

The Sufficiency Condition Hypotheses in Entrepreneurial Counseling Activities

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Abstract

The aim is to explore sufficiency conditions for entrepreneur personality and entrepreneur resources on entrepreneurial counseling activities. The study collected 228 questionnaires from entrepreneurs in Taiwan and applied a relatively new method, fuzzy set qualitative comparative analysis (fs/QCA) to test the sufficiency proposition of the theory. In a regression analysis, indicating that obvious personality traits have not achieved a significant level at all, Personality traits and entrepreneur resources were all taken into the discussion, indicating that obvious personality traits have not achieved a significant level at all. With regards to the exploration of a moderating variable, the demographic variables, which represent the personality traits, do not have a significant influence on entrepreneurial counseling activities. However, the fs/QCA analysis results show there is high causal relevance of a combination of entrepreneur personality and entrepreneur resources on entrepreneurial counseling. In addition, the combination of entrepreneur personality and demographic variable are the sufficiency condition for entrepreneurial counseling activities. It is notable that entrepreneur resource is a necessary condition for entrepreneurial counseling activities. This study suggests that fs/QCA is a useful method to provide a calculus of compatibility and thus to contribute to an enhanced understanding of entrepreneurial counseling activities.

JEL classification numbers: C6; M13

Keywords: Entrepreneur Personality, Entrepreneur Resources, Entrepreneur Counseling activities, fs/QCA

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1 Introduction

The aim is to explore sufficiency conditions for entrepreneur personality and entrepreneur resources on entrepreneurial counseling activities. The relationship among entrepreneur personality, entrepreneur resources and entrepreneurial counseling activities is well established in the relevant literature. In Nabi et al. [40], the personality of an entrepreneur, such as lack of confidence, lack of consideration, lack of persistence and an unawareness of financial risks, could lead to failure in the establishment of the new business by entrepreneurs ignoring the obstacles. Many studies show that the personality of an entrepreneur can more effectively predict the success or failure of a business than the invested industry, the entrepreneurial experience, or the age and gender of the entrepreneurs [35]; [4]; [23]; [24].

Lundström et al. [33] also point out that 15-20% of entrepreneurs did not utilize the entrepreneurial resources available during the establishment of their business, such as information on laws and regulations, taxation, finances and technology. On many occasions, entrepreneurs are less willing to use the resources because of their preconceptions [30]. Zhao et al. [3] further believe that in the process of counseling and training activities, more efforts should be made to understand the personality of the entrepreneurs. Taticchi et al. [26] holds that entrepreneurial competitiveness lies in the utilization of resources, such as strategic partners, and network technology to create value, rather than the type of industry or company. Wu [7] believes that the unique method of allocation of entrepreneurial resources for entrepreneurs determines the development and the establishment of businesses.

In addition to the personality of entrepreneurs, Eileen et al. [16] also believed that to strengthen the understanding and counseling activities, entrepreneurial experience is quite significant. Karunanithy, K., & Jeyaraman, S. [25] point out that entrepreneurial counseling activity are vital necessities that can improve entrepreneurial performance and enhance entrepreneurial abilities. Due to their lack of management knowledge, the chance of failure for these entrepreneurs is increasing. Therefore, the attitude of entrepreneurs towards the resources on offer affects their entrepreneurial performance. Karunanithy, K., & Jeyaraman, S. [25] also point out that through appropriate counseling activities, entrepreneurs are encouraged to discover their own abilities and goals. However, the reality is that the importance of entrepreneurial counseling activities is rarely highlighted. In addition, Mello [36] point out that comparative researchers have increasingly turned to Qualitative Comparative Analysis (QCA) and fuzzy sets as analytic tools for social scientific inquiry. Schneider, C. Q., & Wagemann, C. [27] believe that QCA offers the most systematic way to analyze complex causality and logical relations between causal factors and an outcome. Legewie [31] further believe that advantages of using qualitative comparative analysis (QCA) due to many theoretical models and research questions in the social sciences, at least implicitly, draw on set-theoretic notions by assuming that there are conditions that are necessary or sufficient for the occurrence of a given phenomenon. Vis [21] comparative advantages of fs/QCA and Regression analysis for studies with a moderately large-n(50-100) research and believe that fs/QCA leads to a better understanding of the conditions under which the outcome occur. Therefore, this study uses fs/QCA and regression analysis with a large-n(>200) research and plans to explore whether a combination of entrepreneurial resources and entrepreneurial personality are available, entrepreneurial counseling activities can be yielded.

2 Literature Review

2.1 Entrepreneur Personality Trait

Personality is the consistent response attitude for individuals in the face of different scenarios. Allport [1], Cattell [10] and Costa [9] believe that personality is a permanent and unique function of individuals when compared with others. That is to say, personality is the comprehensive performance recognition of individuals, emotional expression and behavioral mode that distinguishes individuals from all others [28]. Personality constructs the unique recognition of individuals and the external behavioral mode. However, humans have the most important behavioral performance. Therefore, personality traits are quintessential for the enterprise [28].

Allport [1] classified personality into three types: 1. Prime personality: refers to the strongest personality trait that shows individual behavior; 2. Key personality: constructs the core of the personality; 3. Secondary personality trait: refers to some personality traits demonstrated in various scenarios. [10] utilized factor analysis to conclude a 16 personality factor scale (called 16PF), which is the basis for the Big Five Factor Model. In 1981, it was named formally by Goldberg as the Big Five Factor Model. Furthermore, [9] summarized them into five personality factors, which is the five-factor model of personality (OCEAN) universally accepted by psychologists in recent years.

These five personality traits are as follows: Openness to experiences: 1. Broad-minded, bold, adventurous, unfamiliar with routine formalities; 2. Conscientiousness: cautious, careful, considerate, responsible, organized, planned, diligent and sense of success; 3. Extraversion: sociable, gregarious, talkative, and active; 4. Agreeableness: courteous, flexible, trustful, kind and cooperative; and 5. Emotional stability: low self-esteem, nervousness, overly worried, insecurity, poor control of their emotions, depressive, frustrated, sense of guilt, irrational, mental and physical distress, and invalid behavioral responses [22].

Many scholars have questioned whether the number of extracted personality factors was one rather than five, or if the theoretical basis was not solid. Based on various studies, the Big Five Factor Model of personality not only has reliability and validity, but also constantly improves the measurement and verification of different cultures. The complexity, reliability, and predictive validity of the Big Five Factor Model are much more complete than for other personality research. Furthermore, it can be extensively applied in organizational management, clinical practices and other empirical research fields [35]; [2]. In many literatures, a large emphasis is placed on the personality traits of entrepreneurs, especially the fact that there is significant correlation between the personality of entrepreneurs and business performance [37]; [35]. Based on this fact, this study adopts the Big Five Factor Model to conduct research.

2.2. Entrepreneur Resources

Srivastava et al. [34] believe that resources are defined as "market-based assets" and also defined as "the resources generated by the interaction between internal and external environment in enterprises and could create values for customers and financial values". Enterprises resources into three types: the first type is Physical Capital Resources (PCR) consisting of the utilization of practical technologies; the second type is Human Capital Resources (HCR) and includes experience, intelligence counseling activities, relationship,

and personal management insight; the final one is Organizational Capital Resources (OCR) and contains formal and informal planning, the non-formal relationship inside the company and the relationship between the company and the external environment. [20] proposed resource-based theory and believed that the profitability of companies relies on their attractiveness and competitive advantages. The basis for the competitive advantages comes from their resources.

In recent years, in the study of entrepreneurial management, resources have been developed as the key factor determining whether the company will acquire success or not [29]. Entrepreneurial resources are the tangible and intangible resources that can offer the biggest assistance with laws and regulations for entrepreneurs with the minimum effort. These could assist in offering taxation reduction and various financial resources, technologies, the utilization of labor forces, and entrepreneurial counseling activities [11], [12]; [32]; [15]. In particular, in the early stage of a new business, intangible assets, such as technology and management, etc. are much more important than tangible assets [32].

