

Effect of Ability Factors of Entrepreneurial Employees on The Entrepreneurial Performance of New Enterprises

Xingrong Zhang*

Entrepreneurship College, Chengdu Polytechnic, Sichuan 610041, China

This paper focused on the ability factors of entrepreneurial employees, established an analytical model based on the entrepreneurial environment, and proposed some hypotheses. Three hundred and fifty-two valid questionnaires were collected via a questionnaire survey, and then these data were analyzed using SPSS 22.0 software. It was found that the measurement scale had good consistency and the variables showed a significant positive correlation. Finally, the hypotheses were confirmed by means of regression analysis. The results indicate that the ability factors of entrepreneurial employees have a positive influence on entrepreneurial performance, with the entrepreneurial environment playing a mediating role. This paper provides theoretical support for strengthening the competitiveness of new enterprises.

Keywords: new enterprise, entrepreneurial employee, ability factor, entrepreneurial performance

1. INTRODUCTION

As the securing of employment becomes more difficult, it is important that entrepreneurial activities increase. Entrepreneurship can benefit economic development (Sun, 2022) and create new jobs for the unemployed. However, new enterprises often face very fierce competition (Munkongsujarit, 2016) and have a poor survival rate. Entrepreneurship is a very complex process, and there are many factors that play different roles in the success or failure of an enterprise, such as the resources for entrepreneurship, the environment for entrepreneurship, and the ability of entrepreneurial employees. Ng et al. (2016) collected data from Malaysian small and middle-sized enterprises, conducted data analysis using Statistic Package for Social Science (SPSS) and SmartPLS,

and found that the owners' transformational leadership and their entrepreneurial and technological capabilities had a significant and positive impact on the success of their enterprise. Roroh et al. (2021) conducted a study of 70 business participants and found through observation, questionnaires, and interviews that entrepreneurial ability and entrepreneurial motivation had a positive and significant impact on innovative products and entrepreneurial ability, and that motivation through innovation products had a significant and positive effect on the performance of micro, small and medium-sized enterprises (MSMEs) dealing in packaged food. Adeyemo et al. (2021) selected 85 management school students to study the effect of entrepreneurship education on students' entrepreneurial competency and intentions, and found through questionnaires and data analysis that there was a significant effect. Yani et al. (2020) collected data from 315 respondents and analyzed the data using SmartPLS software to explain the effect of social capital and entrepreneurial

*Corresponding address: Chengdu Polytechnic, No. 83, Tianyi Street, High-tech Zone, Chengdu, Sichuan 610041, China. Email: rza93r@yeah.net

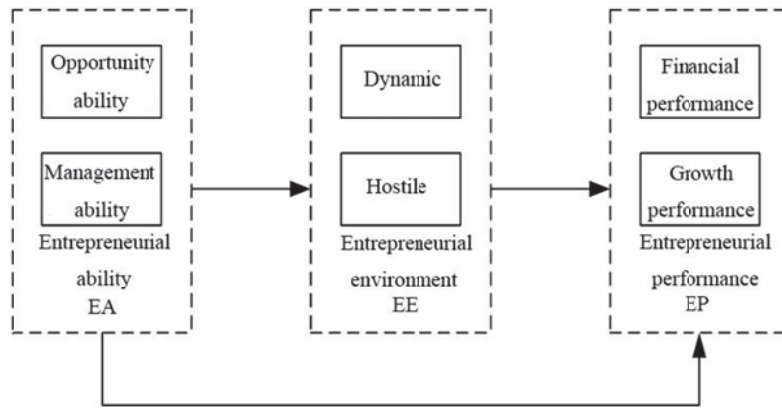


Figure 1 A research model.

competencies on performance. This paper focused mainly on the ability factors of entrepreneurial employees and conducted studies using questionnaires and data analysis based on entrepreneurial environment factors, in order to provide some references for entrepreneurial employees and improve the success rate of new enterprises.

