

# Refining the linkage between perceived capability and entrepreneurial intention: roles of perceived opportunity, fear of failure, and gender

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**Abstract** This study refines the relationship between perceived capability and entrepreneurial intention by considering the mediating roles of perceived opportunity and fear of failure and the moderating role of gender. A moderated mediation framework is developed on the basis of perspectives of the cognitive phenomenon of categorization and the social role theory. Two samples of Taiwan and China obtained from the database released by Global Entrepreneurship Monitor were used to test the hypotheses. A logistic regression analysis followed by a bootstrap approach reveals several interesting results. First, perceived capability positively affects entrepreneurial intention through perceived opportunity; this indirect linkage is stronger in China than in Taiwan. Second, compared with the fear of failure, perceived opportunity has a stronger mediating effect in linking perceived capability and entrepreneurial intention. This difference is more remarkable in China than in Taiwan. Third, gender partially moderates the mediating effect of perceived opportunity. Specifically, perceived capability has a stronger indirect effect on entrepreneurial intention through perceived opportunity among men than among women in Taiwan; however, the difference is not significant between men and women in China. In addition, age negatively affects perceived opportunity and entrepreneurial intention.

**Keywords** Perceived capability · Entrepreneurial intention · Perceived opportunity · Gender · GEM

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## Introduction

Entrepreneurial intention has been considered the most critical factor for predicting a business start-up. Therefore, exploring the factors associated with the development of entrepreneurial intention is pivotal in understanding or predicting how a person becomes an entrepreneur and has attracted considerable attention in entrepreneurship research. Over the past decade, numerous studies have investigated the antecedents of entrepreneurial intention (see the review by Schlaegel and Koenig 2014). Among the antecedents, perceived capability has been demonstrated as a key predictor of a person's intent to start a business (Naktiyok et al. 2010; Ebrahim and Schøtt 2011; Noguera et al. 2013; Walker et al. 2013). However, previous studies have not examined why perceived capability affects entrepreneurial intention. Specifically, studies have paid little attention to the routes linking perceived capability and entrepreneurial intention, whereas studies have suggested adopting process perspectives by involving cognitive variables to enhance the understanding of a business start-up (Baron 2007). Although extant research has investigated the intermediary factors between entrepreneurial intention and its antecedents (Liñán 2008; Chang et al. 2014), they have not examined the role of perceived capability. Filling this gap necessitates further research to develop a clearer understanding of the formation of entrepreneurial intention from a cognitive process perspective, particularly when research stream of entrepreneurial cognition remains in its infancy (Mitchell et al. 2007).

Opportunity and threat perception are cognitive phenomena categorizing a person's entrepreneurship decision process (Krueger and Dickson 1994). The Global Entrepreneurship Monitor (GEM) has reported these two cognitive perceptions as critical factors correlated with a person's willingness to start a business (Kelley et al. 2013). However, apart from serving as predictors of entrepreneurial intention, perceived opportunity and fear of failure have been rarely examined for their mediating roles. Because opportunity and threat perceptions are driven by perceived competence (Chell 2013; Krueger and Dickson 1994), the first question warranting investigation is expressed as follows: Is the effect of perceived capability on entrepreneurial intention realized through perceived opportunity and fear of failure? Moreover, extant research has paid attention to the role of gender in perceived opportunity and fear of failure (DeTienne and Chandler 2007; Rothblum 1990). In entrepreneurship, studies have demonstrated the gender difference in perceived opportunity and fear of failure toward entrepreneurship (Cacciotti and Hayton 2014; Dabic et al. 2012; Kelley et al. 2013). However, the influence of gender difference in the mediating effects of perceived opportunity and fear of failure on the linkages between entrepreneurial intention and its explanatory factors are still unknown. As such, on the basis of the preceding question, the next question raised here is as follows: Is the relationship linking perceived capability and entrepreneurial intention through perceived opportunity and fear of failure different between male and female?

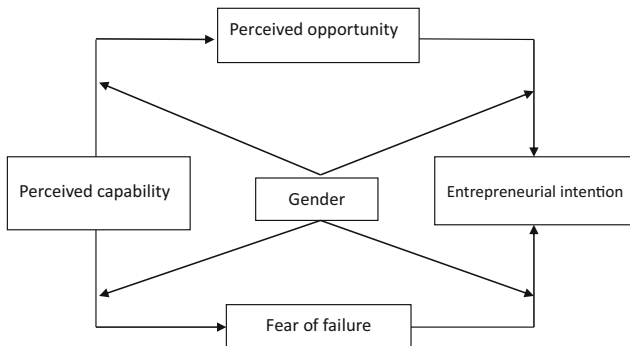
This study therefore answers these two research questions by examining the mediating effects of perceived opportunity and fear of failure on the perceived capability–intention relationship and the moderating roles of gender in these mediation processes. The examinations are conducted in different contexts to validate the framework posited in this study. The topics investigated in this study are concentrated on two research areas: the interaction between personal characteristics and context

influence and the integration of the core entrepreneurial intention model and context analysis. The entrepreneurship literature has paid little effort to the two areas suggested by Liñán and Fayolle (2015). Our research contributes to the entrepreneurship literature in three ways. First, this study increases the understanding of the processes leading from perceived capability to entrepreneurial intention by extending the roles of perceived opportunity and fear of failure. Whereas prior research focuses on investigating the direct effects of perceived capability, perceived opportunity, and fear of failure on entrepreneurial intention (Arab and Sofiyabadi 2013; Noguera et al. 2013; Walker et al. 2013), this study examines the structural relationships among these antecedents of intention. Second, this study advances entrepreneurial cognition research by examining the moderating role of gender. Past literature examines gender differences in entrepreneurial self-efficacy and intention (Díaz-García and Jiménez-Moreno 2010; Haus et al. 2013; Wilson et al. 2007); in contrast, this study argues the mediation relationship between perceived capability and entrepreneurial intention as a contingency linkage of gender. Third, in methodology, this study examines the problems by applying a moderated mediation approach associated with bootstrap procedures, which provide robust tests for the research hypotheses. In addition, to examine the external validity of the results, this study applies a comparison analysis involving two samples: Taiwan and China. The main reason behind this comparison is that the two samples have a highly similar national culture, but are at different stages of economic development. Such a comparison enables providing insight into the role of economic development in the perceived capability–intention relationships.

