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Who Are Good Entrepreneurs? Evidence from Financial Capability, Entrepreneurial Cognition and Entrepreneurial Emotion

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Abstract

This paper intends to divide entrepreneurs into different profiles based on financial capability, entrepreneurial cognition and emotions. Further, this paper examines whether the entrepreneurs' profiles are associated with entrepreneurial performance. Data on financial capability, entrepreneurial cognition, emotion and entrepreneurial performance were collected through online self-report questionnaire. Three distinct profiles were identified by Latent Profile Analysis. Findings suggest that financial capability, positive emotion, negative emotion and entrepreneurial cognition have different effects on entrepreneurial performance. This study contributes to existing research by integrating indicators from ability, emotion and cognition to divide entrepreneurs into different profiles and give an insight into entrepreneurial performance from a entrepreneur-centered perspective.

Keywords: Financial Capability, Entrepreneurial Performance, Entrepreneurial Cognition, Positive Entrepreneurial Emotion, Negative Entrepreneurial Emotion

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1. Introduction

Entrepreneurs have become increasingly active in financial market. It is vital to the survival of start-up firms to make full use of financial products and services efficiently. Until now, entrepreneurial finance has got a marvelous increase. To get sufficient capital, entrepreneurs are always combining with crowdfunding, venture capital and angel invests. However, majority of these products are complex and difficult to grasp, especially for financially unsophisticated entrepreneurs (Rooij, Lusardi, & Alessie, 2011). Although, in most start-up firms, there are professional financial managers to help entrepreneurs to make relevant decisions, the final decisions will be made by entrepreneurs. Thus, entrepreneurs must assume more responsibility for their firms' financial situation (Custódio & Metzger, 2014). Unfortunately, it must be admitted not all entrepreneurs are well-equipped to make financial decisions, especially for young entrepreneurs. The lack of sufficient financial capability leads to failure to make financial decisions (Drexler, Ficher, & Schoar, 2014), which would undermine the probability of their firms' success.

The few studies that attempted to study entrepreneurs through person-centered analyses found that meaningful profiles, distinct from those created based on means splits, could be identified (Zampetakis et al., 2016). An advantage of person-centered analysis is that they can easily reveal complex interaction among multiple foci of entrepreneurs' characteristics than standard analysis (multiple regressions), for which interaction effects among more than 3 variables are very seldom analyzed (Morin et al., 2011). As such, we explore the effects of Financial capability (FC), Entrepreneurial cognition (EC) and Entrepreneurial Emotion (EE) on Entrepreneurial Performance (EP) from the person-centered perspective. We use latent profile analysis to divide entrepreneurs into different profiles and examine whether profiles are relevant to EP.

Our findings make several contributions to existing entrepreneurial literature. First, from the method perspective, drawing on FC, EC and EE, we use latent profile analysis to differentiate entrepreneurs. Furthermore, we examine the relationship of entrepreneurs' profile with EP. It provides us a new insight into entrepreneurial research and demonstrates the importance of focusing on entrepreneurs' characteristics. Second, from the theoretical perspective, our results show not only the positive effects of entrepreneurial cognition, financial capability and positive emotion, also the importance of modest negative emotion on entrepreneurial performance. It requires entrepreneurs to accept negative emotion when they are down, which would also help them promote performance.

2. Literature Review

2.1 Financial capability and entrepreneurial performance

FC reflects people's knowledge of financial matters, their ability to control their money and manage their finances (Von Stumm, O'Creevy, & Furnham, 2013). Moreover, through a large-scale survey, Atkinson et al., (2007) divided FC into four different factors: making ends meet, planning ahead, keeping track of accounts and stay informed of financial information (Von et al., 2013). Entrepreneurs with high FC usually have discernment and can make effective decisions on utilization of financial management.

For entrepreneurship success, it requires entrepreneurs to maximize wealth and profits, which could be realized through entrepreneurs' strategic decisions about organizing allotments of financial resources with considerable financial strength (Taylor, Jenkins, & Sacker, 2011). On the contrary, deficiency of FC commonly leads

to entrepreneurship failure (Wise, 2013). Some scholars have examined the relationship of FC with EP. Briefly, FC affects EP through two ways.

