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Abstract

In This paper is based on the Theory of Planned Behavior to examine the entrepreneurial intention of business students in Taiwan, and how the role of gender and the role of entrepreneurial education influence entrepreneurial intention. Data was collected by questionnaire from a sample of 500 students from National Taiwan University (NTU) Collage of Management. Our result shows that both males and females exhibit low entrepreneurial intention. Moreover, results indicate that male student's entrepreneurial intention is stronger than female students, and students who participated in entrepreneurship program show higher entrepreneurial intention. We also found that the most significant predictors of entrepreneurial intention for both genders are personal attitude and perceived behavioral control. We considered that the role of gender stereotypes reduces female students' entrepreneurial intention, and entrepreneurship education raises students' entrepreneurial intention due to two skills: the scanning-and-search skill and the evaluation-and-judgment skill. This research contributes to test the entrepreneurial intention questionnaire developed from TPB and examine the moderating effect of gender differences and entrepreneurial education to EI. Practical implications and suggestions for further research are discussed.

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Introduction

Over the past decades, entrepreneurship activities have emerged significantly in most countries and created positive impact in economic growth, social development, and employment (Linan & Nambi 2013; Giacomin, et al. 2011; OECD, 2011; Sesen 2013). According to a study that reviewed 12 years of high quality empirical researches regarding to the economic values of entrepreneurship, economic benefits are defined as employment generation and dynamics, innovation, productivity and growth, and the creation of utility (van Praag & Versloot, 2007). Due to this positive impact of entrepreneurship, many countries, including Taiwan, have been promoting entrepreneurial activity enthusiastically among graduating students in university.

As the importance of entrepreneurship got widely accepted, more studies then focused on entrepreneurial intention, or what drives individual to become entrepreneur (Krueger et al. 2000; Linan & Chen, 2006; Linan & Santos, 2007; Linan, 2008; Malebana, 2012). Entrepreneurial intention is the key element to understand entrepreneurship because creating a new business is a planned behavior (Bird, 1988). Taiwan is ranked the best country to start a business in Asia, ranking 8 out of 130 countries in the world (GEI, 2015). Moreover, according to the 2012 Global Entrepreneurship Monitor, Taiwan's rate of entrepreneurial intention is 26.1% in average, which is the highest among Asian countries. The Global Entrepreneurship and Development Institute states that the Asia-Pacific region offers some of the greatest potential for economic growth, because of the two growing economies, China and India. Therefore, considering people's high interest toward entrepreneurship and the opportunities, what factors encourage entrepreneurial intention became a critical issue.

Regarding to entrepreneurial intention, the perceptive that most researchers have agreed with is that new ventures emerge from individual cognitive processes. In other word, it means your intention predicts your behavior. This perceptive is supported by Ajezn's Theory of Planned Behavior (1991) and Shapero and Sokol's Model of the Entrepreneurial Event (1982). Both models help us to understand the influencing factors of entrepreneurial intention and how the venture becomes reality. However, of the two representative intention models just mentioned, the Theory of Planned Behavior (TPB) has been most tested and used to study entrepreneurial intention (Kolvereid 1996; Tkachev and Kolvereid 1999; Krueger et al. 2000; Linan 2004; Fayolle and Gailly 2005, Veciana et. al, 2005). Therefore, in this study, we are particularly investigating the factors from theory-driven models of intention for further discussion with previous studies.

Most studies have discussed about gender differences in entrepreneurial intention (Dutton, 1993; Krueger & Dickson, 1994; Langowitz & Minniti, 2007; Dutton 1993).

However, little research has done to understand the factors that influence men and women differently to want to start a new business. In this study, we conduct an empirical study to test whether the role of gender is a moderating effect on the influencing factors behind entrepreneurial intention.

In this paper, we are specifically looking at the potential entrepreneurs majoring in business school from Taiwan's top ranked university, National Taiwan University. Courses of business major contain the components of entrepreneurship, which is known as the training that encourage entrepreneurship (Potter, 2008; Linan, Rodriguez-Cohard & Rueda-Cantuche, 2010). A number of universities have been very active with courses and programs that promote entrepreneurship activities, for example the Creativity and Entrepreneurship Program of National Taiwan University. Furthermore, we also discuss about the impact of entrepreneurial program on undergraduate students to verify the relationship between entrepreneurial education and entrepreneurial intention.

Literature Review

Entrepreneurial Intention

Thompson (2009, p. 676) defined entrepreneurial Intention as "a self-acknowledged conviction by a person that they intend to set up a new business venture and consciously plan to do so at some point in the future". It is known as the key element to understand the new-firm creation process (Bird, 1988) because creating a new venture is a planned behavior. Most researchers believe that entrepreneurs are shaped by a variety of factors including the interaction between personal characteristics, perceptions, values, beliefs, background, and social environment (Krueger et al., 2000).

Numerous researchers have been discussing the influencing factors of entrepreneurial intention. As a result, among all the models, the Model of the Entrepreneurial Event (Shapero and Sokol, 1982) and the Theory of Planned Behavior (Ajezen, 1991) are the representative ones. The Model of the Entrepreneurial Event focuses on the influencing factors of entrepreneurial event, which includes the perceptions of desirability and feasibility (Krueger et al. 2015). On the other hand, Ajzen's Theory of Planned Behavior explains and predicts how the cultural and social environment affects human behavior. It claims that the influencing determinants of individual's intention are the attitude towards behavior, the subjective norms and perceived behavioral control. According to Krueger et al. (2000), their research compares these two models and concludes that both models provide satisfactory predictions.

Although Krueger (2000) explains that two models compete with each other, it is well known from several studies that the two models overlap. For example, Shapero's construct of perceived venture desirability is similar to Ajzen's determinants of attitude towards the behavior and subjective norms. Also, the perceived venture feasibility examined by Shapero is the same as the perceived behavioral control by Azjen (Krueger & Brazeal 1994). In addition, most previous studies in entrepreneurship have mused TPB to predict entrepreneurial intentions (Kolvereid, 1996; Krueger et al., 2000; Autio et al., 2001; Linan et al., 2008; Marco et al., 2008; Linan & Chen, 2009). As a result, the ability of the TPB to predict EI is well proven.

