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Study of Policies Supporting Women Entrepreneurs

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I. Introduction

A. Background & purpose of study

- Female-owned businesses display gender gap not just in terms of the ratio of newly established corporations and business activities, but qualitative gender gap is also revealed as majority are small businesses concentrated in wholesale and retail sales, accommodation, and food services.
- With the changes in business environment brought about by technological changes, including the 4th industrial revolution, the kind of innovation that transcends previous methods and speed of using technology is made possible. In this context, it is forecast that a great deal of difference in business activities will be generated between those enterprises that adopt them and those that do not.
- Preparation of relevant support that will enable businesses run by women to achieve innovative growth, making flexible responses to

changing situation that accompanies the fourth industrial revolution is necessary.

- This study aims to identify policy tasks necessary to promote innovative growth of female-owned businesses. Specifically, changes in business environment surrounding women entrepreneurs, including the fourth industrial revolution, will be diagnosed, and whether their responses are adequate enough will be determined. Based on such information, examination will be made to decide whether the current policies in which women entrepreneurs participate are sufficient enough for positively responding to environment changes and making business innovation.
- However, given that most female-owned businesses are small-sized and not based on technology, having low relevance to core technological fields of the fourth industrial revolution in a general meaning, this study was promoted, setting the range of subjects more broadly to include those businesses that utilize technology with the current of changes, while regarding the fourth industrial revolution as an environmental element of business activities.

B. Content and method of study

- Through a time series analysis of a relatively long period, directions of changes occurring to female-owned businesses were grasped, and status of relevant government policies and their trends were analyzed with a view to identify policy directions that will promote positive responses to the reality and environmental changes such as the fourth industrial revolution. With the flow of the policies for supporting female-possessed businesses, this paper tries to suggest

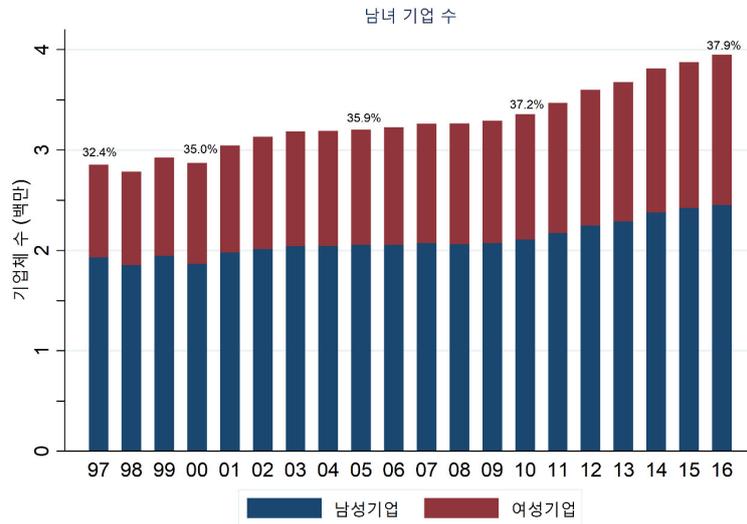
the direction and necessary tasks concerning the policies that are necessary in the current situation.

- Study of literature, analysis of raw data, survey and analysis of actual conditions, expert consultation, etc. were employed as main methods of study. Data on the policies for supporting female-owned businesses and related projects, the Census on Establishments, the Survey on Actual State of Female-owned Businesses, Survey of Venture Firms, etc. were analyzed.
- With female-owned businesses engaged in the industries that can be classified as the foundation industries for the 4th industrial revolution set as subjects, a survey of 200 businesses was conducted. In the entire process of the survey, we consulted relevant persons in charge in the Korean Women Entrepreneurs Association, the Integrated Support Center for Female-owned Businesses, officials in charge of female-owned businesses, policy experts and experts of practical affairs of female-owned businesses.

II. Current Status of Female-Owned Businesses

1. Results of analysis of the Census on Establishments

- The total number of female-owned businesses is increasing, and their percentage is slightly increasing as well. Concentration in such industries as retail and wholesale, accommodation and food service industries is worsening. On the other hand, business careers of male-owned businesses are increasing further in comparison.



