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**Article**

## Predictors of self-employment behavior among business graduates

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## MANAGEMENT | RESEARCH ARTICLE

# Predictors of self-employment behavior among business graduates

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**Abstract:** Self-employment skills (also known as entrepreneurship) play a vital role in the economic development of a country, thus should be given enough attention while designing business education programs. The purpose of this study is to investigate the predictors of self-employment behavior amongst business students in Pakistan. In this regard, the impact of entrepreneurial education, business incubation programs, students' entrepreneurial self-efficacy, and social entrepreneurial attitude on students' entrepreneurial intention and behavior was examined. Also, the moderating role of psychological empowerment on the relationship between self-employment intention and self-employment behavior was analyzed. A total of 542 valid responses were collected through a self-administrative questionnaire from business students in the public universities in Pakistan. The data were analyzed through partial least square structural equation modeling (PLS-SEM) by using smart PLS 3.0 software. The findings show that entrepreneurial education, business incubation programs, entrepreneurial self-efficacy, and social entrepreneurial attitude significantly and positively influence self-employment intention which in turn positively predicts self-employment behavior. Whilst, the moderating role of psychological empowerment between self-employment intention and behavior was not confirmed. Based on the findings, theoretical and practical implications have been discussed to help the policymakers, government institutions, and universities to



Hasan Zahid

### ABOUT THE AUTHOR

Dr. Hasan Zahid is currently working as an Assistant Professor at the Department of Business Administration, Iqra University, Pakistan. He earned his Ph.D. degree of Marketing in Public Administration from School of Government, University Utara Malaysia. He has been teaching various courses of Marketing on the study plan of masters and undergraduates. At the moment, he is supervising research students. Prior to joining the academia, he has been associated with HR corporations and have extensive experience as Business Development Manager and Recruitment Manager in United Arab Emirates. He was engaged with small businesses (SMEs) as a consultant in order to solve or develop business models in United Arab Emirates and Malaysia.

### PUBLIC INTEREST STATEMENT

Becoming self-employed is goal for many want-to-be entrepreneurs, but knowing exactly what business to start and being able to afford the startup costs can be a barrier. The relationship between universities and business incubators (BIs) is necessary as universities are the source of knowledge, research, resources and today's innovation-driven centers. The affiliation or management of a BI program inside a university represents a great advantage for the entrepreneurs, as these institutions can provide links to the industry, society and government entities. The UBIs can develop ability of innovation, critical thinking, business analytics skills and find out new ways to do businesses among the students. These start-ups not only give an opportunity for the local market but the international market can also take this opportunity. The post business projections and cost-benefits analysis skills can help the entrepreneurs to initiate the new ideas properly with less risk.

develop and implement educational strategies to increase students' self-employment behavior.

**Subjects:** Education - Social Sciences; Educational Psychology; Business, Management and Accounting; Educational Research; Sustainability Education, Training & Leadership;

**Keywords:** Business incubation programs; self-employment intention; entrepreneurial education; entrepreneurial self-efficacy; social entrepreneurial attitude

## 1. Introduction

Mounting shreds of evidence have shown that entrepreneurial activities can contribute to several factors including nationwide production capacity, economic growth, innovation, the prosperity of societies, and the creation of new jobs in the local market (Debus et al., 2017; Saberi & Hamdan, 2019). Entrepreneurial-based small and medium firms that are also called microenterprises contributed to the creation of jobs that are considered as rapidly fast-growing firms "i.e. high growth firms or gazelles" (Li et al., 2020). According to the recent report of the W. B. G. E. P (2020) although these fast-growing microenterprises accounted for 3% to 20% of the industries "including manufacturing and services", they have generated more than 50% of new jobs in the services sector (2020, 2020). It is evident across the world economies that entrepreneurship stimulates the economic growth in emerging economies including many countries in Latin America (Bosma et al., 2018; Ehrlich et al., 2017; Hamdani, 2006; Singh & Maurya, 2020; Urbano et al., 2019; Willis et al., 2020) and Africa [8–9]. To that end, entrepreneurship offers a long-lasting solution to the persistent unemployment problem that triggers other problems such as resource wastage, reduction in incomes, and shrinking economies, etc. Although various governments have implemented ambitious policies to tackle the unemployment problem and foster entrepreneurship, there are still miles to go to reduce the youth unemployment rate even in the developed nations (Lewis et al., 2019).

According to the M. C. R (2019), with 140 million people below the age of 30, Pakistan is considered as one of the youngest countries in the developing world or fastest-growing economies in Asia ((M. C. R, 2019), 2019). Thus, entrepreneurship potential can be deemed high for Pakistan although it ranks 122 out of 137 countries (the "second-lowest figure in the Asia Pacific region") in the report of the Global Entrepreneurship Development Institute, G. T. G. E. A. D (2020) (Institute, 2020). Further, according to Pakistan Labour Force Survey (2018), the ratio of unemployed university graduates is increasing substantially as compared to other unemployed individuals having primary, tertiary and secondary education. Flowingly, this existing study sheds light on the antecedents of self-employment behavior among public university business graduates in the Punjab province of Pakistan. More explicitly, the present study elaborates on the impact of "entrepreneurship education, business incubation programs, entrepreneurial self-efficacy, and social entrepreneurship" on the self-employment intentions which in turn predicts self-employment behavior.

The present study has multiple contributions to the self-employment literature. First and foremost, it responds to the recent calls by further examining the antecedents of self-employment intention and behavior (Caines et al., 2019; Kusemererwa et al., 2020; Rostamkalaei et al., 2019; Stephan et al., 2020). Also, it incorporated several dimensions of university-related business incubation programs (i.e. support, skill development, seed capital, synergy, and service) and investigated their impact on self-employment intention, thus replying to Sahban (2016) who stated that few empirical studies have been investigated the effectiveness of incubation programs offered by universities. The university-related business incubation programs aim to assist and help the students to start new businesses and create new jobs in the market. Moreover, this study offers a pioneer attempt to unveil the relationship between entrepreneurial education, business incubation programs, entrepreneurial self-efficacy, and social entrepreneurial attitude and self-employment intention of business graduates. Recent studies have also highlighted the need to examine various factors that could strengthen or weaken the relationship between self-

employment intention and self-employment behavior (Darmanto & Yuliani, 2018; Tiwari et al., 2017).

Addressing these concerns, this study analyses the role of psychological empowerment (PE) as an important moderator between self-employment intention and self-employment behavior. PE is defined as “the perception that one can perform their tasks competently, has the autonomy to decide how to do her job, and her behavior makes a difference” (Thomas & Velthouse, 1990). Individuals with high PE can easily adjust to the demands of their uncertain environments (Firth et al., 2014) and have higher levels of control over their jobs or environment (Erdogan et al., 2018). Therefore, it is expected that people with high PE levels have higher tendencies to engage in self-employment behavior and as a consequence PE moderates the relationship between self-employment intention and behavior. To sum up, this study investigates these aforementioned relationships in Pakistan that has a high potential for entrepreneurship and is a representative of the entrepreneurial climate in less developed nations.