First, FC can help entrepreneurs gain more financial accesses (Atkinson & Messy, 2007). Access to finance plays an important role in business start-ups, and entrepreneurial firms' development and growth (Lee, Sameen, & Cowling, 2015). Entrepreneurs with high FC stays informed, and especially pay attention to relative financial information, which is good for them to identify important opportunities to invest, to obtain essential resources and make competitive decisions. Second, FC can decrease relative financial cost for entrepreneurs. Considering information asymmetries in the financial markets, it is easy for entrepreneurs with low level FC to incur high cost of financing, resulting in decreased profits. FC links with financial knowledge. Poor in financial knowledge brings up high-cost borrowers (Lusardi & Mitchell, 2011).

2.2 Entrepreneurial emotion and entrepreneurial performance

Entrepreneurship is a changeable and unpredictable process (Lichtenstein et al., 2007). Emotions will play a more significant role in shaping individuals' behavior in a context filled with uncertainty and unpredictability than in a certain and predictable environment (Forgas, 1995a). Furthermore, entrepreneurial tasks are highly influenced by emotions for their variations in nature and changes in the unfolding process (Baron & Ensley, 2006). Thus, it is necessary for us to discuss the effect of emotions in the entrepreneurial context. Entrepreneurs' PE affects EP through influencing issue interpretation (Mittal & Ross, 1998), and enhancing self-efficacy (Bandura, 1982).

According to mood congruency effect, individuals selectively pay more attention to information with valences agreeing with their current emotional state (Forgas, 1995a). People in PE tend to interpret issues more positively than neural and NE. For instance, facing with a challenge in entrepreneurial process, positive entrepreneurs usually treat it as an opportunity, and take appropriate strategies to cope with it. The positive coping behavior would make full use of the challenge and gain potential gains for entrepreneurs. Thus, PE positively correlates with EP.

As to the effects of NE on entrepreneurial decision-making, it is much more complex. Many studies have addressed the negative effects of NE on entrepreneurial decision making. They treat the effects of NE as opposite to PE. And they stated that high NE could drive people to interpret challenges as threats leading to a loss of opportunities for development (Mittal & Ross, 1998); and decrease entrepreneurs' self-efficacy resulting in undermining motivations to adopt necessary strategies to cope with challenges (Das & Teng, 1998). However, it must be paid attention to positive side of NE. Bodenhausen (1994) pointed out modest NE could drive people to pay more attention to covariation information, and less halo bias in performance appraisals was appeared. People with modest NE appear to engage in a more thoughtful cost-benefit analysis to make a decision. Modest NE, as sadness, could trigger cognitive strategies, beneficial to solve problems effectively, by motivating individuals to think more systematically and thoroughly (Mohanty & Suar, 2014). Moreover, for sad individuals, it is a means for them to get rid of unhappy experience through cognitively absorbing in information processing tasks (Tiedens & Linton, 2001). Thus, compared with high NE, the modest NE may be better for entrepreneurs to promote their performance. Hence, Modest NE promotes EP, while high NE hinders EP.

2.3 Entrepreneurial cognition and entrepreneurial performance

There are co-existing system functioning when entrepreneurs are deciding what to do: cognitive heuristic system and logical-rational system. The aim of a heuristic is to make decisions more quickly with ignoring part of the information (Gigerenzer & Gaissmaier, 2011). Because entrepreneurship is changeable, unpredictable and uncertain, people with low EC tend to adopt cognitive heuristics for limited cognitive capacity. The cognitive heuristics mainly lead to erroneous evaluations and decisions, because heuristic decision is partially subjective, influenced by existing beliefs and experiences. On the contrary, entrepreneurs with high EC would make decisions according to ability and avoid overconfidence, diagnose problems happening to their firms, have sufficient entrepreneurial knowledge and recognize important opportunities (Seawright, Mitchell, & Smith, 2008). In summary, EC positively correlates with EP.

