

# Technopreneurship intention among nonbusiness students: a quantitative assessment

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## Abstract

**Purpose** – The present study attempts to identify the predictive power of technopreneurial-related activities (TRAs), technopreneurial self-efficacy (TSE) and technopreneurial motivation (TM) on technopreneurial intention (TE) among the nonbusiness students.

**Design/methodology/approach** – A conceptual framework is developed for investigation. A quantitative approach is adopted for this research, and the data are collected from the 282 students of the different public sector universities with a survey questionnaire. The application of structural equation modeling (SEM) is applied to investigate the impact of TRAs, TSE and TM on TE.

**Findings** – The results of SEM found a positive and significant impact of TRAs, TSE and TM on TE among the nonbusiness students of Pakistan.

**Practical implications** – The study would be beneficial for the planners and policymakers of universities to improve modes of technopreneurship. The findings may encourage the students to develop strong beliefs, abilities and skills to start a new venture. The literature of entrepreneurship and technopreneurship may further enrich with empirical evidence of the present study.

**Originality/value** – The study would make technopreneurs able to deal with society's challenges.

**Keywords** Technopreneurship, Technopreneurial activities, Technopreneurial self-efficacy, Technopreneurial motivation, Nonbusiness students

**Paper type** Research paper

## Introduction

In the present era, entrepreneurial skills and high-technology are the driving agents of the economy. Entrepreneurial skills and technopreneurship (the merging technology prowess) are the real sources of a knowledge-based economy. Technopreneurs have a protagonist role in promoting and creating new information communication technologies (ICTs) goods and services to the local and global markets to satisfy the customer demand in the digital economy. Thus, there are still many newly developed information technology (IT) technopreneurs that found themselves either unsuccessful right at the start-up or the prime of life of the businesses. There could be involvement of the external and internal factors.

A technopreneur could be a new age entrepreneur who utilizes the technology to produce or make somewhat unique or to create innovations. Technopreneurship is a reliable source of long-run sustainable competitive advantage. The terms “technology” and “entrepreneurship” commonly point out to technology that is repeatedly used in the industrial world as the practical application of science. Scarcely, the technology itself is measured as a useful appliance for developing skills, creating products and expertise to resolve an issue. However, rapid technological innovation has a sign in the competitiveness of the global business. Similarly, the entrepreneur has a focus on the ability to manage and create a company



without uncertainties and fear of the risks to get profits. Further, some scholars highlight technology entrepreneurship as a whole and social-driven endeavor (Garud and Karnoe, 2003; Ulhoi, 2005). Fayolle *et al.* (2014) and Lin (2004) proposed that entrepreneurial education (EE) is an active strategy for more innovation.

The notion of nurturing an entrepreneur is gorgeous to students due to a unique mode of contributing in the labor market with excellent elasticity in hand. In the perception of Lüthje and Franke (2003), the expected values among graduates confront the challenges regarding independence, self-realization and self-employment. Most of the new business opportunities appear within approximately all academic disciplines (e.g. chemistry, computer science, nursing, arts, pharmacy and engineering). Thus, a considerable number of entrepreneurship creativities at universities are presented by business students and schools (Roebuck and Brawley, 1996; Hisrich, 1988). Indeed, most of the empirical investigations were conducted to investigate entrepreneurial intention (EI) among university students by focusing on business students (Shah and Soomro, 2017). According to Hynes (1996), EE can promote and foster among nonbusiness students.

As a result, the domain literature covers and highlights empirical studies on the factors influencing technopreneurship (Abdulgani *et al.*, 2016). However, among nonbusiness students of Pakistan, the technopreneurs intention is still at infancy stage. Exceptionally, an addition of technopreneurs motivation may provide additional motivation and desire in capturing business opportunities of Pakistani students. The present study focuses on technopreneurial intention (TE), while the other studies focused on EI among the different university students. The findings of the study would be valuable for understanding the role of technology towards the promotion of entrepreneurship.