3 Methodologies

In response to the previous research goal, this study focuses on the study of the influence of the personality traits of entrepreneurs and entrepreneurial resources on entrepreneurial counseling activities and regards the demographic variable as the moderating variable. This study applied fuzzy set qualitative comparative analysis (fs/QCA) to examine proposed arguments. Unlike traditional statistics which detects patterns of relationships between variables, fs/QCA focuses on examining the configurations of cases that constitute the rows of a data matrix [6]. This method provides researchers a huge opportunity to explore or re-exam some previously neglected or disproved relationship/arguments. The current study would like to use a traditional statistic method (i.e., regression) to test the relationships between variables first, and then apply fs/QCA on the same set of data to validate the proposed arguments.

3.1 Research Hypotheses

In response to the previous chapters, in the entrepreneurial process, referral can be made to the utilization of entrepreneurial resources, and the acceptance of entrepreneurial counseling activities. On many occasions, due to personal preconception, entrepreneurs are less willing to utilize entrepreneurial resources [30]. One of the entrepreneurial resources is. Therefore, the attitude of an entrepreneur toward entrepreneurial counseling activities is probably affected by their personality traits. It deduces that the traits of the Big Five Factor Model could affect entrepreneurial counseling activities. Hypothesis 1 is proposed.

H1: The personality traits of entrepreneurs have a significant influence on entrepreneurial counseling activities.

In order to achieve the entrepreneurial goal, tangible and intangible assets that play key roles can be used. In response to previous chapters, the vast array of entrepreneurial resources, such as the degree of entrepreneurial management, various financial resources, technology, utilization of labor force, and entrepreneurial counseling activities, can affect entrepreneurial performance. Fischer, E., & Reuber, A. R. [18] believe that

entrepreneurial counseling activities could affect the ideas of entrepreneurs regarding entrepreneurship. O'Connor [42] holds that from the long-term perspective, entrepreneurial counseling activities are the best assistance available in the entrepreneurial process. In summary, in the entrepreneurial process, entrepreneurial resources can affect entrepreneurial counseling activities. Therefore, hypothesis 2 is proposed.

H2: Entrepreneurial resources have a significant influence on entrepreneurial counseling activities..

Based on H1 and H2, the study further explores whether or not the personality of entrepreneurs can mutually affect the attitude of entrepreneurial resources. Therefore, hypothesis 3 is proposed.

H3: Personality traits and entrepreneurial resources have a significant influence on entrepreneurial counseling activities.

Ellehausen et al [17] hold that demographic variables will affect the attitude toward and willingness to accept entrepreneurial counseling activities. As the previous studies have shown, the personality of entrepreneurs can more effectively predict the success or failure of entrepreneurship than the invested industry, entrepreneurial experience or the age and gender of the entrepreneurs [35]; [4]; [23]; [24]. Furthermore, demographic variables, such as age, gender, working experience, and entrepreneurial aptitude can affect entrepreneurial counseling activities. Therefore, hypothesis 4 is proposed.

H4: Demographic variables have a significant influence on entrepreneurial counseling activities.

As the proposed hypotheses have shown, personality traits and entrepreneurial resources can affect entrepreneurial counseling activities. However, due to different backgrounds and recognition, the influence is different. Therefore, the influence of personality traits on entrepreneurial counseling activities can be interfered by demographic variables and different results are generated. In other words, demographic variables have moderating effects on entrepreneurial counseling activities. Therefore, hypothesis 5 is proposed.

H5: The personality traits of entrepreneurs have moderating effects because of the demographic variables and have a significant influence on entrepreneurial counseling activities.

In other words, from the perspective of resources, due to different personal backgrounds and recognition, entrepreneurs are different. Therefore, the influence of entrepreneurial resources on entrepreneurial counseling activities can be affected by demographic variables, which generate different results. In other words, demographic variables have moderating effects on entrepreneurial counseling activities. Therefore, hypothesis 6 is proposed.

H6: Entrepreneurial resources have a significant influence on entrepreneurial counseling activities through the moderating effects of demographic variables.

Combining the deductions of hypotheses 5 and 6, different results are generated due to the different moderating effects of personality traits and entrepreneurial resources. In other words, there are moderating effects from the demographic variables on the counseling activities mechanisms. Therefore, hypothesis 7 is proposed.

H7: Entrepreneurial resources have a significant positive influence on entrepreneurial counseling activities through the moderating effects of demographic variables.

3.2 Research Framework

Based on the research hypotheses of the previous chapter, this study proposes a research framework as follows:

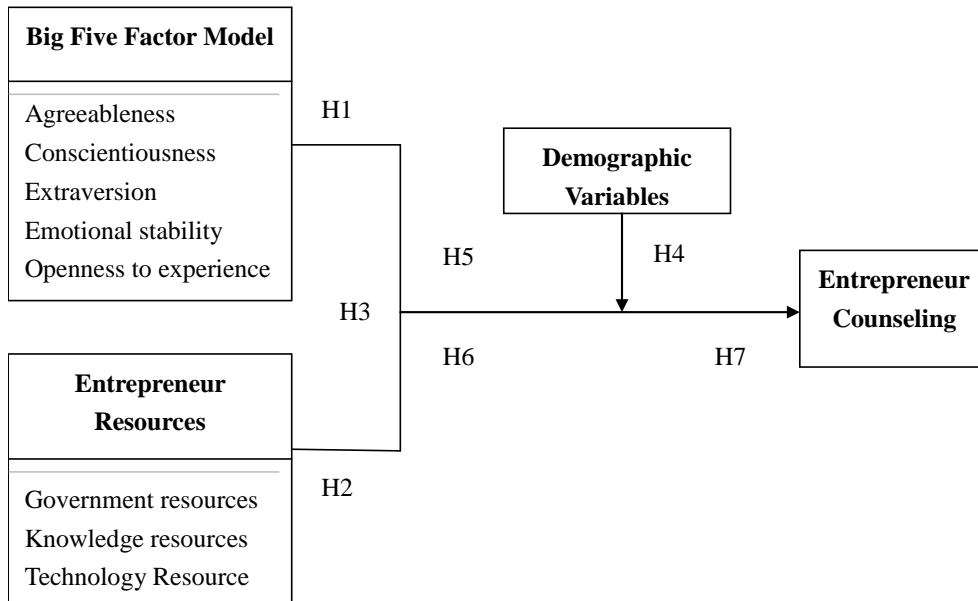


Figure 1 : Conceptual Framework

3.3 Sample and Data Collection

Based on the entrepreneurs of the Association of Taiwanese Chain and Franchise Promotion, this study adopts those entrepreneurs on the Phoenix Ventrue plan (issued by the Council of Labor Affairs, Executive Yuan) as the test samples. 419 questionnaires were distributed on the job website between Dec 2012 to April 2013, of which 268 copies were returned. 40 invalid copies were subsequently removed so the number of valid questionnaires is 228. The effective response rate is 54%.

