



Validating Entrepreneurial Intentions Questionnaire to Assess the Impact of Entrepreneurship Education

Muhammad Zaheer Asghar ¹, Fariha Gul ², Pirta Seitamaa Hakkarainen ³,
M. Zeki Taşdemir ⁴

Abstract

Entrepreneurship education plays an important role in social and economic development of a society through providing self-employment and job opportunities for others. Entrepreneurship education can catalyse entrepreneurial mindset through developing entrepreneurial intentions of graduates. Current study aims to validate entrepreneurial intentions questionnaire in order to study the impact of entrepreneurship education on student's intentions to become an entrepreneur. The question under study is "does entrepreneurship education impact entrepreneurial intentions of the students?" Study has the following objectives; 1) to study the impact of entrepreneurship education on attitude of the students to become an entrepreneur; 2) to find out perceived behavioural control of the entrepreneurship education students to become an entrepreneur; 3) to understand the impact of subjective norms on entrepreneurship education students to become an entrepreneur; 4) to assess the impact of entrepreneurship education on entrepreneurial intentions of the students. This study will utilize theory of planned behaviour as theoretical framework of the study. According to theory of planned behaviour entrepreneurial intentions of a person are formed through a complex process with some antecedents. The antecedents of entrepreneurial intentions are comprised of attitude of the persons towards entrepreneurship; Subjective norms of a person towards entrepreneurship; and perceived behavioural control of a person towards entrepreneurial intentions. It is a quantitative study based on casual comparative research design. Entrepreneurial Intentions Questionnaire was developed based on theory of planned behaviour. It was pilot tested on students (n=60) for reliability and validation tests. It was validated to make a comparison between technology education students' (n=240) who have participated in entrepreneurship education and technology education students' (n=302) who have not participated in entrepreneurship education. The findings of the study have shown appropriateness of theory of planned behaviour

Keywords

Entrepreneurship education
Entrepreneurial Intentions
Questionnaire
Theory of Planned Behaviour
Structural Equation Model

Article Info

Received: 11.10.2015
Accepted: 03.20.2017
Online Published: 01.31.2019

DOI: 10.15390/EB.2019.6105

¹ University of Helsinki, Department of Teacher Education, Finland, zaheer.asghar@helsinki.fi

² University of the Punjab, Institute of Education and Eesearch, Pakistan, naylalach@gmail.com

³ University of Helsinki, Department of Teacher Education, Finland, pirta.seitamaa-hakkarainen@helsinki.fi

⁴ University of Management and Technology, Pakistan, academiczt@gmail.com

to measure entrepreneurial intentions of the students. Students who have participated in entrepreneurship education have shown higher intentions than non participants. Study was concluded with the fact entrepreneurship education does not impact directly to the intentions of the students but it has influence on entrepreneurial intentions of the students through antecedents of intentions. The questionnaire validated for study can be useful for further measurement of entrepreneurial intentions of the students. Cronbach's Alpha was used to test reliability of questionnaire. Factor analysis was used to test validity of the questionnaire. t-test was applied to find out difference in intentions between entrepreneurship education participants and non participants. Structural equation model (SEM) was used to find out relationship between entrepreneurship education and antecedents of entrepreneurial intentions.

This study was knowledge addition about entrepreneurial intentions of the students in Pakistani context and impact of entrepreneurship education. Future study can be conducted to study the new venture creation process of the students with high entrepreneurial intentions.

Introduction

Entrepreneurship education plays an important role on the development of intention. Growth of entrepreneurship education is evidence that students with intentions to run their own business prefer to choose entrepreneurship education program in order to understand new venture creation process (Galloway & Brown, 2002). Hansemark (1998) says that entrepreneurship education also impacts the Technical Vocational Education and Training (TVET) students attitude to choose entrepreneurship as their career. Kuratko (2005) says that it is new emerging trend that educational institutes are going to emerge entrepreneurship education in their degree programs in a very innovative way to make it challenging for learners. Charney and Libecap (2000) says that entrepreneurship education has become important for the students of TVET in order to enhance their entrepreneurial skills to enable them for opportunity recognition and risk taking through linking academics with market needs.

Statement of the Problem

Is entrepreneurship teachable? According to Cunningham and Lischeron (1991); Henry, Hill, and Leitch (2004), there is an ongoing debate whether entrepreneurship education is teachable to students to become entrepreneurs or not? Herron and Robinson (1993) says that entrepreneurial behavior is concerned with personality traits and psychological characteristics of the entrepreneurs. This is the reason that some researchers believe that entrepreneurship is not teachable. However, most of the researchers have the point of view that entrepreneurship can be learned from successful entrepreneurial parents, or through proper education and experiences. These learning experiences from entrepreneurial parents and personal experience will enhance the probability of success in new venture creation.

It is needed to better understand what is impact of different aspects of entrepreneurship education on student's outcomes in the shape of entrepreneurial mind set and skills? Henry, Hill, and Leitch (2005) says that since now there are very few studies those found out link between entrepreneurship education and students outcomes as well entrepreneurial activity and success. There is also shortage of experimental studies with focus in the area of impact of entrepreneurship education intervention programs and there are also less available tracer studies to study that whether students have become entrepreneur or not (Gundlach & Zivnuska, 2010).

Aims and Objectives of the Study

This research aims to validate entrepreneurial intentions in order to study the impact of entrepreneurship education on student's entrepreneurial intentions.

These are the objectives of the study;

- 1- To validate entrepreneurial intentions questionnaire
- 2- To find out impact of entrepreneurship education on antecedents of entrepreneurial intentions of the students
- 3- To find out impact of entrepreneurship education on entrepreneurial intentions of the students
- 4- To find out the difference between entrepreneurial intentions of the students of entrepreneurship education participants and non- participants

Significance of the Study

This research study is an attempt to fill the knowledge gap in the area of entrepreneurship education with focus on the impact of the entrepreneurial curricula on entrepreneurial intentions of the TVET students in Punjab province. It is knowledge addition in previously existing theoretical framework of entrepreneurial intentions by adding impact of entrepreneurship education. It has examined the impact of subjective norms in context of Punjab province on entrepreneurial intentions of the students.