## 2. Literature review and research hypotheses

### 2.1. Theoretical background

The present study has provided the theoretical lens suited to understand entrepreneurial behavior by the support of three theories (The knowledge Spillover Theory of Entrepreneurship, Social Cognitive Career Theory (SCCT) and Shapero Entrepreneurial Event (SEE) Theory) among the business graduates. The knowledge Spillover Theory of Entrepreneurship was presented by (Audretsch & Keilbach, 2005). They postulate that entrepreneurial knowledge has the capacity to sharpen the self-employment views and has the tendency to increase the number of start-ups. In addition, the knowledge spillover theory of entrepreneurship predicts that working experience of any individual and education in universities or other institutes related to entrepreneurship can motivate individuals to start their own businesses. Social Cognitive Career Theory (SCCT) is developed by Lent, Brown, and Hackett (1994) and derived from the social cognitive theory (SCT). The framework of SCCT provides more understanding of those processes through which the individuals make that choice related to the occupational pursuits. In the Shapero Entrepreneurial Event (SEE) Theory, SHAPERO and Sokol (1982) took a glimpse of the life path changes and its influence on individuals' desirability and feasibility perception while establishing new businesses leads towards the formation of entrepreneurial behavior. In the line of the current study, to fill the gap, various antecedents of self-employment behavior *i.e.* entrepreneurial education, university business incubation programs, entrepreneurial self-efficacy, social entrepreneurial attitude, self-employment intention was investigated. In addition, to moderating role of psychological empowerment has also been investigated among the relationship of self-employment intention and self-employment behavior.

### 2.2. Entrepreneurship education and self-employment intention

According to Social Cognitive Career Theory (SCCT) which was developed by Lent, Brown, and Hackett (1994) individuals make their choices related to the occupational pursuits based on their personal experiences, educational background, and learning experiences. Therefore, various cognitive factors (situational or personal variables) have a significant potential to directly or indirectly influence the individual's entrepreneurial intention (Krueger et al. 2000). This confirms with the Knowledge Spillover Theory of Entrepreneurship which postulates that entrepreneurial knowledge hones individuals' self-employment skills, thus increases the number of start-ups initiatives [14]. In other words, entrepreneurship education provided by universities or other institutes could motivate individuals to start their own businesses and practically utilize their knowledge. Ogundipe et al. (2012) and Van der Zwan et al. (2013) reported that entrepreneurship education has a strong influence on self-employment intention, which aligns with Akpan and Etor (2013) who recognized entrepreneurship education as a powerful strategy to motivate graduate students to become entrepreneurs. So, the first hypothesis is developed based on the above theoretical discussions.

H1: *Entrepreneurship education significantly and positively related to self-employment intention among the business graduates' students in Pakistan.*

### **2.3. Business incubation program and self-employment intention**

Business incubation programs are one of the latest concepts to have emerged in the modern business world, which aim to nurture start-ups and support existing small businesses (Sahban, 2016). Based on the Shapero Entrepreneurial Event theory, individuals' intentions, attitudes, and feelings "towards self-employment is a function of their distinctive social environment (e.g., families, educational and professional influences). In this regard, business incubation programs provided by universities play a vital role to develop a suitable ground for university students to follow their entrepreneurial drives (Cheah & Cheah, 2005). The foremost aim of the university-related incubations programs is to encourage new students to launch new start-ups businesses rather than to seek jobs in the outside job market (Sahban, 2016). Prior research have postulated the importance of business incubation programs in entrepreneurial learning and idea generation processes (Al-Mubarak & Busler, 2013; Joseph et al., 2007; Zasiadly, 2012). Also, students having exposure to business incubation programs were found to have higher intentions towards self-employment compared to other students Otuya et al. (2013). Chrismadha et al. (2006) noted that business incubation programs also help newly founded small enterprises to compete in the local as well as international markets. From the above critical discussions, the following hypothesis is formulated to investigate the impact of the business incubation program on self-employment intention in Pakistan.

H2: *Business incubation programs significantly and positively related to self-employment intention among the business graduates in Pakistan.*

### **2.4. Entrepreneurial self-efficacy and self-employment intention**

Entrepreneurial Self-efficacy is defined as "cognitive evaluation of an individual's capabilities to perform specific tasks of entrepreneurship" [13]. Numerous prior researchers have reported a significant and positive influence of entrepreneurial self-efficacy and entrepreneurship intention [13, 37, 38]. According to Indarti and Rostiani (2008), self-efficacy has a significant effect on the strength of entrepreneurship intention among the students. Also, Saeed et al. (2013) have reported the positive effect of self-efficacy on entrepreneurial intention which in turn triggers entrepreneurial action. Therefore, the higher the self-efficacy that the individuals possess in the initial stage of their entrepreneurial career, the higher will be their entrepreneurship intention. Consequently, as mentioned by Chen et al. (1998) entrepreneurial self-efficacy has a positive impact on the development of new ventures. Based on the literature, the following third hypothesis is proposed for the research;

H3: *Entrepreneurial self-efficacy is significantly and positively related to self-employment intention among the business graduates in Pakistan.*

### **2.5. Social entrepreneurship attitude and self-employment intention**

According to Hofstede and Bond (1984), the word society is the arrangement of shared values among the individuals within the society. Geletkanycz (1997) defined societal culture as "the basic referencing frame or logic by which the society views the environment, associations, and their relations to each other". Therefore as stated by Fukuyama (2001) the society and its values significantly influence economic activities as well as molding and shaping of institutional effectiveness. Likewise, an individual's state of mind is affected by the predominant societal values, which could then determine the entrepreneurial attitude and intention of the individual. Therefore based on the intensity of the relationship that an individual has with his cultural surroundings, entrepreneurial attitude and intention may also exist at varying degrees (Ali, 2014). Mitra (2019)

posited a positive relationship between an individual's entrepreneurial attitude and entrepreneurial intention. Therefore, although belonging to the same society, individuals having an entrepreneurial mindset and attitude are more likely to develop stronger self-employment intentions (Ali, 2014). Idris (2017) depicted that societal culture influences individuals' attitudes toward entrepreneurship, which leads to entrepreneurial intention (Moriano et al., 2012). Hence, the following hypothesis is formulated to investigate the influence of social entrepreneurship attitude and self-employment intention among the business graduates.

*H4: Social entrepreneurial attitude is significantly and positively related to self-employment intention among the business graduates of universities in Pakistan.*

### **2.6. Self-employment intention and self-employment actual behavior**

Ajzen (1991) defined intention as “an individual's willingness to perform a certain behavior and the number of times that a person tries to perform a definite behavior”. According to Zahid and Haji Din (2019) & Akbar et al. (2019) “humans are considered as rational actors who plan to attain specific goals and intentionally perform to reach these goals. Hence, behavioral intention can produce the actual behavior”. According to Taylor and Todd (1995), behavioral intention is the best predictor of actual behavior in various sectors including health, technology, and many other domains. Also, numerous prior researchers revealed the presence of a high correlation between the behavioral intention and actual behavior (Bélanger & Carter, 2008; Turner et al., 2010). Drawing up the previous literature the following hypothesis is formulated;

*H5: Self-employment intention significantly and positively influences the self-employment behavior among the business graduates of universities in Pakistan*