2. MODELS AND ASSUMPTIONS

The ability factor of entrepreneurial employees (Sergeeva et al., 2021) refers to the ability of entrepreneurial employees to find opportunities in the market and seize them in order to achieve entrepreneurial success. The ability factor has various dimensions including the ability to find opportunities, the ability to integrate resources, the ability to innovate technology, and so on. In this paper, the entrepreneurial ability (EA) of employees is studied from two perspectives, i.e., the opportunity ability factor and the management ability factor.

Entrepreneurial environment (EE) is also a complex concept (Indrawati et al., 2015), which can be divided into internal and external, direct and indirect, perceptual and rational, etc., according to different criteria. During their development, new enterprises face strong uncertainties; therefore, this paper analyzes the entrepreneurial environment mainly from two perspectives: dynamic and hostile.

The higher the entrepreneurial performance (EP), the better is the development of an enterprise. For new enterprises, only strong entrepreneurial performance can ensure their survival in an increasingly competitive environment. In this paper, entrepreneurial performance is divided into two parts: financial performance, which indicates the benefits created by the enterprise, and growth performance, which indicates the prospective development of the enterprise.

Based on the above discussion, the model developed based on entrepreneurial ability (EA), entrepreneurial environment (EE), and entrepreneurial performance (EP) is shown in Figure 1.

In the model, EA is the independent variable, EP is the dependent variable, and EE is the mediating variable used to analyze the effect of entrepreneurial employees' ability factors on the entrepreneurial performance of new enterprises. The current study concludes that there is a positive effect of

entrepreneurial employees' ability factor on entrepreneurial performance, and if entrepreneurial employees can keenly identify market opportunities and exploit them, they can seize these opportunities to improve business performance. Either good management or an excellent ability to identify opportunities is conducive to the healthy development of enterprises. The entrepreneurial ability of entrepreneurial employees, however, can also be affected by complex entrepreneurial environments, thus affecting performance. In this paper, based on the model in Figure 1, the following hypotheses are proposed.

H1: EA has a positive impact on EP.

H1a: Ability to identify an opportunity has a positive impact on EP.

H1b: Management ability has a positive impact on EP.

H2: EA has a positive impact on EE.

H2a: Ability to identify an opportunity has a positive impact on EE.

H2b: Management ability has a positive impact on EE.

H3: EE has a mediating effect on EA and EP.

H3a: EE has a mediating effect on ability to identify an opportunity and EP.

H3b: EE has a mediating effect on management ability and EP.

3. STUDY DESIGN

The questionnaire survey was the main data-collection method used in this study. The questionnaire contained four sections as shown in Table 1, and participants recorded their responses on a 5-point Likert scale (Joshi et al., 2015).

The questionnaires were distributed either on site or via email to Sichuan creative industry parks, incubators, and college students who were studying for a master of business administration (see Table 2).

Data were analyzed using SPSS 22.0. The various analyses comprised:

Table 1 Content of questionnaire survey.

| Dimension | Content | References | |
|--------------------------|--|--|---|
| Part 1 Basic information | Gender A: Male B: Female | None | |
| | Age A: 25 years old or below B: 26–35 years old C: 36–45 years old D: 46 years old or above | None | |
| | Academic qualifications A: High school diploma or below B: Junior college diploma C: Undergraduate diploma D: Graduate diploma | | |
| | Enterprise size A: 10 people or less B: 11–50 people C: 51–199 people D: 200 people or above | | |
| | Industry to which the enterprise belongs A: Traditional manufacturing B: Business services C: High-tech industry D: Other | | |
| | Business years A: Less than 1 year B: 1–2 years C: 3–4 years D: 5–6 years | | |
| | Opportunity ability A | Good at seizing high-quality opportunities | (Chandler and Jansen, 1992) |
| | Part 2 EA | Accurate identification of consumer needs Actively seek products and services that are useful to consumers Adept at developing new products and services | (Man et al., 2002) |
| | | Management ability B | Be able to set reasonable plans and goals Be able to adjust business ideas in a timely manner Be able to establish scientific rules and regulations Be able to effectively utilize corporate resources |
| | Part 3 EE | Dynamic B1 | The industry to which the enterprise belongs is changing rapidly Competitors' behavior is difficult to be predicted The industry technology is updated quickly Consumer demand is hard to predict |
| Hostile B2 | | More competitive intensity in the industry More difficult to obtain resources needed by the enterprise Higher requirements of customers on products and services | |
| Financial performance C1 | | High return on business sales | (Shen and Luo, 2006) |
| Part 4 EP | Growth performance C2 | High return on business assets Faster market share growth compared to competing companies | |
| | | Faster employee growth compared to competing companies Higher consumer satisfaction compared to competing companies | |