남녀 기업 수: No of Businesses Owned by Men and Women
 기업체 수 (백만): No of Businesses (mil.)
 남성기업: Male-Owned businesses
 여성기업: Female-Owned Businesses

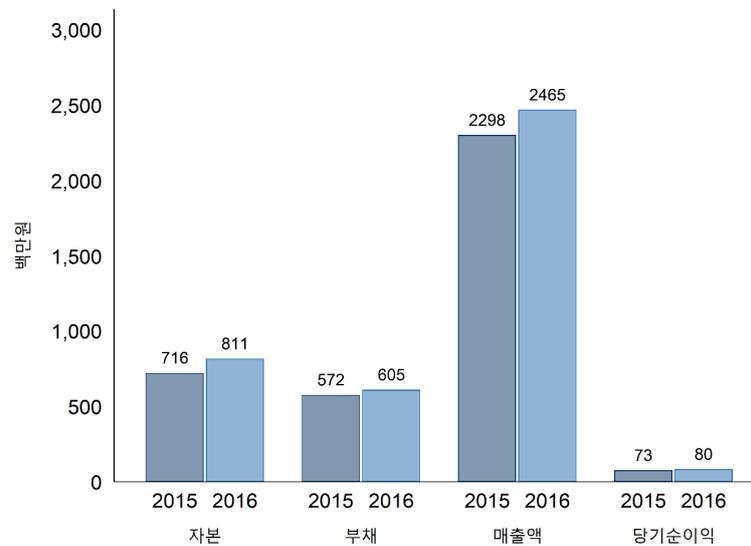
Note: Figures above bars show the percentage of female-owned businesses
 Source: 『Census on Establishment』 of each year, Statistics Korea

[Figure 1] Changes in the respective numbers of businesses represented by men and women

- The size of sales is also very petty. Of the enterprises with sales of 100 million won or higher, female-owned businesses make up higher portion than male-owned businesses only in publishing, video, broadcasting, communication, professional, scientific and technical services, construction, sewage and refuse disposal, electricity, gas and water supply, mining, agriculture and fishing industries. The sizes of women-owned businesses are so petty that among the businesses with sales of 500 million won or higher, there is no industry where the sales of female-owned businesses are higher.

2. Results of analysis of the Survey on Actual State of Female-owned Businesses

- As to the average financial position of female-owned businesses, the average size of owner's capital in 2015 and 2016 was about 710 mil. won and 810 mil. won, respectively, as shown in [Summary figure II-3]. During the same period, their liabilities were about 570 mil. won and 600 mill won, respectively, with the owner's capital to liabilities ratio lower than 100%, which is judged to be comparatively a sound status. The total annual sales stood at 2.3 bil. won and 2.5 bil. won, respectively in 2015 and 2016. However, in the same period, their net income was 73 mil. won and 80 mil. won respectively, which is rather small in comparison to the sales.

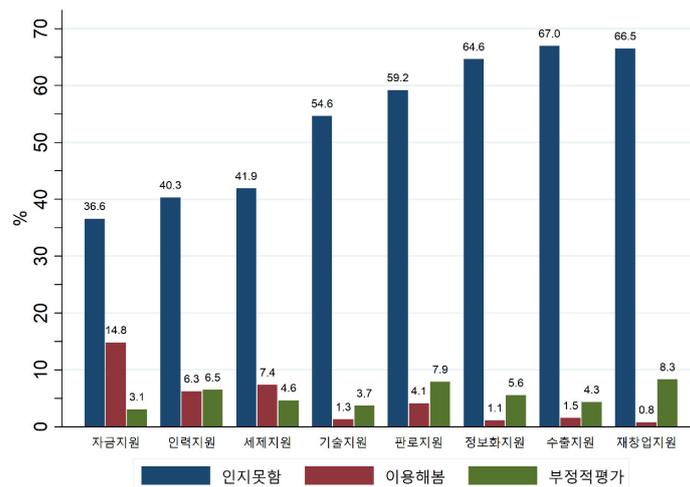


백만원: 1 mil. won 자본: Capital 부채: Liabilities
 매출액: Sales 당기순이익: Net income

Note: Figures represent the medians of each item.

