



# Imaging SMEs : explorative data analyses from the survey for university students in Japan in 2019

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journal or publication title	Doshisha Shogaku (The Doshisha Business Review)
volume	73
number	3
page range	939-958
year	2021-11-15
権利 (英)	Doshisha Daigaku Shogakkai The Association of Commerce Doshisha University
URL	<a href="http://doi.org/10.14988/00028629">http://doi.org/10.14988/00028629</a>

# Imaging SMEs : Explorative Data Analyses from the Survey for University Students in Japan in 2019

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## I Introduction

The debate over the question of what is ‘SMEs (Small and Medium-sized Enterprises)’ is also called the essence in SMEs studies (Takizawa, 1995 ; Yamanaka, 1948). Until now, the question of what ‘SMEs’ is has been discussed mainly based on the cognitive aspects of SMEs, such as the two opposing perceptions of problem-type SMEs and contribution-type SMEs (for example, Japan Academy of Small Business Studies, 2001). These perceptions of SMEs have also defined SMEs as the target of SME policy, as articulated in the SME Basic Act.

In contrast to the opposing perceptions of SMEs as ‘problematic’ and ‘contributory’, there is also a ‘bilateral’ viewpoint of SMEs as a ‘unity of developments and problems’ (Kurose, 2012). However, SMEs are said to be ‘heterogeneous and pluralistic’ (Yamanaka, 1948) and exist in a variety of forms. Regardless of what the actual situation of SMEs is, it is known that diverse images are held of SMEs ‘depending on the person and the time’ (Miwa, 1989, p.57). Several studies have addressed what kind of SMEs’ images are perceived (Goto, 2015 ; Karasawa, 2019 ; Matsui, 2004 ; The Small and Medium Enterprise Agency, 1972 ; 1992 ; Teraoka, 2005). However, these studies have often been based on the opposing perceptions of ‘problem-based’ and ‘contribution-based,’ and the various ways in which SMEs are perceived have not always been rigorously analyzed.

Therefore, this study will analyze what kind of SMEs' images are perceived based on our original survey. This study is an extension of a series of survey analyses of university students conducted by one of the authors on the images of SMEs (Seki, 2017 ; 2018 ; 2019 ; 2020 a ; 2020 b ; Seki and Soga, 2021), and is based on the independently collected data for FY 2019, and is intended to be analyzed in the same methods as Seki and Soga (2021).

The structure of this study is as follows. Section II is a review of various studies dealing with the images of SMEs. Section III describes the survey conducted independently by one of the authors. Section IV describes the analysis methodology, and Section V presents the results of the analysis. In Section VI, a discussion is held based on the suggestions obtained from the analysis results. Section VII provides a summary of the study and clarifies issues for future consideration.

## II Previous Studies

The debate over the question of what 'SMEs' is is also known as the essence in SMEs studies (Takizawa, 1995 ; Yamanaka, 1948). Since SMEs are 'heterogeneous and pluralistic' (Yamanaka, 1948), their images are also known to be diverse. Several studies have examined what kind of SMEs' images are perceived (The Small and Medium Enterprise Agency, 1972 ; 1992 ; Goto, 2015 ; Karasawa, 2019 ; Matsui, 2004 ; Teraoka, 2005).

In 1971, The Small and Medium Enterprise Agency conducted a survey on the images of SMEs among SME workers and published the results in the White Paper on SMEs (1972 and 1992 eds.). In the White Paper on SMEs (1972 ed.), the items related to the problematic perception of SMEs as a 'double structure' ('negative image') and the contributory perception of SMEs as 'adaptable (komawari ga kiku) and vital' ('positive image') as well as the items related to 'individual enterprises' that do not include value judgments such as good or bad were included. In addition, the White Paper on SMEs (1992 ed.) pointed out that 'negative images' such as 'poor working conditions and labor shortage' and 'weak and unstable management structure' coexist with 'positive images' such as 'family atmosphere' and 'core of the local economy'.

The Small and Medium Enterprise Agency conducted a survey of workers in SMEs, but later, researchers interested in SMEs conducted their own surveys, mainly targeting university students (some graduate and junior college students). For example, Matsui conducted a survey in which university students were asked to select eight items from a list of characteristics of SMEs. The results showed 'images of dismal' include, for example, 'subcontractors,'

‘difficulty in raising funds/financing,’ ‘bankruptcy,’ ‘lack of name recognition,’ ‘individual enterprises,’ and ‘instability,’ while ‘images of vitality’ include, for example, ‘partners of large companies,’ ‘leaders of the Japanese economy,’ ‘venture businesses,’ ‘expertise,’ and ‘sources of competitiveness of the Japanese economy’ (Matsui, 2004). Teraoka also pointed out that the ‘negative images’ of SMEs include, for example, ‘no brand’ and ‘low wages, long working hours, and no vacations,’ while the ‘positive images’ include, for example, ‘existence that makes you feel the power of human nature’ and ‘humanity and romance’. (Teraoka, 2005). Goto listed, in order of the number of responses, the ‘negative images’ of SMEs include ‘small scale, small and weak,’ ‘subcontracting,’ ‘financial weakness,’ and ‘subordination to large companies and the economy,’ while the ‘positive images’ include ‘technological strength’ and ‘supporting the Japanese and regional economy’ (Goto, 2015). Furthermore, Goto summarized these studies and pointed out that in the White Paper on SMEs, both ‘positive’ and ‘negative’ images ‘coexist’, but if anything, the negative images are more prevalent, and that recent university students (and some graduate students) also have a variety of images, both positive and negative (Goto, 2015). More recently, Karasawa conducted a survey of junior college students and pointed out that they hold images of manufacturing and technology such as ‘town factories’ and ‘downtown’, as well as images of supporting the Japanese economy and society, relationships with the local community, and problems related to business conditions and work styles (Karasawa, 2019).