### **2.7. Moderating role of psychological empowerment**

Psychological empowerment is defined as “increased intrinsic task motivation manifested in a set of four cognitions (competence, impact, meaning, and self-determination), reflecting an individual's active orientation to his or her work role” (Deci et al., 1989). Numerous prior researchers used psychological behavior as moderator on different endogenous variables like on organizational commitment (Avolio et al., 2004), satisfaction (Barroso Castro et al., 2008), work place aggression (Hepworth & Towler, 2004) and motivation (Epitropaki & Martin, 2013). Though, there is a paucity of empirical studies on investigating the causal relationship (psychological empowerment as moderator) with respect to entrepreneurial behavior (Afsar et al., 2017). Particularly, moderator can be incorporated in the conceptual framework by the following reasons, 1) contradictory results (positive or negative relationship) among the relationship of exogenous variable (X) and endogenous variable (Y), 2) inconsistent results (significant and insignificant relationship) 3) weak results among X and Y (Baron & Kenny, 1986). Additionally, the prior researches have been reported inconsistent findings among the relationship of intention and actual behavior (Akbar et al., 2019; Alam et al., 2020; Lim et al., 2016; Okazaki & Renda dos Santos, 2012; Wati & Koo, 2012, January). These inconsistent findings among the relationship of intention and actual behavior have given the opportunity to the researchers to re-test that weak, inconsistent or contradictory relationship. From the abovementioned discussions, the present study investigated the moderating effect of psychological empowerment among the relationship of self-employment intention and self-employment behavior of the business graduates of public universities. Relying on the literature the following hypothesis is formulated;

*H6: Psychological empowerment moderate between the relationship of self-employment intention and self-employment behavior.*

### 3. Research methodology

This study adopted a quantitative hypothetic-deductive approach to verify the hypothesized relations in the proposed structural model. A field survey was conducted where a temporally segregated research design was employed and the data were collected at two different periods from the same students. This temporal separation of independent, moderator, and dependent variables helps to avoid problems arising from cross-sectional and single-source designs where all the variables are collected at the same time. Data were collected from the management sciences students at all the public universities in the province of Punjab, Pakistan. According to Higher Education Commission in Pakistan, 126 public universities are operating all over Pakistan. The first reason to choose public universities in Punjab is that nearly half of all public universities in Pakistan are located in Punjab. Secondly, the population of Punjab is 110 million, which makes it the most populous province of Punjab. In data collection, only universities having management science departments (27 universities) were reached, and due to the universities' internal policies, the name of the universities included in this study are kept confidential. Common method bias (CMB) has serious concerns in primary data. In order to mitigate CMB we applied multiple methodological remedies. First, we explain the purpose of present study to the respondents and ensure them about confidentiality that data will use research purpose only. Second, we guide the respondents about the response id or alias (fake name) in subsequent survey (time 2). Third, we applied multi-wave design, where in At time 1(T1), we distributed 1050 paper-pencil-based survey questionnaire of entrepreneurial education, business incubation programs, entrepreneurial self-efficacy, social entrepreneurial attitude and self-employment behavior among the management sciences students of 27 public sector universities. Therefore, we have assigned unique code against the original names of the universities (University1, University2, University3 ... .. and University27). At T1 we received 750. After the four weeks' interval, at time 2 (T2) we distributed the 750 paper-pencil-based survey questionnaire of self-employment intentions and psychological empowerment among the same respondents of aforementioned universities. And at T2 we received 542 completely filled surveys with the response rate of 52%. Fourth, we added psychological empowerment as moderator. The inclusion of a moderator reduces the chances of CMB from single-source data (Brockner, Siegel, Daly, Tyler, & Martin, 1997; Simons & Peterson, 2000). Fifth, we perform conformity factor analysis (CFA) of study variables. CFA results reveals that full-factor model have better goodness of fit then other models ( $\chi^2 = 398.66$ ,  $p < 0.001$ ; TLI = 0.67; CFI = 0.73; RMSEA = 0.14). Respondents consisted of 374 (69%) males and 168 (31%) females. Most of the respondents (75%) belonged to the 18–24 years' age group. The majority of the respondents 450 (83%) are the students of bachelor degree. A total of 314 respondents are married (58%). Maximum respondents belong to urban area 434 (80%).

#### 3.1. Measures

We adopted or adapted measures from previous studies according to the operational definition of the variables. The construct of *business incubation programs* have five dimensions "i.e. service, support, skill development, seed capital and synergy", which was measured by 16 reflective items adopted from (Sahban, 2016). Meanwhile, the construct of *entrepreneurship education* was measured with four indicators adopted from a prior study (Serah, 2014). In addition, five indicators used to measure the construct of *entrepreneurial self-efficacy* were adopted from (Sahban, 2016). Likewise, five items were used to measure the construct of *societal entrepreneurship*. In addition, the items for the construct *entrepreneurial attitude* were adopted from the study of (Ali, 2014). The items to measure the constructs of *self-employment behavior* and *psychological empowerment* were adapted from Afsar et al. (2017).

### 4. Results and analysis

Structural Equation Modelling (SEM) is considered second-generation multivariate analysis technique and has gained enormous popularity among the social sciences researcher around the globe (H.Zahid & Haji Din, B. 2019; Zaman et al. 2021; Ali et al. 2019). SEM is the combination of path modeling, factor analysis, and multiple regression and has the ability to test a theoretical



supported causal model (Chin, 1998). In the line of the present study, the selection of PLS-SEM by using smart PLS software was based on the following reasons.

#### 4.1. Assessment of measurement model

In partial least square (PLS), the inspection of items loadings on the latent constructs assessed the reliability of the constructs (Hulland, 1999). For the assessment of the measurement model, reliability and validity are verified by the researcher. The reliability is measured through composite reliability and validity is measured by convergent and discriminant validity. The internal consistency (e.g., composite reliability), convergent validity (e.g., average variance extracted) and discriminant validity (e.g., cross-loadings and HTMT criterion and Fornell- larcker criterion) of the instruments are assessed in the measurement model. In composite reliability of the constructs, all the factor loadings for reflective constructs should be greater than the cutoff value of 0.5 as recommended by (Joseph et al., 2007). In addition, the cut off value of the composite reliability is 0.7 (J. F. Hair et al., 2011). In (Table 3) all the constructs of the present study show a high level of internal consistency reliability. For the assessment of convergent validity, the average variance extracted (AVE) was determined. The value of AVE greater than 0.5 shows the latent variable explained more than half of the variance of its indicators shown in (Table 3). To assess the discriminant validity, two measures were involved. First is the cross-loading of the items that should be greater than 0.5 and values greater than 0.7 are considered as ideal (J. F. Hair et al., 2011). Secondly, the Fornell-Larcker criterion “that more variance is shared by a latent construct with its own indicators than with another latent construct in the structural model” (Fornell & Larcker, 1981) (see in Table 2). According to 2007(Hair et al. 2014), “the squared root of the AVE (represented by the values in the diagonal) calculated should be greater than each of the construct correlations (represented by the values in the off-diagonal)” (see in Table 1).

