

# FACULTY TRAITS AND LEARNING IN ENTREPRENEURSHIP COURSES: EVIDENCES FROM A MODERATION ANALYSIS

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## ABSTRACT

*Entrepreneurship teaching and training is an imperative educational domain for business and economy. An additional insight into the teaching and learning process in Entrepreneurship related courses will enable better policy making and better pedagogy. With a focus on learning in entrepreneurial courses, the primary objective of the research is to understand the impact of faculty traits on learning in the context of three moderator variables (age, gender, educational qualification). The study highlights that three faculty traits are significant to entrepreneurship learning and should be considered in the teaching-learning process. These traits are gender, diversity in educational background and real life work experience. The study is based on a sample (204 respondents) from the Egyptian population and uses the regression techniques to draw inferences.*

**Keywords:** Entrepreneurship; Education; Moderation Analysis; Learning.

## INTRODUCTION

Entrepreneurship significantly affects economic growth. “*Invention and entrepreneurship are at the heart of national advantage*” (Beugelsdijk & Noorderhaven, 2004; Boldureanu et al., 2020). Recent studies show that entrepreneurship can be imparted and developed through entrepreneurship education and training (Petridou et al., 2009). Entrepreneurship education evolved a century ago, with organizations such as Junior Achievement (Volkman et al., 2009). Harvard University introduced one of the initial programs in entrepreneurship in the year 1945 to invigorate the United States economy followed by an MBA entitled ‘Management of new enterprises’ that started in 1947 (Martina & Iucub, 2013).

Entrepreneurship education has been defined as a collection of formalized teachings that educate anyone interested in business creation (Mani, 2015). Entrepreneurship education helps in motivating the entrepreneurial initiatives through enhancing entrepreneurial mindset among the students (Petridou et al., 2009; Mani, 2015).

Entrepreneurship can be taught as a separate subject/course/qualification. It is focused on skill development and know-how on running a business with a more theoretical orientation. It can also be delivered as an extra-curricular subject, usually voluntary or as a core subject in the curriculum or as a non-formal adult education course. It aims to develop entrepreneurial competences such as initiative, confidence and creativity.

Michael porter highlighted the importance of Entrepreneurship for the competitiveness of the nation (Ketels, 2006). The term “*entrepreneurship*” has been defined in a variety of ways. Isaacs et al. (2007) defined Entrepreneurship as “*the process of conceptualizing, organizing, launching through innovation, and nurturing a business opportunity into a potentially high growth venture in a complex and unstable environment*”. Thus, entrepreneurship can be said as

the process of development and transformation of an innovative and non-existent idea into an actual business project that yields value creation. According to Rodriguez-Pena (2021), an entrepreneurship skill includes three main elements, innovativeness, risk taking and pro-activeness. Entrepreneurship education can be defined as the meaningful interference in the learner's life by the educator with the purpose of enhancing entrepreneurial skills and qualities in order to help him surviving in the world of business. Albert et al. (2004) defined entrepreneurship education as the organized formal transmission of entrepreneurial competencies including individual's concepts, skills, and mental awareness that help them to start and develop their growth-oriented projects. In this context, entrepreneurship education programs may have different objectives, such as awareness and motivation, training students how to start and run a business and developing entrepreneurial skills for identifying and exploiting business opportunities.

Teaching entrepreneurship should use an interdisciplinary approach, which means bringing together students from different faculties and fields of study that will cooperate to develop joint activities and projects. Presenting and discussing a successful entrepreneurial model is one of the best ways to sensitize students about entrepreneurship. It is important to accurately define the program's main objectives and to be results-oriented in orientation. A precise definition of the objective of the course will influence the choice of teaching methods/appropriate tools and influence effective performance measurement tools. Some common teaching methods and tools used in entrepreneurship related teaching/training, include,

1. Carrying out observations, case studies, developing business plans and portfolios. Working individually and in groups to practice entrepreneurial skills, using technology (educational software and internet) in order to conduct simulation exercises; monitoring and evaluation of business.
2. Exercises which interpret facts, events, business processes that could contribute to the development of competitive behavior and rational use of resources.