However, while these studies are based on the cognitive aspects of the issue of what ‘SMEs’ is, namely the opposing perceptions of problematic SMEs (‘dismal’ and ‘negative’) and contributory SMEs (‘vital’ and ‘positive’) (with the exception of a few studies (for example, Goto (2015) and Karasawa (2019)), it can be said that these studies only provide concrete examples of what the images of SMEs are. These studies are important in confirming what the perception of SMEs is, in that they have presented various images of SMEs in an organized own way. However, as far as I know, there has been little further analysis beyond the presentation of various images. In other words, previous studies on the image of SMEs have not always rigorously analyzed the various ways in which SMEs are perceived (Sekii, 2017).

For several years, one of the authors has been examining the images of SMEs in Japan today, based on data obtained from a new independent survey of university students who are studying SMEs (Sekii, 2017 ; 2018 ; 2019 ; 2020 a ; 2020 b). Karasawa has also conducted an analysis and examination in almost the same form, referring to the author’s previous study (Karasawa, 2019), but both the author and Karasawa has only attempted some new analyses

that have not been conducted so far, and no further rigorous analysis has been conducted. This study aims to conduct an analysis similar to that of Seki and Soga (2021), using data collected in FY 2019 by one of the authors. Although this analysis is still a trial as well as Seki and Soga (2021), we believe that this will lead to further research on the images of SMEs, which will not only make an academic contribution in terms of advancing SMEs study, but also a practical contribution in terms of providing information for the formulation of SME policies.

### III Survey

This study uses data from a survey on the images of SMEs among university students to conduct a more rigorous analysis, while following some of the previous studies.

There are two main perspectives of analysis: differences among universities to which university students belong, and differences in the grades of university students (as we will see later, differences among genders are also partially analyzed). In recent years, universities with social science faculties have been required to establish collaborations with industry (SMEs) and government in the region where they are located when conducting education and research. Universities or social science faculties have been practicing collaboration with industry (SMEs) and government to varying degrees, and as a result, there are many opportunities to have contact with local SMEs. This may lead to different images of SMEs among university students belonging to different universities. Another analytical perspective is the difference in the university students' grades. As the years go by, university students not only have many opportunities to performances by the practice of collaborations with industry (SMEs) and government, but they also think deeply about companies themselves as they consider their post-graduation career paths, for example, through the experience of 'job hunting'. As a result, the images of SMEs may differ for each grade of university students.

In FY 2019, one of the authors conducted a survey on the images of SMEs among university students taking courses related to SME studies at three universities, namely, University A, University B, and University C. The survey was conducted on April 15, 2019 for University A, April 9, 2019 and September 25, 2019 for University B, and September 30, 2019 for University C. The survey was conducted within the first lecture of the subject and as part of the guidance to eliminate the bias of the lecture contents on the images of SMEs held by university students. The total number of valid responses received from the three universities was 1,309 (University A: 304, University B: 797 (of which 497 were collected in April and 300 in September), and University C: 208).

These three universities are all located in the Kansai region : University A is in Suita City, Osaka Prefecture, and Universities B and C are in Kyoto City, Kyoto Prefecture. These three universities were selected because one of the authors taught a course related to SMEs, and the environment was conducive to carrying out the survey. However, what is more important is that in looking at the differences between the universities, we aimed to compare them in different cities such as University A and University B (or University A and University C), and compare them in the same city such as University B and University C.

Respondents were asked about their department, grade, gender, and images of SMEs. The courses related SME studies where the survey was conducted were in all of the departments of the social sciences. We tried to get responses from as many students as possible, but as most of the courses related to SMEs are offered to second grade students and above, we were not able to get enough responses from first grade students (and fifth grade students and above), as we will see later. Therefore, the main target group was second to fourth grade students, but we judged that there was no problem from the perspective of thinking deeply about the companies themselves such as the experience of 'job hunting.' As for the images of SMEs, we asked the respondents to list at least five images that come to mind when they hear the word 'SME' and to write them in bullet points on the designated form.