3.4 Measurement

In this research framework, the dependant variable is entrepreneurial counseling activities and the interdependent variables are personality traits and entrepreneurial resources. The operational definition of the variables and the measurement tools are illustrated as follows:

3.4.1 Entrepreneur Personality Trait

Entrepreneur personality traits in this study refer to the capabilities of risk-taking, constancy, creativity and adjustment, response to changes in the face of uncertainties and risks and learning abilities from difficulties [8]. Based on [9], this study offers suggestions for the constructs of personality traits so as to develop a scale measuring the constructs of entrepreneur personality trait. There were 23 items and a Likert five-point scale was adopted. When the value is higher, its importance is agreed with more, and vice versa, with values ranging from 1 point to 5 points. The value of KMO (Kaiser-Meyer-Olkin) in the Entrepreneur Personality Trait Scale is 0.780, and the P value of Bartlett's spherical test is less than 0.01. After the principal component analysis of EFA (exploratory factor analysis), the value of the characteristics is more than 1. Five factors are extracted and the accumulated interpreting variable is 58.609%. Orthogonal rotations were then adopted to make sure there was no correlation among the factors and that the absolute value of the loads of the factors for each item was more than 0.5. Additionally, when the absolute value of the loads of the factors that do not belong to other items is less than 0.4, these items can be deleted, and constructs can be acquired under the efficiency principle. At present, there are a total of 19 items in the scale, of which 4 items of factor 1 are relevant to agreeableness, named as Entrepreneurial Agreeableness ($\alpha=0.669$); 5 items of factor 2 are relevant to conscientiousness, named as Entrepreneurial Conscientiousness ($\alpha=0.859$); 4 items of factor 3 are relevant to extraversion, named as Entrepreneurial Extraversion ($\alpha=0.811$); 3 items of factor 4 are relevant to emotional stability, named as Entrepreneurial Emotional Stability ($\alpha=0.731$); and 3 items of factor 5 are relevant to openness experience, named as Entrepreneurial Openness Experience ($\alpha=0.723$). The comprehensive value of Cronbach's α is 0.665, which is not in line with the previous perspective of DeVellis [14] and where the coefficient is over 0.65. Therefore, the results are basically in the range of high level of reliability, which proves a certain degree of stability and internal consistency (see table 1).

Table 1 : Factor Structure of Big Five Factor Model

Item	Factor1	Factor2	Factor3	Factor4	Factor5
Big Five Factor Model					
Agreeableness					
1.I always have a good time to work with others.	0.727	0.236	-0.088	-0.172	-0.025
3.I am a understanding person.	0.712	-0.005	0.136	0.039	-0.147
2.I always put myself in others' shoes.	0.642	0.236	-0.137	-0.255	0.110
5.I have a way with people.	0.542	0.230	0.229	-0.078	0.041
Conscientiousness					
7.No matter what I do, a good method is my key.	0.300	0.784	0.085	-0.056	0.039
9.I always prodding myself to reach my goal on time.	0.058	0.766	0.214	-0.012	0.035
10.I am very systematic in my clear aim.	0.085	0.735	0.251	-0.046	0.010
8.I always try my best to reach my goal.	0.182	0.714	0.221	0.034	0.172
6.I always promote myself-development.	0.327	0.674	0.185	0.095	0.093
Extraversion					
13.I always have a good many friends.	0.076	0.076	0.820	0.028	0.012
12.I have a positive attitude towards made friends with everybody.	-0.046	0.200	0.810	-0.112	-0.054
11.I like talking with anybody.	-0.015	0.346	0.733	0.002	0.132
15.I am a dynamo of energy.	-0.010	0.324	0.594	-0.218	0.260
Emotional stability					
17.I often get the jitters.	0.049	0.003	0.074	0.866	-0.097
19.I often envious of other's success.	-0.213	-0.153	-0.231	0.719	0.029
18.I often fly into a rage.	-0.218	0.080	-0.242	0.714	-0.015
Openness to experience					
22.I am very smart.	-0.011	0.186	0.065	-0.039	0.808
21.I am full of curiosity.	-0.007	0.084	0.004	0.064	0.757
23.I would be in touch with new things.	0.139	-0.003	0.159	0.096	0.753
Eigenvalues					
	5.833	2.511	2.113	1.847	1.177
Cronbach's α					
	0.669	0.859	0.811	0.731	0.723

3.4.2 Entrepreneur Resources

Entrepreneur resources in this study refer to the fact that entrepreneurs seek tangible and intangible assets to play key roles to help entrepreneurs achieve goals. Based on the perspective of entrepreneur resources, as proposed by Lichtenstein and Brush [32] and Dollingers [15], the measurement tool for entrepreneur resources is adopted in this study. With the help of the empirical experience of entrepreneur counseling activities, 11 items were concluded. A Likert five-point scale is used for measurement as, when the value is higher, its importance is more agreed, and vice versa, with value ranges from 1 point to 5 points. The value of KMO (Kaiser-Meyer-Olkin) in the Entrepreneur Resources Scale is 0.829, and the P value of the Bartlett's spherical test is less than 0.01. After the principal

component analysis of EFA (exploratory factor analysis), the value of the characteristics is more than 1; three factors are extracted and the accumulated interpreting variable is 70.364%. Orthogonal rotations are then adopted to make sure there is no significant correlation between the factors and that the absolute value of the loads of the factors for each item are more than 0.5.

Table 2 : Factor Structure of Entrepreneurial Resources

Item	Factor1	Factor2	Factor3
Government resources			
1.Government provides funding assistance to obtain concessions	0.811	0.150	-0.092
2.Government assistance counseling entrepreneurs.	0.795	0.188	0.053
3.Government to construct an efficient business environment	0.748	0.222	0.287
Technology resources			
10.Entrepreneur on the degree of attention processes electronic systematic.	0.263	0.837	0.151
11.Entrepreneurs on the importance of human resource management.	0.140	0.831	0.138
9.Entrepreneurs feelings on the use of the Internet community.	0.166	0.747	0.305
Knowledge resources			
7.Entrepreneurs feelings of management knowledge acquisition	0.058	0.293	0.860
6.Entrepreneurs feelings of entrepreneurs knowledge acquisition.	0.199	0.224	0.821
Eigenvalues	4.924	1.156	1.660
Cronbach's α	0.784	0.821	0.863

When the absolute value of the loads of the factors that do not belong to other items are less than 0.4, constructs can be acquired under the efficiency principle. Consequently, 3 items of factor 1 are relevant to Government Resources, named Government Resources ($\alpha=0.784$); 3 items of factor 2 are relevant to Technology Resources, named as Technology Resources ($\alpha=0.821$); and 2 items of factor 3 are relevant to Knowledge Resources, namely Knowledge Resources ($\alpha=0.863$). The overall Cronbach's α is 0.873, which is in line with the previous perspective of Bland & Altman [5] who stated that the coefficient is over 0.7. Therefore, the results are in the range of high level of reliability, which approves a certain degree of stability and internal consistency (see table 2).

3.4.3 Entrepreneur Counseling activities

Entrepreneurial counseling activities in this study refer to those entrepreneur counseling activities that could enhance the knowledge and skills of entrepreneurs to reduce risks and uncertainties. Based on the perspective of entrepreneurial resources proposed by Nagesh, Narasimha and Murthy [41], the measurement tool for entrepreneurial resources is adopted in this study. With the help of the empirical experience of entrepreneur counseling activities, 6 items were concluded. A Likert five-point scale was used for measurement as when the value is higher, its importance is more agreed, and vice versa, with values ranging from 1 point to 5 points. The value of KMO (Kaiser-Meyer-Olkin) for the entrepreneurial counseling activities scale is 0.912, and the P value of Bartlett's spherical test is less than 0.01. After the principal component analysis of EFA (exploratory factor analysis), the value of the characteristics is more than 1. One factor is

extracted and the accumulated interpreting variable is 71.093%. Orthogonal rotations are then adopted to ensure there is no correlation among the factors and the absolute value of the loads of the factors for each item is more than 0.5. In addition, when the absolute value of the loads of the factors that do not belong to other items is less than 0.4, constructs can be acquired under the efficiency principle. Six items of factor 1 are relevant to the Counseling Activities System ($\alpha=0.913$), which is in line with the previous perspective of Bland & Altman [5] and where the coefficient is over 0.7. Therefore, the results are primarily in the range of high level of reliability, which approves a certain degree of stability and internal consistency (see table 3).

