

# **The 5th Large-Scale Survey of Actual Conditions of Gender Equality in Scientific and Technological Professions**

## **Survey Report**

### **Concise Summary**

**August 2022**

**Japan Inter-Society Liaison Association Committee for  
Promoting Equal Participation of Men and Women in Science  
and Engineering (EPMEWSE)**

Concise Summary of “The 5th Large-Scale Survey of Actual Conditions of Gender  
Equality in Scientific and Technological Professions (Survey Report)”

August 2022

Japan Inter-Society Liaison Association Committee for Promoting Equal  
Participation of Men and Women in Science and Engineering (EPMEWSE)

JAPAN

This report summarizes the results of “The 5th Large-Scale Survey of Actual  
Conditions of Gender Equality in Scientific and Technological Professions” which was  
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# Preface

The Japan Inter-Society Liaison Association Committee for Promoting Equal Participation of Men and Women in Science and Engineering (EPMEWSE) conducts a large-scale survey about every four years on gender equality in the science and engineering professions “to understand the current environment surrounding the communities of science and engineering professionals, to identify issues, and to propose recommendations.”<sup>1)</sup> The first and second surveys were carried out under the consignment of Japan’s Ministry of Education, Culture, Sports, Science and Technology, but from the third survey, the EPMEWSE itself has been working on the project with the combined strength of its member academic societies. Our intention is to continuously capture the trends through periodic research, investigate the awareness of the gender equality related laws and policies set up with the movement of the times, verify the effect of government projects, and recommend new policies as necessary.

In Japan, which has plunged into a declining population and the resulting aging society, how to improve productivity and lead it to innovation is an extremely important issue. In order to solve this issue, attention is focusing on working styles especially of women and the elderly. Against this background, basic plans have been formulated “to maintain and strengthen international competitiveness and to revitalize science and technology/academic activities incorporating various perspectives and ideas”, as stated in the Fourth Basic Plan for Gender Equality (approved by the Cabinet in December 2015), and “toward Reiwa society where all women and girls can thrive and achieve their full potential”, as stated in the Fifth Basic Plan for Gender Equality (approved by the Cabinet in December 2020). Based on these, the “Act on Promotion of Women's Participation and Advancement in the Workplace” was enacted in April 2016. The act made it obligatory for national and local governments as well as private enterprises to comprehend the situation concerning the activity of women, analyze issues, formulate action plans, and make information public. Internationally, at the G7 Ise Shima Summit in 2016, the world leaders declared their commitment “to empowering women and girls, including through capacity-building such as education and training as well as promoting active role of women in Science, Technology, Engineering and Mathematics (STEM) fields,” and for that purpose set up the “Women’s Initiative in Developing STEM Career (WINDS).” Despite these initiatives, Japan ranked 120th out of 156 countries in the global gender gap (gender equality) index announced by the World Economic Forum in March 2021 (121st out of 153 countries in the previous survey). This is the worst among developed countries. Even within Asia, Japan ranks lower than South Korea, China, and ASEAN countries<sup>2)</sup>, and there are calls for further actions to be taken to solve the problem.

Against such a backdrop, this research study clarified the current situation of female researchers and engineers, and how it is changing along with the situation of their male counterparts. Similar to the fourth survey, we considered “Gender Gap in Job Positions,” “Child and Nursing Care,” “Limited-term Employment and Researcher” and “Programs and Policies” as important topics in our analysis. Based on over 19,000 responses, which is more than the previous survey, the report is more content-rich than ever before. We would like to thank the survey participants from each academic society for their cooperation, and as with previous reports, we strongly hope that this report will contribute to gender equality and further development of science and technology.

- 1) Japan Inter-Society Liaison Association Committee for Promoting Equal Participation of Men and Women in Science and Engineering, Report on the MEXT-Commissioned Project in FY2003 “Diverse Visions of Scientists and Engineers in the 21st Century -For the Promotion of Gender Equality-,” March 2004
- 2) Global Gender Gap Report 2021 <https://www.weforum.org/reports/global-gender-gap-report-2021>

# Survey Results

In conducting the survey, the Pre-Analysis Working Group was assigned the task of studying the timing of the survey and creating questionnaire items. With regard to the selection of the questionnaire items, while adding new questions and deleting some previous ones, we adhered to the survey items from the first four surveys as much as possible to enable chronological examination. As a result, the questionnaire for the fifth survey contains 93 questions covering 43 items. The survey was carried out through a website from October 20 to November 30, 2021 targeting members of academic societies.

Note:

In the fifth survey, the following common definitions apply in each chapter.

## ○ Affiliated organization

Affiliated organization is divided into five categories of “university / technical college”, which includes national universities, public universities, private universities, and technical colleges / other educational institutions, “research institution”, which includes public as well as other research institutions, “corporation”, “government”, and “others”, which also includes those that have no affiliation.

## ○ Occupational field

Based on job title (position), occupational field is divided into five major categories.

Two categories for “university/technical college” and “research institution”:

- ① PI: Principal Investigator (professor, associate professor, lecturer, dean, director, division head, group lab chief, senior researcher)
- ② NPI: Not Principal Investigator (assistant professor, research assistant, researcher (including limited-term researcher), research technician)

Two categories for “government” and “corporation”:

- ③ manager (executive director, general manager, senior manager, manager)
- ④ regular employee (group leader, general staff)

One category for:

- ⑤ student

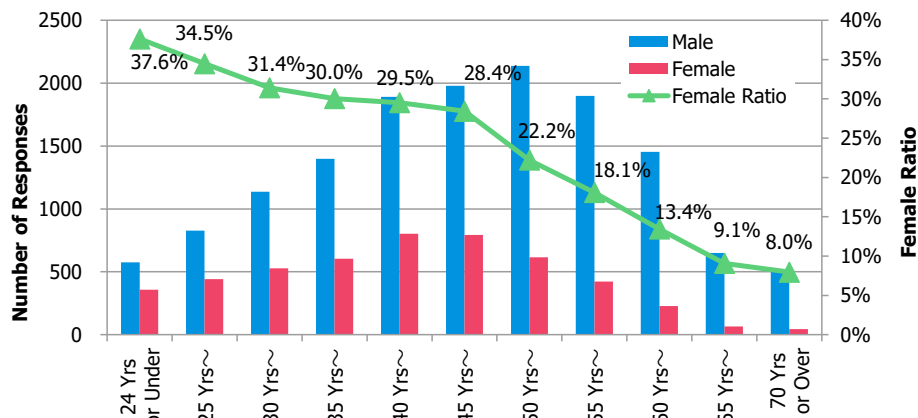
These categories were further divided into nine sub-categories depending on the presence of term limits and used for aggregate analysis. The major categories were subdivided into (A) no-term PI, (B) limited-term PI, (C) no-term NPI (excludes limited-term researcher), (D) limited-term NPI (excludes limited-term researcher), (E) no-term researcher, (F) limited-term researcher (includes researcher reappointed to limited-term employment after reaching retirement age), (G) manager (corporate executive director, general manager, senior manager, manager), (H) regular employee (group leader, general staff), and (I) student.

# Chapter 1 Summary of Results

## 1.1 Basic Data (Question 1-11)

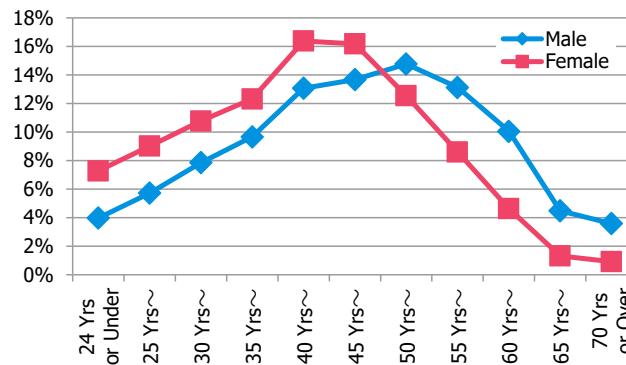
### Age Group and Gender (Question 1, 2: Figure 1.1-2)

The total number of survey respondents was 19,505 of which 14,468 were men, 4,901 (25.1%) were women and 136 (0.7%) preferred not to answer. Percentage of female respondents decreased as age increased (Figure 1.1).



**Figure 1.1 Age Distribution of Respondents and Percentage of Females**

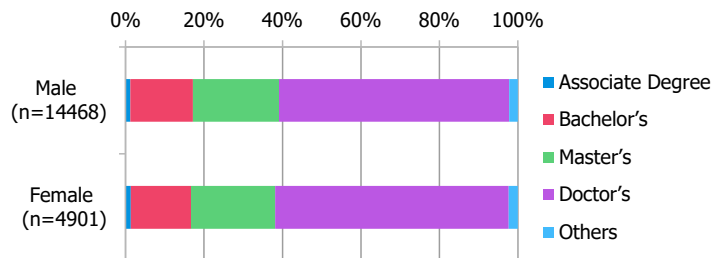
The peak age group was higher for men compared to women (Figure 1.2).



**Figure 1.2 Age Distribution of Respondents by Gender**

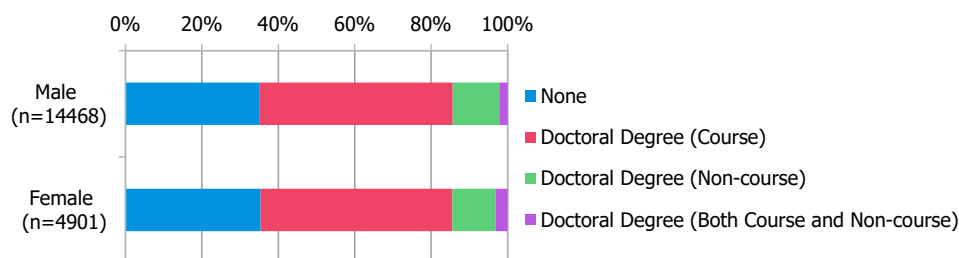
### Highest Academic Degree (Question 3, 4: Figure 1.3-6)

The percentage of women with an undergraduate degree was lower than that of men. However, the percentages of men and women who have completed master's courses were almost the same. As for the completion of doctoral courses, the percentage of women was slightly higher than that of men (Figure 1.3).



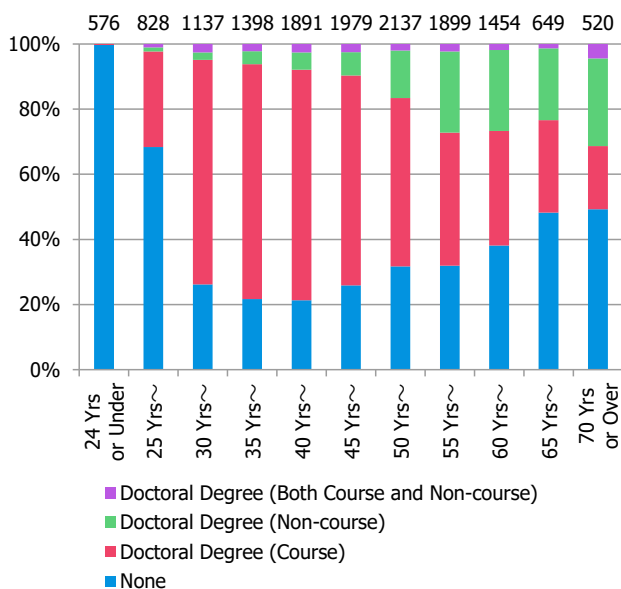
**Figure 1.3 Highest Academic Degree (Single Answer)**

The gender gaps in the percentages of undergraduate degree and doctoral course completion have been shrinking since the third survey, and in this survey, the situation between men and women has finally reversed. The overall degree acquisition rate was 65%. The percentage of men was higher until the previous survey, but this time, it is almost the same (Figure 1.4).

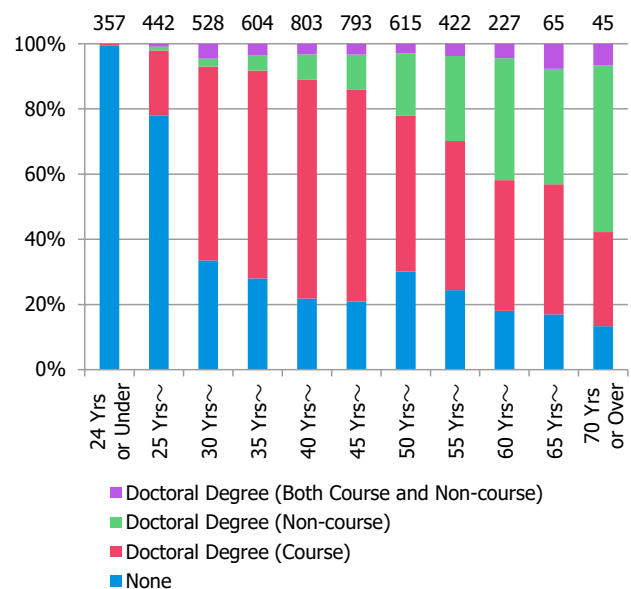


**Figure 1.4 Types of Doctoral Degree (Single Answer)**

The degree acquisition rate rapidly increases for both men and women in their 30's (Figure 1.5, Figure 1.6).



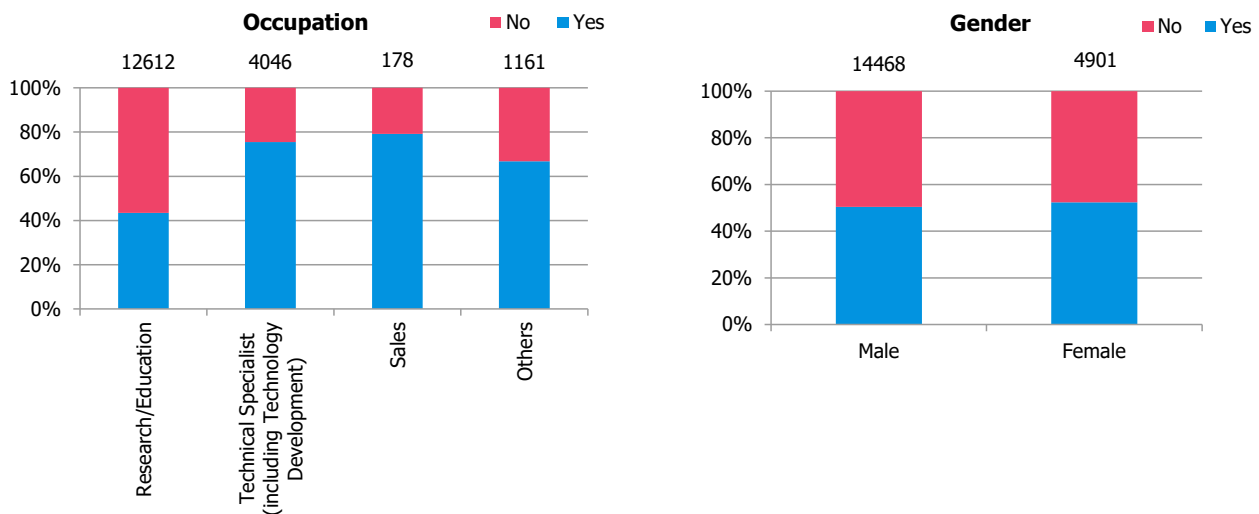
**Figure 1.5 Male Respondents with Doctoral Degree by Age Group (Single Answer)**



**Figure 1.6 Female Respondents with Doctoral Degree by Age Group (Single Answer)**

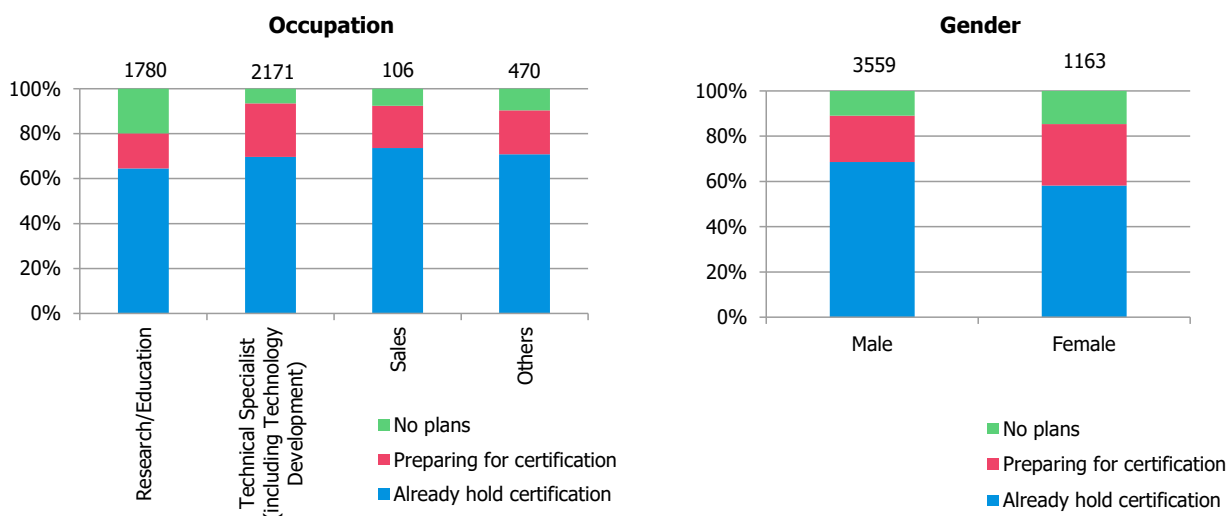
### Acquisition of Certifications (Question 5: Figure 1.8-10)

The acquisition rate of certifications (Figure 1.8) was low for research/education positions and high for technical specialists and sales positions. The acquisition rate was slightly higher for women than for men.



**Figure 1.8 Acquisition of Certifications**

Approximately 70% of technical specialists and sales staff have "acquired" certifications necessary for career development (Figure 1.10). The acquisition rate of certifications for career development was higher among men than among women.

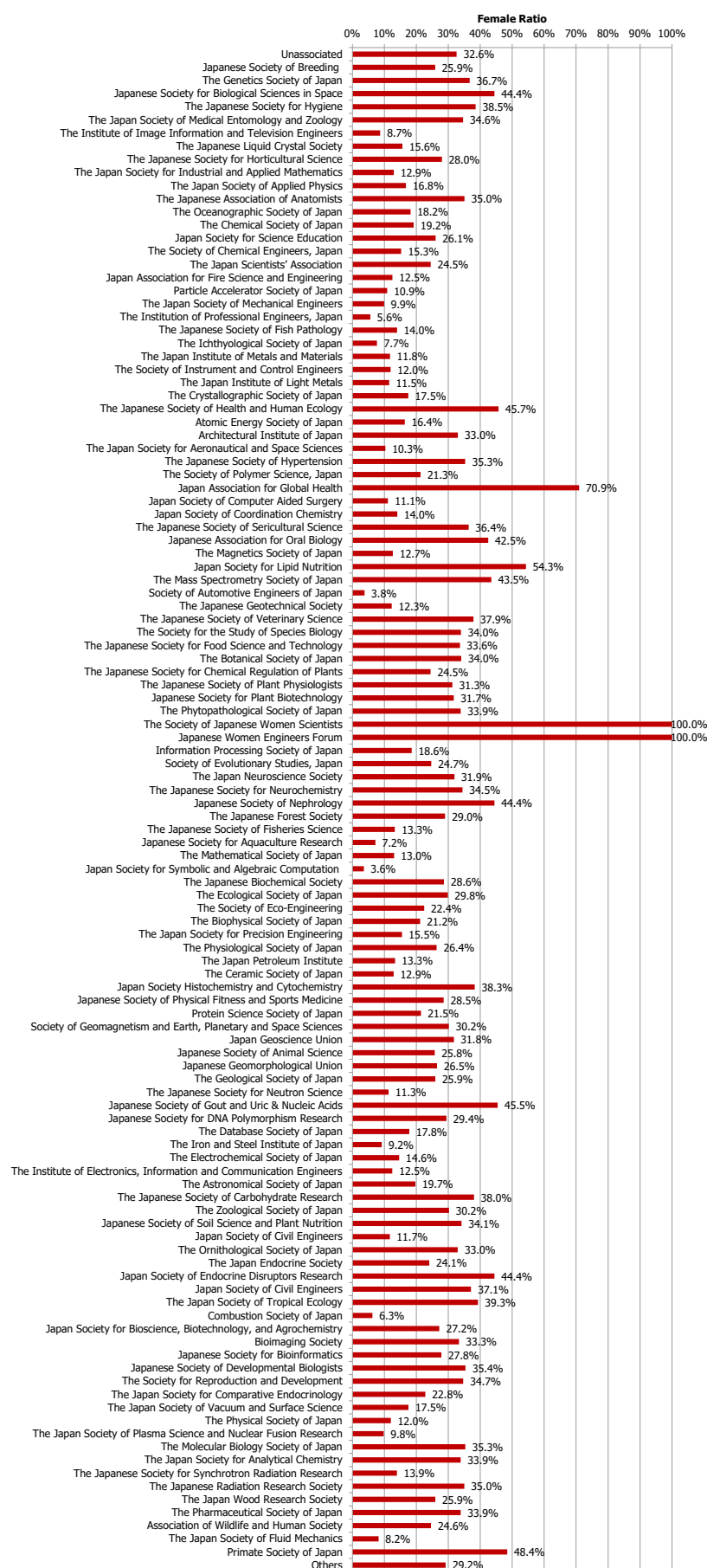


**Figure 1.10 Acquisition of Certifications for Career Development**

### Affiliated Academic Societies (Question 6: Figure 1.11)

The female ratio of survey respondents was higher than the female ratio of society members for all academic societies (Figure 1.11). On average, each person is affiliated with 1.60 academic societies.

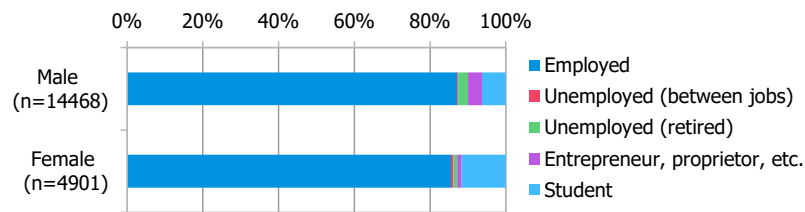




**Figure 1.11 Respondents' Affiliated Academic Society and Percentage of Females (Multiple Answers)**

### Employment Status (Question 7: Figure 1.12)

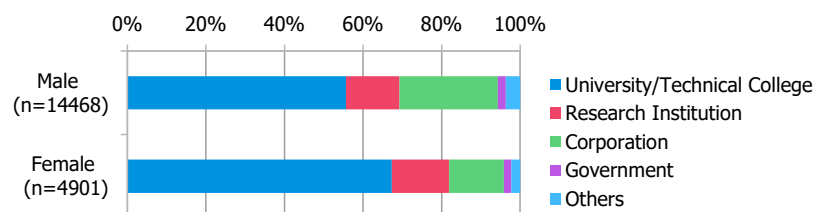
More than 85% of both men and women are employed, and about twice as many women are “unemployed” as men (Figure 1.12).



**Figure 1.12 Current Employment Status (Single Answer)**

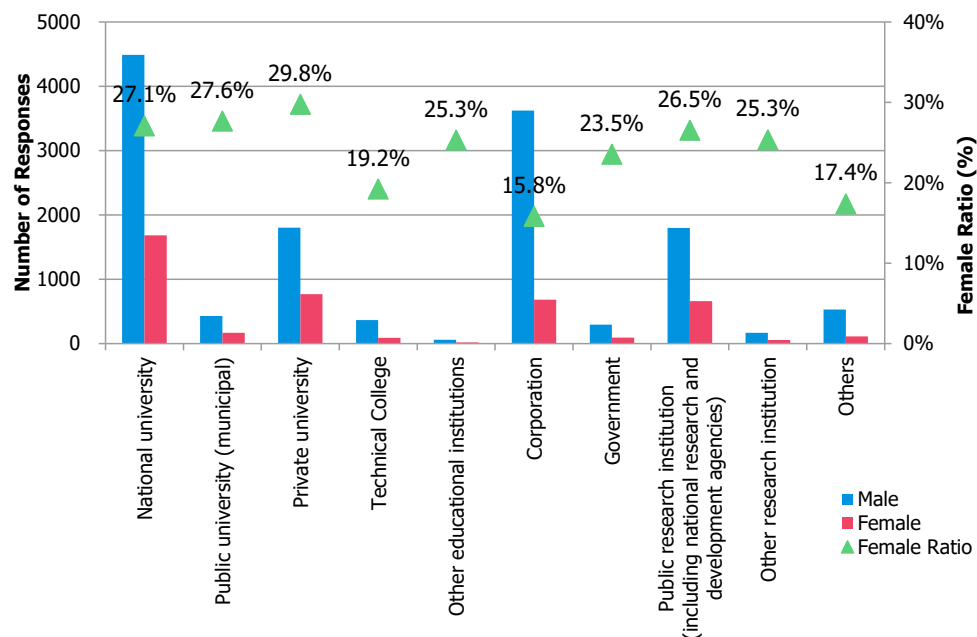
### Affiliated Organization (Question 7: Figure 1.14-15)

Respondents' affiliation was highest with university / technical college (Figure 1.14).



**Figure 1.14 Respondents' Affiliated Organization (Single Answer)**

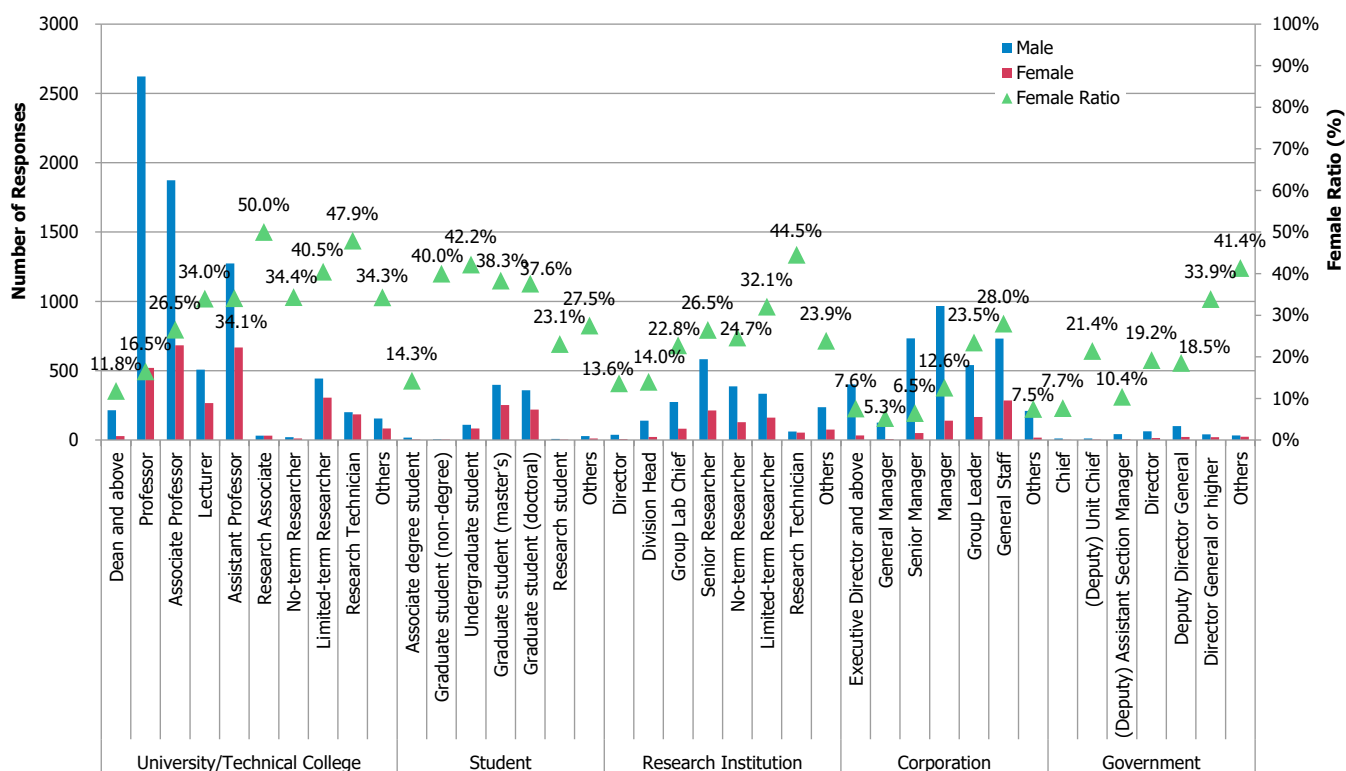
Percentages of women in corporation and government were same as before and slightly lower compared with university / technical college and research institution (Figure 1.15).



**Figure 1.15 Number of Respondents by Organization and Percentage of Females (Single Answer)**

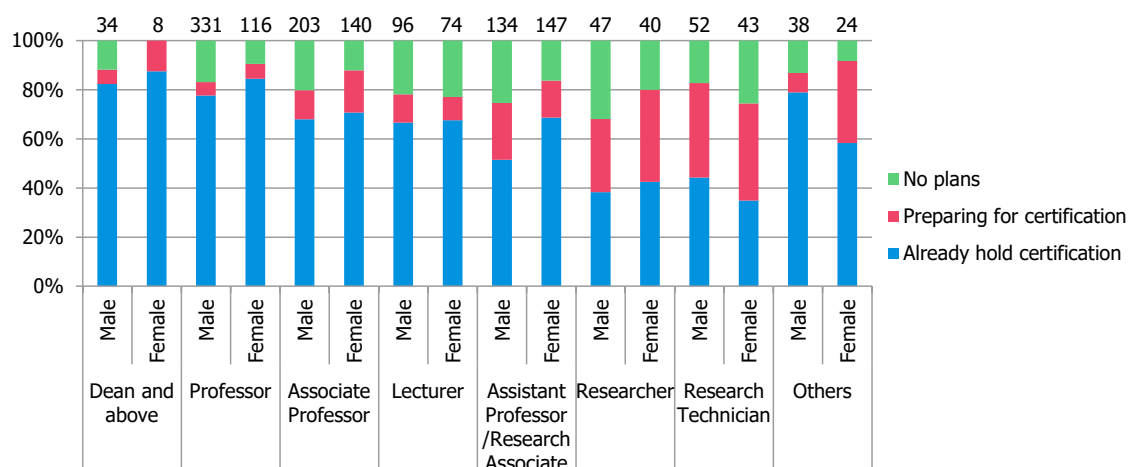
**Job Position (Question 8: Figure 1.16-19)**

As job position becomes higher, female ratio decreases (Figure 1.16).

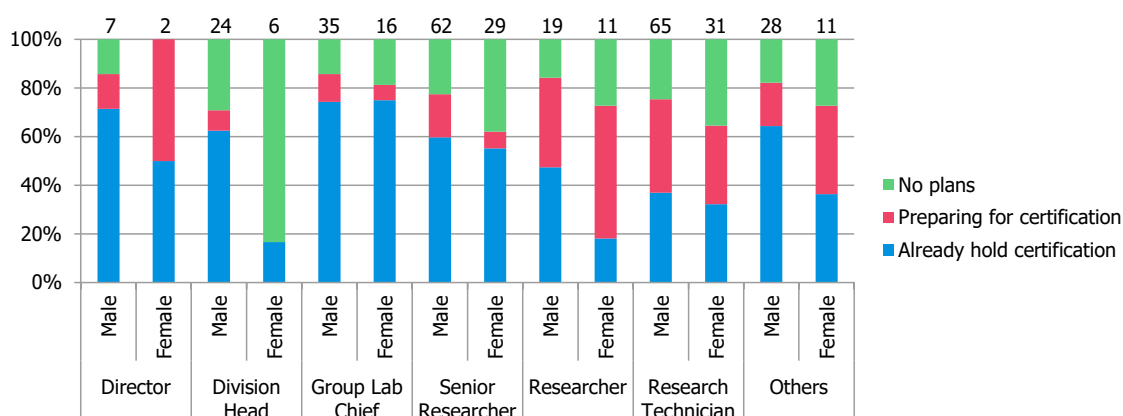


**Figure 1.16 Response by Job Positions (Multiple Answers) and Percentage of Females**

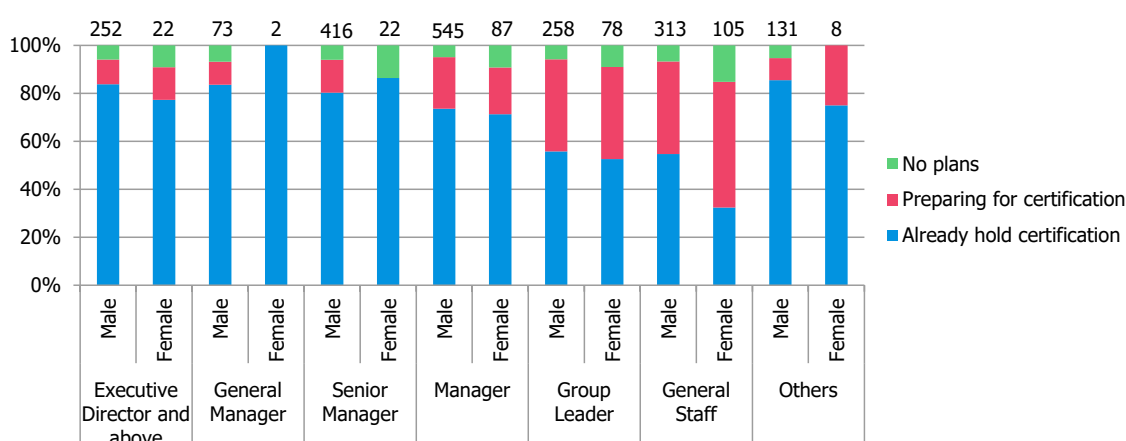
In research institution, acquisition rates of necessary certifications were generally low with acquisition rate of women being lower than that of men in almost all positions (Figure 1.17-19).



**Figure 1.17 Job Position and Acquisition of Necessary Certifications by Gender (University / Technical College)**



**Figure 1.18 Job Position and Acquisition of Necessary Certifications by Gender (Research Institution)**



**Figure 1.19 Job Position and Acquisition of Necessary Certifications by Gender (Corporation)**

### Number of Staff (Question 8: Figure 1.20-21)

Women had a fewer number of staff (for university, number includes associate researchers and those that are supervised) compared with men (Figure 1.20).

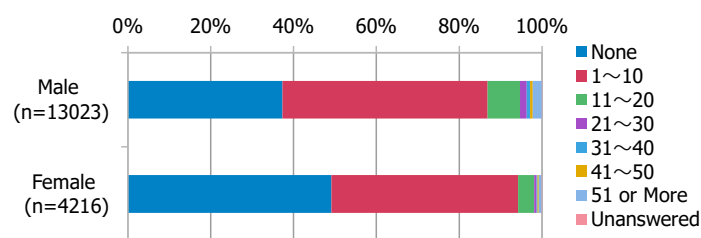


Figure 1.20 Number of Staff by Gender (Single Answer)

The number of staff for men exceeded the number for women in all areas of specialization (Figure 1.21).

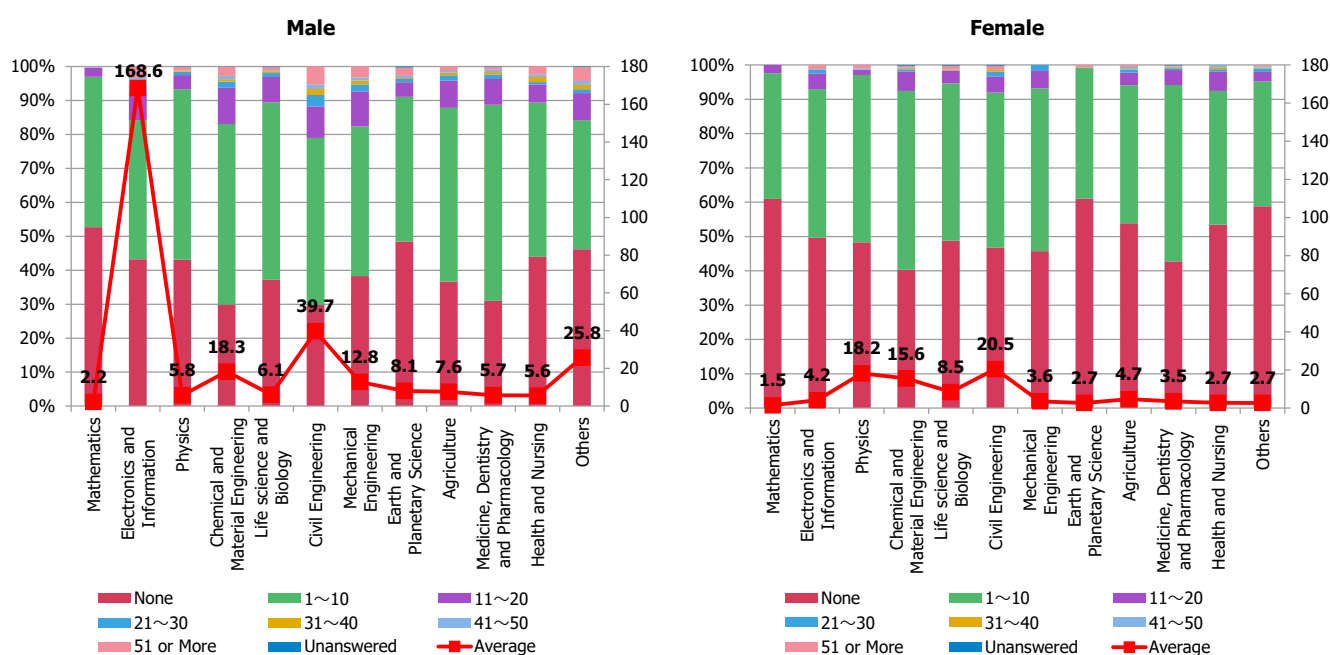


Figure 1.21 Number of Staff by Area of Specialization and Gender (Single Answer)

### Research/Development Funding (Question 8: Figure 1.22-23)

Overall, women earned less research/development funding than men in FY2020 (Figure 1.22).

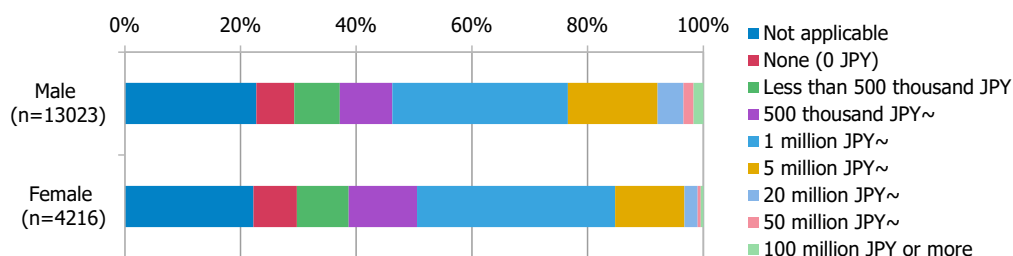
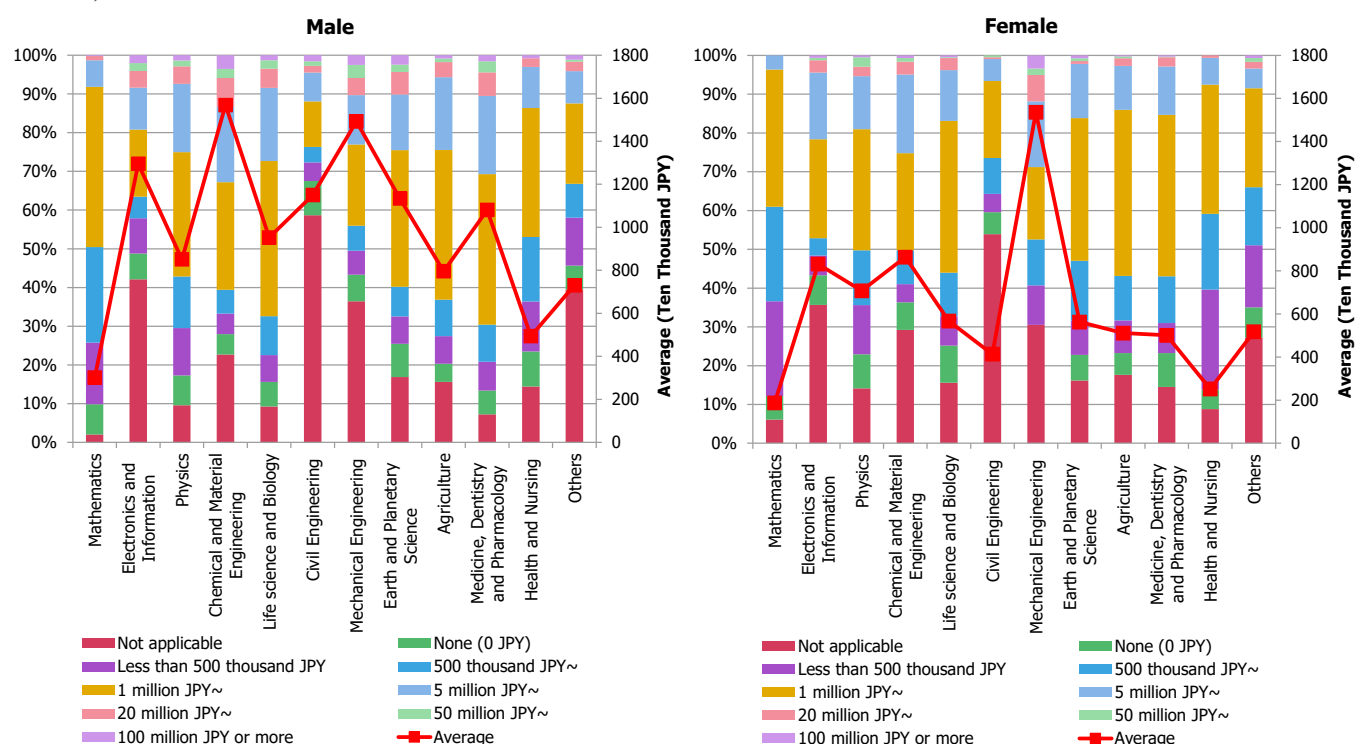


Figure 1.22 Research/Development Funding by Gender (Single Answer)

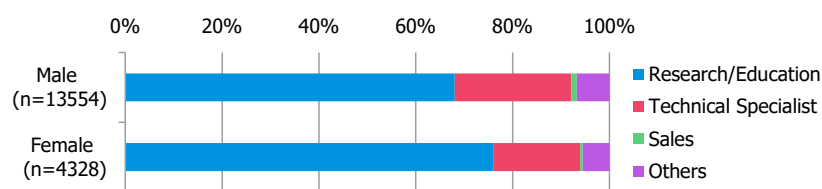
Funding received by men significantly exceeded funding received by women in all areas of specialization (Figure 1.23).



**Figure 1.23 Research/Development Funding by Area of Specialization and Gender (Single Answer)**

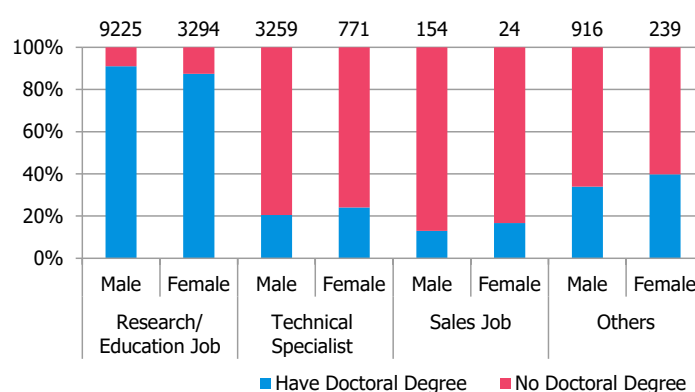
### Occupation (Question 9: Figure 1.24-25)

Sixty-eight percent of men and 76% of women were in research/education jobs (Figure 1.24). Compared with past surveys, the ratio of men in research/education jobs dropped in this survey.



**Figure 1.24 Percentage of Research and Technical Jobs (Single Answer)**

More than 85% in research/education, more than 20% in technical, and more than 15% in sales held doctoral degrees, and there was no significant difference between genders (Figure 1.25).



**Figure 1.25 Respondents with Doctoral Degree by Occupation (Single Answer)**

## Annual Salary (Question 10: Figure 1.27-28)

Annual salaries of women are lower than that of men (Figure 1.27). Women's average annual salaries are about 80% of men's in almost all organizations and age groups (Figure 1.28).