3. Method

3.1 Participants and procedures

We collected data from incubators throughout China. We connected alumni of our school engaging in entrepreneurship and asked them to finish our questionnaire online. 330 entrepreneurs returned the questionnaires to us. We obtained 305 questionnaires among the data, and the valid rate was 92.4%. 57% of these participants were male and 54.8% were married. The average year of these participants was 30.99 (S.E. =7.72). In terms of education, 51.8% of the participants had bachelor's degree, and 42.6% of the entrepreneurs had devoted to entrepreneurship for over 5 years. Most of the entrepreneurial firms belonged to technology and information industries, with a percent of 51.4%.

3.2 Measures

In accordance with the process of translation and back-translation, we translate English scales used in this study into Chinese. In the questionnaire, a five-point Likert scale was used to measure participants' response, with "1" representing "never" and "5" representing "extremely often".

Financial Capability (FC). We measured the FC by scales developed by Atkinson (2007). Considering the length of the scale, only highest loading items from Atkinson's report were administered (Von Stumm et al., 2013). Finally, 14 items were included in our research. The scale yielded a α= 0.817.

Entrepreneurial Performance (EP). Twelve items from Li and Atuahene-Gima (2001) were used to measure EP. The performance was divided into 3 parts: financial performance (e.g. ROE), growth performance (e.g. growth of market share) and innovation performance (e.g. proportion of innovative products). The scale was yielded a α= 0.818.

Entrepreneurial Emotion (EE). EE were measured by PANAs from Watson et al., (1988) (Watson, Clark, & Tellegen, 1988). Considering the length of our questionnaire, we used 12 items with highest loadings from Watson's research (Von Stumm et al., 2013). PE and NE were measured by 6 items respectively. The scale of positive emotion yielded a α = 0.82 and the scale of negative emotion yielded a α = 0.87.

Entrepreneurial cognition (EC). EC was measured by cognitive ability script developed by Seawright, Mitchell and Smith (2008). The scale included four factors: ability/opportunity fit, diagnostic ability, entrepreneurial knowledge and opportunity recognition. The scale yielded a α = 0.833.

Control variables. Gender, age, education, and entrepreneurial experience were

chosen as control variables. Gender was dummy coded, with male participant coded as “0” and female coded as “1”. For education level, “junior college and blow” was coded as “1”, bachelor” was coded as “2” and “master and above” was coded as “3”. For entrepreneurial experience, “under five years” was coded as “1”, “5-10 years” was coded as “2”, “10-20 years” was coded as 4, and “20 years or more” was coded as “4”. Age was self-reported in years. Prior research suggested that these demographic variables might influence EP.

4. Results

4.1 Latent profile analysis

Latent profile analysis is a person-centered perspective statistical method, which can divide participants into different profiles. One of the two main goals of the current study is to identify distinct profiles of entrepreneurs based on their FC, EC and EE.

The fit indices of the LPA models were reported in table 1. According to related studies (Lai et al., 2015), we divided entrepreneurs into three different profiles: proactive entrepreneurs (Profile 1: high FC, high EC, high PE and modest NE) describing 49% of entrepreneurs, pessimistic entrepreneurs (Profile 2: modest FC, modest EC, modest PE, and high NE) describing 46% of entrepreneurs and indifferent entrepreneurs (Profile 3: low FC, low PE, low NE and low EC) describing 5% of entrepreneurs. According to table 1, the LMR test, bootstrap LMR test, AIC, BIC and adjusted BIC indicated that a 3-profile solution fit the present data better than others do (Akaike Information Criterion [AIC] = 2509.99, Bayesian Information Criterion [BIC] = 2576.96, Adjusted Bayesian Information Criterion [ABIC] = 2519.87, Likelihood Ration Test [LRT] $p<0.001$, Bootstrap Likelihood Ration Test [BLRT] $p<0.001$, Entropy=0.8).