After TPB and the model of entrepreneurial event were introduced, Linan, Rodriguez-Cohard and Rueda-Cantuche (2005) combined the two representative models with the theory of social capital (Grootaert & Van Bastelaer 2001; Woolcook & Narayan, 2000) and created an entrepreneurial intent model with three determinants: personal attraction toward entrepreneurship, perceived social norms and perceived feasibility. Few years later, Linan and Chen (2006; 2009) developed and validated the entrepreneurial intentions questionnaire (EIQ), which includes following determinates: entrepreneurial intent (EI), personal attitude (PA), perceived behavior control (PBC) and subjective norm (SN). This EIQ is found valid after several tests after (Linan, Nabi & Krueger, 2013; Linan, Rodriguez-Cohard & Rueda-Cantuche, 2011; Linan, Urbano & Guerreo, 2011). However, Swanepoel and Nieuwenhuizen (2014) applied factor analysis to the factors of Linan and Chen's EIQ (2009) and redefined EI scales. Besides Linan and Chen's EIQ (2009), some other researchers also developed EIQ with different constructs (Hammami & Affes 2013; Parente & Feola, 2013; Yang, 2013; Malebana, 2012).

The Theory of Planned Behavior

Icek Ajzen had first introduced the Theory of Planned Behavior in 1991 and provided a framework to investigate behavioral intentions. The Theory of Planned Behavior is an extension of The Theory of Reasoned Action by Ajzen to include a measure of perceived behavioral control. It suggests that intentions are the most important immediate determinants of behavior (Ajzen, 2002). Numerous researches have empirically tested and validated the Theory of Planned Behavior since its existence.

According to the theory, entrepreneurial behavior is guided by three kinds of considerations: behavioral beliefs, normative beliefs, and control beliefs (Ajzen, 2005, 2012). In their aggregates, behavioral beliefs produce an attitude toward the behavior, normative beliefs result in subjective norm, and control beliefs produce perceived behavioral control, and the three determinants all lead to the foundation of

entrepreneurial intention. The Theory of Planned Behavior states that the more positive and favorable attitude, subjective norm, and perceived behavioral control, the stronger the intention should be. The Theory of Planned Behavior has empirically tested by prior studies and has often been used to study behavioral intention in both social study field and business field (Kolvereid, 1996; Krueger et al., 2000; Autio et al., 2001; Linan et al., 2008; Marco et al., 2008; Linan & Chen, 2009).

Attitudes

Attitude towards the behavior is one of the determinants of entrepreneurial intentions regarding to the Theory of Planned Behavior. Ajzen states that people developed the attitudes from the beliefs they hold about the likely outcomes of performing a behavior and the evaluations of these outcomes. Furthermore, Douglas and Shepherd (2000) found attitude relating to autonomy and discovered attitudes towards risk to be related to entrepreneurial intention, while workload and income attitudes didn't matter. More recent studies indicate that attitude toward entrepreneurship comes from the salient beliefs people have about the benefits of being an entrepreneur (Kolvereid & Isaksen, 2006). In other words, individuals whom believe that entrepreneurial behavior will end in achieving valuable outcomes are the ones that are more likely to be an entrepreneur. Moreover, researchers find out that individual tend to have positive attitudes toward entrepreneurship when his or her significant others, or the close ones, give approvals and supports the idea.

Perceived Behavioral Control

The second determinant of entrepreneurial intentions is perceived behavioral control (PBC), also known as self-efficacy. Perceived behavior control refers to an individual's assessments of the level of capability of performing a certain behavior, which in this case, we are talking about entrepreneurial activities (Ajzen 2005, Ajzen & Cote, 2008). Ajzen (2012) explains that self-efficacy is the root of perceived behavioral control, which is the perceived easiness or difficulty of becoming an entrepreneur. According to Bandura (1997), self-efficacy is "people's judgments of their capabilities to organize and execute courses of action required to attain designated types of performances. Perceived behavioral control comes from control beliefs concerning the availability of factors that influenced the performance of the behavior. These factors could be internal or external factors that include the availability of resources and opportunities, past experience with the behavior, second-hand information about the behavior, observing others' experiences, required skills and abilities, the availability of social support, emotions and compulsions

(Ajzen 2005, 2012). Bandura (1997) also states out the influencing factors of perceived behavioral control including enactive mastery, role modeling, social persuasion, and judgment.

Subjective norms

According to Ajzen (2005), the third determinant of entrepreneurial intentions is subjective norms, which means the "likelihood that important referent individuals or groups approve or disapprove of performing a planned behavior". Sheppard and partners have argued that it is the weakest antecedent (Sheppard et al., 1988). However, Armitage and Conner (2001) claimed that the poor performance of subjective norm component is due to it's measurement, since we shouldn't use single item to measure subjective norm but a reliable multi-item scales. Therefore, we used the Linan and Chen (2009) validated EIQ that adapted by Malebana (2012) as the measuring instrument of our study. According to Malebana (2012), regarding to subjective norms, we are specifically looking into social capital, entrepreneurial support, entrepreneurial self-efficacy, and entrepreneurial competencies.

Social capital is made up of three dimensions that include structural, relational and cognitive dimensions (De Carolis & Saparito, 2006). Linan and Santos (2008) advocated that the kind of social capital to be included into entrepreneurial intention models should be cognitive not structural. Social capital could be defined as capital captured in the form of social relationships, either formal or informal (Linan & Santos, 2008). The role of entrepreneurial support (ES) helps to translate entrepreneurial aspiration into reality. Entrepreneurial support is defined as "the act of providing an entrepreneur with access to a valued resource" (Hanlon & Saunders, 2007). Entrepreneurial self-efficacy (ESE) refers to the degree to which individuals believe that they are able to successfully start a new venture (McGee et al., 2009; Kickul & D'Intino, 2005). Onstenk (2003) defines entrepreneurial competencies as "the structured and integrated ability to perform entrepreneurial activities adequately and to solve entrepreneurial problems".