#### IV Analytical Method

In this study, we will conduct an analysis using textual information about the images of SMEs. The dictionary-based approach and the correlational approach are two approaches to text analysis. According to Higuchi, the dictionary-based approach is a method of classifying words and documents based on the subjective classification criteria of the analyst and has the advantage of being able to operationalize the theory and problem consciousness of the analyst. On the other hand, the correlational approach is a method of classifying words and documents by computer and has the advantage of increasing the objectivity of the research by making the rules and methods public so that a third party can verify and examine them. However, these approaches also have their disadvantages : the dictionary-based approach has the disadvantage that only rules convenient to the analyst are created, while the correlational approach has the disadvantage that it is difficult to reflect the analyst's theory or hypothesis (Higuchi. 2004). We can say that these disadvantages can be compensated for by adopting both approaches. Therefore, in this study, both the dictionary-based approach and the correlational approach will be employed. This will enable us to conduct an analysis that does not only reflect the

subjectivity of the analyst, but also ensures objectivity.

Specifically, in this study, one of the authors will take the following three steps to conduct the analysis. First, using correlational approach, text information on the images of SMEs will be analyzed by KH coder, and frequently used words will be identified, hierarchical cluster analysis and co-occurrence network analysis will be conducted. It is difficult to grasp the context in which the word is used and whether or not it is used together with negative words when checking extracted words by computer. For example, if the extracted word is salary, it is difficult to know whether the salary is high or low. Therefore, secondly, we use a dictionary-based approach to classify each textual information into 25 elements extracted by Seki and Soga (2021), based on meaning, content, and context. In doing so, the classification is done in such a way that words with high frequency of occurrence captured by the KH coder are not left out. Third, based on this, the text information is made variable and multivariate analysis is performed. Specifically, dummy variables are created for each element, which are set to 1 if the element and the corresponding description are included in the text information, and 0 otherwise. Next, these dummy variables are used to create crosstabulation tables by university, grade, and gender, and correspondence analysis is conducted for each. Then, using the scores obtained from the correspondence analysis, a hierarchical cluster analysis is conducted for each university and grade level to grasp the images that are strongly connected to each other. For gender, since only the first axis score can be obtained from the results of the correspondence analysis, the cluster analysis will not be conducted, and the images of gender will be grasped from the results of the correspondence analysis.

## V Results

First, KH coder was used to check the frequently used words<sup>1</sup>. As a result of excluding the terms ‘small and medium,’ ‘enterprise,’ ‘consider,’ ‘think,’ and ‘feel’ from this analysis, the terms ‘few,’ ‘many,’ ‘employee,’ ‘corporation,’ and ‘subcontracting’ ranked in the top five in terms of frequency of occurrence<sup>2</sup>. In addition, cluster analysis and co-occurrence network analysis were conducted. As a result, it could be confirmed that there were many terms related to the large number and size of SMEs<sup>3</sup>. However, the top 50 words in terms of frequency of occurrence included words other than large number and size of SMEs, such as technology,

1 We used a KH coder Alpha.16 d.

2 We specified ‘employee’ as the word to be forcibly extracted during the analysis.

3 We conducted cluster analysis and co-occurrence network analysis using the top 51 words in terms of frequency of occurrence as extraction conditions.

benefits, and rural.

Next, while confirming the meaning and content of the textual information, we classified it according to the 25 elements extracted by Seki and Soga (2021): ‘good labor environment,’ ‘bad labor environment,’ ‘stability of profits and management,’ ‘instability of profits and management,’ ‘flexible decision making,’ ‘autocratic decision making,’ ‘growth-oriented,’ ‘stability-oriented,’ ‘young employees,’ ‘older employees,’ ‘local company,’ ‘town factory,’ ‘finance,’ ‘traditional company,’ ‘start-up company,’ ‘subcontracting,’ ‘size,’ ‘community-based,’ ‘low name recognition,’ ‘behind-the-scenes force,’ ‘technology and innovation,’ ‘specialization,’ ‘large number of companies,’ ‘manufacturing,’ and ‘family business.’ The main words and phrases included in each element are shown in Table 1.

Table 1 Words and phrases included in each element

Elements (Variances)	Words and Phrases
Good labor environment	warm atmosphere, ability to work with presence, close to the president (board member, manager, or employer), work with responsibility, all employees are familiar with each other, young people are active, good atmosphere in the company, employees are close to each other, employees help each other, good teamwork, sense of team unity, unity is strong, camaraderie, unity, loose hierarchy, few black companies, little turnover of people, deepen friendship through drinking parties, little work, loose work, improve skills, be able to do the work you want, be left to your own devices, work in a relaxed manner, experience a wide range of work, excellent vacation system, fewer working hours, weekends and holidays off, less restructuring, stronger relationship between the president and employees, stronger connections, quicker promotion, I can grow, deeper relationships
Bad labor environment	low salary, inferior (not good) benefits, shortage of manpower, disregard for Labor Standards Act, difficult to get career progress, high (heavy) responsibility, low annual (monthly) salary, many transfers, high turnover, dirty, low salary, 3 K, difficulty in recruiting, lots of overtime work, unpaid overtime work(service Zangyo), hard work, narrow work space, lots of baggage in the company, long working hours, no vacation system, few vacations, small bonus, layoffs, rigid, poor working conditions, heavy workload
Stability of profits and management	doubled sales in a short period of time, high work efficiency, high market share, profitable bankruptcy, low risk, producing hit products
Instability of profits and management	difficult to compete with large companies in terms of production speed and cost, unstable, loss-making, small sales, bankruptcy if contracts are lost, weak position, high risk, no one to protect the company, difficult to manage, unstable management, severe management, facing financial difficulty, difficult to gain market share, debt, severe financial situation, severe cash flow, weak competition, weak management structure, weak against large companies, weak brand power, weak, poor, hang by a thread, no bright future or stability, uncertain future, worry about the future, influence of economy
Flexible decision making	speedy decision-making, young people are active, employee’s ideas are employed, employee’s ideas are easily accepted, decisions are made quickly, decisions are made quickly, rules are loose
Autocratic decision making	pressurized, president’s opinion is easy to follow, president’s decisions are all important, president seems scary, president has a lot of freedom, president has a lot of power, president is the one