Table 3 : Factor Structure of Entrepreneurial Counseling Activities

Item	Factor1
Entrepreneur Counseling	
1. Consultants to assist the entrepreneurs for the product design.	0.875
2. Consultant training entrepreneurs on business management.	0.881
3. Consultants counseling entrepreneurs to market their products.	0.878
4. Consultants counseling entrepreneurs on financial accounting	0.890
5. Consultants counseling entrepreneurs on potential location..	0.851
6. Consultants counseling entrepreneurs about business plan writing.	0.661
Eigenvalues	4.226
Cronbach's α	0.913

4 Research Result

We conduct an analysis first by regression analysis and then fuzzy-set qualitative comparative analysis (fs/QCA) to examine the conditions of such hypothesis.

4.1 Regression Analysis

H1 proposed that, in this study the Big Five Factor Model has a significant influence on entrepreneurial counseling activities. After regression analysis, as Table 4.4 shows, agreeableness in Model 1 has significant moderating effects. For the Big Five Factor Model, besides emotional stability, there is a significant positive relationship among the other factors. After having been adjusted, R2 is now 0.044. In terms of entrepreneur resources, government resources, technology resources, and knowledge resources all have a separate but ancient significant moderating effect.

As the previous analysis shows, construct factors are extracted to conduct a regression analysis. The results are shown in the following table. In terms of the construct of personality trait, the factor of agreeableness has achieved significant level, therefore, H1 is approved to be true. The comprehensive adjusted R2 is 0.044, and the F-Value is 3.112. In terms of the construct of entrepreneur resources, Government resources, Technology resources, and Knowledge resources have all achieved a significant level. Therefore, H2

is approved to be true. The comprehensively adjusted R² is 0.382, F-Value is 47.797. Personality traits and entrepreneur resources were all taken into the discussion, indicating that obvious personality traits have not achieved a significant level at all; only the three factors of government resources, technology resources, and knowledge resources have achieved a significant level.

Table 4 : Results of VIF Analysis

Item	Entrepreneur Counseling					
	β value	t value	VIF	R ²	Adjusted R ²	F-value
Big Five Factor Model						
Agreeableness	0.183*	2.458	1.313			
Conscientiousness	0.015	0.181	1.635			
Extraversion	0.031	0.402	1.390			
Emotional stability	-0.106	-1.544	1.119			
Openness to experience	0.034	0.503	1.077			
				0.065	0.044	3.112
Entrepreneur Resources						
Government resources	0.365	6.325	1.226			
Technology resources	0.232	3.671	1.470			
Knowledge resource	0.203	3.345	1.347			
				0.390	0.382	47.797

Hair, et al(1998) : VIF<10

The comprehensive adjusted R² is 0.378, and the F-value is 18.261. Therefore, H3 is partially approved to be true. In terms of demographic variables, age and entrepreneur working experience have achieved a significant level. Therefore, H4 is approved to be true. The comprehensive adjusted R² is 0.045 and the F-value is 2.803 (see table 4). In model 5, in terms of personality traits, this study regards the demographic variable as a moderating variable and the results are not significant.

Table 5 : Results of Regression Analysis

Explanatory Variable	Dependent Variable : Counseling System						
	Model 1	Model 2	Model 3	Model 4	Model 5	Model 6	Model 7
	β value	β value	β value	β value	β value	β value	β value
Demographic Variable							
Gender				0.181			
Age				0.004			
Education				0.253			
Work experience				0.537			
Entrepreneur experience				0.021			
Type of industry				0.412			
Big Five Factor Model							
Agreeableness	0.015*		0.404		0.115		1.105
Conscientiousness	0.857		0.562		0.920		-0.877
Extraversion	0.688		0.451		0.280		0.184
Emotional stability	0.124		0.810		0.842		1.110
Openness to experience	0.615		0.140		0.503		0.215
Entrepreneur Resources							
Government resources		0.000***	0.000***			0.000	0.000
Technology resources		0.000***	0.000***			0.135	0.137
Knowledge resource		0.001***	0.001***			0.001	0.001
R ²	0.065	0.390	0.400	0.071	0.354	0.553	0.562
Adjusted R ²	0.044	0.382	0.378	0.045	0.204	0.459	0.446
F-value	3.112	47.797	18.261	2.803	2.359	5.876	4.825

*: p < .05; **: p < .01; ***: p < .001

Therefore, the entrepreneur counseling activities mechanism did not have a moderating effect. The comprehensively adjusted R² is 0.204, and the F-Value is 2.359; In model 6, in terms of entrepreneurial resources, this study regards the demographic variables as the moderating variable, and the results show that government resources and knowledge resources have significant effects. Hence, they have moderating effects on entrepreneurial counseling activities. The comprehensive adjusted R² is 0.459 and the F-value is 5.876. In model 7, the study takes personality traits and entrepreneurial resources into discussion to verify whether there are moderating effects through the demographic variables and whether there is a positive significant influence. Similarly, in terms of age and entrepreneurial experience, they have achieved a significant level, and the comprehensive adjusted R² is 0.446, and the F-value is 4.825. Therefore, H7 is partially approved to be true (see table 5).

4.2 Fuzzy Set Qualitative Comparative Analysis

The key to the usage of fs/QCA is, for a social science phenomenon or event, whether or not factor X is the causal condition of result Y and what combination of factors produces a result for this phenomenon or event? In other words, the main focus of fs/QCA is to explain how to produce a result, which is different from most regression analysis whose focus is on the understanding of whether or not factor X affects the result of Y [19]. A basic assumption of fs/QCA is that a complex causal relationship is involved with a social phenomenon. This complex causality consists of the following scenarios: to begin with, some factors are mutually integrated and can lead to the generation of an event or phenomenon. In addition, a different combination of some factors can lead to the generation of an event or phenomenon. Furthermore, some factors are probably mutually integrated with other factors and this can lead to the generation of the contrary effects of an event or phenomenon [38].

We describe appropriate procedures for the key aspects of the empirical evaluation of sufficiency condition hypotheses: determining whether X is a sufficiency condition for Y. In fs/QCA, two central measures provide parameters of fit: consistency and coverage [43]. Ragin suggests that a configural model should achieve a consistency ≥ 0.80 to be useful [13]. When testing conditions for their necessity, remember that the threshold for consistency should be high (>0.9) and its coverage should be high (>0.5) [43]. Hence, it is important to further assess coverage for conditions with high consistency, since the identification of a necessary condition with low coverage values is unlikely to yield inferential leverage [36]. A very useful exploratory tool is the XY plot [27]. The XY plot serves as a tool for quick inspection of set relations between causal (combinations of) conditions and the outcome. The XY plot indicates whether necessary or sufficient relations exist between some of the causal conditions. The numbers in the lower right and the upper left corner of the graph indicate consistency and coverage. If the upper left number is close to 1.0, this indicates sufficiency; a number close to 1.0 in the lower right corner indicates a necessary condition.

Regression analysis and fs/QCA are built on two different logics. Fs/QCA uses set theory to evaluate necessary or sufficient configurations of conditions that lead to an outcome. Regression analysis statistically evaluates the impact of an independent variable on a dependent variable. Fs/QCA hypotheses test for necessary conditions and sufficient combinations of conditions, the regression hypotheses focus on the average effect of individual variables or interactions [21]. Therefore, this study introduces a new hypothesis into the fs/QCA model instead of the seven hypothesis used before.