[Figure 3] Financial position of female-owned businesses: 2015-2016

○ According to the Survey on Actual State of Female-owned Businesses, the policies concerning financial and manpower support and tax benefits show high awareness level, whereas the policies concerning the support in the fields of technology, market development, information, business transition, etc. are found to be lesser known. Female-owned businesses, on the whole, experience lack of information, and responded that relaxation of qualification requirements of policies, expansion of scale of support, and enhancement of immediacy are necessary.

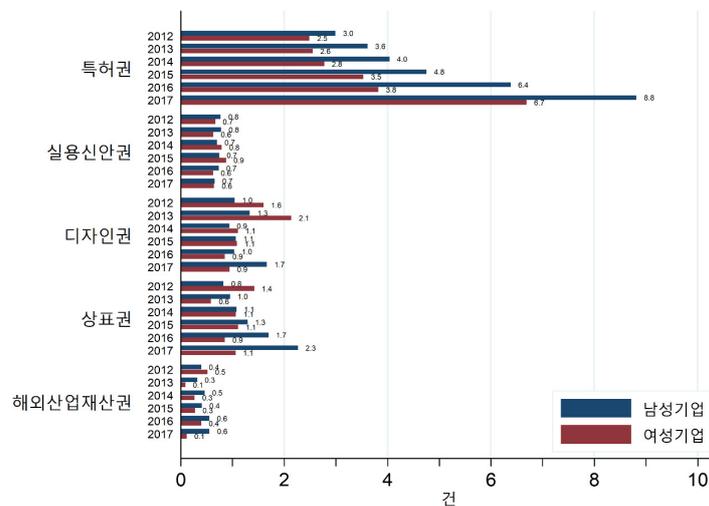


자금지원: Financial support 인력지원: Manpower support
 세제지원: Tax benefits 기술지원: Technology support
 판로지원: Market development support
 정보화지원: Information support
 수출지원: Export support
 재창업지원: Support for restarting business
 인지못함: Unaware of it
 이용해봄: Have used it
 부정적평가: Negative evaluation

[Figure 4] Distribution of the awareness of government support policies, experience of using them, and rate of negative evaluation

3. Results of analysis of the Survey of Korea Venture Firms

- The declining trend of female venture firms is vivid. In the high-risk fields, in particular, this downward trend is persistent. In 2012, the ratio of venture firms of which the CEO were women accounted for 7.0% of venture firms, but in 2017 the ratio fell to 4.12%. The main fields of venture businesses are manufacturing, publishing, video, broadcasting, communication, professional, scientific and technical services, and business support services.
- Gender segregation is revealed in venture fields as well. The industrial property rights related to design are concentrated among female-owned businesses, whereas property rights in the fields of patent, trade mark rights, overseas industrial property rights are concentrated among male-owned businesses.



특허권: Patent right 실용신안권: Utility model right
 디자인권: Design right 상표권: Trademark right
 해외산업재산권: Overseas industrial property right

[Figure 5] Gender of CEO & Average Annual Industrial Property Right

III. Status and problems of support system for female-owned businesses

1. Status of support policies for female-owned businesses in the foundation industries for the 4th industrial revolution

- The policies aimed to support female-owned businesses in foundation industries for the 4th industrial revolution are promoted for the most part by the Ministry of SMEs and startups. The total budget of the Ministry of SMEs and startups for support projects for female-owned businesses increased from 4.68 bil. won in 2004 to 177.9 bil. won in 2018.

〈Table 1〉 Status of the Projects of the Ministry of SMEs and Startups Supporting Female-Owned Businesses

Classification	Project title	Content of support	Subjects of support	Budget (mil. won)	
				2017	2018
Start-up ventures	Operation of the Integrated Support Center for female-owned businesses	Provision of startup support facilities, etc. to women who establish a business	To-be founders or businesses established by women that have been in business shorter than two years	31.93	30.85
	Competitive contests for business startup	Discovery and awarding of prizes to female startup founders with excellent ideas	To be founders or businesses established by women that have been in business shorter than two years	0.9	0.9