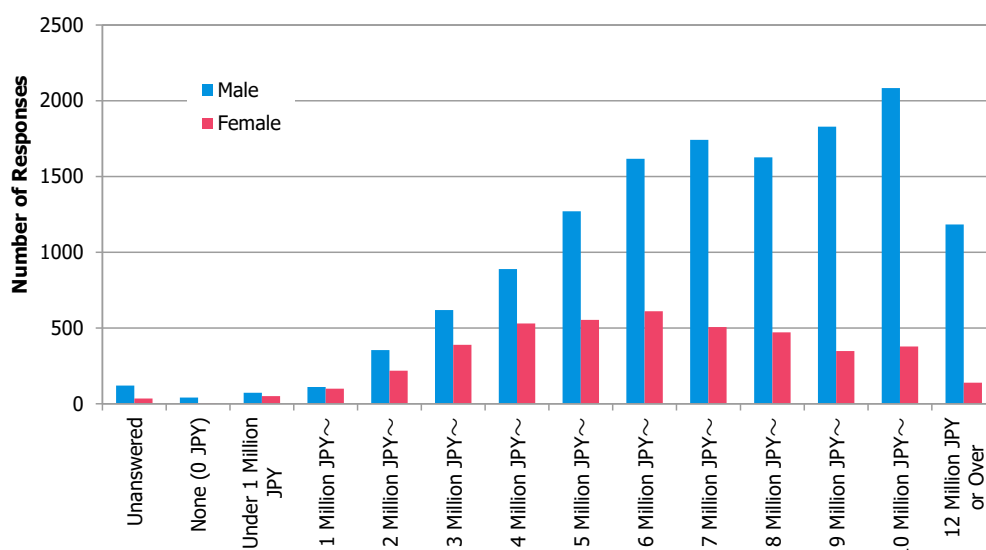
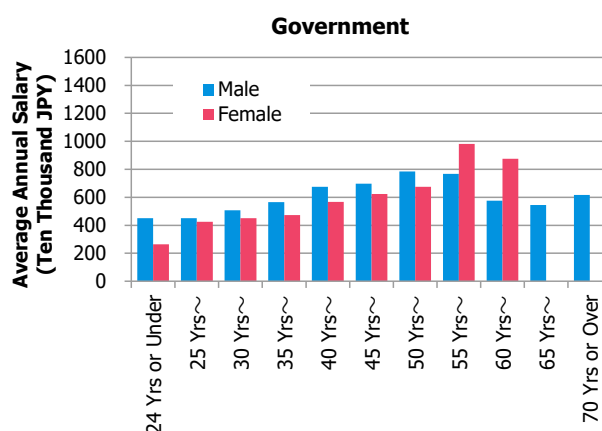
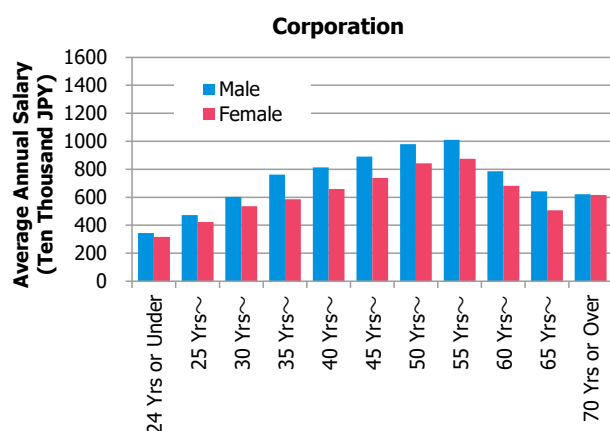
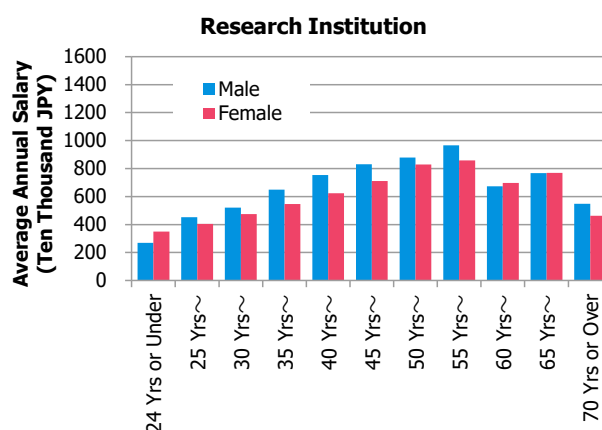
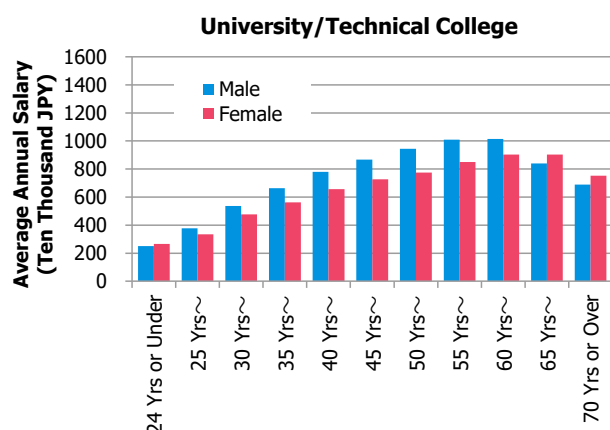
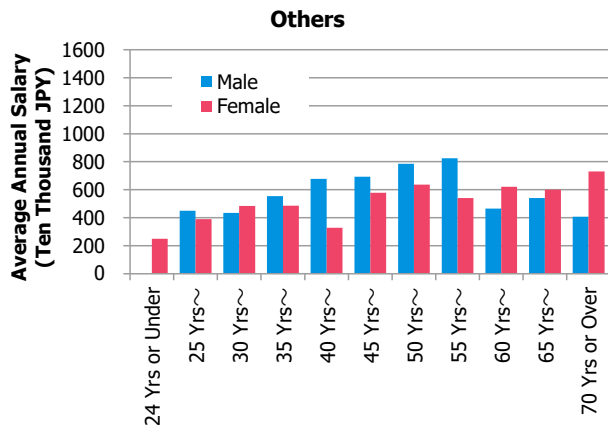


Figure 1.27 Annual Salary by Gender (Single Answer)





**Figure 1.28 Average Annual Salary by Age Group for Each Organization (Single Answer)**



## 1.2 Working Conditions (Question 11-22)

### Finding Employment (Question 11: Figure 1.30)

With the exception of certain areas of specialization, the percentage of women who applied for “open recruitment” was higher than that of men (Figure 1.30).

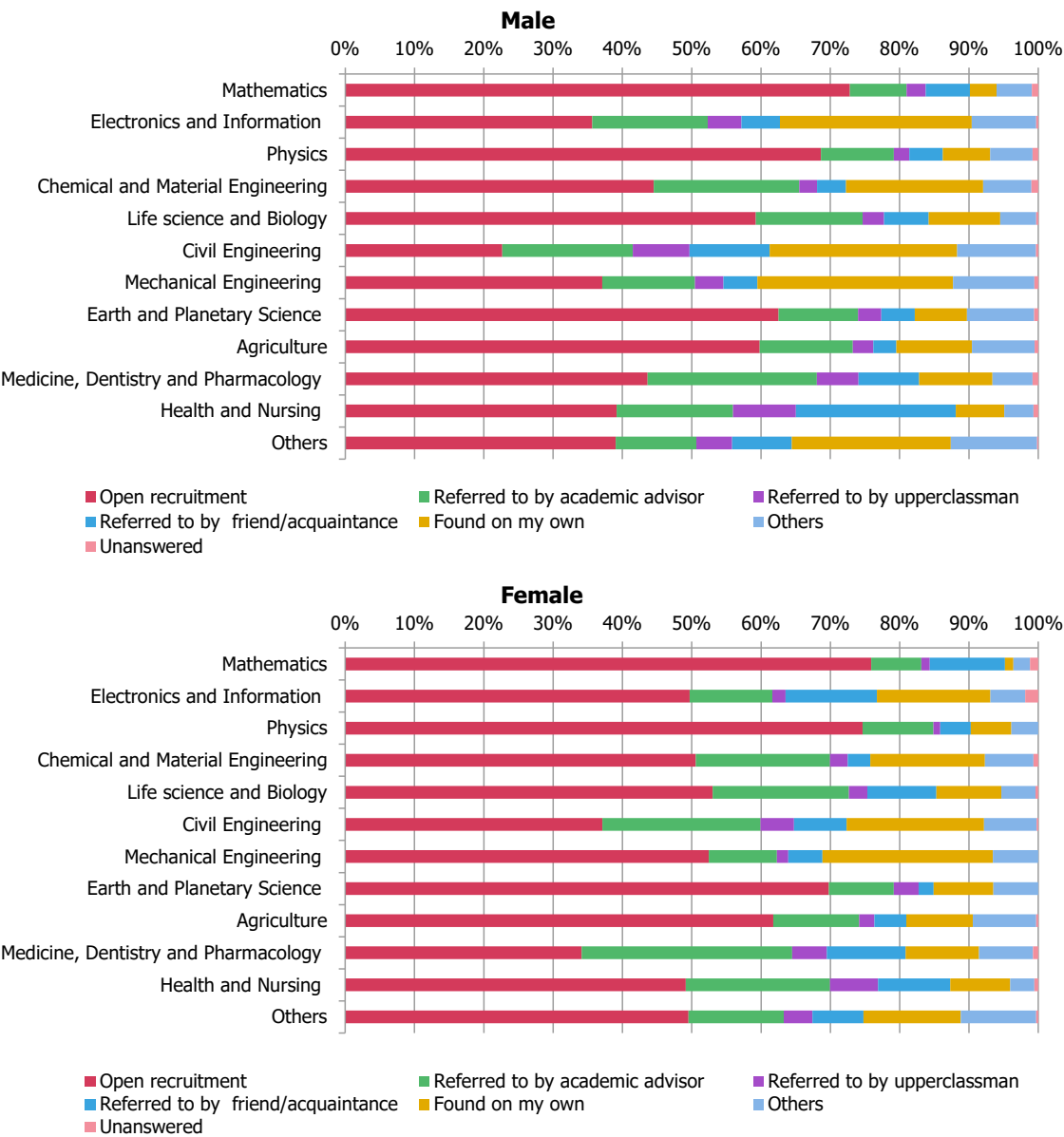


Figure 1.30 Method Used to Find Employment by Gender (Single Answer)

### Employment Status (Question 11: Figure 1.31)

In university / technical college, percentage of no-term employments is low, especially among women (Figure 1.31). More than 80% of employments in corporation have no terms for both men and women. Likewise, more than 90% of employments in government are without terms, and there were no significant gaps between genders.

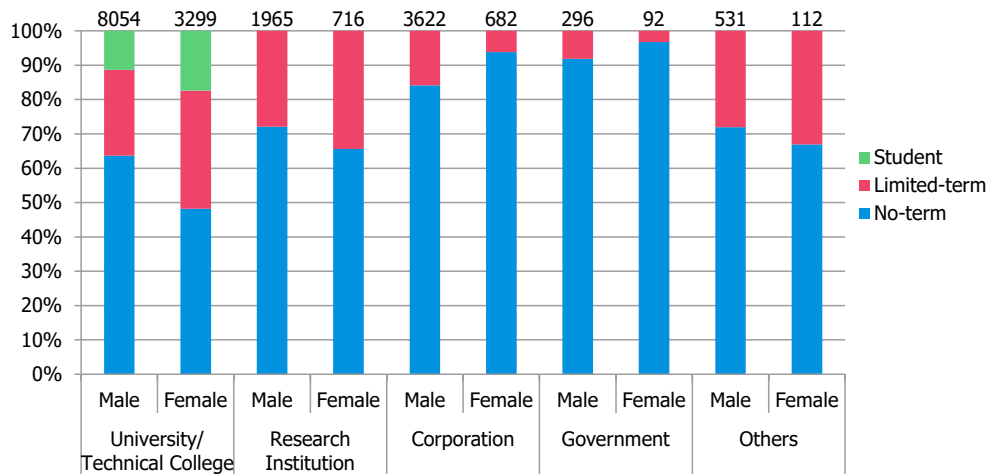


Figure 1.31 Employment Status by Organization (Single Answer)

### Limited-Term Employment (Question 12, 13: Figure 1.33-43)

Women hold limited-term employments longer than men (Figure 1.33). The number of “less than ten years” responses, which was the highest recorded response in the previous survey, drastic dropped in this survey. This may be due to the revision of the Labor Contracts Act.

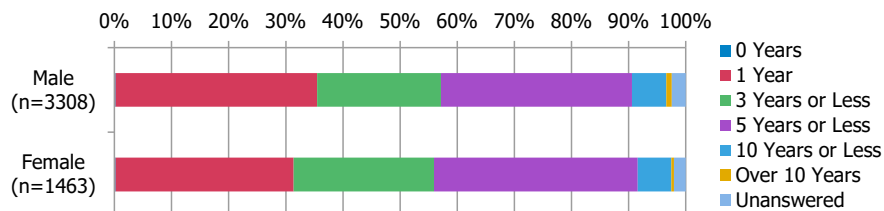


Figure 1.33 Term of Current Occupation (Limited-Term Employment) (Single Answer)

Women changed their affiliated organization more frequently than men (Figure 1.34).

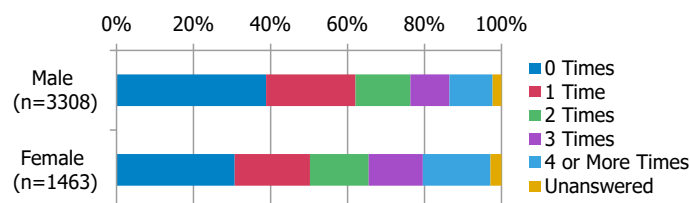
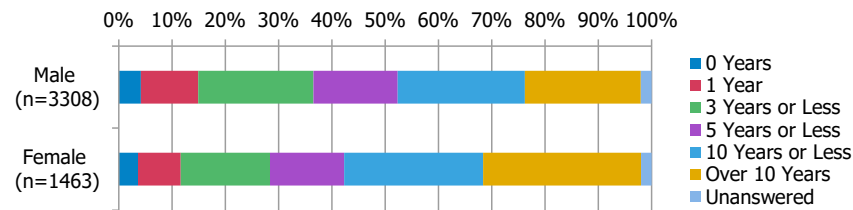


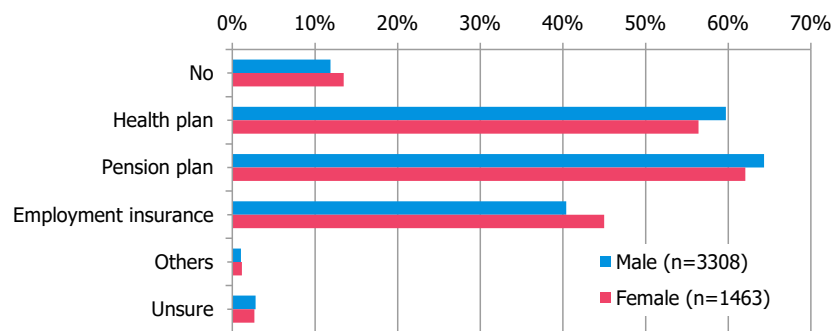
Figure 1.34 Affiliation Changes (Current: Limited-Term Employment) (Single Answer)

The total length of tenure in limited-term employment is longer for women than for men with about 30% of women exceeding 10 years (Figure 1.35).



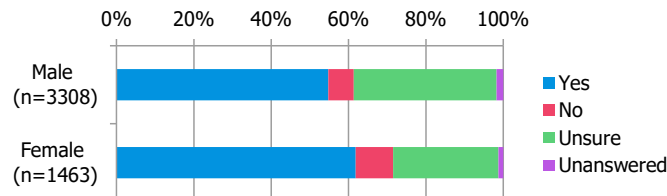
**Figure 1.35 Total Years as Limited-Term Employee (Single Answer)**

Enrollment in “health plan”, “pension plan” and “employment insurance” was around 60%, which is a decrease from the previous survey (Figure 1.36).



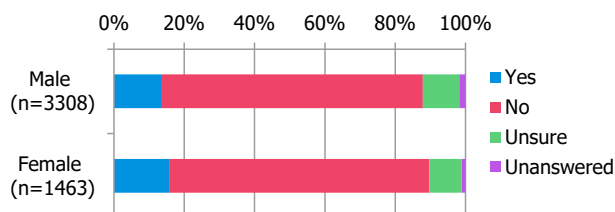
**Figure 1.36 Social Security (Multiple Answers)**

More than half of the respondents qualify for childcare leave (Figure 1.37). The percentage of both men and women who take advantage of the leave has continued to increase since the third survey.

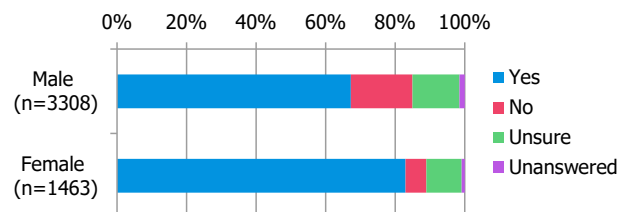


**Figure 1.37 Provision for Childcare Leave (Single Answer)**

About 15% of respondents are in tenure-track positions, an increase from the previous survey (Figure 1.38). About 80% of both men and women desire to work without a term limit, but about 20% of men did not desire a no-term employment (Figure 1.39).

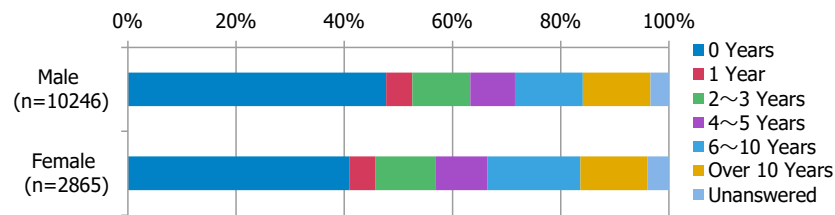


**Figure 1.38 Tenure Track Job (Single Answer)**

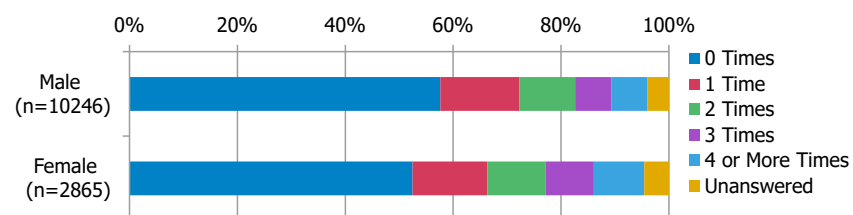


**Figure 1.39 Desire for No-Term Employment (Single Answer)**

The most common length of term experienced by both men and women who have worked in a limited-term position is “6 to 10 years”, and about 12% of respondents have experience working “more than 10 years” (Figure 1.40). The most frequent change of affiliation was “0” for both men and women, but about 40% of both have changed their affiliation more than once (Figure 1.41).

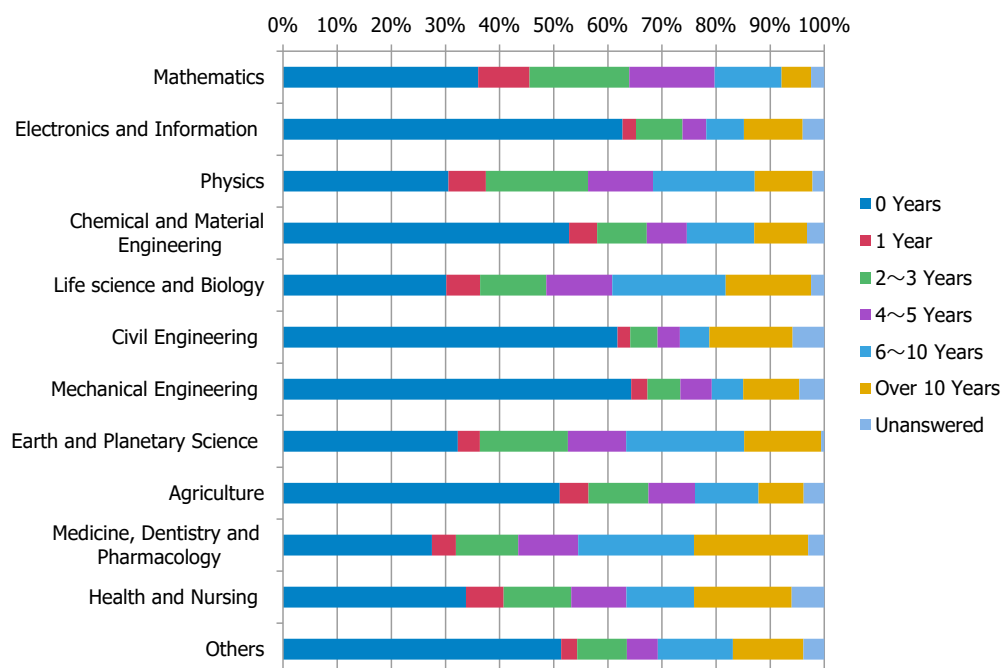


**Figure 1.40 Length of Limited-term Employment (Current: No-Term Employment) (Single Answer)**

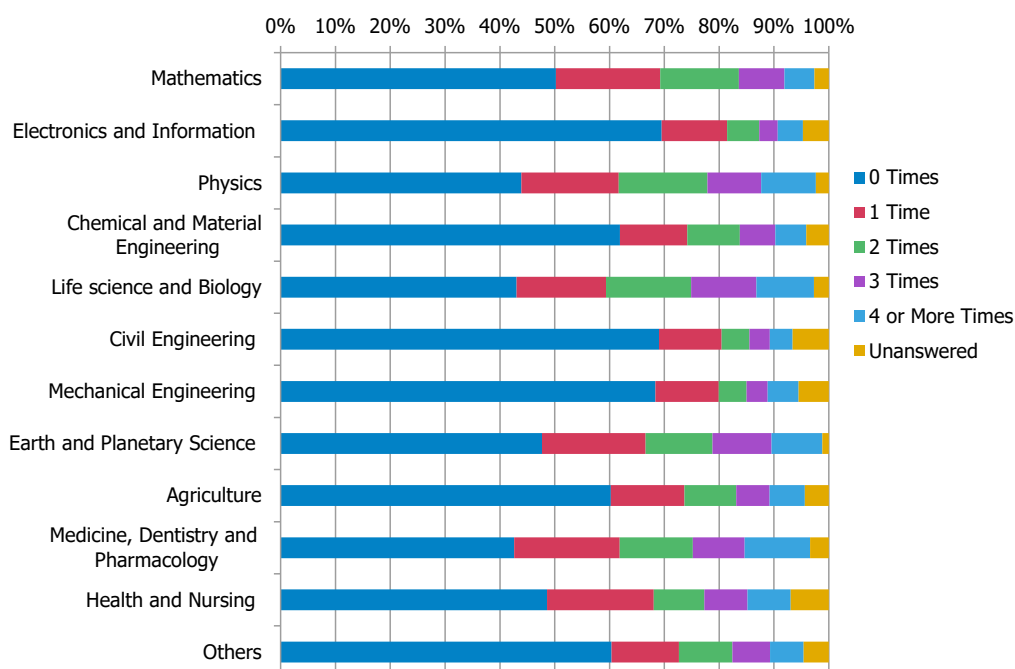


**Figure 1.41 Affiliation Changes (Current: No-Term Employment) (Single Answer)**

The length of limited-term employment experienced by those currently under no-term employment was long in mathematics, physics, life science / biology, earth / planetary science, medicine/dentistry/pharmacology, and health/nursing (Figure 1.42), and the number of affiliation changes was high for these professions as well (Figure 1.43).



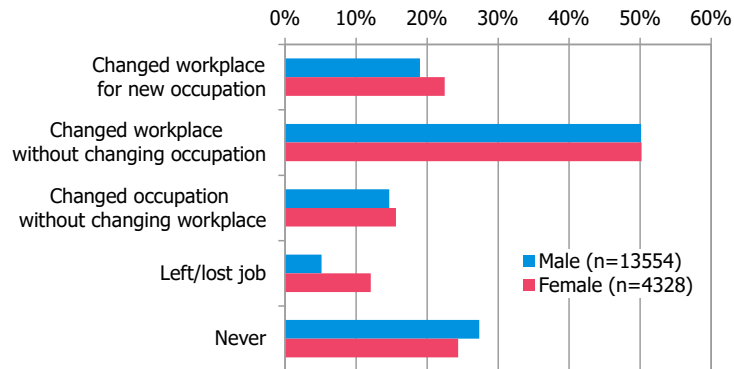
**Figure 1.42 Length of Limited-term Employment by Area of Specialization (Current: No-Term Employment) (Single Answer)**



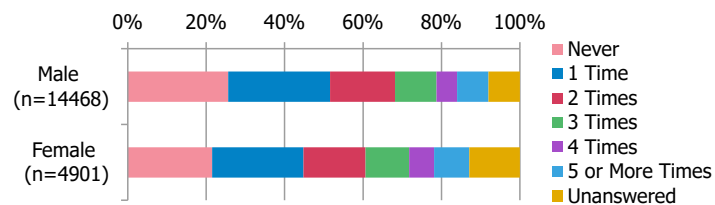
**Figure 1.43 Affiliation Changes by Area of Specialization (Current: No-Term Employment) (Single Answer)**

### Job Change / Relocation / Leaving Job and Reasons (Question 15: Figure 1.44-47)

About half of both men and women have experienced relocation without changing their occupation, and women far outnumbered men when it came to leaving a job (Figure 1.44). Sixty-six percent of both men and women have experienced job change / relocation / leaving job more than once and fewer than 10% have experienced this five times or more (Figure 1.45).

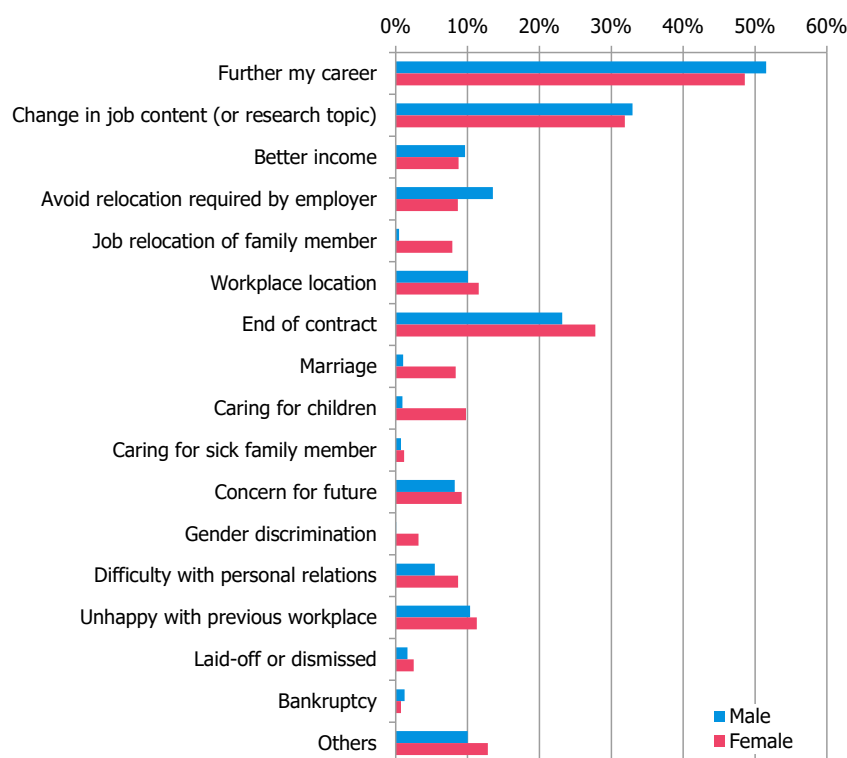


**Figure 1.44 Experience with Job Change / Relocation / Leaving Job (Multiple Answers)**

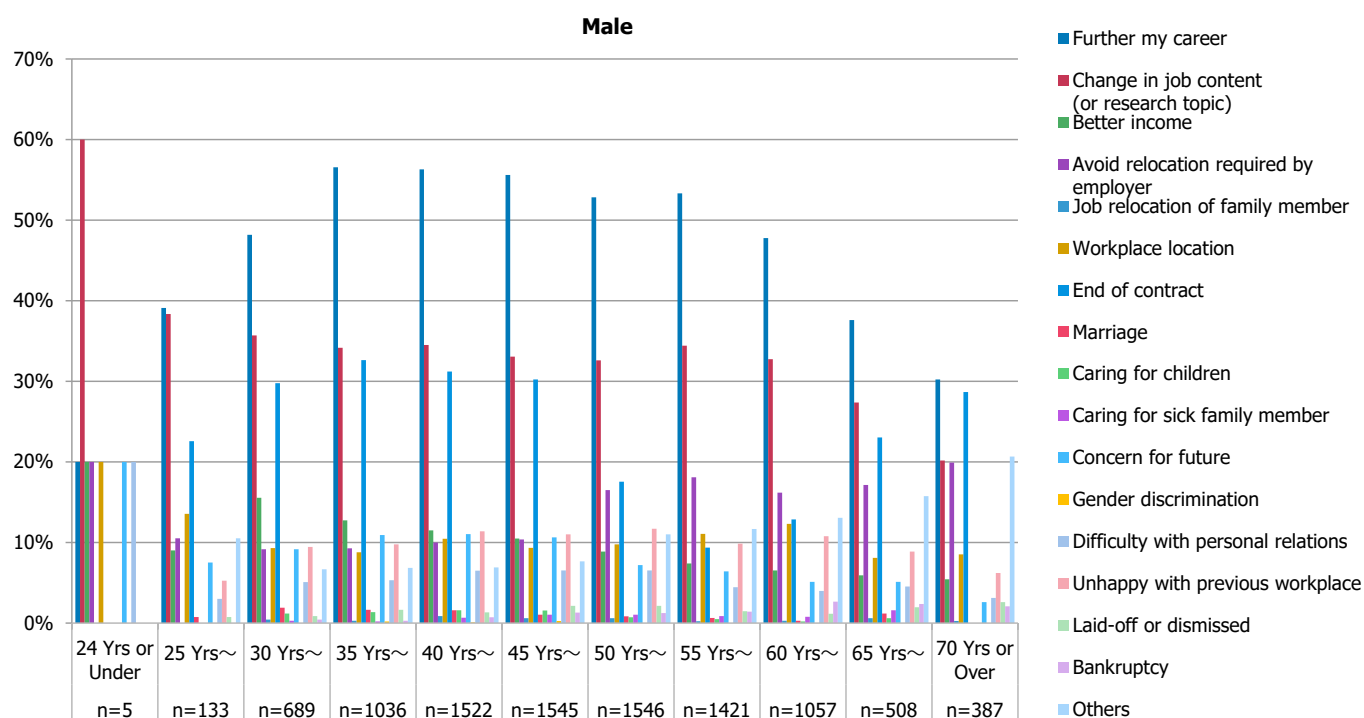


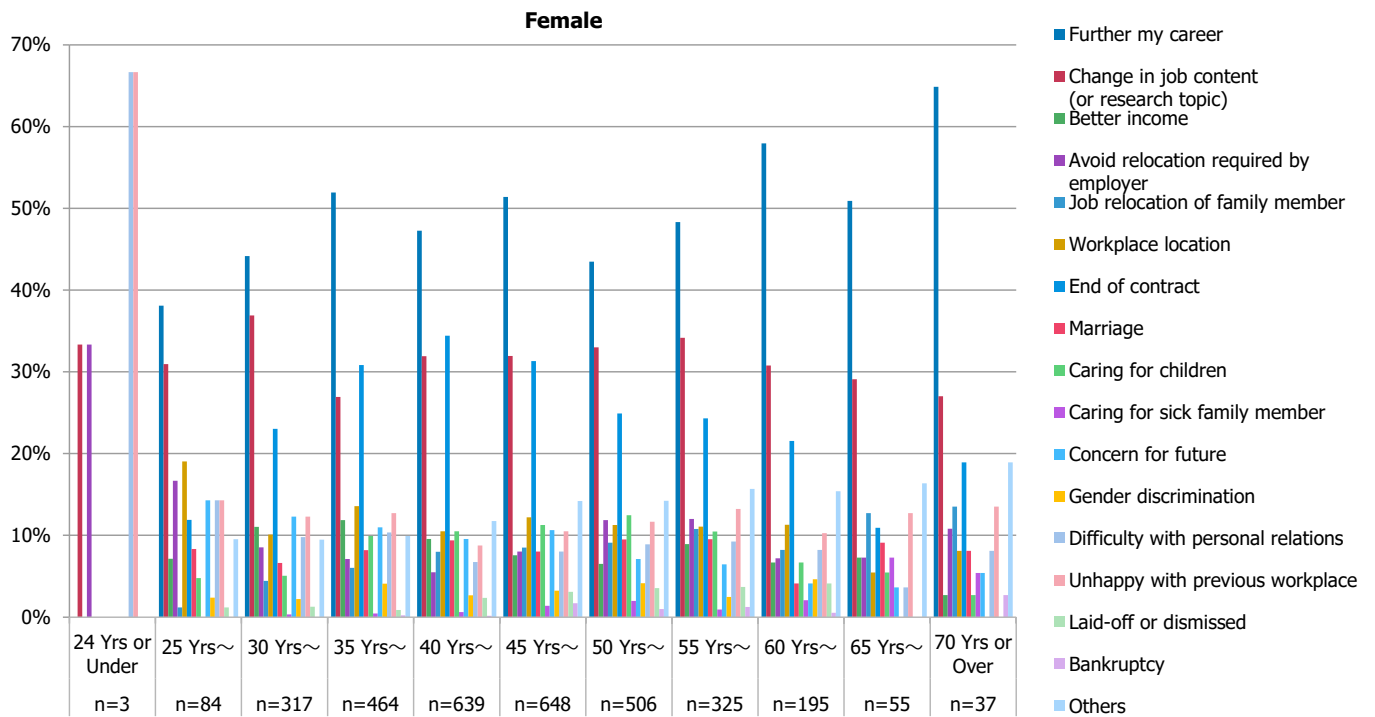
**Figure 1.45 Number of Job Change / Relocation / Leaving Job (Single Answer)**

The most common reason behind job change / relocation / leaving job for both men and women was career advancement. Family relocation, marriage, and childcare reasons were higher with women than men (Figure 1.46). For men, younger the age group, greater the “career advancement” response, whereas for women, it was the opposite and the number became greater as age became higher (Figure 1.47).



**Figure 1.46 Reasons for Job Change / Relocation / Leaving Job (Multiple Answers)**





**Figure 1.47 Reasons for Job Change / Relocation / Leaving Job by Age Group  
(Multiple Answers)**



## Working Hours and Work Style (Question 16, 17, 18: Figure 1.48-62)

The most common working hours system were “discretionary labor system for professional work” for university / technical college; “discretionary labor system for professional work” and “fixed working hours system” for research institution; “fixed working hours system” and “flextime system” for corporation; “fixed working hours system” for government (Figure 1.48). The most contracted working hours was 31 to 40 hours per week, and there was very little difference between men and women (Figure 1.49).

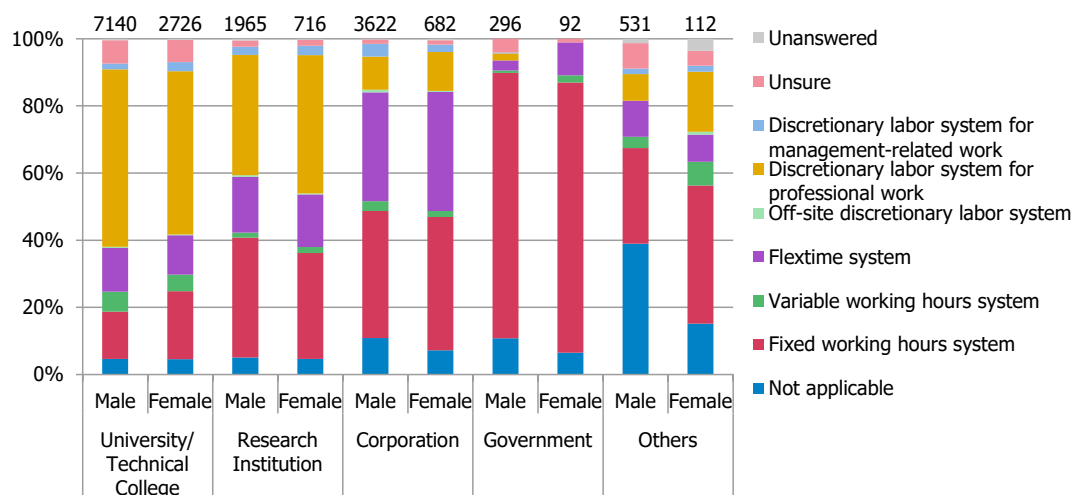


Figure 1.48 Fixed Working Hours System (Single Answer)

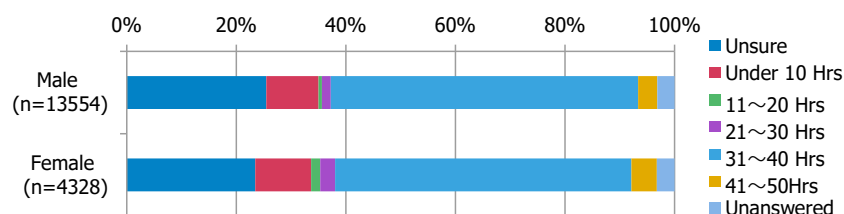


Figure 1.49 Contracted Working Hours per Week (Single Answer)

Work from home or other remote location was allowed for 70% to 80% of respondents regardless of occupation (Figure 1.51).

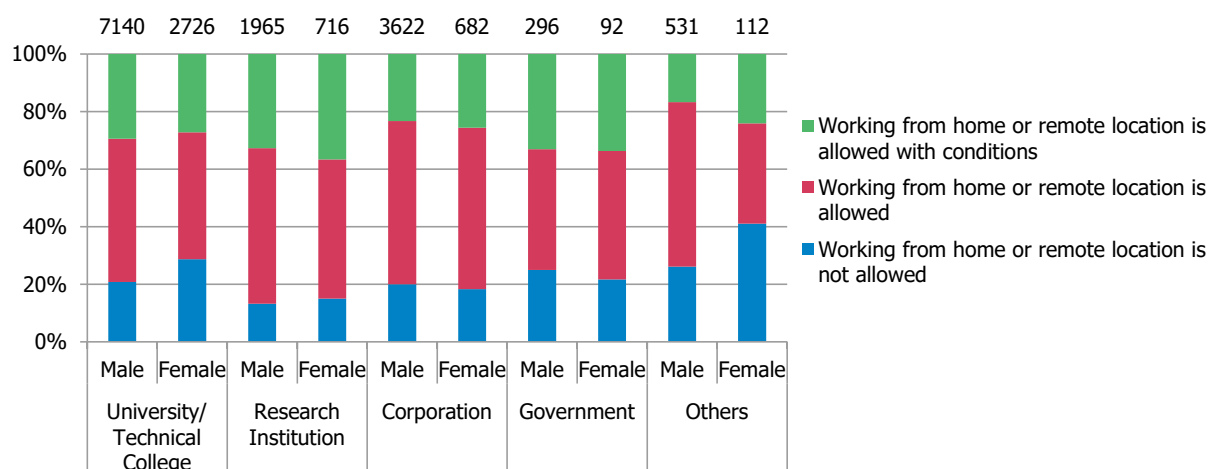
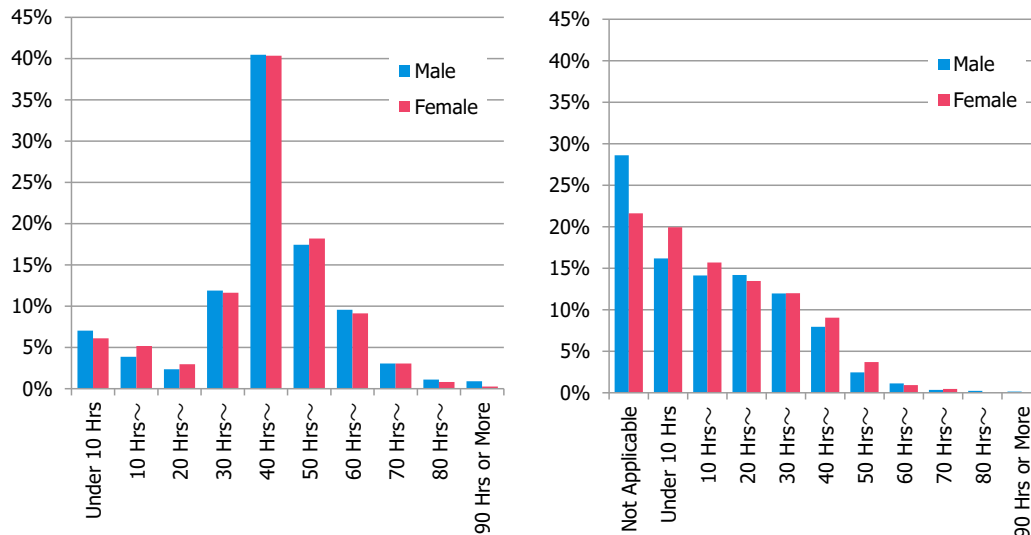
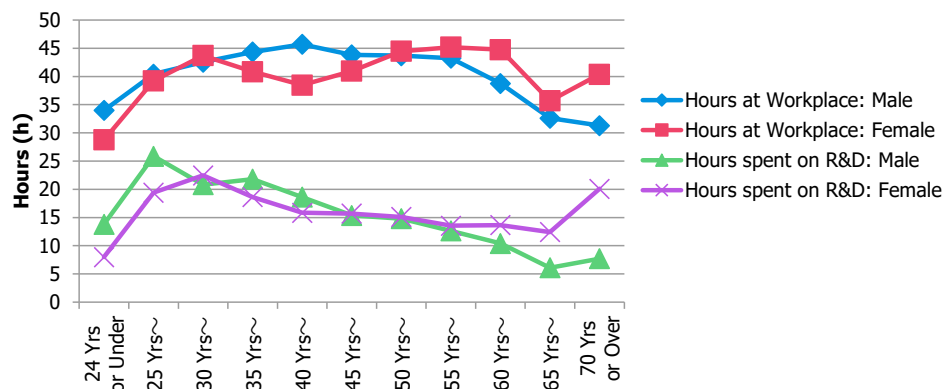


Figure 1.51 Work Style (Ability to Work Remotely) (Single Answer)

There was little difference between men and women in the weekly working hours for those not allowed to work remotely (Figure 1.52, left). The distribution of weekly hours spent in R&D at the workplace stayed under 50 hours (Figure 1.52, right). Although the R&D hours spent at the workplace has been exhibiting a continuous downward trend, the drop was significant in this survey for both men and women. Looking at the number of hours spent at work by age, there is a trough for women between the ages of 30 and 45. It is speculated that women in this age group are fulfilling their family responsibilities as they raise children (Figure 1.53).

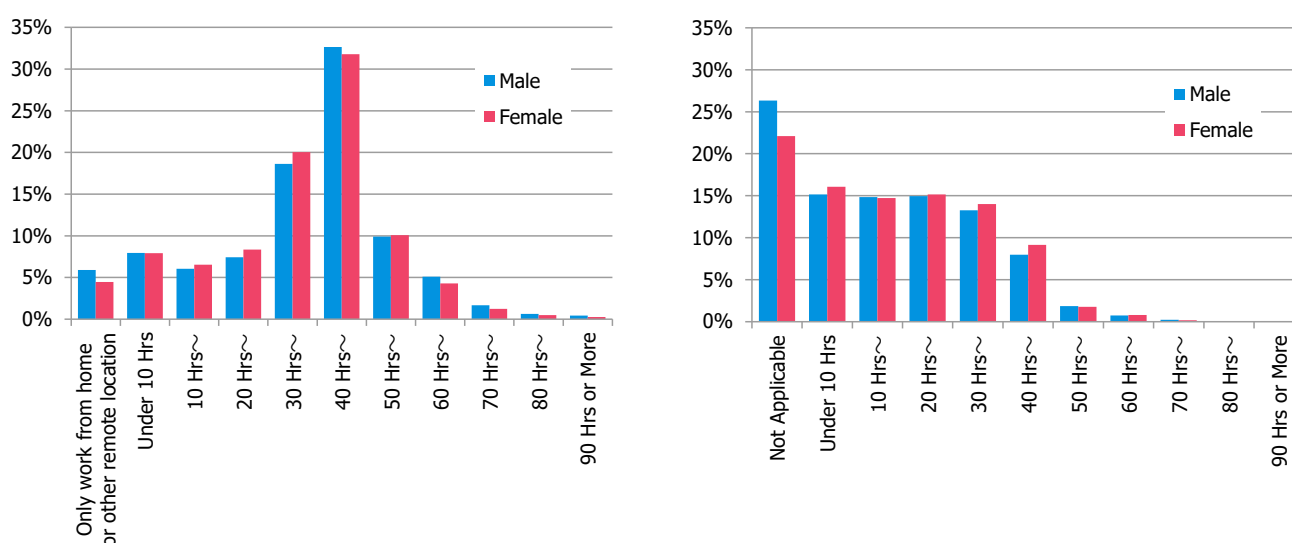


**Figure 1.52 Hours Spent at Workplace per Week (Left) and Hours Spent in R&D at Workplace per Week (Right) (Non-Remote Workers) (Single Answer)**

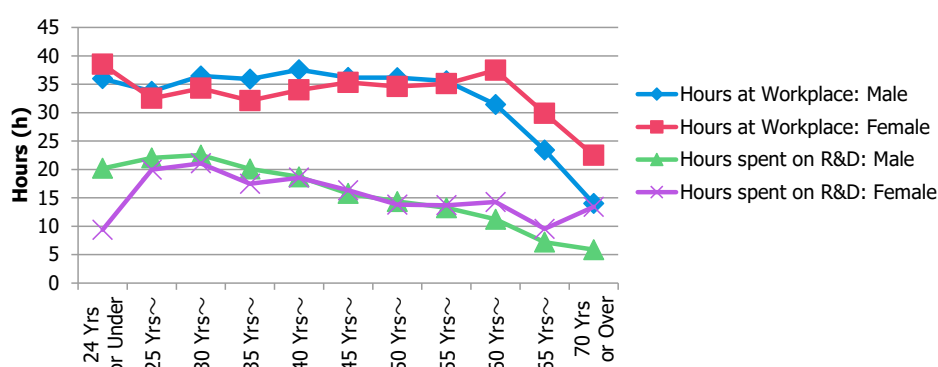


**Figure 1.53 Hours Spent at Workplace per Week by Age Group (Non-Remote Workers) (Single Answer)**

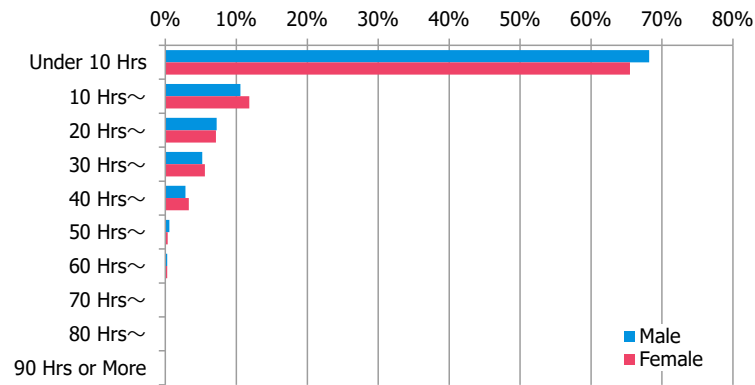
For those allowed to work remotely, there was little difference between men and women in the distribution of weekly working hours and the weekly time spent in R&D at the workplace (Figure 1.56). As with the non-remote workers, R&D time within working hours continues to decline. The results by age are almost the same as the results of the non-remote workers, except for those aged 70 and over (Figure 1.57). About 70% of both men and women that are allowed to work remotely spend less than 10 hours a week working remotely (Figure 1.58), and about 60% spend less than 10 hours performing R&D remotely (excluding those not applicable) (Figure 1.59), which is the same as non-remote workers. Thirty percent of both men and women spend more than 10 hours working remotely, and less than 10% spend more than 30 hours suggesting the existence of people overworking remotely. The number of hours working remotely tends to increase with age for both genders (Figure 1.60). This trend differs from non-remote workers, and it can be said that the ability to work remotely eliminates the gender gap in childcare and housework.