This research is helpful for policy makers to give them an insight to encourage entrepreneurship among students through entrepreneurial TVET. TVET institutes may use this research to develop TVET programs in order to increase students' intentions towards entrepreneurship.

TVET stake holders such as TEVTAs, PVTC, NAVTTC, PBTE and TTB can utilize this research for integration of entrepreneurship education program for TVET students' benefit. For example, TEVTAs and PVTC can develop entrepreneurship education curricula, teacher training programs and PBTE can develop assessment system by utilizing this research. This research will also provide guidelines for TVET curriculum developers, assessment and evaluation experts and teacher trainers to design the program for better delivery of the entrepreneurship education curricula, assessment, teacher training modules respectively for TVET students in Punjab.

The study also intends to be a source of future reference for further research in the area of entrepreneurship and TVET.

Literature Review and Theoretical Framework

The current study has grounded its theoretical foundations on Theory of Planned behavior presented by Ajzen (1991). This theory holds its position among prominent psychological theories on entrepreneurship (Armitage & Conner, 2001; Asghar, Hakkarainen, & Nada, 2016; Kidwell & Jewell, 2003; Long, 2011; Walker, Grimshaw, & Armstrong, 2001; Watson et al., 2014; Zemore & Ajzen, 2014). It was considered appropriate for current study because of the notion that the research entrepreneurial mindset can be carried out in survey design research. The theory claim that one of the best ways to identify entrepreneurial mindset is to ask about intentions of individuals. Another distinguishing feature of this theory is that it presets antecedents of modifications in behavior through intentions (Fretschner, 2014; Kaiser, 2006; Liao, Chen, & Yen, 2007). These modifications in behavior through intentions are applicable to formation of entrepreneurial intentions on the due to education and training. The antecedents that modify behavior as based on the factor. According to this theory the behaviors are formed by combination perceived behavioral control; personal attitude and subjective norms. These three factors influence significantly on intentions of an individual to adopt entrepreneurship as career of (Fretschner, 2014; Lortie & Castogiovanni, 2015; Serida & Tristán, 2011). Another most important factor that influence on these three factors is role of education and training. Underlying assumption of current study is that education plays vital role in modification in perceived behavior, personal attitude and subjective norms thus leading towards the formation of positive entrepreneurial intentions.

The factor of education has been added in these antecedents to examine the impact of entrepreneurship education. Following is comprehensive description of antecedents of theory of planned behavior.

a. Perceived Behavioral Control

One of the main components of entrepreneurial intentions is perceived behavior control (Krueger, Reilly, & Carsrud, 2000). This assumption is grounded on Bandura's (1986) theory of self-efficacy presenting that perceived efficacy greatly influence on behavior of student. It is considered as a conscious process to control a situation (Fretschner 2014; Meyer, Zacharakis, & De Castro, 1993). Education plays an important role in development of high self-efficacy through providing appropriate learning experiences (Bandura, 1986; Krueger et al., 2000; Seligman, 1990).

b. Attitude

Second component of theory of planned behavior is attitude. It is defined as an outcome of behavior or belief (Krueger et al., 2000). Attitude towards entrepreneurship is evaluative criteria towards perceived likelihood to establish and run a business.

It also influence on values given to need of personal wealth, associated prestige, social benefits and personal independence (Krueger et al., 2000; Serida & Tristán, 2011; Shapero, 1982).

c. Subjective Norms

Normative beliefs are the perceptions formed on the basis of opinion of people you are surrounded with including family and friends. The motivation and support provided by family and friends play a significant role in choosing certain career path. These beliefs can be measured by using a valid construct on anticipated support from family and friends. Though these are weak predictors of entrepreneurial intentions but significance of influence of opinion of family, friends, mentors, teachers and guides cannot be ignored (Ajzen, 1987; Bagozzi, Baumgartner, & Yi, 1992; Krueger et al., 2000; Lortie & Castogiovanni, 2015).

d. Entrepreneurship education

In above three antecedents of theory of planned behavior, a fourth factor was added named education. The entrepreneurship education programs are widely offered all around the globe (Kuratko, 2003). They are based on the assumption that education plays role in formation of entrepreneurial intentions, so its role cannot be overlooked.

Owing to importance of factors influencing on formation of intentions for establishing and running one's own venture lead towards the assumption that education in addition to antecedents of behavior play a significant role in increasing intentions to adopt entrepreneurship as career choice. Following figure shows theoretical framework adopted by current study.

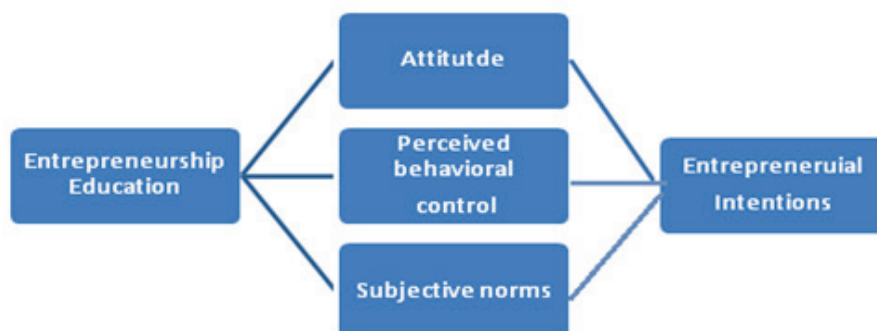


Figure 1. Conceptual Framework based on TPB

Method

It is a quantitative study based on casual comparative research design. Entrepreneurial Intentions Questionnaire was developed based on theory of planned behaviour (Ajzen, 1991). It was pilot tested on students (5 items; $n=60$; $\alpha =.867$) for reliability and validation tests. It was validated to make a comparison between technology education students' ($n=240$) who have participated in entrepreneurship education and technology education students' ($n=302$) who have not participated in entrepreneurship education.