Classification	Project title	Content of support	Subjects of support	Budget (mil. won)	
				2017	2018
	Vitalization of female ventures	Support for BM development, coaching & networking, commercialization, etc.	To-be founders	6	6
	Female venture funds	Expansion of investment source by financing through fund of funds	Female-owned businesses	(100)	(60)
R&D	R&D for exclusive use of female-owned businesses	Support technology development fund for female-owned businesses	Female-owned businesses	100	100
Market development	Support for sales through TV home shopping channels	Education about entering home shopping sales, and support for production of videos, broadcast transmission	Female-owned businesses	4	3.7
	Support for overseas expansion	Expert consulting, education of trade practices, and support for participation in overseas exhibitions	Female-owned businesses	3	2.8
	Operation of female-owned business verification system	Issuance of certificates of female-owned businesses	Female-owned businesses	10.58	12.82
Manpower	Job platforms for female-owned businesses	Provision of matching services between female-owned businesses and professional workforce	Female-owned businesses	5	5.25
Consulting	Operation of Women Entrepreneurs' Desk	Reception and settlement of difficulties experienced in actual sites	Female-owned businesses	4	4

Classification	Project title	Content of support	Subjects of support	Budget (mil. won)	
				2017	2018
Education	Strengthening innovative competence of women entrepreneurs	Support women CEO's in their taking MBA course or business training course	Women CEOs or women executives	4.6	4.6
Other	Survey of female-owned businesses, etc.	Survey on Actual State of Female-Owned Businesses, operation of integrated information network, etc.	-	5.5	7
Total				175.5	

Source: P. 32., 「Basic Plans for Facilitating Activities of Female-Owned Businesses for 2018」, The Ministry of SMEs and Startups

- Of the support projects for 2018, the following can be regarded as the major subjects of female-owned businesses in foundation industries for the 4th industrial revolution: 1) vitalization of women's venture businesses, 2) fund for women's venture businesses, 3) R&D for exclusive use of female-owned businesses. Budget to be poured into those three projects in 2018 are 600 mil. won, 6 bil. won, and 10 bil. won, respectively. This equals to 70% of 23.79 bil. won, the total budget for support projects for female-owned businesses, including the fund for women's venture businesses. So it can be said that a considerably big portion of the total budget goes to female-owned businesses in the foundation industries for the 4th industrial revolution.
- Those female-owned businesses in the foundation industries for the 4th industrial revolution can participate not just in the support

projects provided only to female-owned businesses, but in general projects designed to support small and medium-sized businesses as well. R&D project and technology finance project are more suitable projects for female-owned businesses in technology and knowledge-based industries, particularly for those in the foundation industries for the 4th industrial revolution than for ordinary female-owned businesses to participate in. As to the status of supporting female-owned businesses under the projects for supporting small and medium-sized businesses in 2017 (excluding the realms of micro enterprises and middle-standing enterprises), 64.3 bil. won for R&D, 513.3 bil. won for execution of policies, 2,562 bil. won for guarantee business, and 1.9 bil. won for consulting were supported. The percentage of the amount spent for supporting female-owned businesses by field stops at meager 7.4% for R&D, 11.0% for execution of policies, 22.0% for guarantee businesses, and 15.1% for consulting. (<Summary table III-2>)

<Table 2> Status of supporting female-owned businesses by field of support for small and medium-sized businesses (2017)

Field of support	No. of businesses (Unit of a Co.)			Support fund (100 mil.)		
	Total businesses	Female-owned businesses	Percentage of female-owned businesses	Total businesses	Female-owned businesses	Percentage of female-owned businesses
R&D	7,642	710	9.3	8,672	643	7.4
Policy execution	22,836	2,693	11.8	46,661	5,133	11.0
Guarantee	478,419	114,479	23.9	116,229	25,620	22.0
Consulting	1,441	229	15.9	126	19	15.1

Source: p. 9., 「Basic Plans for Facilitating Activities of Female-Owned Businesses for 2018」, The Ministry of SMEs and Startups