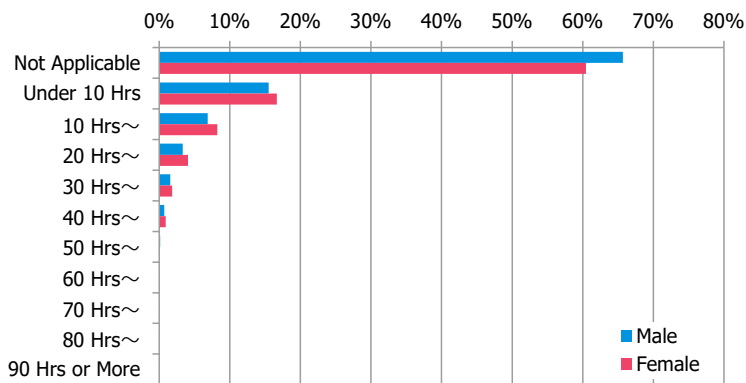
**Figure 1.56 Hours Spent at Workplace per Week (Left) and Hours Spent in R&D at Workplace per Week (Right) (Remote Workers) (Single Answer)**



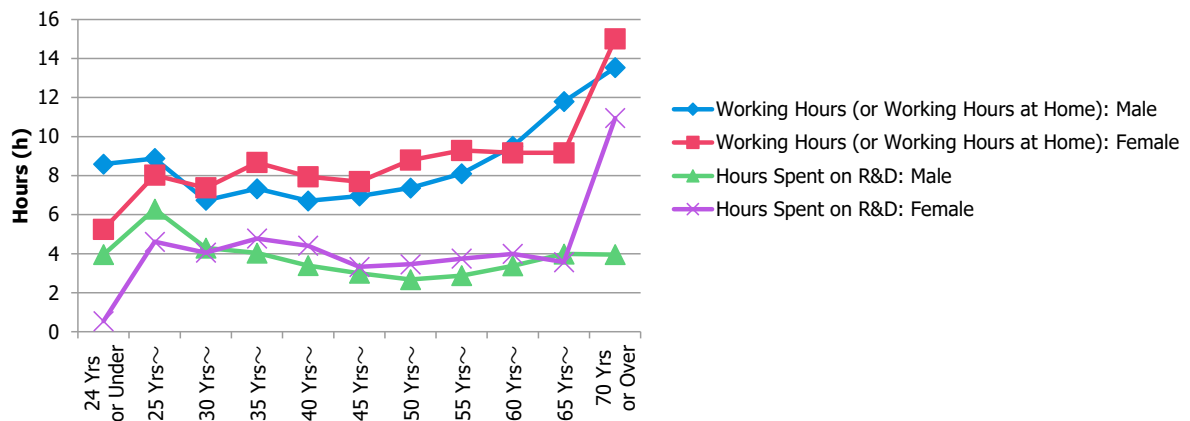
**Figure 1.57 Hours Spent at Workplace per Week by Age Group (Remote Workers) (Single Answer)**



**Figure 1.58 Hours Spent Working Remotely per Week (Remote Workers) (Single Answer)**

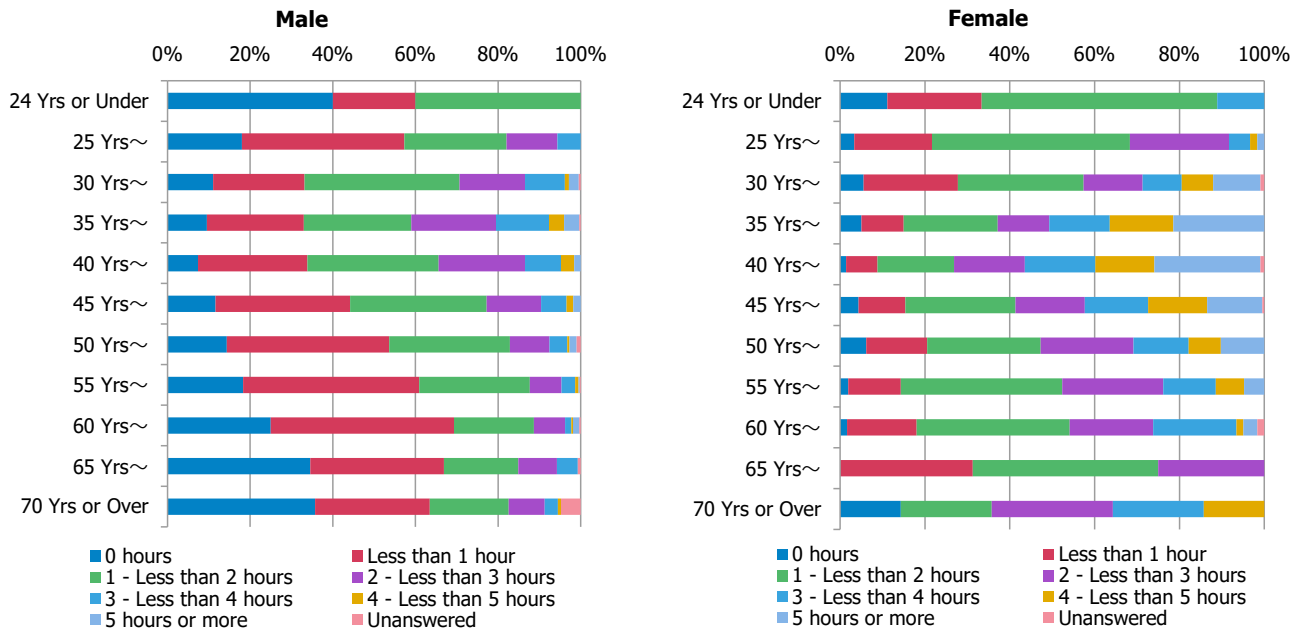


**Figure 1.59 Hours Spent in R&D Remotely per Week (Remote Workers) (Single Answer)**

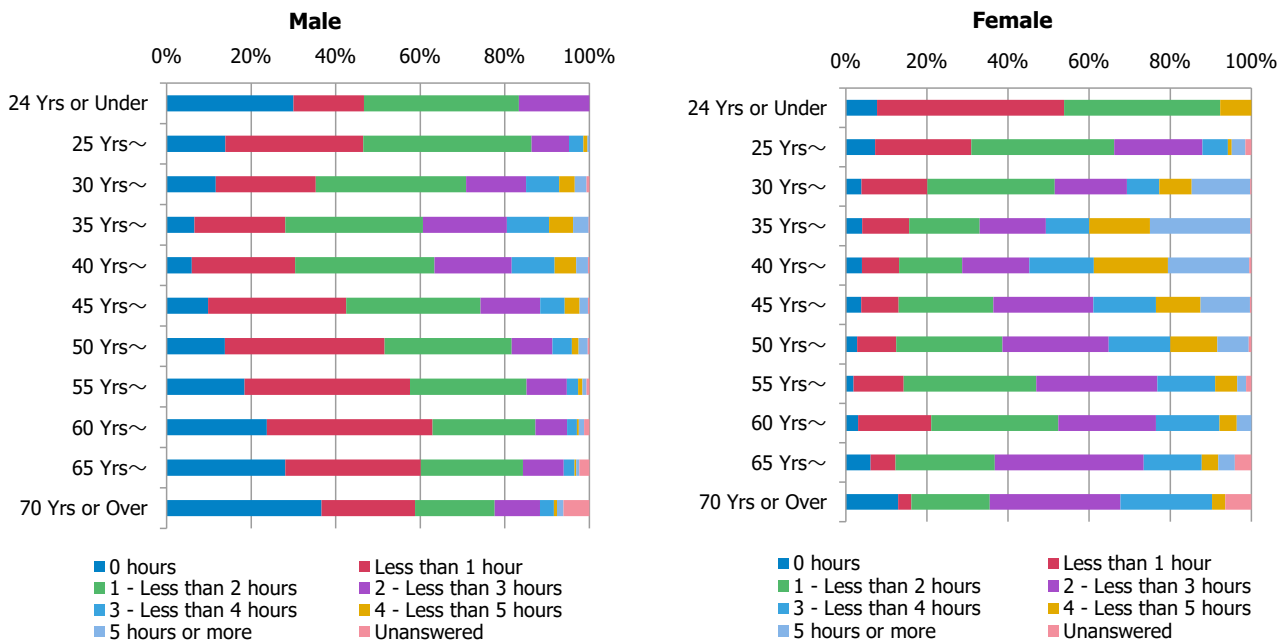


**Figure 1.60 Hours Spent Working Remotely per Week by Age Group (Remote Workers) (Single Answer)**

Regardless of whether remote work is possible or not, the weekly time required for housework, childcare and nursing care by age group was significantly higher for women than for men in all age groups (Figure 1.61, 1.62). In particular, among women aged 40 to 44, which is an important period in terms of life events and career advancement, about 70% spent 2 hours or more, and 20% spent 5 hours or more on housework, childcare, and nursing care. Women tend to spend less time doing housework, childcare, and nursing care when they can work remotely, which suggests that the lack of remote work puts more strain on women than on men.



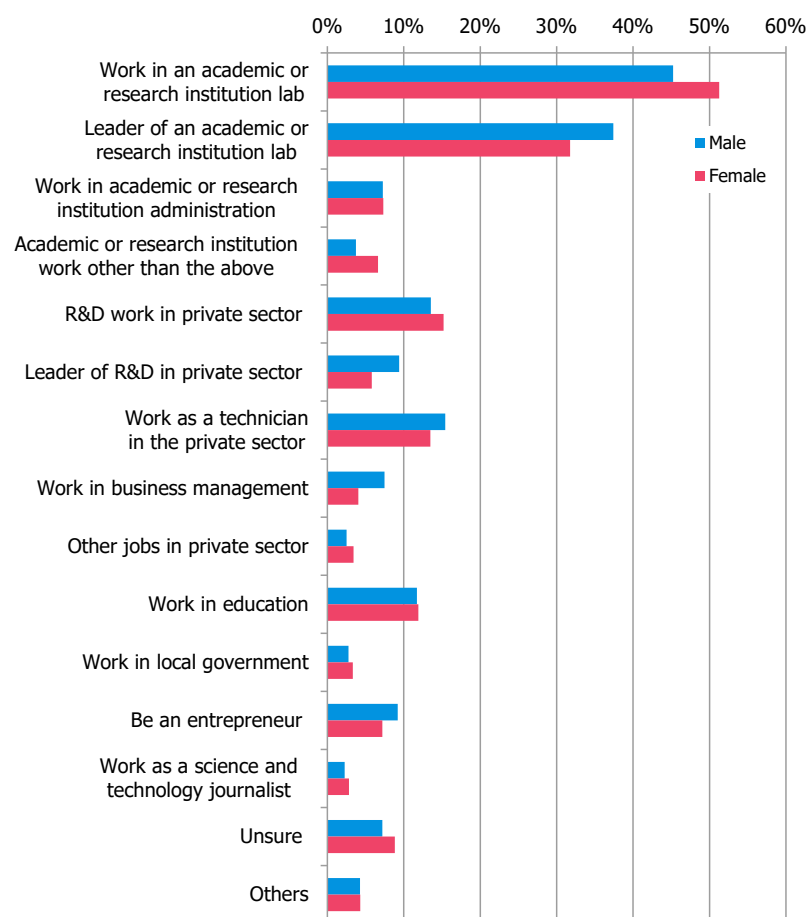
**Figure 1.61 Hours Spent on Housework, Childcare and Nursing Care per Week (Non-Remote Workers) (Single Answer)**



**Figure 1.62 Hours Spent on Housework, Childcare and Nursing Care per Week (Remote Workers) (Single Answer)**

### Career Goals (Question 19: Figure 1.63-65)

Both men and women tended to desire research jobs at universities (Figure 1.63).



**Figure 1.63 Career Goals by Gender (Multiple Answers)**

Majority of respondents, both men and women, desired a research post at a university or research institution, followed by a R&D job at a corporation (Figure 1.64). More than half of the respondents in the fields of basic research and medicine desire to work as a researcher at a university, and in application fields, many respondents desire to work in R&D at a corporation (Figure 1.65).

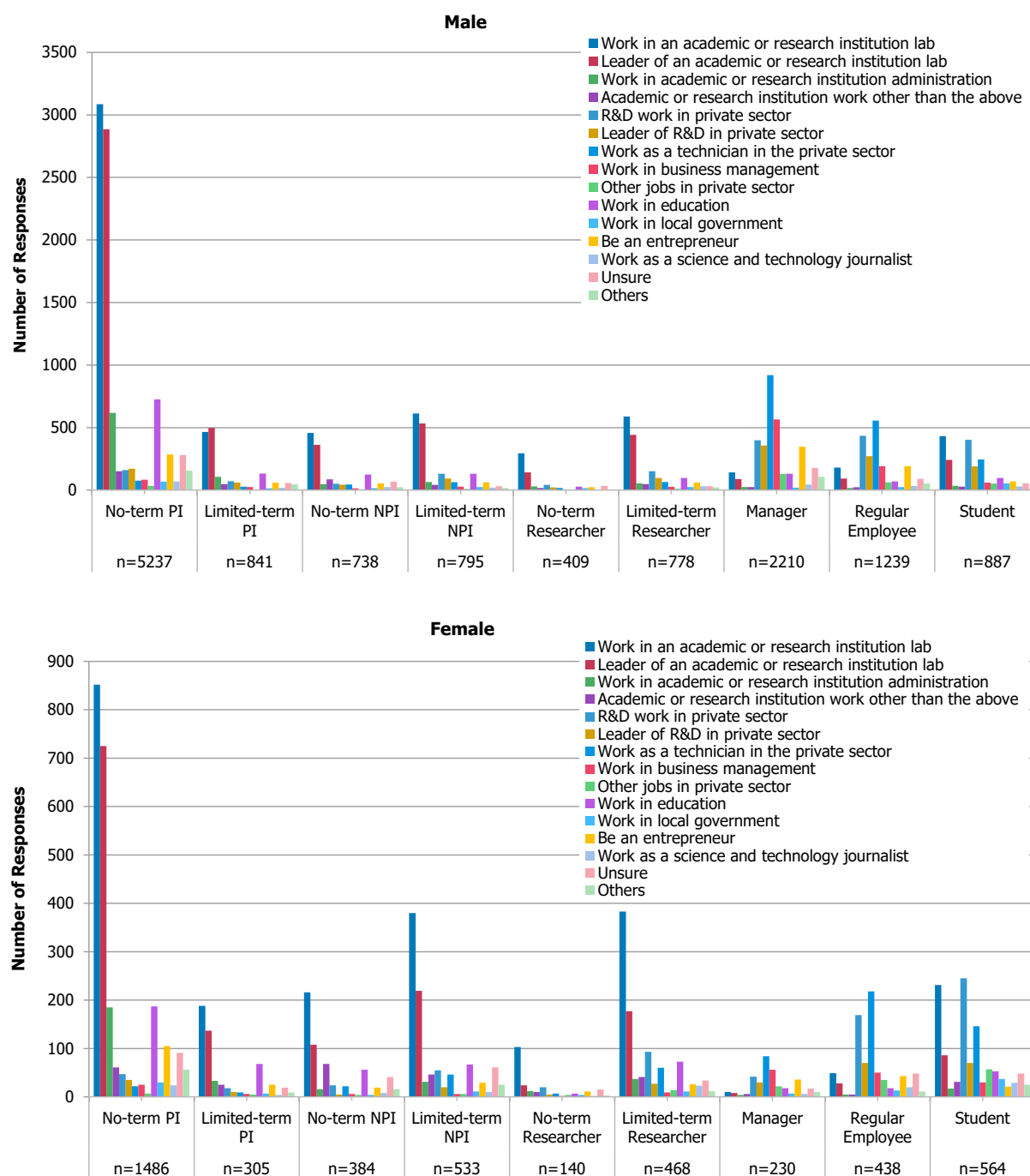


Figure 1.64 Career Goals by Occupational Field (Multiple Answers)

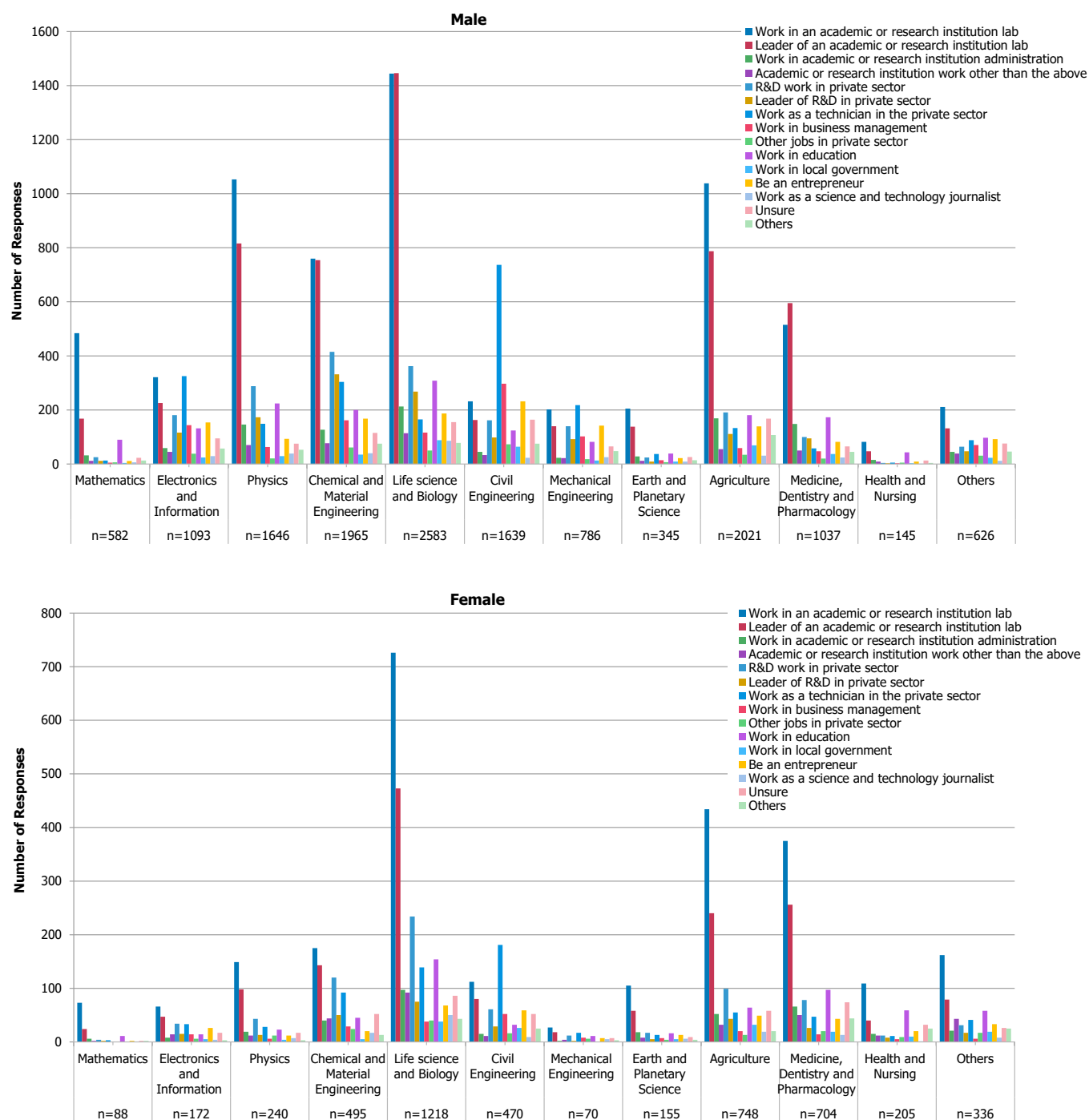
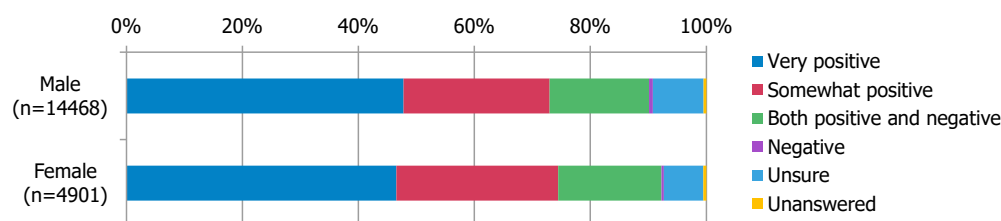


Figure 1.65 Career Goals by Area of Specialization (Multiple Answers)

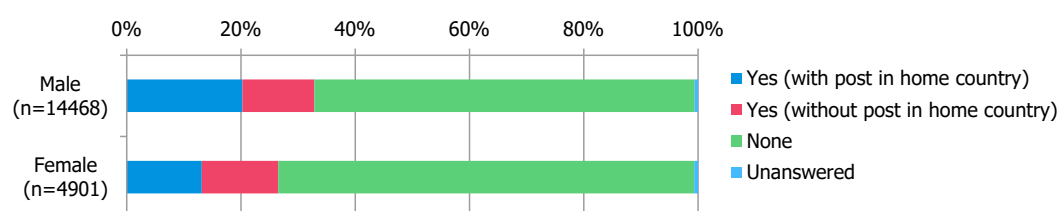


## Overseas Research Activities (Question 21: Figure 1.66-67)

Both genders believe overseas research activities will have a positive impact on their career development (Figure 1.66). About 30% of the respondents had more than half a year of research experience overseas, with slightly more men than women (Figure 1.67).



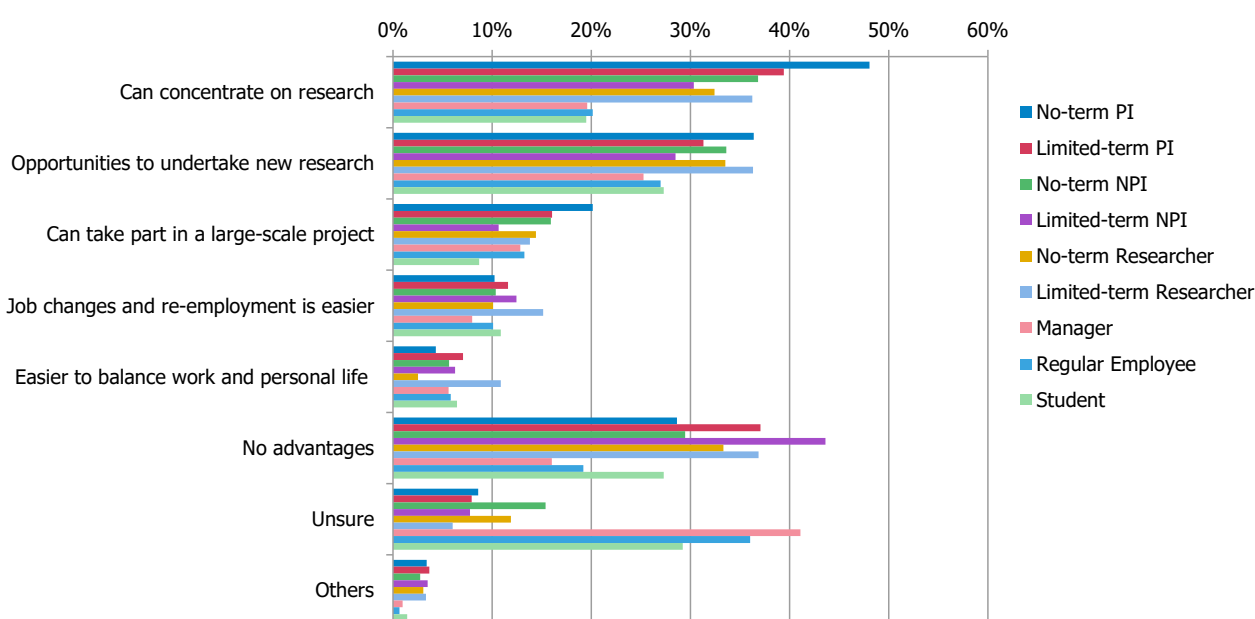
**Figure 1.66 Impact of Overseas Activities on Career Development (Single Answer)**



**Figure 1.67 Experience with Overseas Research Activities Lasting over 6 Months (Single Answer)**

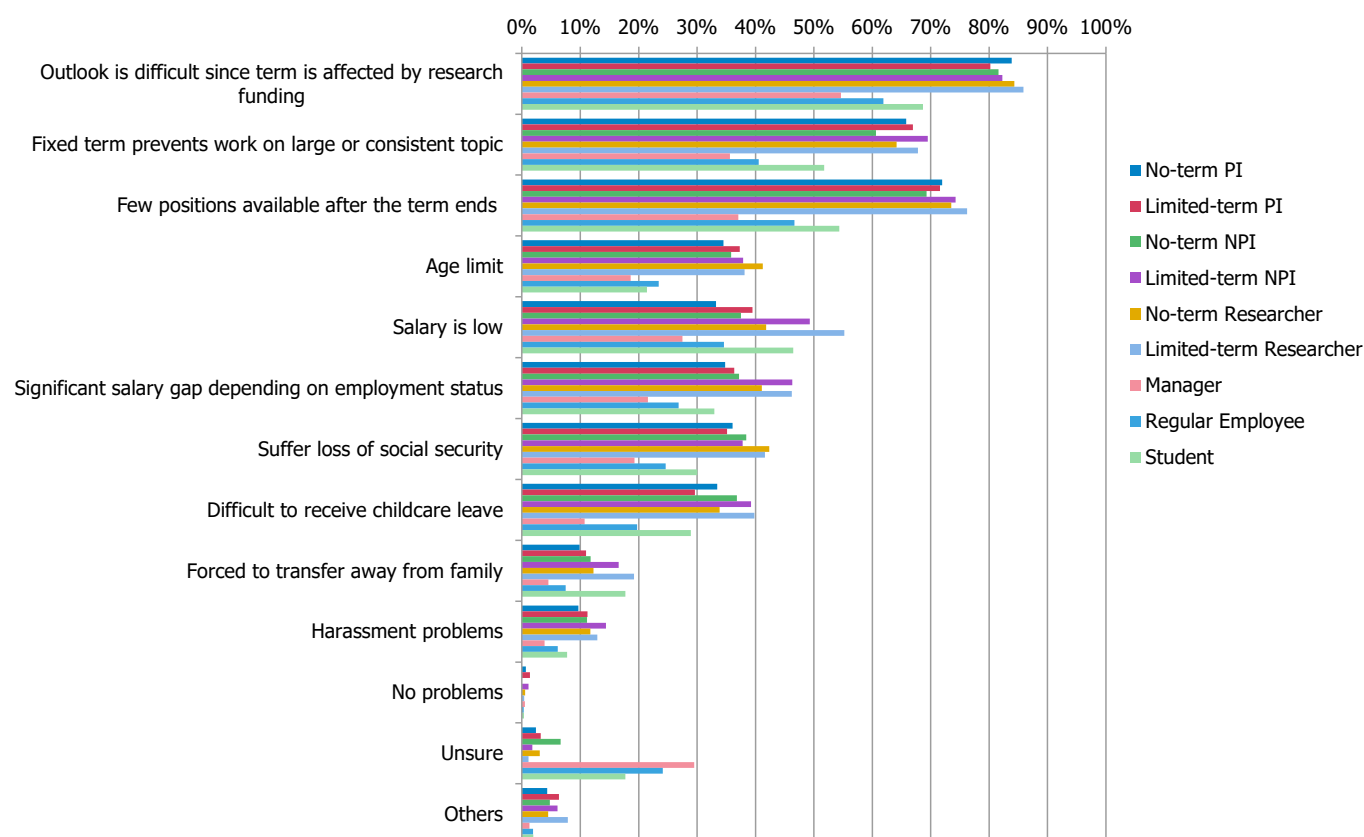
## Limited-Term Position and Career Development (Question 22: Figure 1.68-70)

Many respondents think limited-term position is beneficial since they “can concentrate on research” and the position provides them with “opportunities to undertake new research”. However, there was a huge drop in the selection rates for those responses compared with the previous survey while the “no advantage” response increased significantly (Figure 1.68).



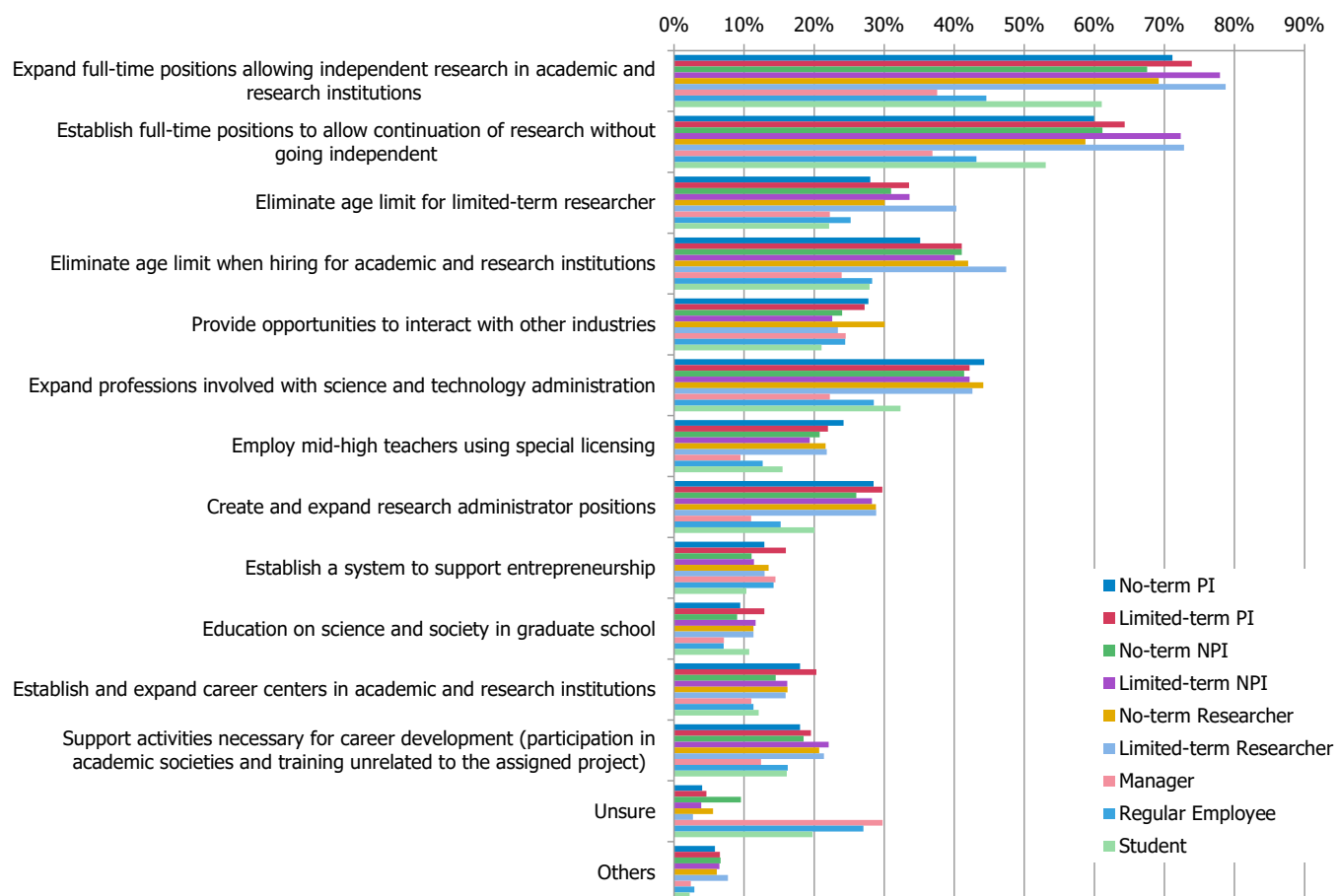
**Figure 1.68 Benefits of Limited-Term Researcher Position (Multiple Answers)**

As for problems with limited-term position, many answered “few positions available after the term ends” and “outlook is difficult since term is affected by research funding” (Figure 1.69). Those that responded “fixed term prevents work on large or consistent topic” increased by slightly less than 10% from the previous survey.



**Figure 1.69 Problems with Limited-Term Researcher Position (Multiple Answers)**

Expansion of full-time positions was frequently cited as necessary for ensuring career path after working as a limited-term researcher as well as more options to choose from other than research positions (Figure 1.70).

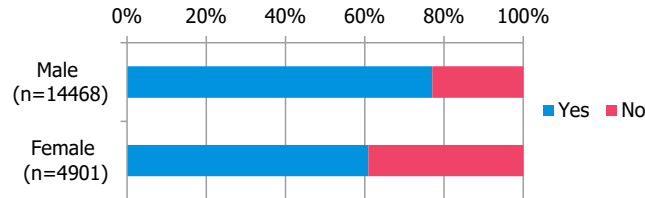


**Figure 1.70 Securing Career Path After Limited-Term Position (Multiple Answers)**

## 1.3 Work and Family (Question 23-36)

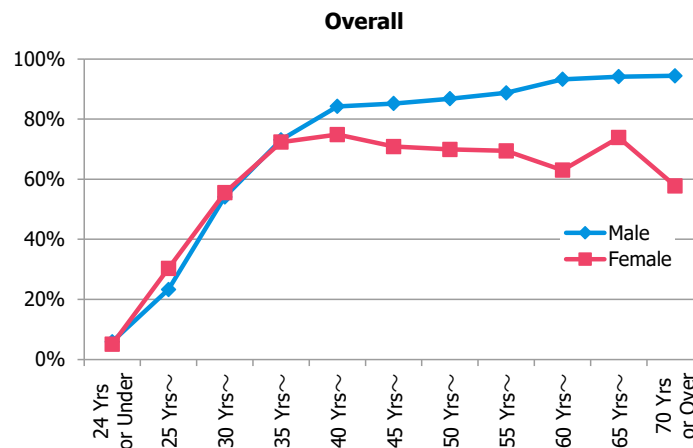
### Spouse / Domestic Partner (Question 23, 24, 25: Figure 1.71-85)

About 20% more men than women have spouses / domestic partners (Figure 1.71).



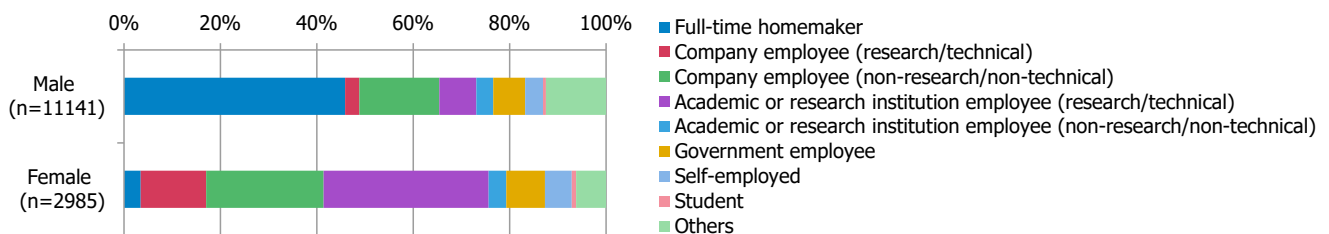
**Figure 1.71 Spouse / Domestic Partner (Single Answer)**

There was no difference between men and women until the early 30's, but after the late 30's, the rate peaked for women while the rate gradually increased for men resulting in a large gender gap (Figure 1.72).



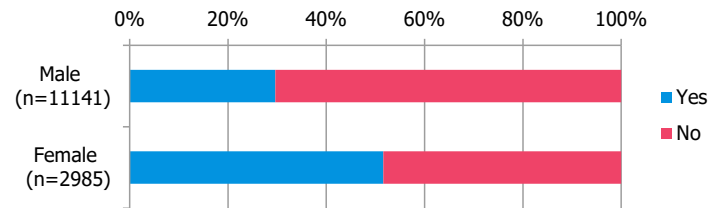
**Figure 1.72 Spouse / Domestic Partner by Age Group for Each Organization - Overall (Single Answer)**

About half of the men's spouses / domestic partners are unemployed, whereas about 97% of the women's spouses / domestic partners are employed (Figure 1.73).



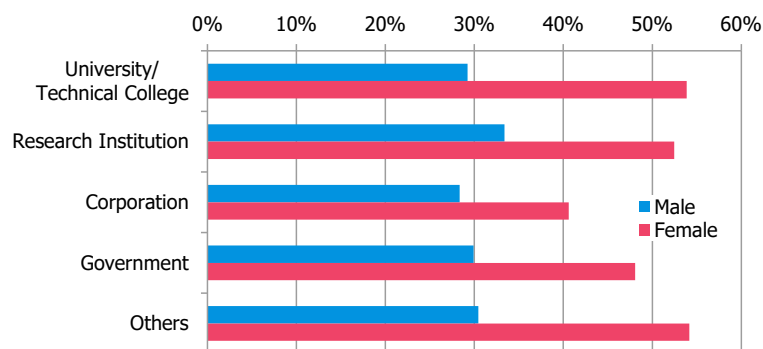
**Figure 1.73 Spouse's / Domestic Partner's Employment (Single Answer)**

Thirty percent of men and 50% of women with spouses / domestic partners have experience living separately, which are slight increases for both genders (Figure 1.76).



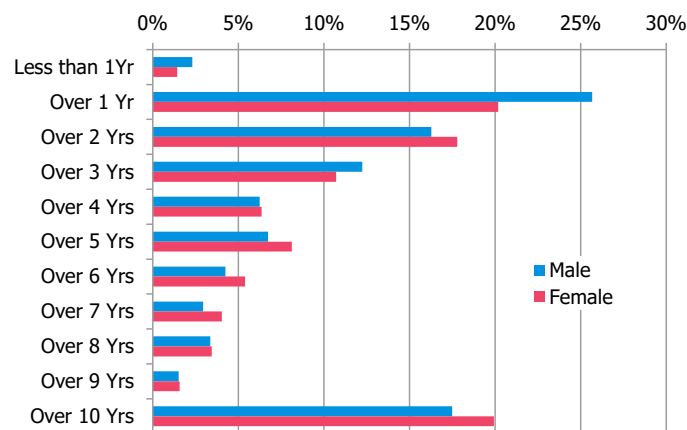
**Figure 1.76 Experience Living Separately (Single Answer)**

Women exceeded men in the ratio of respondents with separate living experience across all organizations, but that difference was small for corporation (Figure 1.78).



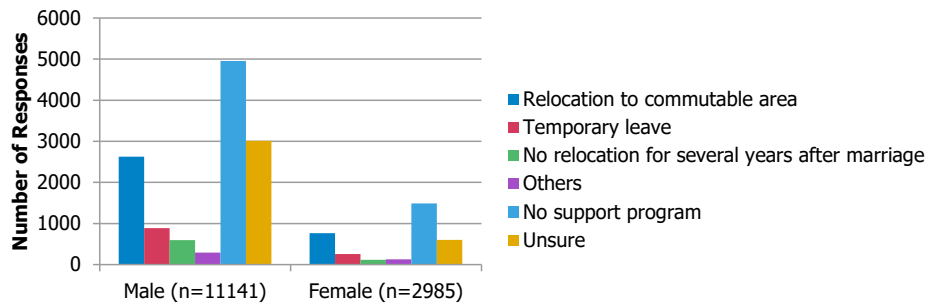
**Figure 1.78 Percentage of Respondents with Separate Living Experience by Organization (Single Answer)**

The length of separation between one year and less than two years received the highest response from both genders, and as the length of separation increased, the percentage of those with experience decreased. However, men and women with ten or more years of experience continued to increase from past surveys (Figure 1.79).



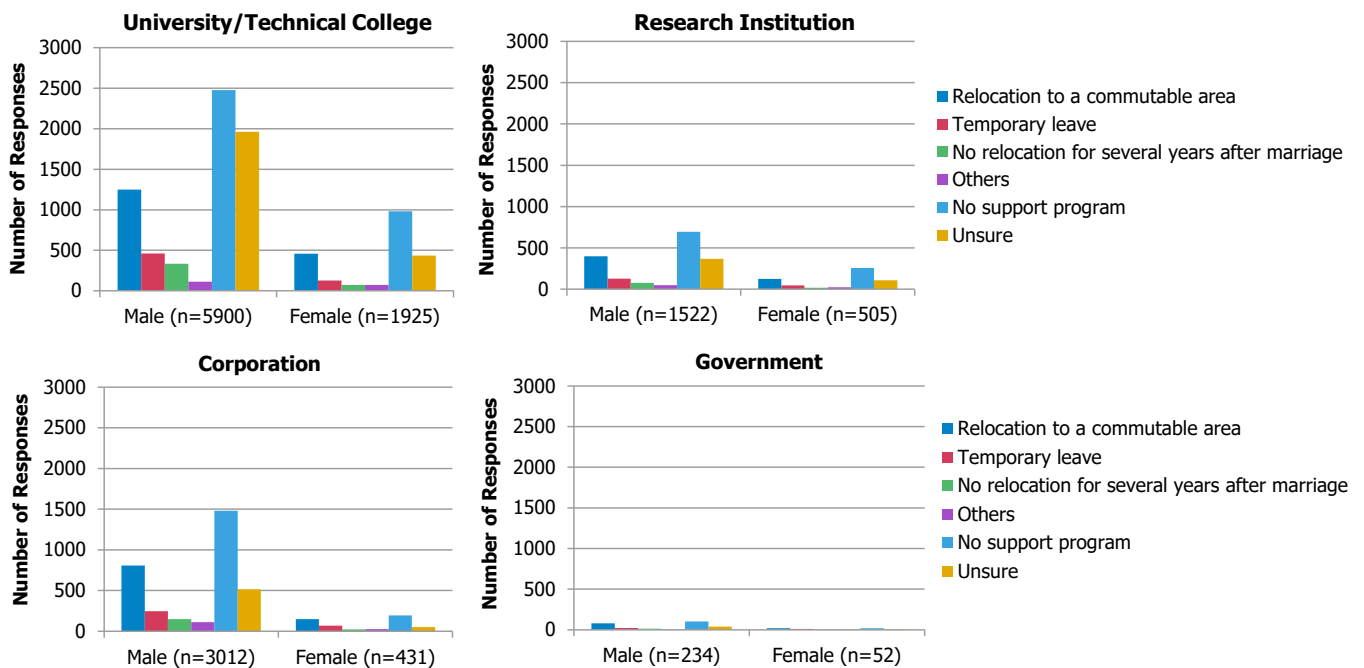
**Figure 1.79 Years Spent Living Separately (Single Answer)**

Regarding the Dual Career Support Program, “no support” was the most common response from both genders. Those that responded “unsure” decreased significantly from the previous survey (Figure 1.80).