### Literature review and hypotheses development

At present, the entrepreneur is a significant organizer or undertaker who organizes an economic venture. He/she organizes, manages and owns with the assumption of risk of business (Shukor, 2006). The Schumpeterian entrepreneur is an innovator who presents new technologies or products. In the perception of Aizzat *et al.* (2009), EI is to be a robust analyst or evaluation of entrepreneurial behavior and activity since entrepreneurship offers intentional, planned behavior and based on reality such intention is leading action. EI is an extent of mind that guides and directs about individuals' actions regarding the improvement and operation of new venture ideas (Bird, 1998). In a similar aspect, Lope (2009) proposed intention as a state of mind directing individuals actions and attentions toward self-employment as contrasting to organizational employment.

In the meantime, technology entrepreneurship is an associated division of entrepreneurship dealing with technology (Syahida, 2008). The involvement of the entrepreneurs in technology is termed as technopreneurs or technology entrepreneurs. Baumol (2002) contributed that a technological entrepreneur is bold with the creation from recognized commercial practices and approaches which continually pursues the occasion to merchandise new technologies, processes, products and measures. A technopreneur could be a new nurtured entrepreneur who uses technology to come out with somewhat new or to make a few innovations. According to Syahida (2008), technopreneur or technology entrepreneur is one who has the various capabilities of an innovator, inventor and entrepreneur. They share the same entrepreneur's behavior like as attitudes, drivers, one's wants, values and beliefs as these both are entrepreneurs. Both (technopreneurs and entrepreneurs) manage a new business that associates to self-employment. Yordanova *et al.* (2020) tried to examine the developing role of TE among Bulgarian science, technology, engineering and mathematics (STEM). The findings of the study showed that in scientific research, university students are more suitable to demonstrate TE. According to Pei-Lee and Chen-Chen (2008), the development of organization

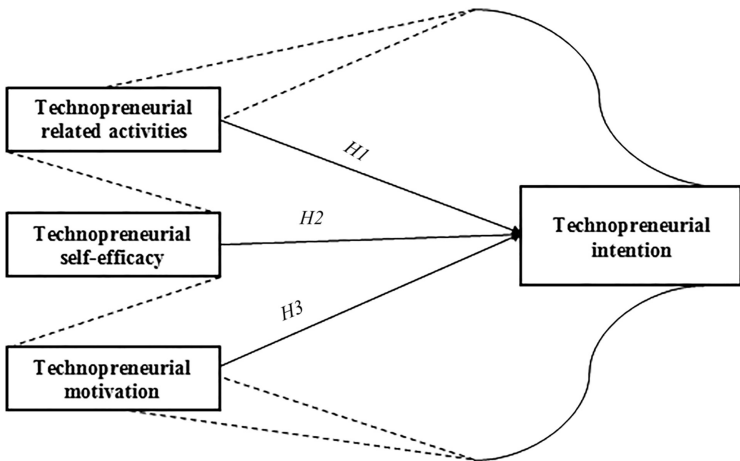
structure and management policies is possible through technopreneurship programs of Multimedia University. [Sharma \(2018\)](#) proposed that gender difference is a significant barrier toward EI among youth. Further, barrier perceptions and the EI between genders vary with change in culture at the regional level.

In the same domain, EI among female students can be developed through entrepreneurial self-efficacy (ESE), university support and proactive personality. Moreover, the results also support that ESE partially mediates the relationship between proactive personality and EI of female students ([Sidratulmunthah and Malik, 2018](#)). Similarly, [Shi et al. \(2019\)](#) found a positive and significant effect of perceived university support on EI. The study also found a significant association between ESE, growth and independence-oriented intentions. More recently, in the context of Pakistan, self-efficacy (SE), perceived feasibility and perceived desirability are found to be the significant predictors of EI ([Soomro et al., 2020](#)).

Consequently, the authors have mainly focused on EI through the different factors such as perceived feasibility, perceived desirability, ESE, proactive personality, university support towards EI ([Sidratulmunthah and Malik, 2018](#); [Shi et al., 2019](#); [Soomro et al., 2020](#)) rather than TE, particularly in Pakistan. Therefore, based on the unavailability of empirical evidence, we proposed the following model ([Figure 1](#)) for evaluation among nonbusiness students.