Growth-oriented	vitality, possibility of growth, new development, high growth potential, high risk and high return, highly competitive spirit, potential for development, potential, try new things
Stability-oriented	old-fashioned thinking, rigid, low upward mobility, not flashy, status quo
Young employees	many young people, young people are active, young people are entrusted with tasks from a young age, many young employees
Older employees	few new graduates
Local company	away from the center of town, out of the city
Town factory	factory in town, city center, city
Finance	financial strength, finance, and dishonor
Traditional company	long history, old, long-living
Start-up company	venture, start-up, starting business, new company
Subcontracting	subcontractors, getting work from large companies, sub-subcontractors
Size	small scale, small number of people, small capital, small number of employees, small factory, small office, small, not big, small number of people, small scale, not big
Community-based	not national-wide, local-based, regionally (locally) based
Low name recognition	minor, not well known, not famous, not recognized, not seen on TV, not advertised, never heard of the company' name, unknown, not known the actual situation, inconspicuous, plain
Behind-the-scenes force	supporting Japan, indispensable, essential, necessary, important, foundation
Technology and innovation	know-how, original, research, development, invention, discovery
Specialization	specialized, specialization, narrow field, narrow scope of work, narrow and deep, maniac
Large number of companies	there are a lot of companies, they are located all over the country, more than 90% of the companies, there are many of them, they exist a lot, there are more of them than large companies, they make up the majority, most of them are small and medium-sized companies, most of them are companies, most of them are large in number
Manufacturing	making(parts), fabrication, production, making things, parts
Family business	father and grandfather run the business, family business, work with family members, president's son will be the next president

Source : by the authors

Then, dummy variables were created for each of these elements, and a cross tabulation table was created (see Tables 2-4). Correspondence analysis was then conducted by university, grade, and gender, respectively (see Tables 5-7)<sup>4</sup>. However, by grade level, due to the small sample size of first grade and fifth grade and above, these were excluded from the analysis. As a result, by university, the scores on the first and second axes respectively, were -0.749 and -0.261 for University A, 0.271 and -0.098 for University B, and -0.183 and 0.702 for University C. By grade, the scores on the first and second axes respectively were -0.605 and 0.326 for second grade students, 0.206 and 0.032 for third grade, and -0.365 and -0.637 in

4 We used BellCurve for Excel 3.21.

the fourth grade. Furthermore, in terms of gender, the score for the first axis was  $-0.254$  for males and  $0.399$  for females. The scores for each variable were as shown in Table 5. In terms of gender, males selected ‘stability of profits and management,’ ‘instability of profits and management,’ ‘autocratic decision making,’ ‘growth-oriented,’ ‘older employees,’ ‘town factory,’ ‘finance,’ ‘start-up company,’ ‘subcontracting,’ ‘low name recognition,’ ‘specialization,’ and ‘manufacturing’ were strongly associated with male, while ‘good labor environment,’ ‘bad labor environment,’ ‘flexible decision making,’ ‘stability-oriented,’ ‘local company,’ ‘traditional company,’ ‘community-based,’ and ‘family business’ were also strongly associated with female. In addition, ‘bad labor environment,’ ‘young employees,’ ‘size,’ ‘behind-the-scenes force,’ ‘technology and innovation,’ and ‘large number of companies’ were shown to be common images among male and female.

Table 2 Cross tabulation table by university

	A univ.	B univ.	C univ.
Good labor environment	60	287	43
Bad labor environment	151	391	84
Stability of profits and management	16	32	18
Instability of profits and management	85	284	62
Flexible decision making	13	122	23
Autocratic decision making	22	45	9
Growth-oriented	17	64	15
Stability-oriented	2	8	3
Young employees	2	11	0
Older employees	6	12	1
Local company	23	95	23
Town factory	29	100	17
Finance	21	64	13
Traditional company	5	23	4
Start-up company	15	63	22
Subcontracting	64	254	64
Size	200	531	168
Community-based	18	101	27
Low name recognition	100	163	75
Behind-the-scenes force	45	111	19
Technology and innovation	9	130	20
Specialization	22	119	28
Large number of companies	35	207	69
Manufacturing	89	218	57
Family business	10	95	21