Gender Differences

In this study, we are investigating whether the role of gender is a moderating effect on the influencing factors behind entrepreneurial intention. Gender differences in entrepreneurial activity are well documented in the Global Entrepreneurship Monitor (2012) stating the finding that the entrepreneurship rate of men is 9% but the entrepreneurship rate of women is 6%. Although men are more likely to create new

venture, it is important to be aware that the entrepreneurship rate of woman in Taiwan is higher than other countries in Asia. Despite of the difference in entrepreneurship rate, the report found that the rate of entrepreneurial intentions of men (53.1%) and women (46.9%) are very close. This supports the fact that the number of women entrepreneurs has increased dramatically recent years.

The differences in entrepreneurial intention between men and women could be related to opportunity recognition and perception. Langowitz and Minniti (2007) found that women perceived fewer opportunities, a higher fear of failure, and higher financial barriers than men. Furthermore, some researches stated that opportunity recognition depends on situational perceptions of controllability (Dutton 1993) and self-efficacy (Krueger and Dickson 1994), which emphasized the importance of social cognitive theory by Bandura (1997). Social environment is an important factor that shaped an individual's cognition (Linan & Santos, 2008), but women were found to have a lower entrepreneurship self efficacy than men (Mueller and Dato-On 2008; Wilson, Kickul, and Marlino 2007), which means the belief that one is capable of doing something or not.

Previous researches also found that entrepreneurship is in a male mentality and experience, which means that researchers and society in general are more likely to associated entrepreneurial actions with men (Bruni, Gherardi, & Poggio, 2004; Gupta et al. 2009). This is also known as the gender-stereotype in perceptions of entrepreneurs.

H_{01} No moderating effect of gender on the relationship between each independent variable (PA/PBC/ES/SC/ESE/EC) and entrepreneurial intention.

H_{11} Each independent variable (PA, PBC, ES, SC, ESE, EC) has a different influence to dependent variable (EI) due to gender differences.

Entrepreneurship Education

McIntryre & Roche (1993) defined entrepreneurship education as "the process of providing individuals with the concepts and skills to recognize opportunities that others have overlooked, and to have the insight and self-esteem to act where others have hesitated. It includes instruction in opportunity recognition, marshaling resources in the face of risk, and initiating a business venture." In other word, entrepreneurship education is known as the training for new venture creation. Furthermore, Linan (2004) added in the development of knowledge, capacities, attitudes and personal qualities about entrepreneurship to the definition, stating that entrepreneurship education is "the whole set of education and training activities – within the educational system or not- that try to develop in the participants the intention to perform entrepreneurial behaviors, or some of the elements that affect that

intention, such as entrepreneurial knowledge, desirability of the entrepreneurial activity, or its feasibility".

As the interest towards entrepreneurial activity has increased during the past decades, it raised the awareness of entrepreneurship education in university. Previous studies suggested that entrepreneurship education is one of the key instruments to increase the entrepreneurial attitudes of potential entrepreneurs (Potter, 2008; Linan, Rodriguez-Cohard & Rueda-Cantuche, 2010). As a result, entrepreneurship programs in university are created, such as the Creativity and Entrepreneurship Program (CEP) of National Taiwan University. The objective of these programs is to promote effective firm creation by four components, which are a taught component, a business-planning component, an interaction with practice component, and a university support component (Gartner and Vesper, 1994). However, whether trainings or entrepreneurship programs raise individual's entrepreneurial intention, previous studies hold different results. Souitaris, Zerbinati, and Al-Laham (2006) found that entrepreneurship programs do raise participants' entrepreneurial attitude and intention. On the other hand, more recently, Oosterbeek et al. (2010) found that the program doesn't have the positive effect on the intention to become an entrepreneur. Therefore, in this study, we want to investigate the moderating effect of the role of entrepreneurial program to the factors that shaped individual's intention. This would allow a better and more effective design of entrepreneurial education in the future.

H_{02} No moderating effect of entrepreneurial education on the relationship between each independent variable (PA/PBC/ES/SC/ESE/EC) and entrepreneurial intention.
H_{12} Each independent variable (PA, PBC, ES, SC, ESE, EC) has a different influence to dependent variable (EI) due to participate in entrepreneurial education or not.

Methodology

Study 1: Confirmatory Factor Analysis

Method

The first part of the study describes the construction and assures the validity of our entrepreneurial intention questionnaire (EIQ). All items in the questionnaire are based on the concept of TPB, which several researchers have developed EIQ with different constructs (Linan & Chen (2009); Hammami & Affes 2013; Parente & Feola, 2013; Yang, 2013; Malebana, 2012). Refer to the latest study of EIQ (Swanepoel, E. & Nieuwenhuizen, C., 2014), we used the validated EIQ of Linan and Chen (2009) that adapted by Malebana (2010) for further discussion.

We used confirmatory factor analysis (CFA) to assure the validity of our

entrepreneurial intention questionnaire (EIQ)，including composite reality and construct validity. This study recruited 160 students from College of Management in Taiwan's top ranking university (NTU) as our validation sample. 48.1% of the participants were men and 51.3% were women: 11.3% were freshmen, 8.8% were sophomores, 27.5% were juniors, 38.1% were seniors, and 1.9% were graduates. Most of the participants hadn't participated in the Creativity and Entrepreneurship Program (82.5%). The validation procedure has yielded satisfactory results. Therefore, our scales for entrepreneurial intention are reliable and valid.