The Nieman and Van Vuuren model of entrepreneurial performance training (see Table 1) is the building block for many entrepreneurship programs. The model suggests three main components, motivation, entrepreneurial skills and business skills.

<b>Motivation</b>	<b>Entrepreneurial skills</b>	<b>Business skills</b>
Need for achievement	Creativity	Management/ Leadership
Ability to inspire	Innovation	Business plans
Expectations of the higher achiever	Ability to take risks	Financial skills
Obstacles or blocks	Ability to identify opportunities	Marketing skills
Help	Ability to have a Help vision for growth	Operational skills
Reactions to success or failure	Interpret successful entrepreneurial role models	Human Resources skills

## LITERATURE REVIEW

Entrepreneurship education is a widely studied subject because of its relevance to training and its utility to economic growth. Soares et al. (2021) studied the impact of corporate

entrepreneurship education on family business with a focus on Brazilian family business. The researchers adopted a single case study approach. In-depth interviews were held with the top management in the corporate understudy followed by a disclosure analysis. The results showed that corporate entrepreneurship education has contributed to the business growth and continuity and leads to achieving competitive advantage. (Gafar et al., 2013) aimed to focus on the rationale for idea generation process in the business start-up and feasibility of entrepreneurial idea generation in higher educational institutions. The researchers identified the Business Team Project Partnership Program (BT-PPP) as a methodology for teaching for enhancing entrepreneurial generation of ideas where colleagues work together on a real business project in order to seize the opportunity to collaborate with guest entrepreneurs and representatives from different industries. The study is conducted on the students of the real estate management and project management sections of Universiti Tun Hussein Onn Malaysia (UTHM). The researchers used a survey based methodology and SPSS based statistical analysis which revealed that BT-PPP succeeded in motivating entrepreneurial idea generation, interaction and networking, entrepreneurial learning outcome (value creation) amongst the students. Karimi et al. (2012) investigated entrepreneurial intentions in 320 students of six Iranian universities. The results showed that entrepreneurship education programs have a direct effect on perceived behavioral control and subjective norms, but doesn't affect entrepreneurial intentions. Ludi et al. (2020) aimed to study the relation between entrepreneurship education and entrepreneurial mindset, viewing the attitude and self-efficacy as a mediator in Indonesian universities. The respondents did an online survey, and the results were analyzed using a Structural Equation Modeling (SEM). They found that entrepreneurship education has a direct effect on entrepreneurial self-efficacy, attitude, and mindset. Tantawy et al. (2021) studied the relationship between creative self-efficacy and entrepreneurial intentions, viewing attitudes and creative process engagement as mediating variables. They used a pre-post survey of students from seven entrepreneurship courses in three Canadian universities. The results inferred that creativity precedes entrepreneurship. Handayati et al. (2020) investigated the relationship between entrepreneurship education and entrepreneurial intentions of the students, by application on vocational students from different universities in Indonesia using an online survey. The researchers used structural Equation Modeling (SEM) and Partial Least Square (PLS) techniques for analyzing data. The results revealed that there is a positive direct effect of entrepreneurship education on entrepreneurial intentions and mindset. Boubker et al. (2021) investigated the impact of entrepreneurship education on entrepreneurial intentions by application in Morocco. They proposed a research model for entrepreneurial intention and found that it depends on four variables, entrepreneurship education, attitude towards entrepreneurship, perceived social norms and perceived entrepreneurial capacity. Also the results showed that there is a significant relationship between management student's entrepreneurship education, attitude towards entrepreneurship and entrepreneurial intention. Jaya et al. (2020) studied the factors that affect the evolution of the entrepreneurship skill program in the coastal areas. They adopted a qualitative descriptive methodology through documentary and in-depth interviews and found that the factors that influence the development of the entrepreneurship skill education program are, natural resource potential, business domain needs, partnership cooperation, institutional assistance in business pioneering, skills-based curriculum development, education level and matching tutor competence, importance of access (distance) to the training center, motivation and mindset of learning citizens and health conditions of learning residents. Ghina (2014) assessed the effectiveness of entrepreneurship education in Indonesia in a two phased study