The remainder of this paper is organized as follows: Section 2 presents the conceptual framework and development of the research hypotheses; Section 3 describes the research methods; Section 4 presents and discusses the results; and Section 5 presents the theoretical and practical implications of the findings, compelling directions for future research, and a brief conclusion.

## Conceptual framework and hypotheses

The conceptual framework of this study is formulated on the basis of perspectives of self-efficacy, the cognitive phenomenon of categorization, and the social role theory (Fig. 1). The direct route is developed on the basis of the self-efficacy theory, which posits that intentions of people are strongly influenced by their beliefs about effectively completing a given task (Bandura et al. 1980) (Fig. 1). The rationale of the indirect routes is based on the cognitive phenomenon of categorization, which postulates that a person has critical biases toward simplifying the range of strategic issues that he or she faces by categorizing as many as possible into “opportunities” and “threats,” and then affects his or her decision making (Dutton and Jackson 1987; Jackson and Dutton 1988). The moderating roles of gender are grounded on the social role theory, which asserts that gender differences affect the decision and behavior of men and women (Eagly 1987). According to this view, this study postulates that gender role differences affect the relationships between perceived capability and entrepreneurial intention. Specific hypotheses concerning these relationships are detailed in the rest of this section together with their underlying rationale.



**Fig. 1** A moderated mediation model of the perceived capability–intention relationship

### Mediating roles of perceived opportunity and fear of failure

In contrast to existing entrepreneurship research, this study argues the mediating roles of perceived opportunity and the fear of failure in the perceived capability–intention relationship. Perceived opportunity, or perceived opportunity, refers to the recognition of entrepreneurial opportunities (Wasdani and Mathew 2014). Starting a business is a risky decision-making process. Previous research has suggested that a person’s risk-taking propensity is influenced by his or her cognitive categorization of the situations he or she faces (Krueger and Dickson 1994; Krueger et al. 2000). A situation where the likely outcomes are perceived as positive and that is deemed to be within a person’s control would be categorized as an “opportunity” (Dutton and Jackson 1987; Jackson and Dutton 1988). Krueger and Dickson’s (1994) experiment showed that opportunity perception depends on perceived competence. People with perceived competence are confident about behavioral controls and outcomes. Accordingly, individuals who have the knowledge, experience, and skills required for entrepreneurship are more likely to perceive opportunities and thus have a high propensity of risk taking. In turn, according to the planned behavioral theory, the increasing risk-taking propensity associated with perceived entrepreneurial opportunities improves a person’s positive attitude toward entrepreneurship and then enhances his or her entrepreneurial intention. Existing research suggests that perceived opportunity increases the intent of starting a business (Arab and Sofiyabadi 2013; Noguera et al. 2013; Walker et al. 2013). Based on these arguments, this study hypothesizes the following:

*H<sub>1</sub>: Perceived capability positively affects entrepreneurial intention through increased perceived opportunity.*

The fear of failure is an emotional response associated with the decision-making of whether to start a business or not. Much entrepreneurial research has discussed the influence of the fear of failure on entrepreneurial behavior (Cacciotti and Hayton 2014). In existing literature, this variable has been described as a negative emotion (Patzelt and Shepherd 2011), an experience of shame or humiliation as a consequence of failure (Wood et al. 2013), an appraisal of a person’s ability to accomplish goals (Noguera et al. 2013), or attitudes toward risk (Koellinger et al. 2013; Shinnar et al. 2012). These descriptions share the emotional response to “threat” in nature. A person’s feeling of

threat is influenced by his or her judgments of the situation that he or she faces. According to the perspectives of cognitive categorization, a situation where the likely outcomes are perceived as negative and that is considered to be beyond his or her control would be labeled as a “threat” (Dutton and Jackson 1987; Jackson and Dutton 1988). Given that the degree of threat perception is negatively influenced by perceived competence (Krueger and Dickson 1994), people confident about the capabilities required for running a business may have low threat perception and hence less fear of failure in entrepreneurship. Existing entrepreneurship literature suggests that less fear of entrepreneurial failure increases the willingness to run a business (Ebrahim and Schøtt 2011; Koellinger et al. 2013; Noguera et al. 2013). Considering these arguments and evidence, this study hypothesizes the following:

*H<sub>2</sub>: Perceived capability positively affects entrepreneurial intention through a decreased fear of failure.*

Although increased perceived opportunity and reduced fear of failure mediate the perceived capability–intention relationship concomitantly, the two mediating impacts may be unequal. The perceived capability–intention relationship through an increase in perceived opportunity is a promotion-focused process; by contrast, this relationship grounded on a decrease in the fear of failure is a prevention-focused process. The former emphasizes the recognition of entrepreneurial opportunities, and the latter is concerned with avoiding potential failure and loss (Bryant 2007; Trevelyan 2011; Tumasjan and Braun 2012). In terms of the planned behavioral theory (Ajzen 1991), positive attitudes toward entrepreneurship are associated with perceived opportunity, and perceived behavioral control is concerned with the avoidance of potential failure. Schlaegel and Koenig’s (2014) meta-analytic evidence suggests that positive attitudes toward entrepreneurship serve a more crucial role than perceived entrepreneurial control in linking self-efficacy and intention. Accordingly, this study hypothesizes the following:

*H<sub>3</sub>: The positive effect of perceived capability on entrepreneurial intention through perceived opportunity is stronger than that through fear of failure.*

### **Moderating role of gender**

Understanding gender differences has been a major focus in the entrepreneurship literature. Numerous studies have suggested that men have higher self-efficacy, risk tolerance, and willingness to start up a business (Díaz-García and Jiménez-Moreno 2010; Fernández-Serrano et al. 2009; Verheul et al. 2012; Wilson et al. 2007; Zellweger et al. 2011); however, these results cannot illustrate that the relationship between perceived capability and entrepreneurial intention is stronger among men than among women. This study adopts the social role theory to examine the moderating roles of gender in the two indirect routes from perceived capability and entrepreneurial intention.

The social role theory recognizes the labor division between women and men; the former assume responsibilities at home, whereas the latter assume roles outside the

home (Eagly 1987, 1997; Franke et al. 1997). The concomitant gender differences in social behavior lead to different expectancies for men and women. Thus, the behaviors of men and women are governed by the stereotypes of their social roles. Men are expected to be more competitive and aggressive, which aligns with their more instrumental role. By contrast, women are expected to be more supportive and expressive, which inhibits their aggression. Competition and aggression are two critical traits of entrepreneurs. The two traits may increase the desire of an individual with perceived capability to search entrepreneurial opportunities and become an entrepreneur. Furthermore, women are expected to spend more time working with the family and household responsibilities than are men (Malach-Pines and Schwartz 2008; Roomi et al. 2009). Family obligations may suppress a woman's desire to recognize entrepreneurial opportunities although she has the same capability level as a man or may diminish a woman's willingness to start a business in spite of identifying the entrepreneurial opportunities. These arguments support the relationship between perceived capability and perceived opportunity and that between perceived opportunity and entrepreneurial intention as being weaker among women than among men. Thus, this study hypothesizes the following:

*H<sub>4</sub>: The positive effect of perceived capability on entrepreneurial intention through perceived opportunity is stronger among men than among women.*

Family obligations may also reduce the time available for entrepreneurship and then increase risk perception. Thus, the fear of failing to run a business may still be present in a woman with a high perceived capability level. Previous research has presented that women are characterized by lower risk tolerance in entrepreneurship than are men (Minniti 2009; Sánchez and Hernández-Sánchez 2014). Given that the fear of failure is positively associated with risk tolerance (Arenius and Minniti 2005), it may be expected that confidence from perceived capability may alleviate the fear of failure to only a limited extent in women compared with that in men. Particularly, among women, the association between perceived capability and the fear of failure is not as strong as that among men. Considering these arguments, this study hypothesizes the following:

*H<sub>5</sub>: The positive effect of perceived capability on entrepreneurial intention through a decreased fear of failure is stronger among men than among women.*

## Research method

### Sample and data

The sample used to test the hypotheses was obtained from the GEM, a well-known international survey of entrepreneurial activities. The GEM database has been increasingly utilized in academic research (e.g. Bergmann et al. 2014; Liñán et al. 2011; Ramos-Rodriguez et al. 2015; Williams and Williams 2014). In the current study, data surveyed by the GEM in Taiwan and China were used to test the hypotheses; these data were used because the two countries exhibit a highly similar national culture, but

different stages of economic development. Specifically, Taiwan is a developed country, whereas China is a developing country (IMF 2008, p.236). National culture and economic development are closely associated with entrepreneurial activities (Fernández-Serrano and Romero 2014; Sández-Escobedo et al. 2014). Entrepreneurial intentions differ between developing and developed countries (Iakovleva et al. 2011). As such, the two samples enabled us to test whether the relationships posited in the framework varied across samples with dissimilar economic development statuses. This study focused on the surveys of the year 2010 because they were the most recent database released by the GEM during the research period. The first survey was conducted by the GEM in the year 2010 in Taiwan. After deleting the unavailable responses, the sample sizes of Taiwan and China were 1,563 and 2,220, respectively.

The major variables included in the framework were entrepreneurial intention, perceived capability, perceived opportunity, fear of failure, and gender. According to prior research, entrepreneurial intention refers to a person's propensity to start a new business. The GEM measures this variable by asking the respondents whether they expected to start a new business within the next 3 years. Perceived capability in the database was measured by asking the respondents whether they had the knowledge, skill, and experience required to start a new business. Perceived opportunity was measured by asking the respondents whether they perceived strong opportunities for starting a business in their residential area in the next 6 months. Fear of failure in the database was measured by asking the respondents whether the fear of failure prevented them from starting a business. All of these variables were dichotomous and scored as 1 = *yes* and 0 = *no*. Gender was a dummy variable, for which 1 = *male* and 0 = *female*. Other than the major variables, this study also included two controls, age and the social status of new business (SNB), in the model for reducing the confounding effects of perceived capability on entrepreneurial intention. The first control was age. Prior studies considered age as an antecedent of entrepreneurial intention (Noguera et al. 2013; Hatak et al. 2015) although their empirical findings were inconsistent. Age was measured by asking the respondents how old (in years) they were at the time of the survey. The second factor controlled was the SNB. This study described the SNB variable as the level of status and respect for a successful business start-up. From the perspectives of social learning, a person's attitudes toward entrepreneurship are influenced by the opinions of the society in which he or she lives (Scherer et al. 1989). This variable is measured by asking the respondents whether those successful in starting a new business had a high level of status and respect in their countries. The first control was continuous measures; by contrast, this second control was a dichotomous variable scored as 1 = *yes* and 0 = *no*. The descriptive statistics and bivariate correlations among these variables were reported in Table 1. These relationships between the dependent variable (entrepreneurial intention) and exploratory variables were further examined in the following.