Table 2 Questionnaire statistics.

| | |
|----------------------------|-----|
| Distributed questionnaires | 400 |
| Recycled questionnaires | 384 |
| Invalid questionnaires | 32 |
| Valid questionnaires | 352 |

Table 3 KMO value metrics.

| KMO value | Applicability of analysis |
|-----------|---------------------------|
| 0.90–1.00 | perfect |
| 0.80–0.89 | meritorious |
| 0.70–0.79 | middling |
| 0.60–0.69 | mediocre |
| 0.50–0.59 | miserable |
| 0.00–0.49 | unacceptable |

Table 4 Descriptive statistics results.

| | Variables | Number of samples | Percentage |
|--|------------------------------|-------------------|------------|
| Gender | Male | 207 | 58.81% |
| | Female | 145 | 41.19% |
| Age | 25 years old or less | 99 | 28.13% |
| | 26–35 years old | 118 | 33.52% |
| | 36–45 years old | 76 | 21.59% |
| | 46 years old or above | 59 | 16.76% |
| Academic qualifications | High school diploma or below | 78 | 22.16% |
| | Junior college diploma | 94 | 26.70% |
| | Undergraduate diploma | 131 | 37.22% |
| | Graduate diploma | 49 | 13.92% |
| Enterprise size | 10 people or less | 68 | 19.32% |
| | 11–50 people | 101 | 28.69% |
| | 51–199 people | 99 | 28.13% |
| | 200 or above | 84 | 23.86% |
| Industry to which the enterprise belongs | Traditional manufacturing | 89 | 25.28% |
| | Business services | 103 | 29.26% |
| | High-tech industry | 92 | 26.14% |
| | Other | 68 | 19.32% |
| Business years | Less than 1 year | 135 | 38.35% |
| | 1–2 years | 89 | 25.28% |
| | 3–4 years | 74 | 21.02% |
| | 5–6 years | 54 | 15.34% |

- (1) a descriptive statistical analysis: this can help understand the distribution of variables and count the sample size and percentage.
- (2) a reliability and validity analysis: Cronbach's alpha coefficient was used to test the reliability (Bonett and Wright, 2015). If the α coefficient is greater than 0.7, the scale is acceptable. Exploratory factor analysis was used to test the validity of the questionnaire (Mir et al., 2016), and the Kaiser-Meyer-Olkin (KMO) value and the result of Bartlett's test of sphericity were analyzed. The KMO values are shown in Table 3. $KMO > 0.5$ and $p < 0.05$ were taken as acceptable ranges.
- (3) a correlation and regression analysis: the Pearson correlation coefficient (Qu and Ding, 2021) and regression

analysis was performed to determine the correlation between the variables and to test the hypotheses.

4. RESULTS AND ANALYSIS

4.1 Descriptive Statistical Analysis

The distribution of the sample data is shown in Table 4.