2. Problems

- The size of projects are limited compared to the size of the population of policy subjects. According to Sin Seon-me et al., the number of venture businesses registered in Venturein (venture business notification database) as of 2015 was 2,563, of which 13.7% (about 350 enterprises) were startups with business experience shorter than a year. Meanwhile, “Women Venture Startup Care Program” yearly supports 60 teams; the project to support business establishment in liaison with leading venture firms supported 85 enterprises (including male-owned businesses) in 2018; the accumulated number of subjects since 2014 of the fund for female-owned venture businesses is as meager as 20; and the R&D support project to be used exclusively by women yearly supports fewer than 100 female-owned businesses.
- The performance management of the policies for supporting female-owned businesses is not adequate. Although, the Ministry of SMEs and Startups and the Women Enterprise Supporting Center (Foundation) publishes a 「white paper on female-owned businesses」 annually, policy report or basic data to be used for checking the results of 「Basic Plans for Facilitating Activities of Female-owned Businesses」 by major project are not produced. The effects of preferential treatment system for female-owned businesses and newly introduced measure of appointing 30% of women members in the evaluation committee need to be examined based on relevant data. A desirable change would be to set mid-term goals of the 「Basic Plans for Facilitating Activities of Female-owned Businesses」 with five years as a unit, and establish yearly plans to achieve the goals.

IV. Results of the survey on actual state of female-owned businesses

1. Survey outline

- The subjects of this survey were 200 female-owned businesses registered in the Women Enterprise Supporting Center, which are engaged in foundation industries for the fourth industrial revolution. Major types of businesses that were subjects of the survey were ‘business facility management, business support, and rental services’, ‘professional, scientific and technical services,’ ‘information and communications,’ and those manufacturing businesses that are planning to develop a product or to change their work process.
- The main content of the survey includes the following: first, general situation and management condition of responding female-owned businesses; second, current status of technological development and convergence in relation to the 4th industrial revolution; last, their demands for policy support. From this, we intend to grasp the current business condition and the difficulties female-owned businesses are confronted with in relation to the 4th industrial revolution, and identify their technological level, future management plan, and required policies.

2. Survey results

A. General status

- A total of 213 female-owned businesses responded to the survey. 141 businesses, or 66.2% of the total, were in ‘manufacturing business’

accounting for 66.2%, and the rest 72 businesses, or 33.8%, were in ‘facility management, business support and rental service,’ ‘professional, scientific, and technical services,’ and ‘information and communications services.’ In terms of growth stage of responding businesses, 51 businesses, or 23.9%, answered they were in the early stage after establishment or in entering stage, 95 businesses, or 44.6%, answered in developing stage, 48 businesses, or 22.5%, in maturing stage, and 19 businesses, or 8.9%, in declining stage.

- The absolute majority of subjects, or 64.8% of the total, is small businesses hiring less than 10 persons. 61 businesses, or 28.6%, hire 10~30 persons. Only 14 businesses, or 6.6%, hire more than 30 persons.
- In terms of technological level of producing main products or services, 14.1% of subjects are high-technology businesses, 38% intermediate-technology businesses, 47.9% are businesses of general purpose technology.
- Venture businesses account for 30.5% of the total, inno-biz businesses 17.8%, and main-biz businesses 11.7%. The rest do not fall under any of these categories.

B. Financial and manpower status

- Average total assets are 1.9601 bil. won; average total liabilities is 1.6887 bil. won; average total capital is 3.6487 bil. won; average annual sales is 3.730 bil. won; and average annual operating profit is 269.2 mil. won.
- The percentage in domestic sales is revealed to be 93.9% in average, showing most of them do business within domestic markets. The

average sales to consumers is 34.5%, and the average sales to the government is 23.4%, showing higher percentage of sales to the government. By growth stage, the businesses in entering stage show high sales to consumers, and those in developing stage show relatively high sales to the government, small and medium-sized companies, and venture companies. In the case of businesses in maturing stage, in addition to all kinds of sales mentioned above, show relatively high sales to conglomerates and their affiliates, which suggests their customer base is evenly distributed.

- The average number of management personnel is 2.7 persons, the average number of production workforce is 4.6 persons, the average number of sales personnel 1.5 persons, the average number of R&D personnel 0.9 persons, the average personnel in other fields 3.7 persons, with total workforce 13 persons in average. They have 2.9 vacancies in average, which amount to 21.8% of the current number of personnel. The ratio of the vacancies to the current number of personnel is higher in non-manufacturing businesses. While the number of vacancies is biggest in the businesses in maturing stage, the ratio of vacancies to the number of current personnel is biggest in the businesses in developing stage.