Table 1. Sample Size

Entrepreneurship Education	Participants	Non Participants
	302	240

Questionnaire was consist of three sections to get response from students about their learning and entrepreneurial intentions. First section comprises of theory of planned behaviour constructs; entrepreneurial intentions, attitude towards entrepreneurship, perceived behavioral control, and subjective norms. Second construct consists of entrepreneurship education. Section three has demographics information. Section one has item distribution; 6 questions for entrepreneurial intentions, 6 questions for attitude towards entrepreneurship, 6 questions for perceived behavioral control and 6 items for subjective norms. Second section has 6 items related to entrepreneurship education. Third section comprises of demographics variables: gender (male/ female), name of city (Region01/Region02/Region 03), entrepreneurship education (participation/ non participation), parental work background (self employed/ unemployed/ employed), and work experience (experienced/ not experienced).

Questionnaire was same for control group and experimental group except entrepreneurship education part which was omitted for control group as they had not participated in entrepreneurship course. Here term control group is applicable for students who have not participated in entrepreneurship education while term experimental group is applicable for students group who have participated in entrepreneurship education course.

Every item has been measured by 5-point likert scale. Point 1 represents high level of disagreement, point 2 represents simple disagreement, point 3 represents neutral statement, point 4 is for simple agreement and point 5 is meant for high level of agreement. Survey participants were asked to tick or circle the relevant point to show their concern towards statements of the questionnaire.

t-test was applied for comparison purpose, Regression was applied to study the relation between antecedents of entrepreneurial intentions. SEM was used for validation of the questionnaire.

Results

Reliability

Questionnaire was pilot tested for measuring reliability and validity of the instrument. Pilot test was conducted on 60 students. 60 students of TVET were selected who has participated in entrepreneurship education.

Over all reliability of five factors scale has been remained Cronbach Alpha 0.867 as shown in the table 2;

Table 2. Reliability Statistics

Cronbach Alpha	N of Items
.867	5

Entrepreneurship Group's Construct Validity

Same questionnaire was used for control group and entrepreneurship group except entrepreneurship education factor which was added for entrepreneurship group. Control group was not asked about entrepreneurship education factor because they had not participated in entrepreneurship course. Entrepreneurship group's construct with its factors is shown in figure 2.

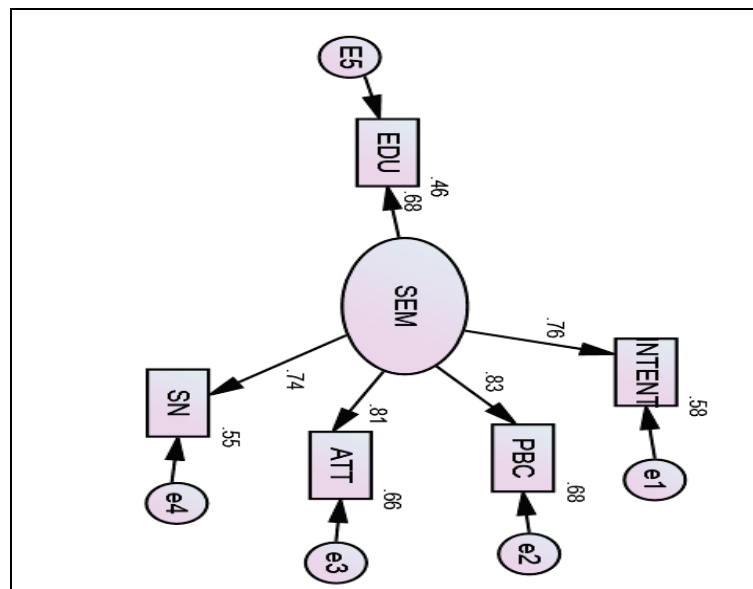


Figure 2. Entrepreneurship Group Construct with Factors

EQ was comprised of five major factors;

- Entrepreneurship Education
- Subjective Norms
- Perceived Behavioral Control
- Attitude towards Entrepreneurship
- Entrepreneurial Intentions

Entrepreneurship Education was considered as exogenous variable while other all factors were considered endogenous variables.

Data screening was performed and basic assumptions were assessed for the application of SEM such as homogeneity, non-spurious relationship, normality, uncorrelated error terms and outliers. Outliers were observed through upper and lower values of quartiles of data. Data was free of outliers. Data distribution of Independent variables such as attitude, subjective norms, perceived behavioral

control and entrepreneurship education as well as dependent variable such as entrepreneurial intentions showed approximately normal distribution with z-values ($1.96 < X < -1.96$) of the skewness and kurtosis (Cramer & Howitt, 2004; Doane & Seward, 2011), Shapiro-Wilk's test, ($p > .05$) (Razali & Wah, 2011; Shapiro & Wilk, 1965) and graphics of normal Q-Q plot. The scatter plot showed the distribution of independent variables around the dependent variable slope which shows the linearity with positive relationship among variables. The assumption of uncorrelated error term was also assessed prior to execute SEM. The residuals plot showed that there was no violation of assumption. The assumption of Non-spurious relationship was confirmed through true observed covariance. The demographics of sample showed homogeneity of the sample through t-test ($p > .05$). All questions have significant path relation with major factor as shown in the given table 3 which are normal for validation;

Table 3. Basic Values

Factors	Mean	P	S.D.	C.S.	Skew.	Kurt.
INTENT	4.269	***	0.036	1.00	0.000	0.049
PBC	4.353	***	0.034	1.00	-0.020	0.019
ATT	4.538	***	0.035	1.00	-0.001	-0.002
SN	4.236	***	0.038	1.00	-0.024	0.092
EDU	4.540	***	0.027	1.00	-0.007	0.045

AMOS software was used to test the relationship between dependent and independent variables through Structural Equation Model. Path analysis was chosen to study the relationship among multiple independent variables and dependent variable (Ullman, 1996). Path analysis a subset of SEM was essential to use due to relationship of entrepreneurship education which was estimated as independent variable on the dependent variables of the antecedents of entrepreneurial intention. SEM was also used due its ability to estimate the goodness of fit to describe that suggested model is fit or not (Kline, 1998). SEM has following parameters.