#### 4.2. Assessment of structural model

Once the measurement model goodness was established then the assessment of the structural model was performed (see in Figure 1) (Chin, 2010). Firstly, the predictive power of the structural model was determined by evaluating the Coefficient of the determinant ( $R^2$ ) of each of the endogenous variable and significance level of the path coefficient was also determined (Chin, 2010; Joe F Hair Jr, Sarstedt, Hopkins, & Kuppelwieser, 2014). According to Cohen (1992), the rule of thumb of  $R^2$  values is 0.26 as substantial, 0.13 as moderate and 0.02 as weak for the endogenous latent constructs (see in Table 3). Secondly, the predictor construct was assessed by using the effect size of Cohen ( $f^2$ ). Therefore, the  $f^2$  values are considered as 0.35 as large, 0.15 as

**Table 1. Values of composite Reliability (CR) & Average Variance Extracted (AVE)**

	Composite Reliability (CR)	Average Variance Extracted (AVE)
Business Incubation Programs	0.789	0.864
Entrepreneurial Education	0.858	0.669
Entrepreneurial Self-efficacy	0.838	0.567
Psychological Empowerment	0.806	0.512
Seed Capital	0.841	0.639
Self-Employment Intention	0.884	0.607
Self-Employment Behavior	0.821	0.606
Service	0.824	0.540
Skill Development	0.819	0.602
Social Entrepreneurial Attitude	0.888	0.725
Support	0.827	0.547
Synergy	0.765	0.620

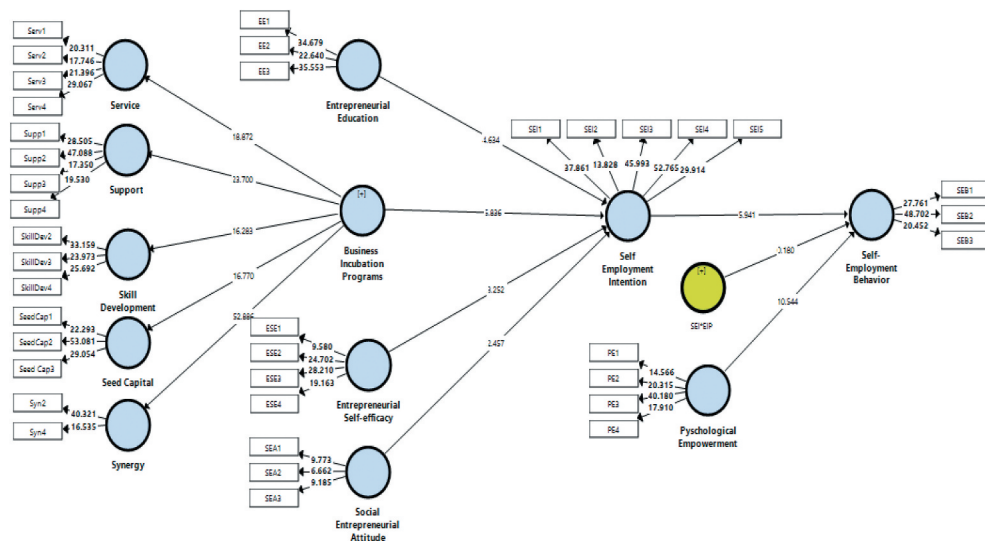
**Table 2. Discriminant validity (fornell-larcker criterion)**

	EE	ESE	PE	SD	SEI	SEB	Ser.	SD	SEA	Sup.	Syn.
Entrepreneurial Education	<b>0.818</b>										
Entrepreneurial Self-efficacy	0.344	<b>0.753</b>									
Psychological Empowerment	0.429	0.308	<b>0.715</b>								
Seed Capital	0.742	0.330	0.414	<b>0.799</b>							
Self-Employment Intention	0.450	0.334	0.653	0.486	<b>0.779</b>						
Self-Employment Behavior	0.391	0.245	0.673	0.393	0.611	<b>0.778</b>					
Service	0.298	0.215	0.319	0.346	0.410	0.312	<b>0.735</b>				
Skill Development	0.357	0.245	0.248	0.388	0.257	0.246	0.260	<b>0.776</b>			
Social Entrepreneurial Attitude	-0.002	-0.023	-0.039	0.216	0.163	-0.034	0.215	0.014	<b>0.852</b>		
Support	0.380	0.283	0.381	0.356	0.291	0.381	0.303	0.363	-0.018	<b>0.739</b>	
Synergy	0.398	0.363	0.418	0.437	0.431	0.428	0.662	0.383	0.164	0.766	<b>0.787</b>

**Table 3. Structural model results (result of SEM and hypothesis testing)**

Hypothesis	Relationship	Path Coefficient	Std. Error	t value	p-value	Supported	R2	Q2
H1	EE > INT	0.244	0.054	4.499	0.000	Yes	0.447	0.180
H2	BIP > INT	0.296	0.051	5.839	0.000	Yes		
H3	ESE > INT	0.141	0.044	3.205	0.001	Yes		
H4	SEA > INT	0.136	0.052	2.633	0.004	Yes		
H5	INT > BEH.	0.298	0.032	5.941	0.000	Yes		

**Figure 1. Structural model (inner model).**



medium and 0.02 as small respectively (Cohen, 2013). The hypotheses testing of the relationships among the exogenous and endogenous variables were determined by using bootstrapping of 5000 sub-samples. Finally, to determine the criterion of predictive accuracy, the Stone-Gsisser's  $Q^2$  value was utilized. In PLS-SEM, the blindfolding procedure was used to determine the value of  $Q^2$  (Geisser, 1974; Joe F Hair Jr et al., 2014; Stone, 1974) construct of Self-Employment Intention has been measured with five items and adopted from the prior study (Sahban, 2016) (see in Table 3).

### 5. Discussion

In the line of the present study, the first hypothesis indicated ( $\beta = 0.240$ ,  $t$ -value = 4.543,  $p < 0.05$ ) that entrepreneurial education significantly and positively influences the self-employment intention and are consistent with the prior studies (Akpan & Etor, 2013; Ogunipe et al., 2012; Van der Zwan et al., 2013). Therefore, the development in the education sectors via latest technology adoption, proper guidance, support the innovation, training, and development at the university level can bring significant change among the attitude of students. This positive attitude can catalyze self-employment behavior. Also, the findings confirmed the second hypothesis ( $\beta = 0.300$ ,  $t$ -value = 5.844,  $p < 0.05$ ) that highlights the positive relationship between business incubation programs and self-employment intention. This proposed relationship is in line with the previous studies (Indarti & Rostiani, 2008; Krabel, 2013; Otuya et al., 2013; Sahban, 2016). These universities related business incubation programs can build a favorable attitude of students to start their own businesses. These incubation environments provide awareness among students about various challenges while doing business. In addition, the universities should provide training and development programs or short courses. University incubation programs can give chance to final year students to work for new companies or other start-ups no matter for free that sharpen their skill set and make them ready to enter the business world. Various universities around the globe have providing spin-off activities of students, installing several new entrepreneurial programs in universities and generating a network with the local industry. The third hypothesis showed ( $\beta = 0.139$ ,  $t$ -value = 3.085,  $p < 0.05$ ) entrepreneurial self-efficacy significantly and positively influences the self-employment intention, the outcome of the hypothesized third hypothesis is constant with the prior research work done by various authors (Minglei & Yang, 2013; Nastiti et al., 2010; Sahban, 2016). The findings of the present study revealed that the higher the level of self-efficacy than the higher will be the self-employment intention to start new businesses. In universities, the students through various exposures regarding business-related activities gain confidence and develop a feeling to become an entrepreneur. These programs can

