

Factor Analysis of Entrepreneurship for Entrepreneurial Value Creation

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Abstract

This paper analyzes the entrepreneur spirit in Japan and globally based on the results of the Global Entrepreneurship Monitor (GEM) 2019 / 2020 GLOBAL REPORT (GEM Report). We identified three factors that reveal Japanese attitudes towards entrepreneurship.

The study aims to provide a detailed understanding of the components of entrepreneurship based on its findings. According to the GEM Report, Japan ranks 47th out of fifty countries in terms of the Total early-stage Entrepreneurial Activity (TEA) ranking. It is necessary to clarify the attitudes of Japanese people towards entrepreneurship before implementing any necessary measures. Therefore, any countermeasure and actions will be more effective and productive.

We performed factor analysis on the responses to the 17 specific questions using maximum likelihood estimation (MLE), Promax rotation, and t-tests.

The results of factor analysis showed that Japanese people are not optimistic and lack confidence in themselves, but they are shrewd.

Please note, due to low questionnaire data reliability, further investigation is needed to address issues and enhance reliability.

Keywords: Entrepreneurship, Entrepreneur, Entrepreneur spirits, Entrepreneur competency

1 Introduction

In Japan, a lot of companies are created every year, while a considerable number of companies have reached the end of their life span. Industries rise and fall with the times, and it is natural for businesses to close and to repeat this cycle. In order to revitalize Japan's economic activity, it is extremely important to increase the number of entrepreneurs and start new businesses.

However, Japan's entrepreneurial activity is not at a high level compared to other countries in the world. According to the GEM Report, Japan was ranked 47th out of fifty countries in terms of the TEA rate [1].

The Japanese government has designated 2022 as the "first year of startup creation" and finalized a five-year plan by the end of the same year with a view to increasing the number of startups tenfold over the next five years [2]. In June 2022, the Ministry of Economy, Trade and Industry (METI) published a booklet "METI Startup Policies: List of Support Policies for

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Startups" that summarizes startup-related support measures, including support measures that directly support the growth of startups such as subsidies and loans, as well as measures that support the growth of startups by investors, research institutions, universities, and local governments. METI is working on fostering entrepreneurship by publicizing support measures that directly support the growth of startups, such as subsidies and loans, as well as tax systems and programs that support the activities of investors, research institutions, universities, and local governments that support startup growth [3]. The Ministry of Education, Culture, Sports, Science and Technology (MEXT) is surveying the status of entrepreneurship education in Japan and abroad. The MEXT is striving to provide opportunities for students who do not have the chance to receive entrepreneurship education and is implementing the "National Entrepreneurship Human Resources Development Program" in 2023. Like the METI, the program aims to promote entrepreneurship in Japan [4].

Increasing the number of startups by fostering entrepreneurial motivation is important for the development of the Japanese economy. As mentioned above, entrepreneurial activity in Japan is quite low by global standards, and it is only natural that measures should be proactively implemented to address this issue. However, why is it that entrepreneurial activity in Japan has not increased? According to the "2018 Survey on Entrepreneurship and Entrepreneurial Attitudes" conducted by Japan Finance Corporation (JFC), the most common reason for not starting a business among people without management experience and interested in starting a business was "Lack of personal funds" (53.1%). This was followed by "Too much risk in case of failure" (35.5%) and "Cannot come up with a business idea" (33.6%) [5]. In particular, the latter problems, "Too big a risk in case of failure" and "Can't come up with a business idea," affect the attitudes of entrepreneurs and are not problems that can be easily solved. The MEXT initiative aims to change attitudes by providing entrepreneurship education from the young age, but it may be necessary to clarify what kind of attitudes Japanese people have toward entrepreneurship before taking the necessary measures.

Therefore, this study aims to clarify what kind of attitudes Japanese have toward entrepreneurship, and to identify trends in Japanese attitudes toward entrepreneurship through a comparison of Japan and the rest of the world. The analysis is based on the results of the GEM Report [1]. GEM is a project team of entrepreneurship researchers from Babson College in the U.S. and the University of London Business School in the U.K., who aimed to "accurately grasp the actual status of entrepreneurial activities," "pursue comparisons across countries," and "understand the impact of entrepreneurship on the national economy."