Table 4. SEM Good Fit Parameters

Test	Good Fit	Moderate Fit	
χ^2	$0 \leq \chi^2 \leq 2df$	$2df \leq \chi^2 \leq 3df$	(Bollen & Long, 1993, p. 6)
χ^2 / df	$0 \leq \chi^2 / df \leq 2$	$2 \leq \chi^2 / df \leq 3$	(Schumacker & Lomax, 2004)
P value	$0.05 \leq p \leq 1.00$	$0.01 \leq p \leq 0.05$	(Bollen & Long, 1993, p. 6)
GFI	$0.95 \leq GFI \leq 1.00$	$0.90 \leq GFI \leq 0.95$	(Olobatuyi, 2006)
CFI	$0.97 \leq CFI \leq 1.00$	$0.95 \leq CFI \leq 0.97$	(Schumacker & Lomax, 2004)
RMSEA	$0 \leq RMSEA \leq 0.05$	$0.05 \leq RMSEA \leq 0.08$	(Steiger & Lind, 1980)
NFI	$0.95 \leq NFI \leq 1.00$	$0.90 \leq NFI \leq 0.95$	(Hair et al., 2006)
TLI	$0.95 \leq TLI \leq 1.00$	$0.90 \leq TLI \leq 0.95$	(Hair et al., 2006)

Minimum was achieved with Chi-square = 18.891, degrees of freedom = 5 and Probability level = .002. It was good fit with NFI= .967, TLI=.976 and CFI=.975 as shown in Table 5;

Table 5. Base Line Comparison

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	DF	P	CFI
Default model	.967	.902	.976	.926	5	.002	.975
Saturated model	1.000		1.000		0		1.000
Independence model	.000	.000	.000	.000	15	.000	.000

Control Group's Construct Validity

Control group's construct has four factors those are similar with experimental group's four basic factors such as entrepreneurial intentions; perceived behavioral control; attitude towards entrepreneurship; and subjective norms as shown in figure 3.

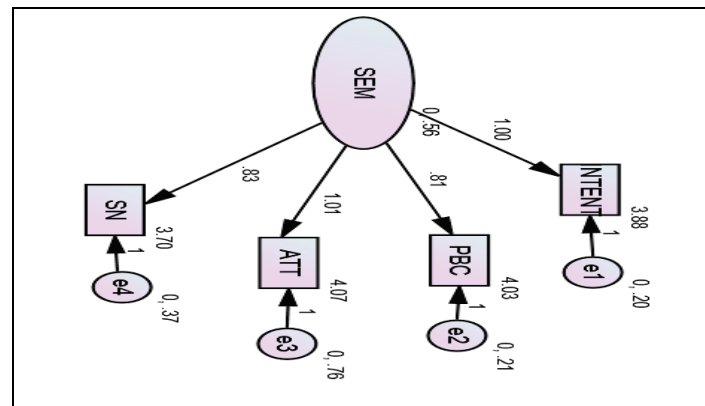


Figure 3. Control Group's construct with Factors

Skewness and Kurtosis is between -2.00 and +2.00 which shows normal distribution of the data in probability curve as shown in table 5.

Table 6. Basic Values

SEM	Mean	S.D.	C.S.	Skewness	Kurtosis
INTENT	3.884	0.050	1.000	0.000	0.035
ADK	4.029	0.0414	1.000	-0.005	0.029
TTM	4.073	0.067	1.000	-0.007	0.032
ÖN	3.697	0.050	1.000	0.017	0.035

Minimum was achieved with degree of freedom= .001, CFI= .976, and NFI=.973 which shows good fit at probability level $p=.001$ as shown in table 6.

Table 7. Baseline Comparisons

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	CFI	DF	P
Default model	.973	.863	.976	.880	.976	2	.001
Saturated model	1.000		1.000		1.000	0	
Independence model	.000	.000	.000	.000	.000	10	.000

All factors have significant path relation ($P<.01$) with construct as shown in the given Table 8 which is normal for validation;

Table 8. Regression with Construct

Regression		Estimate	S.E.	C.R.	P	
INTENT	<---	SEM	1.000		***	
PBC	<---	SEM	.810	.058	13.917	***
ATT	<---	SEM	1.010	.083	12.166	***
SN	<---	SEM	.833	.065	12.746	***

Levene's test was run to test the homogeneity of the control group demographic background (gender, age, work experience and parental work background) to the entrepreneurship/ experimental group. Results are shown in the table. Test results shows that both groups have homogenous demographic background. It is evidence of the similar demographic background of the control group and experimental group students. Both groups had also same educational background as they were in same year of study.

Table 9. Homogeneity of Demographics between Control Group and Entrepreneurship Group

	Levene's Test		t-test for Equality of Means		
	F		t	df	Sig. (2-tailed)
Gender	2.400		1.335	541	.182
Parents work back ground	8.101		-.730	541	.466
Experience	4.047		-.272	541	.786

Table 10. Descriptive statistics of Variables

Variables	Ent. Edu Participants (n= 238)		Ent. Edu Non Participants (n=305)	
	X	SD	X	SD
Ent. Int.	4.26	.55	3.88	.87
Att.	4.53	.53	4.07	1.15
SN	4.35	.52	4.02	.76
PBC	4.23	.58	3.69	.87

Ent. Int: Entrepreneurial intentions; Att: Attitude; SN: Subjective Norms; PBC: Perceived Behavioral Control; Ent. Edu: Entrepreneurship education

The correlation was run to test the existence of relation between variables for further testing of hypothesis. The correlations of entrepreneurship education group were found significantly positive among the variables as shown in Table 11. The correlations among non participants of entrepreneurship education group were also measured. These were observed significantly positive as shown in the table.