As shown in Table 4, the number of males among the entrepreneurial employees was higher than the number of females (58.81% and 41.19% respectively); 33.52% of participants were aged between 26 and 35 years; 28.13% were 25 years old or younger. The majority had an undergraduate diploma (37.22%), followed by the junior college diploma

Table 5 Results of reliability analysis.

| | Total scale | Entrepreneurial ability scale | Entrepreneurial environment scale | Entrepreneurial performance scale |
|------------------------------|-------------|-------------------------------|-----------------------------------|-----------------------------------|
| Number of items | 20 | 8 | 7 | 5 |
| Cronbach's Alpha coefficient | 0.921 | 0.835 | 0.829 | 0.833 |

Table 6 Results of validity analysis.

| | Entrepreneurial ability | Entrepreneurial environment | Entrepreneurial performance |
|-------------------------------|-------------------------|-----------------------------|-----------------------------|
| KMO value | 0.728 | 0.812 | 0.847 |
| Bartlett's test of sphericity | 456.372 | 289.574 | 567.218 |
| | 0.000 | 0.000 | 0.000 |

Table 7 Results of correlation analysis (**: the significance level is 0.01).

| | Opportunity ability | Management ability | Environmental dynamics | Environmental hostility | Financial performance | Growth performance |
|-------------------------|---------------------|--------------------|------------------------|-------------------------|-----------------------|--------------------|
| Opportunity ability | 1 | | | | | |
| Management ability | 0.742** | 1 | | | | |
| Environmental dynamics | 0.698** | 0.721** | 1 | | | |
| Environmental hostility | 0.685** | 0.687** | 0.734** | 1 | | |
| Financial performance | 0.714** | 0.692** | 0.756** | 0.732** | 1 | |
| Growth performance | 0.725** | 0.759** | 0.691** | 0.685** | 0.726** | 1 |

(36.7%), and the number of employees who achieved a graduate diploma or above was the smallest (13.92 %). The size of the new enterprises was relatively even, usually 11 ~ 50 people or 51 ~ 199 people. Most of the new enterprises were engaged in business services (29.26%), followed by the high-tech industry (26.14%). In terms of operation, 38.35% had been in business for less than a year. The number of enterprises was inversely proportional to the number of years in business, with enterprises that have operated for 5–6 years accounting for only 15.34% of the sample.

4.2 Reliability and Validity Analysis

The results of the questionnaire reliability analysis are presented in Table 5.

Table 5 shows that the α coefficient of the total scale was 0.921, indicating good consistency of the questionnaire, and the α coefficients of the subscales were 0.835, 0.829, and 0.833 respectively, which showed good reliability of the questionnaire.

The results of the validity analysis are presented in Table 6.

Table 6 shows that the KMO values of entrepreneurial ability, entrepreneurial environment, and entrepreneurial performance were all greater than 0.7, and Bartlett's test of sphericity was significant ($\alpha = 0.000$), indicating that the

questionnaire had good validity and there was no need to discard any items.

4.3 Correlation and Regression Analysis

Table 7 presents the results of the correlation analysis.

Table 7 shows that there was a significant positive correlation between entrepreneurial ability, entrepreneurial environment, and entrepreneurial performance. To test the hypotheses, regression analysis was performed on the variables.

The analysis results of the ability factors and entrepreneurial performance of entrepreneurial employees are shown in Table 8.

Table 8 shows that the regression coefficient for opportunity ability was 0.425 for entrepreneurial performance and 0.365 for management capability, and the significance levels were both 0.000. In the regression analysis, R^2 was 0.198, the adjusted R^2 was 0.182, and the F value was 15.67. The results showed that the ability factor and entrepreneurial performance were positively correlated; thus, hypotheses H1, H1a, and H1b were supported.

It is evident that when entrepreneurial employees have strong entrepreneurial ability, it is beneficial for new enterprises to adopt appropriate and rational ways to overcome

Table 8 Regression analysis result I.

| Models | | Constant | Opportunity ability | Management ability |
|------------------------------|----------------|----------|---------------------|--------------------|
| Non-standardized coefficient | B | 2.152 | 0.284 | 0.146 |
| | Standard error | 0.311 | 0.083 | 0.094 |
| Standardized coefficient | beta | | 0.425 | 0.365 |
| <i>t</i> | | 6.978 | 3.125 | 1.524 |
| Significance | 0.000 | 0.000 | 0.000 | |