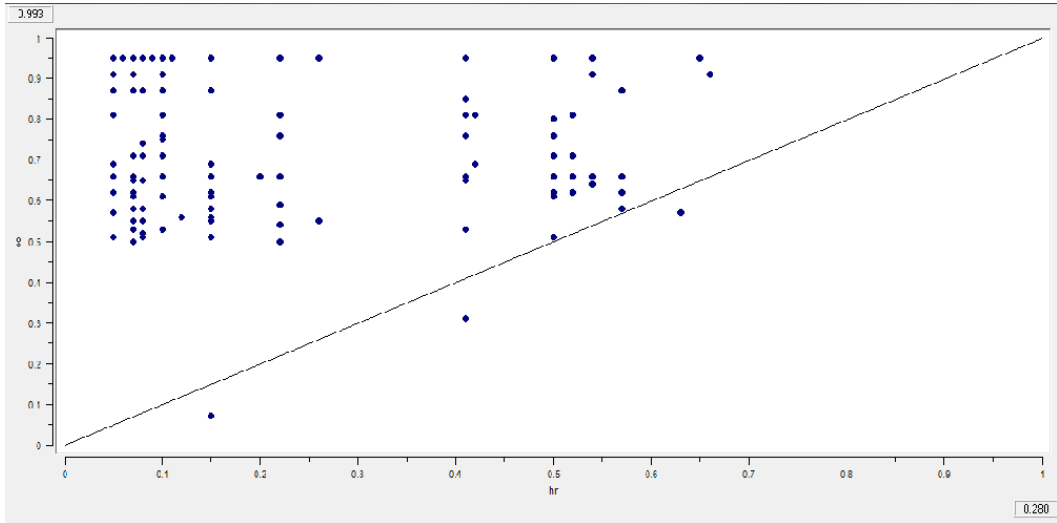


Figure2 : Results of hypothesis 1 by fs / QCA

On the above basis, hypothesis 1 is proposed: entrepreneur personality is a sufficiency condition for entrepreneurial counseling activities. The findings for consistency (0.993) and coverage (0.280) indicate that the model is useful (see Figure2).

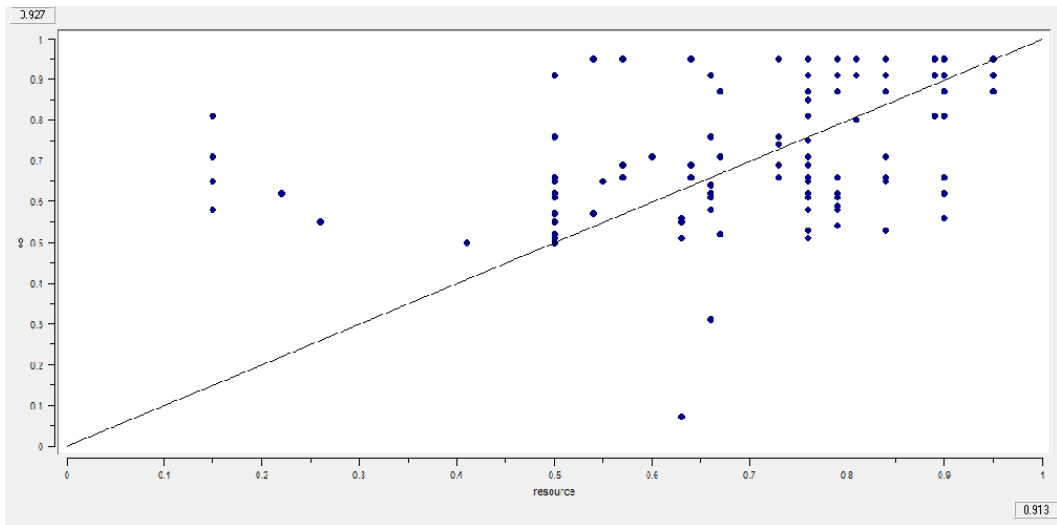


Figure 3 : Results of hypothesis 2 by fs / QCA

Such as above, hypothesis 2 is proposed: entrepreneur resource is a sufficiency condition for entrepreneurial counseling activities. The findings for consistency (0.927) and coverage (0.913) indicate that the model is useful (see Figure3).

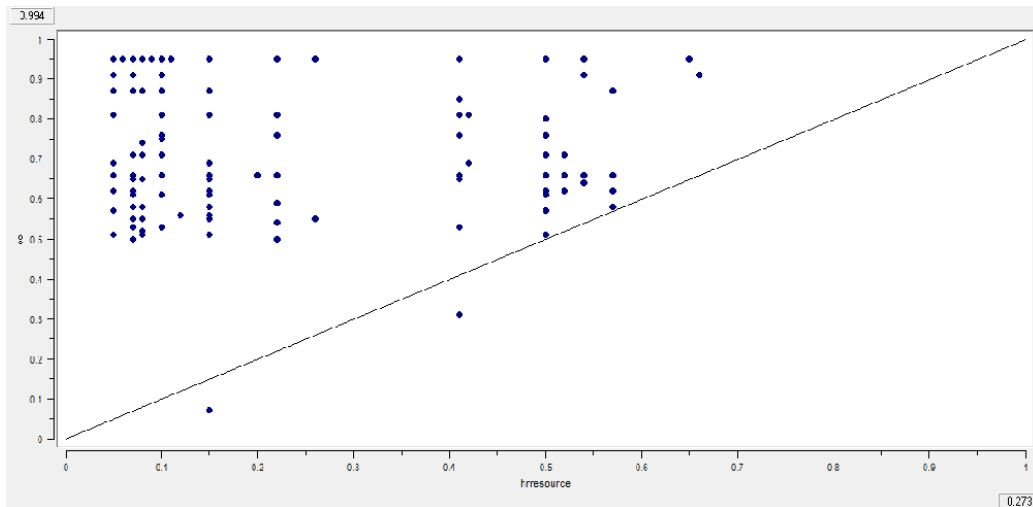


Figure 4 : Results of hypothesis 3 by fs / QCA

Such as above, hypothesis 3 is proposed: the combination of entrepreneur personality and entrepreneur resources are the sufficiency condition for entrepreneurial counseling activities. The findings for consistency (0.994) and coverage (0.273) indicate that the model is useful. (see Figure4) .

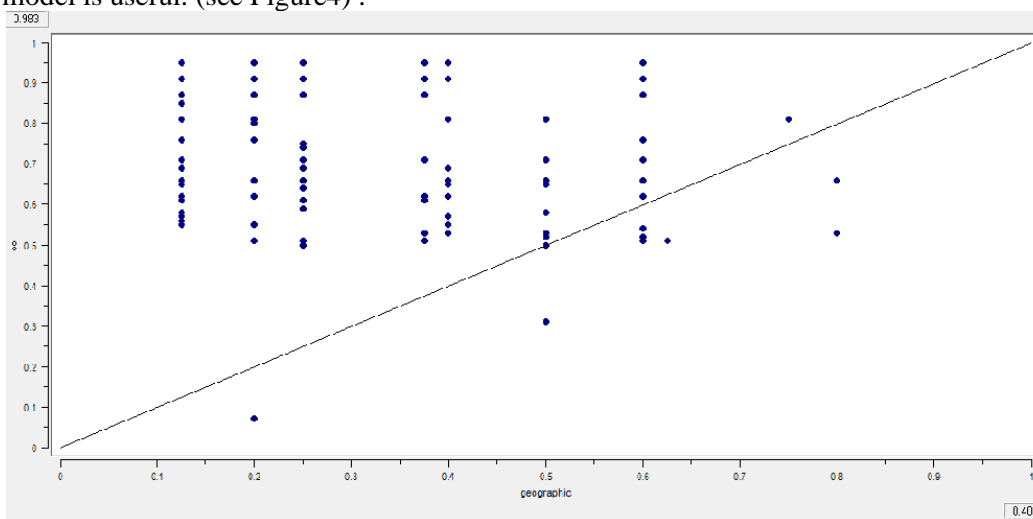


Figure 5 : Results of hypothesis 4 by fs / QCA

Hypothesis 4 is proposed: demographic variable is a sufficiency condition for entrepreneurial counseling activities. The findings for consistency (0.983) and coverage (0.405) indicate that the model is useful (see Figure 5).

