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Abstract

The purpose of this study was to explore the direct and interaction effects of entrepreneurial events (feasibility and desirability) and perceived risk (opportunity and threat) on entrepreneurial intention in a transitional economy – Vietnam. The testing results show that perceived desirability and perceived feasibility have direct and interactive effects on entrepreneur intention. Risk as both threat and as opportunity has direct and moderating effects on entrepreneurial intention.

Keywords: Perceived desirability and perceived feasibility, risk as threat and risk as opportunity, entrepreneurial intention, interaction effect, moderating effect.

Introduction

Entrepreneurial intention (EI), which reflects an individual level of interest in starting a business (Fitzsimmons and Douglas 2011, Krueger et al. 2000), has proven to be a primary predictor of future entrepreneurial behaviour (Esfandiar et al. 2017, Liñán and Fayolle 2015, Schlaegel and Koenig 2014). Understanding individual factors that influence EI remains critical to explaining entrepreneurial behaviour (Bird 2015, Block et al. 2015, McDonald et al. 2015). Existing theory suggests that EI is a function of personal perceptions of desirability and feasibility (Krueger et al. 2000, Martínez et al. 2017, Schlaegel and Koenig 2014). Accordingly, both perceptions of desirability and feasibility are proposed to be the products of social and cultural environments (Bird 2015, Esfandiar et al. 2017, Shapero and Sokol 1982).

Also, it is suggested that perceived risk is a crucial element in explaining entrepreneurial motivation (Block et al. 2015, Stewart and Roth 2001), intention (Martínez et al. 2017, Nabi and Liñán 2013) and behaviour (Barbosa et al. 2007a, Macko and Tyszka 2009, Martínez et al. 2017). Nevertheless, previous studies in the entrepreneurship field mainly look at the downside of risk (i.e., risk as threat) (Forlani and Mullins 2000, Martínez et al. 2017, Stewart and Roth 2001), while the upside of risk (i.e., risk as opportunity) seems to be ignored (Barbosa et al. 2007b, Nabi and Liñán 2013).

Furthermore, the moderator effect of perceived risk on the relationship between motivations and EI also are neglected, leading to an uncomprehensive picture of the association between motivations and risk. Such knowledge enables us to form effective strategies specifically designed for potential entrepreneurs as well as to provide insights into entrepreneurial success and innovativeness (Koellinger 2008, Koellinger et al. 2007). This study is expected to shed light on what motivates entrepreneurs by addressing two specific issues.

Firstly, does strong EI require both high perceived desirability and high perceived feasibility? According to the conventional model of Shapero and Sokol (1982), that is true. If perceived desirability and perceived feasibility jointly and positively influence EI, however, it may be that

relatively high levels of either perceived feasibility or perceived desirability will increase the impact of the other variable on EI and therefore strong EI will form as if perception of feasibility and desirability surpass threshold values (Fitzsimmons and Douglas 2011, Shah and Higgins 1997). There is little understanding of how perceived feasibility and perceived desirability might jointly influence EI (Fitzsimmons and Douglas 2011, Liñán and Fayolle 2015). Thus, this study aims to contribute to the existing literature by combining perceived feasibility and perceived desirability to explore how and why they predict directly and interactively the intention to create a new venture in Vietnam. Answering the unexplored question in the literature on transitional context – 'Do perceived feasibility and perceived desirability interact with each other to influence EI?' – forms the first purpose of this study.

Secondly, recent studies suggest that different facets of individuals' personality and values are important to explain or predict their EI (Block et al. 2015, Brandstätter 2011). Our second issue explores if and how perceived risk has an important role in forming EI. The literature review suggests that perception of risk (Block et al. 2015), along with perceived feasibility and perceived desirability, are important variables and have strong impacts on EI (Barbosa et al. 2007b, Nabi and Liñán 2013). However, the literature review also reveals a lack of studies exploring the moderator effect of risk in the process of forming EI although there exists evidence supporting the moderator effect of risk in the process of forming behavioural intention in some risky contexts (Casidy and Wymer 2016, Chiu et al. 2014). Also, risk in the entrepreneurship context includes risk as threat and risk as opportunity (Barbosa et al. 2007b, Nabi and Liñán 2013). Therefore, this study takes the first step in examining the moderator role of those types of perceived risk (i.e. risk as threat and as opportunity) by questioning. 'Does risk interact with perceived feasibility and perceived desirability to have impacts on EI?' forms the second purpose of this study.

As noted earlier, EI is the result of social and cultural environments. Hence, a transitional context like Vietnam, which refers to economies moving from central planning to market-based and having significant economic and social changes (Manev and Manolova 2010), is interesting for

exploring EI. According to a report released by the Global Entrepreneurial Monitor (2019), about 46.4% of Vietnamese think there are good opportunities to start a business here, while 62.1% consider entrepreneurship a good career choice. The start-up frenzy started in Vietnam in 2014 when the Vietnamese government called for more investment in the community and demonstrated its political will with several pragmatic moves (Australian Trade and Investment Commission 2019). The biggest move was the approval last year of the "Supporting the National Innovation Start-up Ecosystem by 2025" scheme. However, the entrepreneurial intentions in Vietnam is just 25% in 2017 (Global Entrepreneurial Monitor 2019), which is lower than the average rate at 30.3% in other transitional economies, such as China and India (Australian Trade and Investment Commission 2019). This may be the results of inadequate understandings regarding if and how essential drivers jointly effect EI in different country contexts (Bruton et al. 2008). The risks are also offset by the low barriers to entry and starting up (e.g., the availability of cheap labor, a high standard of education, and the low cost of living) and by the complicated business environment (e.g., a high staff turnover, a rapidly-changing government regulations, a high level of bureaucracy and a high level of government corruption). This makes the entrepreneurs need to be quick and take advantage of every opportunity that comes their way, but they need not necessarily risk everything to launch their dream company (Jones and Masters 2016). The economic and political changes that have occurred in transitional economies (e.g. Vietnam) provide distinctive and dynamic settings for studying EI phenomena in new contexts that differ from previous studies. Thus, understanding how people form their intention to start businesses in Vietnam may facilitate the development of appropriate policies and foster entrepreneurial activities more efficiently.