Table 9 Regression analysis result II.

| Models | Constant | Opportunity ability | Management ability | |
|------------------------------|----------------|---------------------|--------------------|-------|
| Non-standardized coefficient | B | 1.035 | 0.256 | 0.481 |
| | Standard error | 0.268 | 0.081 | 0.085 |
| Standardized coefficient | beta | | 0.348 | 0.465 |
| <i>t</i> | | 3.872 | 3.564 | 4.698 |
| Significance | | 0.000 | 0.000 | 0.000 |

Table 10 Regression analysis result III (**: the significance level is 0.01).

| | Model 1 | Model 2 | |
|-----------------------------|-----------------------------|---------|---------|
| | Entrepreneurial performance | Step 1 | Step 2 |
| Independent variable | | | |
| Opportunity ability | | 0.465** | 0.368** |
| Management ability | | 0.362** | 0.297** |
| Mediating variable | | | |
| Entrepreneurial environment | 0.514** | | 0.568** |
| R^2 | 0.368 | 0.187 | 0.384 |
| ΔR^2 | 0.358 | 0.175 | 0.356 |
| F-value | 78.64 | 32.16 | 38.67 |

and solve the difficulties and challenges of entrepreneurship in a timely fashion. Moreover, employees with strong innovation and execution abilities can also strengthen the competitive advantages of enterprises. The ability to identify opportunities can help new enterprises to discover potential markets and acquire greater market share. Management ability leads to more effective deployment of internal resources of new enterprises and improvement of employees' motivation. Therefore, entrepreneurial employees need to accumulate experience and knowledge through continuous learning and practice and make efforts to improve entrepreneurial performance.

The analysis results for the ability factors and entrepreneurial environment of the entrepreneurial employees are shown in Table 9.

Table 9 that the regression coefficient of opportunity ability for the entrepreneurial environment was 0.348, the regression coefficient of management ability for the entrepreneurial environment was 0.465, and the significance levels were both 0.000. In the regression analysis, R^2 was 0.456, the adjusted R^2 was 0.447, and the F value was 52.36. The results show that the ability factor of entrepreneurial employees and entrepreneurial environment were positively correlated, so hypotheses H2, H2a, and H2b were valid.

It can be concluded that when entrepreneurial employees have strong entrepreneurial ability, they can respond better to the complex entrepreneurial environment and use corresponding countermeasures to solve problems. As entrepreneurial

employees improve their ability, the entrepreneurial environment becomes more complex and competitive; under such influences, in order to strengthen their competitive advantage, entrepreneurial employees will further improve their ability.

Finally, to verify the mediating role of entrepreneurial environment, a regression analysis of the entrepreneurial environment and entrepreneurial performance was conducted (model 1), and an analysis was performed by taking entrepreneurial ability or entrepreneurial environment as the independent variable (model 2). The results are shown in Table 10.

Table 10 shows that the explanatory variable of entrepreneurial environment for entrepreneurial performance was 36.8% in model 1, and the results of two regression analyses were significant in model 2. However, the significance of the entrepreneurial ability in terms of entrepreneurial performance slightly decreased when the entrepreneurial environment was used as a mediating variable, which indicated that entrepreneurial ability and entrepreneurial environment could predict entrepreneurial performance better when used together. Therefore, hypotheses H3, H3a, and H3b were valid.

Hence, due to the uncertainty of the environment, enterprises must constantly look for new opportunities to ensure the growth of their businesses. In these situations, entrepreneurial employees need to constantly improve their ability to identify and take advantage of business opportunities and constantly try new management methods to improve the benefits obtained by new enterprises.

5. CONCLUSION

This paper analyzed the impact of entrepreneurial employees' ability factors on entrepreneurial performance for the development of new enterprises and simultaneously analyzed the entrepreneurial environment. It was found that:

- (1) the ability factors of entrepreneurial employees had a positive impact on entrepreneurial performance;
- (2) the ability factors of entrepreneurial employees had a positive impact on the entrepreneurial environment; and
- (3) entrepreneurial environment mediated entrepreneurial ability and performance.