2 Concepts Related to Entrepreneurs

Entrepreneur has different meanings depending on whether one is an entrepreneur, a researcher, or a policy maker. Whether entrepreneurs discuss its ideals and reality based on their own experiences, researchers discuss it by analyzing entrepreneurs and building models of them, or policy makers discuss its expectations and social impact as a policy target, the reality is that each position has its own concept. In this section, we first review the academic definition of entrepreneur and then clarify what entrepreneurship is from previous studies.

2.1 The Concept of Entrepreneur

The origin of the concept of entrepreneur is said to have begun in the 18th century with the words of Richard Cantillon in France [6]. Originally spelled "entrepreneur" in French. In English, it is a combination of "Entre," meaning "between," and "Preneur," meaning "taker. The word "entrepreneur" was originally used to describe a middleman or trader [7]. The word "entrepreneur" was adopted into English and became "entrepreneur". In current Japanese, entrepreneur is often translated to "Kigyoka" which mean someone who starts a new business. It is said that the word entrepreneur was first used in the world by Jean-Baptiste Say, a 19th century economist. Say stated that "The term entrepreneur is difficult to render in English", but he added that entrepreneurs are the person who takes upon himself the immediate responsibility, risk, and conduct of a concern of industry, whether upon his own or a borrowed capital. In his book, he mentioned "For want of a better word, it will be rendered into English by the term adventurer". He does not use the word entrepreneur. [8]

The pioneering use of the term entrepreneur for the concept of a person who starts a "new business = entrepreneur" is Schumpeter's description of the innovator as a person who creates innovations. According to Schumpeter, innovation cover five cases: 1. The introduction of a new good, 2. The introduction of a new method of production, 3. The opening of a new market, 4. The conquest of a new source of supply of raw materials or half-manufactured goods, 5. The carrying out of the new organization of any industry. It is based on the idea of being an innovator, or entrepreneur.[9]

Another researcher who defined the concept of entrepreneur is Peter Drucker. Drucker proposes that the entrepreneur destroys and dismantles order. Drucker, like Schumpeter, also believes that the entrepreneurs try to create new and different value", "And it is change that always provides the opportunity for the new Purposeful Innovation" [10].

In 2008, William Bygrave of Babson College describes "Our entrepreneur is the person who perceives an opportunity and creates an organization to pursue it." [11]. Dyer, Gregersen, & Christensen, and his colleagues describe an innovative entrepreneur challenge the status quo and frequently ask what if about the future, observing the world around them, formulates hypotheses, experiments, and tests them, and then utilize idea networking to realize the business [12]. Neck, Neck, & Murray describes that entrepreneurs may be different what people think, they are not extreme risk takers, collaborate more than they compete, and act more than they plan. They argue that Entrepreneurship is about collaboration, creating together, taking action with limited resources, and courageously navigating uncertainty. A strong network helps us do these things. [13] In the early 1700s to 1900s, entrepreneurs were focused on their personal activities, but since the early 2000s, the emphasis has shifted to forming organizations, working with others, and collaborating.

2.2 The Concept of Entrepreneurship

Entrepreneurship is the word entrepreneur with the suffix "ship. The suffix creates a noun that, after a noun or adjective, means a position, state, ability, or group [14]. Thus, the meaning of "entrepreneurship" can generally be defined as "the ability or state of being independent and seeking to start a new business on one's own. However, researchers have defined entrepreneurship differently. The following is a definition of entrepreneurship as defined by researchers.