Table 1. Results of Latent Profile Analysis (N=305)

Model	LL	Parameters	AIC	BIC	ABIC	Entropy	LMR(p)	BLRT(p)
1 Class	-1388.87	8	2793.74	2823.51	2798.13	Na	Na	Na
2 Class	-1283.57	13	2593.13	2641.50	2600.27	0.99	<0.001	<0.001
3 Class	-1237.00	18	2509.99	2576.96	2519.87	0.80	<0.001	<0.001
4 Class	-1220.10	23	2486.19	2571.76	2498.82	0.75	0.44	<0.001
5 Class	-1205.62	28	2467.25	2571.41	2482.61	0.80	0.43	<0.001
6 Class	-1197.74	33	2461.49	2584.26	2479.60	0.80	0.37	0.12
7 Class	-1183.34	38	2442.69	2584.06	2463.54	0.79	0.54	<0.001
8 Class	-1167.73	43	2421.46	2581.43	2445.06	0.83	0.17	<0.001
9 Class	-1165.73	48	2427.45	2606.03	2453.79	0.82	0.54	<0.001

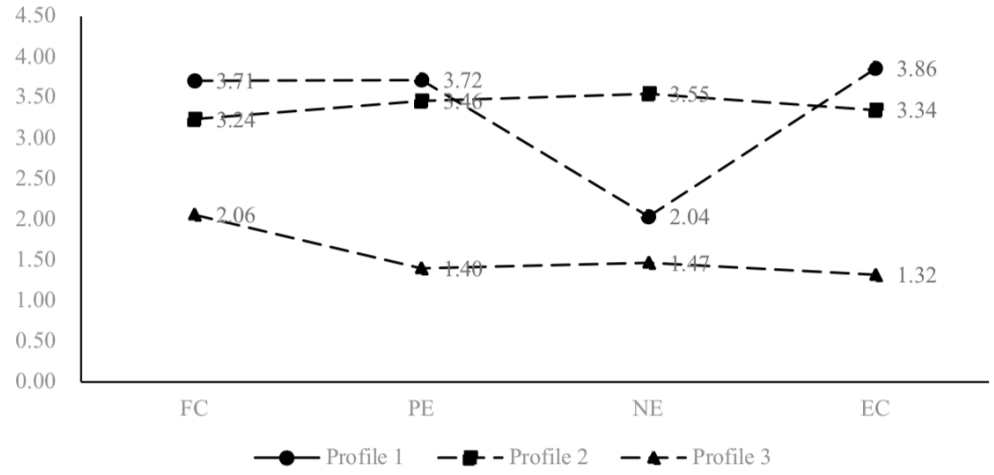

Figure1. Results of Latent Profile Analysis

To compare the differences of FC, EE and EC in three different profiles, we conducted ANOVA based on three profiles and the results were shown in table 2. Proactive entrepreneurs had the highest FC, PE, EC and modest NE. Pessimistic entrepreneurs had second highest FC, PE, EC and the highest NE. Indifferent entrepreneurs had the lowest FC, PE, NE, and EC. And the F tests and LSD tests for EE, PE, NE and EC were all significant at 99% confidence.

Table2. ANOVA Test of Independent Variables (N=305)

Variables	Profile 1	Profile 2	Profile 3	F	LSD
FC	3.71	3.24	2.06	63.18	1>2>3
PE	3.72	3.46	1.40	53.65	1>2>3
NE	2.04	3.55	1.47	286.81	2>1>3
EC	3.86	3.34	1.32	156.93	1>2>3

Profiles and Entrepreneurial performance

So as to test the association of profiles with EP, we conducted one-way ANOVA test. According to table 3, results showed that the proactive entrepreneurs had the highest EP (M=3.31, F=58.69, p<0.001) and the LSD tests were all significant at 95% confidence. The results of ANOVA tests of the 3 dimensions of EP were the same (M=3.26~3.36. F>27.07, P<0.001). Hence, H1 to H4 were supported.