C. Status of technological development and convergence in relation to the 4th industrial revolution

- To the question asking if they are preparing for or responding to the 4th industrial revolution, 68.1% of the total answered they were not. Those businesses that answered they make preparation focus on development of new products and services (51.5%), and development

of new businesses or business models (50.0%). As the reasons for failing to make preparation, shortage of investment funds (40.4%) lack of professional manpower, needlessness given the characteristics of their products, and uncertainty about demand creation (20.0%, respectively), etc. were cited. 90.3% answered that they needed to prepare in the future.

- The positive outlook on the 4th industrial revolution prevailed among the subjects. With regard to sales and competitiveness, the outlook was positive in general. With regard to job creation, however, positive views were lacking in comparison. CEO's interest in the 4th industrial revolution was judged to be rather high, but their professionalism was judged to be lacking.
- About the difficulties related to the 4th industrial revolution, 78.9% cited difficulty in introducing technology, 73.2% difficulty in securing and utilizing manpower, 69.5% difficulty in R&D, and 59.6% difficulty in sales.

D. Demand for policy support of female-owned businesses

- As difficulties they are confronted with, pay rise (63.8%) was cited the most, followed by securing funds (63.4%), securing manpower (56.8%), market development (45.1%), excessive competition (44.6%), sluggishness in technological innovation and development of new products (44.1%) in that order. By growth stage, those in entering stage cited securing funds and manpower, and marketing, etc. as the biggest difficulty, and those in developing stage cited securing funds and manpower, and pay rise as the biggest difficulty they experience.

- In the past three years, 26.8% of the subjects have experienced receiving R&D support, 55.4% finance & guarantee support, 23.5% marketing and market development support, 16.0% export support, 19.7% tax benefits concerning employment, 30.5% young workforce support, technical personnel support 5.2%, technology support 2.8%, customized consulting 19.7%, etc.
- Compared to the percentage of those businesses that answered their business situation have improved a great deal due to government support, an absolute majority answered their business situation has improved a little bit due to government support. R&D fund support was cited the most as the most improved government support.
- As reasons for not having received government support, 28.0% answered they did not meet the qualification requirements, 22.0% answered they did not know the information on application, 20.0% answered the kind of support they needed was not offered, 18.0% answered they gave up because it took too long to receive support, 8.0% answered the size of support was too small, etc.
- As for the support they are willing to receive in the future, 55.4% answered they were willing to receive finance & guarantee support, 52.1% R&D support, 50.2% marketing and market development support, 39.9% technical personnel support, 39.4% young personnel support, 33.3% tax benefits concerning employment, 32.4% customized consulting support, 31.5% export support, etc.
- With regard to the ratio of experiencing the projects designed to support female-owned businesses, 7.5% have experience of participating in venture funds for exclusive use of female-owned businesses, 11.7% in R&D fund support, 13.6% special guarantee

program for exclusive use of female-owned businesses at the time of technology guarantee, etc. The rate of participation in innovative competence empowerment program for women entrepreneurs and the rate of participation in public procurement are the highest. Although the subjects have many different experiences, the rate of participation or utilization of other projects stops at 10% or more, except for the use of startup business support center.

- The rate of subjects that answered they do not know of the venture fund system for exclusive use of female-owned businesses, which is an important benefit for technology-based companies, is 76.1%. The rate of those who answered they do not know of the R&D fund support for exclusive use of female-owned businesses is 69.7%, and that of those who said they do not know of the special guarantee program for exclusive use of female-owned businesses at the time of technology guarantee is 74.5%. This suggests the urgency to enhance the awareness level of those projects. However, the level of intention to participate in those projects in the future is very high.
- As to the reasons for not having the intention to participate, many answered they lack the personnel to prepare their participation or they could not afford the participation. So, it is necessary to check the difficulties felt at the actual work sites. Demands for and necessity of relevant policies are revealed to be different by growth stage and technological level of each business, which suggests the necessity to identify necessary policies for technology-based enterprises in addition to the existing policies for female-owned businesses.
- The demand for R&D support among high-tech businesses, and the demand for technical personnel among the businesses in developing stage are considerably high. This shows the necessity that support

policies for female-owned businesses, which were originally prepared with the total female-owned businesses as subjects, need to be more specialized.