Table 11. Correlation Among Variables of Entrepreneurship Group

		INTENT	ATT	PBC	SN	EDU
INTENT	Pearson Correlation	1	.648**	.650**	.546**	.445**
	Sig. (2-tailed)		.000	.000	.000	.000
	N	238	238	237	237	238
ATT	Pearson Correlation	.648**	1	.656**	.561**	.591**
	Sig. (2-tailed)	.000		.000	.000	.000
	N	238	238	237	237	238
PBC	Pearson Correlation	.650**	.656**	1	.635**	.528**
	Sig. (2-tailed)	.000	.000		.000	.000
	N	237	237	237	236	237
SN	Pearson Correlation	.546**	.561**	.635**	1	.566**
	Sig. (2-tailed)	.000	.000	.000		.000
	N	237	237	236	237	237
EDU	Pearson Correlation	.445**	.591**	.528**	.566**	1
	Sig. (2-tailed)	.000	.000	.000	.000	
	N	238	238	237	237	238

** . Correlation is significant at the 0.01 level (2-tailed).

Table 12. Correlation between Non Participants of Entrepreneurship Education Group's Variables

		INTENT	ATT	PBC	SN
INTENT	Pearson Correlation	1	.606**	.673**	.614**
	Sig. (2-tailed)		.000	.000	.000
	N	305	305	305	305
ATT	Pearson Correlation	.606**	1	.516**	.398**
	Sig. (2-tailed)	.000		.000	.000
	N	305	305	305	305
PBC	Pearson Correlation	.673**	.516**	1	.622**
	Sig. (2-tailed)	.000	.000		.000
	N	305	305	305	305
SN	Pearson Correlation	.614**	.398**	.622**	1
	Sig. (2-tailed)	.000	.000	.000	
	N	305	305	305	305

** . Correlation is significant at the 0.01 level (2-tailed).

Comparison of Entrepreneurship Education Participants and Non Participants

The following hypotheses were developed for comparison of the entrepreneurial intentions of entrepreneurship education participants and non participants;

Hypothesis 01: There is no significant difference between the intentions of the student's those have participated in entrepreneurship education and those have not participated in entrepreneurship towards their intention to start their own business.

Hypothesis 02: There is no difference between the attitudes of student's those participated in entrepreneurship education and did not participate in entrepreneurship education towards their intention to start their own business.

Hypothesis 03: there is no difference of the student's subjective norms those has participated in entrepreneurship education and those has not participated in entrepreneurship education towards intentions to start their own business.

Hypothesis 04: There is no difference of the student's perceived behavioural control those has participated in entrepreneurship education and those has not participated in entrepreneurship education towards their intentions to start their own business.

t-test was run to test for comparison purpose between two groups. The findings as shown in the table reflect that entrepreneurship education participants have more intentions towards entrepreneurship; entrepreneurial attitude; perceived behavioural control; and subjective norms than non entrepreneurship education participant group.

Table 13. Comparison between Entrepreneurship Education Participants and Non Participants

	Entrepreneurship Education	N	Mean	Std. Deviation
INTENT	Participants	241	4.27	.554
	Non Participants	302	3.87	.874
ATT	Participants	241	4.53	.535
	Non Participants	302	4.06	1.160
PBC	Participants	240	4.35	.518
	Non Participants	302	4.02	.762
SN	Participants	240	4.23	.579
	Non Participants	302	3.68	.871

Table 14. Independent Samples Test

		Levene's Test		t-test for Equality of Means		
		F	Sig.	T	df	Sig. (2-tailed)
INTENT	Equal variances assumed	53.11	.000	6.15	541	.000
	Equal variances not assumed			6.45	516.45	.000
ATT	Equal variances assumed	34.86	.000	5.83	541	.000
	Equal variances not assumed			6.27	443.53	.000
PBC	Equal variances assumed	21.92	.000	5.72	540	.000
	Equal variances not assumed			5.96	528.12	.000
SN	Equal variances assumed	26.81	.000	8.39	540	.000
	Equal variances not assumed			8.78	524.66	.000

Hypothesis 01 “there is no significant difference between the intentions of the student’s those have participated in entrepreneurship education and those have not participated in entrepreneurship towards their intention to start their own business” was rejected with $t=6.15$, $F=53.11$ and .000 significant level. The mean values (4.27) of entrepreneurship education participants were higher than mean value (3.87) of non entrepreneurship education participant’s intentions towards entrepreneurship.

Hypothesis 02: “There is no difference between the attitudes of student’s those participated in entrepreneurship education and did not participate in entrepreneurship education towards their intention to start their own business” was rejected with $t=5.83$, $F=34.86$ and .000 significant level. The mean values (4.53) of entrepreneurship education participants were higher than mean value (4.06) of non entrepreneurship education participant’s attitude towards entrepreneurial intentions.

Hypothesis 03: “there is no difference of the student’s subjective norms those has participated in entrepreneurship education and those has not participated in entrepreneurship education towards intentions to start their own business” was rejected with $t=8.39$, $F=26.81$ and .000 significant level. The mean values (4.23) of entrepreneurship education participants were higher than mean value (3.68) of non entrepreneurship education participant’s subjective norms towards entrepreneurial intentions.

Hypothesis 04: “There is no difference of the student’s perceived behavioural control those has participated in entrepreneurship education and those has not participated in entrepreneurship education towards their intentions to start their own business” was rejected with $t=5.62$, $F=21.92$ and .000 significant level. The mean values (4.35) of entrepreneurship education participants were higher than mean value (4.02) of non entrepreneurship education participant’s perceived behavioural control towards entrepreneurial intentions.

Testing the Model for the Theory of Planned Behaviour

AMOS 20.0 was used for the testing of TPB model through SEM path analysis, attitude towards entrepreneurship, entrepreneurial intentions and perceived behavioural control was considered as endogenous variables and subjective norms was considered as exogenous variable. Raw data was input to the structural equations as shown in figure 4.