Table 3. ANOVA Test of Entrepreneurial Performance (N=305)

Variables	Profile 1	Profile 2	Profile 3	F	LSD
Entrepreneurial Performance	3.31	3.18	1.42	58.69**	1>2>3
Financial Performance	3.27	3.20	1.37	37.14**	1=2>3
Growth Performance	3.36	3.19	1.45	46.32**	1>2>3
Innovation Performance	3.26	3.14	1.40	27.07**	1=2>3

Note: *$p < 0.05$, **$p < 0.01$;

5. Discussion

This study explores how entrepreneurs use their performance as a response to FC from a person-centered perspective. From person-centered perspective, we used latent profile analysis based on FC, EC, PE and NE to divide entrepreneurs into three different profiles. In addition, we used EP as the outcome, results showing that entrepreneurs with high EC, high FC, high PE and modest NE had the best performance. Our study not only provides evidence to indicate the importance of FC and EC, but also offers an insight into the complex effects of EE on entrepreneurial decision-making process. The effects of PE and NE are not always contradicted, and modest NE is also important to promote entrepreneurial performance.

5.1 Theoretical implications

From the perspective of method, our research applied latent profile analysis to analysis which type of entrepreneurs could finally get high entrepreneurial performance. Latent profile analysis is kind of person-centered approach, which has the potential to extend entrepreneurial research by identifying how different profiles of entrepreneurs based on FC, EC, and EE are differentially linked to entrepreneurial performance. Considering the complex structure of entrepreneurs' characteristics, variable-centered methods (e.g. regression analysis) may be not the suitable choice for our topic. From the person-centered perspective, we used latent profile analysis to differentiate entrepreneurs in to 3 different profiles: proactive entrepreneurs (high FC, high EC, high PE and modest NE) describing 49% of entrepreneurs, pessimistic entrepreneurs (modest FC, modest EC, modest PE, and high NE) describing 46% of entrepreneurs and indifferent entrepreneurs (low FC, low PE, low NE and low EC)

describing 5% of entrepreneurs. Furthermore, we revealed the different characteristic structure based on FC, EC, PE and EE, which is the first step in the development of differentiate strategies targeting specific profiles of entrepreneurs.

From the perspective of theory, our research mainly has two implications. This study provides direct evidence that FC could exert influences on EP. Entrepreneur competency is the key point leading to the distinct performance of SMEs. Entrepreneurs' competencies are comprised by knowledge, experience and skills. Rooij et al., (2011) elaborated the positive relationship between FC and stock market participation, and it could ensure the success of financial decisions. However, there is no direct evidence to support FC could affect EP. Our study used latent profile analysis to prove that high FC was necessary for high EP.

This study provides support for the view that modest NE is an effective tool to help individuals make decisions. With modest NE, individuals tend to think systematically and thoroughly, and notice the covariation information, leading to effective decision making (Tiedens & Linton, 2001). Our study clarifies paradoxical views in the entrepreneurial context and provide the corresponding context in which NE exerts specific effects. The effects of PE and NE are not contradicted, whereas they play different roles in making entrepreneurial decisions. ities.

5.2 Practical Implications

According to our findings, it is enough to advocate that entrepreneurs should increase their FC to increase EP. Existing studies have proved that FC could be nurtured through taking part in related education programs.

Our study provides evidence that modest NE and high PE would strengthen entrepreneurial performance. Thus, entrepreneurs should improve their ability to regulate emotions. When entrepreneurs experience NE, they should accept it rather than resist it, which could take advantage of the cognitive schema triggered by NE.

Finally, EC plays an important role in shaping the effects of FC on performance. It is important for entrepreneurs to increase their entrepreneurial knowledge through education and practice and summarize their practical experience and transfer it into their inner cognitive schema.

5.3 Limitations and Future Study

Some limitations must be addressed for future studies. First, a cross-sectional design was used to test our hypotheses, which cannot determine causality efficiently and convincingly, and avoid social desirability. Future study with a field experiment or longitude research would help to verify the influence exerted by FC on EP. Second, all of the data collected from entrepreneurs themselves would inevitably lead to common source variance. Future study could use data from multiple sources, for example using objective indicators rather than subjective indicators measure EP.

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