In addition, most previous studies just focus on demographic characteristics and problems, not on Vietnamese entrepreneurs' intention to start a business or the factors necessary for success (Nguyen and Nordman 2017, Sohns and Diez 2017, Vuong 2016). Finally, there are differences in the way entrepreneurs start new business ventures as well as form their entrepreneurial orientation across countries and regions. Hence, there is a need to assess if theoretical implications in

developed countries are valid in transitional economies such as Vietnam (Bruton et al. 2008, Manev and Manolova 2010).

To sum up, this study contributes to the existing literature in three areas. Firstly, it explores the combined role of perceived feasibility and perceived desirability toward the formation of EI. Secondly, it discusses and tests the moderator role of two types of risk on EI. Thirdly, it is conducted in a scarcely studied context.

Theory and background

Entrepreneurial event model

The literature review indicates the entrepreneurial event model (EEM; Shapero and Sokol 1982) and the theory of planned behaviour (TPB; Ajzen 1991) are the two main models widely adopted in entrepreneurship studies (Bird 2015, Engle et al. 2010, Fitzsimmons and Douglas 2011, Krueger et al. 2000, Schlaegel and Koenig 2014). According to EEM model, EI is the result of perceived desirability and perceived feasibility (Shapero and Sokol 1982). Krueger (1993) defined perceived desirability in the EEM model as 'the degree to which one finds the prospects of starting a business to be attractive'. He also emphasizes that in essence, 'it reflects one's affection toward entrepreneurship' and therefore it involves attitudes toward the act and subjective norms which are two important variables in TPB (Ajzen 1991). Perceived feasibility is defined as 'the degree to which one believes that he or she is personally capable of starting a business' (Krueger 1993). This element in the EEM model is mostly the same as the element of self-efficacy or perceived behavioural control in TPB model (Liñán et al. 2011, Zhang et al. 2014).

Both EEM and TPB have been shown to be powerful in predicting and explaining EI (Devonish et al. 2010, Krueger et al. 2000, Martínez et al. 2017, Schlaegel and Koenig 2014), and prior research argues that the TPB and the EEM overlap (Guerrero et al. 2008, van Gelderen et al. 2008). Moreover, previous theories (e.g. extended theory of planned behaviour; Perugini and Bagozzi 2001, model of goal-directed behavior; Perugini and Conner 2000) and recent studies (Esfandiar et al. 2017, Krueger 2009, Schlaegel and Koenig 2014) describe a mechanism through

which the three TPB constructs influence EI via two EEM constructs. EEM is more domain specific and adapted toward EI and behaviour (Autio et al. 2001, Krueger et al. 2000, Li 2007, Solesvik et al. 2012). It is also a parsimonious model. Thus, this study uses EEM as the main theoretical framework.

Direct effect of perceived feasibility and perceived desirability on EI

According to Shapero and Sokol (1982), perceived desirability and perceived feasibility lead to the formation of the entrepreneurial event. Empirical evidence also provides scholars with rich and validated argumentation on the relationship among perceived desirability, perceived feasibility and EI in both developed countries and developing or transitional countries (Fitzsimmons and Douglas 2011, Krueger and Brazeal 1994, Martínez et al. 2017, Schlaegel and Koenig 2014, Wang et al. 2011, Zhang et al. 2014).

In a Vietnamese context, perceived desirability may reflect the expectation of utility derived from entrepreneurship (e.g. life improvement, wealth increasing, independence or autonomy) (Nguyen and Mort 2016). Perceived desirability is important because individuals will not choose to become entrepreneurs if the total utility they expect from the entrepreneurship does not surpass the counterpart from their best employment (Douglas and Shepherd 2000). In addition, the process of forming EI in Vietnam requires perceived feasibility; an individual belief about physical and mental passion; internal locus of control; and availability of various resources (Khuong and An 2016). That personal belief is an important variable to explain EI because individuals with strong personal beliefs may be more optimistic and goal oriented and therefore are readier to face challenges and obstacles and have a positive forecast about entrepreneurship. Based on these arguments, the first two hypotheses are:

H1. Perceived desirability (*a*) and perceived feasibility (*b*) has a positive effect on EI

The interaction between perceived feasibility and perceived desirability

The EEM model is closely related to expectancy theory (Vroom 1964). Feasibility is related to expectancy, and desirability is a form of value (Fitzsimmons and Douglas 2011, Gollwitzer 1996,

Steel and König 2006). Furthermore, it is argued that each action is more likely to be pursued when the multiplication between expectancy (e.g. perceived feasibility) and value (e.g. perceived desirability) has the largest value (Steel and König 2006). Indeed, there exists empirical evidence that proves the multiplicative relationship between expectancy and value (Feather 1988, Shah and Higgins 1997). This suggests that in addition to direct effects, perceived feasibility and perceived desirability may interact to have a combined effect on EI.

According to regulatory focus theory (Brockner et al. 2004, Higgins 1998, Shah and Higgins 1997), when individuals focus on promotion, then their desired outcome is to maximize the opportunities to found a successful start-up. According to the theory of cognitive dissonance (Festinger 1962), in the case of inconsistency between attitudes and behaviour (i.e. focus on prevention), it is most likely that the attitudes will change to accommodate the behaviour. That is, individuals tend to not only adjust their perception of feasibility to believe they have enough skill and ability required to be a successful entrepreneur, but also the desirability of becoming an entrepreneur is greater than for alternative career options. Based on these arguments, it is expected that the interaction between perceived feasibility and desirability has a positive effect on EI.

As the world is starting its fourth industrial revolution race, Vietnam is accelerating to catch up with the rotation. It is obviously an opportunity for young people in Vietnam to rise and claim themselves. Given that the opportunities associated with entrepreneurship are widely recognized in Vietnam, in the process of forming the intention to act entrepreneurially, the Vietnamese individual will care more about utilizing opportunities and in such situations will tend to be oriented towards a promotion focus. Following this argumentation, the third hypothesis is:

H2. Perceived feasibility and perceived desirability interact to have a positive effect on EI.