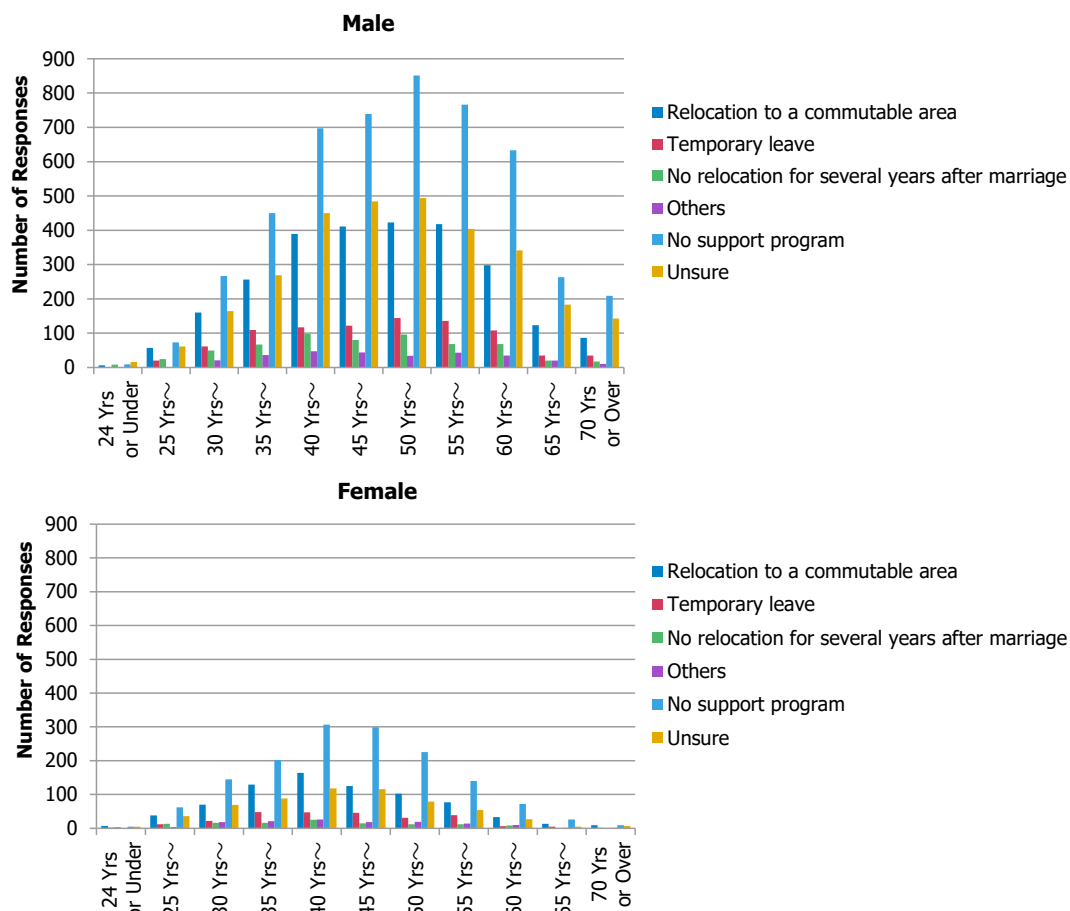
**Figure 1.80 Dual Career Support Program (Multiple Answers)**

A high percentage of respondents in university / technical college and research institution indicated “no support” for Dual Career Support Program. In contrast, the same response was relatively low from those in corporation (Figure 1.81).



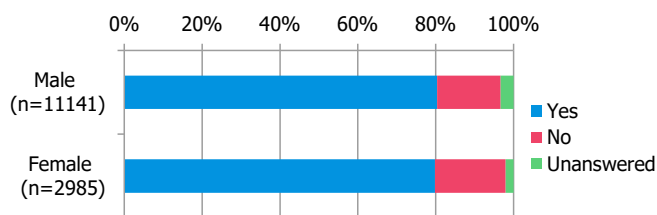
**Figure 1.81 Dual Career Support Program by Organization (Multiple Answers)**

The “unsure” response decreased significantly for both genders aged 34 and under (Figure 1.82).



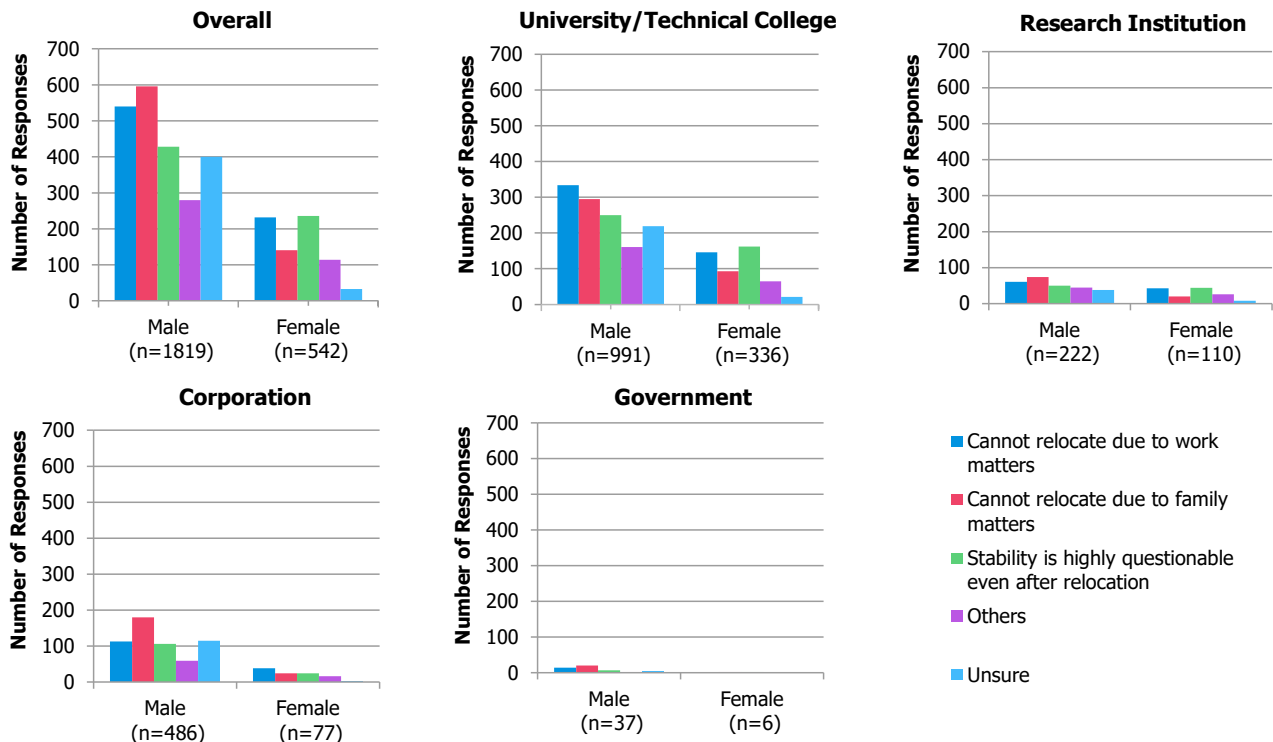
**Figure 1.82 Dual Career Support Program by Age Group (Multiple Answers)**

Around 80% of both genders desire to use the Dual Career Support Program (Figure 1.83).



**Figure 1.83 Use of Dual Career Support Program (Multiple Answers)**

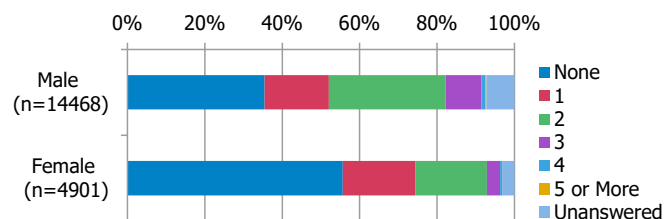
Among women, the highest reason for not wanting to use the Dual Career Support Program was “stability is highly questionable even after relocation”, while the number of women who responded “cannot relocate due to family matters” was lower than that of men (Figure 1.85). The “unsure” response was significantly higher for men than for women.



**Figure 1.85 Reason for Not Using Dual Career Program (Overall / by Organization) (Multiple Answers)**

### Number of Children (Question 26, 33: Figure 1.86-93)

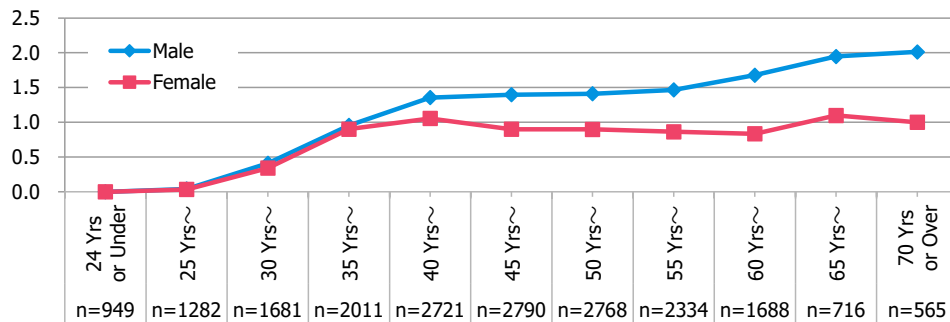
Fifty-six percent of women responded that they have no children, and those with either one or two were about 20% each (Figure 1.86). Nearly 60% of men have children, and 40% of them have two or more. This is in line with results observed in past surveys.



**Figure 1.86 Number of Children (Single Answer)**

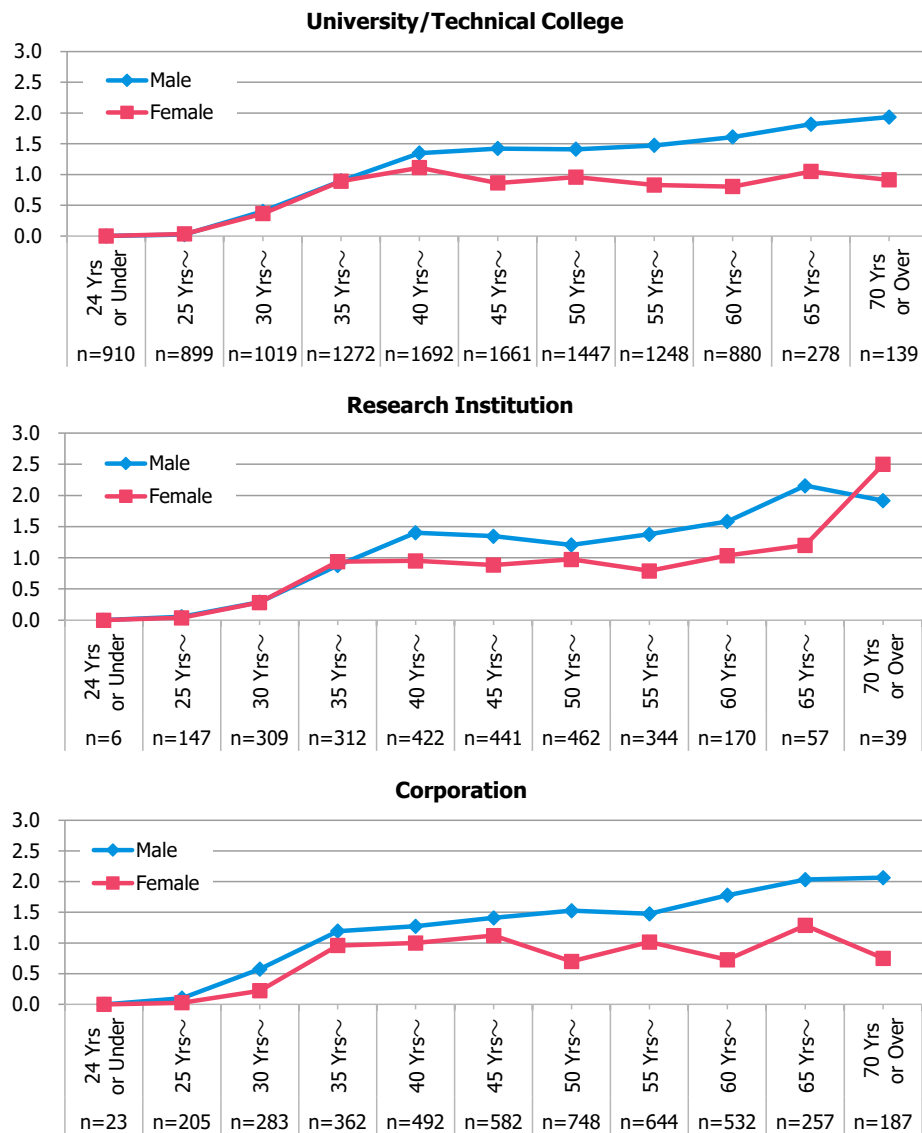


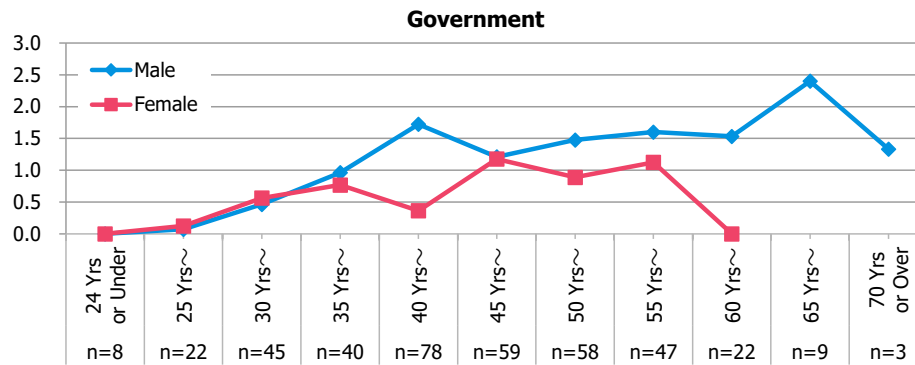
The number of children increases with age for men, reaching two at ages 65 to 69. On the other hand, women reach one child at ages 35 and over, and after that the number remains almost flat (Figure 1.87). Result-wise, men turn out to have twice as many children than women.



**Figure 1.87 Number of Children Overall (Single Answer)**

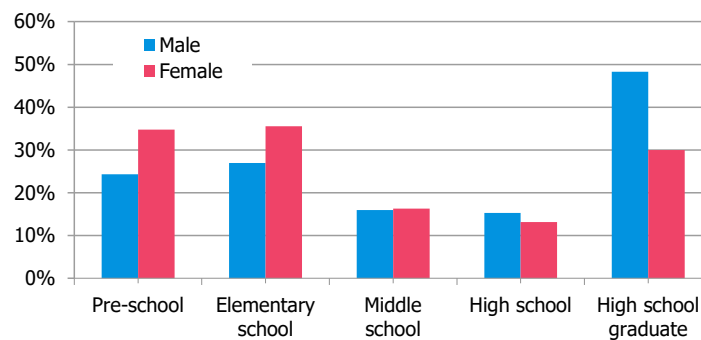
The gender gap in the number of children was the same for all organizations, and no other differences were observed as well (Figure 1.88).





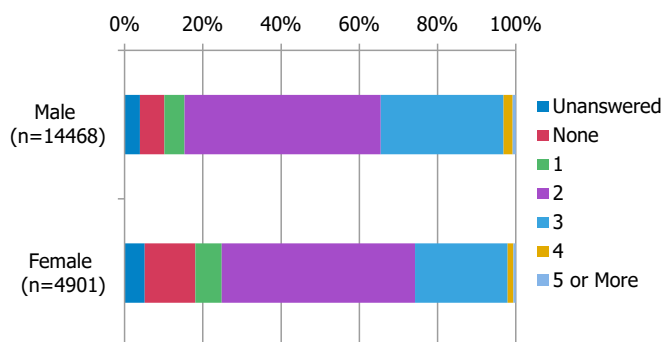
**Figure 1.88 Number of Children by Organization (Single Answer)**

Among the respondents who have children, 50% of men and 30% of women have children that are high school graduates or older (Figure 1.89).

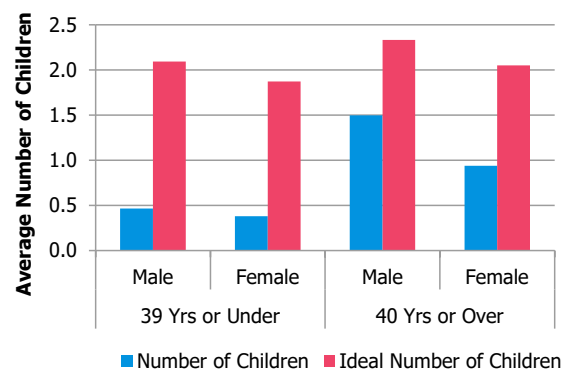


**Figure 1.89 Age of Children (for those with children) (Multiple Answers)**

The ideal number of children is two for both men and women with about 50% of each gender providing this response. This was followed by three children for 31% of men and 24% of women (Figure 1.91). Especially for women, there is a large gap between the ideal and the actual number of children. There is no significant difference by age group, and it is worth noting that even the younger generation desires to have about two children (Figure 1.92).

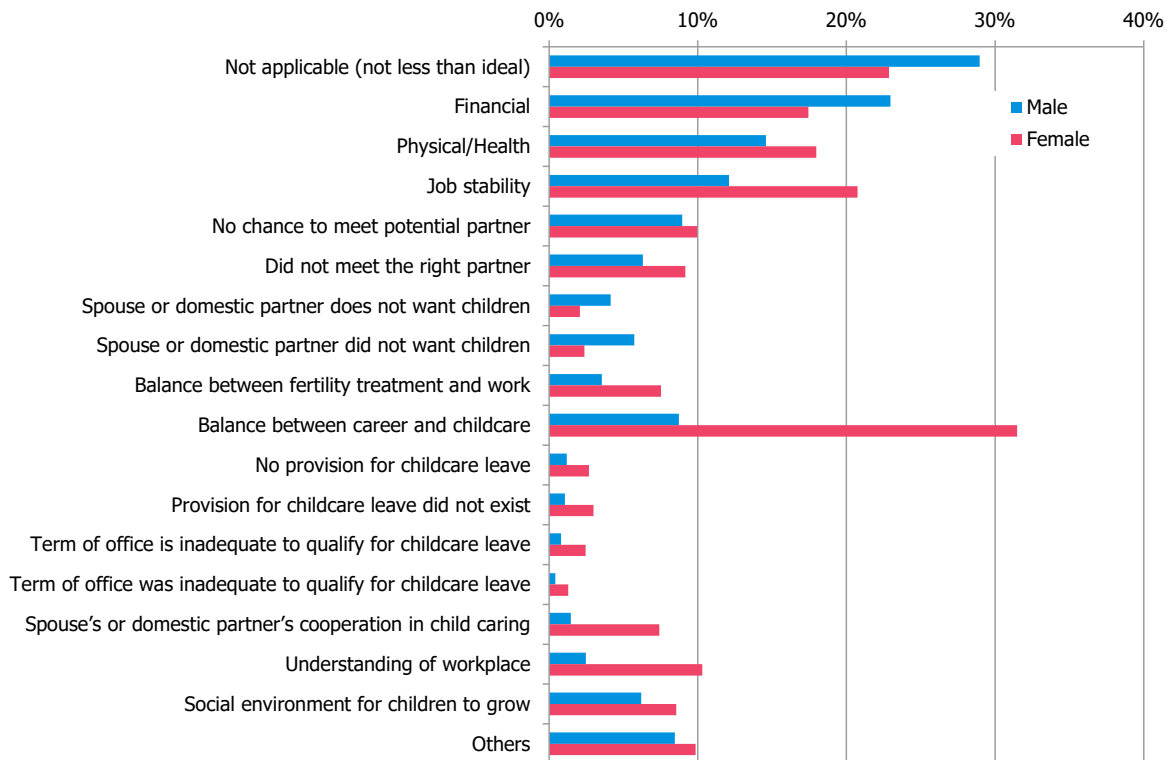


**Figure 1.91 Ideal Number of Children (Single Answer)**



**Figure 1.92 Actual and Ideal Number of Children (Single Answer)**

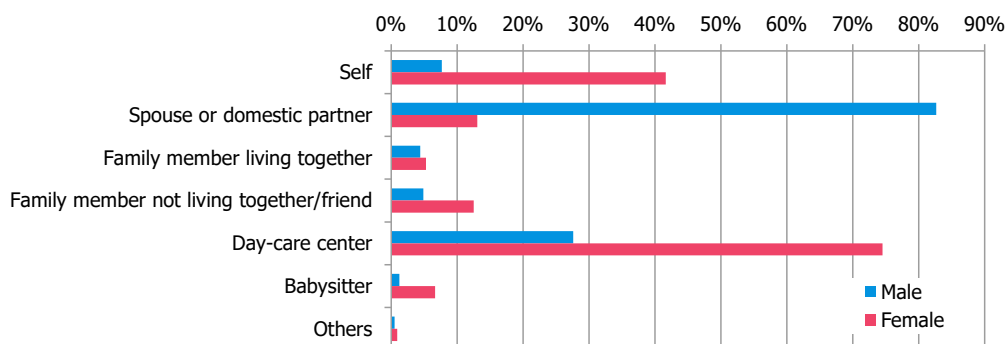
The most common reason for not being able to achieve the ideal number of children was “financial” for men, and “balance between career and childcare” for women (Figure 1.93). The “financial” response continues to decrease since the third survey while “job stability” increased. As in previous surveys, “balance between career and childcare”, “spouse’s or domestic partner’s cooperation in child caring”, and “understanding of workplace” have not improved indicating that a sufficient work environment for female researchers to have children has not yet been realized.



**Figure 1.93 Reasons Why Number of Children Are Less than Ideal (Multiple Answers)**

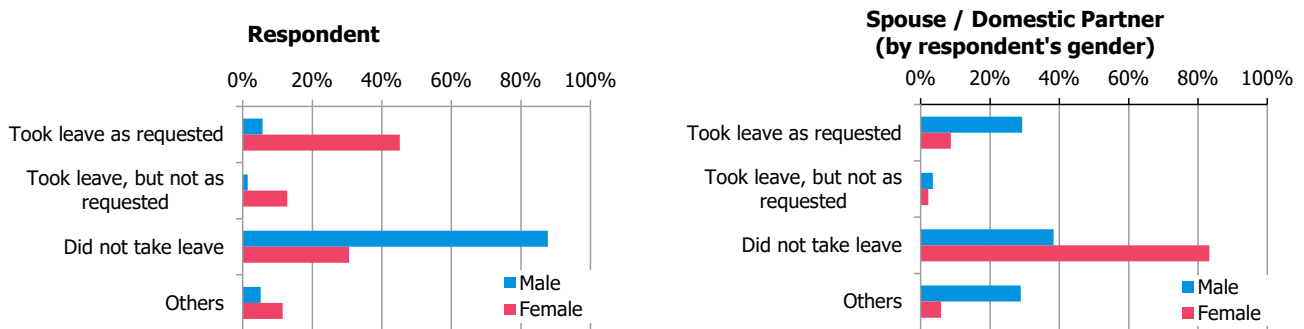
### Childcare and Childcare Leave (Question 26-32: Figure 1.94-99)

Regarding the primary caregiver of preschool children, men’s response of “spouse / domestic partner” and women’s response of “day-care center” were both about 80% (Figure 1.94). Women that responded “self” increased dramatically from past surveys reaching 42% in this survey. This change was not observed with men, and the growing gap between genders is problematic.



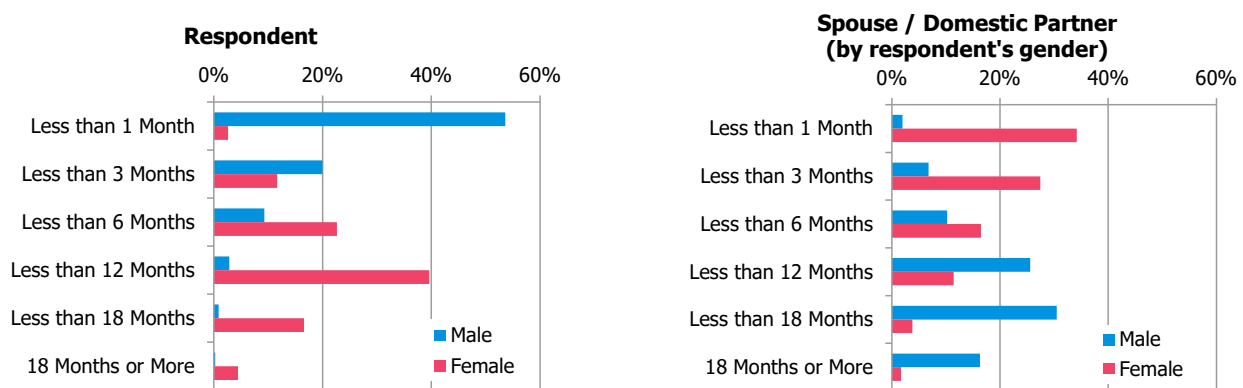
**Figure 1.94 Person Responsible for Daytime Childcare (Pre-school) (Multiple Answers)**

The ratio of those who “took (childcare) leave as requested” continues to increase slightly from past surveys regardless of whether the leave was taken by the respondents themselves or their spouses / domestic partners (Figure 1.96). However, as in past surveys, the overwhelming majority of those who took leave were women.



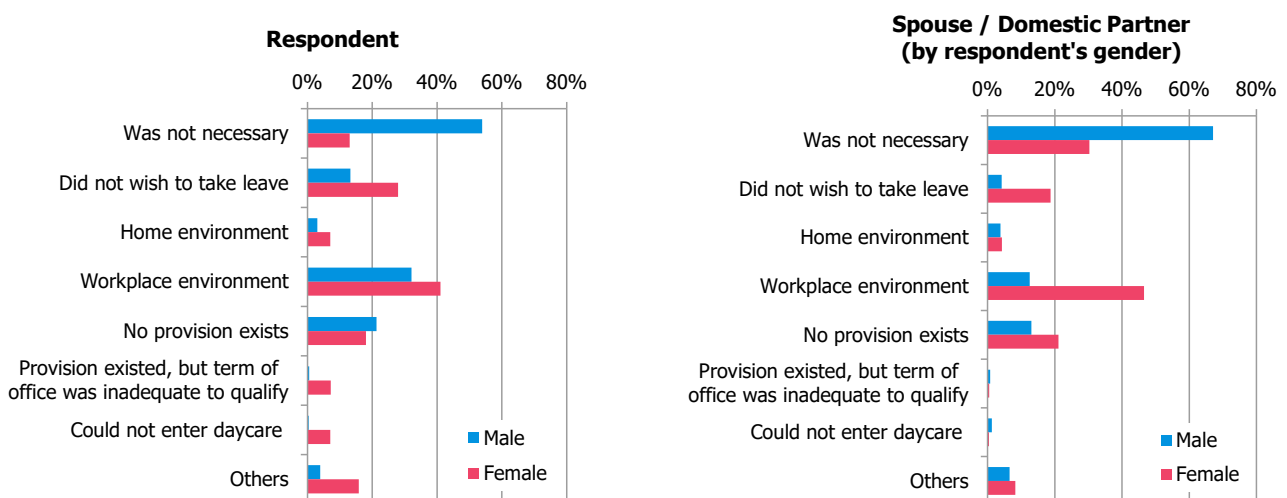
**Figure 1.96 Status of Childcare Leave (Multiple Answers)**

More than half of the men said that their leave was less than a month, and 40% of the women said their leave lasted less than 12 months, which were the highest responses from the respective genders (Figure 1.97).



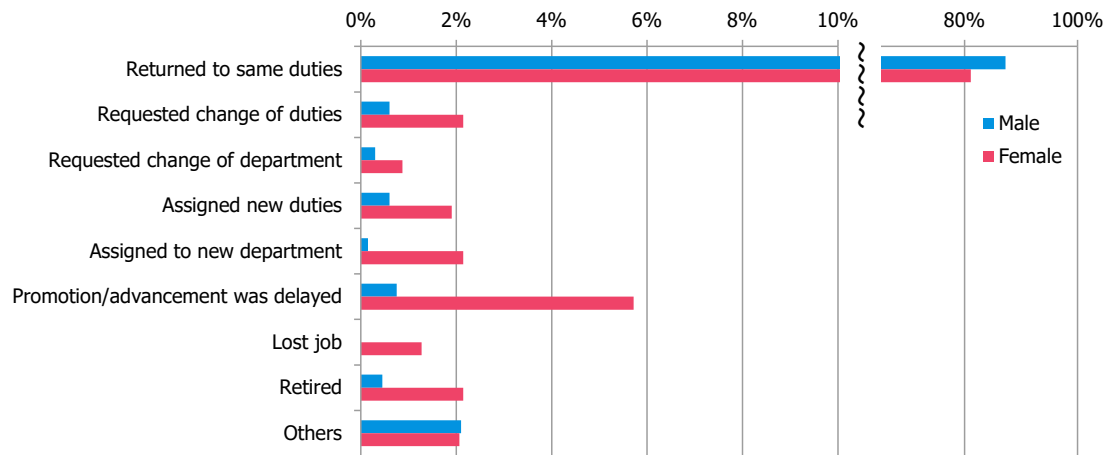
**Figure 1.97 Length of Childcare Leave (Single Answer)**

As for the reason why childcare leave was not taken, more than half of the men responded that “leave was unnecessary” (Figure 1.98). Among women, “workplace environment” response was slightly higher than others suggesting that workplace arrangements and understanding regarding childcare leave are still insufficient.



**Figure 1.98 Reasons for Not Taking Leave (Multiple Answers)**

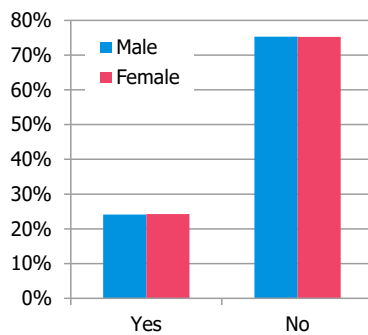
Regarding changes in job duties after a childcare leave, more men than women responded that they “returned to same duties” as before the leave. For women, “promotion/advancement was delayed”, “assigned new duties/department”, and “requested change of duties” were the top responses (Figure 1.99).



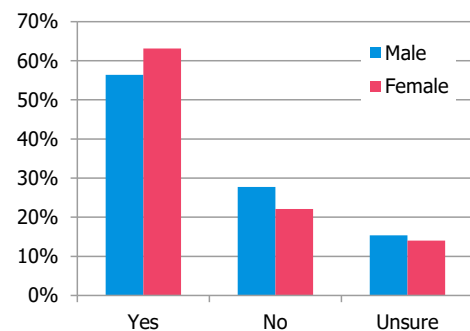
**Figure 1.99 Status after Leave (Single Answer)**

### Nursing Care (Question 34: Figure 1.100-103)

Twenty-four percent of both men and women have a family member who needs nursing care, which was the same level as the previous survey (Figure 1.100). A higher percentage of women than men are aware of “nursing-care leave program”, indicating that women are more inclined to think that leave is necessary for family care (Figure 1.101).

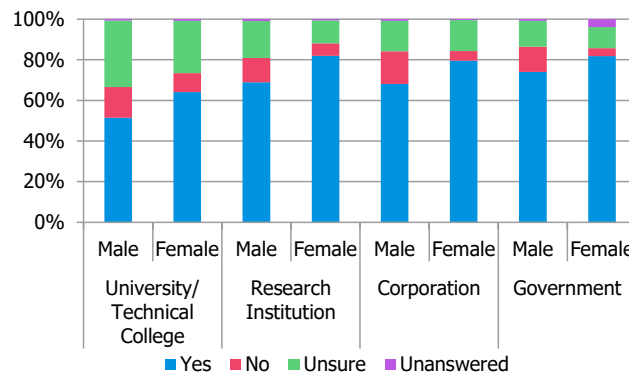


**Figure 1.100 Need for Nursing Care of Family Member (Single Answer)**



**Figure 1.101 Awareness of Nursing-Care Leave (Single Answer)**

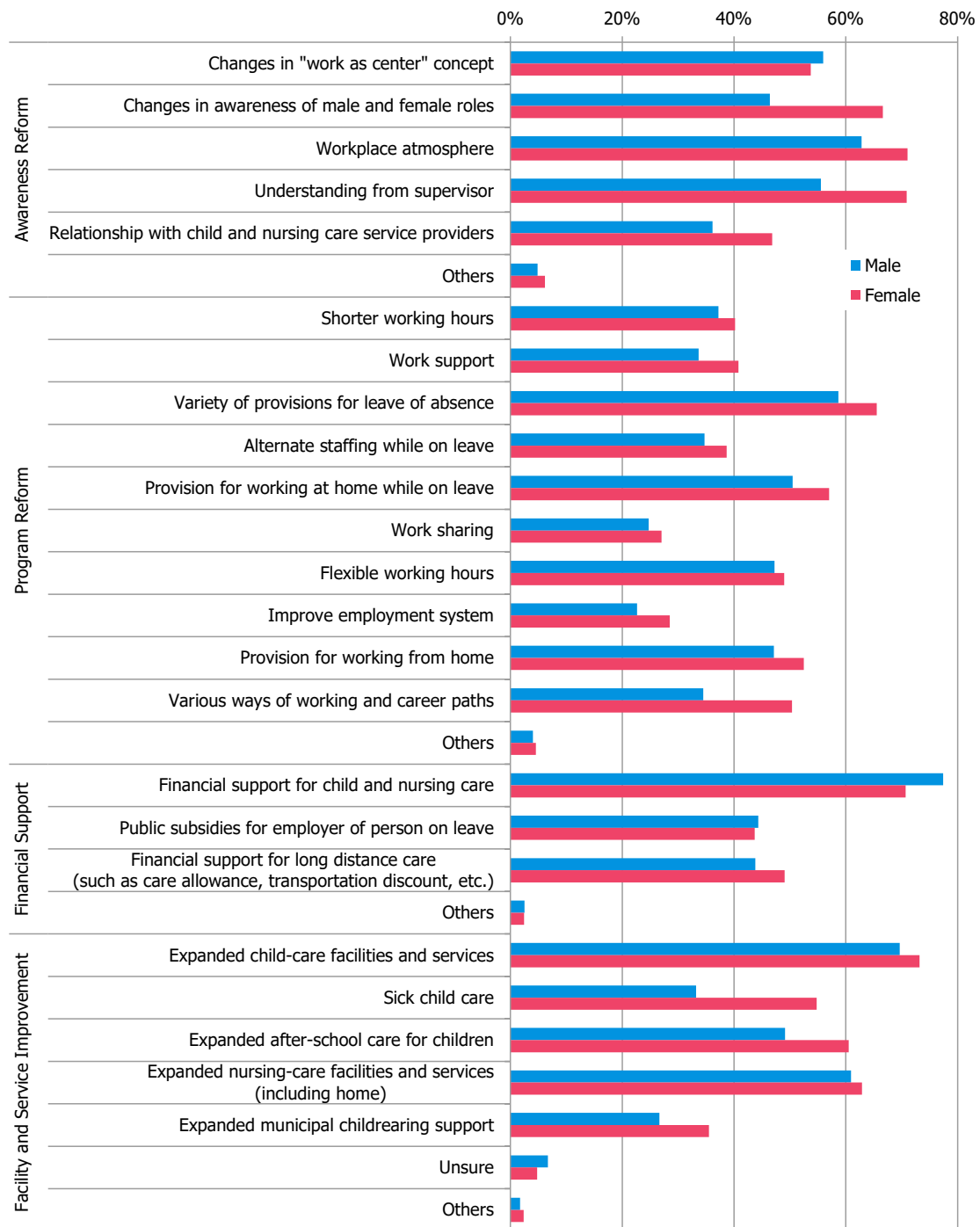
Overall, around 60% answered that their workplace has a nursing-care leave program. However, the “yes” response was low in university / technical college compared with corporation and research institution (Figure 1.103). In all occupational fields, the percentage of women who answered “yes” was higher than that of men, and the percentage who answered “unsure” was higher with men.



**Figure 1.103 Provision for Nursing-Care Leave at Respondent's or Spouse's / Domestic Partner's Workplace (Single Answer)**

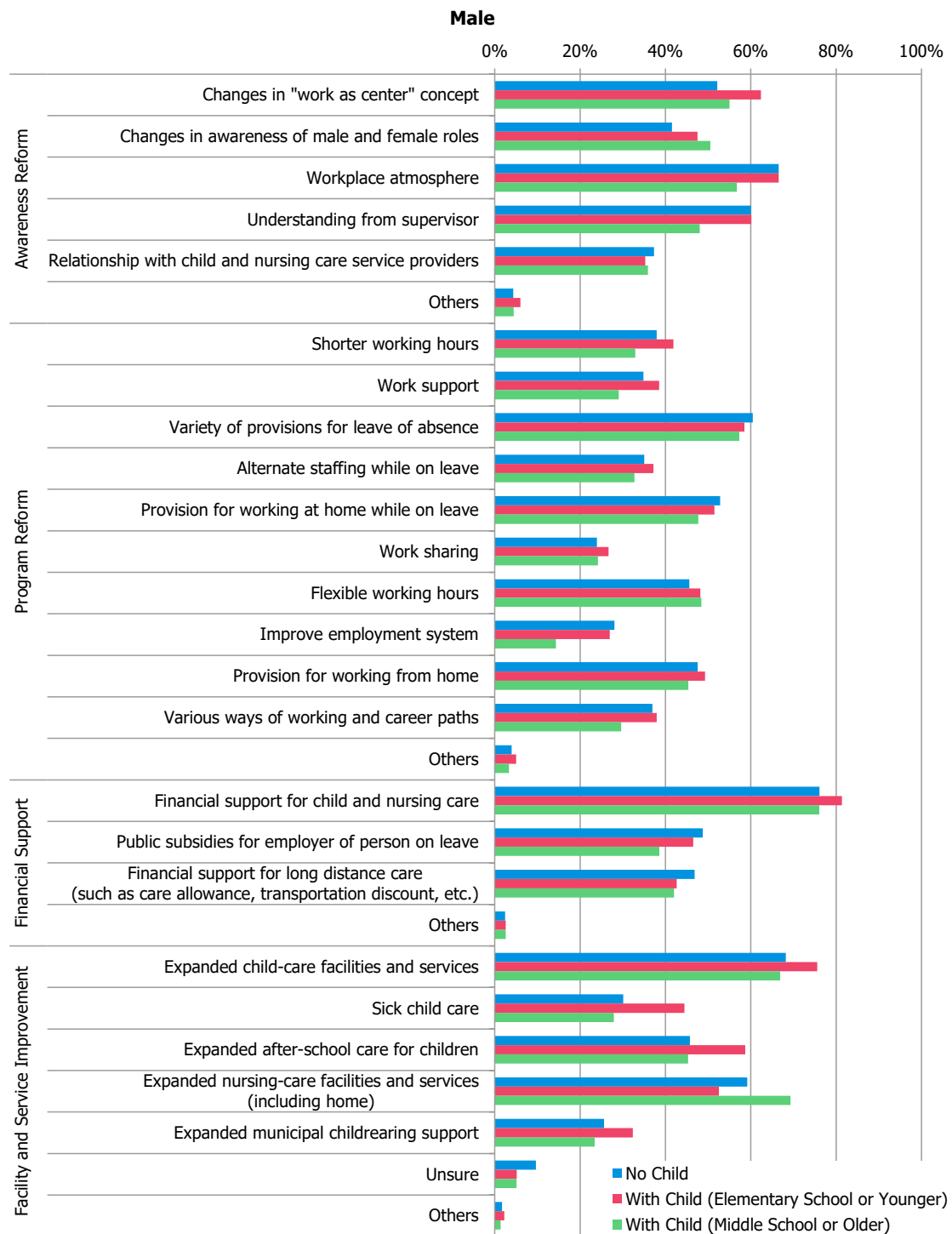
### Balancing Work and Family (Question 35: Figure 1.104-105)

The selection rate of requirements necessary to balance work and family was higher for women than men (Figure 1.104).

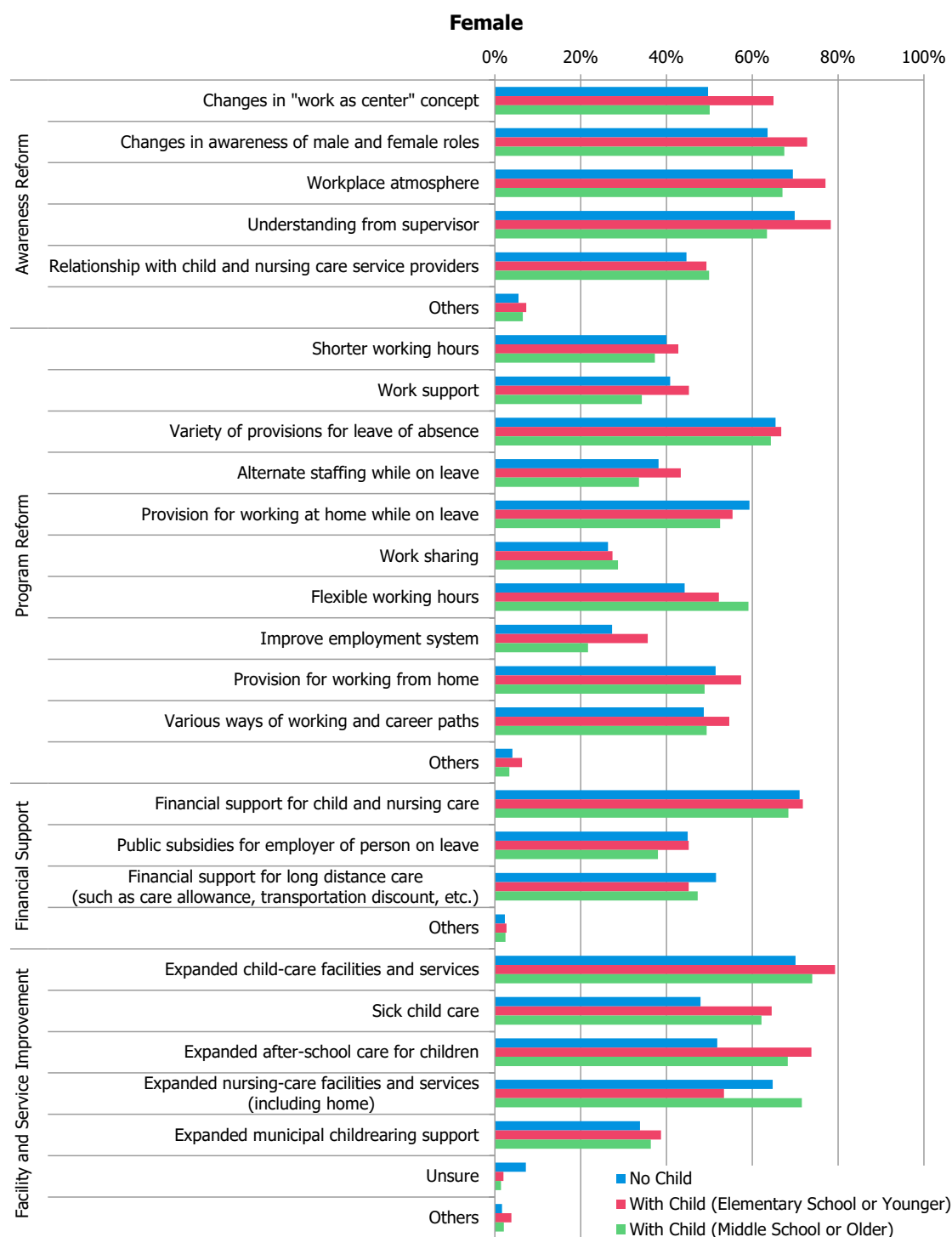


**Figure 1.104 Requirements for Balancing Family and Work (Multiple Answers)**

Compared to women without children, women with children of elementary school age or younger were about 10% more likely to choose “changes in awareness of male and female roles”, “changes in ‘work as center’ concept”, and “understanding from supervisor” as necessary requirements (Figure 1.105).



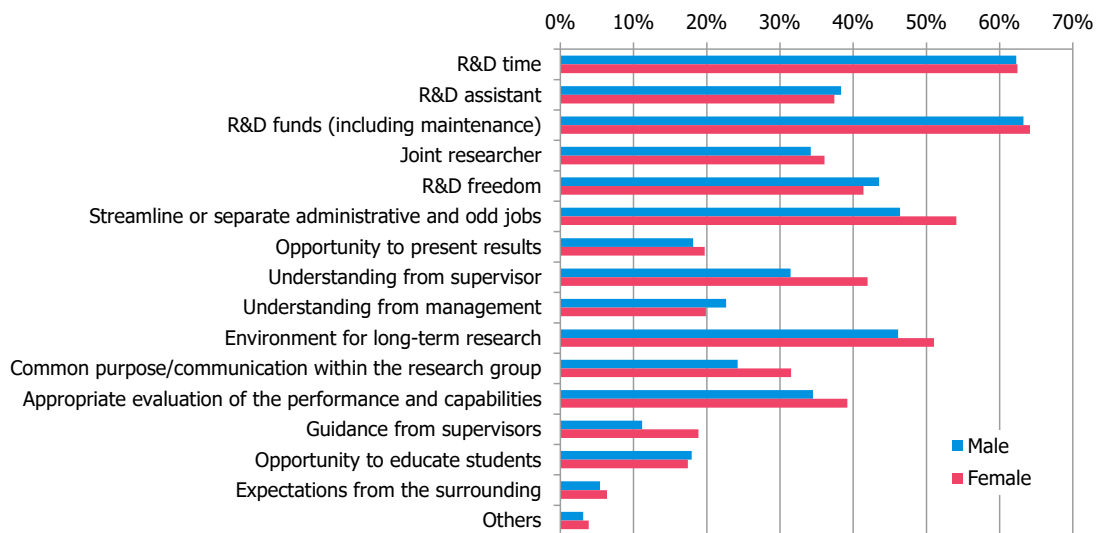




**Figure 1.105 Requirements for Balancing Family and Work by Presence of Children (Multiple Answers)**

### Environment Required for R&D (Question 36: Figure 1.106)

More than 60% of the respondents selected “R&D time” and “R&D funds (including maintenance)” as requirements for furthering R&D (Figure 1.106). Nearly half of the respondents also selected “streamline or separate administrative and odd jobs” and “environment for long-term research.” There were no significant differences between genders.