Results

In order to test for the factorial validity, we used LISREL version 8.70 and performed confirmatory factor analysis with maximal likelihood estimation. This study refers to the indicators recommended by Browne and Cudeck (1993), Hu and Bentler (1999), Hair Jr et al. (2010), Bentler and Bonett (1980). Based on the CFA, the seven-factor solution yielded a reasonable fit. The result shows x^2 = 4598.13, *df* = 1994, RMSEA = 0.095, SRMR = 0.081, CFI = 0.95, NFI = 0.91, NNFI = 0.95. Table 1 shows the result of the CFA.

Table 1 CFAs of EIQ factors

	Recommended criteria	Suggested by authors	
χ^2			4598.13
df			1994
RMSEA	< 0.05 close fit <0.08 reasonable fit > 0.10 unacceptable fit	Browne and Cudeck	0.095
SRMR	< 0.08	Hu and Bentler	0.081
CFI	> 0.9	Hair Jr et al.	0.95
NFI	> 0.9	Bentler and Bonett	0.91
NNFI	> 0.9	Bentler and Bonett	0.95

Fit of Internal Structure of Model

1. Convergent Validity

According to the Fit of Internal Structure of Model, it shows that the factor load of observed variables has good validity evidence. Speaking of convergent validity, the composite reliability (CR) of the seven variables reached over 0.06 (EI = 0.9529, PA = 0.9403, PBC = 0.9565, ES = 0.9095, SC = 0.8834, H = 0.9326, EC = 0.8464), which reached the standard suggested by Fornell and Larcker (1981). Moreover, Hair et al. (2006) suggested average variance extracted of all variables should reach 0.5.

Although SC (AVE = 0.3769) and H (AVE = 0.4254) didn't reach 0.5, but most of the AVE of the seven factors reached the standard of 0.5. Therefore, we can say that this entrepreneurial intention model had good inner quality. Table 2 shows the factor loadings and composite reliability result.

Table 2 Composite Reliability of EIQ factors

Latent variables	CR composite reliability	AVE average variance extracted
EI	0.9529	0.6935
PA	0.9403	0.7257
PBC	0.9565	0.7109
ES	0.9095	0.7158
SC	0.8834	0.3769
ESE	0.9326	0.4254
EC	0.8464	0.5800

2. Discriminant Validity

Joreskog (1971) suggested one way to test the discriminant validity is by calculating the confidence interval of the latent variables. If the confidence intervals excluded 1, then it assured latent variables' discriminant validity. The confidence intervals are shown in Table 3.

Table 3 Discriminant Validity of EIQ factors

Latent variables	correlation	confidence interval lower	confidence interval upper
EI↔PA	0.93	0.8908	0.9692
EI↔PBC	0.86	0.8208	0.8992
EI↔ES	0.61	0.4924	0.7276
EI↔SC	0.77	0.6916	0.8484
EI↔ESE	0.44	0.3028	0.5772
EI↔EC	0.42	0.2632	0.5768
PA↔PBC	0.89	0.8508	0.9292
PA↔ES	0.58	0.4624	0.6976
PA↔SC	0.77	0.6916	0.8484
PA↔ESE	0.46	0.3228	0.5972

Latent variables	correlation	confidence interval lower	confidence interval upper
PA←EC	0.37	0.2132	0.5268
PBC←ES	0.60	0.4824	0.7176
PBC←SC	0.77	0.6916	0.8484
PBC←ESE	0.53	0.4124	0.6476
PBC←EC	0.47	0.3328	0.6072
ES←SC	0.71	0.6120	0.8080
ES←ESE	0.53	0.4124	0.6476
ES←EC	0.42	0.2632	0.5768
SC←ESE	0.53	0.4124	0.6476
SC←EC	0.45	0.3128	0.5872
ESE←EC	0.88	0.8212	0.9388

Table 4

Variable	Entrepreneurial Intention Questionnaire						
Item/Factor	EI	PA	PBC	ES	SC	ESE	EC
1	0.74	0.77	0.88	0.82	0.25	0.55	0.77
2	0.86	0.88	0.91	0.81	0.29	0.64	0.78
3	0.87	0.84	0.91	0.90	0.20	0.65	0.79
4	0.87	0.90	0.84	0.85	0.47	0.73	0.71
5	0.79	0.85	0.80		0.83	0.67	
6	0.86	0.85	0.83		0.71	0.76	
7	0.90		0.86		0.66	0.69	
8	0.75		0.77		0.72	0.72	
9	0.83		0.78		0.78	0.68	
10					0.75	0.72	
11					0.79	0.75	
12					0.68	0.48	
13					0.57	0.52	
14					0.53	0.45	
15						0.58	
16						0.70	
17						0.76	
18						0.68	
19						0.67	
Composite Reliability	0.9529	0.9403	0.9565	0.9095	0.8834	0.9326	0.8464

Study 2: Multiple Group Structural Equation Modeling (SEM)

Method

We also conducted an independent samples *t* test to compare gender differences and whether participate in CEP or not. To test our hypotheses, we performed multiple group structural equation modeling (SEM) with maximum likelihood estimation. In this part, we examined multiple groups (gender differences and participated in CEP or not) fit in our original model. If there's a difference within multiple groups, then we should beware that different group might gives different performance. If there isn't a difference, it means despite multiple groups, it won't change the original model.

Reference to the method suggested by Vandenberg and Lance (2000), we assured measurement invariance does exist, including ensuring factor loading, indicator variables average, latent variables covariate and variance, measurement error covariate and variance, to avoid difference within multiple groups comes from measurement but not the structure we are testing on. Accordingly, we develop the baseline model.

The study recruited 500 students from College of Management in NTU. 43.2% of the participants were men, and 55.8% were women: 11.4% were freshmen, 13.4% were sophomores, 29.2% were juniors, 12.2% were seniors, 32.4% were gradates, and 1.0% were doctors. In the sample, most participants hadn't participated in CEP (85.0%).

Result

Fig 1.