V. Conclusion and policy tasks

- It has been long since the importance of such measures that support technology startups in all kinds of policies designed to support women's establishment of business was suggested. But achievements on that part are not increasing. So, evaluation of the policies concerning the establishment of technology-based startups and impact analysis by gender need to be made. Given that the size of support projects are limited compared to the size of the population of policy subjects, the number of the subjects of such support that is offered to technology startups, including female venture funds, should be increased, and the size of such support project need to be expanded.
- The strengthening of differentiated support offered by growth stage is required. Given that the burden of personnel expenses is biggest in developing and maturing stage, the maximum limit in fund support need to be flexibly expanded according to the growth stage of subjects. To strengthen the support in securing quality manpower, relevant guidelines, etc. of the government policy concerning manpower support needs to be revised so as to give preference to female-owned technology-based businesses.
- Since the necessity for existing support policies for female-owned businesses is comparatively low among technology-based businesses

and demand for technology or technology investment support is high, the kinds of projects that support various R&D projects based on specific technologies need to be developed on the sidelines of the existing policies designed to support female-owned businesses. Especially, businesses in the early stage after establishment appeal a great deal of difficulties due to lack of R&D experience. Therefore, such kind of support as holding information sessions by field of technology for female-owned technology-based businesses, etc. is necessary.

- There is a necessity to gather associations etc. of technology-based businesses represented by women by field of technology, build a network of women entrepreneurs within the foundation industries for the 4th industrial revolution, and start the process of building a platform where common interests and policy demands are determined.
- Building a feedback system for checking the adequacy, etc. of relevant policies is required. Production of policy report or basic data to be referenced in the inspection of results and progress of 「Basic plans for facilitating activities of female-owned businesses」 by major project is necessary. The effects of preferential treatment of female-owned businesses and the newly introduced measure of designating 30% of women members in the evaluation committee should also be examined based on relevant data. It is also recommended to alter 「Basic plans for facilitating activities of female-owned businesses」 to mid- to long-term plans for more vivid differentiation of policies.

〈Table 3〉 Summary of policy tasks and content

Policy tasks	Major content
<p>Facilitation of discovery of women founder-to-be in foundation industries for the 4th industrial revolution</p>	<ul style="list-style-type: none"> ① Diversity in the major, job experience, and desired field of startup of women participants in startup education program and discovery program of founders-to-be needs to be enhanced. (Positive selection from the majors, types of job and desired fields of startup where the ratio of women is low is recommended.) ② Implementation of education on entrepreneurship for female college students majoring in natural sciences or engineering. (Programs offered to female college students at WISSET regional centers, etc.)
<p>Development of support policies by growth stage</p>	<ul style="list-style-type: none"> ① Addition of preferential treatment of female-owned businesses to the existing financial support policy offered to businesses in the early growth stage. (Addition of a preferential system reflecting the characteristics of female-owned businesses to the existing startup support fund, and investment and loan compound financing fund, which are offered according to business history for a set period of time.) ② Expansion of manpower support for female-owned businesses in the maturing stage. (As part of the program supporting the career re-entry of women in science, engineering, and technology, offer preferential treatment to those women who majored in science, engineering, and technology and restart their career in female-owned businesses, and to those female-owned business that hire them.)
<p>Enhancement of awareness level of support policies for female-owned businesses</p>	<ul style="list-style-type: none"> ① Provision of customized information service concerning government support programs to each female-owned business. (To this end, deploy consultants on the information concerning female-owned businesses at the Integrated Support Center for Female-owned Businesses, and demonstrate customized information service through startup business support centers located nationwide.) ② Expansion of manpower support for female-owned businesses in the maturing stage. (As part of the program supporting the career re-entry of women in science, engineering, and technology, offer preferential treatment to those women who majored in science, engineering, and technology and restart their career in female-owned businesses, and to those female-owned business that hire them.)