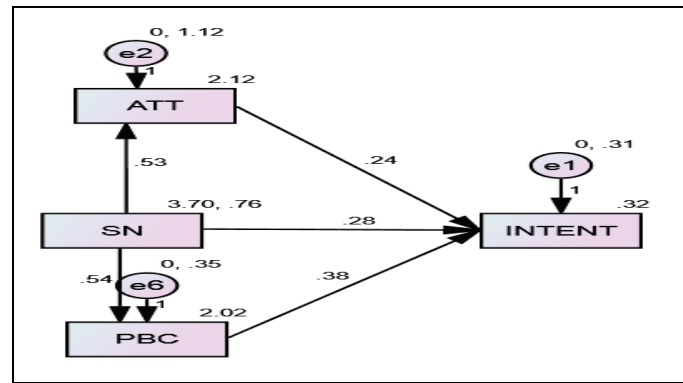


Figure 4. Testing the TPB model

The Minimum level was achieved with Chi-square = 45.649, Degrees of freedom = 1 and Probability level = .000. Other indices suggested good model fit: NFI=0.912, CFI=0.912, and IFI= 0.914 indicated adequate fit and RMSEA (0.205) indicated mediocre fit. From this information, we can conclude that the hypothesized model of TPB was fitting for the entrepreneurship intention variables.

Table 15. Model Fit Summary

Model	NFI Delta1	IFI Delta2	CFI
Default model	.912	.914	.912
Saturated model	1.000	1.000	1.000
Independence model	.000	.000	.000

All paths among the variables of theory of planned behaviour (TPB) were significant at level of 0.01 as shown in table.

Table 16. Regression Weights: (Group number 1 - Default model)

			Estimate	S.E.	C.R.	P
ATT	<---	SN	.528	.070	7.571	***
PBC	<---	SN	.543	.039	13.859	***
INTENT	<---	ATT	.244	.033	7.507	***
INTENT	<---	SN	.278	.047	5.887	***
INTENT	<---	PBC	.382	.058	6.593	***

Testing the Education-Entrepreneurial Intention Model

In the path model, entrepreneurship education was defined as exogenous variable. Attitude towards entrepreneurship, subjective norm, perceived behavioural control and entrepreneurial intention were defined as endogenous variables in the model. The purpose of the model was to study the specific influence of the entrepreneurship education on the antecedent attitudes and intention toward entrepreneurship as shown in Figure 5 and Table 17.

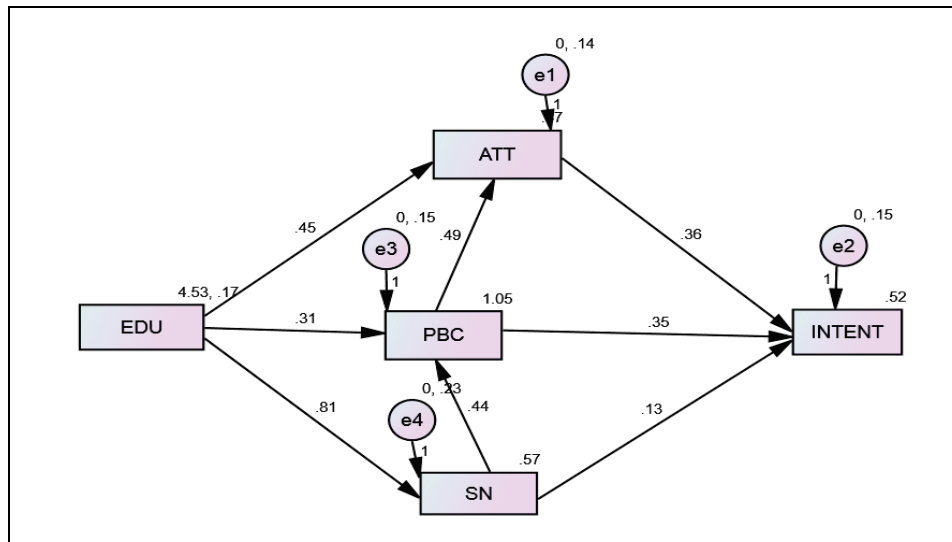


Figure 5. SEM Presentation of Relationship Among Antecedents of Entrepreneurial Intentions

Minimum was achieved with a Chi-square = 4.32 and Degrees of freedom = 2 at Probability level = .115 than it was employed multiple good-of-fit indices, which indicated good fit: NFI= .993, RMSEA=0.07; RFI=0.944; TLI=0.969, CFI .996 as shown in Table 17.

Table 17. Baseline Comparisons

Model	NFI Delta1	RFI rho1	IFI Delta2	TLI rho2	DF	P	RMSEA	CFI
Default model	.993	.944	.996	.969	2	.115	.070	.996
Saturated model	1.000		1.000		0			1.000
Independence model	.000	.000	.000	.000	15	.000	.396	.000

Next, we proceeded in analyzing the specific relationships among the variables. As indicated in Table 18;

Table 18. Regression Weights: (Group number 1 - Default model)

			Estimate	S.E.	C.R.	P	Accepted / Rejected
SN	<---	EDU	.809	.076	10.593	***	Accepted
PBC	<---	EDU	.314	.075	4.196	***	Accepted
PBC	<---	SN	.444	.052	8.454	***	Accepted
ATT	<---	EDU	.445	.070	6.335	***	Accepted
ATT	<---	PBC	.494	.055	8.950	***	Accepted
INTENT	<---	ATT	.364	.064	5.722	***	Accepted
INTENT	<---	SN	.131	.058	2.276	.023	Accepted
INTENT	<---	PBC	.354	.071	5.011	***	Accepted

All the paths were significant ($P < .05$). The strongest path was between entrepreneurship education and subjective norms towards entrepreneurial intentions (path coefficient = 0.809, $p < 0.01$), entrepreneurship education towards perceived behavioral control (path coefficient = 0.314, $p < 0.01$), subjective norms towards perceived behavioral control (path coefficient = 0.444, $p < 0.01$), entrepreneurship education towards attitude (path coefficient = 0.445, $p < 0.01$), attitude towards entrepreneurial intentions (path coefficient = 0.364, $p < 0.01$), perceived behavioral control towards intentions (path coefficient = 0.354, $p < 0.01$), while the weakest path was between subjective norms towards entrepreneurial intentions and entrepreneurial intentions (path coefficient = 0.131, $p < 0.05$). Therefore, all the hypotheses of the conceptual model were accepted at a level of 0.05.