where the first phase was a descriptive phase that concentrated on clarifying the current learning and institutional supports within higher education and the second phase was an explanatory phase that aimed to find out, elaborate the concepts, denominations, and suggestions for developing entrepreneurial learning theory. Pech et al. (2021) aimed to study the relationship between the different entrepreneurship teaching methods and the development of prospective entrepreneurs based on sample of 214 responses. The researchers argued that there is a significant gap between the student's learning and the actual business needs, and this gap can be fulfilled by finding the right teaching method. The paper analyzed the preferences of teaching methods for management students and found that the students expected to be taught by active methods such as expert lectures and business simulators. Different preferences were found for students from different departments. The students in the economics department liked active approaches more than students in the social studies department. Students in the health and social sciences chose specific projects and counselling as instructional techniques. Hahn et al. (2017) studied entrepreneurial education and learning at universities and found that the exposure to various entrepreneurship education efforts has an inverted U-shaped association with entrepreneurial learning outcomes, based on human capital theory. They further proposed that the students' entrepreneurial experience, the teaching style used in entrepreneurial ventures given at the institution, and the presence of opportunity-driven entrepreneurship in the country attenuate this association. Wei et al. (2019) looked into the mediating impacts of political skills and recognizing entrepreneurial opportunities on perceived entrepreneurship education and innovation. They found that there is a positive relationship between entrepreneurship education and innovation perceptions. Additionally political skills and entrepreneurial opportunity recognition act as a mediating factor between perceived entrepreneurship education and innovation and also that the political skills and entrepreneurial opportunity recognition play a mediating effect between perceived entrepreneurship education and innovation. Dianne & Welsha et al. (2016) found that change is the keystone of reality in entrepreneur education, and that the entrepreneurship students are in the process of becoming something they were not previously. The process theory's implications and similarities to entrepreneurship education are deliberated in the research.

## RESEARCH METHODOLOGY

The primary objective of the study is to understand more about the teaching-learning process in entrepreneurship courses. A secondary objective of the study is to understand the impact of faculty traits on the learning in entrepreneurship related courses in the context of selected demographic moderator variables. Accordingly, the study tests four null hypotheses,

- H<sub>01</sub>: Faculty traits have no impact on the learning in Entrepreneurship courses*
- H<sub>01a</sub>: Gender of a faculty does not affect the learning in Entrepreneurship courses*
- H<sub>01b</sub>: Real life work experience of faculty does not affect the learning in Entrepreneurship courses*
- H<sub>01c</sub>: Diverse educational background of the faculty does not affect the learning in Entrepreneurship courses*

A survey was conducted during August-September, 2021 from faculty, students and corporates based in Egypt. The questionnaire was prepared based on the analysis of existing literature and news items, which was further validated in discussion with two experts and finally a survey instrument with 27 items was finalized. This included 8 demographic variables. The survey questionnaire was floated online (due to COVID-19 mobility protocol) to 400 prospective respondents and 204 usable responses (51%) were found using a convenience sampling

technique. Out of the 27 items 8 questions were based on discrete choices and 19 were based on a Likert's scale ranging from 1 to 5 (1 indicating 'strongly disagree' to 5 indicating 'strongly agree'). The reliability statistics of the sample (Cronbach's Alpha) was observed as 0.83 for all 27 items, which is acceptable as per Cronbach (1951). The face validity and statistical reliability score of the questionnaire qualifies it as a robust survey instrument for such a study. Three firm level demographic variables have been used in the study as moderator variables indicating the age of respondents, gender of respondents and their highest qualifications. The variable measuring 'learning' has been calculated as an average score of responses from five direct questions referring to the significance of joint teaching, group work, knowledge of current affairs, study material and the importance of technology. The variable indicating 'faculty traits' or characteristics has been measured as an average score of three direct survey questions on males being a better teacher, real life work experience of faculty members and diversification in educational background of faculty members.