Drucker describe "Entrepreneurship is neither a science nor an art. It is a practice." [10]. Timmons states that the basic components of entrepreneurship is value creating, opportunity creating and seizing, frugality with resources, bootstrapping strategies, staged capital commitments, team building, achieving better fits, and juggling paradoxes. [15]. Kuratko & Hodgettes describe "Entrepreneurship is a dynamic process of vision, change, and creation. " It requires "the willingness to take calculated risks – in terms of time, equity, or career", "the ability to formulate an effective venture team", and "the vision to recognise opportunity where others see chaos, contradiction, and confusion." [16].

Neck et al. state that the environment for entrepreneurship is fluid, dynamic, uncertain, and ambiguous. The entrepreneurial mindset is the ability to quickly sense opportunities, take action, and get organized under uncertain conditions. [13]. Another definition relates to Developing an entrepreneurial mindset is: "self-aware of personality, motivated to achieve personal ambitions, self-organised, flexible and resilient, curious towards new possibilities, responsive to problems and opportunities, able to go beyond perceived limitations, tolerant of risk, and failure, sensitive to personal values. " [17].

3 Components of Entrepreneurship

The survey of previous studies in the previous section shows that the definitions of entrepreneur and entrepreneurship vary widely from researcher to researcher. This section examines what entrepreneurship entails.

In summary, an entrepreneur is a person, or an organization composed of people who are sensitive to change and opportunity, and who can create businesses based on new discoveries that do not exist in the world. It is not difficult to imagine that there are competencies necessary for an entrepreneur. In Japan, however, the meaning of entrepreneurship often focuses on mindset. Tanabe attributes this to the fact that Drucker's book "innovation and entrepreneurship" was translated into Japanese as "innovation and entrepreneur mindset" [18]. This mindset can also be considered as one of the competencies required to work as an entrepreneur. Therefore, entrepreneurship should be composed of competency (competencies) and mindset.

Tanabe, mentioned above, proposes that entrepreneurship be defined as "Kigyoka Sei (起業家性)" [18] and the authors agree with this idea. We believe that entrepreneurship can be categorized into entrepreneur competencies and an entrepreneurial mindset, which we call the entrepreneur spirit. The above can be summarized in the following diagram.

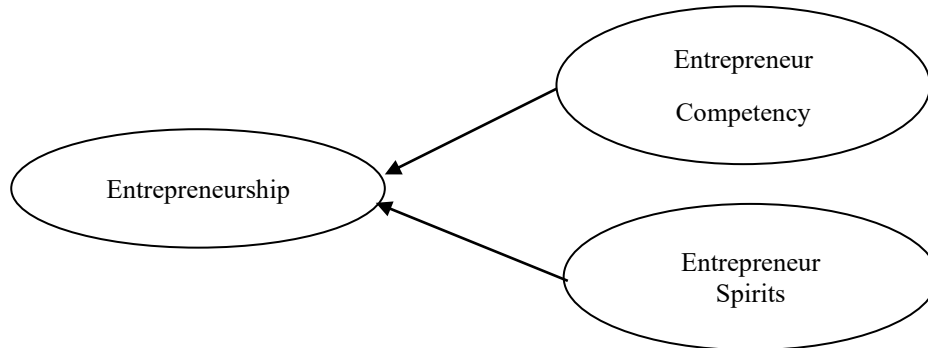


Figure 1: Composition of entrepreneurship

In the following, this paper will examine the entrepreneur spirit in entrepreneurs. Not many studies have been conducted specifically on the entrepreneur spirit. Therefore, we will clarify what kind of entrepreneur spirit entrepreneurs have in their activities and make a comparison between Japan and the rest of the world.

4 Analysis

4.1 Data

The survey for analysis is the GEM Report, a preliminary survey conducted in 1997 by entrepreneurship researchers at Babson College in the U.S. and the University of London in the U.K. The first GEM Report was conducted in 1999 and has been conducted continuously since then.

GEM Report consist of 2 type of surveys, Adult Population Survey (APS) and National Expert Survey (NES). We analyze the GEM Report APS in this paper. The GEM Report APS asks about their entrepreneur activities, attitudes, motivations, and ambitions using the same standard GEM questionnaire. A summary is provided in Table 1.