Source : by the authors

Table 3 Cross tabulation table by grade

	Second	Third	Fourth
Good labor environment	57	285	41
Bad labor environment	121	421	73
Stability of profits and management	9	41	12
Instability of profits and management	74	297	55
Flexible decision making	16	121	18
Autocratic decision making	16	42	16
Growth-oriented	12	70	8
Stability-oriented	2	9	0
Young employees	3	7	2
Older employees	5	8	6
Local company	16	105	17
Town factory	28	96	20
Finance	17	63	16
Traditional company	4	24	3
Start-up company	8	77	12
Subcontracting	55	280	39
Size	159	621	102
Community-based	18	107	18
Low name recognition	74	214	45
Behind-the-scenes force	37	113	22
Technology and innovation	15	125	17
Specialization	25	121	19
Large number of companies	44	233	30
Manufacturing	75	243	42
Family business	13	84	23

Source : by the authors

Table 4 Cross tabulation table by gender

	Male	Female
Good labor environment	202	180
Bad labor environment	372	238
Stability of profits and management	39	23
Instability of profits and management	257	158
Flexible decision making	86	70
Autocratic decision making	47	26
Growth-oriented	62	30
Stability-oriented	7	6
Young employees	8	5
Older employees	14	5
Local company	68	65
Town factory	97	48
Finance	70	26

Traditional company	16	15
Start-up company	67	30
Subcontracting	259	113
Size	525	349
Community-based	76	66
Low name recognition	206	123
Behind-the-scenes force	100	67
Technology and innovation	92	59
Specialization	110	58
Large number of companies	185	119
Manufacturing	222	135
Family business	64	58

Source : by the authors

Table 5 Correspondence analysis scores by university

	Axis i	Axis ii
A Univ.	-0.749	-0.261
B Univ.	0.271	-0.098
C Univ.	-0.183	0.702
Good labor environment	0.396	-0.350
Bad labor environment	-0.225	-0.301
Stability of profits and management	-0.623	0.816
Instability of profits and management	0.026	-0.150
Flexible decision making	0.749	0.054
Autocratic decision making	-0.486	-0.508
Growth-oriented	0.119	-0.017
Stability-oriented	0.056	0.623
Young employees	0.706	-1.240
Older employees	-0.467	-1.082
Local company	0.188	0.062
Town factory	0.095	-0.374
Finance	-0.050	-0.269
Traditional company	0.339	-0.235
Start-up company	0.111	0.543
Subcontracting	0.147	0.090
Size	-0.255	0.156
Community-based	0.378	0.304
Low name recognition	-0.818	0.317
Behind-the-scenes force	-0.253	-0.534
Technology and innovation	0.967	-0.064
Specialization	0.389	0.137
Large number of companies	0.342	0.620
Manufacturing	-0.309	-0.125
Family business	0.708	0.229

Source : by the authors

Table 6 Correspondence analysis scores by grade

	Axis i	Axis ii
Second grade	-0.605	0.326
Third grade	0.206	0.032
Fourth grade	-0.365	-0.637
Good labor environment	0.227	0.065
Bad labor environment	-0.195	0.157
Stability of profits and management	-0.204	-0.799
Instability of profits and management	-0.077	-0.044
Flexible decision making	0.521	-0.220
Autocratic decision making	-0.857	-0.715
Growth-oriented	0.439	0.177
Stability-oriented	0.545	1.257
Young employees	-0.849	-0.084
Older employees	-1.736	-1.490
Local company	0.388	-0.234
Town factory	-0.284	-0.051
Finance	-0.301	-0.398
Traditional company	0.430	0.081
Start-up company	0.637	-0.384
Subcontracting	0.254	0.085
Size	-0.055	0.116
Community-based	0.299	-0.218
Low name recognition	-0.473	0.106
Behind-the-scenes force	-0.382	0.146
Technology and innovation	0.620	-0.176
Specialization	0.163	-0.003
Large number of companies	0.317	0.133
Manufacturing	-0.271	0.227
Family business	0.083	-0.939

Source : by the authors

Table 7 Correspondence analysis scores by gender

	Axis i
Male	-0.254
Female	0.399
Good labor environment	0.528
Bad labor environment	0.006
Stability of profits and management	-0.118
Instability of profits and management	-0.055
Flexible decision making	0.383
Autocratic decision making	-0.213
Growth-oriented	-0.407
Stability-oriented	0.465

Young employees	-0.030
Older employees	-0.812
Local company	0.640
Town factory	-0.375
Finance	-0.762
Traditional company	0.609
Start-up company	-0.515
Subcontracting	-0.550
Size	0.065
Community-based	0.486
Low name recognition	-0.099
Behind-the-scenes force	0.077
Technology and innovation	0.009
Specialization	-0.283
Large number of companies	0.014
Manufacturing	-0.071
Family business	0.555