Entrepreneurship has great importance in promoting economic growth. Most of colleges and universities of the globe are offering entrepreneurial programs or education to provide the learning regarding entrepreneurship ([Shah and Soomro, 2017](#)) and to create the effect in strategies towards more innovation ([Lin, 2004](#)). Further, in various countries, universities have tracked the example of US institutions and established a variety of entrepreneurial education initiatives. [Wadhwa et al. \(2008\)](#) claimed that a significant number of US-born technopreneurs who have Master of Business Administration (MBA) degree established corporations more speedily (an average of 13 years after graduation) than others who have no MBA degree. Common traits and capabilities, such as determination and risk-taking in many technopreneurs and entrepreneurs, are part of one's deoxyribonucleic acid (DNA).

Nevertheless, a disagreement arises whether such traits frequently related to technopreneurs are proficient in transmuting the stimulation into a business notion and ultimately into an actual corporation. In this field, the prior investigations like [Duval-Couetil et al. \(2011a\)](#) and [Shah and Soomro \(2017\)](#) also have provided some evidence that educational programs can enhance EI. To boost up the technopreneurship, it is essential to inspect the



**Figure 1.**  
Conceptual framework  
of the study

predictors, which may influence an individual's intentions for a new business venture, particularly among young individuals. In such a perspective, SE is the potent factor of EI models (Lope, 2009). SE is the resilient personal belief in capabilities and skills to start a task that leads towards success (Bandura, 1997; Lope, 2009). Its notion reflects an individual's most profound thoughts about the performance of tasks. Through this belief, they would be capable of transforming successfully such skills into a proposed consequence (Bandura, 1989, 1997; Wilson *et al.*, 2007). In such a way, in the domain of entrepreneurship, the numerous studies have tremendously examined the relationship between ESE and entrepreneurial career intentions or preferences (Memon *et al.*, 2019). According to Machmud *et al.* (2020), TE can be predicted by SE. The relation between SE and TE developed through technopreneurs learning. An empirical investigation of Vamvaka *et al.* (2020) underlined the factors including the perceived controllability, perceived self-efficacy (PSE) and EI are forecasted by three factors, i.e. commitment to entrepreneurship; choice intention and nascent entrepreneurship. Further, it is also claimed that PSE and affective attitudes are the robust analysts of intention.

In the literature, the authors mainly focused on motivation in two domains, including intrinsic and extrinsic motivation (Vardhan and Biju, 2012; Sesen and Pruett, 2014). A quantitative study of Choudhary (2017) recommends a positive and significant effect of motivational factors on EI. Similarly, other motivational factors, including propensity to take the risk, and egoistic passion, are also found to be the significant predictors of EI (Shane *et al.*, 2003). The scholars like Liñán and Chen (2009) and Haus *et al.* (2013) proved the variation of entrepreneurship among the different human groups.

Consequently, the previous findings provide the association between EE and EI in both cases, empirically and theoretically (Shah and Soomro, 2017; Soomro *et al.*, 2019). In recognition, ESE is a valuable factor due to the strong predictor of EI and entrepreneurial actions. Entrepreneur and technopreneur must have a robust belief in their capabilities and skills to start a new business venture with an idea to cope with society's challenges (Urban, 2010). Thus, a few investigations were found that have focused on technopreneurial self-efficacy (TSE) with TE. In the perception of Moy *et al.* (2001), motivation is the protagonist factor which has a vital role for an individual's intense desire towards initiating a business or venture. Initially, the motivational factors play a significant role in pushing for self-employment, wealth and security (Zhuplev *et al.*, 1998). These factors (intrinsic and extrinsic motivation) drive an individual and create a passion for starting a business (Simola, 2011). It is also stated the intrinsic motivation has a more substantial effect rather than extrinsic motivation. Theoretically, the entrepreneurial event theory (EET) and the theory of planned behavior (TPB) have enormously neglected the motivational factors despite the significant predictors of EI (Buhasri and Ismail, 2019).

In consequence, the related studies have focused the relationship of ESE, technopreneurial-related activities (TRAs), TSE and technopreneurial motivation (TM) towards EI and TE separately (Zhuplev *et al.*, 1998; Shah and Soomro, 2017; Memon *et al.*, 2019), except the Pakistani context. Henceforth, we proposed the following hypotheses:

- H1. TRAs have a positive and significant effect on TE.
- H2. TSE has a positive and significant effect on TE.
- H3. TM has a positive and significant effect on TE.