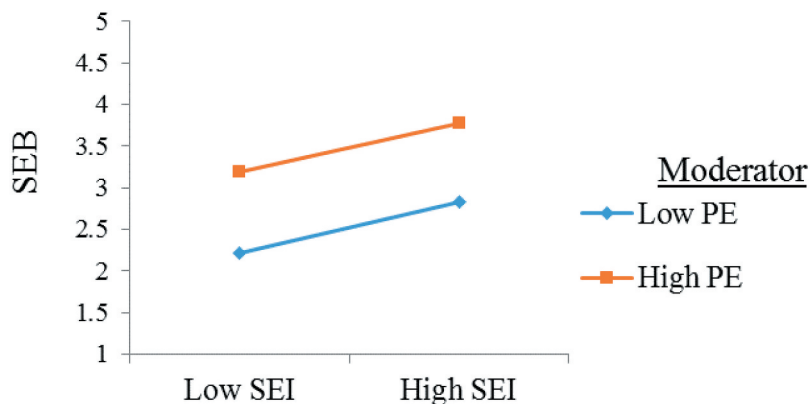
give liberty or freedom to the students to think out of the box like innovation, availing the proposed opportunities, initiate networking and investor relationships, create opportunities in the market within the intense environment, problem-solving skills, cope with unexpected challenges and managing the workforce and get maximum output. Lastly the fourth hypothesis designated ( $\beta = 0.132$ ,  $t\text{-value} = 2.474$ ,  $p < 0.05$ ) social entrepreneurial attitude significantly and positively influences the self-employment intention. Numerous prior researchers have the same consistent findings in line with the current study findings (Ali, 2014; Moriano et al., 2012; Sahban, 2016). The findings of the result and the proposed relationship revealed that societal culture has a significant impact on individual attitudes towards the adoption of a career. The students follow the culture and their state of mind is exactly the same as the culture prevails and develop their attitude. Therefore, social influence of students has a serial impact on the self-employment behavior. The university management plays an important role to develop such an environment around the business students and develop their attitude to think out of the box and adopt self-employment as a career rather than seek jobs. The findings of the current study do not support the moderating effect of psychological empowerment. One conceivable reasoning of the insignificant for interaction effect is the strong and significant relationship of self-employment intention and self-employment behavior. Additionally, Baron and Kenny (1986) revealed that moderator variable does not work better in strong relationship among the predictor and criterion. In addition, the self-employment intention significantly and positively influences the self-employment behavior ( $\beta = 0.298$ ,  $t\text{-value} = 5.941$ ,  $p < 0.05$ ) (see in Table 4 and Figure 2). Specially, the business graduate with strong self-employment intention will definitely adopt entrepreneurship behavior. Secondly, the researcher in the current study is going to conduct the study in Pakistan. Pakistan is the second largest Muslim country of the world with 95 percent of the population is Muslim and majority of the respondents are also Muslims as well. The innermost figure of Islam holy “Prophet Muhammad (Peace Be Upon him)’s Hadith” as narrated by Hazrat Omar bin Al-Khattab (R.A); “Actions are but by intention and every man shall have but that which he intended . . .” (Nawawi, 1996). Subsequently, once the self-employment intention will increase then to adoption of self-employment behavior should be mandatory.

**Table 4. Structural Model Assessment (Moderation)**

	( $\beta$ )	(STDEV)	T Statistics	P Values	Decision
ESI * PE > SEB	0.475	0.050	0.180	0.855	Not Supported

**Figure 2. Structural model (variance-based technique) for SEB adoption.**

**Note:** SEB = Self-Employment Behavior; SEI = Self-Employment Intention; PE = Psychological Empowerment



## 6. Implications

### 6.1. Theoretical implications

The existing study empirically tested the proposed relationships with the set of three theories (The Knowledge Spillover Theory of Entrepreneurship Social Cognitive Career Theory (SCCT) Shapero Entrepreneurial Event (SEE) Theory) to support the exogenous variables and endogenous construct. In addition, the above-mentioned theoretical combination has explained 33% of the variance. Hence, proved that the present study help to increase the self-employment intention among the business students and consistent with various prior researchers (Minglei & Yang, 2013; Nastiti et al., 2010; Sahban, 2016) (Indarti & Rostiani, 2008; Krabel, 2013; Otuya et al., 2013; Sahban, 2016).

### 6.2. Policy implications

This study has suggested that these universities-related business incubation programs sharper individual behavior and motivate them towards self-employment intention-like innovative courses, internships, and strong university and industry collaboration. The policymaker can encourage the youth by giving proper training, develop connections with the industry to place them for experience, competitions for innovation, research and design (R&D) within the course outline of the students, interaction with the industrial managers to develop knowledge. The decision-makers can increase the self-employment intention and directly contribute the local market and economy of Pakistan. The corporation of universities with the Government can encourage the innovation environment. Pakistan's higher education institutions can play a significant role in this regards and effective policies can directly improve the economy of Pakistan.

### 6.3. Practical implications for government and universities

The entrepreneurship education is quite new in Pakistan and universities. Instead of emphasize on old textbooks and theories, the universities can offer an environment of innovation, solve real problem, enhance decision-making, pressure handling, creation of funds, resource allocation, team building for every student in entrepreneurial education. Teachers of universities encourage the students to come up with new ideas with proper business plans and focus on pragmatic entrepreneurship rather than content teaching style. In the endeavor of the government to promote entrepreneurship by sponsoring new top 100 ideas. Moreover, the multinationals are outsourcing the services in developing nations. Various entrepreneurial activities have been initiated by some developing nations and get rewarded in an excellent way like Information Technology hub in India, the textile industry in Bangladesh and various SEMs are operating in China. The majority of these businesses are new and small start-ups. Thus, the main agenda of this research is to promote self-employment among the business graduates of the universities of Pakistan. These start-ups not only give an opportunity for the local market but the international market can also take this opportunity. Innovation in businesses can increase productivity leads to a decrease in the unemployment rate in Pakistan.

### 6.4. Implications for academicians and enterprises

#### 6.4.1. For university business incubations and academia to support entrepreneurship

The findings of this study suggest to establish various skill sets among the business graduates to create more entrepreneurship. Integration between the industry, universities, government and academia should play a vital role to boost entrepreneurial behavior. The Ministry of Education and Higher Education Commission (HEC) should encourage universities to offer various entrepreneurial education courses and make these courses compulsory for the current curriculum. The qualified and skillful faculty can help to achieve this objective by giving practical knowledge, develop business analytical skills, goal strategies among the graduates. The best in class practices must be adopted to attract the stakeholders. The scope of these incubation centers must be clear, easily understandable and processes will be explained in a wider framework. The effectiveness and efficiency of these business incubation should be measured, evaluate and monitor through fixed

key performance indicators (KPIs). The resources should be directed to the most successful factor of UBIs rather than blindly utilize the resources on all factors.

#### 6.4.2. Implications for enterprisers

The results of the present study revealed several implications for enterprises especially small and medium enterprises (SMEs). The UBIs can develop ability of innovation, critical thinking, business analytics skills and find out new ways to do businesses among the graduates. The business students can generate jobs locally rather than find jobs in initial level. Additionally, these trained graduates can smartly assist these current SMEs and help them to generate businesses. The post business projections and cost-benefits analysis skills can help the entrepreneurs to initiate the new ideas properly with less risk.