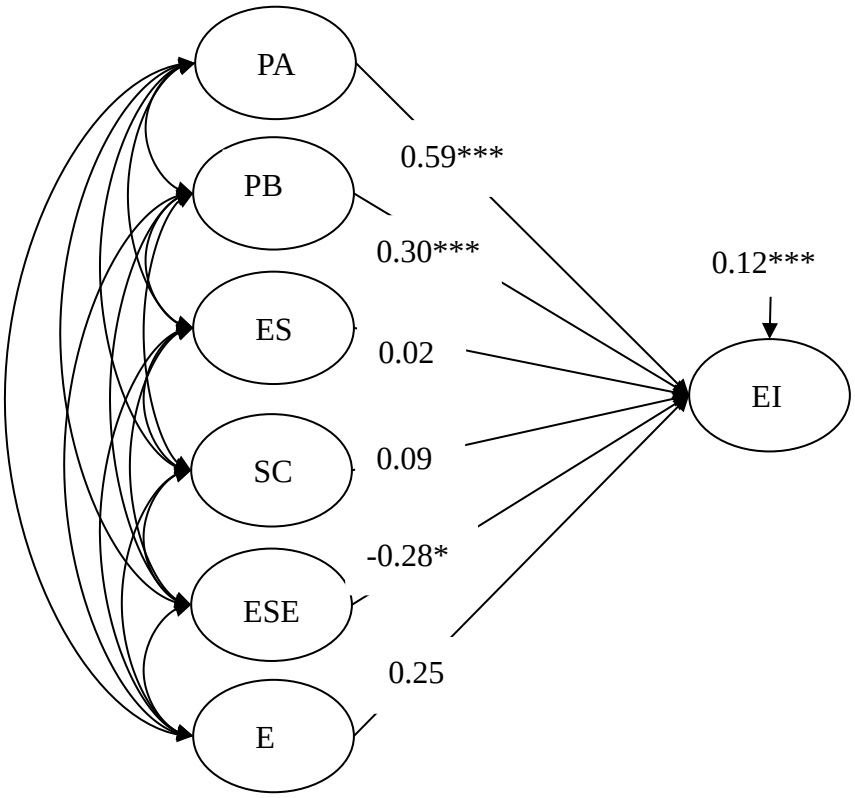


Table 5 Correlation of latent variables

	PA	PBC	ES	SC	ESE	EC
PA	1.00***					
PBC	0.87***	1.00***				
ES	0.43***	0.50***	1.00***			
SC	0.79***	0.77***	0.58***	1.00***		
H	0.40***	0.50***	0.35***	0.54***	1.00***	
EC	0.37***	0.46***	0.33***	0.48***	0.94***	1.00***

Table 6 Fit Index

	Recommended criteria	Suggested by authors	
χ^2			2839.38
df			719
RMSEA	< 0.05 close fit <0.08 reasonable fit > 0.10 unacceptable fit	Browne and Cudeck	0.086

SRMR	< 0.08	Hu and Bentler	0.068
CFI	> 0.9	Hair Jr et al.	0.98
NFI	> 0.9	Bentler and Bonett	0.97
NNFI	> 0.9	Bentler and Bonett	0.97

Table 8 t test

Gender Differences

	Male (*n*=215)		Female (*n*=279)		*t* 值	*p* 值
	M	*SD*	*M*	*SD*		
EI	2.970	1.201	2.523	1.117	4.268	0.000

CEP or not

	Yes (*n*=73)		No (*n*=424)		*t* 值	*p* 值
	M	*SD*	*M*	*SD*		
EI	3.339	1.252	2.612	1.123	5.022	0.000

In this study, we used LISREL (version 8.70) and performed structural equation modeling (SEM) with maximum likelihood estimation. The results show that the model fit is acceptable (x^2 = 2839.38, *df* = 719, RMSEA = 0.086, SRMR = 0.068, CFI = 0.98, NFI = 0.97, NNFI = 0.97). Furthermore, the *t* test shows that within multiple groups, independent variables influence dependent variable differently. Hence, we want to examine if multiple groups (gender differences/education) have a moderating effect on the relationship between independent variables and entrepreneurial intention.

The structure model (Fig. 2) shows that there are only moderating effect of gender on the relationship between SC and EI and between ESE and EI and between EC and EI, while PA and PBC were found to be a concern of both men and women; thus, Hypothesis 01 was partially supported. On the other hand, the structure model (Fig. 3) shows that PA and PBC influence the EI of students with or without the background of CEP. However, with the moderating effect of CEP, it shows a significant relationship between students' entrepreneurial intention and PA, PBC, SC, ESE and EC. Therefore, Hypothesis 02 was partially supported.

Fig. 2 Gender Differences (L: male, R: female)