## Methods

### *Sample and collection of the data*

The focus of the investigation was the students who have involved in significant courses in engineering, mathematics, electronics and specific others among the different public sector universities of Sindh, province of Pakistan. We did not focus on those students who were studying the courses of business or entrepreneurship. A descriptive research design was

formulated to get the objective of this research study. Initially, 450 survey questionnaires were randomly distributed among the respondents. In return, we gained 282. It yielded a 62% response rate.

Before distribution, we visited the different institutes and requested their respective deans to acquire the permission and assistance in the distribution of the survey. We fully have taken care of our respondents concerning ethical protocols. We made them aware of the aim and objectives of the research task. They were even guided about the options regarding the Likert scale. They were also guaranteed about the usage of their acquired response. Thus, the printed copies of questionnaires were distributed. We offered them sufficient time and allowed to carry the questionnaire at their homes or where they may feel comfortable to fill the questionnaire with full concentration.

#### *Survey tool and its authentication*

A survey questionnaire was employed to acquire the response from the chosen participants. However, the items of the survey questionnaire were adopted from the literature. To confirm the questionnaire in our study's context, a pilot survey was conducted to gain the response from 25 respondents. We had ensured the assumptions of reliability and validity considered to be the significant steps of survey validation (Taherdoost, 2016). The reliability was conducted to assess the stability and consisted of the result. The reliability focused on determining the consistency and stability of the result; the test of reliability is crucial in discussing the consistency across the parts of a measuring instrument (Huck, 2007). In this respect, Cronbach's alpha coefficient is the most common measure of internal consistency and the appropriate measure of reliability on account of the usage of the application of Likert scales (Whitley, 2002; Robinson, 2010). The above 0.70 is considered to be an excellent internal consistency (Whitley, 2002; Robinson, 2010). In contrast, for exploratory perspective, the values of the reliability must be equal to or above 0.60 (Straub *et al.*, 2004). In our study's results, we found the values of reliability greater than 0.70, which is excellent.

Further, regarding the validity, we employed the principal component analysis (PCA) with varimax rotation method (Wee and Quazi, 2005; Koh and Nam, 2005). As a result, the items were loaded above 0.40, which is the minimum criterion value in the study to conduct the next steps of analysis. In this way, a reliable and valid survey questionnaire was launched for final data collection.

#### *Measures*

We adopted the required items from the related literature. TE factor was measured on 13 items adopted from Ajzen and Fishbien (1980) and Lope (2009). TRAs factor was evaluated on nine items adopted from Duval-Couetil *et al.* (2011a). Similarly, TSE was measured on ten items taken from the study of Wilson *et al.* (2007). Finally, TM was measured on five items adopted from the study of Solesvik (2013). All the items were measured through a five-point Likert scale ranging from strongly agree = 1 to strongly disagree = 5.

#### **Data analysis**

In the first step, we applied SPSS, which is known as user friendly in conducting the various fundamental analyses, i.e. descriptive statistics, reliability, data screening and data cleaning (Hair *et al.*, 2018). In the second step, to assess the hypothesized paths, structural equation modeling (SEM) is applied. SEM is a popular method of analysis and has good recognition in exploring the relationships among constructs (Hair *et al.*, 2011, 2014; Lowry and Gaskin, 2014). Further, it is also a useful statistical tool for testing theories and conceptual models of the study empirically (Hair *et al.*, 2011, 2014). We conducted the SEM through Analysis of

Moment Structures (AMOS), version 26.0. We preferred AMOS (instead of partial least square SEM [PLS-SEM]) as it allows the scholars to define whether the associations among the variables in the research framework are significant and based on the data collected. It is the second generation of multivariate analysis techniques which combines the various methods available in the first generation of multivariate analysis (Hair *et al.*, 2014; Lowry and Gaskin, 2014).

We did not consider PLS-SEM as it is useful and powerful to test the theory and complex research model (Lowry and Gaskin, 2014; Hair *et al.*, 2018). It needs a small size of the samples (Henseler *et al.*, 2015). Even though some researchers argue that PLS-SEM is less rigorous, its usage has gained popularity due to the unique features of PLS-SEM to handle smaller sample size (Hair *et al.*, 2011; Lowry and Gaskin, 2014). Besides, the small sample size in PLS-SEM is said to have biases against consistency (Hair *et al.*, 2014; Lowry and Gaskin, 2014). Henceforth, our study has covered a sample size of 282 respondents. However, our research has not been applied to any theory and is not based on limited samples. It just examined the proposed superficial relationships and consisted of large representatives which fulfill the criterion of AMOS.