SPSS 20.0 statistical software has been used for data analysis. The anchor analytical technique includes linear regression and moderation analysis. A 'moderator' variable is a third party variable that modifies (changes) the relationship between an independent variable (IV) and a Dependent Variable (DV). The moderation effect is interpreted based on the statistical significance of regression coefficients and the R-squared changes. The moderation effect as measured by the interaction term is used as in equation 1. Three moderator variables are used in the study (age of respondents, gender of respondents and their highest qualifications.), sequentially, based on equation 1.

$$\text{Learning} = \text{Faculty traits} + \text{Moderator} + \text{Faculty traits} * \text{Moderator} \quad \dots (1)$$

## DATA ANALYSIS

The highest coefficient of variation (56%) was observed for the variable that males are better entrepreneurship teachers than females and the lowest coefficient of variation (22%) was observed for the variable that technology helps in the entrepreneurship related teaching-learning process.

Analyzing the demographic data for the respondents, 76% respondents were observed with age of 30 years or less, 75% respondents are salaried, 59% respondents are from the academic domain and 21% are from the corporate sector. About 63% respondents are female, 81% are single, 58% are post graduate while 84% respondents have an annual income less than 10000 US Dollars.

Analyzing the frequency distribution of core questions related to entrepreneurship education, no respondents disagreed that an entrepreneurship teacher should have a diverse educational background. About 50% respondents were unsure (5% disagreed) that entrepreneurship courses can be based on self-paced learning, 58% agreed (3% disagreed) that group work is better than solo work while 52% agreed (2% disagreed) that customized study material is better than text books in the entrepreneurship courses. About 67% respondents agreed (none disagreed) that technology helps in learning, 61% disagreed (only 4% agreed) that male students perform better than female students in entrepreneurship courses, 52% agreed (only 1% disagreed) that the real life corporate work experience of teaching faculty adds value to learning and 58% are of the opinion that the students with work experience perform better while 55% respondents were in favor (4% against) of joint teaching. About 63% respondents agreed that entrepreneurship should be a full program, 49% agreed (3% disagreed) that entrepreneurship students get a better job package, 64% are of the opinion that learning in entrepreneurship courses

helps to do a better job while 40% disagreed (6% agreed) that it is a difficult course. About 63% agreed that current affairs helps in learning, 48% disagreed (9% agreed) that male teachers are better teachers, 59% agreed (2% disagreed) that entrepreneurship course should be taken by all students, irrespective of the educational stream. The entire four null hypotheses were not accepted based on the results of linear regressions (Table 2).

	<b>R-squared (%)</b>	<b>p-value</b>	<b>coefficient</b>
Faculty traits	51	0	1.273
Gender of a faculty	33	0	-0.46
Real life work experience	73	0	0.7
Diverse educational background	75	0	0.76

		<b>Coefficient</b>	<b>p-value</b>	<b>p-value</b>	<b>R-squared change</b>
1	(Constant)	-0.09	0.76	0	
	Faculty traits	1.28	0.00		
	Age	-0.19	0.02		
2	(Constant)	-3.25	0.00	0	51.7 to 55
	Faculty traits	2.21	0.00		
	Age	2.00	0.00		
	Interaction 1	-0.65	0.00	0	
3	(Constant)	0.96	0.02	0	
	Faculty traits	1.07	0.00		
	Gender	-0.43	0.00		
4	(Constant)	2.29	0.02	0	55.8 to 56.3
	Faculty traits	0.68	0.02		
	Gender	-1.34	0.04		
	Interaction 2	0.28	0.15		
5	(Constant)	-0.83	0.01	0	
	Faculty traits	1.13	0.00		
	Qualification	0.28	0.00		
6	(Constant)	-1.72	0.29	0	55.6 to 55.7
	Faculty traits	1.41	0.01		
	Qualification	0.53	0.24		
	Interaction 3	-0.08	0.58	0	