The direct effect of perceived risk

In an entrepreneurial context, risk perception (Nabi and Liñán 2013), risk propensity (Stewart and Roth 2001) or risk attitudes (Block et al. 2015) is important for intention to establish new business ventures (Brandstätter 2011). Risk is a potential entrepreneur's assessment of the liability

inherent in pursuing entrepreneurial behaviour (Barbosa et al. 2007b, Nabi and Liñán 2013). A potential entrepreneur's risk perception includes risk as opportunity (potential gains) and risk as threat (potential losses). Risk as opportunity implies that the individual does not want to miss an opportunity and associated potential gains while risk as threat relates to potential losses and risk of failure (Barbosa et al. 2007b, Dickson and Giglierano 1986, Nabi and Liñán 2013). To be consistent with previous literature, this study adopts a concept of entrepreneurial risk perception including both gains and losses, or risk as opportunity and risk as threat, to explore the impact of risk on EI in a Vietnamese context.

A review of the literature suggests perceived risks as drivers of entrepreneurial action (Barbosa et al. 2007b, Nabi and Liñán 2013). More specifically, risk as opportunity tends to strengthen EI while risk as threat tends to reduce EI. This is because risk as opportunity generates a dynamic for potential entrepreneurs to move forward and act entrepreneurially to maximize the potential gains and thus enhances EI whereas risk as threat creates a bias to elaborate, re-consider and hopefully ultimately rule out reasons not to go forward and therefore reduces EI (Barbosa et al. 2007b, Dickson and Giglierano 1986).

The Vietnamese economy is characterized by a high level of instability and uncertainty, which means that new venture creation in Vietnam includes greater risk as threat-taking behaviours (Nguyen and Nordman 2017, Sohns and Diez 2017). Thus, potential entrepreneurs in Vietnam also take risk as threat into consideration in the process of forming EI. Risk as threat may be counter-balanced, however, by the low barriers of entry and start-up, cheap labour and the low cost of living (Jones and Masters 2016). Furthermore, participation in the World Trade Organization (WTO) and the Comprehensive and Progressive Agreement for Trans-Pacific Partnership (CPTPP) opens a huge opportunity for start-ups to penetrate international markets (i.e. opportunity). Hence, two elements of risk are critical and important although relatively few studies have examined both constructs in Vietnam. Thus:

H3. (*a*) Perceived risk as opportunity has a positive effect on EI while (*b*) perceived risk as threat has a negative effect on EI.

The moderation effect of perceived risk

Risk perception (i.e. risk as threat and risk as opportunity) may play a role as a moderator in the relationship between perceived desirability and EI. Higher risk as threat causes potential entrepreneurs to apply many strategies (e.g. carefully evaluating more career options) to achieve 'security' and 'avoiding responsibility' status, which are motivational beliefs indicating a lower EI (Kolvereid 1996). That is, an increase in risk as threat leads to a decrease in the predictive power of perceived desirability on EI. In contrast, beliefs about the opportunities and challenges which associate with risk as opportunity encourage potential entrepreneurs to try their best to act entrepreneurially. That is, an increase in risk as opportunity generates an increase in the predictive power of perceived desirability on EI. It is also argued that the desirability of potential gains (i.e. risk as an opportunity) or losses (i.e. risk as a threat) reflect salient beliefs about possible outcomes of entrepreneurial activities (Fitzsimmons and Douglas 2011). Thus, risk perception should have an influence the predictive power of perceived desirability on EI. To sum up, the greater risk perception as opportunity, the higher the influence of perceived desirability on EI, whereas the greater risk perception as threat, the lower the influence of perceived desirability on EI. Based on above arguments, the next two hypotheses are:

H4. (a) Perceived risk as opportunity strengthens the relationship between perceived desirability and EI while *(b)* perceived risk as threat weakens the relationship between perceived desirability and EI.

Previous studies have shown risk perceptions have a link to perceived feasibility (Macko and Tyszka 2009). Individuals with a positive view about risk (i.e. risk as opportunity) are more comfortable dealing with challenges and obstacles. Even in the same situation (i.e. entrepreneurship), individuals with a threat as opportunity point of view consider it as less risky than others with a risk as threat viewpoint. Thus, they may experience less debilitating anxiety

about entrepreneurial options, perceive greater control over outcomes (e.g., positive rewards) and thus possess higher EI (Zhao et al. 2005). That is, risk as opportunity should have an influence on the predictive power of perceived feasibility on EI. The greater risk as opportunity, the higher the influence of perceived feasibility on EI. Similarly, the negative perception of risk (i.e. risk as threat) causes more debilitating anxiety, less sense of control, and less self-efficacy (Barbosa et al. 2007b). Therefore, the greater risk as threat, the lower the influence of perceived feasibility on EI. Based on these arguments, the next final two hypotheses are:

H5: (*a*) Perceived risk as opportunity strengthens the relationship between perceived feasibility and EI while (*b*) perceived risk as threat weakens the relationship between perceived feasibility and EI.