Discussion and Conclusion

Students who have participated in entrepreneurship education have shown more entrepreneurial intentions than students who have not participated in entrepreneurship education. The results of study are supported by the evident from literature that entrepreneurship education plays an important role in enhancing intentions towards establishment of one's own venture (Long 2011; Souitaris, Zerbinati, & Al-Laham, 2007; Young, 1993). Attitude, subjective norms and perceived behavioral control towards entrepreneurial intentions were higher of entrepreneurship education participants than non-participants. It shows the impact of entrepreneurship education on student's intentions to become an entrepreneur. This finding is in line with previous research studies showing that higher level of education leads towards higher intention to towards venture formation (Levie & Autio, 2008; Long, 2011).

The results also present role of three antecedents of theory of planned behavior on one another as well as on intentions to chose entrepreneurship as career. For example effect of subjective norms on change in intention of students to adopt entrepreneurship as career is directly supported by persuasion theory (Eagly & Chaiken, 1993; Long, 2011) and cognitive theory (Festinger, 1957). This leads towards assumption that individuals are influenced by the opinion of the people surrounding tem thus effecting decision of him/her to become an entrepreneur. Similarly, subjective norms also influence on percieved behavioral control and is supported by Bandura's (1986) social cognitive theory. These theories support the idea that if the environment is supportive and training is provided, it leave positive influence on intention of students to become self-employed (Eagly & Chaiken, 1993; Feather, 1982). In previous researches the role of subjective norms has been studied very weak to influence the decision to become and entrepreneur (Autio, Keeley, Klofsten, Parker, & Hay, 2001; Krueger et al., 2000; Long, 2011). In this study the role of subjective norms is weak as compared to other variables but it has influence on student's decision to become an entrepreneur. It shows that social peers have influence on student's decisions.

Entrepreneurship education is based on the philosophy of increasing knowledge about business, training of skills required to establish a business and positive attitude towards self-employment. It can be assumed that if the students are provided with set of knowledge and skills it will directly influence on their decision to become an entrepreneur. The education increase self confidence by providing training to control and change behavior through knowledge and skills thus leading towards higher intentions (Henry et al., 2005; Long 2011; Souitaris et al., 2007).

Less is known about relationship between antecedents of theory of planned behavior and role of education on intention of students to become entrepreneurs. The findings of this research describe that there is relationship between attitude and perceived behavioral control. Subjective Norms also influence the perceived behavioral control. Social cognitive theory of Bandura (1986) confirms this relationship of perceived behavioral control and social pressure.

Suggestions

- Entrepreneurship education should made part of higher education in order to develop entrepreneurial intentions of the students.
- Government should also develop support services along with entrepreneurship education to promote entrepreneurial intentions.
- Theory of planned behaviour can be used to study the entrepreneurial intentions of the students.

References

- Asghar, M. Z., Hakkarainen, P. S., & Nada, N. (2016). An analysis of the relationship between the components of entrepreneurship education and the antecedents of theory of planned behavior. *Pakistan Journal of Commerce and Social Sciences*, 10(1), 45-68.
- Ajzen, I. (1987). Attitudes, traits, and actions: Dispositional prediction of behavior in personality and social psychology. *Advances in Experimental Social Psychology*, 20(1), 1-63.
- Ajzen, I. (1991). Theory of planned behavior. *Organizational Behaviour and Human Decision Processes*, 50, 179-211.
- Armitage, C. J., & Conner, M. (2001). Efficacy of the theory of planned behaviour: A meta-analytic review. *British Journal of Social Psychology*, 40(4), 471-499.
- Autio, E., H. Keeley, R., Klofsten, M., G. C. Parker, G., & Hay, M. (2001). Entrepreneurial intent among students in Scandinavia and in the USA. *Enterprise and Innovation Management Studies*, 2(2), 145-160.
- Bagozzi, R., Baumgartner, H., and Yi, Y. (1992). State vs. action orientation and the theory of reasoned action. *Journal of Consumer Research*, 18(4), 505-518.
- Bandura, A. (1986). *The social foundations of thought and action*. Englewood Cliffs: Prentice-Hall.
- Bollen, K., & Long, J. (1993). *Testing structural equation models*. California: Sage Publications.
- Chang, J. (1998). Model of corporate entrepreneurship: Intrapreneurship and exopreneurship. In *Allied Academies International Internet Conference* (Vol. 1, p. 7).
- Charney, A., & Libecap, G. D. (2000). *Impact of entrepreneurship education*. Kansas City, MO: Kauffman Center for Entrepreneurial Leadership.
- Cramer, D., & Howitt, D. L. (2004). *The Sage dictionary of statistics: A practical resource for students in the social sciences*. Sage Publications.
- Cunningham, J. B., & Lischeron, J. (1991). Defining entrepreneurship. *Journal of Small Business Management*, 29(1), 45-61.
- Doane, D. P., & Seward, L. E. (2011). Measuring skewness: A forgotten statistic. *Journal of Statistics Education*, 19(2), 1-18.
- Eagly, A. H., & Chaiken, S. (1993). *The psychology of attitudes*. Harcourt Brace Jovanovich College Publishers.
- Feather, N. T. (1982). Unemployment and its psychological correlates: A study of depressive symptoms, self-esteem, protestant ethic values, attributional style, and apathy. *Australian Journal of Psychology*, 34(3), 309-323.
- Festinger, L. (1957). *A theory of cognitive dissonance*. Stanford, CA: Stanford University Press.
- Fretschner, M. (2014). Ajzen's theory of planned behavior in entrepreneurship education research. *Becoming an Entrepreneur* (pp. 249-277). Sense Publishers.
- Galloway, L., & Brown, W. (2002). Entrepreneurship education at university: A driver in the creation of high growth firms?. *Education+ Training*, 44(8/9), 398-405.
- Gundlach, M. J., & Zivnuska, S. (2010). An experiential learning approach to teaching social entrepreneurship, triple bottom line, and sustainability: Modifying and extending practical organizational behavior education (PROBE). *American Journal of Business Education (AJBE)*, 3(1).
- Hair, J. F., Black, W. C., Babin, B. J., Anderson, R. E., & Tatham, R. L. (2006). *Multivariate data analysis* (Vol. 6). Upper Saddle River, NJ: Pearson/Prentice Hall.
- Hansemark, O. C. (1998). The effects of an entrepreneurship programme on need for achievement and locus of control of reinforcement. *International Journal of Entrepreneurial Behavior & Research*, 4(1), 28-50.