Policy tasks	Major content
<p>Establishment of a network of female-owned businesses in foundation industries for the 4th industrial revolution</p>	<ul style="list-style-type: none"> ① In-depth analysis of technology development support for female-owned businesses and preparation of improvement measures ② Building a platform for identification of policy demands of female-owned businesses in foundation industries for the 4th industrial revolution
<p>Examination of policy results and building a feedback system</p>	<ul style="list-style-type: none"> ① Examination of the accomplishments of 「Basic plans for facilitating activities of female-owned businesses」 by core project and announcement of results ② Alteration of the term of the 「Basic plans for facilitating activities of female-owned businesses」 to five years ③ Development and utilization of women entrepreneurship index

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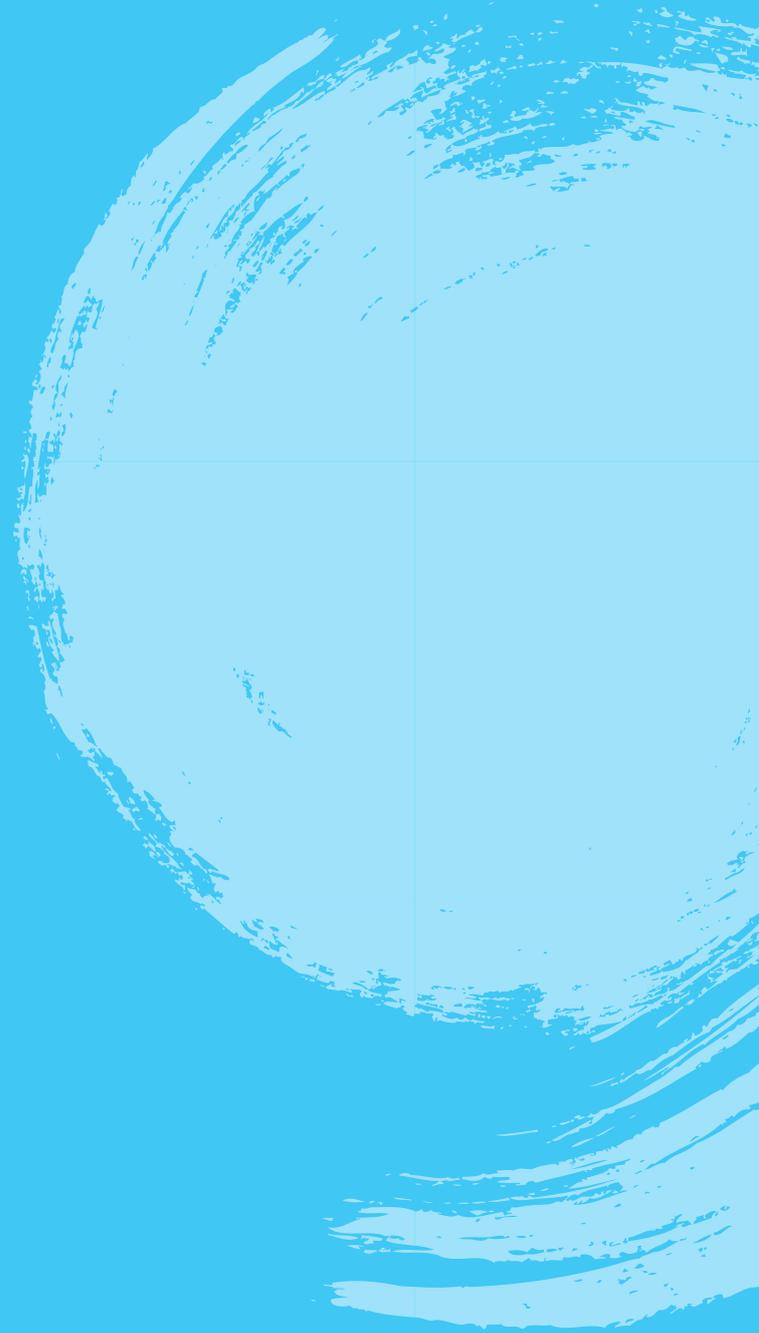
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