Seventeen questions related to entrepreneur sprits were selected (Table 2). Responses were requested using a 5-point Likert scale. Subjects with answers such as “don’t know” or “no response” were excluded.

Table 1: Summary of GEM Report APS

Survey Scope	Questionnaires collected from 50 countries around the world, of which questionnaires in Japan are included in the survey.
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Survey Year	Conducted from late July 2019 to early August 2019.
Survey Target	Ordinary working-age adults (aged 18-64)
Number of total questionnaires	98 questionnaire was prepared and divided to 8 blocks. Survey participants will only answer questions in the section that applies to them.
Number of valid responses collected	The number of samples collected was 163,006 persons. Of these, we excluded targets with answers such as don't know or no response and included data from 24,288 cases worldwide (including 224 cases in Japan) in the analysis.

4.2 Methods

A maximum likelihood factor analysis was performed on the questionnaire data of subjects who responded to 17 target questions. Promax rotation was performed on factors with eigenvalues greater than 1. Factor scores were calculated based on the weights of the rotated factors. SPSS statistics 24.0 was used for these analyses. Three factors were selected based on eigenvalue attenuation and factor interpretability, and factor analysis was conducted again using the maximum likelihood method and Promax rotation. As a result, four items with factor loadings less than .40 were deleted, and the maximum likelihood method and Promax rotation were used again.

In addition, a t-test was conducted for each of the extracted factors to see what kind of differences exist between entrepreneur spirits in Japan and the rest of the world.

4.3 Results

Three factors were extracted as a result of the processing. Figure 2 shows the scree plot. As can be seen from the results in Figure 2, there were three factors with eigenvalues greater than one, and furthermore, based on the inflection points, it was deemed reasonable to employ three factors. The final factor analysis results are shown in Table 2.

The first factor was named "optimism" because it consisted of content reminiscent of the characteristics of thinking that business opportunities are close at hand and that entrepreneurship is easy. The second factor was named the "self-confidence" because it can be thought of as a characteristic of making business decisions based on the understanding that one has knowledge and skills and that one is a creative person. Finally, the third factor was named the "shrewdness" factor, because it consists of the contents that express sharpness toward business opportunities.