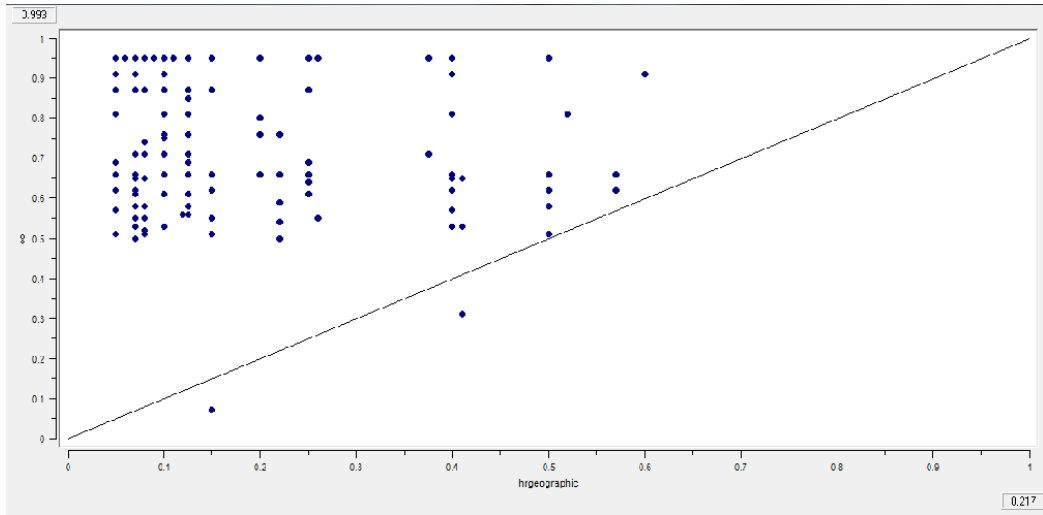


Figure 6 : Results of hypothesis 5 by fs / QCA

Hypothesis 5 is proposed: the combination of entrepreneur personality and demographic variable are the sufficiency condition for entrepreneurial counseling activities. The findings for consistency (0.993) and coverage (0.217) indicate that the model is useful (see Figure 6).

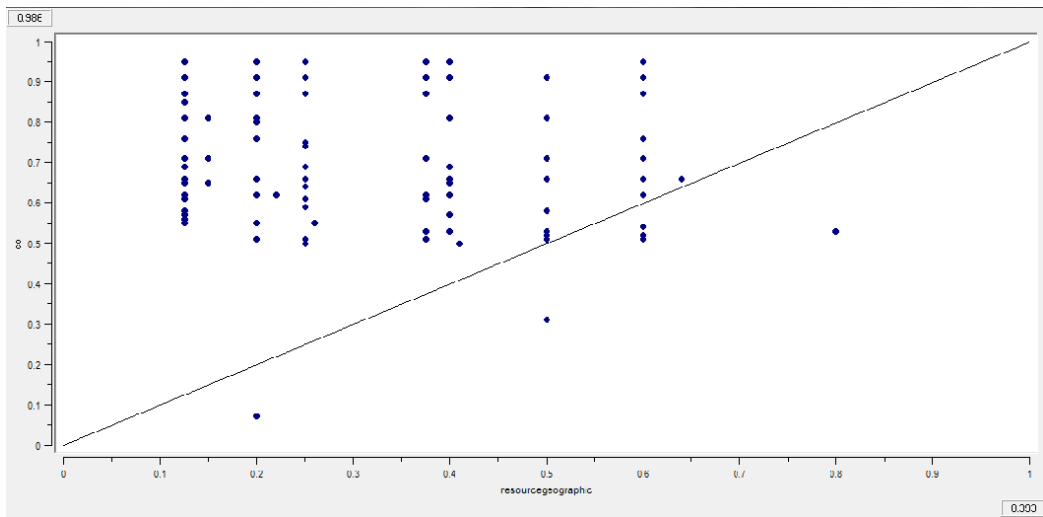


Figure7 : Results of hypothesis 6 by fs / QCA

Hypothesis 6 is proposed: the combination of entrepreneurial resources and demographic variable are the sufficiency condition for entrepreneurial counseling activities. The findings for consistency (0.986) and coverage (0.393) indicate that the model is useful (see Figure7).

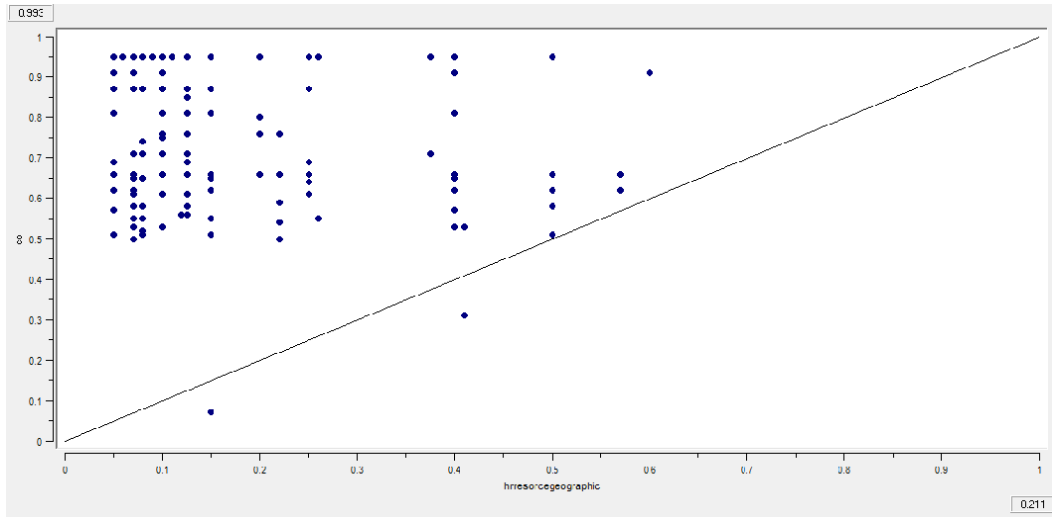


Figure 8 : Results of hypothesis 7 by fs / QCA

Hypothesis 7 is proposed: the combination of entrepreneurial resources, entrepreneur personality and demographic variable are the sufficiency condition for entrepreneurial counseling activities. The findings for consistency (0.993) and coverage (0.211) indicate that the model is useful (see Figure8).

5 Discussions

In the above study, we adopted regression analysis to testify the significant influence of entrepreneurial resources, entrepreneur personality and demographic variable on entrepreneurial counseling activities. The empirical results of this study show that personality traits have a significant influence on entrepreneurial counseling activities. This study further explores the perspective proposed by Zhao et al [3]. In the process of entrepreneur counseling activities, we should first understand the personality traits. Zhao et al. [3] believe that consciousness, emotional stability and openness to experience will affect entrepreneurship. Our study further clarifies the relationship between entrepreneurial counseling activities and personality traits and approves that personality traits have a significant influence on entrepreneurial counseling activities, in which the influence of agreeableness has achieved a significant level. It indicates that the degree of recognition for the importance of entrepreneurial counseling activities is relatively high. Therefore, those entrepreneurs with flexibility, trust, agreeableness, and willingness for cooperation have relatively more willingness to accept entrepreneur counseling activities. This result could be given to related government organs to encourage further understanding regarding the personality traits of entrepreneurs in the unitization of entrepreneurial resources, which is conducive for the acquisition of information on the degree of satisfaction with governmental issues. For entrepreneurs, in terms of making decisions, those entrepreneurs who have the willingness or more flexibility and intention for cooperation with the outside have more chances to acquire external resources and entrepreneur counseling activities which could assist entrepreneurship inside and reduce risks in failure.

In terms of demographic variables, the age and working experience of entrepreneurs have a significant influence on entrepreneurial counseling activities, which is in line with the perspective of Elliehausen et al [17]. This states that demographic variables can affect the attitudes of entrepreneurs toward entrepreneurial counseling activities and the willingness to accept counseling activities or not. It is approved to be true by the empirical results. After the ANOVA analysis, this study found that these entrepreneurs, aged from 30-40 and from 50 to 60, place great emphasis on entrepreneurial counseling activities.