- Henry, C., Hill, F., & Leitch, C. (2004). The effectiveness of training for new business creation. *International Small Business Journal*, 22(3), 249-269.
- Henry, C., Hill, F., & Leitch, C. (2005). Entrepreneurship education and training: Can entrepreneurship be taught? Part I. *Education+ Training*, 47(2), 98-111.
- Herron, L., & Robinson, R. B., Jr. (1993). A structural model of the effects of entrepreneurial characteristics on venture performance. *Journal of Business Venturing*, 8(3), 281-294. doi:10.1016/0883-9026(93)90032-z
- Isaacs, E., Visser, K., Friedrich, C., & Brijlal, P. (2007). Entrepreneurship education and training at the further education and training (FET) level in South Africa. *South African Journal of Education*, 27(4), 613-630.
- Kaiser, F. G. (2006). A moral extension of the theory of planned behavior: Norms and anticipated feelings of regret in conservatism. *Personality and Individual Differences*, 41(1), 71-81.
- Kidwell, B., & Jewell, R. D. (2003). An examination of perceived behavioral control: Internal and external influences on Intention. *Psychology & Marketing*, 20(7), 625-642.
- Kline, R. (1998). *Principles and practice of structural equation modeling*. New York: Guilford Press.
- Krueger, N. F., Reilly, M. D., & Carsrud, A. L. (2000). Competing models of entrepreneurial intentions. *Journal of Business Venturing*, 15(5), 411-432.
- Kuratko, D. F. (2003). Entrepreneurship education: Emerging trends and challenges for the 21st century. *White Paper, US Association of Small Business Education*, 22.
- Kuratko, D. F. (2005). The emergence of entrepreneurship education: Development, trends, and challenges. *Entrepreneurship Theory and Practice*, 29(5), 577-598.
- Levie, J., & Autio, E. (2008). A theoretical grounding and test of the GEM model. *Small Business Economics*, 31(3), 235-263.
- Liao, C., Chen, J. L., & Yen, D. C. (2007). Theory of planning behavior (TPB) and customer satisfaction in the continued use of e-service: An integrated model. *Computers in Human Behavior*, 23(6), 2804-2822.
- Long, C. T. (2011). The impact of entrepreneurship education on entrepreneurial intention of engineering students. Hong Kong: City University.
- Lortie, J., & Castogiovanni, G. (2015). The theory of planned behavior in entrepreneurship research: What we know and future directions. *International Entrepreneurship and Management Journal*, 11(4), 935-957.
- Meyer, G. D., Zacharakis, A. L., & De Castro, J. (1993). A postmortem of new venture failure: An attribution theory perspective. *Frontiers of Entrepreneurship Research*, 17(13), 256-269.
- Olobatuyi, M. (2006). *A user's guide to path analysis*. Lanham: University Press of America.
- Razali, N. M., & Wah, Y. B. (2011). Power comparisons of shapiro-wilk, kolmogorov-smirnov, lilliefors and anderson-darling tests. *Journal of Statistical Modeling and Analytics*, 2(1), 21-33.
- Robinson, P., & Hayes, M. (1991). Entrepreneurship education in America's major universities. *Entrepreneurship Theory and Practice*, 15(3), 41-52.
- Schumacker, R., & Lomax, R. (2004). *A beginner's guide to structural equation modelling* (2nd ed.). Routledge.
- Seligman, M. (1990). *Learned optimism*. New York: Knopf.
- Serida, N. J. and Tristán, M. O. (2011). Using the theory of planned behavior to predict nascent entrepreneurship. *Academia: Revista Latinoamericana de Administración*, 46, 55-71.
- Shapero A. (1982). Social dimensions of entrepreneurship. In C. Kent, D. Sexton, & K. Vesper (Eds.), *The Encyclopedia of Entrepreneurship* (pp. 72-90). Englewood Cliffs: Prentice-Hall.
- Shapiro, S. S., & Wilk, M. B. (1965). An analysis of variance test for normality (Complete samples). *Biometrika*, 52(3/4), 591-611.

- Souitaris, V., Zerbinati, S., & Al-Laham, A. (2007). Do entrepreneurship programmes raise entrepreneurial intention of science and engineering students? The effect of learning, inspiration and resources. *Journal of Business Venturing*, 22(4), 566-591.
- Steiger, J., & Lind, J. (1980). Statistically-based tests for the number of common factors. Paper presented at *Annual Meeting of Psychometric Society*. Iowa City, IL.
- Ullman, J. (1996). Structural equation modeling. In B. Tabachnick & L. Fidell (Eds.), *Using Multivariate Statistics* (pp. 709-819). New York: Harpercollins College Publishers.
- Walker, A. E., Grimshaw, J. M., & Armstrong, E. M. (2001). Salient beliefs and intentions to prescribe antibiotics for patients with a sore throat. *British Journal of Health Psychology*, 6(4), 347-360.
- Watson, M. C., Johnston, M., Entwistle, V., Lee, A. J., Bond, C. M., & Fielding, S. (2014). Using the theory of planned behaviour to develop targets for interventions to enhance patient communication during pharmacy consultations for non-prescription medicines. *International Journal of Pharmacy Practice*, 22(6), 386-396.
- Young, H. P. (1993). The evolution of conventions. *Econometrica: Journal of the Econometric Society*, 57-84.
- Zemore, S. E., & Ajzen, I. (2014). Predicting substance abuse treatment completion using a new scale based on the theory of planned behavior. *Journal of Substance Abuse Treatment*, 46(2), 174-182.