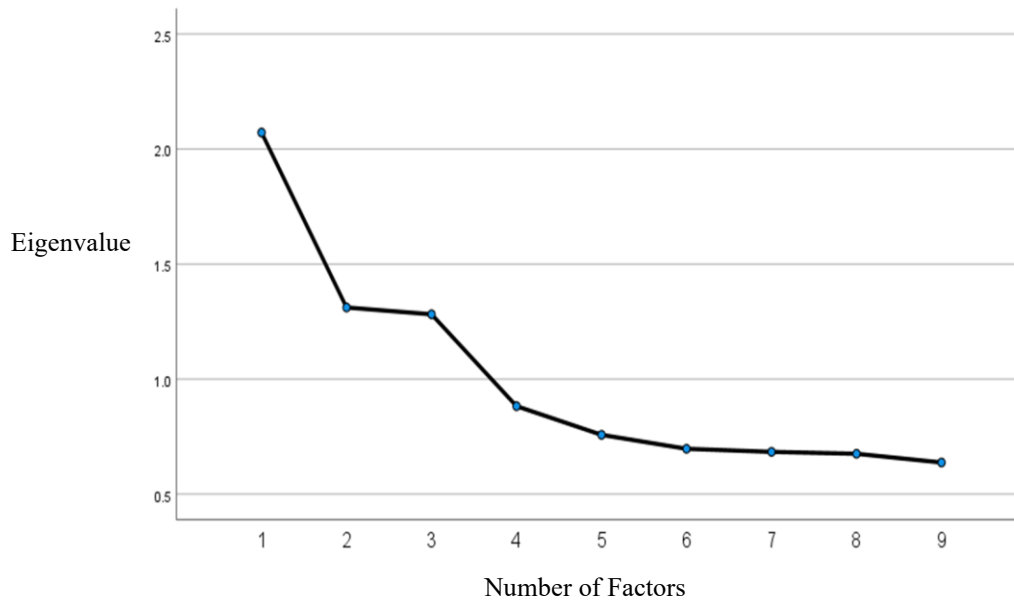


Figure 2: Scree plot of factors

Table 2: Questionnaire Items and Factor Analysis Results

Question	Factor name		
	optimism	self-confidence	shrewdness
Qi10. In my country, you will often see businesses that primarily aim to solve social problems.	0.564	0.162	0.173
Qi9. In your country, it is easy to start a business.	0.507	0.154	0.013
Qi2. In the next six months, there will be good opportunities for starting a business in the area where you live.	0.477	0.249	0.006
Qi8. In my country, you will often see stories in the public media and/or internet about successful new businesses.	0.471	0.216	0.177
Qi13. Other people think you are highly innovative.	0.235	0.607	0.087
Qi14. Every decision you make is part of your long-term career plan.	0.191	0.483	0.163
Qi3. You personally have the knowledge, skill and experience required to start a new business.	0.165	0.481	-0.013
Qi11. You rarely see business opportunities, even if you are very knowledgeable in the area.	0.070	0.128	0.625
Qi12. Even when you spot a profitable opportunity, you rarely act on it.	0.123	0.028	0.489
Qi4. You would not start a business for fear it might fail.	-	-	-
Qi5. In my country, most people would prefer that everyone had a similar standard of living.	-	-	-
Qi6. In my country, most people consider starting a new business a desirable career choice.	-	-	-
Qi7. In my country, those successful at starting a new business have a high level of status and respect.	-	-	-
Q1K3. Please tell me the extent to which the following statements reflect the reasons you are trying to start a business. To make a difference in the world.	-	-	-
Q1K4. Please tell me the extent to which the following	-	-	-

statements reflect the reasons you are trying to start a business. To build great wealth or a very high income.			
Q1K8. Please tell me the extent to which the following statements reflect the reasons you are trying to start a business. To continue a family tradition.	-	-	-
Q1K9. Please tell me the extent to which the following statements reflect the reasons you are trying to start a business. To earn a living because jobs are scarce.	-	-	-

The results of t-tests for each factor are as follows. There were significant differences in three factors: the global average for optimism and self-confidence was higher; Shrewdness was higher in Japan.

Table 3: T-test Results

	1.Japan n=224		2.Global (Except Japan) n=24288		t-value	
	Mean	SD	Mean	SD		
optimism	2.87	0.78	3.22	0.91	5.71	***
self-confidence	3.11	0.95	3.99	0.81	16.17	***
Shrewdness	3.28	1.20	2.87	1.11	6.08	***

***p<0.001, **p<0.01, *p<0.05

5 Discussion

Based on the results of the analysis in the previous section, this section discusses the factors that constitute entrepreneur spirit and the differences between Japan and the rest of the world in these factors.

In the factor analysis, three factors were extracted. The first factor, "optimism," indicates the entrepreneur spirit of being able to take opportunities positively and tackle them without fear of failure, in response to the mental burden of starting a new business. The "Entrepreneur Spirit" is a key component of the Silicon Valley startup experience. The forward-looking nature of entrepreneurs in Silicon Valley startups has been theorized by Stanford psychologist Krumboltz as Planned Happenstance Theory, and five human attributes have been identified. The five are Curiosity, Flexibility, Persistence, Optimism, and Risk-taking [19], and this factor can be considered valid. However, Qi4, a question about failure, was less related to the "optimism" factor and more related to Qi11 and Qi12. We may be able to find a relationship with "optimism" depending on the way the questions were asked, and this is an issue for future study.

The second factor, "self-confidence," is a question that asks about one's own competencies, and we believe that individuals who can answer these questions with confidence have strong entrepreneur spirit. In this regard, Hasegawa, in his interviews with career-shifted person, often heard the phrase, "I felt like I could do something." He pointed out the importance of having confidence, as he heard the phrase "I don't have any proof, but..." in many of them [20]. The importance of having confidence is significant because entrepreneur can also be considered as one career shift.