It probably leads to the following 'conclusion' that those entrepreneurs aged from 30 to 40 place more emphasis on entrepreneurial counseling activities to close the gap of knowledge that has arisen due to the lack of their working experience or entrepreneurial experience. For those entrepreneurs aged from 50 to 60, they probably have more work experience, but they are more willing to accept entrepreneurial counseling activities to reduce the risks in failure and place more emphasis on the influence arising from entrepreneurial counseling activities. In summary, the content of entrepreneur counseling activities and training policies are not in line with the customized needs of entrepreneurs. Therefore, with regard to entrepreneur counseling activities, in order to know more about the ideas of entrepreneurs, those entrepreneurs with agreeable personality traits aged from 30 to 40 and from 50 to 60 could be studied first because of their preference towards entrepreneurial counseling activities, then related administrative responses and related correction of those related policies could be acquired.

In terms of entrepreneur resources, the three factors of government resources, technology resources, and knowledge resources have achieved a significant level, which indicates that entrepreneurial resources have a significant influence on entrepreneur counseling activities. This study which is in line with the perspective of Fischer, E., and Reuber, A. R. [18] who stated that when the degree of emphasis is on the importance of entrepreneurial resources, the degree of recognition for the importance of entrepreneur counseling activities is also relatively higher. Specifically speaking, when an entrepreneur places more emphasis on entrepreneur resources, they will attract more attention to the influence of entrepreneur counseling activities and the establishment of businesses. It not only recognizes all possible problems and the gap in entrepreneurial resources in the existing entrepreneurship, but also tries to seek out new methods and solutions with the help of entrepreneur counseling activities to solve the issue of resources. Those individuals with relatively rich entrepreneurial resources will not only have an effective response to the market changes, but also their knowledge of entrepreneurship will also offer the enhancement of products or services, which can be used extensively in the entrepreneur fields.

In terms of entrepreneurial resources, this study regards demographic variables as a moderating variable and the results show that government resources and knowledge resources have significant effects. H6 is partially approved to be true, which indicates that there is an moderating effect of demographic variables on entrepreneurial counseling activities. Therefore, entrepreneurial resources, based on the influence of demographic variables on entrepreneurial counseling activities, embody the influence of entrepreneurial resources on entrepreneurial counseling activities. When we consider that the factor of the personal background of entrepreneurs also injects some influence, the policy implications are also in line with the previous statements. When governments offer counseling activities to those entrepreneurs, they have to start by attention on demographic variables. For example, the involvement of entrepreneurs aging from 30 to 40 and those from 50 to 60 could revise appropriately related counseling activity policies and enhance the degree

of satisfaction towards administration.

Personality traits and entrepreneurial resources are taken into consideration to verify the moderating effects of the demographic variables. It also produces a significant positive influence. H7 is also partially approved to be true, indicating that there are moderating effects from the demographic variables on entrepreneurial resources, and personality traits on entrepreneurial counseling activities. Therefore, this study concludes that personality traits and entrepreneurial resources will have an influence on entrepreneur counseling activities through demographic variables and it shows the influence of personality traits and entrepreneurial resources on entrepreneurial counseling activities. When we consider that the factor of personal background of entrepreneurs also injects some influence, the policy implications are also in line with the previous statements.

Through fs/QCA, the XY plot indicates sufficient relations exist. If the upper left number is close to 1.0, this indicates sufficiency; a number close to 1.0 in the lower right corner indicates a necessary condition. The results show that there is high causal relevance for entrepreneurial resources, entrepreneur personality, demographic variable and entrepreneurial counseling activities (consistency ≥ 0.80), indicating that a single factor or the combination of two factors have sufficiency for the results. Specifically, when entrepreneurial resources are available, the results (Y) of successful entrepreneurial counseling activities are probably yielded. When those entrepreneurs with agreeable personality traits aged from 30 to 40 and from 50 to 60, the performance of entrepreneurial counseling activities can be created and when the combination of entrepreneurial resources is available and those entrepreneurs with agreeable personality traits aged from 30 to 40 and from 50 to 60, the performance of entrepreneurial counseling activities can be yielded. It is notable that the findings of hypothesis 2 for consistency (0.927) and coverage (0.913) indicate that entrepreneur resource is a necessary condition for entrepreneurial counseling activities. Ragin [43] point out that testing conditions for their necessity, remember that the threshold for consistency should be high (> 0.9) and its coverage should be high (> 0.5). Therefore, entrepreneurial resources highly possible will be the necessarily reason for the production of successful entrepreneurial counseling activities.

In a regression analysis, indicating that obvious personality traits have not achieved a significant level at all, Personality traits and entrepreneur resources were all taken into the discussion, indicating that obvious personality traits have not achieved a significant level at all. However, the fs/QCA analysis results show there is high causal relevance of a combination of entrepreneur personality and entrepreneur resources on entrepreneurial counseling. We further in line with the perspective of Mahoney, J. [39] and Vis, B. [21], that a low correlation between variables does not preclude the existence of relationships of necessity and/or sufficiency.

6 Conclusions

This study's conclusions have more rich implications, and classification means in reference to future researches. This paper fills the gap from previous studies and the results of this study will be helpful for subsequent scholars to conduct deep researches that exploring sufficiency conditions for entrepreneur personality and entrepreneur resources on entrepreneurial counseling activities.

First of all, this study adopted entrepreneurs in Taiwan as samples and the conclusions

acquired are basically in line with the deductions of this paper. In addition, this study, based on the perspective of Zhao et al. [3] stated that entrepreneurial counseling activities could start with the research on personality traits. Furthermore, in line with the perspective of Elliehausen et al [17] who state that demographic variable could affect the attitude of the entrepreneurs towards entrepreneurial counseling activities and their willingness to accept the counseling activities.

This is proven by the empirical results. As per the previous statements, this study is conducive to clarify the implications of the literatures of entrepreneur counseling activities and to acquire the support for an empirical database. Vis [21] further believe that a factor that influences the outcome in only a subset of cases—but some cases nonetheless—becomes invisible in a regression analysis; in fact, it only inflates the variance and deflates the coefficients.

We compare regression analysis and fs/QCA analysis, with fuzzy set analyses to show that set theoretic indices can better capture these varying relationships than correlational measures. The analytical results of fs/QCA can further be used to guide regression analysis for in-depth study. Another form of fs/QCA graphical representation that appears in the reviewed articles is the visualization of hypotheses or the identified pathways towards the outcome [36].

A further aim of this study has been to demonstrate the added value that a fuzzy-set analysis using QCA can bring to the study of methodologies, both in terms of providing a greater understanding of how causes combine to create an outcome. Fs/QCA leads to a fuller understanding of the conditions under which the outcome occurs. We suggests that fs/QCA is a useful method to provide a calculus of compatibility and thus to contribute to an enhanced understanding of entrepreneurial counseling activities.

References

- [1] G.W. Allport, *Pattern and growth in personality*, Rinehart & Winston, New York, 1963.
- [2] J. Allik, and R. R. McCrae, Toward a Geography of Personality Traits Patterns of Profiles across 36 Cultures, *Journal of Cross-Cultural Psychology*, **35**(1), (2004), 13-28.
- [3] H. Zhao, S. E. Seibert, and G. T. Lumpkin, The relationship of personality to entrepreneurial intentions and performance: A meta-analytic review, *Journal of Management*, **36**(2), (2010), 381-404.
- [4] Benz, M. and B. Frey, "Being Independent is a Great Thing: Subjective Evaluations of Self-Employment and Hierarchy," *Economica*, **75**, (2008), 362–383.
- [5] Bland, J. Martin, and Douglas G. Altman. "Statistics notes: Cronbach's alpha." *Bmj* 314.7080 (1997): 572.
- [6] Chang, C. W., T. H. Tseng and A. G. Woodside, Configural algorithms of patient satisfaction, participation in diagnostics and treatment decisions' influences on hospital loyalty, *Journal of Services Marketing*, **27**(2), (2013), 91-103.
- [7] W. W. Wu, A competency-based model for the success of an entrepreneurial start-up, *WSEAS Transactions on Business and Economics*, **6**(6), (2009), 279-291.
- [8] B. Cross, and A. Travaglione, The untold story: is the entrepreneur of the 21st century defined by emotional intelligence? *International Journal of Organizational Analysis*, **11**(3), (2003), 221-228.