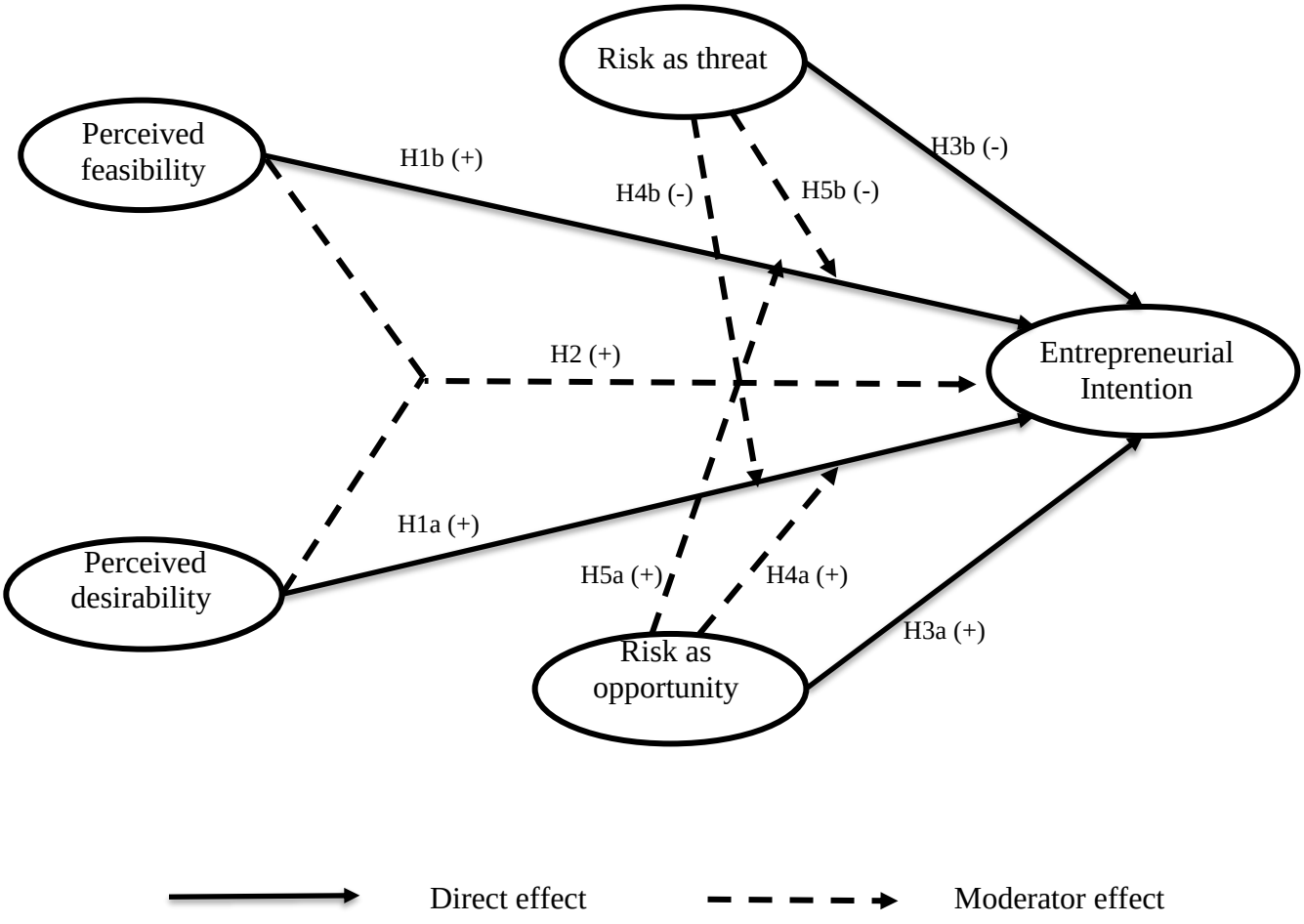

Figure 1: The theoretical model

Method

Data collection and sample

To assess the scales and test the proposed hypotheses, a survey questionnaire was developed to collect data. The questionnaire was translated into Vietnamese and then translated back into English by a language instructor. The two versions of the English questionnaire were compared to ensure that the translation and wording used in the Vietnamese version were consistent. Researchers set up a series of in-depth interviews with five MBA students in Nha Trang city to ensure all items were understood correctly and accurately. After that, the scales were tested in a pilot survey with 30 MBA students in Ho Chi Minh city using Cronbach's alpha and exploratory factor analysis (EFA). The Cronbach's alpha test results showed that all those scales have acceptable reliability ($\alpha > 0.70$) and the EFA test results showed that one item is rejected (EI1) because of low factor loading (< 0.5). Most universities in the country, in particular in big cities like Ha Noi, Ho Chi Minh or Nha Trang, are expanding academic programs and establishing start-up centers that encourage students to take part in the startup culture and in entrepreneurship competitions. Students who specialize in business administration at both undergraduate and master levels are often trained by start-up courses and programs as compulsory courses. Therefore, we expect that they have enough knowledge and experience to evaluate how hard to establish a new business in this context. In the main study, data from MBA students were collected in Ho Chi Minh and Nha Trang in a self-administered survey after classes. Nha Trang is one of the highest growth cities attracting millions of tourists annually, Ho Chi Minh is the main business centre of Vietnam. Thus, there are lots of opportunities for start-ups in these two cities, and MBA students in these areas may have a sharp tendency to be self-employed. Furthermore, MBA students may be considered potential entrepreneurs at the end of their programs when they must choose between a return to employment or become an entrepreneur (Shepherd and DeTienne 2005). Also, it is noted that business students are appropriate for entrepreneurship studies because they 'often see the founding of a company as an attractive alternative to wage or salary employment' (Lüthje and Franke 2003) due to increasing

desirability of self-employment and related values like autonomy, desire to be the boss and challenge (Kolvereid 1996, Lüthje and Franke 2003). Finally, MBA students as a research sample have been used widely in many previous entrepreneurship studies (Autio et al. 2001, Lüthje and Franke 2003, Zhao et al. 2005).

To increase the response rate, respondents were offered incentive gifts such as keychains and t-shirts. To minimize bias in answering the survey, the respondents were clearly informed that the study concerned EI and focused only on their personal opinions with no right or wrong answers. Out of 230 MBA students who agreed to take part in the survey, 29 cases were rejected because of missing data. Thus, data from 201 remaining cases were used for analyses (the response rate was 87.4%). The typical respondents were women (51.7%), age 25–30 (50.7%) and a staff employee (63.7%). The average age for the entire sample was 26 years, ranging from 22 to 35, and the average income per month was about USD $330. Sample characteristics are presented in Table 1.

Table 1: Sample characteristics

Characteristics	**Frequency**	**Percentage**
Gender		
Male	97	48.3
Female	104	51.7
Age		
22 – under 25	57	28.4
25 – under 30	102	50.7
From 30	42	20.9
Income (million VND)		
Under 5	24	11.9
5 – under 10	93	46.3
10 – under 20	54	26.9
From 20	30	14.9
Job position		
Staff	128	63.7
Supervisor	12	6.0
Manager	52	25.9
Others	9	4.5

Measures

As defined earlier, perceived feasibility is the degree to which one believes that he or she is personally capable of starting a business (Krueger 1993). Furthermore, Krueger and Brazeal (1994) and Krueger et al. (2000) contend that perceived feasibility should include an aspect of the ability to

control a start-up to reflect the construct more fully. In this sense, though seen as distinct, perceived feasibility is much overlapped with perceived behavioural control, as defined by Ajzen (2002), who perceived behavioural control as including not only the feeling of being able but also the perception of controllability of the behaviour. Therefore, this study used four items (see Table 2) adapted from the scale of perceived behavioural control to measure perceived feasibility, as suggested by previous studies (e.g., Fitzsimmons and Douglas 2011, Liñán and Chen 2009, Martínez et al. 2017).