## Analyses and results

The model for the conceptual framework comprised two mediators (perceived opportunity and fear of failure) and a dependent variable (entrepreneurial intention), which is

**Table 1** Means, standard deviations, and correlations

Variable	1	2	3	4	5	6	7
EI	1.00 (1.00)						
PC	0.22 <sup>a</sup> (0.29) <sup>a</sup>	1.00 (1.00)					
Gender	0.06 <sup>a</sup> (0.08) <sup>a</sup>	0.10 <sup>a</sup> (0.13) <sup>a</sup>	1.00 (1.00)				
Age	-0.19 <sup>a</sup> (-0.25) <sup>a</sup>	0.15 <sup>a</sup> (-0.08) <sup>a</sup>	-0.06 <sup>a</sup> (0.06) <sup>a</sup>	1.00 (1.00)			
NBS	0.04 (0.05)	0.04 (0.01)	0.04 (0.01)	0.09 <sup>a</sup> (-0.02)	1.00 (1.00)		
PO	0.14 <sup>a</sup> (0.23) <sup>a</sup>	0.10 <sup>a</sup> (0.27) <sup>a</sup>	0.08 <sup>a</sup> (0.05) <sup>b</sup>	-0.15 <sup>a</sup> (-0.09) <sup>a</sup>	0.05 (0.07) <sup>a</sup>	1.00 (1.00)	
FF	-0.01 (-0.05) <sup>b</sup>	-0.08 <sup>a</sup> (-0.06) <sup>a</sup>	-0.07 <sup>a</sup> (-0.04)	0.05 (0.04)	0.08 <sup>a</sup> (0.02)	0.02 (-0.06) <sup>a</sup>	1.00 (1.00)
Mean	0.31 (0.32)	0.27 (0.32)	0.50 (0.46)	38.65 (39.06)	0.60 (0.76)	0.31 (0.37)	0.43 (0.37)
SD	0.46 (0.47)	1.91 (0.47)	0.50 (0.50)	12.11 (11.97)	0.49 (0.42)	0.46 (0.48)	0.50 (0.48)

1. EI = Entrepreneurial intention; PC = Perceived capability; NBS = Status of a successful business start-up; PO = Perceived opportunity; FF = Fear of failure

2. Compared with the statistics for the Taiwan sample, those for the China sample are reported in parentheses

3. Significance level: a,  $p < 0.01$ ; b,  $p < 0.05$

4. The notations, which correspond to the seven variables, documented in the GEM database are FUTSUP, SUSKILL, Gender, Age, NBSTATUS, OPPORT, and FEARFAIL, respectively

a dummy variable. This model is an extension of a single-mediator model. For such a model, mediation processes can be assessed using the bootstrap method suggested by MacKinnon et al. (2007) in addition to the approach suggested by Baron and Kenny (1986). The Baron and Kenny's (1986) procedure can be briefly described as three steps: (1) Regressing the dependent variable on the independent variable and the coefficient estimate of the dependent variable has to achieve a statistical significance; (2) Regressing the mediator on the independent variable and the coefficient estimate of the dependent variable needs to be significant; and (3) Regressing the dependent variable on the dependent variable and the mediator at the same time. In turn, comparing the coefficient estimate of the independent variable with that found in the first step. If the coefficient estimate of the mediator is significant and the coefficient estimate of the independent variable found in (3) (direct effect) is smaller than that found in (1) (total effect) or nonsignificant, then mediation effect exists. This study examined the mediation hypotheses by applying the three steps first, followed by the bootstrap approach. Because the dependent variables in the models were dichotomous measures and all of them were operationalized by single measure, a logistic regression



approach (instead of an ordinary least square analysis or a structural equations technique) was adopted to estimate the models.

By utilizing the Baron and Kenny's (1986) steps, Tables 2 and 3 separately represent the estimation results based on the Taiwanese and Chinese samples. In the two tables, all the  $\chi^2$  values indicate that these assumed models have exploratory power. Model 1 shows that perceived capability had a positive effect on entrepreneurial intention ( $\beta_T=1.29, p<0.01$ ;  $\beta_C=1.26, p<0.01$ ). Models 2 and 3 also suggest that perceived capability positively affected perceived opportunity ( $\beta_T=0.60, p<0.01$ ;  $\beta_C=1.12, p<0.01$ ) and negatively affected fear of failure ( $\beta_T=-0.39, p<0.01$ ;  $\beta_C=-0.23, p<0.05$ ).<sup>1</sup> After incorporating perceived opportunity and fear of failure into Model 1, Model 4 shows that the effect of perceived capability on entrepreneurial intention remained significant ( $\beta_T=1.20, p<0.01$ ;  $\beta_C=1.10, p<0.01$ ); however, the magnitude was lower than that shown in Model 1. In addition, Model 4 reveals that perceived opportunity positively affected entrepreneurial intention ( $\beta_T=0.38, p<0.01$ ;  $\beta_C=0.69, p<0.01$ ); however, the negative impact of fear of failure on entrepreneurial intention failed to achieve statistical significance ( $\beta_T=-0.08, p>0.05$ ;  $\beta_C=-0.07, p>0.05$ ). These results support H1, suggesting that perceived capability positively affects entrepreneurial intention through perceived opportunity; however, they do not support H2, which states that perceived capability positively affects entrepreneurial intention through reduced fear of failure.