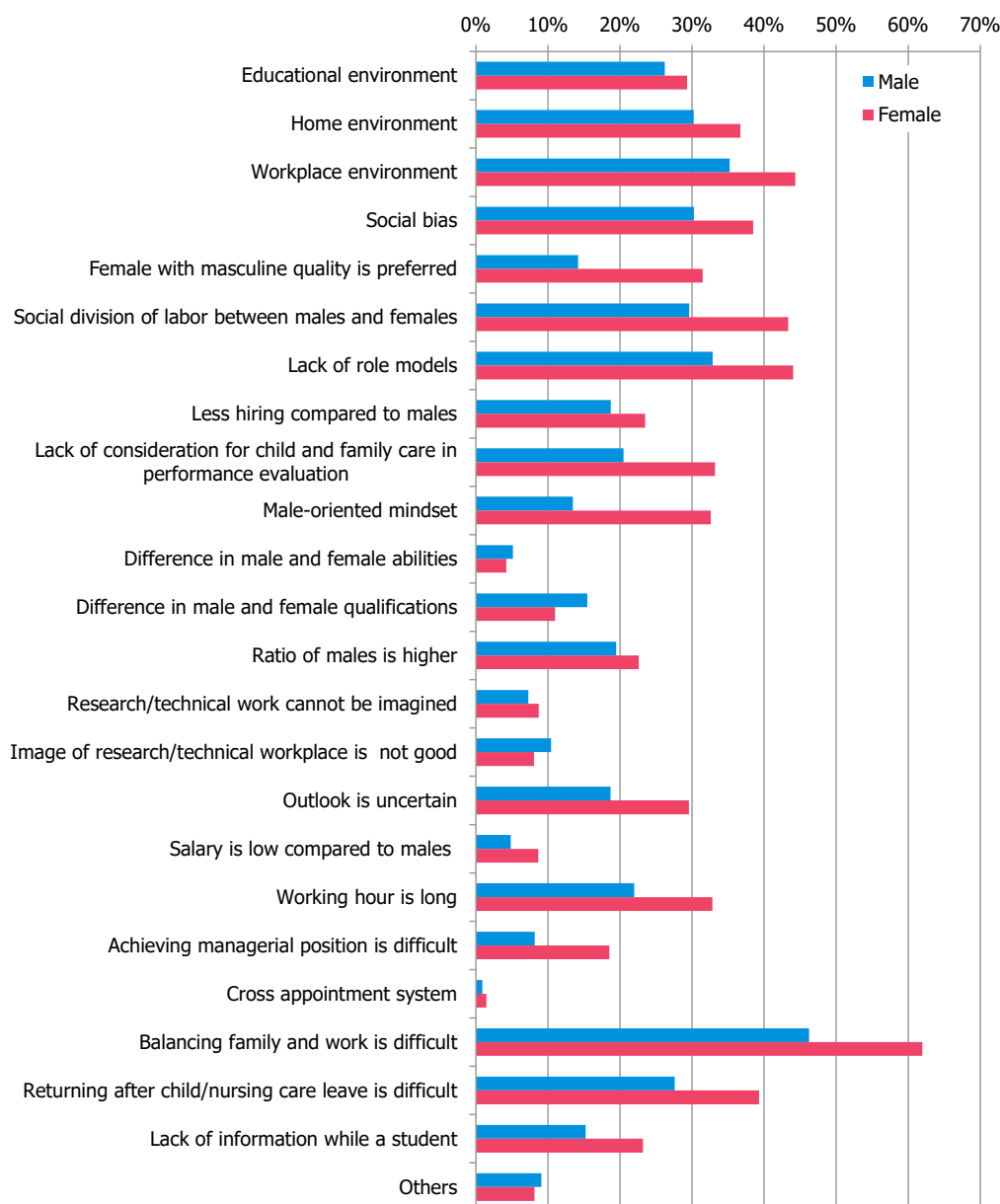


**Figure 1.106 Environment Required for R&D (Multiple Answers)**

## 1.4 Gender Equality (Question 37-43)

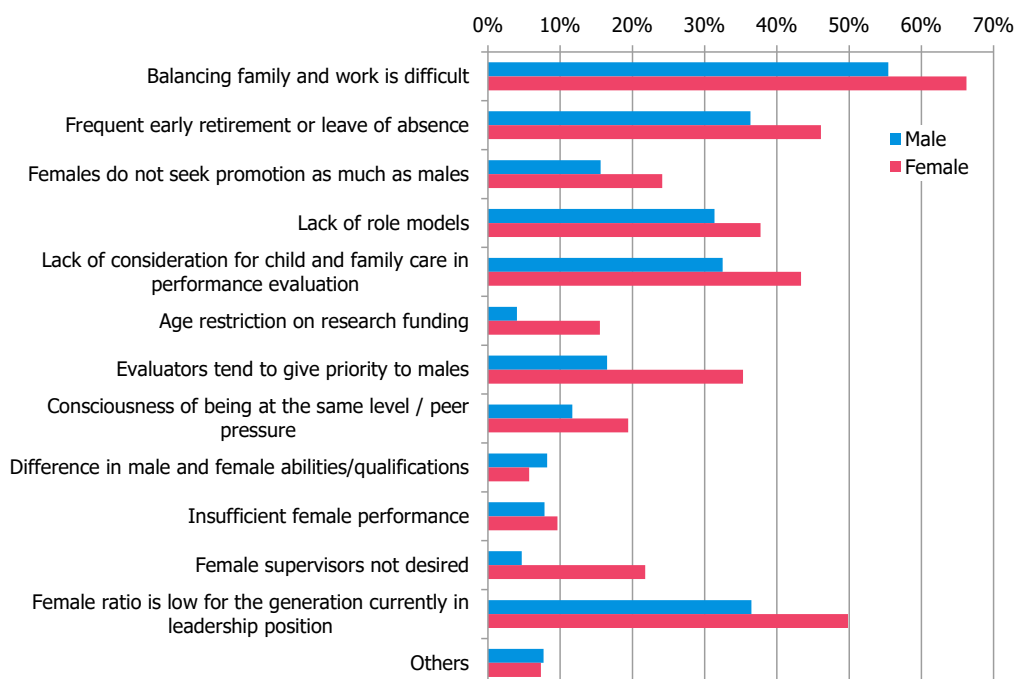
### Percentage of Female Researchers (Question 37: Figure 1.107-109)

“Balancing family and work is difficult” was the most common reason chosen by both men and women for the low percentage of female researchers (Figure 1.107).



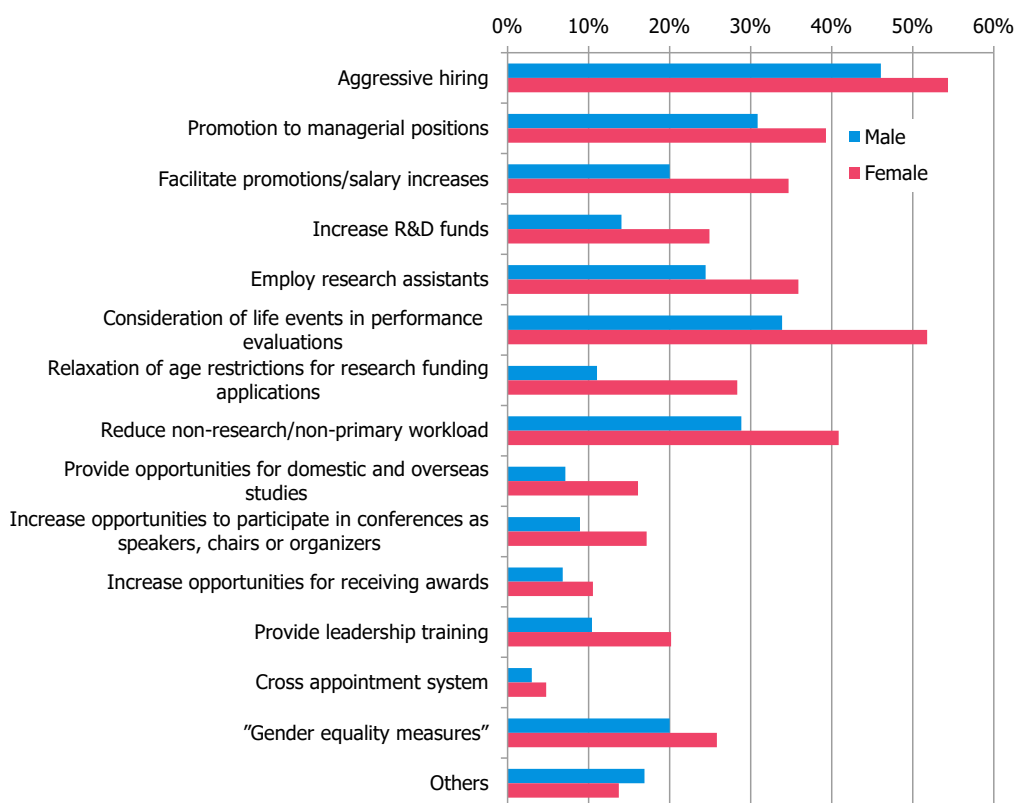
**Figure 1.107 Reasons for Low Percentage of Female Researchers (Multiple Answers)**

The top reason for the low percentage of women in leadership positions was also “balancing family and work is difficult”, which was chosen by more than 50% of both men and women (Figure 1.108).



**Figure 1.108 Reasons for Low Percentage of Females in Leadership Position (Multiple Answers)**

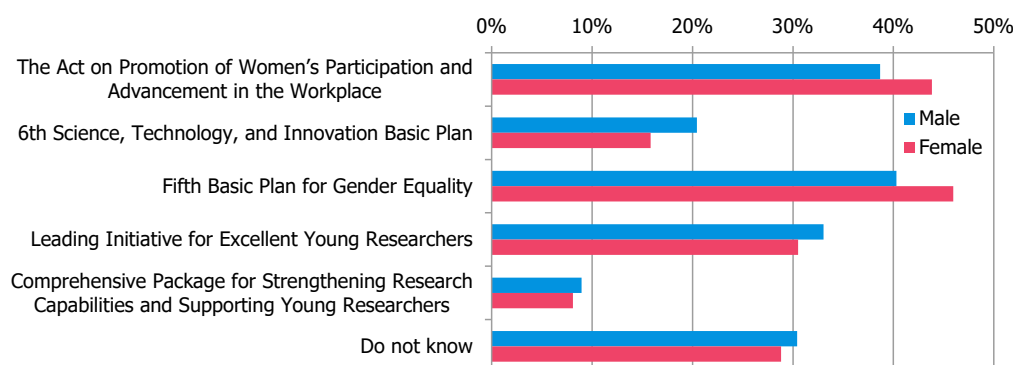
As an improvement measure, “aggressive hiring” was the most requested response from both men and women. This was followed by “consideration of life events in performance evaluations”, “reduce non-research/non-primary workload”, and “employ research assistants” (Figure 1.109).



**Figure 1.109 Remedies for Improving Female Ratio (Multiple Answers)**

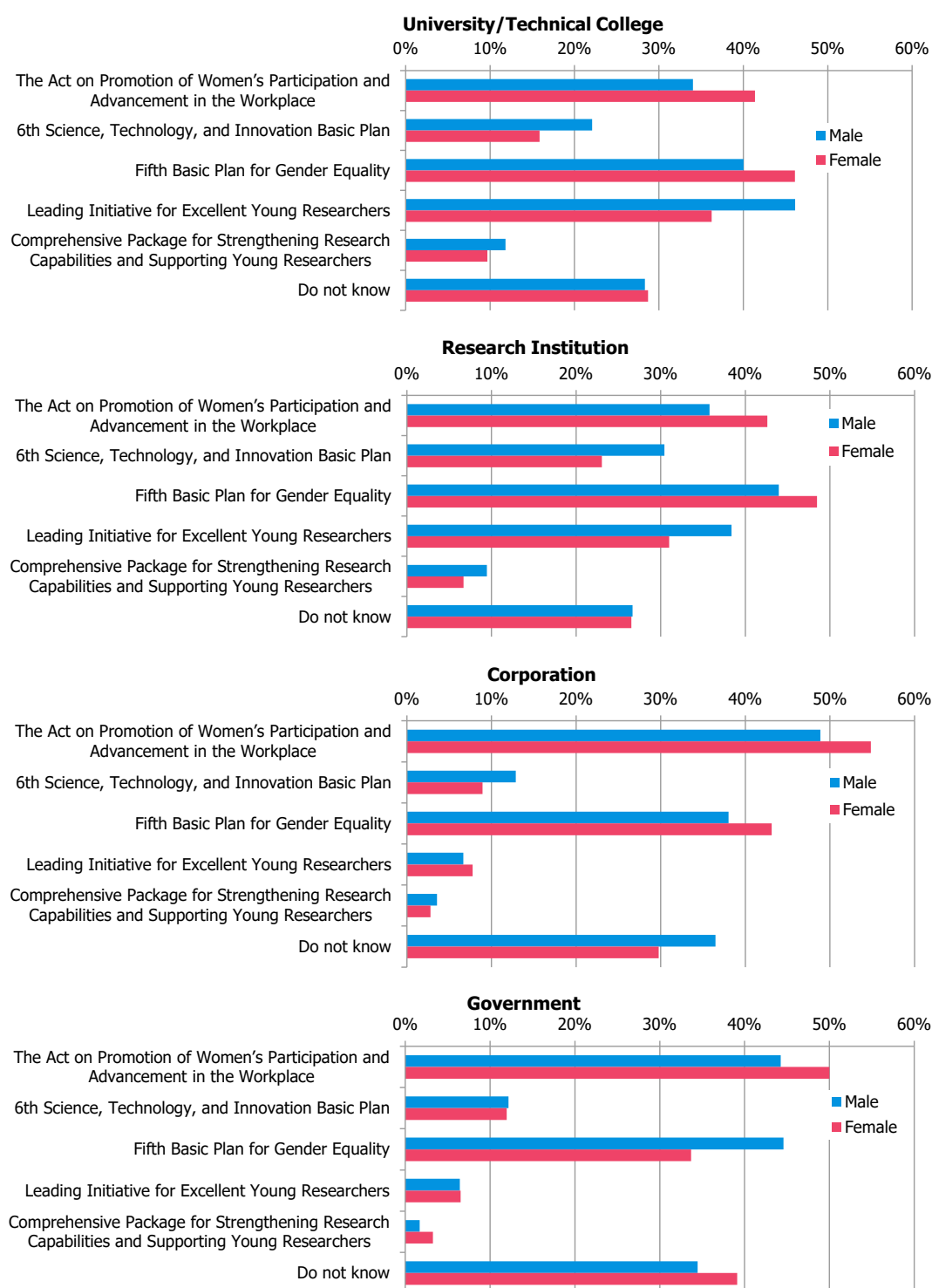
### Awareness of New Policies (Questions 38, 39: Figure 1.110-113)

About 40% of both men and women are aware of the “Act on Promotion of Women’s Participation and Advancement in the Workplace” (Figure 1.110). A little less than 20% are aware of the “6th Science, Technology, and Innovation Basic Plan” with women having about 5% higher awareness than men. About 40% are aware of the “Fifth Basic Plan for Gender Equality” and again the women’s awareness was about 5% higher than men. About 5% more men than women were aware of the “Leading Initiative for Excellent Young Researchers”. Less than 10% of the respondents were aware of the “Comprehensive Package for Strengthening Research Capabilities and Supporting Young Researchers”. About 30% answered “do not know” to these laws and basic plans indicating that awareness of gender equality policies is still low.



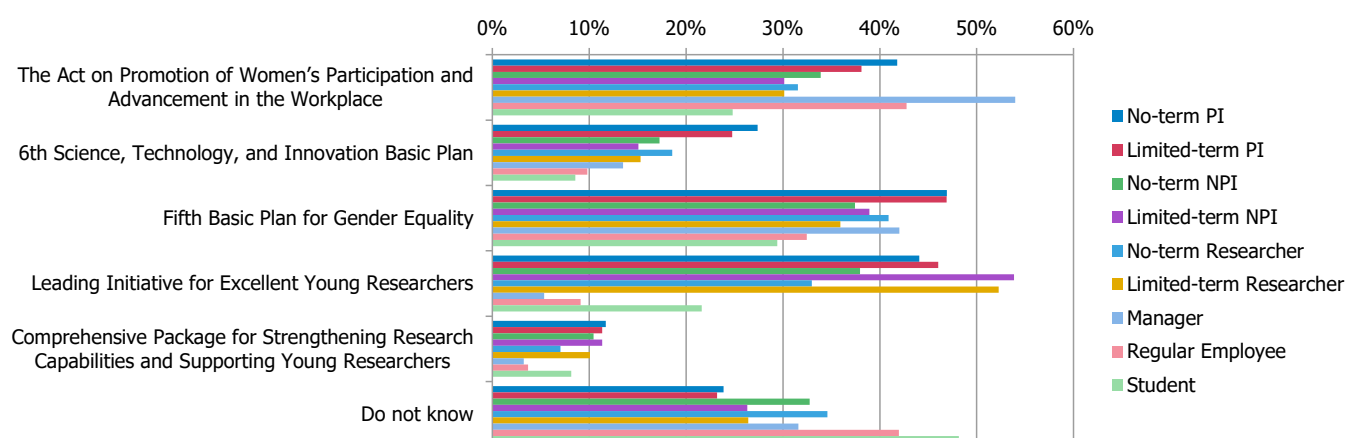
**Figure 1.110 Awareness of Policies (Multiple Answers)**

Those aware of the “Act on Promotion of Women's Participation and Advancement in the Workplace” were numerous for corporation with about 50% of both men and women indicating awareness (Figure 1.111). Awareness of the “6th Science, Technology, and Innovation Basic Plan” was high for research institution but low for corporation. The “Fifth Basic Plan for Gender Equality” awareness was generally high with all organizations. The “Leading Initiative for Excellent Young Researchers” was highly recognized in university / technical college and research institution, but the recognition was extremely low in corporation. Awareness of the “Comprehensive Package for Strengthening Research Capabilities and Supporting Young Researchers” was low across all organizations.



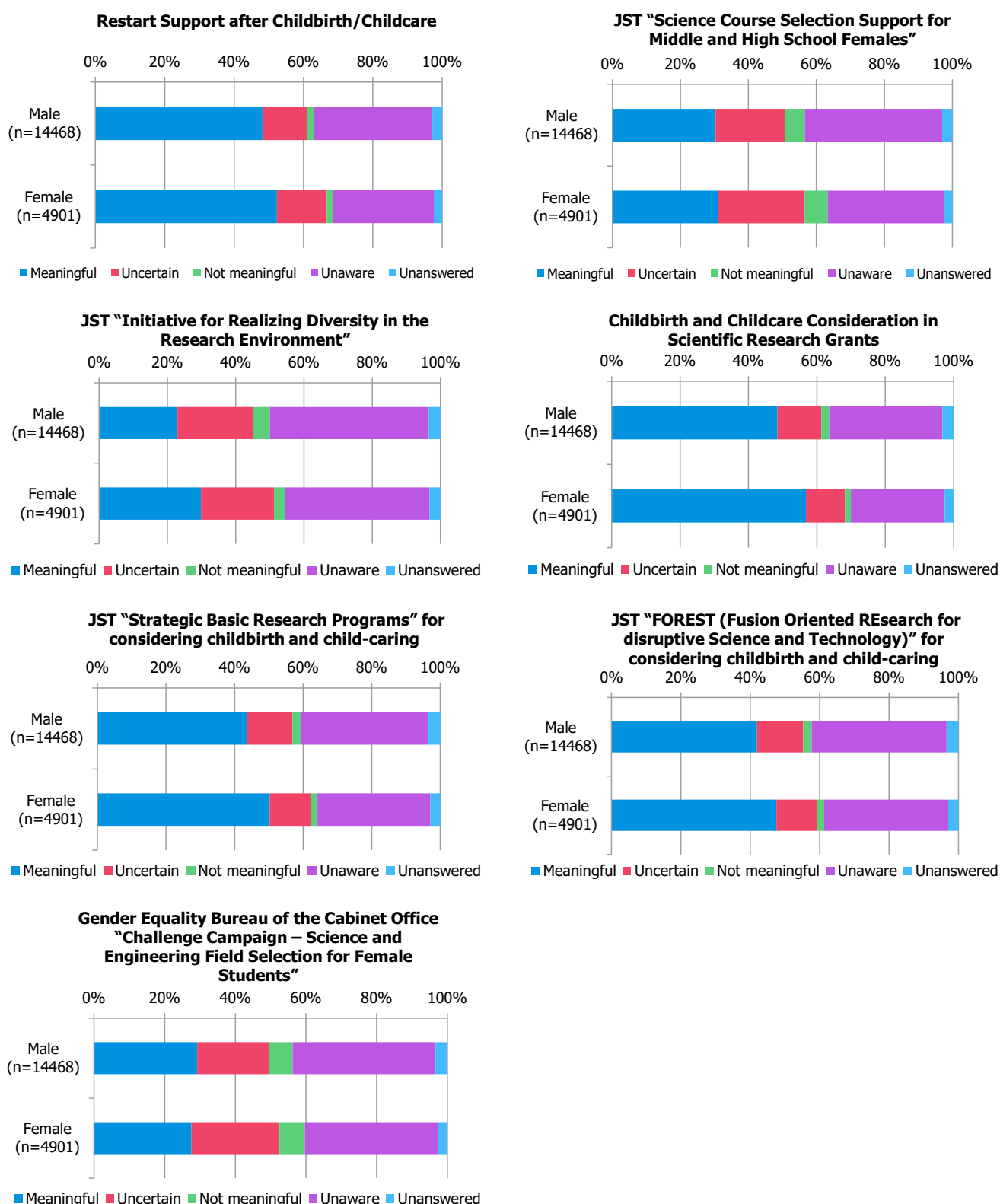
**Figure 1.111 Awareness of Policies by Organization (Multiple Answers)**

As a result of tabulating the degree of policy awareness by occupational field (Figure 1.112), the awareness of the “Act on Promotion of Women's Participation and Advancement in the Workplace” was high among respondents who are managers or general staff. The awareness of the “6th Science, Technology, and Innovation Basic Plan” and the “Fifth Basic Plan for Gender Equality” became greater as the respondents’ positions became higher. The “Leading Initiative for Excellent Young Researchers” awareness was high with limited-term NPIs and limited-term researchers, who are the main targets of the policy. The awareness of the “Comprehensive Package for Strengthening Research Capabilities and Supporting Young Researchers” turned out to be low for all occupational fields. About half of the students and general staff answered that they had no awareness with any of the policies.



**Figure 1.112 Awareness of Policies by Occupational Field (Multiple Answers)**

Sixty percent of women and 50% of men are aware of support related to childbirth and childcare, and about half answered that it was “meaningful” (Figure 1.113).

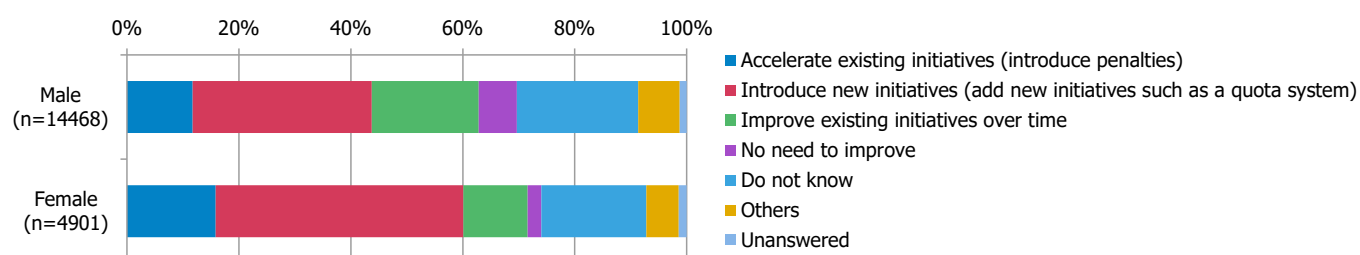


**Figure 1.113 Awareness and Significance of National Policies and Support for Female Researchers (Single Answer)**



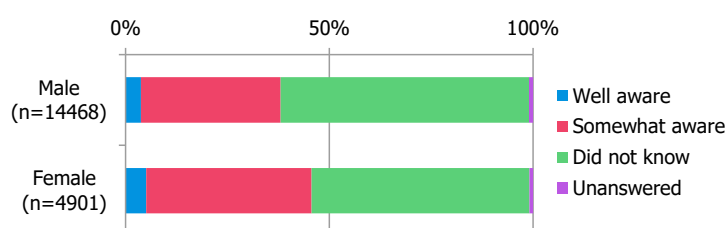
### Awareness and Significance of Hiring Targets (Question 40, 41: Figure 1.114-119)

About 60% of women selected “introduce new initiatives” or “accelerate existing initiatives” when asked about improvements to the national policies and support for female researchers (Figure 1.114). Men selected “improve existing initiatives over time” and “no need to improve” more often than women.



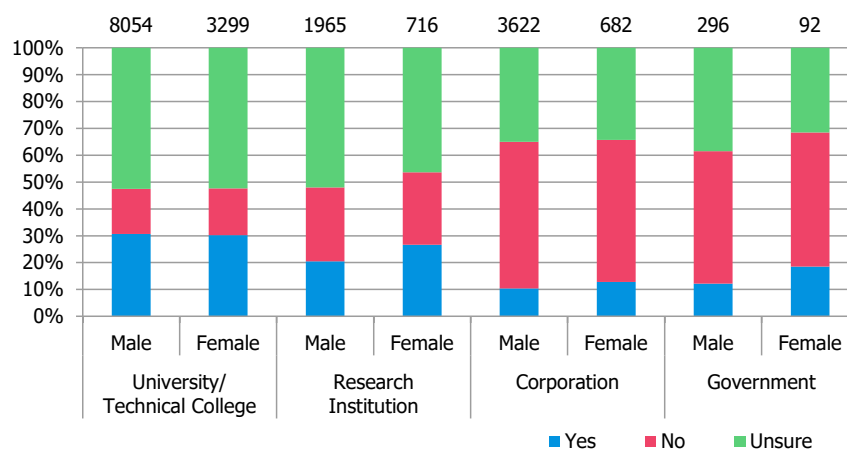
**Figure 1.114 Improving National Policies and Support for Female Researchers (Single Answer)**

Sixty-one percent of men and 53% of women answered that they “do not know” the existence of numerical targets for hiring female researchers and engineers (Figure 1.115). Awareness is still low, which is consistent with past surveys. Women’s positive opinions greatly outweighed the negatives with respect to initiatives that set numerical targets.

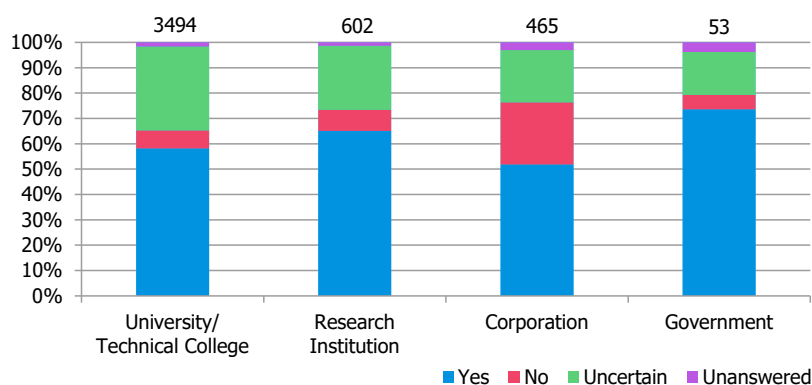


**Figure 1.115 Awareness of Numerical Target for Female Hiring (Single Answer)**

There was no difference between men and women in terms of whether their organizations set numerical targets for hiring female researchers (Figure 1.117). As in the previous survey, government published the highest number of numerical targets followed by research institution, university / technical college, and corporation (Figure 1.118).

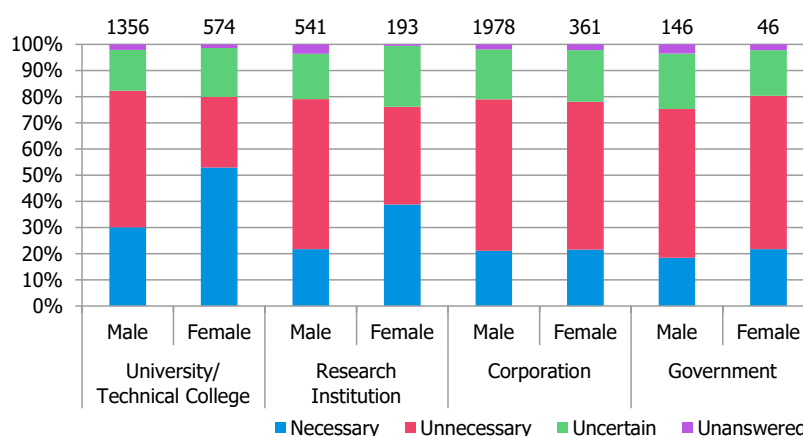


**Figure 1.117 Numerical Target for Female Hiring (Single Answer)**



**Figure 1.118 Published Numerical Target for Female Hiring (for those who replied yes to set target) (Single Answer)**

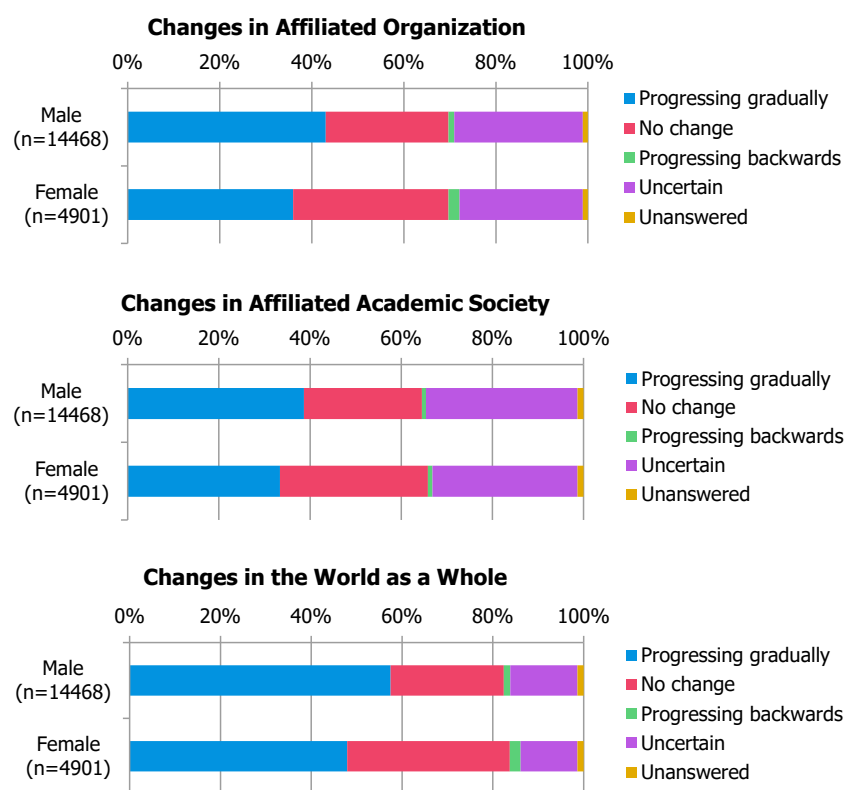
When asked about the necessity of setting numerical hiring targets, many women that answered “necessary” were from university / technical college and research institution (Figure 1.119).



**Figure 1.119 Need for Numerical Target (for those who replied no to set target) (Single Answer)**

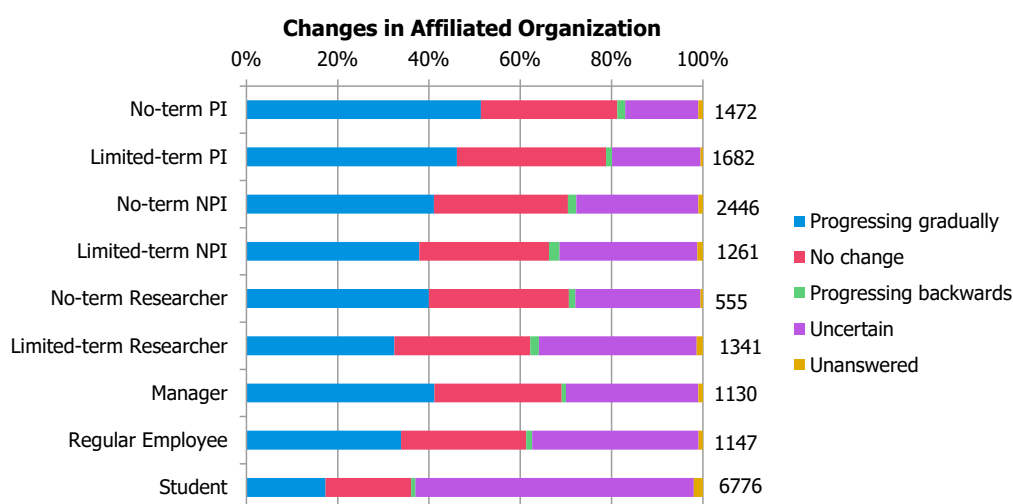
## Promotion of Gender Equality (Question 42: Figure 1.120-121)

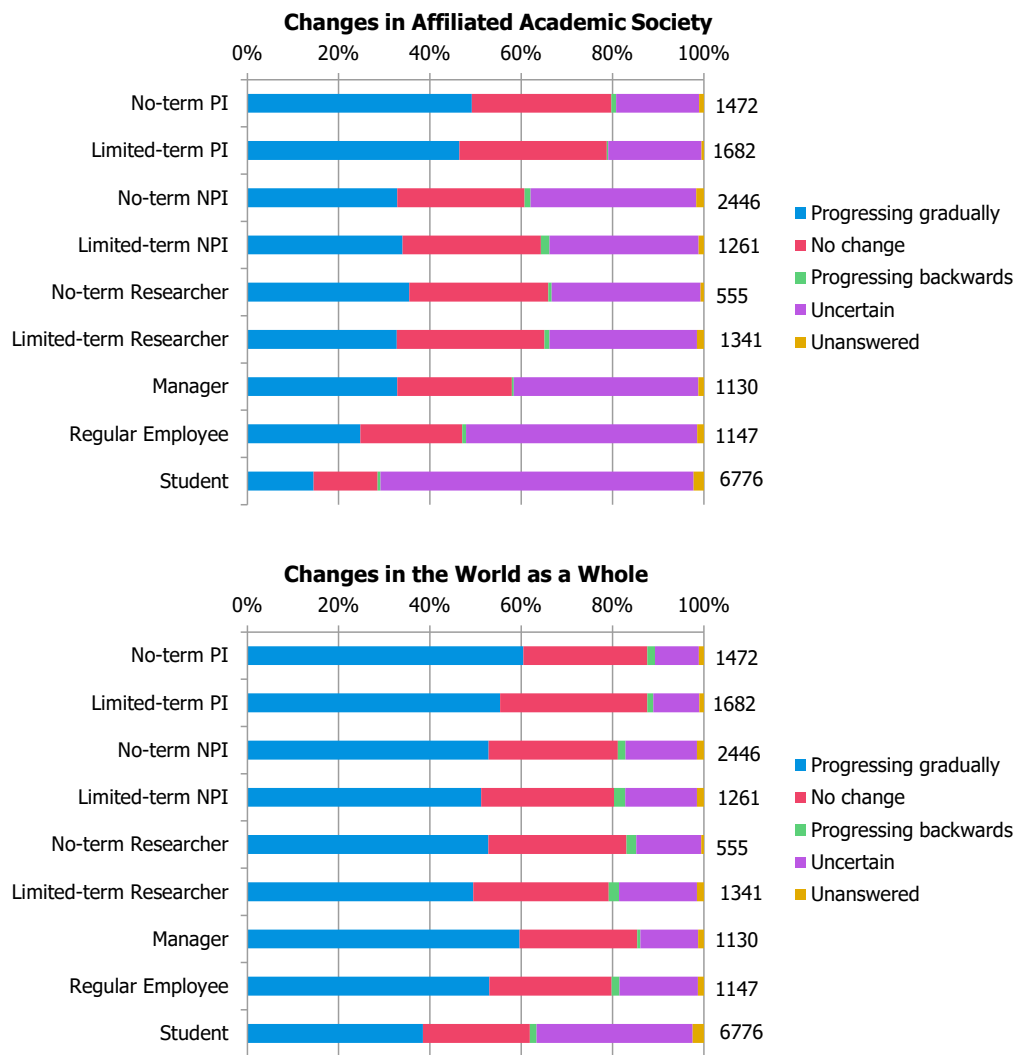
In all categories, more men than women feel progress in the promotion of gender equality is “progressing gradually” (Figure 1.120).



**Figure 1.120 Progress in the Promotion of Gender Equality (Single Answer)**

The “progressing gradually” perceptions were high among respondents in high-ranking occupations (PIs and managers) (Figure 1.121).

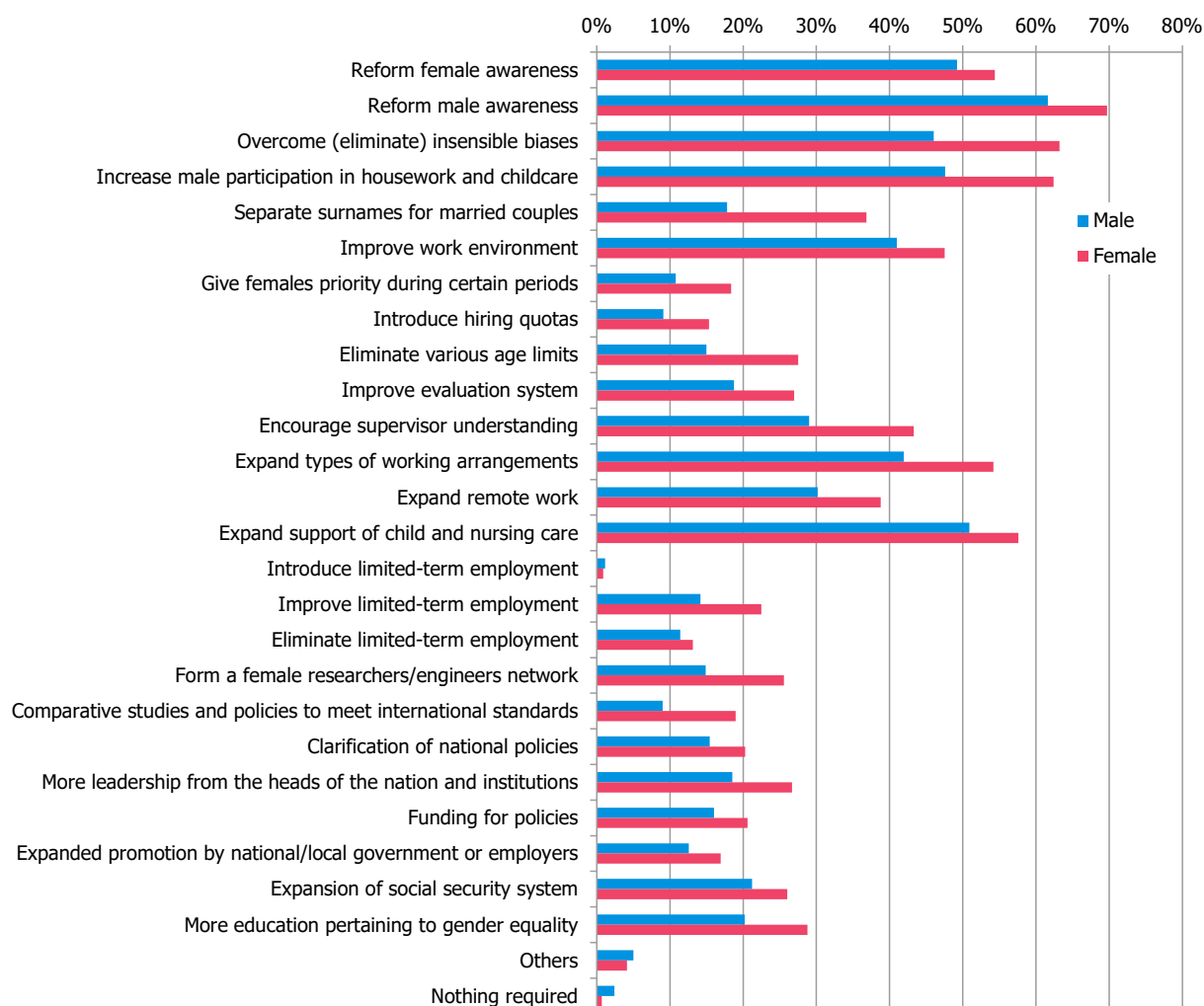




**Figure 1.121 Progress in the Promotion of Gender Equality by Occupational Field (Single Answer)**

### Future Requirements for Gender Equality (Question 43: Figure 1.123)

Large number of responses from both men and women indicated “reform male/female awareness” as a necessary requirement to promote gender equality in the future (Figure 1.123). The “reform female awareness” response decreased slightly from the previous survey. The change in the “reform male awareness” response was minimal from the previous survey, but it did maintain a high percentage of responses. About half of the respondents selected the “overcome (eliminate) insensible biases” response, which was new addition in this survey.



**Figure 1.123 Future Requirements for Gender Equality (Multiple Answers)**

## Chapter 2 Important Issues: Gender Gap in Job Positions

In order to investigate the factors behind the lower percentage of women in higher job positions, analysis was conducted based on the job position index. The job position index is defined as the median value of the cumulative number of each job position when the respondents for each organization are arranged from the lowest to the highest job position, with the minimum value being 0 and the maximum value being 10.

### Job Position Index (Figure 2.1)

The job position index was calculated from the job position distribution of each respondent's affiliated organization. Starting with this survey, government has been added as an affiliated organization. Compared to the fourth survey, the job position index of research associate / assistant professor and above decreased for university / technical college. For research institution, the job position index of limited-term researcher (postdoc) and above decreased. Corporation exhibited decrease in job position index for all classes. These results are assumed to be due to the decrease in the ratio of respondents in relatively lower job positions.

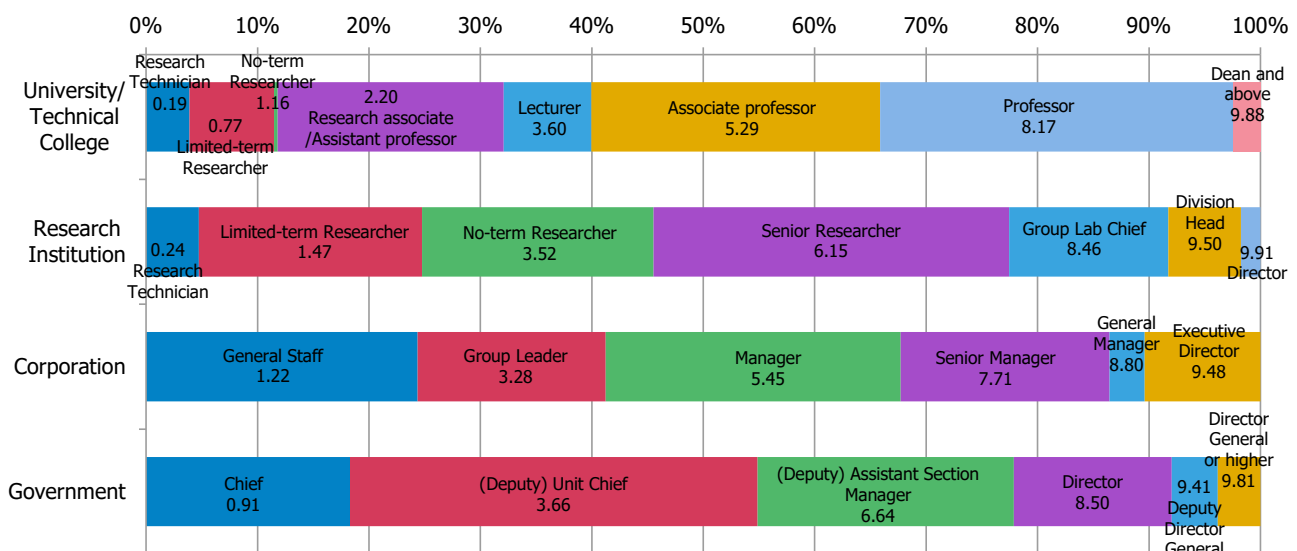


Figure 2.1 Definition of Job Position Index (Single Answer)

### Job Position Index by Age for Each Organization (Figure 2.2)

In all organizations, the job position index increased with age, but as was the case in the fourth survey, promotion of women after the age of 30 was slow. The gender gap for university / technical college was larger than research institution and corporation. For all organizations, the job position index of men was higher than that of women. The gender gap in the job position index by organization showed an improvement trend up to the fourth survey, but leveled off in the fifth survey. Comparing the ages between genders at which the job position index reaches 7, except for corporation, ages of women were about 10 years higher than men confirming that promotion of women is slower.