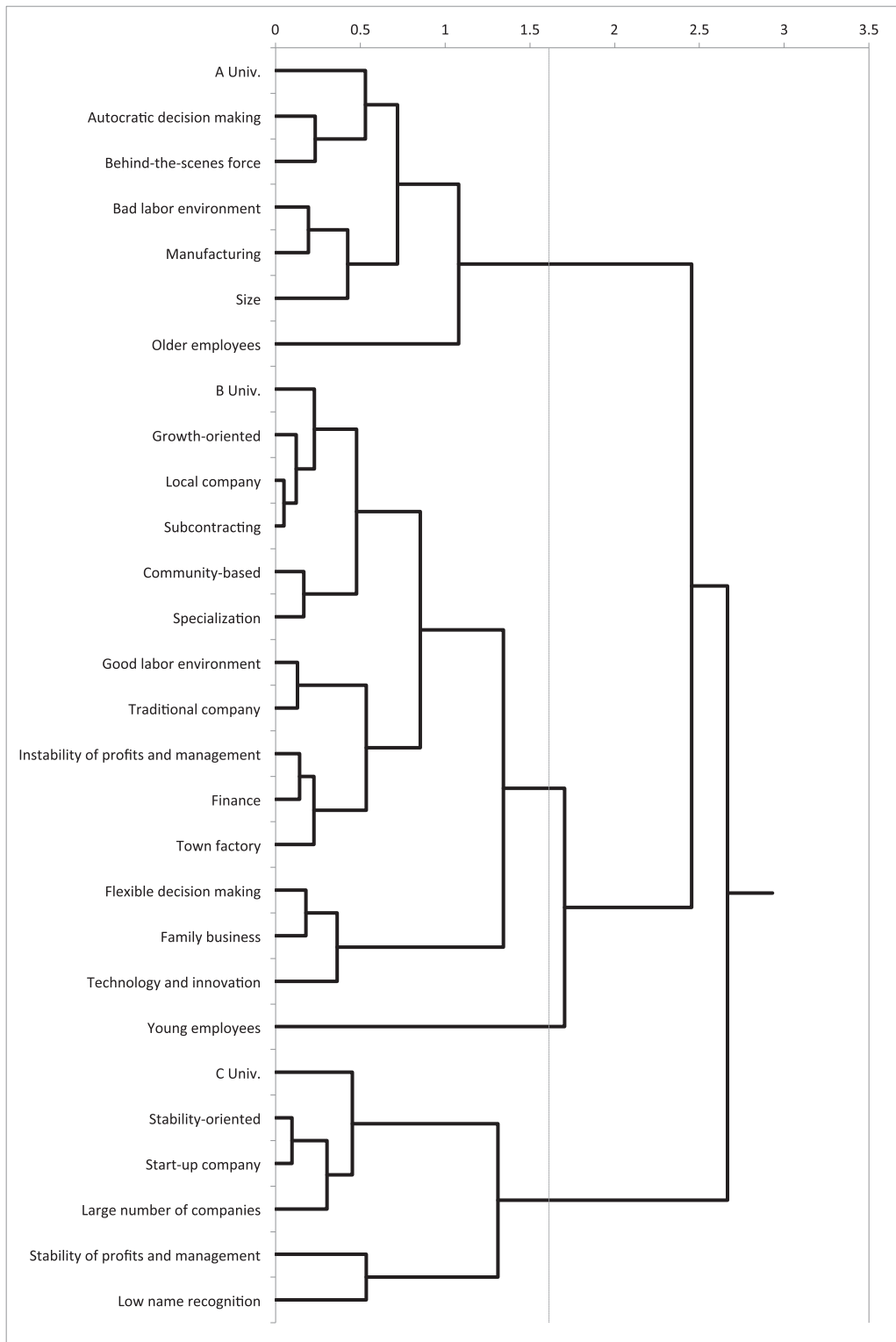
Source : by the authors

We conducted hierarchical cluster analysis using the scores by university and grade<sup>5</sup>. As the results of analyzing the scores by university, ‘autocratic decision making,’ ‘behind-the-scenes force,’ ‘bad labor environment,’ ‘manufacturing,’ ‘size,’ and ‘older employees’ were strongly associated with University A. And ‘growth-oriented,’ ‘local company,’ ‘subcontracting,’ ‘community-based,’ ‘specialization,’ ‘good labor environment,’ ‘traditional company,’ ‘instability of profits and management,’ ‘finance,’ ‘town factory,’ ‘flexible decision making,’ ‘family business,’ ‘technology and innovation,’ and ‘young employees’ were strongly associated with University B. Lastly, ‘stability-oriented,’ ‘start-up company,’ ‘large number of companies,’ ‘stability of profits and management,’ and ‘low name recognition’ were strongly associated with University C (see Figure 1).

As the results of analyzing the scores by grade, ‘young employees,’ ‘bad labor environment,’ ‘manufacturing,’ ‘town factory,’ ‘low name recognition,’ ‘behind-the-scenes force,’ ‘instability of profits and management,’ and ‘size’ were strongly associated with second grade. And ‘specialization,’ ‘good labor environment,’ ‘subcontracting,’ ‘large number of companies,’ ‘growth-oriented,’ ‘traditional company,’ ‘flexible decision making,’ ‘technology and innovation,’ ‘start-up company,’ ‘local company,’ ‘community-based,’ and ‘stability-oriented’ were strongly associated with third grade. Lastly, ‘stability of profits and management,’ ‘finance,’ ‘family business,’ ‘autocratic decision making,’ and ‘older employees’