Perceived desirability is the degree to which one finds the prospect of starting a business to be attractive (Krueger and Brazeal 1994)—in other words, the nature of perceived desirability reflects specific attitudes towards the entrepreneurial act (Fitzsimmons and Douglas 2011, Krueger and Brazeal 1994, Krueger et al. 2000, McMullen and Shepherd 2006, Shook and Bratianu 2008). For example, Krueger et al. (2000) argued that in the case of venture creation, the desirability of the associated outcomes of creating a firm should be assessed regarding the evaluation of entrepreneurship. Therefore, this study measured perceived desirability using four evaluative items (see Table 2) developed by previous studies (Fitzsimmons and Douglas 2011, Martínez et al. 2017, McMullen and Shepherd 2006). Among those four items, one directly measures the attractiveness of the entrepreneurial act ('A career as an entrepreneur is totally attractive to me') and the other three represent the desire to act entrepreneurially from different aspects (love, satisfaction, advantage).

Perceived risk as threat and risk as opportunity measurements were adopted from Barbosa et al. (2007b) and Nabi and Liñán (2013). Finally, the EI measurement was adopted from Nabi and Liñán (2013). Table 2 presents the measurements and their sources.

This study used 7-point Likert scale to measure the intended scales with 1 = *totally disagree*, 4 = *neither disagree nor agree* and 7 = *totally agree*. The mean values of measurement constructs were quite high, ranging from 4.89 (perceived feasibility) to 5.26 (perceived feasibility), except for the risk as threat construct (2.67), with standard deviations ranging from 1.04 (risk as threat) to 1.43 (EI).

Table 2: Constructs measurement

Constructs		Items	Sources
Perceived feasibility (PF)	PF1	Starting a firm and keeping it viable would be easy for me	Nabi and Liñán (2013)
	PF2	I am able to control the creation process of a new business	
	PF3	If I tried to start a business, I would have a high chance of being successful	
	PF4	I know all about the practical details needed to start a business	
Perceived desirability (PD)	PD1	If I had the opportunity and resources, I would love to start a business	Nabi and Liñán (2013)
	PD2	Being an entrepreneur would give me great satisfaction	
	PD3	Being an entrepreneur implies more advantages than disadvantages to me	
	PD4	A career as an entrepreneur is totally attractive to me	
Perceived risk as threat (R)	R1	Starting a new business is very risky	Barbosa et al. (2007b); Nabi and Liñán (2013)
	R2	The probability of a new venture doing poorly is very high	
	R3	There is great uncertainty when predicting how well a new venture will do	
	R4	The overall riskiness of a new venture is high	
Perceived risk as opportunity (RO)	RO1	I see the possibility of starting a business as a potential opportunity to pursue	Barbosa et al. (2007b); Nabi and Liñán (2013)
	RO2	If I don’t start my own business, I may be missing a great opportunity	
	RO3	Overall, I would label the option of starting a business as something positive	
	EI1 (RI)	I am ready to do anything to be an entrepreneur	Nabi and Liñán (2013)

Entrepreneurial intention (EI)	EI2	I will make every effort to start and run my own business
	EI3	I am determined to create a business venture in the future
	EI4	I have a very high intention of ever starting a business

Note: (*RI): rejected item in pilot study*

Results

Validation of measures: reliability and validity

The constructs were assessed to ensure internal consistency and convergent and discriminant validity by performing Cronbach's alpha, EFA and confirmatory factor analysis (CFA) using SPSS and AMOS.

The Cronbach's alpha test shows that all the values are higher than 0.70, ranging from 0.85 (risk as threat and risk as opportunity) to 0.92 (perceived feasibility), indicating original items can be used for an EFA test. The EFA test was used with a principal axis factoring method and Promax rotation. The results showed a Kaiser-Meyer-Olkin value of 0.86 (p = 0.000), and all items were grouped into five constructs as proposed in the research model. Hence, all items were used as input for the CFA test. The results, summarized in Table 3, indicate that the measurement model fits the data well [χ^2 = 124.31, df = 125; χ^2/df = 0.99; RMSEA = 0.00; GFI = 0.94; AGFI = 0.92; IFI = 1.00; NFI = 0.95; CFI = 1.00; SRMR = 0.04; PClose = 0.99].

All the composite reliability (CR) measures exceed the minimum value of 0.7, and all the variances extracted (VE) surpass the recommended threshold of 0.50. The individual item loadings on the constructs are all significant (p < 0.001; t-value > 6) with values ranging from 0.58 to 0.89, showing that the convergent validity of the constructs is acceptable.

Table 3. Constructs and indicators

Constructs and indicators	Factor loadings	t – value	Cronbach's Alpha	Composite reliability	Variance extracted

Perceived feasibility			0.92	0.92	0.74
PF1	0.82	13.95			
PF2	0.84	14.39			
PF3	0.87	15.30			
PF4	0.87	15.21			
Perceived desirability			0.92	0.92	0.73
PD1	0.90	15.85			
PD2	0.84	14.26			
PD3	0.86	14.91			
PD4	0.82	13.89			
Risk as threat			0.85	0.85	0.60
R1	0.76	12.01			
R2	0.69	10.55			
R3	0.77	12.07			
R4	0.86	14.32			
Risk as opportunity			0.85	0.85	0.65
RO1	0.84	13.25			
RO2	0.74	11.43			
RO3	0.84	13.40			
Entrepreneurial intention			0.91	0.91	0.76
EI2	0.87	15.17			
EI3	0.85	14.65			
EI4	0.87	15.15			

Notes. All factor loadings are significant at $p < 0.001$

As shown in Table 4, all the correlations are less than 0.50, and the correlation between each of the constructs (highest value 0.46) is less than the square root of average variance extracted (AVE) from each pair of constructs (lowest value 0.77), demonstrating discriminant validity (Fornell and Larcker 1981).

Table 4: Means, standardized deviation, correlations

			Correlations				
	Mean	SD	1	2	3	4	5
1.PF	4.89	1.22	0.86				
2.PD	5.27	1.20	0.43	0.85			
3.R	2.68	1.04	-0.45	-0.35	0.77		
4.RO	5.14	1.13	0.10	0.09	-0.18	0.81	
5.EI	4.93	1.43	0.52	0.46	-0.44	0.28	0.87

Note. the square root of AVEs are on the diagonal.