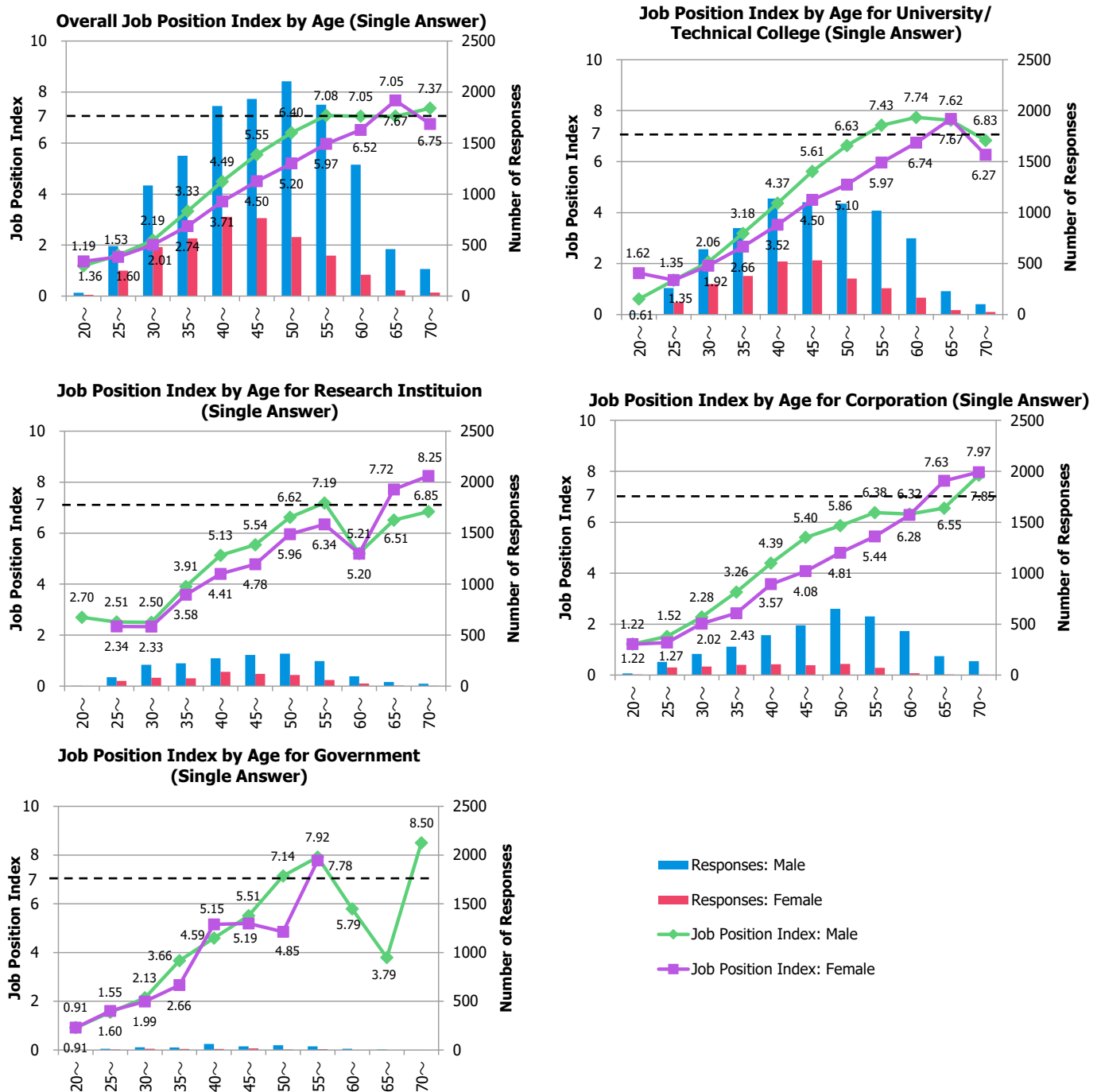


Figure 2.2 Job Position Index by Age for Each Organization

### Job Position Index by Age for University / Technical College (Figure 2.3)

At national and private universities, the gender gap tended to increase with age. In particular, the gender gap of national university was the largest. Since the fourth survey, the gender gap in the job position index did not improve.

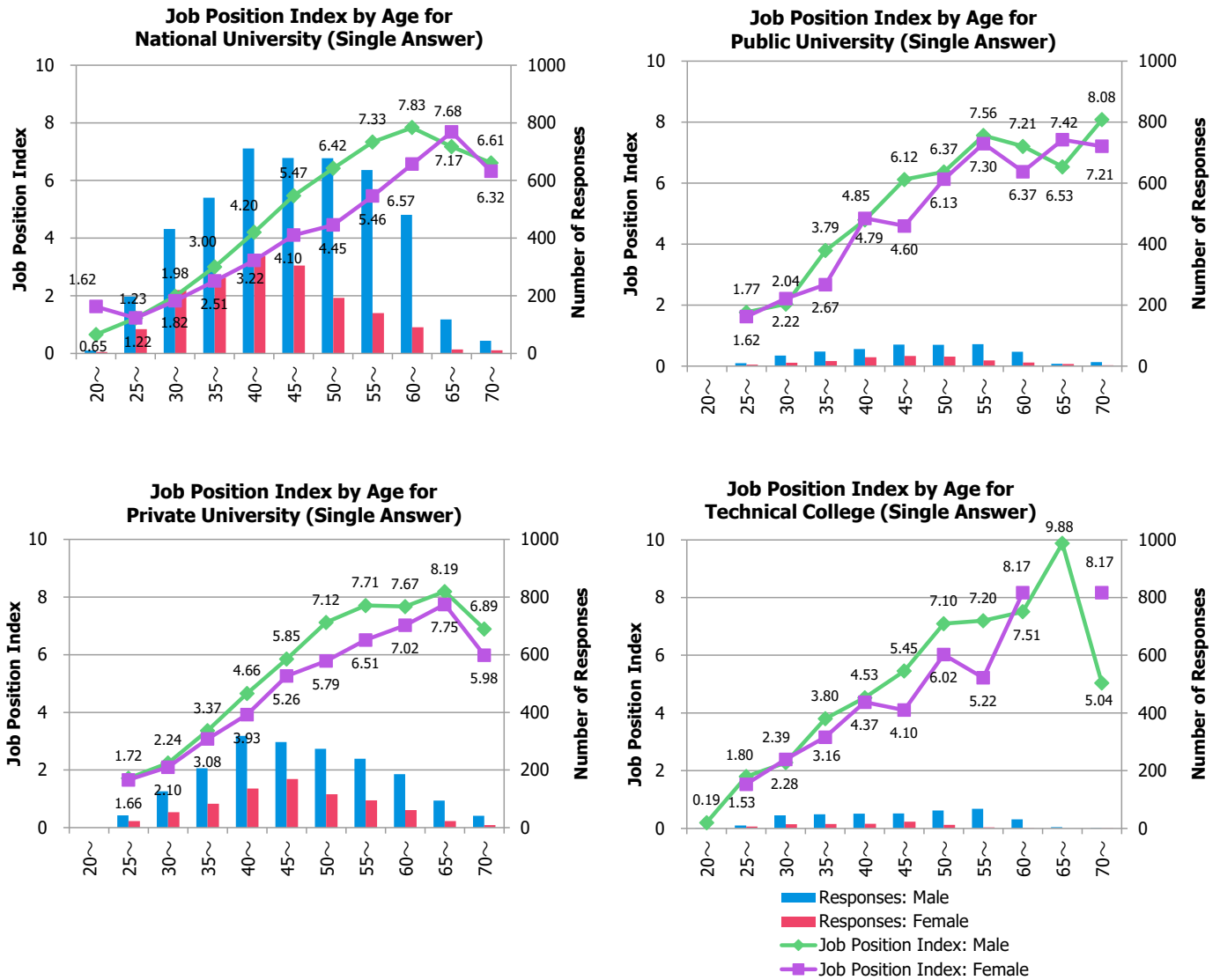


Figure 2.3 Job Position Index by Age for University / Technical College

### Job Position Index by Age for Each University / Technical College Academic Field (Figure 2.4)

Starting at around age 45, the gender gap in the job position index begins to widen with age. In engineering and agriculture fields, the change in gender gap according to age was relatively small. On the other hand, there was a large gender gap in life science and biology fields. The age at which the job position index exceeded 5 was around 45 for men, while it was revealed that promotion of women was five to ten years slower.



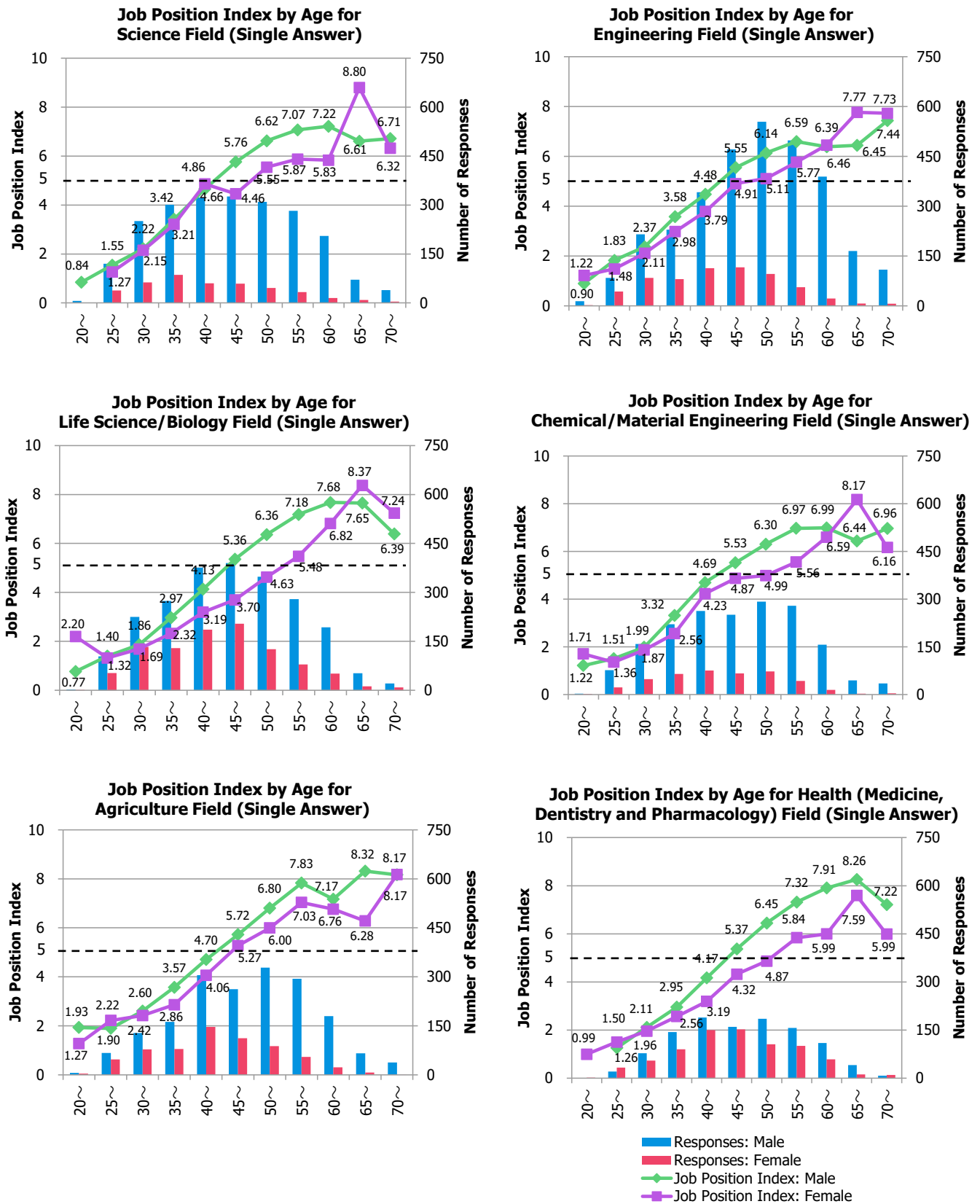
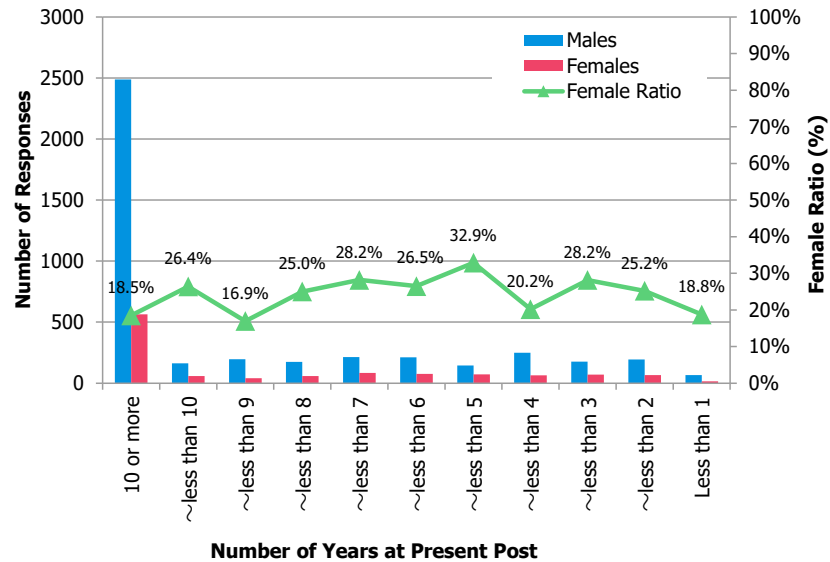


Figure 2.4 Job Position Index by Age for Each University / Technical College Academic Field

### Length of Employment as a Female Faculty (Lecturer or Above) in University / Technical College (Figure 2.5)

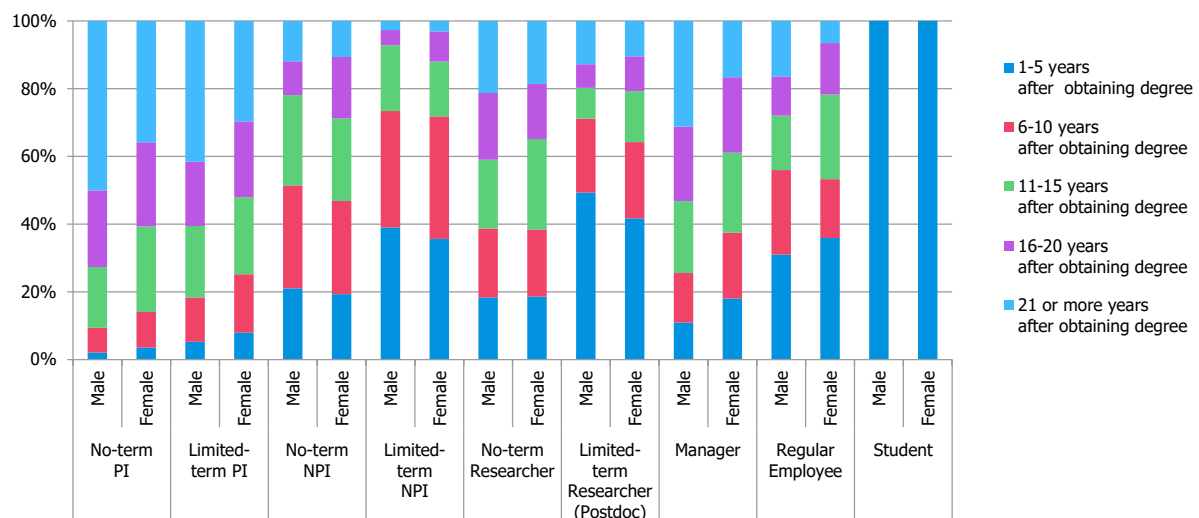
The percentage of women who have been employed for more than one year but less than ten years has not changed significantly since the fourth survey. The percentage of women employed ten years or more also remained unchanged from the fourth survey, suggesting that overall improvement is stagnating.



**Figure 2.5 Length of Employment and Percentage of Female Faculties (Lecturer or Above) in University / Technical College (Single Answer)**

### Years Elapsed Since Obtaining Degree and Current Occupation (Figure 2.6)

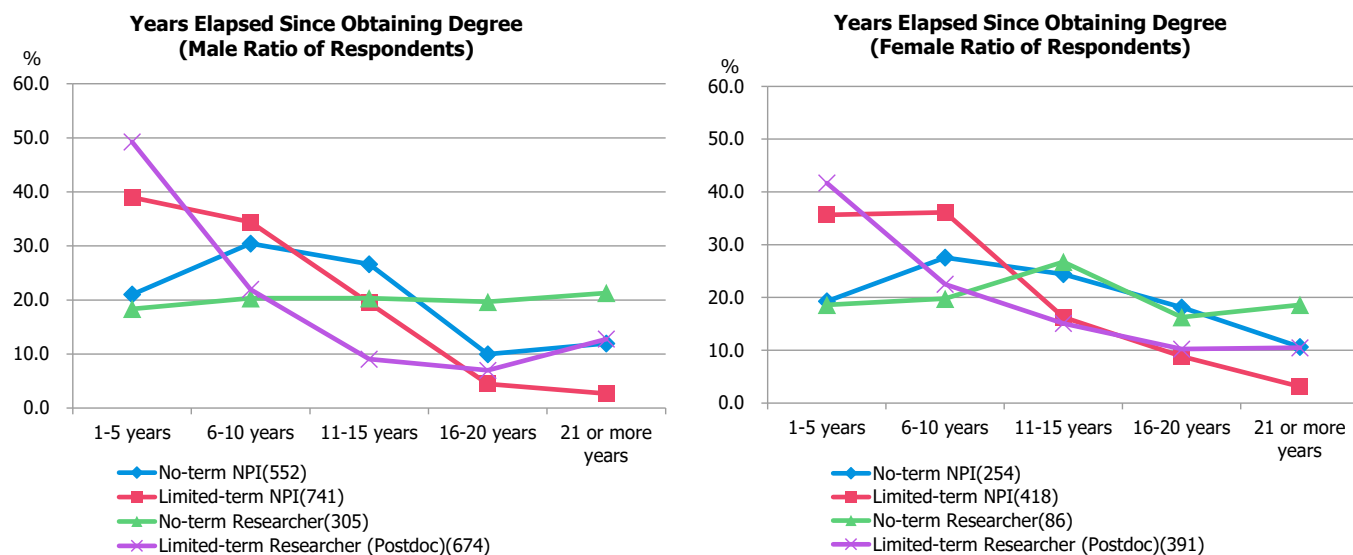
Compared to the fourth survey, the percentage of those who have obtained their degree 16 years ago or more has increased by 11 points for men and 21 points for women. From these results, it can be seen that the older age groups continuously respond to the questionnaire. Approximately 20% of both men and women who have obtained their degree 16 years ago or more are under limited-term employment, and 10% of those have had the term 21 years or more. This result suggests the aging and lengthening of limited-term employment.



**Figure 2.6 Years Elapsed Since Obtaining Degree x Current Occupation x Gender (Single Answer)**

### Years Elapsed Since Obtaining Degree and Job Position (Figure 2.7)

When comparing men and women who obtained their degree more than ten years ago, the percentage of women with limited-term employment was higher than that of men. This suggests that women tend to have longer tenure in limited-term employment. Women 16 to 20 years after obtaining a degree are more likely to stay in limited-term employment than men, which implies that women aged 40 to 45 are not making full use of their abilities.



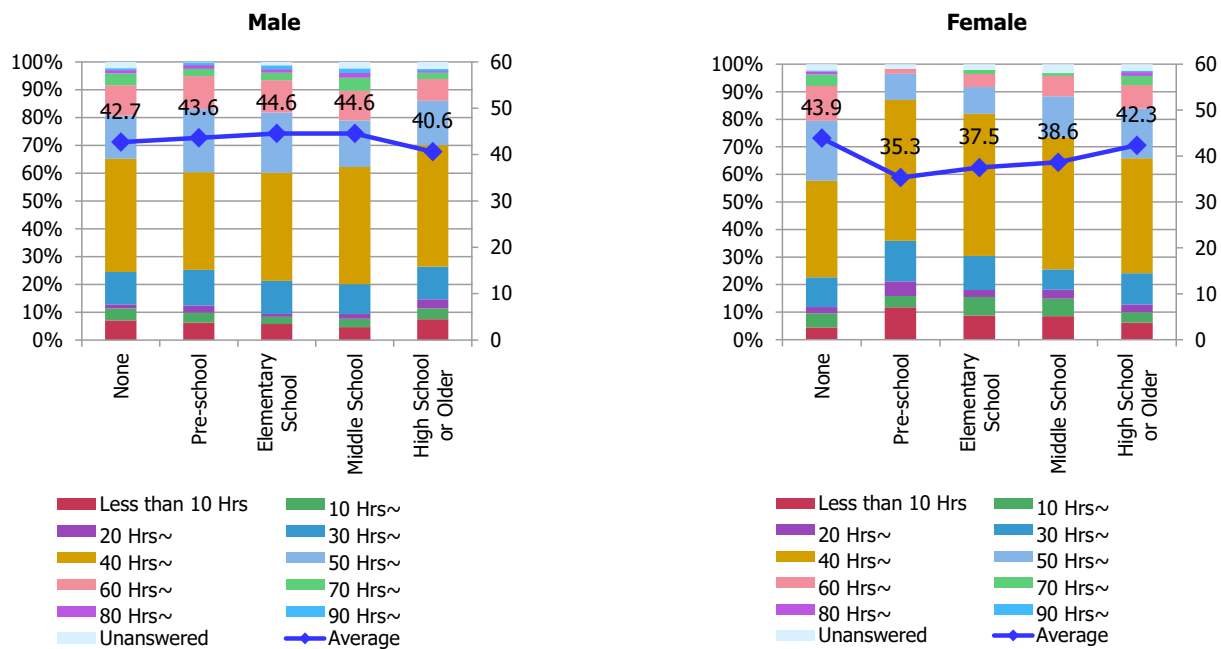
**Figure 2.7 Years Elapsed Since Obtaining Degree and Job Position**  
(Ratio of Respondents) ( ) is number of responses

## Chapter 3 Important Issues: Child and Nursing Cares

Raising awareness and improving the environment are very important for both men and women to balance work and family. This chapter examines the issues and necessary measures regarding “child and nursing cares”, where a large gap exists between genders.

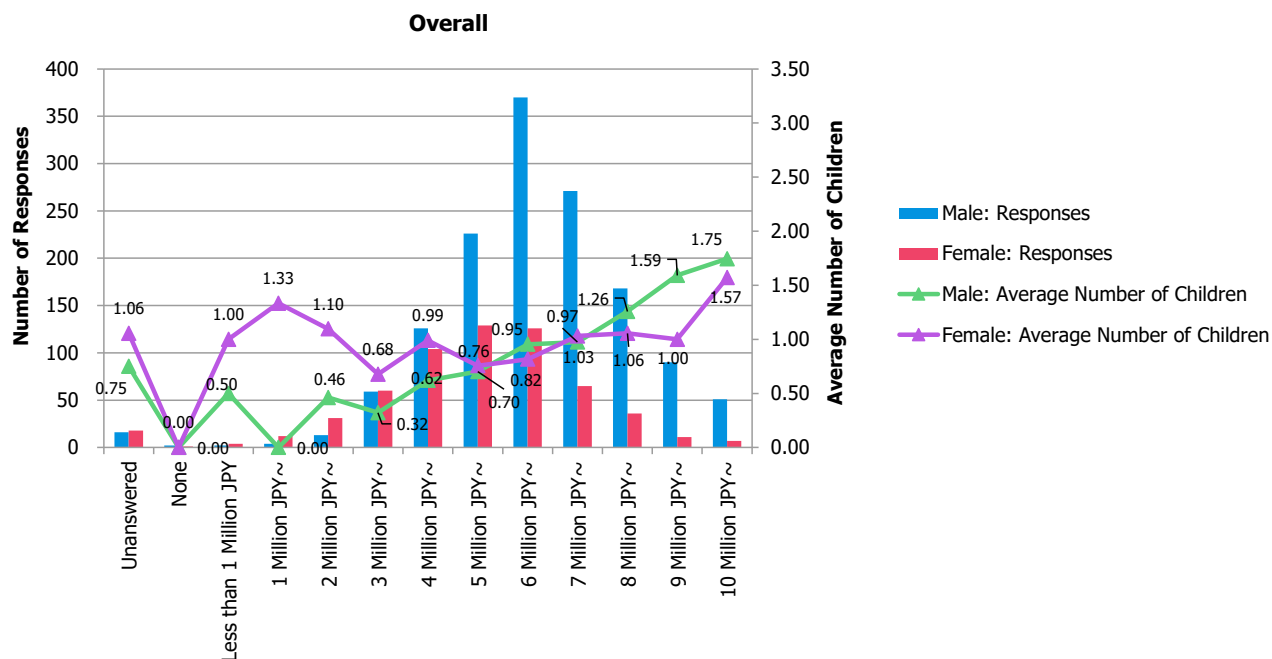
### Effect of Childcare on Career (Figure 3.1-2)

(Figure 3.1) There is a clear difference in the hours spent at work between men and women when they have young children, whereas there is little difference when they have no children or when children are in high school or older. In particular, there is a difference of 8.3 hours in the average hours spent at work between men and women when they have preschool children.



**Figure 3.1 Hours Spent at Workplace by Children's Age Group (Single Answer)**

(Figure 3.2) For women, there is very little correlation between annual salary and the number of children, while for men, the number of children increases proportionally with annual salary. This is similar to the fourth survey (Figure 3.2), confirming that women tend to bear the time burden while men bear the financial burden.



**Figure 3.2 Annual Salary and Number of Children (respondents in their late 30's) - Overall (Single Answer)**

### Childcare Leave (Figure 3.3-6)

(Figure 3.3-6) Overall, the younger the children, the higher the percentage of those that take childcare leave. For corporation, the percentage of women taking leave was very high. Whereas, for university / technical college, 24.4% of the women did not take leave and this rate was 19.6% for research institution. Although the percentage of men who took leave was very low, the rate has doubled since the fourth survey (Figure 3.3).

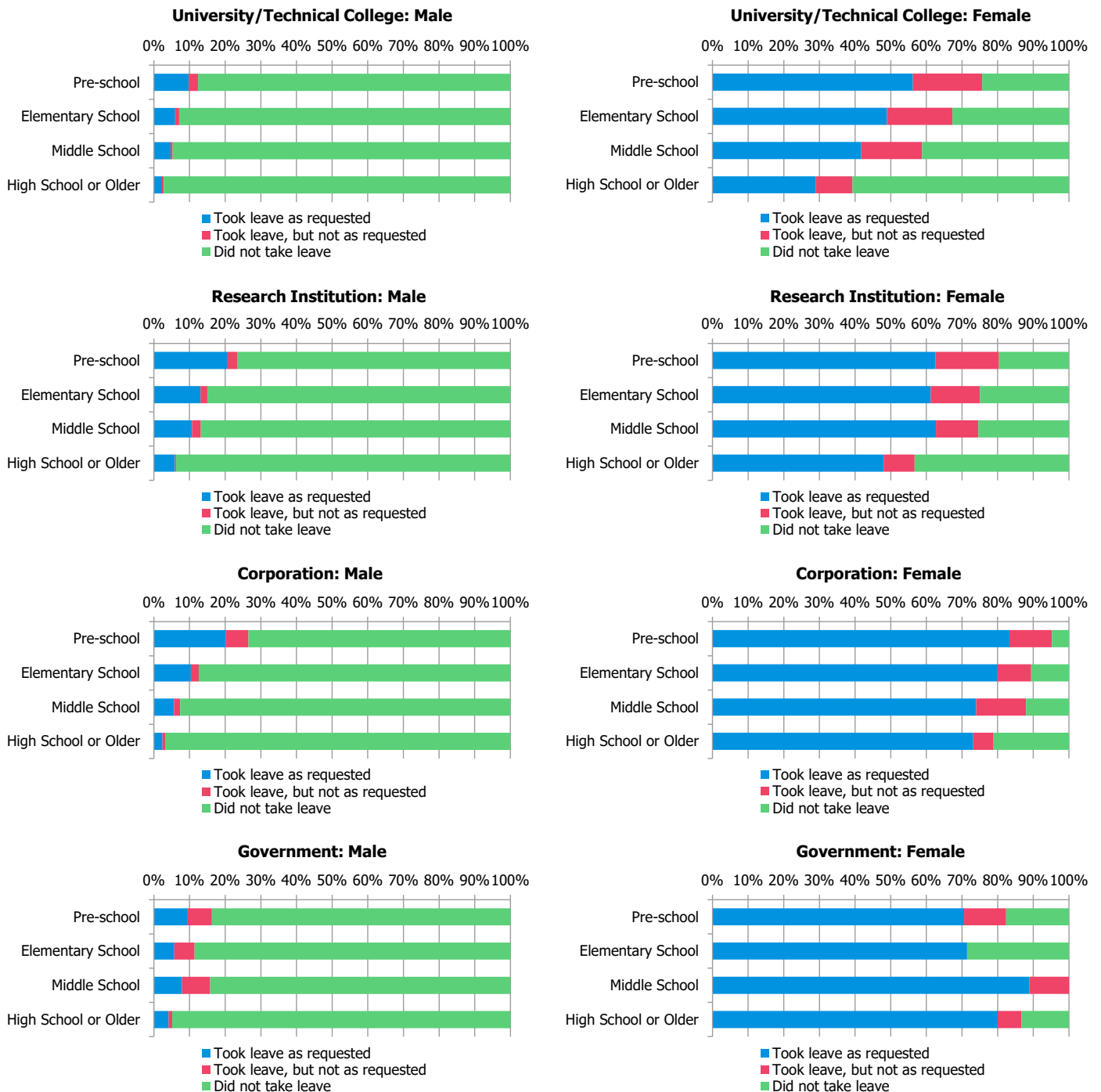
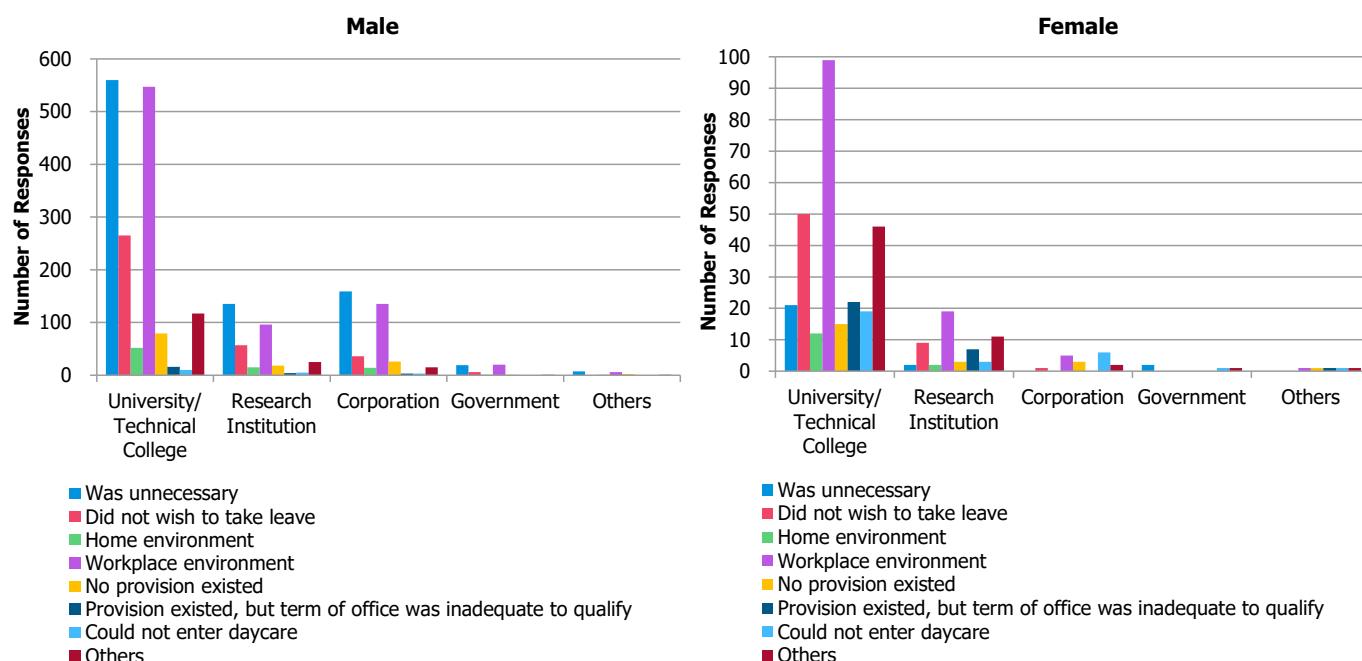
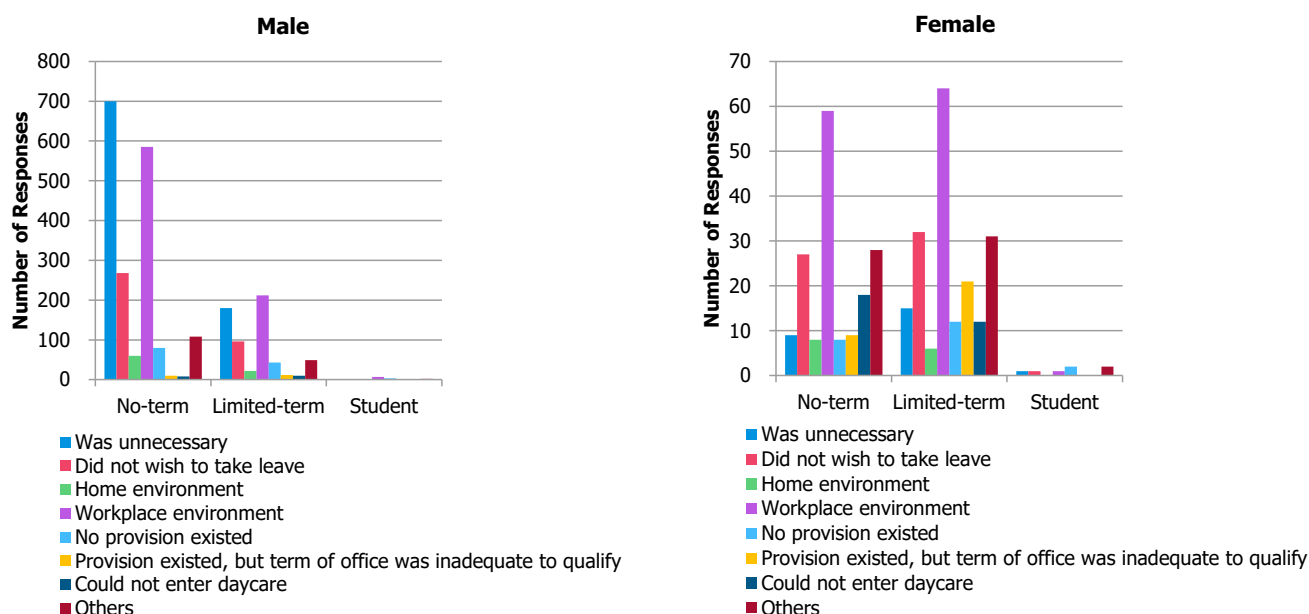


Figure 3.3 Childcare Leave by Organization and Children's Age Group (Single Answer)

Among parents with preschool children, the most frequently cited reason for “did not take leave” despite necessity and “took leave, but not as requested” was “work environment” regardless of the affiliated institution or the employment status (Figures 3.4 and 3.5). Furthermore, while those in corporations that answered “provision existed, but term of office was inadequate to qualify” was zero, the percentage was high among women who are assistant professors or limited-term researchers in university / technical college, and limited-term researchers in research institution (Figures 3.4 and 3.5).

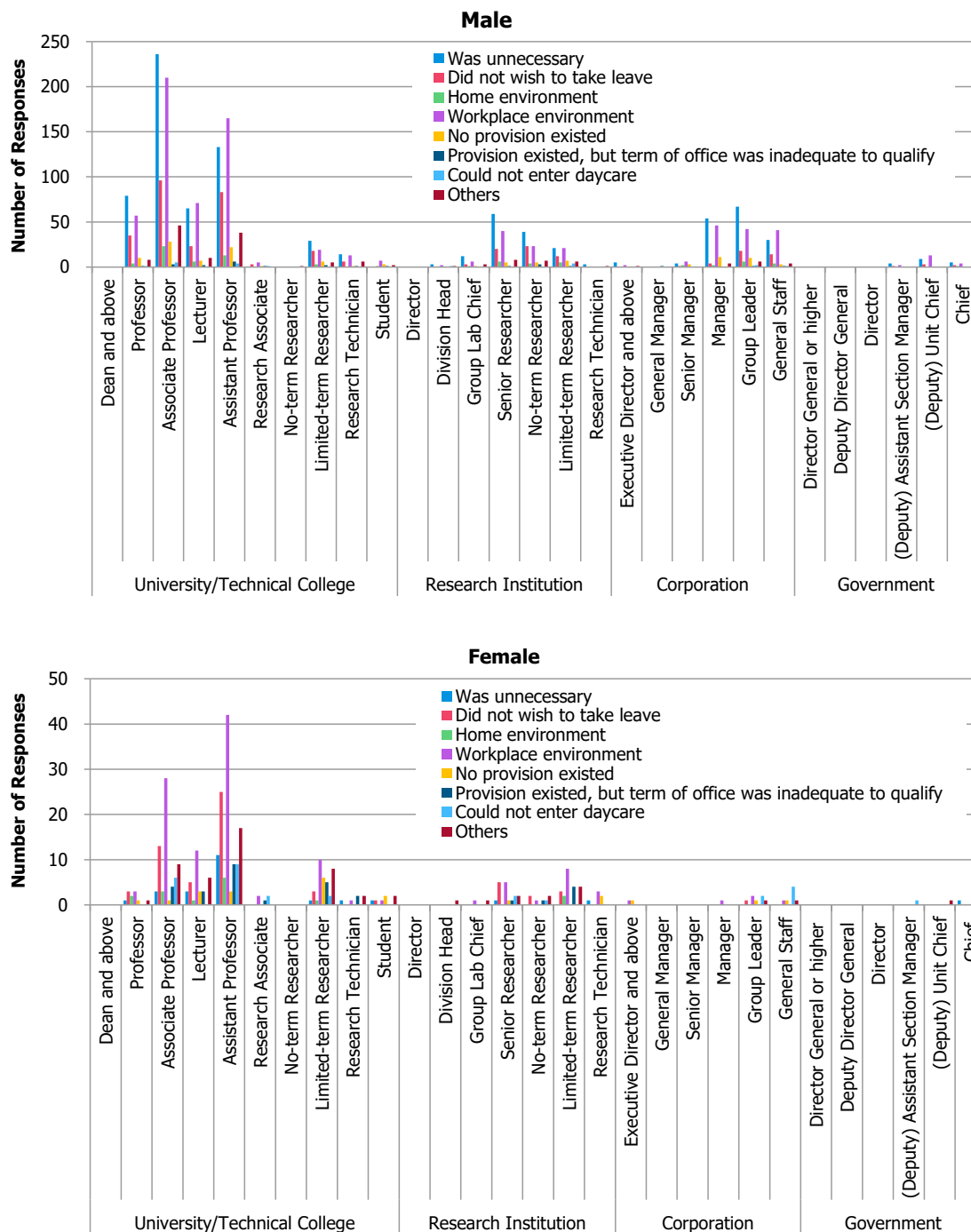


**Figure 3.4 Why Parents with Pre-school Children Did Not Take Leave (Multiple Answers)**



**Figure 3.5 Why Parents with Pre-school Children Did Not Take Leave by Employment Status (Multiple Answers)**

Comparing by job position, a high percentage of women who are associate professors, lecturers, assistant professors or limited-term researchers in university / technical college, and limited-term researchers in research institution cited "work environment" as the reason for not taking leave (Figure 3.6).

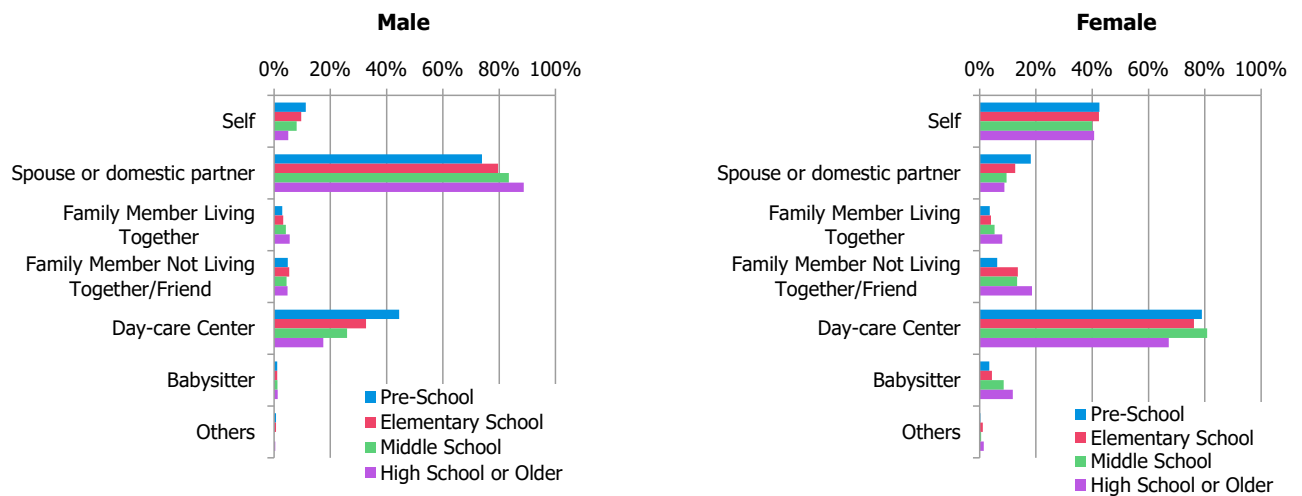


**Figure 3.6 Why Parents with Pre-school Children Did Not Take Leave by Job Position (Multiple Answers)**



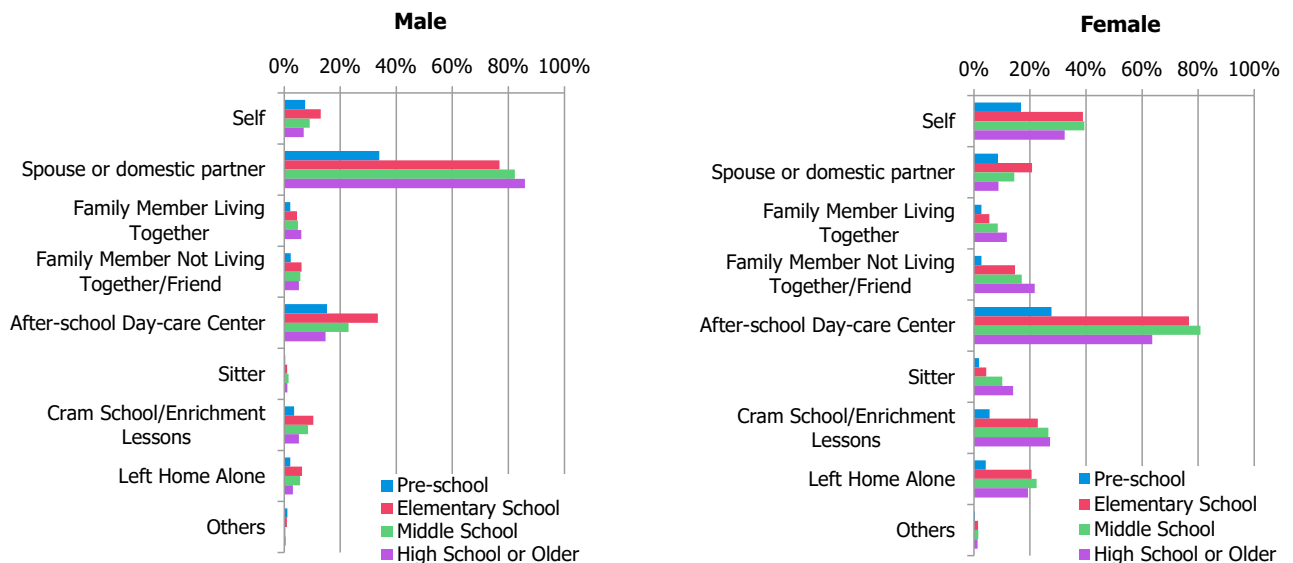
### Childcare Support (Figure 3.7-9)

(Figure 3.7) More than 70% of men entrust daytime childcare to their spouses / domestic partners, whereas more than 70% of women use day-care centers.