This study also adopted the bootstrap approach suggested by Preacher and Hayes (2004, 2008) to examine the mediation tests that were conducted based on the traditional steps. This approach was executed by resampling and then calculating the indirect effects of the mediation model (i.e., the cross products of the estimated coefficients of perceived capability presented in Models 2 and 3 and the estimated coefficients of perceived opportunity and fear of failure reported in Model 4). The bootstrap samples were set to 5,000. The results derived for the Taiwan sample indicated that the estimates of the indirect paths through perceived opportunity and fear of failure were 0.05 and  $-0.01$ , respectively. The 95 % confidence intervals (bias-corrected confidence intervals) associated with the two estimates ranged from 0.02 to 0.10 and  $-0.03$  to 0.01, respectively. The sample of China was used to test the hypothesis by employing the same bootstrap procedure. The estimates of the indirect paths through perceived opportunity and fear of failure were 0.18 and 0.01, respectively, and their 95 % confidence intervals ranged from 0.12 to 0.24 and  $-0.01$  to 0.02, respectively. Overall, these results suggested that perceived opportunity demonstrated a mediating effect in linking perceived capability and entrepreneurial intention; by contrast, the mediating role of fear of failure was not significant, and this result is

<sup>1</sup> An endogeneity of the perceived capability (PC) variable may be concerned in Models 2 and 3. A person's perception of capability was closely related to his or her knowledge and experience. However, the GEM database did not include these two variables. Because a person's knowledge and experience were related to his or her age and education level, we used age and education as the proxy variables of experience and knowledge, respectively. According to the traditional procedure of a test for endogeneity in a probit model (Wooldridge 2002, pp.472–478), we first regressed PC on age, education, and other controls in Models 2 and 3 and calculated the error term. Next, we added the error term as a control in Models 2 and 3 and reran the two models for the two samples. These regressions were executed using a logistic approach. The estimated coefficients of the error term in Models 2 and 3 failed to reach the 5 % significance level ( $\beta_T=-0.07, p>0.05$ ;  $\beta_T=-0.04, p>0.05$ ;  $\beta_C=0.06, p>0.05$ ;  $\beta_C=-0.02, p>0.05$ ). These results suggested that endogeneity was not a serious concern in this study.

**Table 2** The mediating effects of perceived opportunity and fear of failure (Taiwan)

Variable (Dep. Var)	Model 1 (EI)	Model 2 (PO)	Model 3 (FF)	Model 4 (EI)
Intercept	0.39 (0.21)	- 0.10 (0.20)	- 0.43 (0.24)	0.19 (0.22)
PC	1.29 (0.13)**	0.60 (0.13)**	- 0.39 (0.12)**	1.20 (0.13)**
Gender	0.14 (0.12)	0.23 (0.11)*	- 0.26 (0.10)*	0.13 (0.12)
Age	- 0.05 (0.01)**	- 0.03 (0.01)**	0.01 (0.01)*	- 0.05 (0.01)**
NBS	0.24 (0.11)*	0.26 (0.11)*	- 0.17 (0.11)	0.21 (0.11)*
OA				0.38 (0.12)**
FF				- 0.08 (0.12)
$\chi^2$	1762.56**	1857.45**	2109.02**	1752.64**
N	1563	1563	1563	1563

Gender = 1, males; 0, females. Figures in parentheses are estimated standard errors

EI Entrepreneurial intention, PC Perceived capability, NBS Status of a successful business start-up, PO Perceived opportunity, FF Fear of failure

\*\* $p < 0.01$ ; \* $p < 0.05$

consistent with those from the tests conducted using the traditional steps. Furthermore, these bootstrap results supported H3, which states that the mediating effect of perceived opportunity is greater than that of fear of failure. To examine whether the estimates of confidence intervals vary with the number of resampling steps, we set the bootstrap replications to 10,000. These results highly close to those estimated using 5,000 replications.<sup>2</sup>

To test Hypotheses 4 and 5, we further analyzed the influence of gender on the mediating roles of perceived opportunity and fear of failure. Conventionally, these analyses were based on a moderated mediation model. Because the gender variable is a dummy, we adhered to the procedures suggested by Muller et al. (2005) to assess the mediating effects of perceived opportunity and fear of failure among men and women by splitting the samples. The results are reported in Tables 4 and 5. In Table 4, Model 2 shows that perceived capability had a strong positive effect on perceived opportunity, regardless of gender ( $\beta_m = 0.56$ ,  $p < 0.01$ ;  $\beta_f = 0.65$ ,  $p < 0.01$ ). Model 4 shows that perceived opportunity positively affected entrepreneurial intention among men ( $\beta_m = 0.46$ ,  $p < 0.01$ ), but not among women ( $\beta_f = 0.28$ ,  $p > 0.05$ ). Furthermore, Model 3 reveals that perceived capability negatively influenced the fear of failure among men ( $\beta_m = -0.62$ ,  $p < 0.01$ ), but not among women in the subsample ( $\beta_f = -0.14$ ,  $p > 0.05$ ). Model 4 shows that the fear of failure did not significantly influence entrepreneurial intention in the two subsamples ( $\beta_m = -0.03$ ,  $p > 0.05$ ;  $\beta_f = -0.13$ ,  $p > 0.05$ ). In Table 5, Models 2 and 4 separately indicate a positive effect

<sup>2</sup> The bootstrap replications were set to 10,000, and the results derived for the sample of Taiwan revealed that the estimates of the indirect paths through opportunity awareness and fear of failure were 0.05 and -0.02, respectively. The 95 % confidence intervals (bias-corrected confidence intervals) associated with the two estimates ranged from 0.03 to 0.10 and -0.02 to 0.01. The sample of China was used to test the hypothesis by employing the same bootstrap procedure. The estimates of the indirect paths through opportunity awareness and fear of failure were 0.17 and 0.02 and their 95 % confidence intervals ranged from 0.13 to 0.24 and -0.01 to 0.03, respectively.