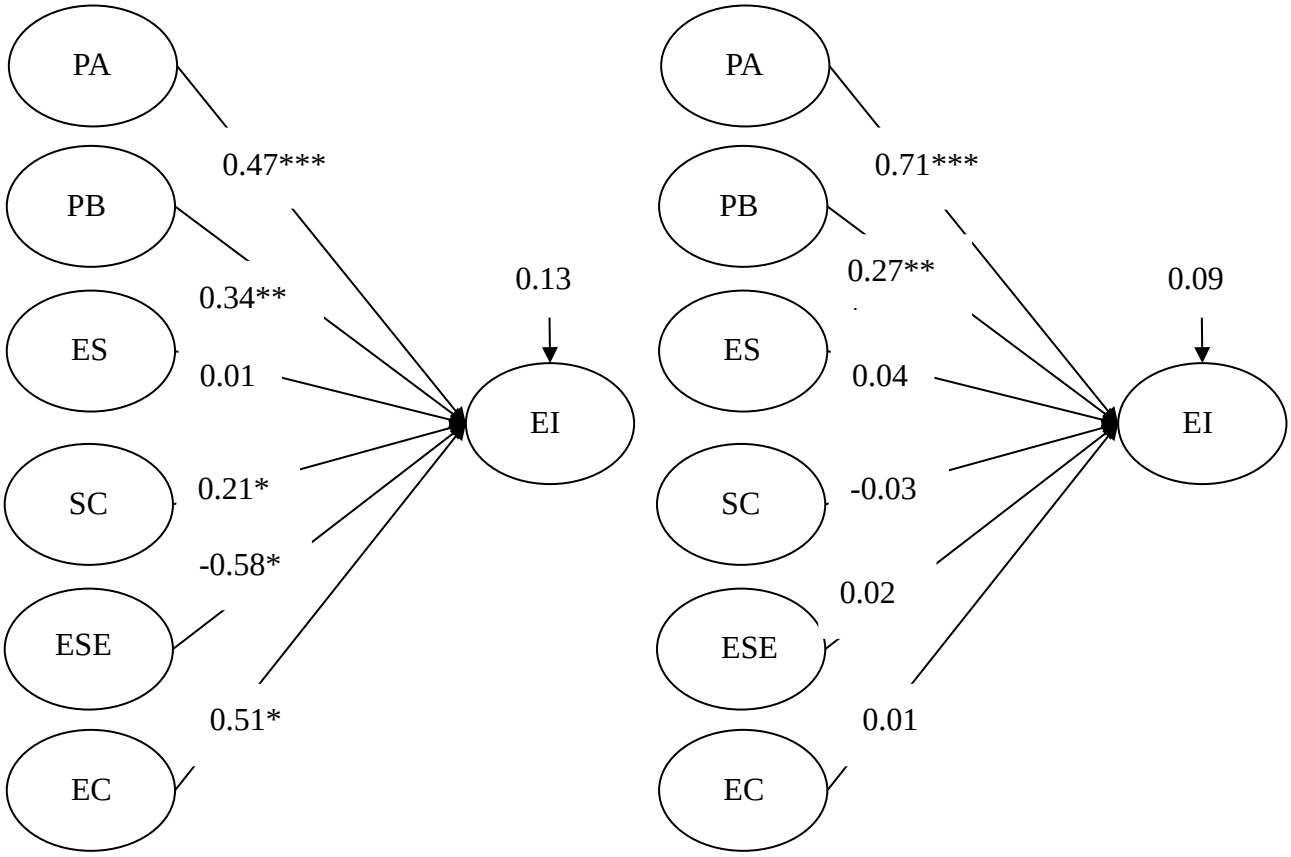
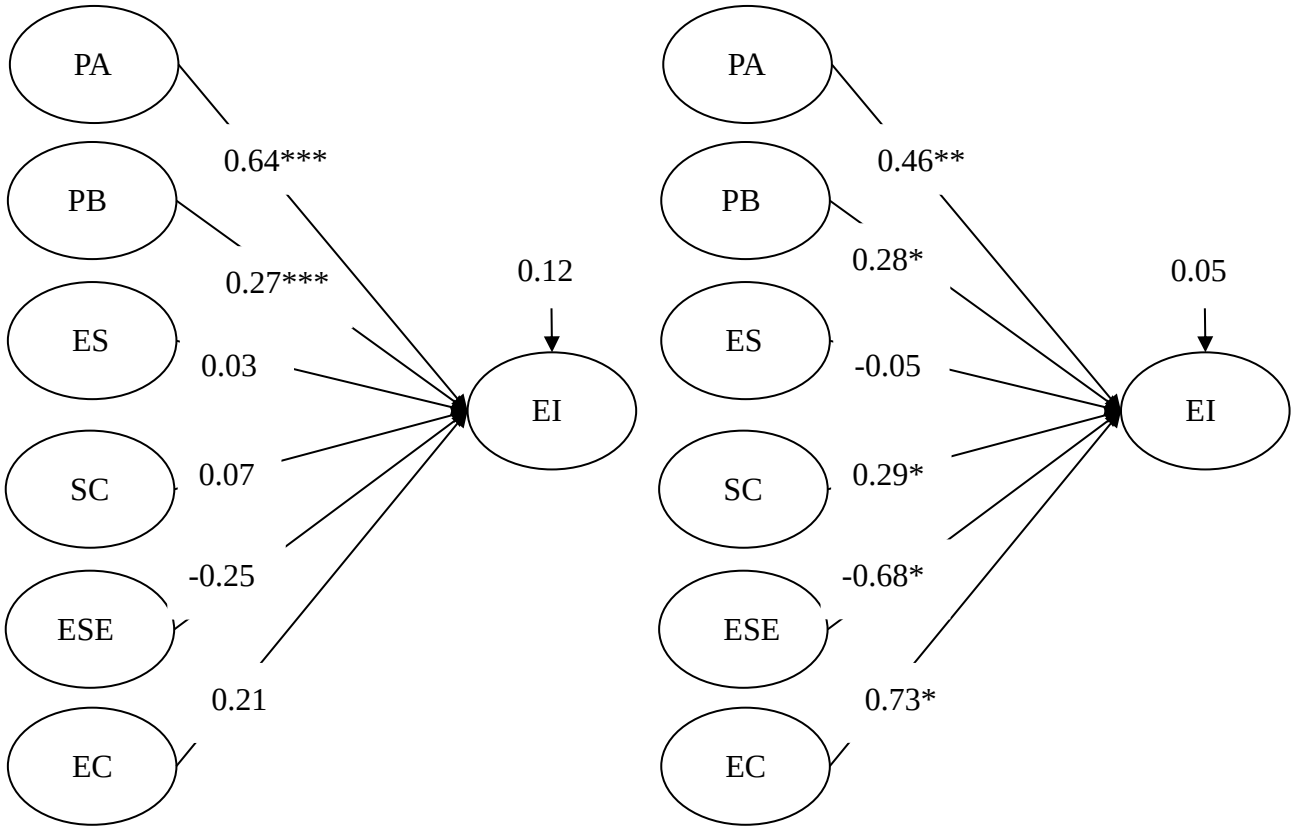


Fig. 3 Participants in Entrepreneurial Program (L: w/o CEP, R: w/ CEP)



Discussion

Results from our study have confirmed that personal attitude (PA) and perceived behavioral control (PBC) are significantly the main predictors explaining the intention to start a new business, as previous researches had also found before (Armitage & Conner, 2001; Linan & Chen, 2009). However, we find that the majority of the sample of students hadn't thought about creating new business as a future career plan. As a result, the individuals in this sample shown a low entrepreneurial intention, and this can be explained by the influencing factors we investigated in this study. In this study, we are specifically looking at the impact differences of determinants among different genders and between students who participated in entrepreneurship program and who didn't.