This paper tested the hypotheses using data analysis and analyzed the effects of entrepreneurial employees' ability factors and entrepreneurial environment on entrepreneurial performance, which provides some referable opinions for the better development of new enterprises.

REFERENCES

1. Adeyemo, S.A., Ogunleye, P.O., Adeyemi, M.A. & Kareem, T. (2021). Entrepreneurship Education as an Impetus to Entrepreneurial Competence and Entrepreneurial Intentions among Polytechnic Students: A Quantitative Approach. *Asian Journal of Education and Social Studies*, 29–37.
2. Bonett, D.G. & Wright, T.A. (2015). Cronbach's alpha reliability: Interval estimation, hypothesis testing, and sample size planning. *Journal of Organizational Behavior*, 36(1), 3–15.
3. Chandler, G.N. & Jansen, E. (1992). The founder's self-assessed competence and venture performance. *Journal of Business Venturing*, 7(3), 223–236.
4. Indrawati, N.K., Salim, U., Djumahir & Djawahir, A.H. (2015). The mediating role of entrepreneurial alertness in relationship between environmental dimensions and entrepreneurial commitment: entrepreneurial self-efficacy as moderating variables. *International Journal of Entrepreneurship and Small Business*, 26(4), 467–489.
5. Joshi, A., Kale, S., Chandel, S. & Pal, D.K. (2015). Likert Scale: Explored and Explained. *British Journal of Applied Science & Technology*, 7(4), 396–403.
6. Li, D.Y., Xiang, B.H. & Chen, Y.L. (2009). Dynamic Capabilities and Their Functions: The Impact of Perceived Environmental Uncertainty. *Nankai Business Review*, (6), 9.
7. Man, T.W.Y., Lau, T. & Chan, K.F. (2002). The competitiveness of small and medium enterprises: A conceptualization with focus on entrepreneurial competencies. *Journal of Business Venturing*, 17(2), 123–142.
8. Mir, P.A., Bhasin, J. & Rasool, G. (2016). A Measure of Supervisory Power: Scale Development and Validation. *Jindal Journal of Business Research*, 5(1), 51–63.
9. Munkongsujarit, S. (2016). Business incubation model for startup company and SME in developing economy: A case of Thailand. *2016 Portland International Conference on Management of Engineering and Technology (PICMET)*, 74–81.
10. Ng, H.S., Kee, D. & Ramayah, T. (2016). The role of transformational leadership, entrepreneurial competence and technical competence on enterprise success of owner-managed SMEs. *Journal of General Management*, 42(1), 23–43.
11. Qu, N. & Ding, X. (2021). The Influence of multi-dimensional factors of classroom environment on English performance. *Engineering Intelligent Systems*, 29(1), 65–73.
12. Roroh, A.M., Haerani, S. & Umar, F. (2021). The Role of Product Innovation in Mediating the Entrepreneurial Competence and Motivation on the Performance of Packaged Food MSMEs. *Hasanuddin Journal of Business Strategy*, 3(1), 40–51.
13. Sergeeva, T., Podbolotova, M., Natyrova, E., Averianova, S. & Lobanov, I. (2021). Development of student entrepreneurial competence using the resources of social partnership. *SHS Web of Conferences*, 98, 1–5.
14. Shen, C.H. & Luo, L. (2006). A study on the key factors of entrepreneurial success and the criteria of performance appraisal. *Journal of Central South University (Social Science)*, 12(2), 231–235.
15. Sun, R. (2022). Evaluation of innovative entrepreneurship education based on the analytic hierarchy process. *Engineering Intelligent Systems*, 30(1), 17–22.
16. Yani, A., Eliyana, A., Hamidah., Sudiarditha, I.K.R. & Buchdadi, A.D. (2020). The impact of social capital, entrepreneurial competence on business performance: An empirical study of SMEs. *Systematic Reviews in Pharmacy*, 11(9), 779–787.