**Table 3** The mediating effects of perceived opportunity and fear of failure (China)

Variable (Dep. Var)	Model 1 (EI)	Model 2 (PO)	Model 3 (FF)	Model 4 (EI)
Intercept	0.19 (0.20)	- 0.86 (0.24)**	- 0.72 (0.22)*	0.13 (0.26)
PC	1.26 (0.10)**	1.12 (0.09)**	- 0.23 (0.09)*	1.10(0.10)**
Gender	0.25 (0.10)*	0.08 (0.09)	- 0.13 (0.09)	0.25 (0.10)*
Age	- 0.05 (0.01)**	- 0.01 (0.01)*	0.01 (0.01)*	- 0.05 (0.01)**
NBS	0.20 (0.12)	0.34 (0.11)**	- 0.13 (0.11)	0.14 (0.11)
OA				0.69 (0.10)**
FF				- 0.07 (0.11)
$\chi^2$	2436.50**	2728.12**	2902.70**	2391.30**
N	2220	2220	2220	2220

*EI* Entrepreneurial intention, *PC* Perceived capability, *NBS* Status of a successful business start-up, *PO* Perceived opportunity, *FF* Fear of failure

Gender = 1, males; 0, females

\*\* $p < 0.01$ ; \* $p < 0.05$

of perceived capability on perceived opportunity ( $\beta_m = 1.01$ ,  $p < 0.01$ ;  $\beta_f = 1.22$ ,  $p < 0.01$ ) and that of perceived opportunity on entrepreneurial intention ( $\beta_m = 0.87$ ,  $p < 0.01$ ;  $\beta_f = 0.52$ ,  $p < 0.01$ ) among men and women. In addition, Model 3 reports that perceived capability negatively affected the fear of failure among women ( $\beta_f = -0.40$ ,  $p < 0.01$ ), but not among men ( $\beta_m = -0.03$ ,  $p > 0.05$ ). Model 4 reveals nonsignificant effects of fear of failure on entrepreneurial intention among men and women ( $\beta_m = -0.23$ ,  $p > 0.05$ ;  $\beta_f = -0.06$ ,  $p > 0.05$ ). Overall, these results partially support H4, which states that perceived opportunity has a stronger mediating effect on entrepreneurial intention among men than among women; however, they do not support H5, which states that the perceived capability–intention relationship through the fear of failure is stronger among men than among women.

The bootstrap procedure again was adopted to estimate the 95 % confidence intervals of the effects of indirect paths. The results after setting 5,000 bootstrap resamples are reported in Table 6. In terms of the route through perceived opportunity, the intervals for Taiwanese men and women did not overlap; however, those for Chinese men and women overlapped. By contrast, the effect for the indirect paths through the fear of failure included 0 and overlapped, regardless of the samples. These results confirm those of the previously reported tests.

In addition to the results of the preceding analyses conducted for testing the hypotheses, Tables 2 and 3 reveal noteworthy statistical results for the controls. First, Age exerts a negative effect on EI ( $\beta_T = -0.05$ ,  $p < 0.01$ ;  $\beta_C = -0.05$ ,  $p < 0.01$ ) and OA ( $\beta_T = 0.03$ ,  $p < 0.01$ ;  $\beta_C = -0.01$ ,  $p < 0.05$ ). These results suggest that older people exhibit lower entrepreneurial intentions and perceived opportunity compared with younger people. Second, for the sample of Taiwan, gender positively affects OA ( $\beta_T = 0.23$ ,  $p < 0.05$ ) and negatively influences FF ( $\beta_T = -0.26$ ,  $p < 0.05$ ); but the effect of gender on EI is nonsignificant. By contrast, the analyses for the sample of China reveal that gender demonstrates a positive effect on entrepreneurial intention ( $\beta_C = 0.25$ ,  $p < 0.05$ ), but it does not affect OA. Third, NBS exerts a positive effect

**Table 4** The gender differences in the mediating roles of perceived opportunity and fear of failure (Taiwan)

Variable	Model 1 (EI)		Model 2 (PO)		Model 3 (FF)		Model 4 (EI)	
	Male	Female	Male	Female	Male	Female	Male	Female
Intercept	0.75 (0.34) <sup>*</sup>	0.41 (0.38)	0.30 (0.32)	0.13 (0.37)	-0.84 (0.31) <sup>**</sup>	-0.59 (0.32) <sup>*</sup>	0.46 (0.36)	0.23 (0.39)
PC	1.39 (0.18) <sup>**</sup>	1.15 (0.19) <sup>**</sup>	0.56 (0.17) <sup>**</sup>	0.65 (0.19) <sup>**</sup>	-0.62 (0.17) <sup>**</sup>	-0.14 (0.17)	1.35 (0.19) <sup>**</sup>	1.12 (0.19) <sup>**</sup>
Age	-0.05 (0.01) <sup>**</sup>	-0.05 (0.01) <sup>**</sup>	-0.03 (0.01) <sup>**</sup>	-0.04 (0.01) <sup>**</sup>	0.01 (0.01)	0.01 (0.01)	-0.05 (0.01) <sup>**</sup>	-0.04 (0.01) <sup>**</sup>
NBS	0.10 (0.17)	0.39 (0.17) <sup>*</sup>	0.15 (0.16)	0.37 (0.17) <sup>*</sup>	-0.36 (0.15) <sup>*</sup>	0.20 (0.15)	0.09 (0.16)	0.36 (0.17) <sup>*</sup>
OA							0.46 (0.16) <sup>**</sup>	0.28 (0.18)
FF	906.96 <sup>**</sup>	853.17 <sup>**</sup>	972.89 <sup>**</sup>	883.40 <sup>**</sup>	1026.72 <sup>**</sup>	1078.23 <sup>**</sup>	-0.03 (0.17)	-0.13 (0.17)
$\chi^2$							899.25 <sup>**</sup>	850.31 <sup>**</sup>
N	778	785	778	785	778	785	778	785