From the t-test (Table 8), it shows that male student`s entrepreneurial intention is stronger than female`s. Regarding to the influencing factors that shaped entrepreneurial intention, the result shows that the intentions of different genders are caused by different factors. Males' entrepreneurial intention is influenced by personal

attitude (PA), perceived behavioral control (PBC), social capital (SC), entrepreneurial self-efficacy (ESE), and entrepreneurial competencies. On the other hand, only PA and PBC would exert its influence on EI for female sample of students.

Our finding shows no moderating effect of gender on the relationship between PA and EI and between PBC and EI, meaning PA and PBC were found to be a concern of both male and female students. This supports the findings of Wilson et al. (2007), Diaz-Garcia and Jimenez-Moreno (2010), and Karimi et al. (2013). However, the authors mentioned above also argued that the effect of PBC on EI is the strongest in their study and we found another factor. In contrary, we found that personal attitude (PA) was the most significant predictor of entrepreneurial intention for both genders. The model shows that attitude have significant impact on entrepreneurial intention with a positive correlation at both male and female. One plausible reason might be related to the low salary problem in Taiwan. Low salary levels have long plagued Taiwan's workforce. Students would rather choose be an entrepreneur than being employed because then they could have made more money.

As a result, Taiwanese students appear to have a positive attitude toward becoming an entrepreneur. Thus, PA would be a strong predictor of EI for both genders in Taiwan culture. Both genders are more influenced by attitude than perceived behavioral control. However, despite female students having lower entrepreneurial intention than males, female personal attitude has a greater impact to female potential entrepreneurs than male potential entrepreneurs. In other words, females have more favorable perceptions about their PA toward firm creation than males do.

On the other hand, as expected, our result shows social capital, self-efficacy, and entrepreneurial competencies were found to be a concern only to male students. One plausible explanation might be related to gender stereotype. Socially constructed gender stereotypes do cause an effect in entrepreneurship and influence men and women's entrepreneurial intentions (Gupta, Turban, Wasti, & Sikdar, 2009). Gupta et al. (2009) found the correlation between male and entrepreneurial characteristics was relatively high whereas the correlation between female and entrepreneurial characteristics was low. Therefore, it states that entrepreneurs were perceived to have masculine characteristics and this led to gender-role stereotypes in entrepreneurship. These stereotypes are believed to act as strong social forces that justify and maintain the sex segregation of occupations (Cejka & Eagly, 1999; Marlow & Carter, 2004). As a result, due to gender-role stereotype, men being entrepreneur are more acceptable and favorable by the society, which is why the influencing factors that related to subjective norms (SC, H, and EC) are predictors to EI only for men not women.

In this section, we further investigate the role of entrepreneurial education in

predictors of intention in entrepreneurship. The expected moderating effect of entrepreneurial education was supported by the result. Our result from the t-test shows that students who claimed to participate in the Creativity and Entrepreneurship Program (CEP) of National Taiwan University have a higher EI than the ones who didn't. According to the SEM diagram, it shows that PA and PBC influence the EI of students who didn't participate in CEP. However, with the moderating effect of CEP, it shows a significant relationship between students' entrepreneurial intention and PA, PBC, SC, H and EC.

As a predictor of EI, social capital refers to how participants' country, community, and family cultures shaped the value and supports of entrepreneurial activity. In this study, the sample of students is from the department of business school, which means they share similar social culture and education background. However, the result only shows a positive and significant) correlation of SC with students from CEP. This is probably because the Creativity and Entrepreneurship Program (CEP) of National Taiwan University offers a culture or environment that makes the potential student entrepreneur to feel supportive to create own business. Our findings proved the significant role of entrepreneurial education and entrepreneurial support as students perceived the education and support that they received from their universities as an important impact on their entrepreneurial intent, which is consistent with previous research's result (Saeed, et.al. 2015).

Moreover, the result shows that entrepreneurial education reinforces the scanning and search entrepreneurial alertness skill (Westhead & Solesvik, 2015); therefore, students under entrepreneurial education are encouraged to scan through information and resources regarding to entrepreneurial activities. According to Global Entrepreneurship Monitor 2014's global report (Singer, Amorós & Arreola, 2015), the majority of Taiwanese gives positive feedback toward entrepreneurial activity, since 75.2% of Taiwan population aged 18-64 agree "Entrepreneurship as a good career choice". Among the 12 indicators of entrepreneurship framework, Taiwan scores higher than average score in 8 indicators (GEM, 2014), which are in Finance, National Policy-Regulation, Government Programs, R&D Transfer, Internal Market-Dynamics, Internal Market-Openness, Physical Infrastructure, Cultural and Social Norms. This shows that the social capital (SC) of Taiwan referring to entrepreneurship is high and supportive. In this study, the result supports the idea that entrepreneurial education reinforces scanning and search entrepreneurial alertness skill, which create a social belief in their mindset. Since entrepreneurial education allows and encourages students to be acknowledged about the social capital toward entrepreneurship, which is the approval to entrepreneurship. Knowing that people approved entrepreneurial behavior will strengthen individual's intention to start a new

business.

The result also shows that the entrepreneurial competency (EC) is one of the factors that influenced the EI of students under entrepreneurial education. There is a positive correlation between EC and EI. In other words, it proves that entrepreneurial education increases students' ability to entrepreneurial alertness or EC, and thus raises the rate of EI. Entrepreneurial competency is the evaluation and judgment entrepreneurial alertness skill (Westhead and Solesvik, 2015), which means the ability of opportunity recognition (DeTienne & Chandler, 2004).