### 7. Limitations and future scope

The present study has few limitations. First, the present study adopted cross-sectional multi-wave design. We collected self-reported data from the same individuals three times with a one-month gap between data collection. Though certain steps were taken to avoid common method bias, results should still be interpreted with caution. For future studies, data may be collected from multiple sources (e.g., peers, supervisor and self-reported) to reduce common method bias. Second, data were collected through convenient sampling techniques, which limits the generalizability of the findings. Finally, the future studies will be used other boundary conditions such as personality traits which may buffers the relationship between self-employment intentions and self-employment behavior.

### 8. Conclusions

Summing up this study establishes entrepreneurial education, business incubation programs, entrepreneurial self-efficacy and social entrepreneurial attitude as important drivers of self-employment behavior among business graduates. But the relationship between self-employment intentions and self-employment behaviors are buffered by psychological empowerment. Knowledge spillover theory of entrepreneurship, social cognitive career theory and Shapero entrepreneurial event theory play important role in establishing these aforementioned relationships.

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#### References

Afsar, B., Badir, Y. F., Saeed, B. B., & Hafeez, S. (2017). Transformational and transactional leadership and

employee's entrepreneurial behavior in knowledge-intensive industries. *The International Journal of Human Resource Management*, 28(2), 307–332.

<https://doi.org/10.1080/09585192.2016.1244893>

Ajzen, I. (1991). The theory of planned behavior. *Organizational Behavior and Human Decision Processes*, 50(2), 179–211. [https://doi.org/10.1016/0749-5978\(91\)90020-T](https://doi.org/10.1016/0749-5978(91)90020-T)

Akbar, A., Ali, S., Ahmad, M. A., Akbar, M., & Danish, M. (2019). Understanding the antecedents of organic food consumption in Pakistan: Moderating role of food neophobia. *International Journal of Environmental Research and Public Health*, 16(20), 4043. <https://doi.org/10.3390/ijerph16204043>

Akpan, C., & Etor, C. (2013). University lecturers' perception of entrepreneurship education as an empowerment strategy for graduate self-employment in South-South Nigeria. *International Journal of Asian Social Science*, 3(5), 1180–1195.

Alam, M. Z., Hoque, M. R., Hu, W., & Barua, Z. (2020). Factors influencing the adoption of mHealth services in a developing country: A patient-centric study. *International Journal of Information Management*, 50 (2020), 128–143. <https://doi.org/10.1016/j.ijinfomgt.2019.04.016>

Ali, IA. (2014). Factors Influencing Self-Employment Intention among Nigerian Post-Graduate Students of Universiti Utara Malaysia (UUM). Thesis submitted to Othman Yeop Abdullah Graduate School of Business Universiti Utara Malaysia.

Ali S, Ullah H, Akbar M, Akhtar W, Zahid H. Determinants of Consumer Intentions to Purchase Energy-Saving

- Household Products in Pakistan. *Sustainability*, 2019; 11(5):1462. <https://doi.org/10.3390/su11051462>
- Al-Mubarak, H. M., & Busler, M. (2013). The effect of business incubation in developing countries. *European Journal of Business and Innovation Research*, 1(1), 19–25.
- Audretsch, D. B., & Keilbach, M. (2005). Entrepreneurship capital and regional growth. *The Annals of Regional Science*, 39(3), 457–469.
- Avolio, B. J., Zhu, W., Koh, W., & Bhatia, P. (2004). Transformational leadership and organizational commitment: Mediating role of psychological empowerment and moderating role of structural distance. *Journal of Organizational Behavior: The International Journal of Industrial, Occupational and Organizational Psychology and Behavior*, 25(8), 951–968. <https://doi.org/10.1002/job.283>
- Baron, R. M., & Kenny, D. A. (1986). The moderator–mediator variable distinction in social psychological research: Conceptual, strategic, and statistical considerations. *Journal of Personality and Social Psychology*, 51(6), 1173. <https://doi.org/10.1037/0022-3514.51.6.1173>
- Barroso Castro, C., Villegas Perinan, M. M., & Casillas Bueno, J. C. (2008). Transformational leadership and followers' attitudes: The mediating role of psychological empowerment. *The International Journal of Human Resource Management*, 19(10), 1842–1863. <https://doi.org/10.1080/09585190802324601>
- Bélanger, F., & Carter, L. (2008). Trust and risk in e-government adoption. *The Journal of Strategic Information Systems*, 17(2), 165–176. <https://doi.org/10.1016/j.jsis.2007.12.002>
- Bosma, N., Sanders, M., & Stam, E. (2018). Institutions, entrepreneurship, and economic growth in Europe. *Small Business Economics*, 51(2), 483–499. <https://doi.org/10.1007/s11187-018-0012-x>
- Brockner, J., Siegel, P. A., Daly, J. P., Tyler, T., & Martin, C. (1997). When trust matters: The moderating effect of outcome favorability. *Administrative science quarterly*, 558–583.
- Caines, V., Earl, J. K., & Bordia, P. (2019). Self-employment in later life: How future time perspective and social support influence self-employment interest. *Frontiers in Psychology*, 10, 448. <https://doi.org/10.3389/fpsyg.2019.00448>
- Cheah, H.-B., and Cheah, M. (2005). Small, diversified and sustainable: small enterprises in a sustainable production system. In: Harvie, C. and Lee, B.-C. (eds), (2005). *Sustaining growth and performance in East Asia*, Cheltenham:Edward Elgar, pp. 28–71.
- Chen, C. C., Greene, P. G., & Crick, A. (1998). Does entrepreneurial self-efficacy distinguish entrepreneurs from managers? *Journal of Business Venturing*, 13(4), 295–316. [https://doi.org/10.1016/S0883-9026\(97\)00029-3](https://doi.org/10.1016/S0883-9026(97)00029-3)
- Chin, W. W. (1998). *Commentary: Issues and opinion on structural equation modeling*. JSTOR.
- Chin, W. W. (2010). How to write up and report PLS analyses. In *Handbook of partial least squares* (pp. 655–690). Springer.
- Chrismadha, T., Panggabean, L. M., & Mardiaty, Y. (2006). Pengaruh konsentrasi nitrogen dan fosfor terhadap pertumbuhan, kandungan protein, karbohidrat dan fikosianin pada kultur Spirulinafusiformis. *Berita Biologi*, 8(3), 163–169. DOI 10.14203/beritabiologi.v8i3.792.
- Cohen, J. (1992). A power primer. *Psychological Bulletin*, 112(1), 155. <https://doi.org/10.1037/0033-2909.112.1.155>
- Cohen, J. (2013). *Statistical power analysis for the behavioral sciences*. Routledge.
- Darmanto, S., & Yuliani, G. (2018). Mediating role of entrepreneurial self efficacy in developing entrepreneurial behavior of entrepreneur students. *Academy of Entrepreneurship Journal*, 24(1), 1–14.
- Debus, M., Tosun, J., & Maxeiner, M. (2017). Support for Policies on Entrepreneurship and Self Employment among Parties and Coalition Governments. *Politics & Policy*, 45(3), 338–371. <https://doi.org/10.1111/polp.12205>
- Deci, E. L., Connell, J. P., & Ryan, R. M. (1989). Self-determination in a work organization. *Journal of Applied Psychology*, 74(4), 580. <https://doi.org/10.1037/0021-9010.74.4.580>
- Ehrlich, I., Li, D., & Liu, Z. (2017). The role of entrepreneurial human capital as a driver of endogenous economic growth. *Journal of Human Capital*, 11(3), 310–351. <https://doi.org/10.1086/693718>
- Epitropaki, O., & Martin, R. (2013). Transformational–transactional leadership and upward influence: The role of relative leader–member exchanges (RLMX) and perceived organizational support (POS). *The Leadership Quarterly*, 24(2), 299–315. <https://doi.org/10.1016/j.leaqua.2012.11.007>
- Erdogan, B., Ozyilmaz, A., Bauer, T. N., & Emre, O. (2018). Accidents happen: Psychological empowerment as a moderator of accident involvement and its outcomes. *Personnel Psychology*, 71(1), 67–83. <https://doi.org/10.1111/peps.12228>
- Firth, B. M., Chen, G., Kirkman, B. L., & Kim, K. (2014). Newcomers abroad: Expatriate adaptation during early phases of international assignments. *Academy of Management Journal*, 57(1), 280–300. <https://doi.org/10.5465/amj.2011.0574>
- Fornell, C., & Larcker, D. F. (1981). *Structural equation models with unobservable variables and measurement error: Algebra and statistics*. SAGE Publications Sage CA.
- Fukuyama, F. (2001). Social capital, civil society and development. *Third World Quarterly*, 22(1), 7–20. <https://doi.org/10.1080/713701144>
- Geisser, S. (1974). A predictive approach to the random effect model. *Biometrika*, 61(1), 101–107. <https://doi.org/10.1093/biomet/61.1.101>
- Geletkanycz, M. A. (1997). The salience of ‘culture’s consequences’: The effects of cultural values on top executive commitment to the status quo. *Strategic Management Journal*, 18(8), 615–634. [https://doi.org/10.1002/\(SICI\)1097-0266\(199709\)18:8<615::AID-SMJ889>3.0.CO;2-I](https://doi.org/10.1002/(SICI)1097-0266(199709)18:8<615::AID-SMJ889>3.0.CO;2-I)
- 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., Hopkins, L., & Kuppelwieser, V. (2014). Partial Least Squares Structural Equation Modeling (PLS-SEM): An Emerging Tool in Business Research. *European Business Review*, 26(2), in print
- Hair, J. F., Sarstedt, M., Hopkins, L., & Kuppelwieser, V. G. (2014). Partial least squares structural equation modeling (PLS-SEM): an emerging tool in business research *Eur. Bus. Rev.* 26 (2), 106–121.
- Hair, J.F., Sarstedt, M., Hopkins, L. and Kuppelwieser, V.G. (2014), “Partial least squares structural equation modeling (PLS-SEM): an emerging tool in business research”, *European Business Review*, Vol. 26 No. 2, pp. 106–121
- Hamdani, D. (2006). *Conceptualizing and measuring business incubation*. Citeseer.