Hypothesis testing

An approach as suggested by Kenny and Judd (1984) was used for modelling latent variable interactions. Furthermore, to reduce the complexity of the estimated model, an analytical strategy of nested models in structural equation modelling (SEM) was employed. That is, five SEM models were conducted to test the interacting and moderating effects, including an independent variable, a moderator and their interaction on EI. The preliminary analyses indicated that the moderator effects of risk as opportunity on the relationship of perceived desirability – EI (H4a) and risk as threat on the relationship of perceived feasibility – EI (H5b) are not supported by the data and therefore these interactions were not included in the next analyses.

The independent variables and interactions were tested in two nested models because they were entered into two blocks. The Direct Effect Model estimates the direct effects of perceived desirability, perceived feasibility, risk as threat and risk as opportunity on EI. The Full Model adds the interaction effect between perceived desirability and perceived feasibility, and the moderator effects of risk as threat and risk as opportunity on EI. The results indicate acceptable fit for the two estimated models (GFI = 0.94–0.85; CFI = 1.00–0.96; AGFI = 0.92–0.81; IFI = 1.00–0.96; NFI = 0.95–0.88; RMSEA = 0.00–0.05; SRMR = 0.04–0.05; PClose = 0.99–0.6). Although the Direct Effect Model demonstrates a better fit than the Full Model, the direct effect was tested as a necessary condition to further test the moderation effect. Also, the Direct Effect Model does not provide any insights into the interaction and moderation effects. Furthermore, the estimation results

are consistent with each other for the two models. Thus, the following conclusions are based on the Full Model (see Table 5).

The direct effects: The testing result supports H1a which proposes the positive impact of perceived desirability on EI (β = 0.28, t = 3.78, p < 0.001) and H1b which proposes perceived feasibility has a positive effect on EI (β = 0.34, t = 4.40, p < 0.001). These results are a necessary condition for testing further moderating effects on these relationships. The results also support the impact of different types of risk on EI. In particular, H3a, which proposes risk as opportunity has a positive effect on EI, is supported by data (β = 0.20, t = 3.03, p < 0.01). H3b, which proposes risk as threat has a negative effect on EI, also is supported by data (β = -0.20, t = -2.61, p < 0.01).

Table 5: Hypotheses testing

Variables /Hypotheses		Direct Effect		Full Model		Conclusion
		Std. ß	t–value	Std. ß	t–value	
Direct effect						
Perceived desirability	H1a	0.25	3.4***	0.28	3.78***	Support
Perceived feasibility	H1b	0.32	4.1***	0.34	4.40***	Support
Risk as opportunity	H3a	0.20	2.95**	0.20	3.03**	Support
Risk as threat	H3b	-0.17	-2.21*	-0.20	-2.61**	Support
Interaction and moderation effect						
Desirability x Feasibility	H2	-	-	0.13	1.96*	Support
Risk as opportunity x Desirability [a]	H4a	-	-	-	-	Not
Risk as threat x Desirability	H4b	-	-	-0.13	-2.04*	Support
Risk as opportunity x Feasibility	H5a	-	-	0.12	1.97*	Support
Risk as threat x Feasibility [a]	H5b	-	-	-	-	Not
R^2 (Intention)		0.41		0.47		
Effect size (ES)		–		11.3%		
CMIN/df		0.99		1.48		
RMSEA		0.00		0.05		
GFI		0.94		0.85		
AGFI		0.92		0.81		
CFI		1.00		0.96		

Notes: * p < 0.05; ** p < 0.01; *** p < 0.001; ES = $(R^2_i - R^2_{i-1}) / (1 - R^2_i)$; [a] *the hypotheses are not supported in preliminary analyses*

The interaction effect: As expected, H2, which proposes the interaction between perceived desirability and perceived feasibility has a positive effect on EI, is supported by data (β = 0.13, t = 1.96, $p < 0.05$).

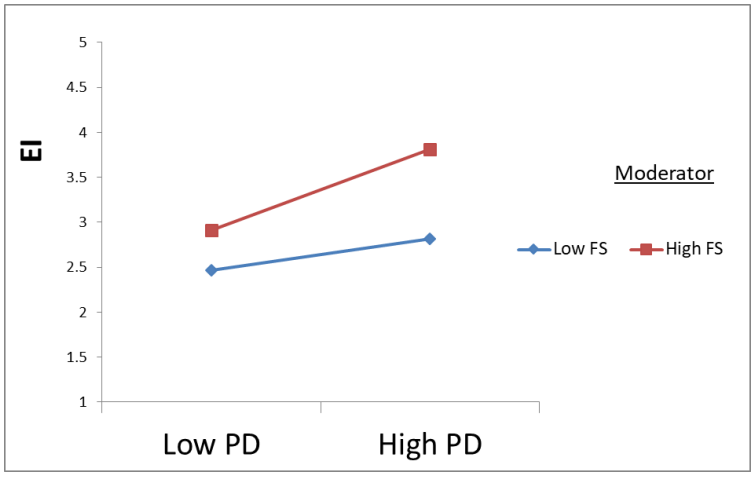

Figure 2: Interaction effect between perceived desirability and perceived feasibility

The moderator effects: The testing results show support for the moderator effect of two components of risk on the relationship among perceived desirability, perceived feasibility and EI. Specifically, H4b, which proposes that risk as threat weakens the effect of perceived desirability on EI, is supported by data (β = -0.13, t = -2.04, $p < 0.05$). H5a, which hypothesizes that risk as opportunity strengthens the effect of perceived feasibility on EI, also is supported by data (β = 0.12, t = 1.97, $p < 0.05$). The addition of the interactions increases the explained variance of EI by 11.1%