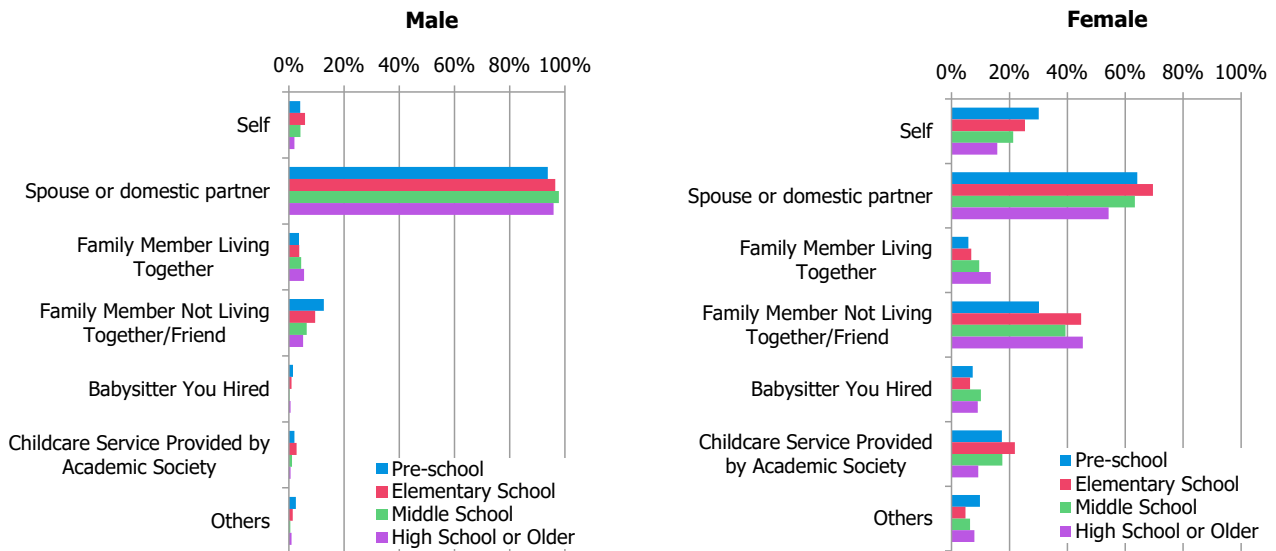
**Figure 3.7 Daytime Caregivers of Pre-School Children by Age of Youngest Child (Multiple Answers)**

(Figure 3.8) High percentage of men entrust after-school childcare to their spouses / domestic partners. On the other hand, women use various institutions such as after-school daycare and extracurricular activities.



**Figure 3.8 After-School Caregivers of Elementary School Children by Age of Youngest Child (Multiple Answers)**

(Figure 3.9) When attending academic conference events, more than 90% of men entrust childcare to their spouses / domestic partners, whereas for women, only 50% to 70% entrust care to their spouses / domestic partners. In addition, about 20% of the women who have pre-school or elementary school children find childcare services on their own or use services provided by academic societies.



**Figure 3.9 Caregivers during Academic Conference Events by Age of Youngest Child (Multiple Answers)**

### Experience Living Separately and Dual Career Support (Figure 3.10-15)

(Figure 3.10) In case of men who never lived separately from their spouses / domestic partners or who lived six or more years apart, the average number of children exceeds 1.5, which is slightly more than the others. On the other hand, for women, there were no notable differences in the number of children between those with and without separate living experience or the number of years spent apart. Additionally, it was confirmed that the average number of children was higher for men in corporation.

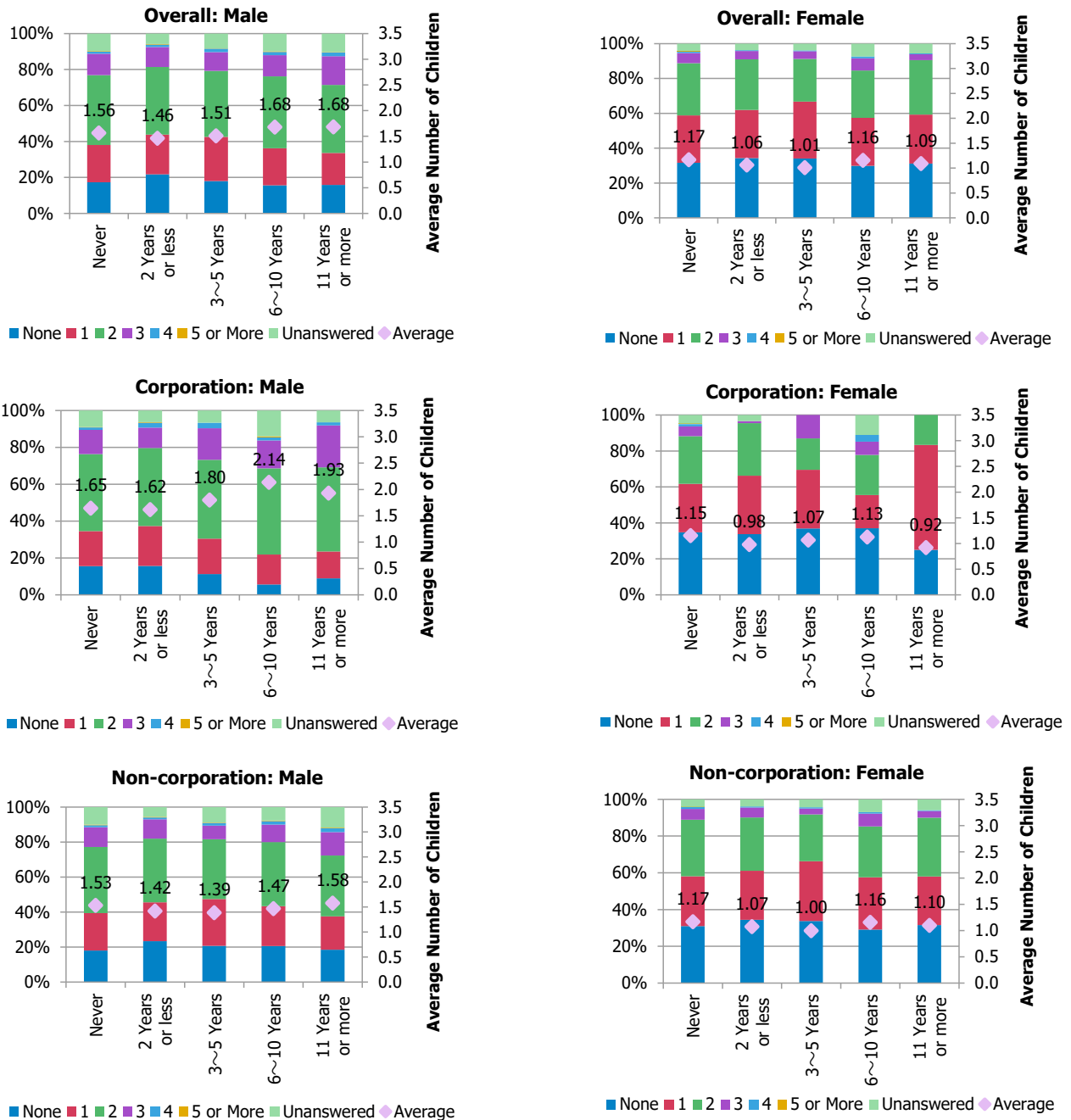
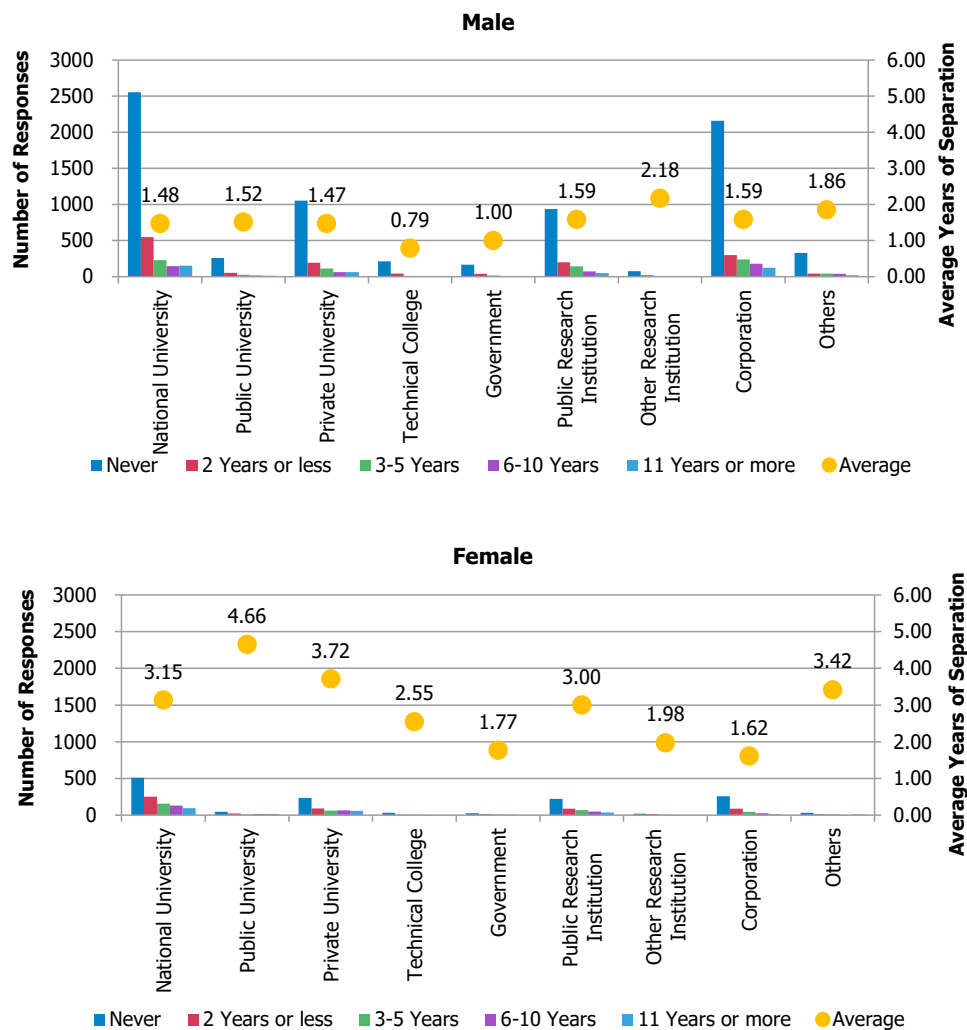


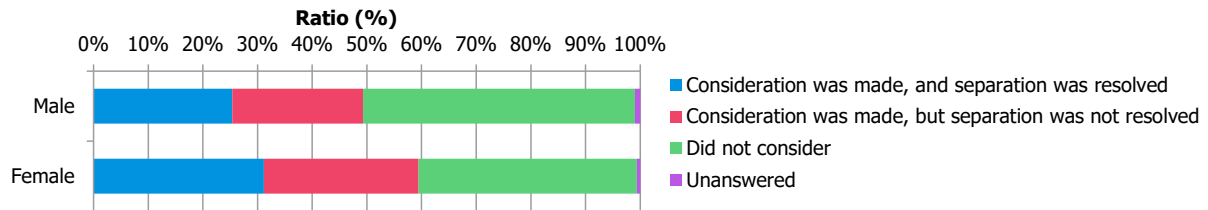
Figure 3.10 Length of Separation and Number of Children (Single Answer)

(Figure 3.11) Men in research institution, corporation, and public university ranked highest when it came to the length of living separately. For women, those in universities (public/private) have longer length of separation than others. Furthermore, apart from those in corporation, women spend longer living separately than men.

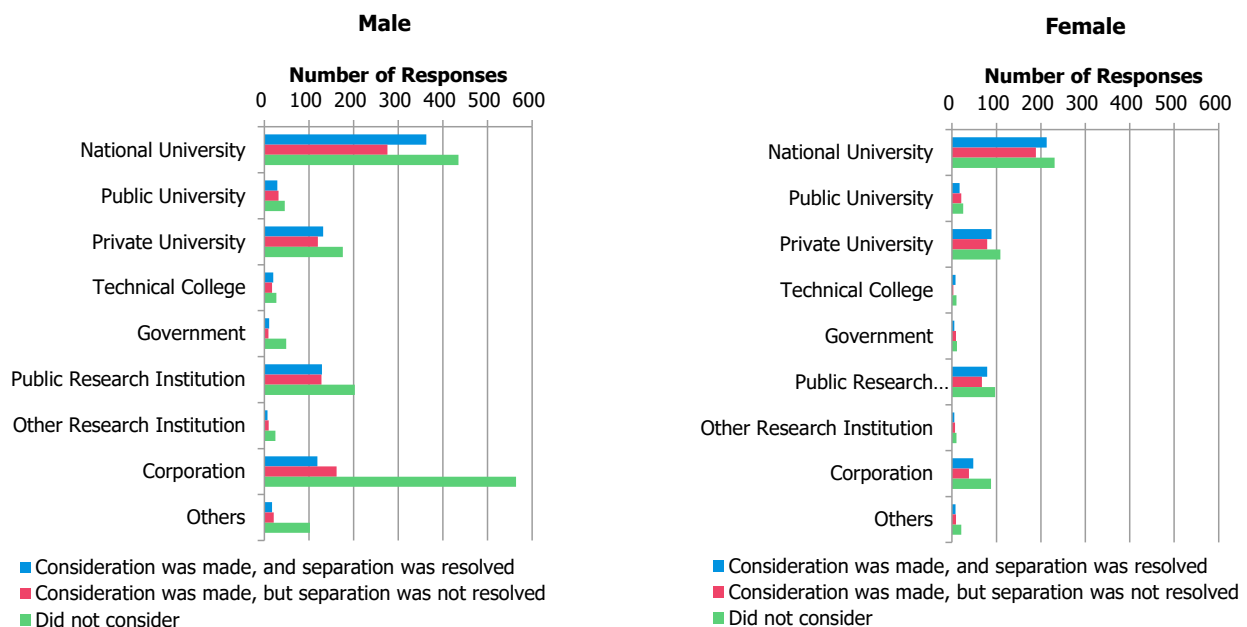


**Figure 3.11 Length of Separation and Average by Organization (Single Answer)**

(Figure 3.12-13) Fifty percent of men did not consider options to avoid living separately from their spouses / domestic partners. Fifty-nine percent of women considered options, and as result, 52% of those were able to avoid separate living. In a comparison according to affiliated organization, “did not consider” response was received from many respondents, both men and women, in corporation and government (Figure 3.13). In university and research institution, partners are often in the same occupation, and it is thought that they are in an environment that is easier to consider options compared to those in corporation.

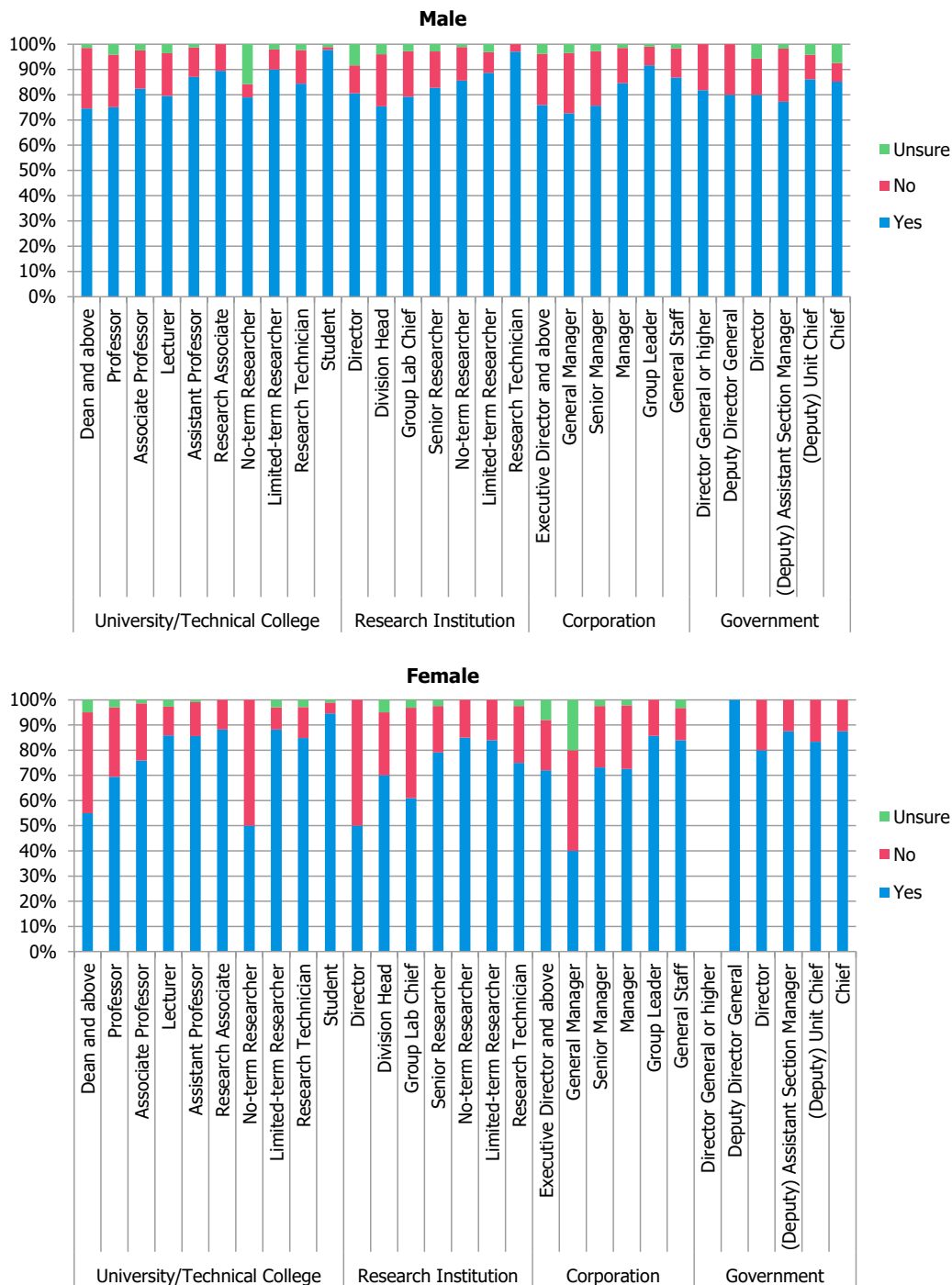


**Figure 3.12 Consideration to Avoid Separate Living (Single Answer)**



**Figure 3.13 Consideration to Avoid Separate Living by Organization (Single Answer)**

(Figure 3.14-15) For both men and women, those who answered “yes” to the use of the Dual Career Support Program were mostly in low job positions while those who answered “no” tended to be in higher positions. More women than men responded that they did not want to use the program, suggesting that women are more strongly concerned with the possible consequences associated with its use. As for the reason for not wanting to use the program, the most common answer among men differed depending on the job position in their affiliated organization while majority of women answered “cannot relocate due to work matters” regardless of their affiliated organization. Furthermore, many female professors and associate professors answered that “stability is highly questionable even after relocation”.



**Figure 3.14 Use of Dual Career Support Program by Job Position (Single Answer)**

Note) Number of response was 0 for “Director General or higher” in “Government” (Female)

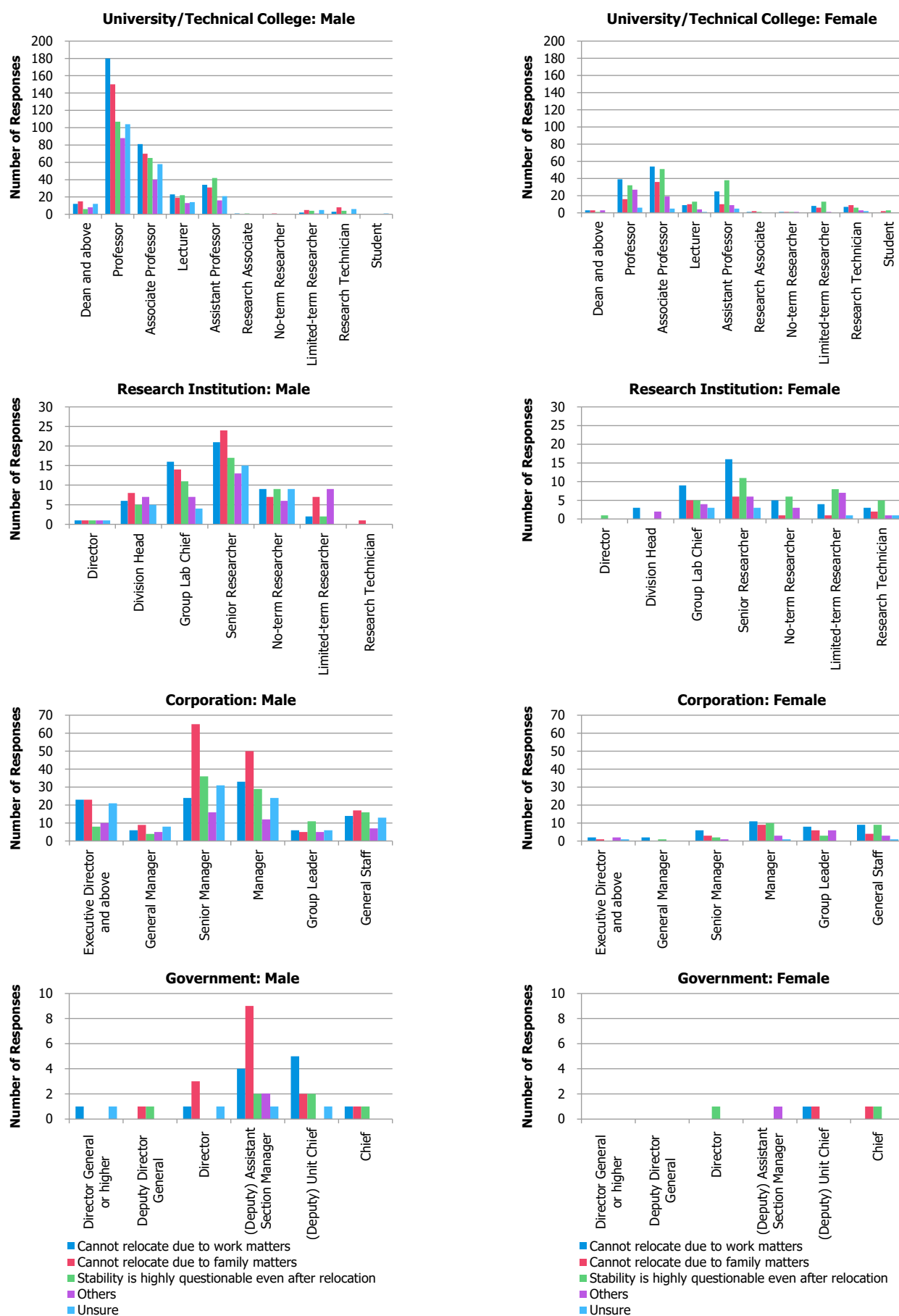
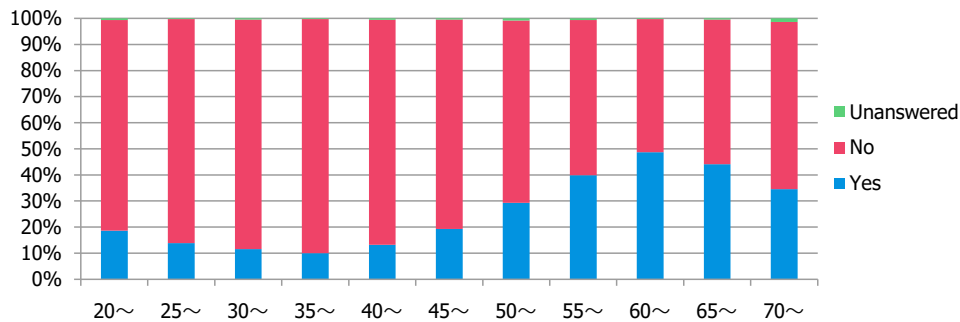


Figure 3.15 Reasons for Not Using Dual Career Support Program by Organization (Multiple Answers)

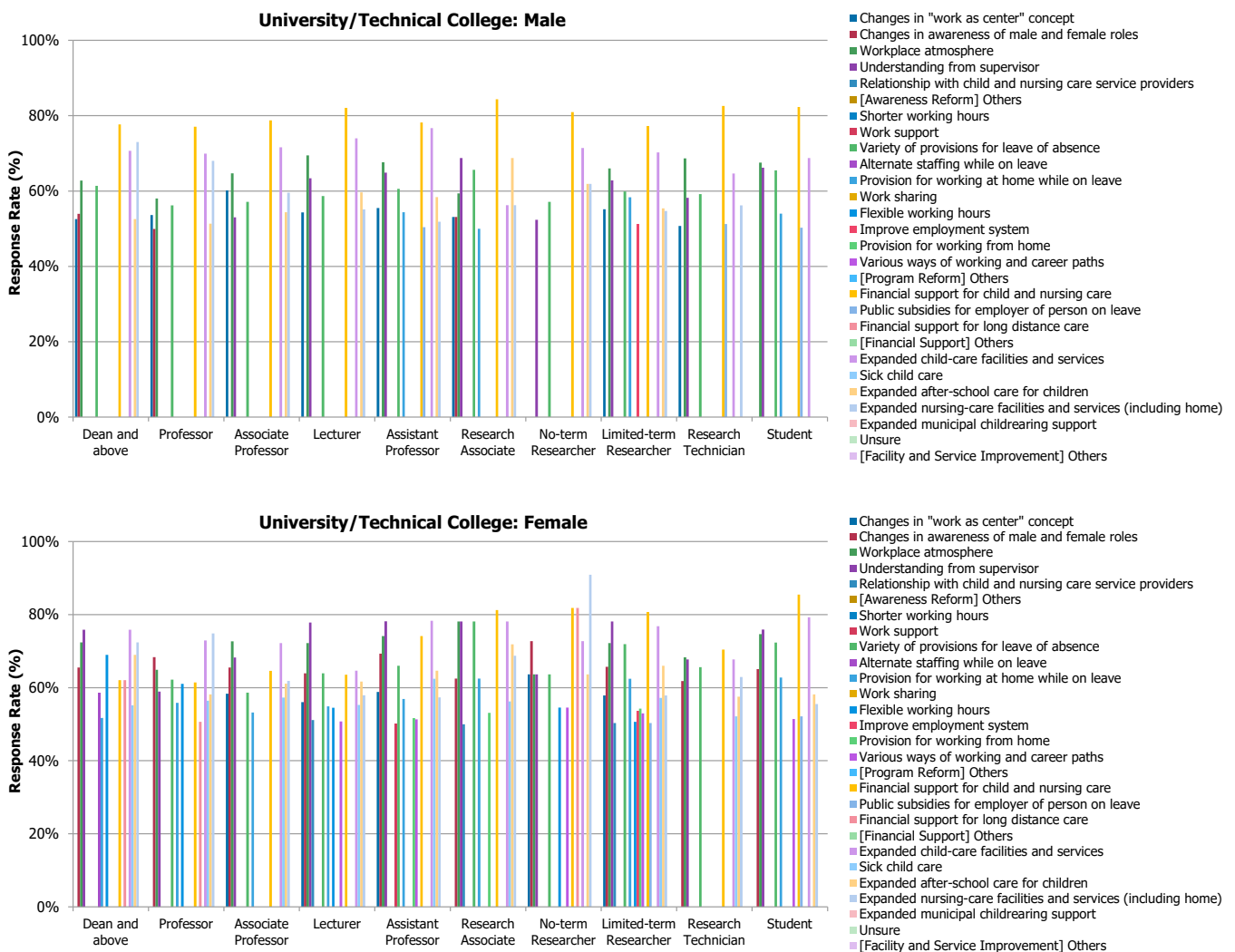
### Work and Child/Nursing Cares (Figure 3.16-17)

(Figure 3.16) Number of respondents who have family members requiring nursing care was highest for those in the 60 to 65 age group.

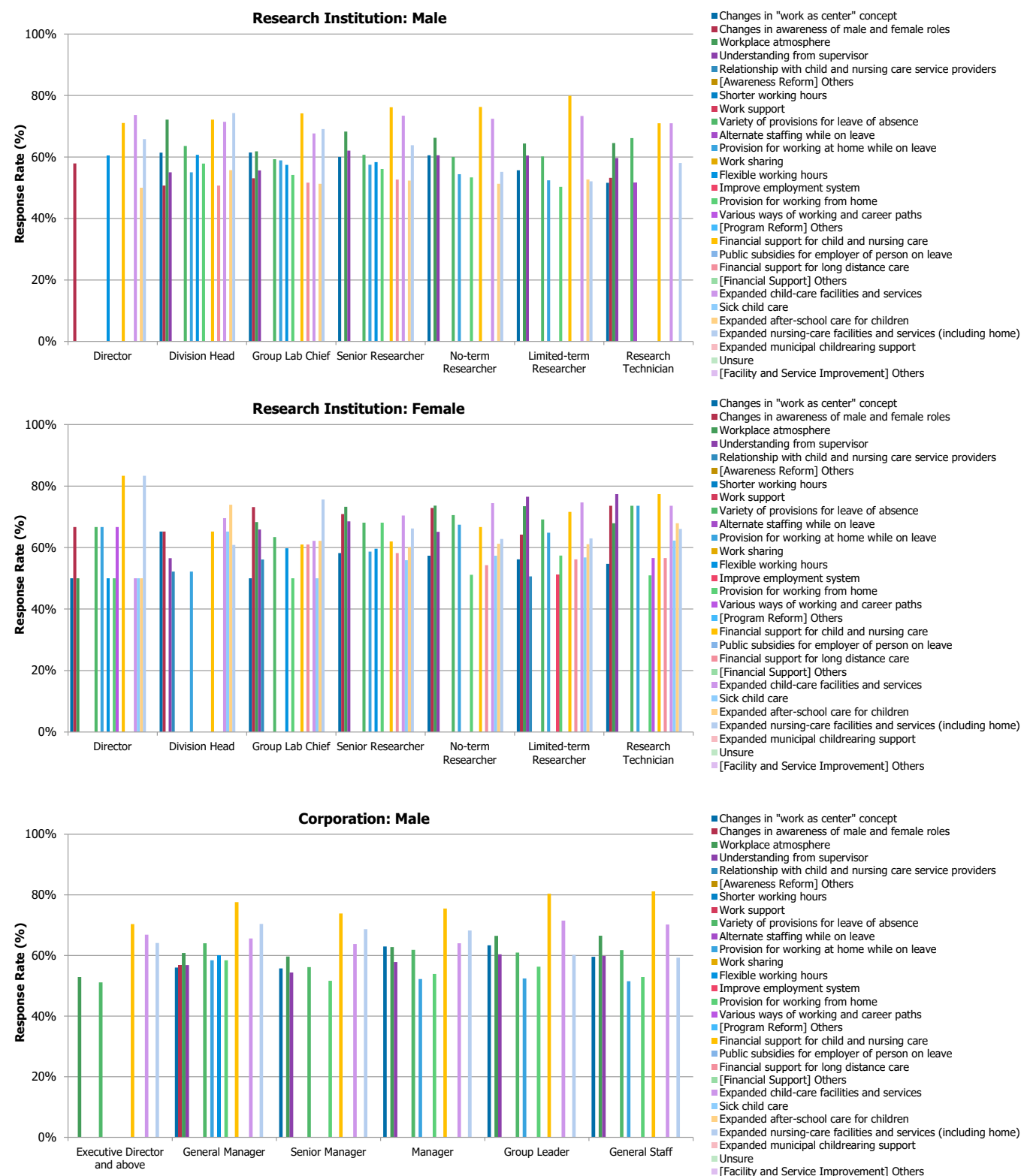


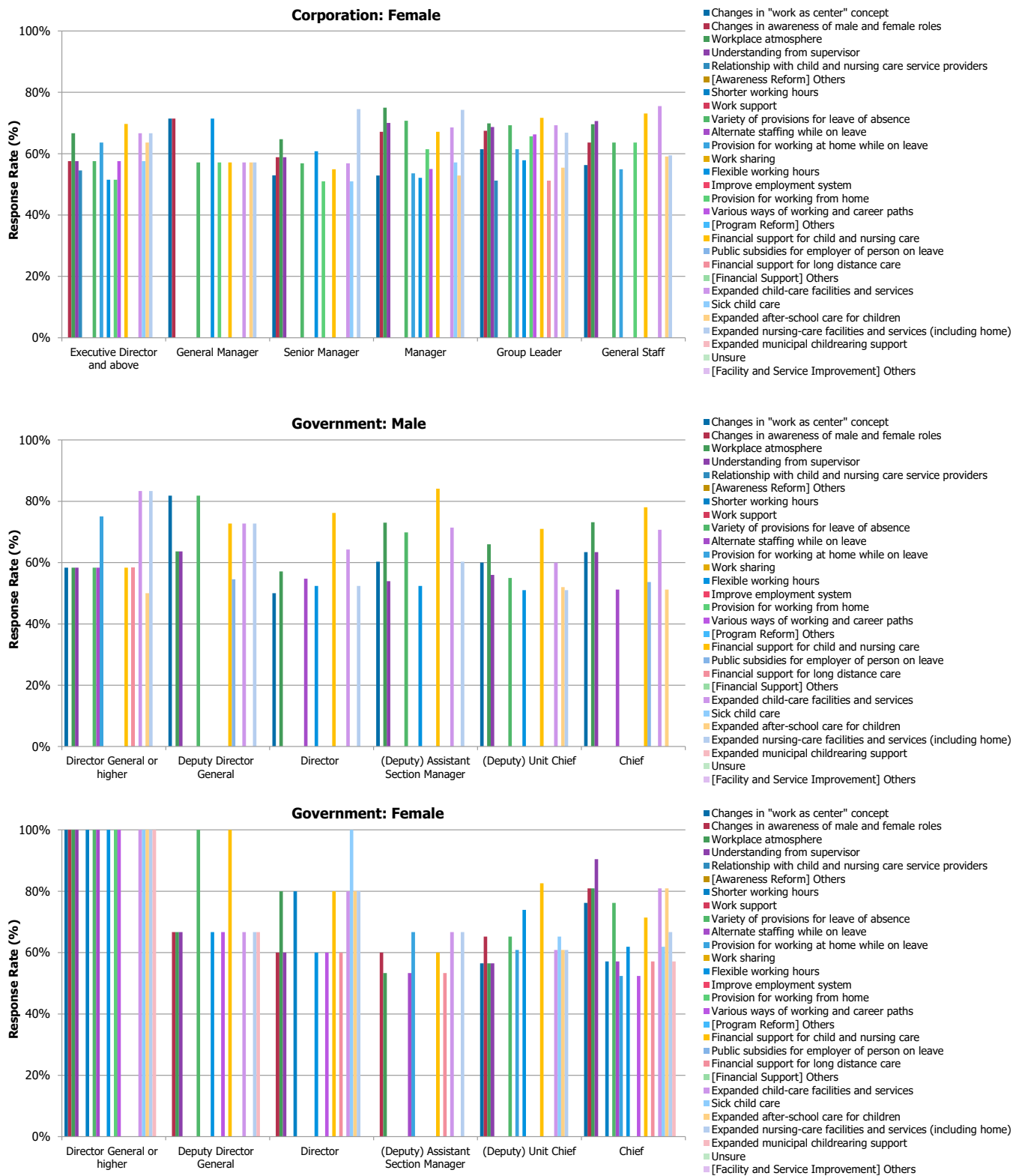
**Figure 3.16 People Requiring Nursing Care (Single Answer)**

(Figure 3.17) For university / technical college, “expanded childcare facilities and services” received the highest percentage of responses as the top requirement for balancing work and child/nursing cares from men of all job positions. The highest response from women varied depending on job position. For corporation, response with the highest percentage varied by job position for both men and women.









**Figure 3.17 Requirements for Balancing Work and Child/Nursing Care by Organization (Multiple Answers)**

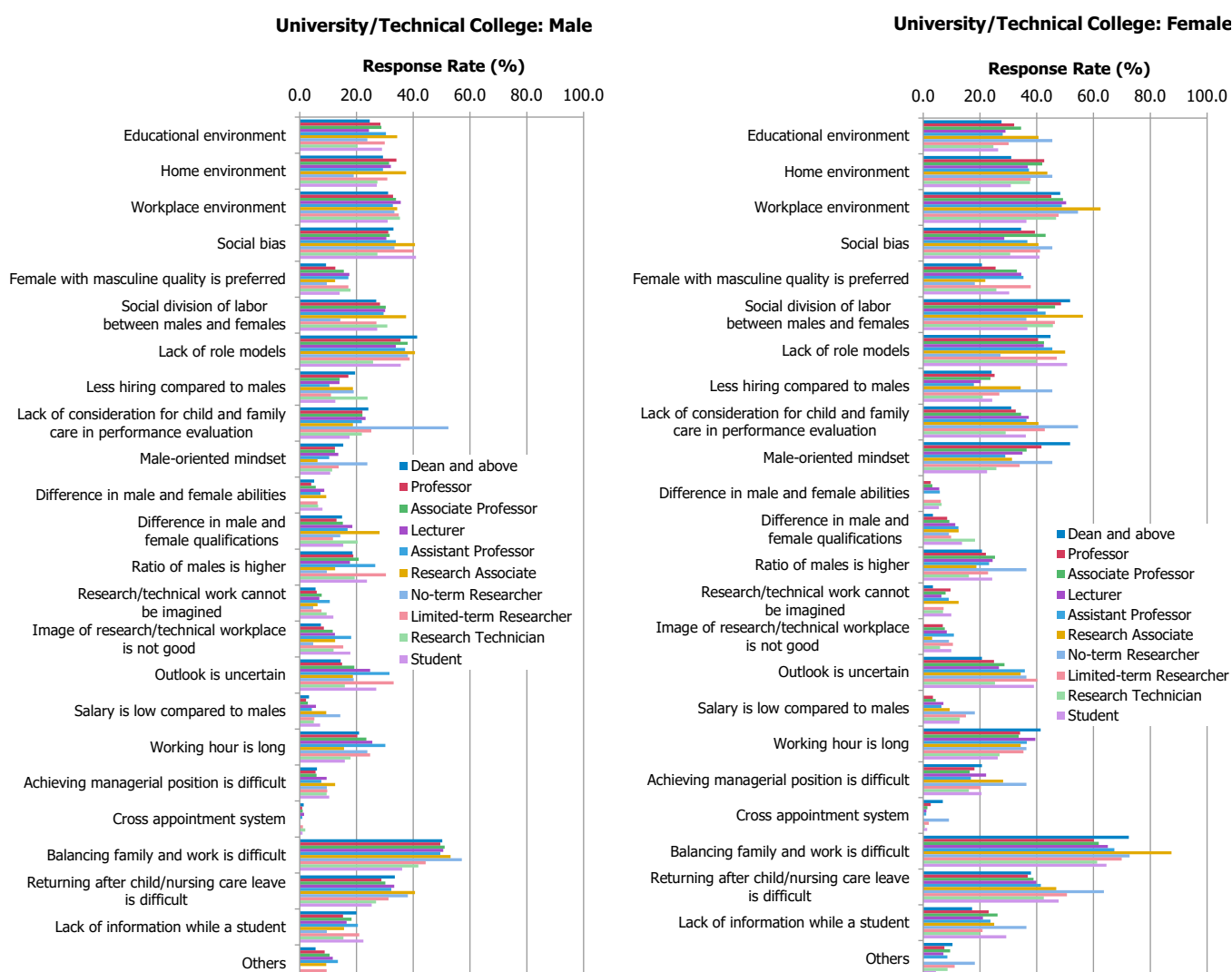
Note) Corresponding question did not set a limit on the number of choices making the resulting graphs complicated. Therefore, only choices with a response rate of 50% or more are displayed.

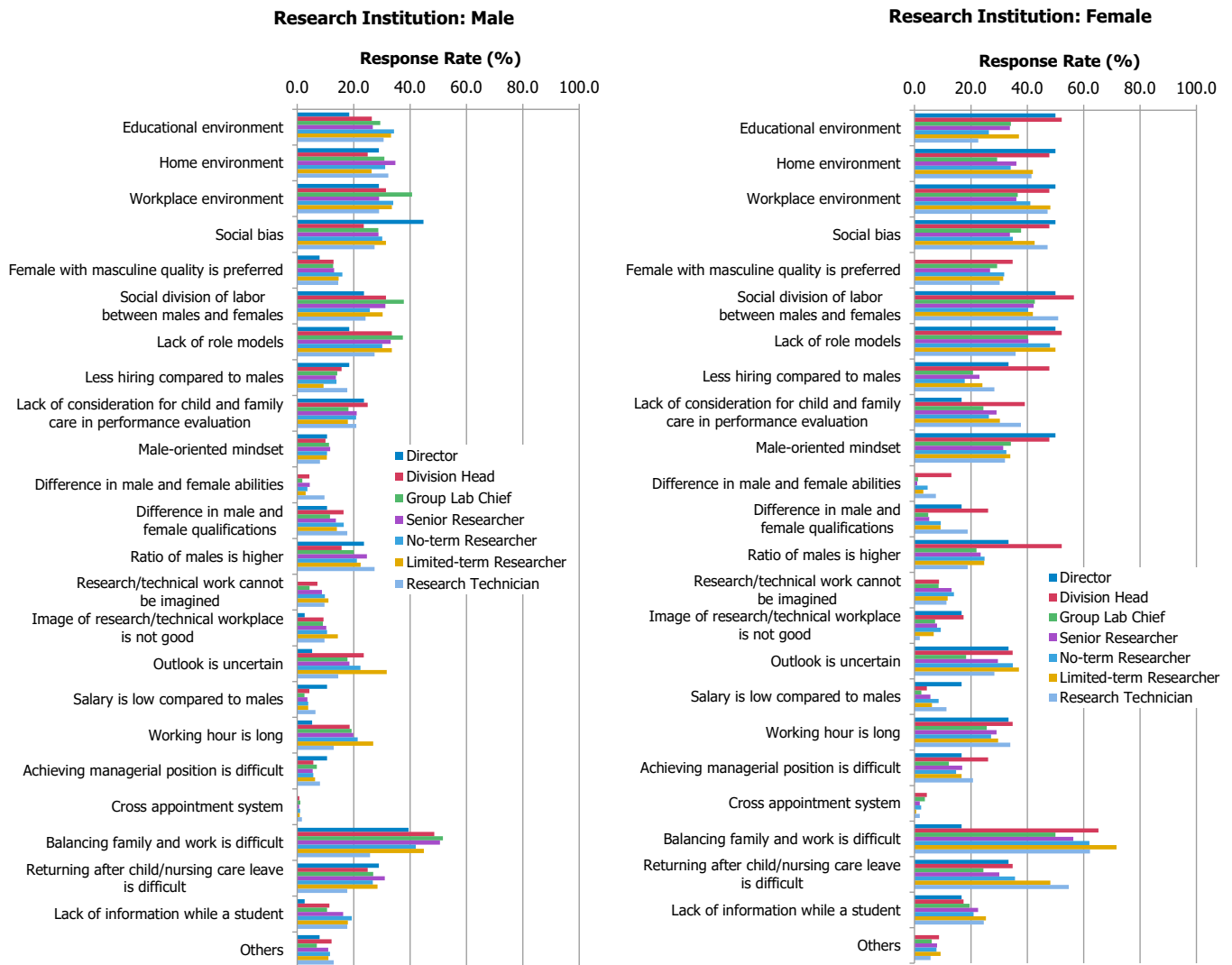
## Requirements for Further Promoting Gender Equality (Figure 3.18-20)

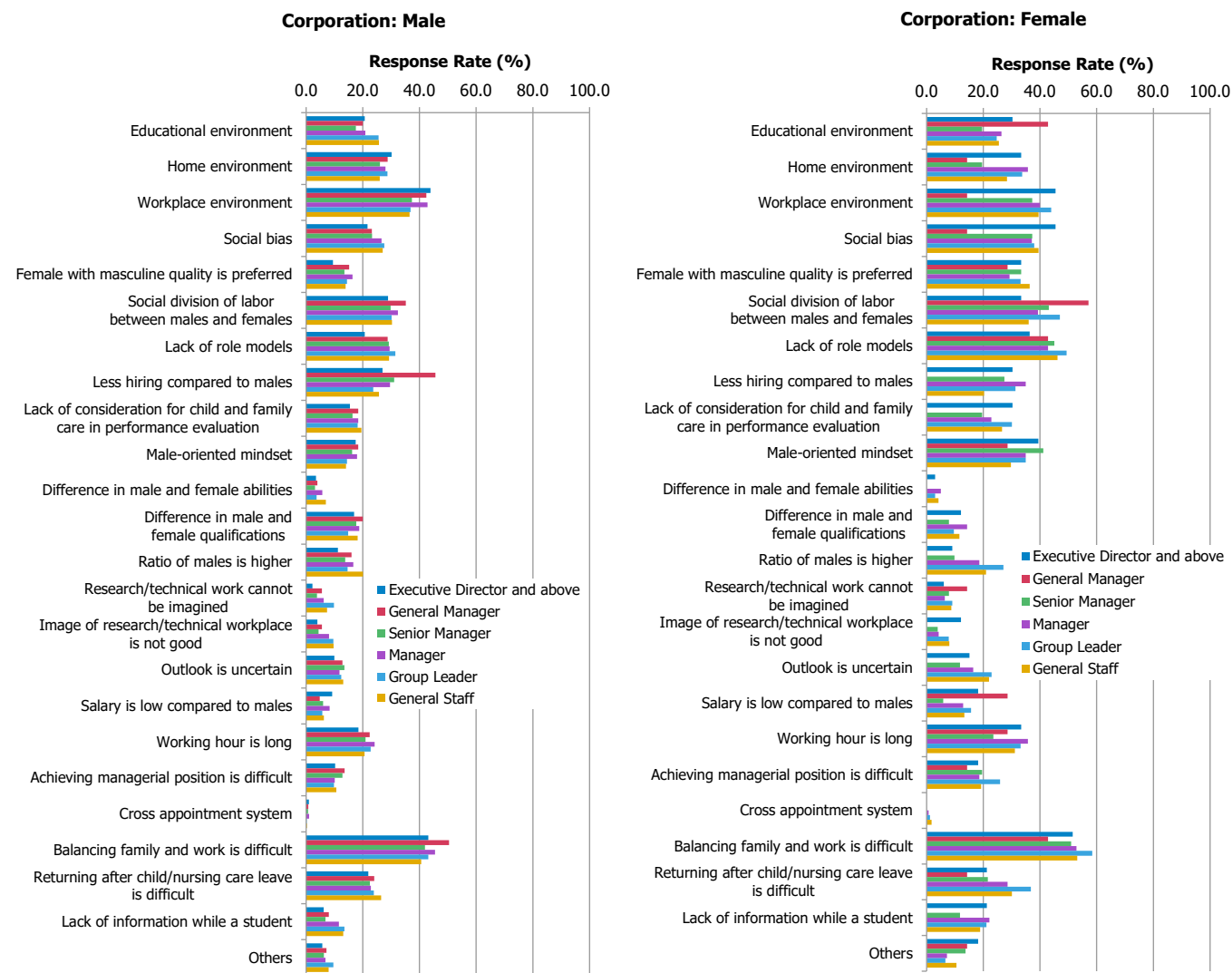
(Figure 3.18) In university / technical college, both men and women cited “balancing family and work is difficult” as the highest reason to why the proportion of women in science and technology fields is low. “Lack of consideration for child and family care in performance evaluation” was the second highest reason cited by men while women cited “workplace environment”.