### Demography

The demography of respondents showed that in the sample, the majority were male students (68.83% or  $n = 180$ ) than female students (36.17% or  $n = 102$ ) (Table 1). With respect to the age of the respondents, the majority of the respondents (51.77%) were found between 21 and 30 years of age. In total, 58 respondents (20.57%) were 31 and above years of age. The majority ( $n = 222$  or 78.72%) of respondents were unmarried compared to married ( $n = 60$ ; 21.28%) (Table 1).

### Measurement model

In the measurement model, the indicator's reliability assessment was conducted through factor loadings. The related indicators demonstrated high loadings of the values above 0.70 (Hair *et al.*, 2017). We followed the suggestive values of Hair *et al.* (2010) that exceeded 0.70, indicating the meaningful factor loadings. The majority of the items have appeared with loading score of 0.70 (Hair *et al.*, 2010) (Table 2). However, some items were excluded due to low loadings score or less than 0.70. Besides, the value of composite reliability (CR) of rest of the factors was noticed in between 0.790 and 0.892 (Table 2), which exceeds 0.70 as suggested by the renowned scholars including Gefen *et al.* (2000) and Kline (2010). Henceforth, construct reliability as CR and Cronbach's alpha was moderately error-free for all the variables. In order to notice the measure of the identical construct, the average variance extracted (AVE) values

	Category	Frequency	Percentage
Gender	Male	180	68.83
	Female	102	36.17
	Total	282	100.0
Age (years)	1–20	78	27.66
	21–30	146	51.77
	31 and above	58	20.57
	Total	282	100.0
Marital status	Married	60	21.28
	Unmarried	222	78.72
	Total	282	100.0

**Table 1.**  
Demography

Construct	Item code	Factor loadings	CR	AVE	$\alpha$
TE	TE1	0.889	0.903	0.799	0.831
	TE3	0.875			
	TE2	0.867			
	TE4	0.853			
	TE6	0.850			
	TE5	0.843			
	TE7	0.834			
	TE8	0.826			
	TE10	0.808			
	TE9	0.798			
TSE	TSE1	0.892	0.926	0.805	0.838
	TSE2	0.888			
	TSE3	0.880			
	TSE5	0.864			
	TSE4	0.823			
	TSE6	0.815			
	TSE9	0.790			
TRA	TRA1	0.873	0.829	0.775	0.853
	TRA2	0.843			
	TRA3	0.840			
	TRA4	0.832			
	TRA6	0.812			
	TRA5	0.807			
	TRA9	0.798			
	TRA8	0.790			
TM	TM2	0.852	0.925	0.872	0.893
	TM1	0.835			
	TM3	0.815			
	TM4	0.801			

**Note(s):** AVE = summation of the square of the factor loadings; CR = square of the summation of the factor loadings;  $\alpha$  = Cronbach's alpha; TE = technopreneurial intention; TSE = technopreneurial self-efficacy; TRA = technopreneurial-related activities; TM = technopreneurial motivation

**Table 2.**  
Measurement model

were applied. This judges the degree of correlation with identical constructs. We found the values of AVE in between 0.775 and 0.872 for every construct that is the above 0.50 (Hair *et al.*, 2010). In sum up, all the variables have satisfied the required values of convergent. Finally, the reliability of constructs was calculated through Cronbach's alpha coefficient. The value of Cronbach's alpha coefficient of every factor has fallen between 0.831 and 0.893 that exceeds the recommended values as above 0.70 (Nunnally and Bernstein, 1994; Kannana and Tan, 2005).