However, the result shows that entrepreneurial self-efficacy has a negative effect on entrepreneurial intention. This result opposes with most of the studies using EIQ (Liñán & Chen, 2009; Nieuwenhuizen & Swanepoel, 2015; Ozaralli & Rivenburgh, 2016) and rejects the findings of previous researches regarding to entrepreneurial education (Pihie and Bagheri 2013; Saeed, et.al. 2015). Most policy makers in the world believe that the goal of increasing numbers of entrepreneurship can be reached through education (European Commission, 2006), including entrepreneurial education. However, this study shows a doubt to it. The finding of this study is supported by the findings of Oosterbeek, Van Praag & Ijsselstein (2010) and Hattab (2014), which state that the effect on entrepreneurial students' self-assessed entrepreneurial skills is insignificant and the effect on the intention to become an entrepreneur is even negative. One plausible explanation might be that entrepreneurial education strengthens students' risk perception skill (Westhead and Solesvik, 2015). As a result, students are more alerted to the possible risks of being an entrepreneur. The sample of students in our study is business school's students from the top ranked university of Taiwan, which means these students are the ones with better career opportunities in the future. Facing the risks of entrepreneurship, it means that the opportunity cost to start a new business of the participants in this study is higher than the students from other university. Consequently, if individual's entrepreneurial self-efficacy is higher, then her or his entrepreneurial intention will be lower. Furthermore, under the entrepreneurial education, it strengthens students' skills of managing employees, new product development, financial acumen, marketing and networking, etc. These are all professional skills of a manager that companies and firms are looking for, which increases the opportunity cost between creating a new business and being employed. The increase of opportunity cost can be seen to be a major reason that weakens students' entrepreneurial intention. It may be the case that as Wennekers et al. (2005) argue more developed and wealthier countries provide more attractive private and public sector career options for graduates, leading to less entrepreneurial intentions.

Conclusion and Implications

This study contributes to the field of entrepreneurial intention in several ways. First, it has tried to explain why previous studies found subjective norms a poor predictor of EI. We extended the concept to ES, SC, H, and EC with multiple scales and test the structure model with multiple groups. Second, it has tested the moderating effect of multiple groups, gender and education, on the relationship between EI and its influencing factors. Third, it used a lately developed instrument (EIQ) to measure the relevant cognitive constructs. Reliability and validity measures support the EIQ, but there still be room for improvement.

Results have partially supported our hypotheses. The SEM holds for different groups. Regarding to gender differences, although effects of PA to EI and PBC to EI exist in both genders, SC, ESE, and EC are only concerned by men, which show a moderating effect of gender. Similarly, PA and PBC strongly predict EI of students with or without CEP background, but SC, ESE, and EC are only concerned by students with CEP background, which proven the moderating effect of education. Supported by previous researches, we found the most significant predictors of EI are PA and PBC. However, under the moderating effect of gender and education, SC, ESE, and EC are also strong predictors to EI.

Gender differences in access to economic opportunities are frequently debated in relation to gender differences in entrepreneurial intentions. As a result, women exhibit lower average entrepreneurial intention than men. PA and PBC strongly influence both genders' EI, but men's EI is also influenced by subjective norm (SC, H and EC). We assert one possible explanation for such difference: gender-role stereotypes. Informal institutions, particularly cultural or social norms, within a country or particular group undoubtedly influence preferences. Taiwan's traditional culture and social norms tend to encourage male, but not female, to start up their own business; thus, SC and EC both encourage only men to become entrepreneurs.

Our study found that Creativity and Entrepreneurship Program (CEP) create an entrepreneur-encouraged environment for the CEP students. Students who participate in such program, can have a better understanding of the overall attitude of society toward entrepreneurships, moreover, can broaden one's perspective on market in modern capitalist societies. Therefore, the result of this study is that CEP shapes students with higher incentives in entrepreneurship. Whether participated in CEP or not, students' EI are mainly affected by the support of PA and PBC; however, students within such program are further affected by social norms such as SC, H, and EC. Nevertheless, despite the effect of CEP, ESE has a negative effect on E.

It is important to note that, entrepreneurial support under any multiple groups has no effect on EI. Entrepreneurial support is mainly used to test whether the respondents

feel supported by the government in consideration to innovative startups. The result indicates that even students that participated in the CEP didn't feel that the government supports entrepreneurship. The result opposes what Taiwan government claimed, which should be a consideration of future policy. Moreover, the leader of NTU CE Program should further reflect on how their program can more efficiently help talented young entrepreneurs in starting their own business

This study shows that Taiwan's top students in management are lack of entrepreneurial incentives. We conducted questionnaire on the sample group of the university students in National Taiwan University College of Management, and one might said that compared to other Taiwan university students, our sample has a better chance in finding jobs. Thus, they may result in relatively higher opportunity cost on business startups. Results show that respondents don't expect the benefit from entrepreneurship is higher than being employed, which result in an overall low level of entrepreneurial incentive. Moreover, when one's self-efficacy is high, entrepreneurial intention is lower.

This assertion suggests that, similar to other developed and wealthier countries that provide social welfare, university students tend to choose to be employed rather than being an employer. Moreover, our data suggests that one's university's ranking positively correlates with their opportunity cost needed in business startups. Indeed, the higher the university's ranking is, the higher the opportunity cost of the students from that university will experience when starting their own business. However, future research should be developed to test these two findings.

Future research should be developed to confirm our findings with a wider sample from different university or different country. The sample group of this study is solely based on students from a certain college of a university, which our result lacks of comparative analysis. Also, the authors of this article are professors and graduates of NTU, which might have limited our analytic view. Third, this study assumed that influencing factors have direct effect on EI, which lack of a concern of intermediary variable. Therefore, the concerns listed above are the limitation of this study, which shall be taken into consideration and improved in future researches.

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