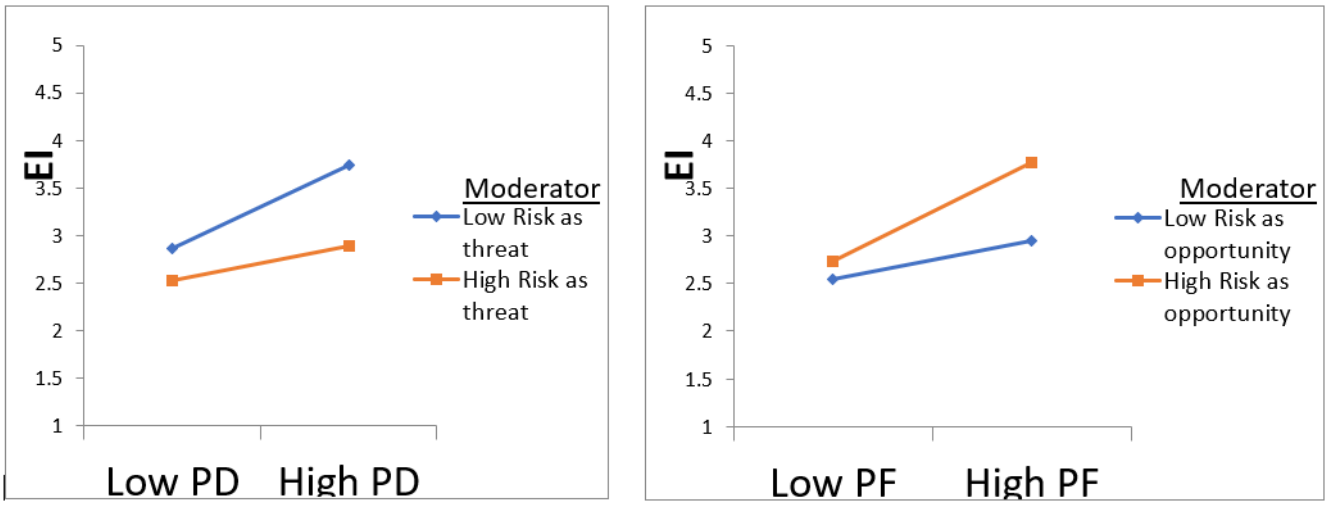

Figure 3: The moderator effects of risk as threat and risk as opportunity

Discussion

The results show that both perceived feasibility and perceived desirability have strong and positive impacts on EI. The findings demonstrate the consistencies with previous studies (Fitzsimmons and Douglas 2011, Krueger et al. 2000, Martínez et al. 2017) in emphasizing the critical roles of feasibility and desirability perceptions toward explaining EI. As noted earlier, however, there is only a handful of studies focusing on these two motivational factors affecting EI in a transitional context (Nguyen and Mort 2016, Wang et al. 2011). Hence, this study contributes by providing scholars with empirical evidence supporting the important role of those factors in predicting intention to act entrepreneurially in a typical transitional country such as Vietnam. It may conclude that the significant roles of perception of desirability and feasibility toward EI are stable across economies (Fitzsimmons and Douglas 2011, Liñán and Chen 2009), suggesting the robustness of EEM in explaining and predicting EI.

Previous studies mostly focus on the direct effects of motivational factors (i.e. perceptions of desirability and feasibility) on EI (Krueger et al. 2000, Martínez et al. 2017). Hence, there is a lack of deep understanding of the interaction between these factors, generating the call for conducting studies to fill this gap (Fitzsimmons and Douglas 2011, Liñán and Fayolle 2015). This study was conducted to respond to the call and to contribute to a more comprehensive picture of the important role of two motivational factors toward EI. More importantly, this study focused on a transitional economy (Vietnam), which was rarely examined before.

Conventional wisdom acknowledges that high EI requires both high perception of desirability and feasibility (Krueger 1993, Krueger and Brazeal 1994, Krueger et al. 2000). The finding of this study on the interaction between these two factors, presented in Figure 2, shows that EI also exists if either perceived desirability or perceived feasibility is high. This finding is consistent with previous studies (Fitzsimmons and Douglas 2011, Shah and Higgins 1997) that confirm EI to be strong when either perceived desirability or when perceived feasibility is high because it also shows that high value of either one would lead to the increase in the influence of the other on EI. The

finding is interesting and may come from the fact that over half of the Vietnamese population is young (General Statistics Office of Vietnam 2019), and is opportunity-seeking and sensing (Jones and Masters 2016, Nguyen and Mort 2016). As a result, they are more likely to consider opportunities as more valuable and thus use every means to utilize those opportunities (Yoo 2017). In addition, being consistent with previous studies (e.g., Jones and Masters 2016), it could be concluded that Vietnamese young people require either perceived desirability or perceived feasibility to form the intention to act entrepreneurially. Hence, this study contributes by confirming previous findings in a transitional economy, forming a deeper knowledge regarding the process of forming EI. It is worth noticing that although the current study was conducted in a typical transitional country context, the findings open the potential for future tests and confirmation of the interaction relationship in other contexts.

Regarding the role of risks, the results of EFA and CFA indicate that the conceptualization of risk, including risk as opportunity and risk as threat, is appropriate for examining the role of risk toward entrepreneurship. Also, this conceptualization is consistent with previous research showing that perceptions of opportunity and threat are independent of each other (Barbosa et al. 2007b, Nabi and Liñán 2013). Furthermore, the findings show that two types of risk have significant effects on EI but in the opposite way. This is understandable and consistent with prior studies (Barbosa et al. 2007b, Dickson and Giglierano 1986, Venkataraman 2002), because risk as threat could stimulate individuals to activate a prevention focus, leading to the inhibition of behaviour, while risk as opportunity activates a promotion focus which promotes behaviour (Higgins 1998). It is also worth noting that although the two-factor conceptualization of perceived risk is widely adopted (Dickson and Giglierano 1986, Fourati and Affes 2014, Mullins and Forlani 2005) and perceived risk is acknowledged to be a significant predictor of the entrepreneurial act (Palich and Bagby 1995, Simon et al. 2000), the empirical studies that test the impact of the two types of risk on entrepreneurial intention are limited, with contradictory findings (Barbosa et al. 2007b, Fayolle et al. 2008, Nabi and Liñán 2013). For example, while Barbosa et al. (2007b) and Fayolle et al. (2008)

found significant relationships between the two types of risk and entrepreneurial intention, Nabi and Liñán (2013) found no significant relationships between those constructs. Furthermore, none of those studies was conducted in a transitional context. Therefore, the results help to consolidate the role of different types of risk in explaining entrepreneurship intention in a transitional context, which is relatively rare in the literature.