EI Entrepreneurial intention, PC Perceived capability, NBS Status and respect for those successful at a business start-up, PO Perceived opportunity, FF Fear of failure  
<sup>\*\*</sup>,  $p < 0.01$ ; <sup>\*</sup>,  $p < 0.05$

**Table 5** The gender differences in the mediating roles of perceived opportunity and fear of failure (China)

Variable	Model 1 (EI)		Model 2 (OA)		Model 3 (FF)		Model 4 (EI)	
	Male	Female	Male	Female	Male	Female	Male	Female
Intercept	0.43 (0.29)	0.20 (0.27)	- 0.82 (0.28)**	- 0.79 (0.26)	- 1.07 (0.27)**	- 0.57 (0.24)*	0.49 (0.36)	0.52 (0.40)
PC	1.25 (0.15)**	1.27 (0.14)**	1.01 (0.14)**	1.22 (0.13)**	- 0.03 (0.06)	- 0.40 (0.12)**	1.09 (0.15)**	1.14 (0.14)**
Age	- 0.05 (0.01)**	- 0.05 (0.01)**	- 0.02 (0.01)*	- 0.02 (0.01)**	0.01 (0.01)	0.01 (0.01)	- 0.05 (0.01)**	- 0.05 (0.01)**
NBS	0.24 (0.17)	0.15 (0.16)	0.37 (0.16)*	0.31 (0.15)*	- 0.21 (0.16)	0.07 (0.14)	0.18 (0.17)	0.11 (0.16)
OA							0.87 (0.15)**	0.52 (0.14)**
FF	1158.78**	1277.57**	1290.12**	1436.32**	1313.47**	1584.55**	- 0.23 (0.15)	- 0.06 (0.14)
$\chi^2$							1121.24**	1264.86**
N	1020	1200	1020	1200	1020	1200	1020	1200

EI Entrepreneurial intention, PC Perceived capability, NBS Status and respect for those successful at a business start-up, PO Perceived opportunity, FF Fear of failure  
 \*\*,  $p < 0.01$ ; \*,  $p < 0.05$

**Table 6** The confidence intervals for the indirect paths from a bootstrap approach

Path	Taiwan		China	
	Male	Female	Male	Female
PC → PO → EI	0.06–0.13	–0.01–0.06	0.11–0.28	0.06–0.24
PC → FF → EI	–0.06–0.05	–0.04 - 0.01	–0.01–0.03	–0.04–0.02

*EI* Entrepreneurial intention, *PC* Perceived capability, *PO* Perceived opportunity, *FF* Fear of failure

on OA ( $\beta_T = 0.26$ ,  $p < 0.05$ ;  $\beta_C = 0.34$ ,  $p < 0.01$ ), suggesting that a high level of social status and respect for people successful at starting a new business increases a person's perceived opportunity.

## Discussion and implications

The unexpected results and several interesting findings in the controls warrant further discussion. First, this study does not demonstrate that perceived capability enhances entrepreneurial intention through a decreased fear of failure, regardless of the countries and gender. Specifically, perceived capability reduces the fear of failure for a business start-up; however, a decreased fear of failure does not increase entrepreneurial intention. This result is not consistent with the entrepreneurship literature, which considers fear of failure a crucial sociocultural factor affecting the probability of becoming an entrepreneur (Koellinger et al. 2013; Noguera et al. 2013; Shinnar et al. 2012). The unexpected non-significance may be explained by the work of Nabi and Liñán (2013) that persons with low risk perception may still not intend to start a business if they do not perceive opportunities. In practice, business start-up is a risky process, those who would like to start a new business may still be afraid of entrepreneurial failure (Chua and Bedford 2015). In other words, high entrepreneurial intention is not necessarily associated with low fear of failure. Therefore, this result may not be surprising.

Second, the results of this study do not indicate that the indirect effect of perceived capability on entrepreneurial intention through perceived opportunity is stronger among men than among women in the Chinese sample. This may possibly be explained by the one-child-per-family policy of China. This policy has created gender equality in the household division of labor (Chow and Chen 1994). Until 1978, China was a socialist planned economy that emphasized gender equality. Although its market reform has increasingly changed gender equality during the 1990s, China had a low gender inequality in 2011, which was ranked 35th on the United Nations Development Programme's Gender Inequality Index (GII) among 142 countries. In China, particularly in the urban areas, an increasing number of women pursue economic status and are not expected to participate in family responsibilities, unlike previous generations (Fung 2014). This gender equality development may diminish the difference in entrepreneurial intent between men and women because they perceive opportunities.