- Hepworth, W., & Towler, A. (2004). The effects of individual differences and charismatic leadership on workplace aggression. *Journal of Occupational Health Psychology, 9*(2), 176. <https://doi.org/10.1037/1076-8998.9.2.176>
- hin W.W. (2010) How to Write Up and Report PLS Analyses. In: Esposito Vinzi V., Chin W., Henseler J., Wang H. (eds) Handbook of Partial Least Squares. Springer Handbooks of Computational Statistics. Springer, Berlin, Heidelberg. [https://doi.org/10.1007/978-3-540-32827-8\\_29](https://doi.org/10.1007/978-3-540-32827-8_29)
- Hofstede, G., & Bond, M. H. (1984). Hofstede's culture dimensions: An independent validation using Rokeach's value survey. *Journal of Cross-cultural Psychology, 15*(4), 417–433. <https://doi.org/10.1177/0022002184015004003>
- Hulland, J. (1999). Use of partial least squares (PLS) in strategic management research: A review of four recent studies. *Strategic Management Journal, 20*(2), 195–204. [https://doi.org/10.1002/\(SICI\)1097-0266\(199902\)20:2<195::AID-SMJ13>3.0.CO;2-7](https://doi.org/10.1002/(SICI)1097-0266(199902)20:2<195::AID-SMJ13>3.0.CO;2-7)
- Idris, A. A. (2017). Entrepreneurial intention among post-graduate students in Nigerian Universities: Conceptual review. *American Finance & Banking Review, 1*(1), 12–23. <https://doi.org/10.46281/amfbr.v1i1.122>
- Indarti, N., & Rostiani, R. (2008). *Intensi kewirausahaan mahasiswa: Studi perbandingan antara Indonesia, Jepang dan Norwegia*.
- Institute, G. T. G. E. A. D. (2020). *The global entrepreneurship and development institute*. from <https://the.gedi.org/>
- Krabel, S. (2013). *Are entrepreneurs made on campus?? How entrepreneurial orientation of universities influences graduates? occupational choice*. In 35th DRUID Celebration Conference. Barcelona Spain: ESADE Business School.
- Krueger Jr, N. F., Reilly, M. D., & Carsrud, A. L. (2000). Competing models of entrepreneurial intentions. *Journal of business venturing, 15*(5–6), 411–432.
- Kusemererwa, C., Munene, J. C., Laura, O. A., & Balunywa, J. W. (2020). Individual learning behavior: Do all its dimensions matter for self-employment practice among youths in Uganda? *Journal of Enterprising Communities: People and Places in the Global Economy, 14*(3), 373–396. <https://doi.org/10.1108/JEC-02-2020-0012>
- Lent, R. W., Brown, S. D., & Hackett, G. (1994). Toward a unifying social cognitive theory of career and academic interest, choice, and performance. *Journal of vocational behavior, 45*(1), 79–122.
- Lent, R. W., Brown, S. D., & Hackett, G. (1994). Toward a unifying social cognitive theory of career and academic interest, choice, and performance. *Journal of vocational behavior, 45*(1), 79–122.
- Lewis, B., Veronica, C. M., Francis, N., & Isaac, A. (2019). Effects of gross domestic product and inflation rate on unemployment rate in Ghana: Comparative analysis of multiple regression and covariance matrix models. *American Journal of Applied Mathematics, 7* (1), 5–12. <https://doi.org/10.11648/j.ajam.20190701.12>
- Li, C., Makhdoom, H. U. R., & Asim, S. (2020). Impact of entrepreneurial leadership on innovative work behavior: Examining mediation and moderation mechanisms. *Psychology Research and Behavior Management, 13*, 105–118. <https://doi.org/10.2147/PRBM.S236876>
- Lim, Y. J., Osman, A., Salahuddin, S. N., Romle, A. R., & Abdullah, S. (2016). Factors influencing online shopping behavior: The mediating role of purchase intention. *Procedia Economics and Finance, 35*(5), 401–410. [https://doi.org/10.1016/S2212-5671\(16\)00050-2](https://doi.org/10.1016/S2212-5671(16)00050-2)
- M. C. R. (2019). *McKinsey & company report* (2019).
- Minglei, D., & Yang, L. (2013). Process, mechanism of entrepreneurial self-efficacy on the entrepreneurial intention-empirical study in China. *Advances in Information Sciences and Service Sciences, 5*(9), 319. <https://doi.org/10.4156/aiss.vol5.issue9.38>
- Mitra, J. (2019). *Entrepreneurship, innovation and regional development: An introduction*. Routledge.
- Moriano, J. A., Gorgievski, M., Laguna, M., Stephan, U., & Zarafshani, K. (2012). A cross-cultural approach to understanding entrepreneurial intention. *Journal of Career Development, 39*(2), 162–185. <https://doi.org/10.1177/0894845310384481>
- Nastiti, T., Indarti, N., & Rostiani, R. (2010). Minat berwirausaha mahasiswa Indonesia dan Cina. *Journal of Management and Business, 9*(2), pp 188–189. <https://doi.org/10.24123/jmb.v9i2.164>
- Ogundipe, S. E., Kosile, B. A., Olaleye, V., & Ogundipe, L. (2012). Entrepreneurial intention among business and counselling students in lagos state university sandwich programme. *Journal of Education and Practice, 3*(14), 64–72.
- Okazaki, S., & Renda dos Santos, L. M. (2012). Understanding e-learning adoption in Brazil: Major determinants and gender effects. *International Review of Research in Open and Distributed Learning, 13*(4), 91–106. <https://doi.org/10.19173/irrodl.v13i4.1266>
- Otuya, R., Kibas, P., Gichira, R., & Martin, W. (2013). Entrepreneurship education: Influencing students' entrepreneurial intentions. *International Journal of Innovative Research & Studies, 2*(4), 132–148.
- Pakistan Labour Force Survey 2017–2018, <https://www.pbs.gov.pk/content/labour-force-survey-2017-18-annual-report>
- Rostamkalaei, A., Nitani, M., & Riding, A. (2019). Self-employment, financial knowledge, and retirement planning. *Journal of Small Business Management, 1*–30, DOI:10.1080/00472778.2019.1695497.
- Saberi, M., & Hamdan, A. (2019). The moderating role of governmental support in the relationship between entrepreneurship and economic growth: A study on the GCC countries. *Journal of Entrepreneurship in Emerging Economies, 11*(2), 200–216. <https://doi.org/10.1108/JEEE-10-2017-0072>
- Saeed, R., Nayyab, H. H., Rashied, H., Lodhi, R. N., Musawar, S., & Iqbal, A. (2013). Who is the most potential entrepreneur? A case of Pakistan. *Middle-East Journal of Scientific Research, 17*(9), 1307–1315.
- Sahban, M. A. (2016). *Determinants of entrepreneurial intention among business students in Indonesia*. Universiti Utara Malaysia.
- Serah, A. T. (2014). *The relationship between entrepreneurship and self-employment intention among undergraduate students of Universiti Utara Malaysia* (Doctoral dissertation, Universiti Utara Malaysia).
- Shapiro, Albert and Sokol, Lisa, *The Social Dimensions of Entrepreneurship* (1982). The University of Illinois at Urbana-Champaign's Academy for Entrepreneurial Leadership Historical Research Reference in Entrepreneurship, Available at SSRN:<https://ssrn.com/abstract=1497759>