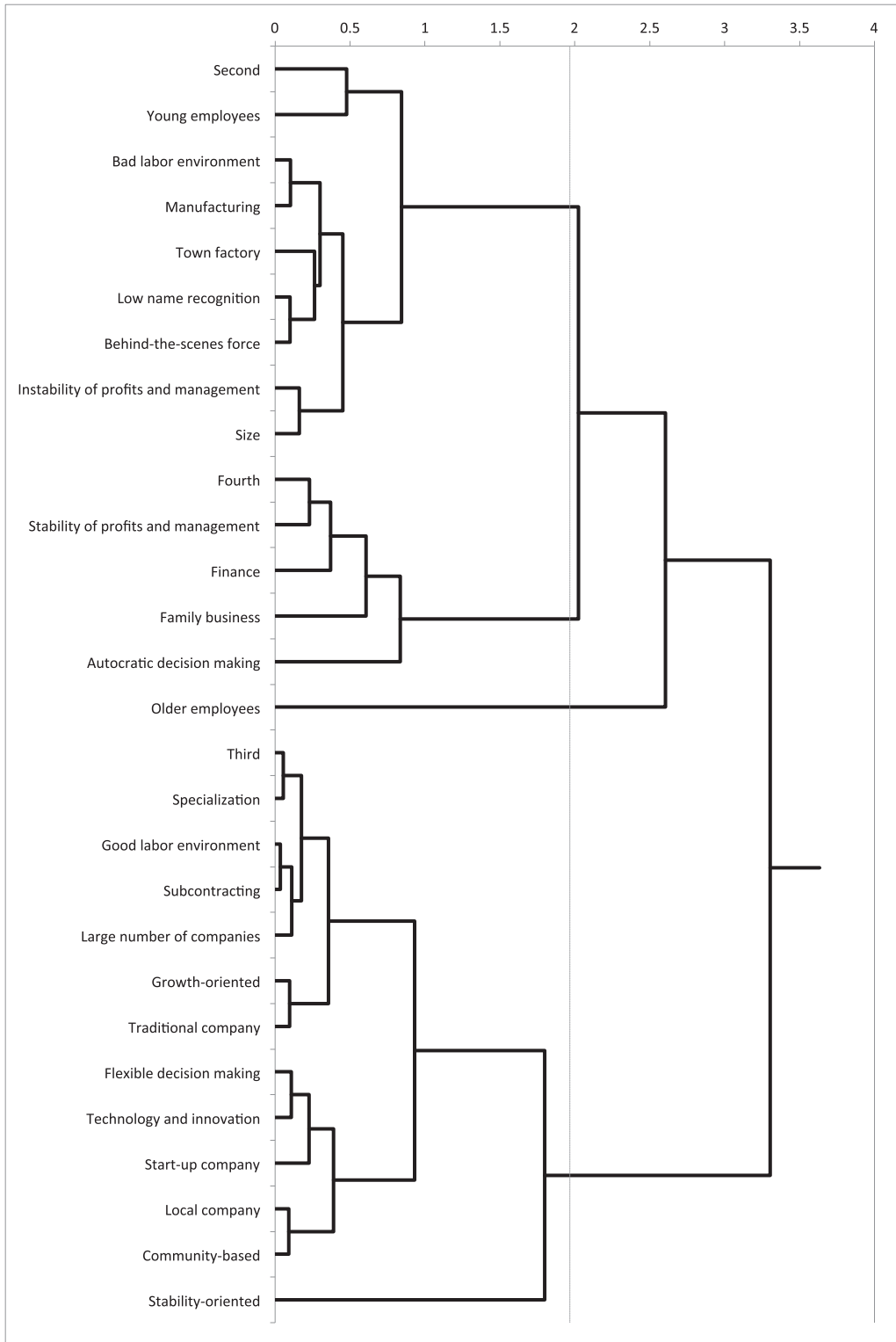
<sup>5</sup> We used BellCurve for Excel 3.21.

Figure 1 The results of cluster analysis by university



Source : by the authors

Figure 2 The results of cluster analysis by grade



Source : by the authors



were strongly associated with fourth grade (see Figure 2).

## VI Discussion

In this study, we analyzed the images of SMEs held by university students, mainly from two perspectives: the difference between the universities to which the students belonged and the difference between the grades of the students. Correspondence analysis and cluster analysis were conducted for these two perspectives, and it was confirmed that the images of SMEs differed by university and grade. In addition, when only correspondence analysis was conducted for gender, it was confirmed that the images of SMEs differed by gender as well.

By university, the first was to compare universities in different cities such as between University A and University B (or between University A and University C). In University A, the image of SMEs was strongly associated with the image of ‘bad labor environment,’ while in University B, the image of SMEs was strongly associated with the image of ‘good labor environment.’ This indicated that the two universities have opposite images of the working environment of SMEs. University A was found to have a positive image of SMEs such as a ‘behind-the-scenes force’ supporting the Japanese economy, but also to have negative images of SMEs such as ‘autocratic decision making’ and ‘bad labor environment.’ On the other hand, University C was found to have positive images such as ‘stability-oriented’ and ‘stability of profits and management,’ but also a negative image such as ‘low name recognition.’ The location of the clusters showed that University A and University C were located far apart from each other, indicating that although they were found to have both positive and negative images, they differed in the details of their images.