Third, the results of this study indicate that age negatively affects perceived opportunity and entrepreneurial intention among men and women. Existing literature has documented positive and negative effects of age on entrepreneurship. The view on the

positive effect of age on entrepreneurship is that the quantity of financial and human capital that a person possesses and that is essential for starting and conducting a business increases with age (Arenius and Minniti 2005; Parker 2009). By contrast, self-employment may also decrease with age because entrepreneurship is assessed as a more risky employment option (Boden 1999; Parker 2009) and as an option that often requires longer working hours (Blanchflower 2004). Our findings support the latter and are consistent with literature, which suggests that younger people have greater chances of becoming entrepreneurs (Arenius and Minniti 2005; Carter et al. 2001).

Fourth, the relationship between gender and entrepreneurial intention is not the focal topic of this study; however, it has been examined in the entrepreneurship literature. Haus et al. (2013) reviewed the literature on this topic and concluded that men have higher entrepreneurial intention than do women. The current study supports this conclusion by presenting highly noteworthy results. According to our results, the process linking gender and entrepreneurial intention involves a direct route for the China sample, but an indirect route through perceived opportunity for the Taiwan sample. The case for Taiwan particularly offers one possible explanation for the higher entrepreneurial intention among men; men are more likely to perceive entrepreneurial opportunities. Specifically, perceived opportunity may serve as a mediator of the gender–intention relationship in country contexts. This result has not been reported in existing entrepreneurship research. In addition, this study determines that status and respect for people who have successfully started a new business indirectly influence entrepreneurial intention through perceived opportunity. The possible explanation for this finding may be gleaned from the perspective of vicarious learning (Bandura 1977; Scherer et al. 1989), which suggests that people who observe the status and respect those who have a successful business start-up receive may perceive that a chance of success exists in creating a business, thus prompting them to create a new business.

This study also advances the current knowledge about entrepreneurship research by disentangling the relationship between perceived capability and entrepreneurial intention in two ways. First, the entrepreneurship literature in general has recognized that perceived capability improves entrepreneurial intention. Our research not only confirms the argument but also qualifies it by analyzing the roles of perceived opportunity. The results show that perceived capability increases entrepreneurial intention through perceived opportunity. In other words, persons with skills, knowledge, and experience have stronger intention to start a new business because they are more likely to find or create opportunities. This finding suggests that considering perceived opportunity as a mediator is necessary to deepen the understanding of how perceived capability affects entrepreneurial intention. Furthermore, the GEM considers perceived capability as self-efficacy, which represents a person's beliefs about his or her capability of producing effects. Existing entrepreneurship research has not focused much on the process leading from self-efficacy to entrepreneurial intention (Schlaegel and Koenig 2014). Our finding refines the knowledge about the linkage between self-efficacy and entrepreneurial intention by showing the mediating role of perceived opportunity. Second, this study further clarifies and extends the role of gender in understanding the process of becoming an entrepreneur. Existing research primarily contributes to understanding the differences in entrepreneurial intention between men and women (Haus et al. 2013); however, it rarely reveals how the perceived capability (entrepreneurial self-efficacy)–intention relationship varies with gender. Our study indicates that the mediating effects

of perceived opportunity may be different among men and women. This finding implies that by ignoring the role of perceived opportunity and gender, the existing arguments linking self-efficacy and entrepreneurial intention are incomplete. In addition, the results suggest that the moderating effect of gender on the meditation process of perceived opportunity may vary among countries. These findings provide a more comprehensive view of the relationship between perceived capability and entrepreneurial intention. Specifically, without considering the roles of gender and countries, the view of the perceived capability–intention relationship will be oversimplified. In addition, this study provides insight into literature by highlighting the role of economic development. The two samples analyzed in this study represent a developed country with a low economic growth rate (Taiwan) and a developing country with a high economic growth rate (China). Our results suggest that perceived opportunity has a stronger mediating effect in China than in Taiwan. This finding implies that cross-national studies of entrepreneurial intention should consider the economic development status of various countries instead of blending them together for producing more insights to the literature.

## Conclusion

This study utilizes the GEM database, an international survey of entrepreneurship and widely used in entrepreneurship research, and yields compelling results based on two samples, Taiwan and China. The generalizability of these findings should be validated through further research in other contexts since entrepreneurial activities may vary among different cultures (Fernández-Serrano and Romero 2014). For example, from Hofstede's (2001) perspective of national culture, a person's entrepreneurial intention may have a greater probability of being affected by subjective norms in addition to perceived capability in a society with high collectivism. In other words, the perceived capability–intention relationship may be weaker in a society with collectivism than in that with individualism. Furthermore, this study posits the relationship between age and entrepreneurial intention as a linear form. However, entrepreneurial intention may increase with the age until a certain threshold and decrease afterwards. Specifically, age may exert a nonlinear effect on entrepreneurial intention, which can be examined in future studies. In addition, perceived capability, perceived opportunity, fear of failure, and entrepreneurial intention in the GEM database are measured using a single item with a dichotomous scale. Too few response categories may loosely capture a respondent's attitude and produce more conservative statistical results (Lozano et al. 2008). Thus, using multi-item scales with multiple response categories for collecting data on these variables to validate the framework developed here should be considered in the future.

In conclusion, this study elaborates the relationship between perceived capability and entrepreneurial intention by considering the mediating roles of perceived opportunity and fear of failure and the moderating roles of gender. Overall, these results suggest that perceived capability affects entrepreneurial intention partially through perceived opportunity, rather than the fear of failure, and this indirect strength may differ between men and women. These results imply that determining the mediating role of perceived opportunity and the moderating role of gender is beneficial for understanding the



process involved in becoming an entrepreneur. More importantly, these findings underscore the requirement for a contextual process view to be included in the entrepreneurship theory. Without a contextual process view, the entrepreneurship theory is unlikely to be used for developing new insights into the role of perceived capability (self-efficacy) in entrepreneurial intention.

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