Previous studies are most likely to neglect the moderator role of the perception of risk in the process of forming EI. This study discusses, hypothesizes and empirically tests the moderator role of two types of risk toward EI. The findings show that perception of risk as threat weakens the relationship between perceived desirability and EI while perception of risk as opportunity strengthens the association between perceived feasibility and EI. This finding is consistent with expectancy theory (Gollwitzer 1996, Segal et al. 2005, Steel and König 2006, Vroom 1964) which indicates that the higher the possibility of values or rewards (i.e. risk as opportunity) individuals can get, the stronger the tendency to act they have. In contrast, a higher possibility of losses (i.e. risk as threat) leads to a lower tendency to act. However, we fail to demonstrate the positive (negative) moderating effect of risk as opportunity (threat) on the relationship between perceived desirability (feasibility) and entrepreneurial intention. These results yield the possibility that there exist suppressors (e.g. personal values) that mediate the effect of the interaction between risk as opportunity (threat) and desirability (feasibility) on entrepreneurial intention, making the total effect of this interaction on entrepreneurial intention insignificant. Also, it is possible that other potential moderators (e.g. risk-avoidance (risk-taking) propensity, risk attitude) change the sign of the effect of the interaction between risk as opportunity and desirability on entrepreneurial intention. These capacities of the mediated and/or moderated effects could generate opportunities for future studies to clarify the intricate relationship between risk as opportunity (threat), desirability (feasibility) and entrepreneurial intention. Also, the findings are important and unique because they turn simple main effects into more insightful conditional relationships (Liñán and Fayolle 2015) and form a more comprehensive picture of the role of risk in an entrepreneurship context. The consideration of

the moderator effect of risks in the relationships provides a deeper insight into the mechanism forming entrepreneurial intention from perceived desirability and feasibility in which risk as threat acts as a strong barrier and risk as opportunity acts as a strong promoter (Figure 3). This indicates that perception of desirability may fail to predict EI under highly risky situations, or, in other words, an individual with strong desire to find a new business venture in an environment with a high level of perceived risk as threat may not become an entrepreneur. In contrast, an individual with moderate feasibility may become an entrepreneur if he/she perceives the situation is full of opportunity. For lots of opportunities to establish a business in technology, media, and consumer services and products in this country (Yoo 2017), the findings suggest that Vietnamese young people would want to become entrepreneurs if either their entrepreneurship motivation or intention is strong enough or they have had appropriate solutions to face with the risks to form EI. This research on EI could make a significant progress because it improves the understanding of the deep assumptions underpinning intention.

Conclusions

This study aims at addressing two critical questions in the Vietnamese entrepreneurship context. The first question is 'Does EI require both high in perceived desirability and perceived feasibility'? To answer this first question, this research draws on the EEM model of Shapero and Sokol (1982) to explore the direct effects of and the interaction effect of perceived desirability and perceived feasibility on EI. The second question is 'Does perceived risk has an important role in the process of forming EI'? To answer the second question, the study adopted the conceptualization that includes two aspects of risk (i.e. risk as threat and risk as opportunity) and hypothesizes risk as both determinants and moderators of EI. The proposed hypotheses were tested using structural equation modeling for latent variables. The results indicate the reliability and validity of the constructs, and the findings support seven of nine proposed hypotheses. Both perceived desirability and perceived feasibility were found to have direct and interactive effects on EI. Risk as threat had a negative direct effect on EI and negatively moderated the relationship between perceived

desirability and EI while risk as opportunity had a positive direct effect on EI and positively moderated the relationship between perceived feasibility and EI. This study sheds light on the formation of EI and can provide policymakers with some managerial implications.

Firstly, because of the consistent findings with Fitzsimmons and Douglas (2011), this research lends its taxonomy to categorize potential entrepreneurs. Accordingly, there are four types of potential entrepreneurs in Vietnam: natural, accidental, inevitable and non- entrepreneur. This categorization of potential entrepreneurs should help policymakers develop efficient and effective policies to promote entrepreneurship in Vietnam. Individuals in the first three groups have the highest intention to start a new business venture, and therefore they have the highest possibility to become real entrepreneurs. Thus, policymakers should put the strongest attention on this group and create favourable policies to urge the transformation from intention to actual behaviour of entrepreneurship. Entrepreneurship in Vietnam needs strong support from the government to overcome the weakly functioning market factors as well as an inadequate institutional framework (Nguyen and Mort 2016) including the lack of experience of business and human capital, and inappropriate services for business development such as accounting, auditing, legal services, taxation, training, and business advisory services. Hence, some suggestions should be to 'build up an adequate legal framework, a pro-entrepreneurship socio-cultural setting, restore the macroeconomic stability, and improve infrastructure and business support system' (Nguyen and Mort 2016).

Secondly, the findings show that perceptions of risk have strong, direct and moderating effects on EI. Recent studies suggest that entrepreneurial risk perceptions can be taught and learned (Barbosa et al. 2008, Kassean et al. 2015, Liñán et al. 2011). Universities and policymakers should continue designing and promoting the teaching of entrepreneurship education programs along with assessing how those programs affect students' risk perceptions and entrepreneurial motivation (Heinrichs 2016). In line with previous studies (Barbosa et al. 2007a, Barbosa et al. 2008, Nabi and Liñán 2013), this is an important move forward, especially for individuals in a non-entrepreneurs

group. Education programs may not only improve their perception of risk as opportunities and reduce the perception of risk as threat but also improve their feasibility (e.g. skills and knowledge) and desirability (e.g. a good career option), which in turn improve their intention to act entrepreneurially (Heinrichs 2016). The increase of risk as opportunity and decrease of risk as threat also have positive effects on the links among feasibility, desirability and EI, respectively, which also causes the increase in EI.

Limitations of the study and future research

This study is not free of limitations. Firstly, the data were collected using convenience sampling in two cities of Vietnam. Therefore, future studies should expand to have a representative sample in more cities of Vietnam as well as other transitional economies to achieve more general results. Secondly, this study used a global scale of perceived risk that includes risk as opportunity and risk as threat. Future studies should consider including two types of risk to generate deeper and broader knowledge of the role of risk toward EI. To get a better understanding, however, each type of risk should be conceptualized as a multi-dimensional construct. For example, risk as threat may contain economic risk, social risk, time risk, health risk and personal risk (Martínez et al. 2017). This study only focuses on EI. Future studies also should cover actual action toward entrepreneurship due to the gap between intention and actual behaviour. Finally, different methods could be used to explore the combined effects of feasibility and desirability. For example, Fuzzy set Qualitative Comparative Analysis (Ragin 2014, Woodside 2013) has emerged as a new technique that uses Boolean logic to substitute for the traditional correlation method in the systems approach to form causal conditions related to a particular result. This method may generate different results about the combined effects. Therefore, future studies could benefit from combining different methods and comparing potential results.

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