The Table 3 indicates the results from the moderation analysis where the moderating effect of age, gender and qualification is studied on the relationship of learning with faculty traits. It is observed that the qualification moderates the effect of faculty traits on the learning in entrepreneurship courses. The age as a variable changed sign (-0.19 to 2) in the presence of the interaction variable (model 2). The qualification variable was previously significant (p-value =0) which became insignificant (p-value=0.24) in the presence of the interaction variable. The R-squared value improved in all the three moderating equations where age as a moderator explained 55% variance, gender explained 56.3% variance and educational qualification explained 55.7 % variance in learning.

## DISCUSSION

The demographics of the sample respondents indicated a low age bias with 76% respondents to be observed under the age of 30 years or less, 75% respondents are salaried, 59% respondents are from the academic domain and 21% are from the corporate sector. This demographic mix is ideal for a study on entrepreneurship education.

Analyzing the frequency distribution of the responses from the core questions related to entrepreneurship education, no respondents disagreed that an entrepreneurship teacher should have a diverse educational background indicating a large agreement on this issue implying that diversity in the educational background of the faculty is imperative to the teaching-learning process in entrepreneurship education. Group work and customized study material is also generally agreed by the respondents while a general disagreement was observed on the question that male students perform better than the female students in entrepreneurship courses.

The primary objective of the research is to understand the impact of faculty traits on entrepreneurial learning in the context of three moderator variables (age, gender, educational qualification). The respondents were found to be most distributed in responses ( $CV=56\%$ ) that males are better entrepreneurship teachers than females while the respondents agreed most on the point that technology helps in teaching entrepreneurship. The age as a variable changed sign (-0.19 to 2) in the presence of the interaction variable (model 2) and explained 55% variance in learning. This implies that the higher the age of faculty and students, the higher is the impact of faculty traits on the learning in entrepreneurship courses. This addresses the concern raised in the teaching learning process by Pech et al. (2021).

All the four null hypothesis were rejected. This implies that the faculty traits influence learning in entrepreneurship courses. Specifically, the gender of the faculty, its professional work experience and its diverse educational background influence the learning in entrepreneurship courses. Additionally, a negative and significant regression coefficient was found for gender of the faculty ( $r=-0.46$ ,  $p\text{-value}=0$ ) with learning indicating an increasing agreement that male faculty is a better teacher in entrepreneurship courses. This was conformed in moderation analysis also where gender indicated a negative relationship with learning (Table 3). Additionally, the moderation analysis indicated that the highest qualification moderates the effect of faculty traits on the learning in entrepreneurship courses. This implies that the higher the qualification of the faculty and students, the better learning happens (Wilson et al., 2009).

## CONCLUSION

With a focus on learning in entrepreneurial courses, the primary objective of the research was to understand more about the variables influencing the learning. Additionally, the impact of faculty traits on learning in the context of three moderator variables (age, gender, educational qualification) was analyzed. The gender indicated a negative relationship with entrepreneurial learning whereas the 'educational qualification or background' of the respondents was found to moderate the effect of faculty traits on learning. Thus, it could be concluded that selected faculty traits influence the learning in entrepreneurship courses and that male faculty has more influence on learning than female faculty. This finding was confirmed by the four null hypothesis analyzed in the study. Diversity in the educational background of the faculty was observed as imperative to the teaching-learning process in entrepreneurship education. Also the importance of group work and customized study material emerged as important tools in this learning

process. Gender bias in learning was not observed as significant for students but some bias was observed for male faculty.

**Managerial implications:** The three faculty traits (gender; diversity in educational background; real life work experience) are significant to learning and should be considered in the policy for the teaching-learning process in entrepreneurship courses.

**Future scope and limitations:** A larger sample from multiple institutions and from multiple countries would give more robust and generalized results. A specific study focused on gender is required to address relevant issues in the teaching-learning process in entrepreneurship courses.

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