Another aim of the analysis by university was to compare the two universities in the same urban city, as in the case of University B and University C. Although both universities are located in the same city, the images of SMEs as ‘traditional company’ and ‘instability of profits and management’ was strongly associated with University B, while the images of SMEs as ‘start-up company’ and ‘stability of profits and management’ was strongly associated with University C. Thus, even within the same urban area, the images of SMEs held by university students differed from one university to another. This further confirms the assertion that the images of SMEs among university students differs from one university to another. The reason for this is that differences in curricula and other aspects of each university may also have an impact on the difference in images.

By grade, when comparing second grade and fourth grade, fourth grade students tend to

have images of ‘autocratic decision making’ and ‘stability of profits and management’ for SMEs. The reason for this may be that the fourth grade students have more realistic images of themselves working for a SME, and they translate these images into their own. Comparing second grade and third grade, third grade students have more ‘heterogeneous and pluralistic’ images of SMEs, including, for example, ‘growth-oriented,’ ‘stability-oriented,’ ‘local company,’ ‘traditional company,’ ‘start-up company,’ ‘subcontracting,’ and ‘community-based’. When they entered university, they had vague images of SMEs, but in their third grade, their images became more ‘heterogeneous and pluralistic’ and they began to have various images of SMEs, and in addition, in their fourth grade, as they became more aware of real work, they began to have more realistic images of SMEs as their own affairs.

By gender, when compared to males and females, males tend to have images of SMEs related to making products such as ‘town factory,’ ‘manufacturing,’ and ‘subcontracting,’ and images related to financial aspects such as ‘profit’ and ‘finance.’ This is partly because males have biased views of SMEs as making products, but it is also because they have images of large companies in the sector of commerce and service such as trading companies and IT companies. On the other hand, females have more positive images of SMEs such as ‘good labor environment’ and ‘flexible decision making,’ as well as images of ‘local company’ and ‘community-based.’ From these results, it can be inferred that females think of SMEs as workplaces where they can easily accept a certain degree of assertiveness to have a balance between their lives and works when they work for a SME.

## VII Conclusion

The purpose of this study was to conduct a more refined form of analysis based on the FY 2019 data collected independently by one of the authors on what kind of SMEs’ images are perceived. Specifically, first, using the Correlational approach, the textual information of the images of SMEs held by university students was analyzed using KH coder, and frequently used words were identified, and hierarchical cluster analysis was conducted. Second, using the Dictionary-based approach, each text information was classified into 25 elements extracted by Seki and Soga (2021) according to meaning, content, and context. Third, based on this classification, the text information was made into variables, and multivariate analysis was conducted. From these analyses, it became clear that the images of SMEs held by university students differed by university, grade, and gender, as shown in the previous section for specific details. Although there are still a lot of experimental efforts in this study, we are

convinced that further development of the study on the images of SMEs will not only lead to academic contributions to further deepen SME studies but will also lead to practical contributions providing information for the formulation of SME policies by clarifying more concretely the images that university students have of SMEs.

However, there are still some issues to be considered in this study. First, there are some issues related to the results of the analysis of this study. Even if we say that the images of SMEs held by university students differ from one university to another, there are still various points that need to be taken into consideration, such as what kind of curriculum is offered at those universities and what kind of collaboration between industry (SMEs) and government is being undertaken. In addition, even though the images of SMEs held by university students differ from grade to grade, there are factors that may affect the images of SMEs held by the university students, such as the fact that their parents own a SME in the family business. These basic attributes of university students must be carefully considered.

Second, there are issues related to the data used in our analysis. Even though the data used in this study was collected by the author, it was limited to university students in only three universities. Even though it is an important finding that the images of SMEs held by university students differ from university to university, the number of universities is limited to three universities and in only Kansai region. Therefore, it is necessary to expand the target area for data collection to the whole of Japan and collect data on the images of SMEs held by university students nationwide. In addition, university students are only a small number of the Japanese population as a whole. Therefore, the images of SMEs held by university students alone do not indicate the images of SMEs held by the Japanese people. Moreover, although university students are undoubtedly the most promising people in the near future, they are not yet ready to begin to work, and unlike workers, it is questionable to what extent university students are aware of the reality of the existence of SMEs (and, before that, whether they are aware of what an enterprise is). Of course, the reason why university students have some specific images of SMEs even though they do not correctly recognize the reality of SMEs (of course, they must also correctly recognize how SMEs exist) must be examined separately. However, the images of SMEs among university students alone do not represent the images of SMEs among the Japanese people in general. From this viewpoint, it is necessary to examine not only university students but also general people in some way.

Thirdly, there is the issue of deriving more academic and practical implications. It is necessary to derive the further academic and practical significance of the analysis presented in this study such as clarifying in what ways the images of SMEs today (by university students)

based on the results of this study differ from the images of SMEs presented by The Small and Medium Enterprise Agency (1972) and other institutions in various periods, and also clarifying how it is consistent with the perception of SMEs enshrined in the SME Basic Act.

All of the above points are issues for the future. We will discuss each of them in different forms in other studies.

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