### *Structural model*

We employed the structural equation model (SEM) to confirm the model fitness and hypotheses assessment. The model fit indices showed (CMIN = 2.232; goodness-of-fit index [GFI] = 0.933; adjusted goodness-of-fit index [AGFI] = 0.922; normed fit index [NFI] = 0.951; comparative fit index [CFI] = 0.939 and root mean square error of approximation [RMSEA] = 0.039) the excellent fitness of the model with data (Table 3). With respect to hypotheses assessment, the significant and positive effect of TRAs on TE (SE = 0.030; CR = 5.321;  $p < 0.01$ ) (Table 4 and Figure 2) is noticed. Thus, H1 is supported. Besides, an analysis confirmed the significant and positive effect of TSE on TE (SE = 0.064; CR = 6.734;  $p < 0.01$ ) (Table 4 and Figure 2). Henceforth, H2 is supported. Finally, we have also been found



TM as the significant predictor of TE (SE = 0.043; CR = 6.335;  $p < 0.01$ ) (Table 4 and Figure 2), which accepted H3.

### Discussion and conclusion

The present study examined the technopreneurship intention through TRAs, TSE and TM among nonbusiness students on a quantitative basis. A conceptual model was developed and some hypotheses as proposed by reviewing rigorous field literature. We targeted the nonbusiness course-related students from the different public universities of Sindh, Pakistan. To test the proposed paths, AMOS, version 26.0, software was employed to this respect. In association with H1, H2 and H3, the findings found the significant and positive effect of TRAs, TSE and TM on TE. These findings are in line with the earlier research including Zhuplev *et al.* (1998), Luthje and Franke (2004), Urban (2010), Simola (2011), Shah and Soomro (2017) and Buhasri and Ismail (2019). Our results reflected the strong beliefs and capabilities of technopreneurs for the initiative of a new venture or entrepreneurial activities. This creates the enterprising spirit and entrepreneurship adaptation among individuals (Davies *et al.*, 2002). Hence, our respondents may follow the Schumpeter's (1949) guidelines that are about new ideas inventions into successful innovations through capability and willingness. Further, the indispensable resources for taking benefit of opportunities through managing risks and decisions to confront the issues may also be found (Davies *et al.*, 2002). Among our respondents, the motivation was found to be the significant factor that reflects the actual intense desire about the initialization of business. They may be pushed through this towards wealth creation (Zhuplev *et al.*, 1998).

In a sequel, the overall findings provided the empirical evidence regarding the positive and significant effect of TRAs, TSE and TM on TE among the nonbusiness students of Sindh, Pakistan. Due to the prominence of entrepreneurship in endorsing economic growth, most of the global universities offer entrepreneurial programs or education to provide knowledge about entrepreneurship (Shah and Soomro, 2017). However, there is a great need to give the technopreneurship education to develop strong TE among the individuals.

**Table 3.**  
Model fit indices

	CMIN/df	GFI	AGFI	NFI	CFI	RMSEA
Model fit indicators	2.232	0.933	0.922	0.951	0.939	0.039
Suggested values	<3	>0.90	>0.90	>0.90	>0.90	<0.05

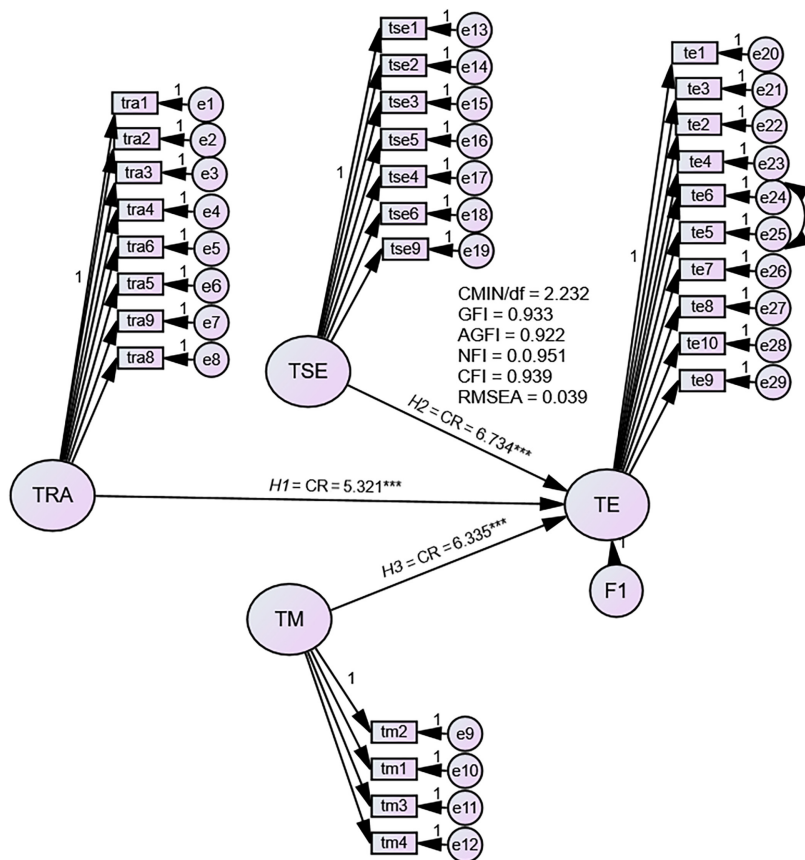
**Note(s):** CMIN =  $\chi^2$ /chi-square/df; df = degree of freedom; GFI = goodness-of-fit index; AGFI = adjusted goodness-of-fit index; NFI = normed fit index; CFI = comparative fit index; RMSEA = root mean square error of approximation