- [9] P. T. Jr. Costa, and R. R. McCrae, "Revised NEO personality inventory (NEO-PI-R) and NEO five factor inventory (NEO-FFI) professional manual", Odessa, FL : *Psychological Assessment Resources*, 1992.
- [10] R. B. Cattell, *The Scientific Analysis of Personality*, Baltimore Penguin, 1965.
- [11] L. P. Dana, *Entrepreneurship and venture creation: An international comparison of five Commonwealth Nations*, *Frontiers of Entrepreneurship Research*, Ed. NC Churchill, JA Hornaday, BA Kirchoff, OJ Krasner, and KH Vesper. Wellesley, MA: Babson College, (1987), 573-583.
- [12] L. P. Dana, Saint Martin/Sint Maarten: a case study of the effects of culture on economic development. *Journal of Small Business Management*, **28**(4), (1990), 91-98.
- [13] A. G. Woodside, *Case study research: Theory, methods, practice*, Bingley, UK: Emerald Group Publishing, 2010.
- [14] R.F. DeVellis, *Scale Development, Theory and Applications* Sage, Newbury Park, 1991.
- [15] M. J. Dollingers, *Entrepreneurship: Strategies and Resources (3ed.)*.NJ: Prentice Hall International Inc, 2003.
- [16] Eileen M. Fischer, A. Rebecca Reuber, and S. Dyke Lorraine, A theoretical overview and extension of research on sex, gender, and entrepreneurship, *Journal of Business Venturing*, **8**(2), March 1993, 151–168.
- [17] G.. Elliehausen, E. Christopher Lundquist, and M. E. Staten, The impact of credit counseling on subsequent borrower behavior. *Journal of Consumer Affairs*, **41**(1), (2007), 1-28.
- [18] E. Fischer and A. R. Reuber, Support for Rapid-Growth Firms: A Comparison of the Views of Founders, Government Policymakers, and Private Sector Resource Providers, *Journal of small business management*, **41**(4), (2003),346-365.
- [19] B. Rihoux and C.C. Ragin, *Configurational comparative methods: Qualitative comparative analysis (QCA) and related techniques*, Sage, 2009.
- [20] R. M. Grant, "The resource-based theory of competitive advantage: implications for strategy formulation", *California Management Review*, **33**(3), (1991), 567-586.
- [21] B. Vis, The comparative advantages of fs/QCA and regression analysis for moderately large-N analyses, *Sociological Methods & Research*, **41**(1), (2012), 168-198.
- [22] S. Tok and S. Morali, Trait emotional intelligence, the big five personality dimensions and academic success in physical education teacher candidates, *Social Behavior and Personality: an international journal*, **37**(7), (2009), 921-931.
- [23] A. Hyytinen, P. Ilmakunnas, and O. Toivanen, The return to entrepreneurship puzzle. *Working Paper*, 2008.
- [24] J. Hartog, M. Van Praag, and J. Van Der Sluis, If you are so smart, why aren't you an entrepreneur? Returns to cognitive and social ability: Entrepreneurs versus employees. *Journal of Economics & Management Strategy*, **19**(4), (2010), 947-989.
- [25] K. Karunanithy, and S. Jeyaraman, Impact of Entrepreneurial Characteristics on the Organizational Development of the Small Business Entrepreneurs, *Industrial Engineering Letters*, **3**(6), (2013), 28-33
- [26] Paolo. Taticchi, F. Tonelli, E. Hernandez, and L. Cagnazzo, Implementation of a Knowledge Management Tool within a VDO Network: Preliminary Results, *WSEAS Transactions on Business and Economics*, **6**, (2009), 2.

- [27] C. Q. Schneider and C. Wagemann, *Qualitative Comparative Analysis (QCA) und Fuzzy Sets*, Barbara Budrich, 2007.
- [28] M. L. Shih, S. H. Lin, S. H. Hsiao, L. M. Huang, C. C. Chiu, and K. Y. Chen, The study of the correlation among personality traits, leadership competence and organizational performance, *WSEAS Transactions on Business and Economics*, **1**(6), (2009), 11-20.
- [29] D. A. V. O. R. I. N. Kralj and M. Markič, Sustainable development strategy and product responsibility, *WSEAS Transactions on Environment and Development*, **4**(2), (2008), 109-118.
- [30] J. Kärki, *The Support Possibilities of a Starting Entrepreneur*, Business Management Bachelor's Thesis, Mikkeli University of Applied Sciences, 2009.
- [31] N. Legewie, An Introduction to Applied Data Analysis with Qualitative Comparative Analysis (QCA). In *Forum: Qualitative Social Research*, **14**(3), September 2013.
- [32] B. M. Lichtenstein, and C. G. Brush, How do "Resource Bundles" Develop and Change in New Ventures? A Dynamic Model and Longitudinal Exploration, *Entrepreneurship Theory and Practice*, **26**(3), (2001), 37-58.
- [33] A. Lundström, M. Almerud, and L. Stevenson, Entrepreneurship and Innovation Policies, Analyzing measures in European countries, *FSF 2008*:3.
- [34] R. K. Srivastava, T. A. Shervani and L. Fahey, Market-based assets and shareholder value: a framework for analysis, *Journal of Marketing*, **62**(1), (1998), 2-18.
- [35] A. Ciavarella Mark, K. Buchholtz Ann, M. Riordanb Christine, D. Gatewoodb Robert, and S. Stokes Garnett, The Big Five and venture survival: Is there a linkage?, *Journal of Business Venturing*, **19**, (2004), 465–483.
- [36] P. A. Mello, A Critical Review of Applications in Qca and Fuzzy-Set Analysis and a 'Toolbox' of Proven Solutions to Frequently Encountered Problems, *In APSA 2012 Annual Meeting Paper*, 2012.
- [37] E. H. Sherrie, C. Thomas, S. M. Baucus, and C. Andrew, "Idea or prime opportunity? A framework for evaluating business ideas for new and small ventures", *Journal of Small Business Strategy*, **15**, (2004), 61-79.
- [38] C. Wagemann and C. Q. Schneider, Qualitative comparative analysis (QCA) and fuzzy-sets: Agenda for a research approach and a data analysis technique, *Comparative Sociology*, **9**(3), (2010), 376-396
- [39] J. Mahoney, "Reflections on Fuzzy-set/QCA." *Qualitative Methods, Newsletter of the American Political Science Association Organized Section on Qualitative Methods 2.2*, (2004), 17-21.
- [40] G.Nabi, R. Holden, and & A. Walmsley, From student to entrepreneur: Towards a model of graduate career-making in business start-up, *Journal of Education and Work*, 2010.
- [41] P. Nagesh and M. N. Murthy, The Effectiveness of Women Entrepreneurship Training Program: A Case Study, *The ICAI University Journals of Entrepreneurship Development*, 2008.
- [42] S. M. O'Connor, Teaching IP from an Entrepreneurial Counseling and Transactional Perspective, *Louis ULJ*, **52**, (2007), 877.
- [43] C. C. Ragin, *Redesigning social inquiry: Fuzzy sets and beyond*, Chicago: University of Chicago Press, 2008.