- Simons, T. L., & Peterson, R. S. (2000). Task conflict and relationship conflict in top management teams: the pivotal role of intragroup trust. *Journal of applied psychology, 85*(1), 102.
- Singh, A., & Maurya, S. (2020). Role of technology and entrepreneurship in economic development: A South Asian perspective. In *Technological innovations for sustainability and business growth* (pp. 56–70). IGI Global.
- Stephan, U., Li, J., & Qu, J. (2020). A fresh look at self-employment, stress and health: Accounting for self-selection, time and gender. *International Journal of Entrepreneurial Behavior & Research, 26*(5), 1133–1177. <https://doi.org/10.1108/IJEBR-06-2019-0362>
- Stone, M. (1974). Cross-validation and multinomial prediction. *Biometrika, 61*(3), 509–515. <https://doi.org/10.1093/biomet/61.3.509>
- Tabachnick, B. G., Fidell, L. S., & Ullman, J. B. (2007). Using multivariate statistics (Vol. 5, pp. 481–498). Boston, MA: Pearson
- Taylor, S., & Todd, P. (1995). Decomposition and crossover effects in the theory of planned behavior: A study of consumer adoption intentions. *International Journal of Research in Marketing, 12*(2), 137–155. [https://doi.org/10.1016/0167-8116\(94\)00019-K](https://doi.org/10.1016/0167-8116(94)00019-K)
- Thomas, K. W., & Velthouse, B. A. (1990). Cognitive elements of empowerment: An “interpretive” model of intrinsic task motivation. *Academy of Management Review, 15*(4), 666–681. <https://doi.org/10.5465/amr.1990.4310926>
- Tiwari, P., Bhat, A. K., & Tikoria, J. (2017). An empirical analysis of the factors affecting social entrepreneurial intentions. *Journal of Global Entrepreneurship Research, 7*(1), 9. <https://doi.org/10.1186/s40497-017-0067-1>
- Turner, M., Kitchenham, B., Brereton, P., Charters, S., & Budgen, D. (2010). Does the technology acceptance model predict actual use? A systematic literature review. *Information and Software Technology, 52*(5), 463–479. <https://doi.org/10.1016/j.infsof.2009.11.005>
- Umer Zaman, Hasan Zahid, Muzafar Shah Habibullah & Badariah Haji Din | (2021). Adoption of Big Data Analytics (BDA) Technologies in Disaster Management: A Decomposed Theory of Planned Behavior (DTPB) Approach, *Cogent Business & Management, 8*:1, 1880253, DOI: [10.1080/23311975.2021.1880253](https://doi.org/10.1080/23311975.2021.1880253)
- Urbano, D., Aparicio, S., & Audretsch, D. (2019). Twenty-five years of research on institutions, entrepreneurship, and economic growth: What has been learned? *Small Business Economics, 53*(1), 21–49. <https://doi.org/10.1007/s11187-018-0038-0>
- van der Zwan, P., Zuurhout, P., & Hessels, J. (2013). Entrepreneurship education and self-employment: The role of perceived barriers. *Panteia/EIM bv. Pozysskano z: <http://www.ondernemerschap.nl/pdf-ezH.201301>*
- W. B. G. E. P. (2020).
- Wati, Y., & Koo, C. (2012, January). Toward green IS adoption behaviors: A self-determination perspective. In *2012 45th Hawaii International Conference on System Sciences* (pp. 1207–1216).
- Willis, D. B., Hughes, D. W., Boys, K. A., & Swindall, D. C. (2020). Economic growth through entrepreneurship: Determinants of self employed income across regional economies. *Papers in regional science, 99*(1), 73–95.
- Zahid, H., & Haji Din, B. (2019). Determinants of Intention to Adopt E-Government Services in Pakistan: An Imperative for Sustainable Development. *Resources, 8*(3), 128. doi: [10.3390/resources8030128](https://doi.org/10.3390/resources8030128)
- Zasiadly, K. (2012). Business incubator model: Business road map 2020. *USAID. Macroeconomic Project, 1–43*.



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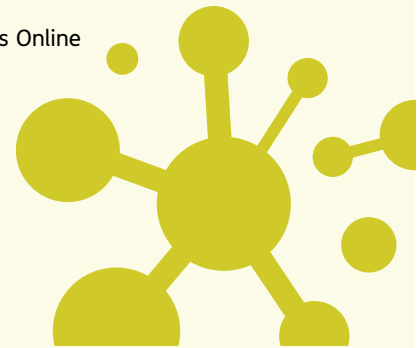
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