furthermore, the DIYers have greater self-control to chase their dreams and have the confidence to tackle with different kinds of challenges and risk that may arise. Consequently, the DIYers evolve and feel progress in their personality. In conclusion,

Table 5 Academic literature confirming the results of the current study

Path	Relationship	Hypothesis	Decision	Reference/source/authors
IS < ---PU	Intention to use Scale < ---Perceived Usefulness	H1a	Supported	Davis (1989); Venkatesh and Davis (2000); Ma et al., (2017); Tsourela and Nerantzaki (2020); Ritz et al. (2019); Nair and Sunil (2020)
IS < ---PEO	Intention to use Scale < ---Perceived Ease of Use	H1b	Supported	Davis (1989); Moon and Kim (2001); Oumlil and Juiz (2018); Ritz et al., (2019); Zhao and Wang (2020); Nair and Sunil (2020)
DIY < ---IS	Do it yourself behavior (Digitalization) < ---Intention to use Scale	H1c	Supported	Wijaya and Budiman (2019); Ritz et al. (2019); Nair and Sunil (2020)
DIY --- > DIS	Do it yourself behavior (Digitalization) - > Disenchantment	H2a	Supported	Bhattacharjee (2001); Bhattacharjee and Premkumar (2004); Ritz et al. (2019); Nair and Sunil (2020)
DIY --- > SC	Do it yourself behavior (Digitalization) - > Satisfaction Scale	H2b	Supported	Shih and Venkatesh (2004); Bhattacharjee (2001); Ritz et al. (2019); Nair and Sunil (2020)
DIY < ---PECB	Do it yourself behavior < ---Perceived Economic Benefit	H3a	Supported	Bogdon (1996); Bush et al., (1987); Wolf and McQuitty (2013); Ritz et al. (2019); Nair and Sunil (2020)
DIY < ---PLOQ	Do it yourself behavior < ---Perceived Lack of Product quality	H3b	Not supported	Wolf and McQuitty (2013); Ritz et al. (2019); Nair and Sunil (2020)
DIY < ---PLPA	Do it yourself behavior - > Perceived Lack of Product Availability	H3c	Not supported	Ritz et al. (2019); Nair and Sunil (2020)
DIY --- > SOC	Do it yourself behavior - > Sense of Control	H4b	Supported	Wolf and McQuitty (2013); Ritz et al. (2019); Nair and Sunil (2020)
DIY --- > SOFE	Do it yourself behavior - > Sense of Fun and Excitement	H4c	Supported	Wolf and McQuitty (2013); Ritz et al. (2019); Nair and Sunil (2020)
DIY --- > SOI	Do it yourself behavior - > Self-Improvement	H4a	Supported	Wolf and McQuitty (2013); Ritz et al. (2019); Nair and Sunil (2020)

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both models' major predictors, particularly PU, PEO, attitude, disenchantment, and satisfaction of TAM, were discovered to be the main enablers of digital entrepreneurial acceptance, whereas perceived economic benefits, sense of fun and excitement, sense of control, and self-improvement were discovered to be the main enablers of digital entrepreneurial acceptance.

Apart from its theoretical implication this study has many practical implications. Most importantly, this endeavor provides additional empirical evidences in the SMEs sector for digital entrepreneurial acceptance. The findings of the research can help policy makers both in public and private sectors to formulate strategies for e-entrepreneurial and DIY activities.

Limitation

The scope of this research is only limited to SMEs as well as the sample size was not adequate. Only data from conveniently accessible cities of different regions were collected. Moreover, the study results are only confined to the developing country-like Pakistan and it cannot be generalized to other parts of the topographical areas.

Future research

This research opens up a new channel for future investigation in the topic under inquiry in the context of Pakistan; however, the results of the present study can be applied to all the SMEs more precisely having the same industry type as shown in Table 1. On the basis of the limitation further studies may consider large sample size in different sectors with different sampling approaches. It is pertinent to test the subject with different methodologies to further evaluate these models and structured questionnaire can be used for data collection. The present study was cross sectional in nature so longitudinal studies are recommended to examine the causality association more explicitly. Cross-national comparisons can be very useful in further verifying the findings of this research.

Abbreviations

TAM	Technology acceptance model
DIY	Do-it-yourself
LDCs	Least developed countries
EI	Entrepreneurial intention
ICT	Information and Communications Technology
B2B	Business to business
B2C	Business to customer
SME	Small and medium enterprises
SEM	Structural equation modeling
TPB	Theory of planned behavior
PU	Perceived usefulness
PEOU	Perceived ease of use
IS	Intention to use scale
DIS	Disenchantment
SC	Satisfaction scale
PECB	Perceived economic benefits
PLOQ	Perceived lack of product quality
PLOP	Perceived lack of product availability
SOI	Self-improvement
SOC	Sense of control
SOFE	Sense of fun and excitement

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Author contributions

MI: major contributor in writing the manuscript. AD: analyzed and interpreted the data and proof reading of the article. MH: wrote the methodology section and performed the correspondence task. IA: administration of the task and critically review the paper. All authors read and approved the final manuscript.

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Declarations

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All the materials used from primary and secondary source data were ethical. Informed consent was obtained from all individual participants included in the study.

Consent for publication

The entire participant has consented to the submission of the paper to the journal for publication.

Competing interests

The authors declare that there is no competing interest for this article.

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