Finally, the third factor, "shrewdness", specifically asks about the attitude toward the business

opportunity in front of them. In this regard, Eisenmann, a professor at Harvard Business School, introduced the advice from one of his former students to aspiring entrepreneurs: “For me, ‘pursuing opportunity beyond resources controlled’ sums up perfectly what I do day-to-day. You need to be inventive, creative, opportunistic, and persuasive, because you rarely have enough resources. Embracing this definition helps me in my role.” [21]

The above clarification indicates that the characteristics comprising the entrepreneur spirit can be explained in terms of three factors. However, there are two points of view that are not yet clear from the results of this factor analysis but could become characteristics. One is "cupidity. The desire for money can be considered as one of the major factors in stirring the entrepreneur spirit. Minato states that entrepreneurs will start a business when the expected profit from starting a business is much higher than the current situation, referring to the magnitude of the financial impact of starting a business [22]. Since the GEM Report did not explicitly ask about monetary impact, we would like to clarify it in our research in the future. The second is self-actualization. As with animal spirits, the ability to act with irrational motives and awareness for self-actualization can be considered an important factor in entrepreneurship. In this regard, Suzuki revealed that entrepreneurs are dissatisfied with low income but feel high satisfaction with job satisfaction and stated the importance of self-actualization through satisfaction in entrepreneurship [23]. We would like to clarify this point in future surveys.

Based on the factors extracted above, a comparison of the mean scores of the entrepreneur spirit responses between Japan and the rest of the world revealed a significant difference in the mean scores of the optimism and self-confidence factors between Japan and the rest of the world. However, there was a significant difference in the Japanese results for shrewdness. According to Karasawa's research, experiments have revealed that Japanese tend to evaluate their own characteristics more negatively and those of related others more positively [24]. This can be considered to have an effect on lowering the average scores of “optimism” and “self-confidence” among the Japanese. On the other hand, the results show that “shrewdness”, in which the Japanese act shrewdly in response to business opportunities, is higher than the world average. The authors analyzed the question content and found that there may have been a change in nuance in the translation from English to Japanese. In Japanese, the word "finding" or "discovering" a business opportunity has an active nuance, whereas in English, they have a passive nuance and could be intended as "luckily" finding a business opportunity. However, this point was not either sufficiently clear or well supported. Therefore, it should be clarified in future experiments by the authors.

6 Limitations and Issues of This Study

Based on the previous discussion, we identified the factors that comprise the entrepreneur spirit and confirm the way Japanese people hold attitudes toward entrepreneurship.

However, the results of the factor analysis have not shown sufficient reliability, as the Cronbach reliability coefficients, α , calculated for the subscales of each scale ranged from .47 to .57. In the future, the authors would like to review the question items with low correlations and consider conducting a re-test. In addition, since the number of Japanese survey data was about 1% of the total number of survey data, the reliability of the data cannot be said to be sufficiently

high. Since this analysis was based on a single year's survey data, we believe it is necessary to improve the accuracy of the analysis by utilizing time-series data in the future.

Next, although this paper does not mention the entrepreneur competencies that comprise entrepreneurship, we believe that clarifying their contents and analyzing their relationship with entrepreneur spirit would be an important research theme.

7 Conclusion and Future Works

In this paper, we conducted a factor analysis based on the results of the GEM Report and examined the differences in entrepreneur spirit between Japan and the rest of the world, with the aim of clarifying the nature of entrepreneur consciousness and identifying trends in Japanese attitudes toward entrepreneurship through a comparison of Japan and the rest of the world.

As a result, we extracted three factors and confirm the Japanese attitude toward entrepreneurship. As mentioned earlier, the reliability of the results of the questionnaire data analysis is not high, so in order to increase the reliability of the results, it is necessary to clarify the problems with the questionnaire and conduct the experiment again. In addition, based on the results, we would like to clarify the components of entrepreneurship in more detail.

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