**Table 4.**  
SEM estimations

H. No	Independent variables	Path	Dependent variable	Estimate	SE	CR	P	Decision
H1	Technopreneurial activities	→	Technopreneurial intention	0.223	0.030	5.321	***	Accepted
H2	Technopreneurial self-efficacy	→	Technopreneurial intention	0.249	0.064	6.734	***	Accepted
H3	Technopreneurial motivation	→	Technopreneurial intention	0.333	0.043	6.335	***	Accepted

**Note(s):** SE = standard error; CR = critical ratio;  $p$  = significance level \*\*\* $p < 0.05$





**Figure 2.**  
Structural  
equation model

**Note(s):** TE = technopreneurial intention; TSE = technopreneurial self-efficacy;  
TRA = technopreneurial related activities; TM = technopreneurial motivation

The outcomes of the study would be valuable for the policymakers and planners of universities to boost up and improve the prevailing teaching modules and methods. The technopreneurs have the same determinants of entrepreneur's behavior such as attitudes, drivers, values and beliefs and needs like entrepreneurs. Thus, it is agreeable to use TE model with creativity and innovation. Due to the use of TSE, the study may be useful to explore the TE and EIs and action. The high existence of TSE may develop further strong beliefs, abilities and skills to initiate a new business. Additionally, it would make technopreneurs able to cope with society's challenges. The positive results of the study underlined the significance of designing suitable university policies to create enterprising global technopreneurs.

The study was conducted in Sindh, province of Pakistan, so it is not free from certain limitations. With regard to the conceptualization of the study, we focused mainly on general literature rather than focusing only on the literature of developing context. We did not underpin our conceptualization with a concerned theory as previously the TPB has been enormously applied to examine the entrepreneurship intention in both contexts developing and developed. Our conceptualized model is restricted to a few predictors such as TRAs, TSE

and TM towards technopreneurship intention without control of any demographic construct. The present study is limited to cross-sectional data and collected through a single source (questionnaire). Area wise, the study only focused on Sindh, province of Pakistan, where only nonbusiness students were traced through random sampling framework. Concerning time horizon, our research is based solely on cross-sectional data. We collected only 282 samples.

The present study conceptualized the investigation of technopreneurship intention through TRAs, TSE and TM. However, there are many other factors such as technopreneurial achievement; confidence; innovation; personality traits; willingness to take risks; self-realization personal suitability; good mental alertness; attitudes; motivation and stress tolerance; decision-making and communication and administrative skills which can be applied to investigate the technopreneurship intention in the future. Besides, in the same field, there are many theories such as the TPB; the theory of reasoned action (TRA) and entrepreneurial event model (EEM) strictly suggested to inspect the technopreneurship intention in future. With regard to methods, mixed methods should be employed to get more suitable and authentic results. More longitudinal studies are needed to be conducted in both the developing and developed contexts. Contextually, the area of the study should be extended throughout Pakistan. The business students should be considered as the study's respondents rather than nonbusiness students. In the future, more sample size with other sampling strategies (expect random) should be applied to validate the results of a study further.

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