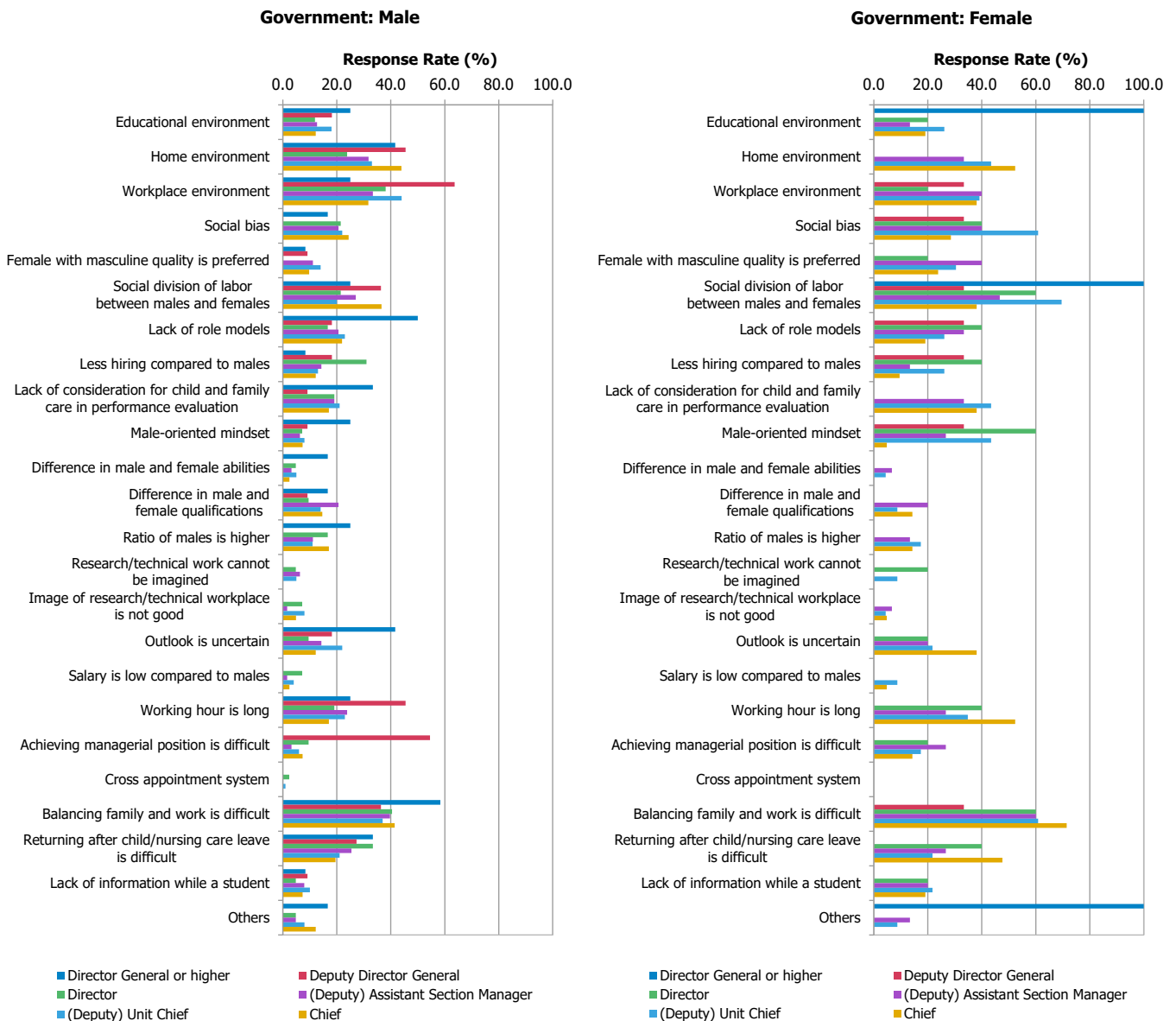
In research institution, “balancing family and work is difficult” was the highest reason for both men and women followed by “lack of role models” and “workplace environment”. In corporation, “balancing family and work is difficult” was also the top reason for both men and women. This was followed by “workplace environment” and “social division of labor between males and females”.

In government, “balancing family and work is difficult” was again the top reason given by both men and women. The second highest reason cited by men was “workplace environment” while women cited “social division of labor between males and females”.





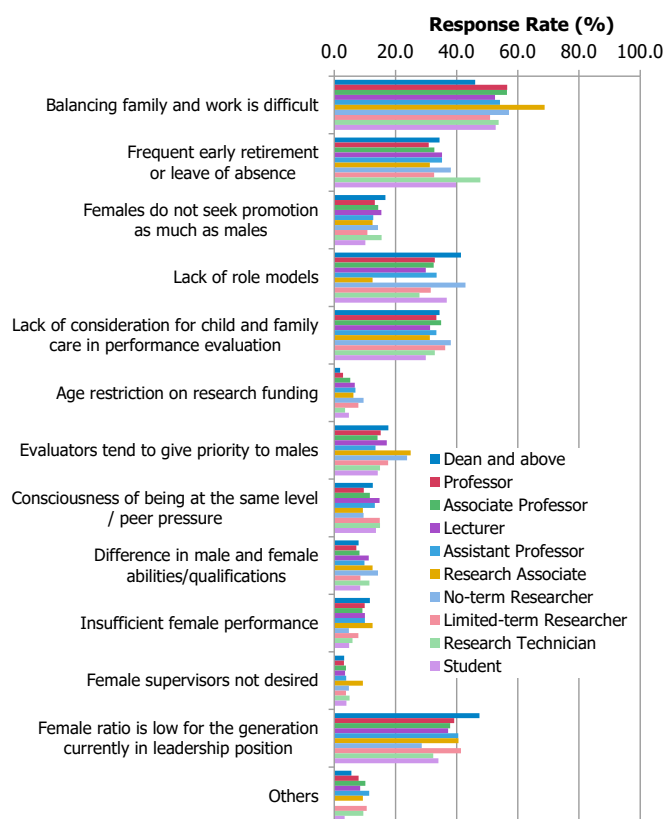




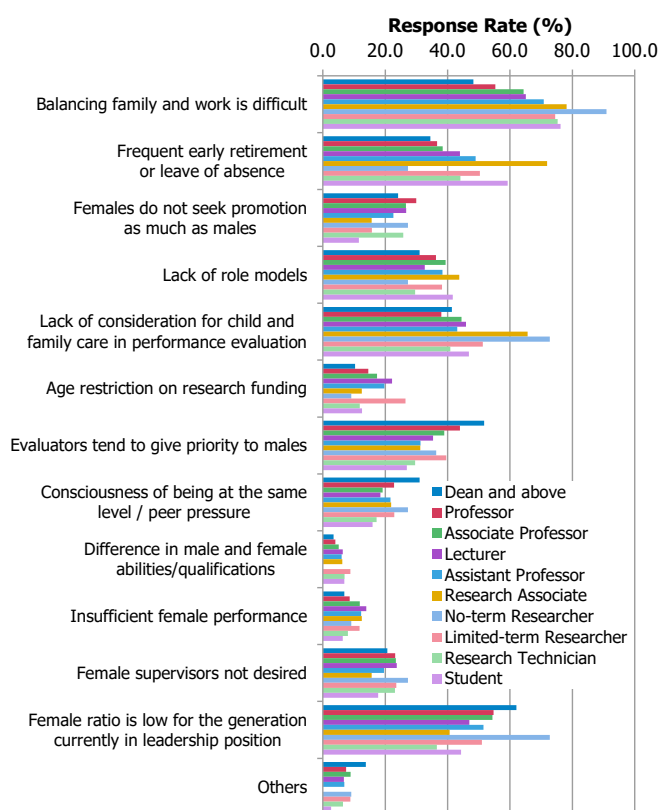
**Figure 3.18 Reasons for Low Proportion of Females in Science and Technology Fields in General by Organization (Multiple Answers)**

(Figure 3.19) As for the reasons why the proportion of women in leadership positions is low, “balancing family and work is difficult” was the most common response from all organizations. Although the order varies by organization and gender, the second and subsequent most common reasons were “female ratio is low for the generation currently in leadership position”, “frequent early retirement or leave of absence”, and “lack of consideration for child and family care in performance evaluation”.

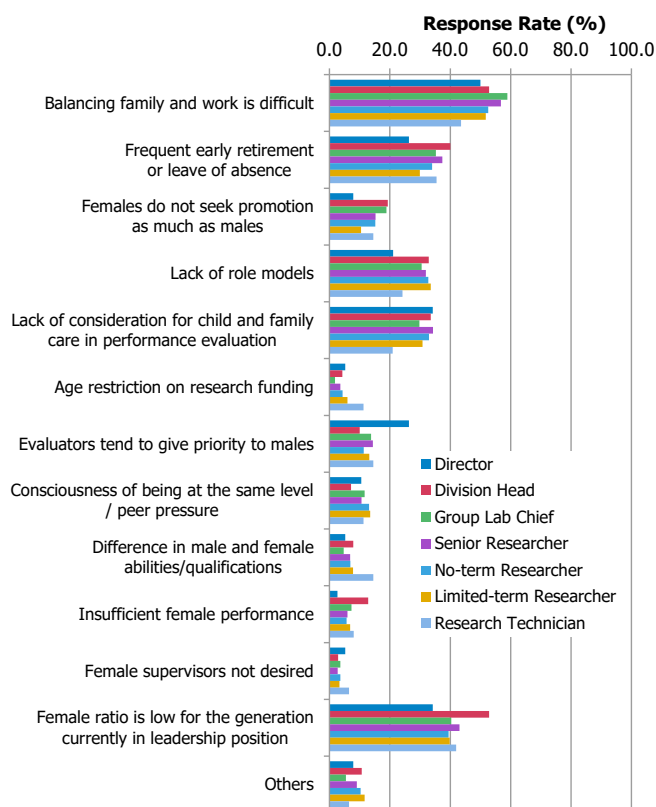
University/Technical College: Male



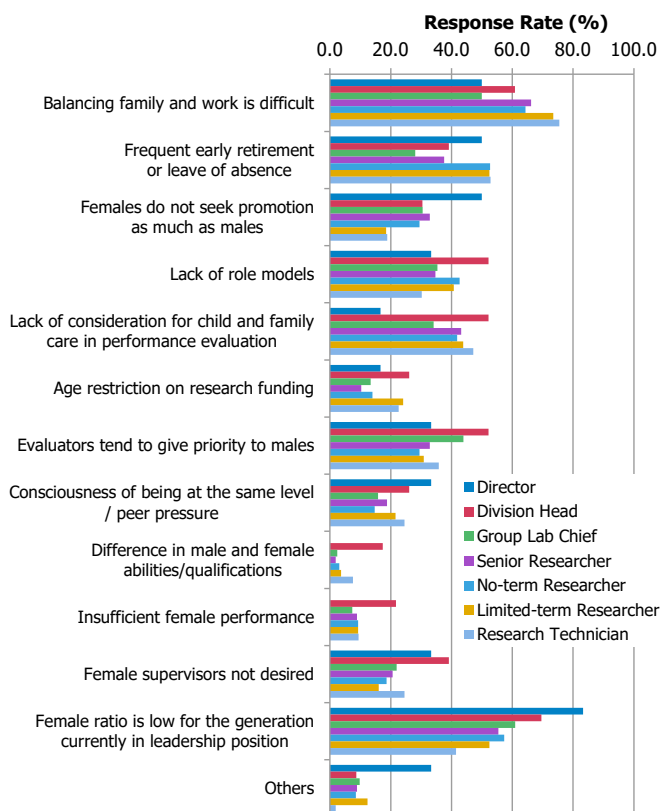
University/Technical College: Female

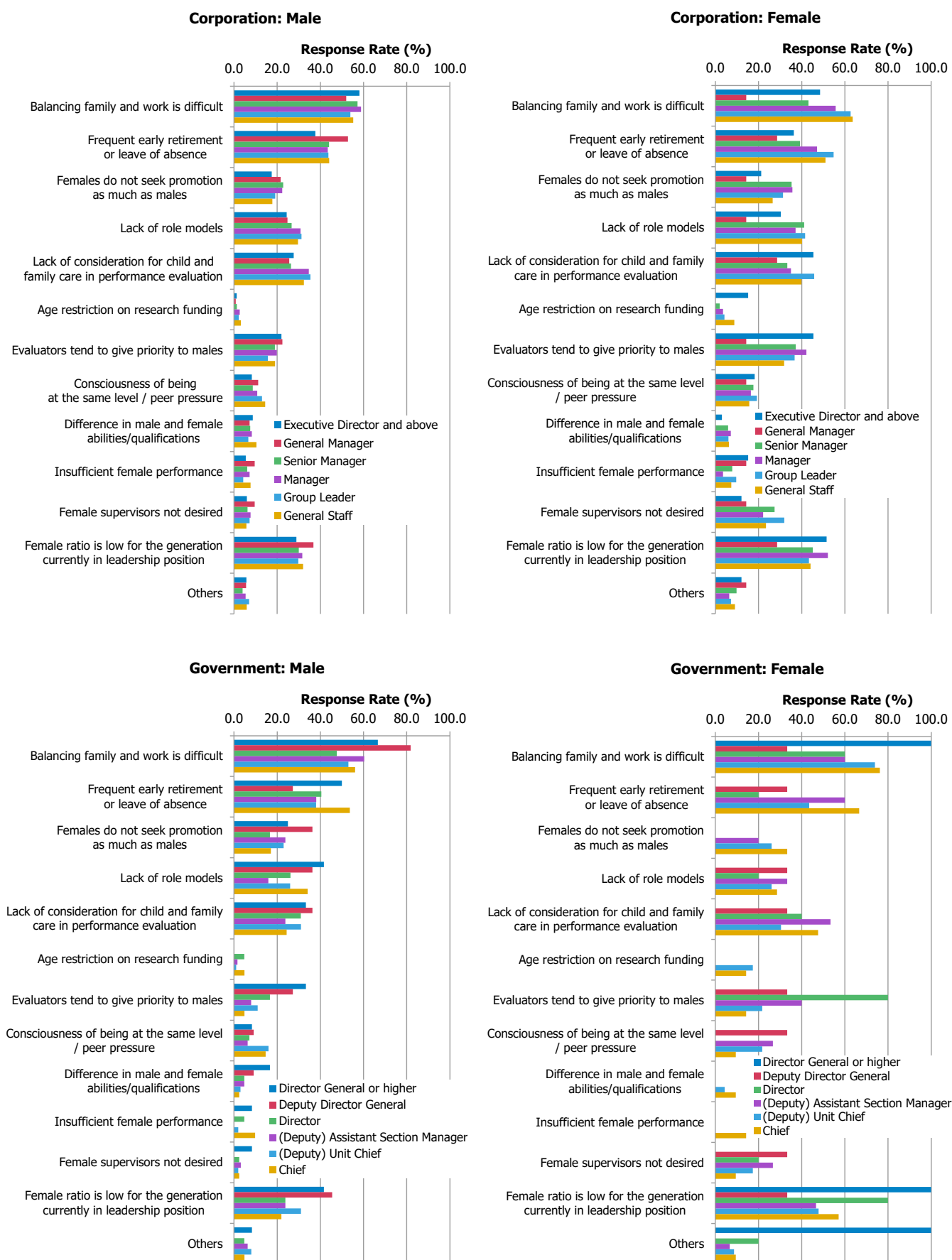


Research Institution: Male



Research Institution: Female





**Figure 3.19 Reasons for Low Proportion of Females in Leadership Positions in Science and Technology Fields by Organization (Multiple Answers)**

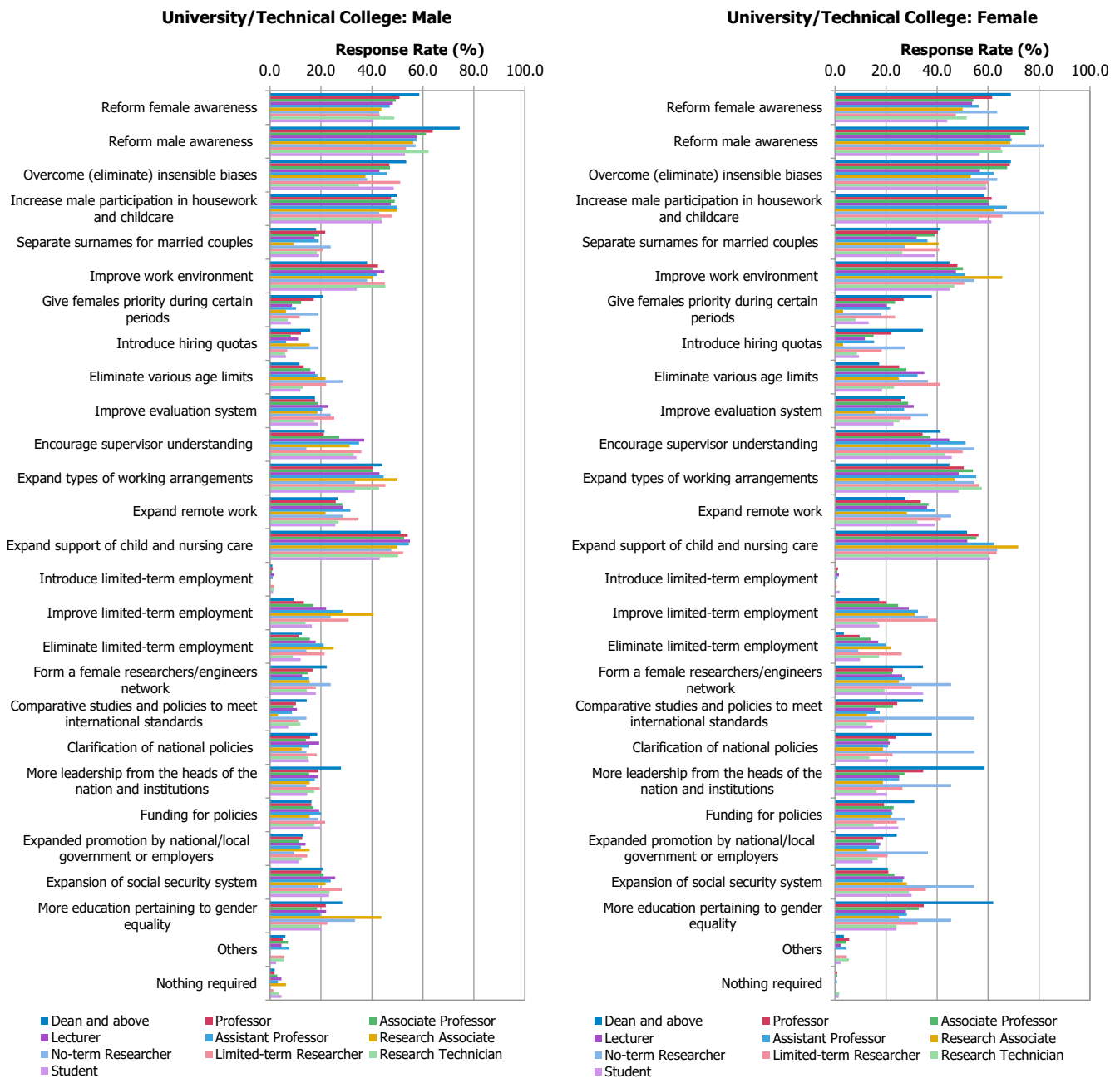


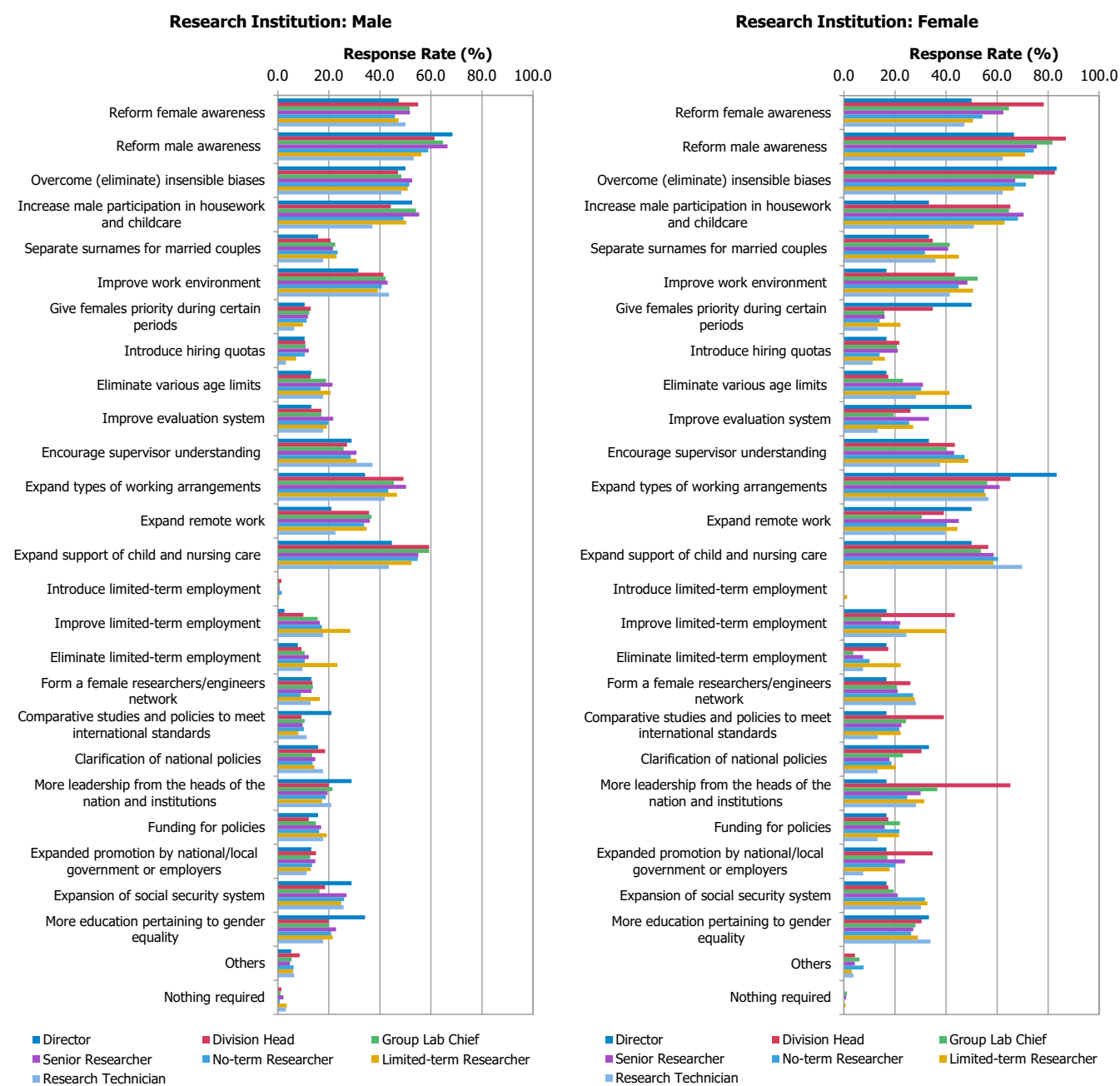
It should be noted that, compared to men, the “evaluators tend to give priority to men” reason was selected more by women in high job positions (Table 3.1).

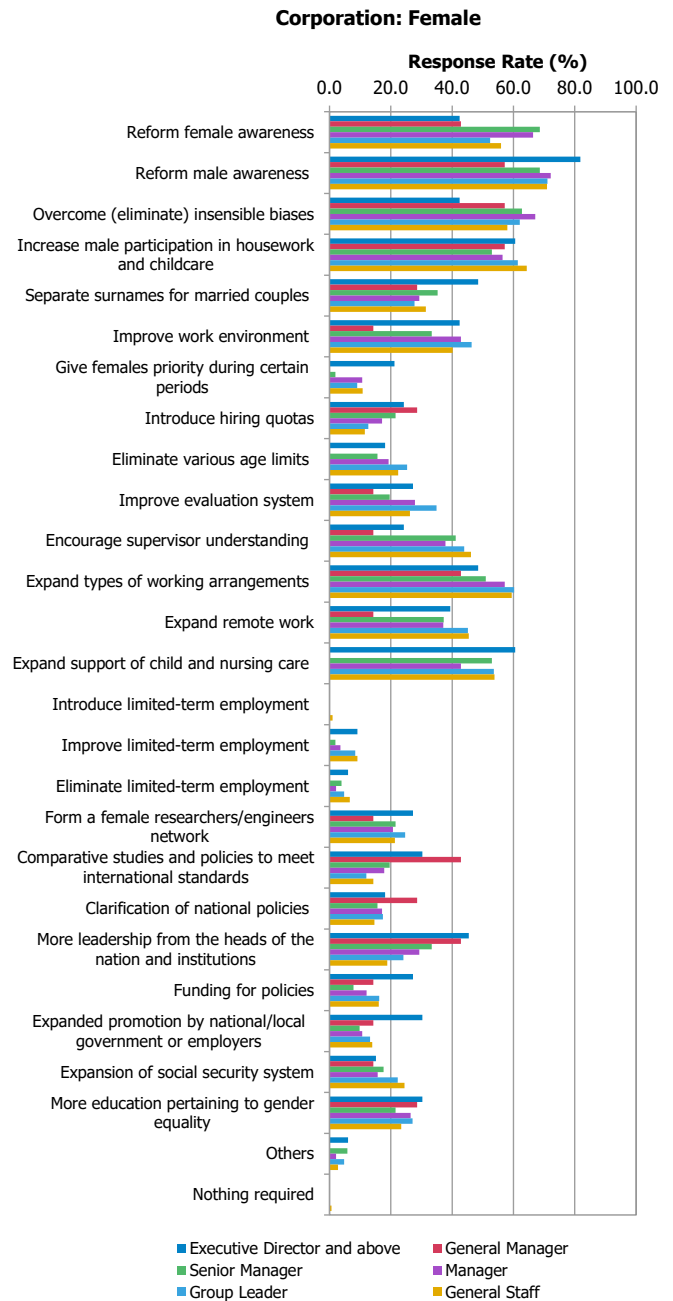
**Table 3.1 Top Three Job Positions with the Highest “Evaluators tend to give priority to men” Response**

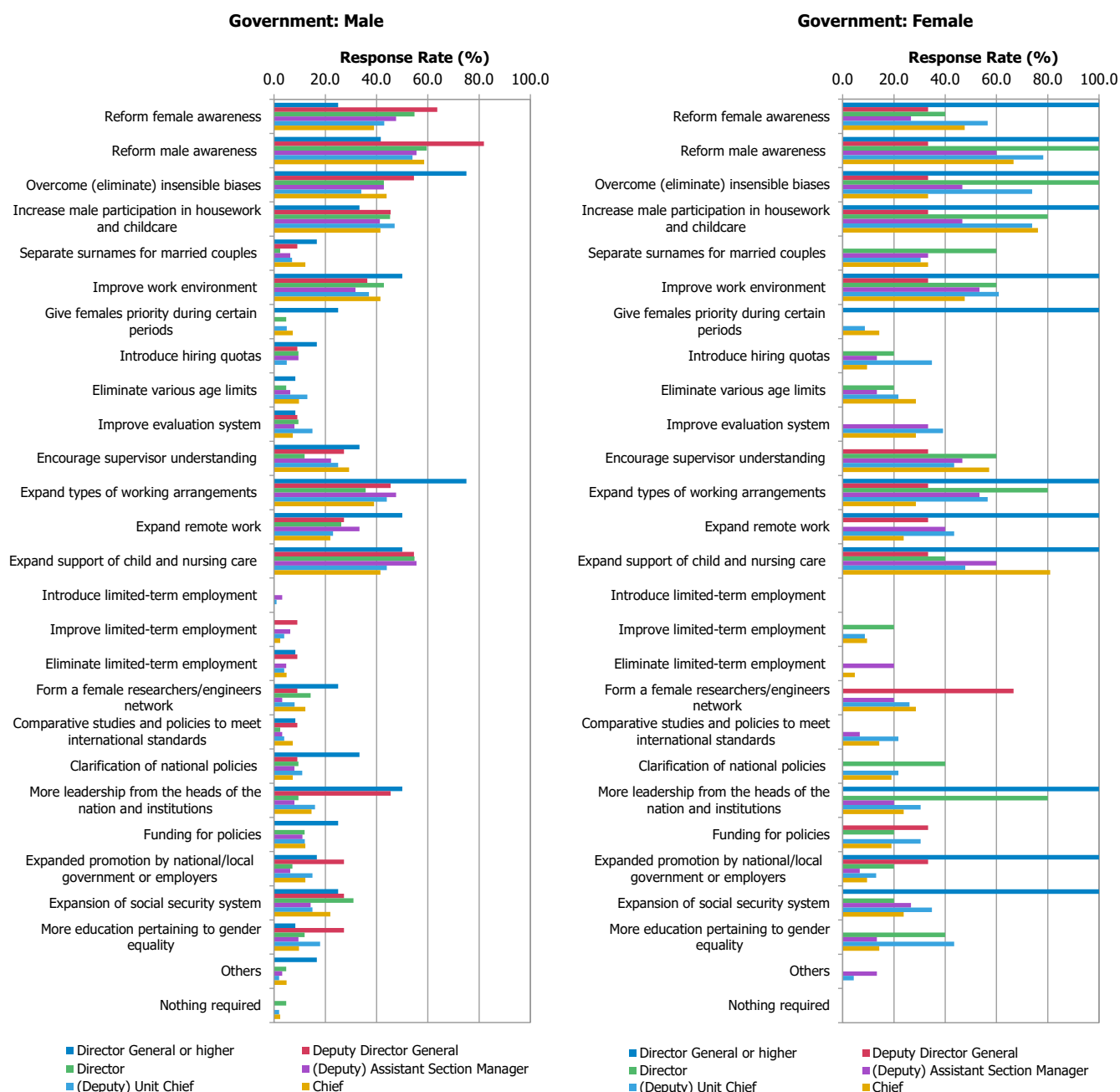
<b>Affiliated Organization</b>	<b>Males</b>			<b>Females</b>		
University / Technical College	No-Term Researcher	Dean	Limited-Term Researcher	Dean	No-Term Researcher	Professor
	23.8%	15.3%	13.7%	51.7%	45.5%	41.7%
Research Institution	Senior Researcher	Group Lab Chief	No-Term Researcher	Director	Division Head	Group Lab Chief
	11.7%	11.3%	10.6%	50.0%	47.8%	34.1%
Corporation	General Manager	Manager	Executive Director	Senior Manager	Executive Director	Manager
	18.4%	18.0%	17.5%	41.2%	39.4%	35.0%
Government	Director General	Deputy Director General	(Deputy) Unit Chief	Director	(Deputy) Unit Chief	Deputy Director General
	25.0%	9.1%	8.0%	60.0%	43.5%	33.3%

(Figure 3.20) For both men and women in all organizations, the answer chosen as the top requirement for further promotion of gender equality was “reform male awareness”. The second most common choice for men was “expand support of child and nursing care”, whereas “increase male participation in housework and childcare” and “overcome (eliminate) insensible biases” were highly cited by women.









**Figure 3.20 Requirements for Further Promoting Gender Equality by Organization (Multiple Answers)**

Overall, large percentage of both men and women tends to think it is more important to “reform male awareness” rather than to “reform female awareness” (Table 3.2).

**Table 3.2 Top Three “Requirements for Further Promoting Gender Equality” Response (%)**

			First	Second	Third
University / Technical College	Males	Reform male awareness	Dean (74%)	Professor (64%)	Research Technician (62%)
		Expand support of child and nursing care	Lecturer (55%)	Assistant Professor (55%)	Professor (54%)
	Females	Reform male awareness	Dean (76%)	Professor (75%)	Associate Professor (75%)
		Overcome (eliminate) insensible biases	Dean (69%)	Professor (69%)	Associate Professor (68%)
Research Institution	Males	Reform male awareness	Director (68%)	Senior Researcher (67%)	Group Lab Chief (65%)
		Expand support of child and nursing care	Division Head (59%)	Group Lab Chief (59%)	Senior Researcher (55%)
	Females	Reform male awareness	Division Head (87%)	Group Lab Chief (82%)	Senior Researcher (78%)
		Overcome (eliminate) insensible biases	Division Head (82%)	Group Lab Chief (74%)	No-term Researcher (71%)
Government	Males	Reform male awareness	Deputy Director General (82%)	Director (60%)	Chief (59%)
		Expand support of child and nursing care	(Deputy) Assistant Section Manager (56%)	Director (55%)	Deputy Director General (55%)
	Females	Reform male awareness	Director General (100%)	Director (100%)	(Deputy) Unit Chief (78%)
		Increase male participation in housework and childcare	Director General (100%)	Director (100%)	Chief (76%)
Corporation	Males	Reform male awareness	General Manager (73%)	Manager (67%)	Executive Director (66%)
		Expand support of child and nursing care	General Manager (53%)	Executive Director (49%)	Manager (48%)
	Females	Reform male awareness	Executive Director (82%)	Manager (72%)	Group Leader (71%)
		Increase male participation in housework and childcare	General Staff (64%)	Group Leader (61%)	Executive Director (61%)

## Chapter 4 Important Issue: Limited-Term Employments and Limited-Term Researchers (Postdocs)

### 4.1 Basic Data for Limited-Term Employment

#### Employment Status by Age (Figure 4.1a, Figure 4.1c), Employment Status by Affiliated Organization (Figure 4.2), Employment Status by Job Position (Figure 4.3a, Figure 4.3b)

In corporation and government, most men and women work without term limits, and for those with term limits, the percentage was lower for women than for men. On the other hand, in university / technical college and research institution, the percentage of women under limited-term employment is higher than that of men, and 42% of women in university / technical college work with term limits (Figure 4.2). Comparing by age group, employment in corporation remains mostly without term until retirement (Figure 4.1c), whereas more than 40% of women in university / technical college and research institution hold limited-term positions even after reaching the age of 40 (Figure 4.1a). In terms of employment status by position, unlike research institution and corporation, the number of limited-term positions in university / technical college tends to decrease significantly as job position rises. This trend remains unchanged since the third survey (Figure 4.3a, Figure 4.3b).

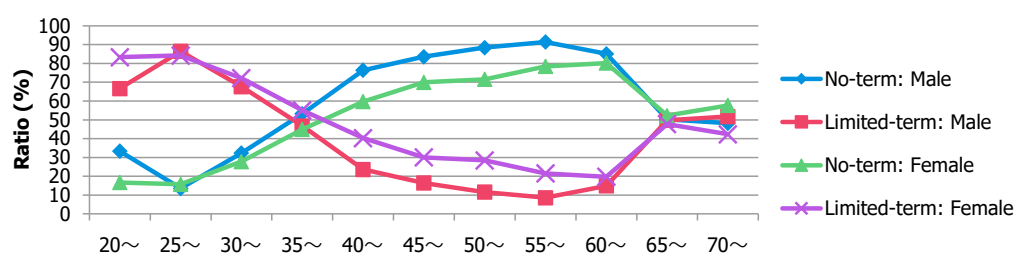


Figure 4.1a Employment Status by Age: University / Technical College (Single Answer)

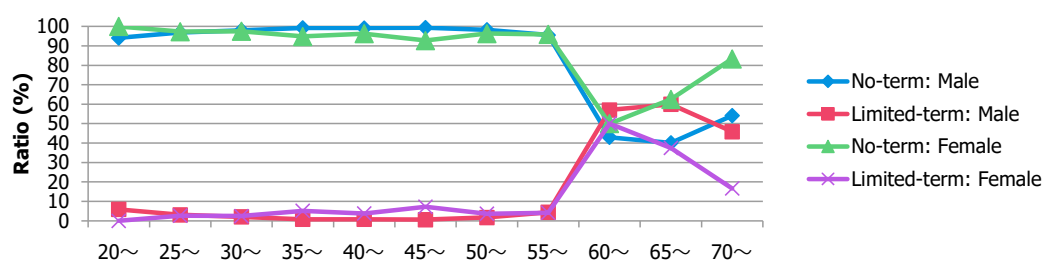


Figure 4.1c Employment Status by Age: Corporation (Single Answer)

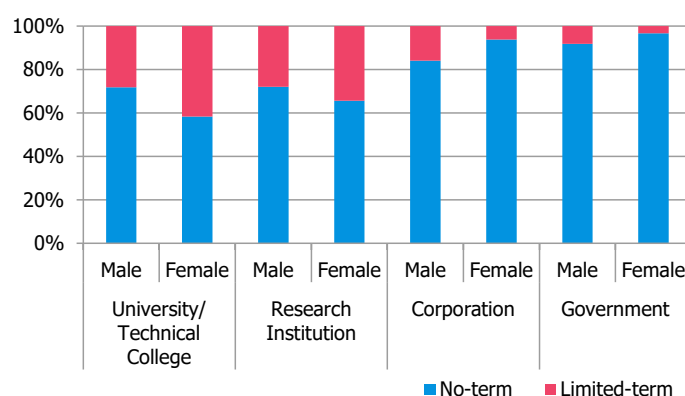


Figure 4.2 Employment Status by Affiliated Organization (Single Answer)

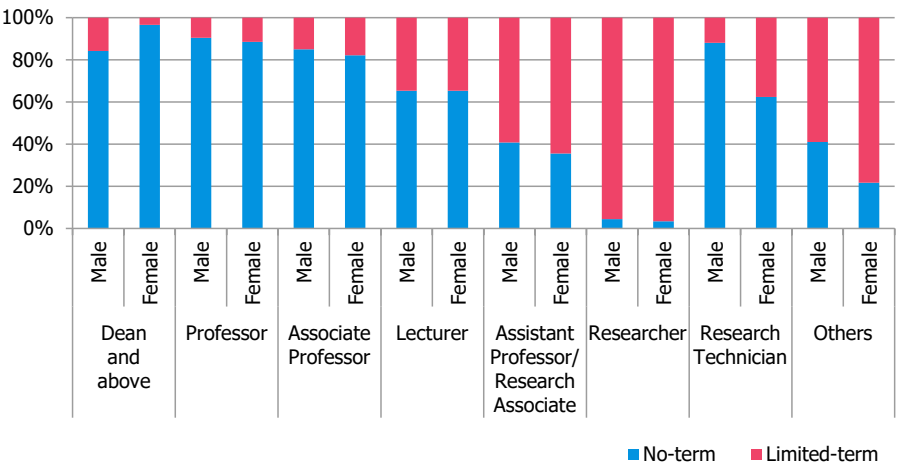


Figure 4.3a Employment Status by Job Position: University / Technical College (Single Answer)

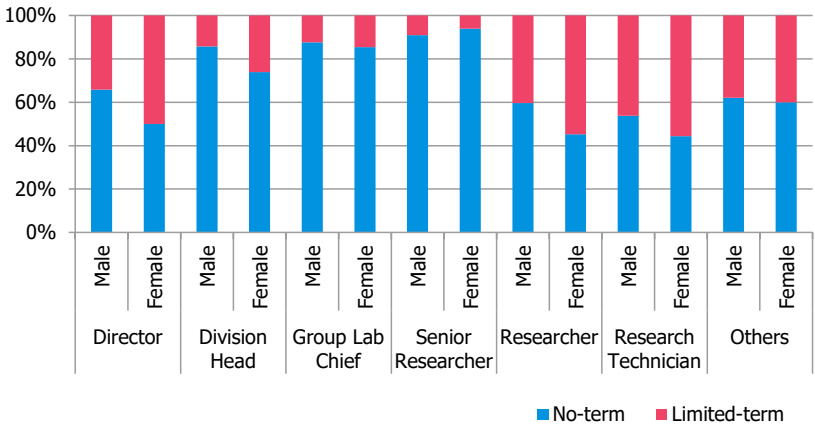
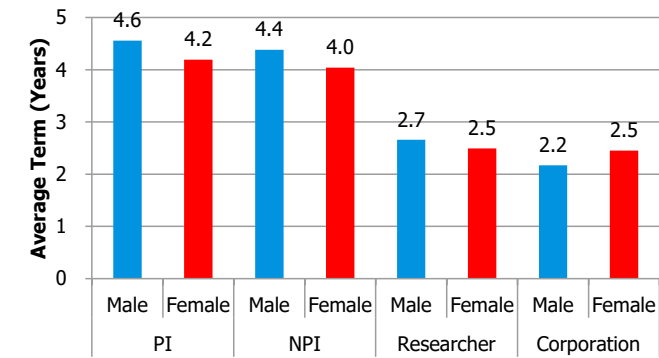


Figure 4.3b Employment Status by Job Position: Research Institution (Single Answer)

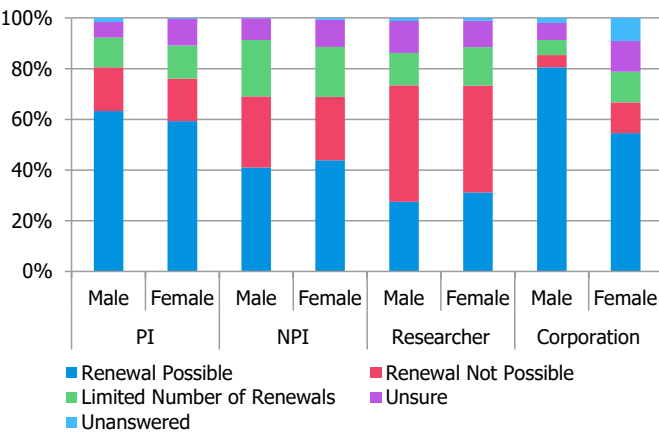


**Term of Employment by Occupational Field and Average Term of Employment by Gender (Figure 4.4b), Extending Limited-Term Employment (Figure 4.5)**

For both men and women, the tendency for the length of term to be shorter for lower positions has not changed since the third survey. In this fifth survey, the term of female NPIs increased by an average of 0.4 years compared to the fourth survey, but the percentage of female PIs with a term of five or more years decreased by 6% (Figure 4.4b). The possibility of extending the term in university / technical college and research institution was nearly the same as in the previous survey, but it has decreased by 16% among women in corporation (Figure 4.5).



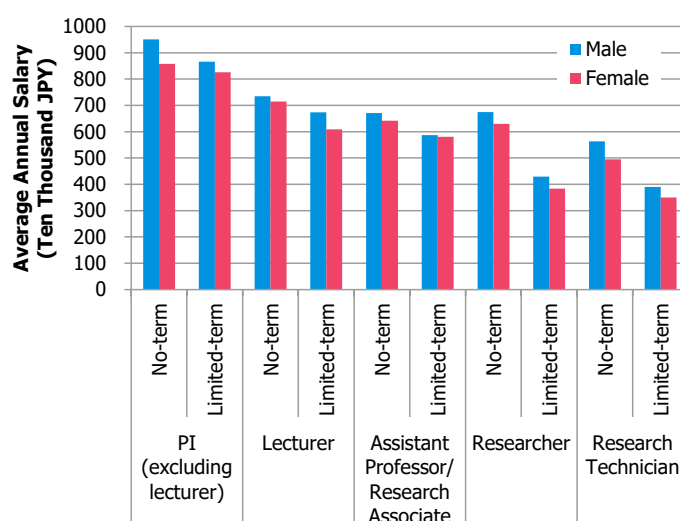
**Figure 4.4b Average Term of Employment by Gender (Single Answer)**



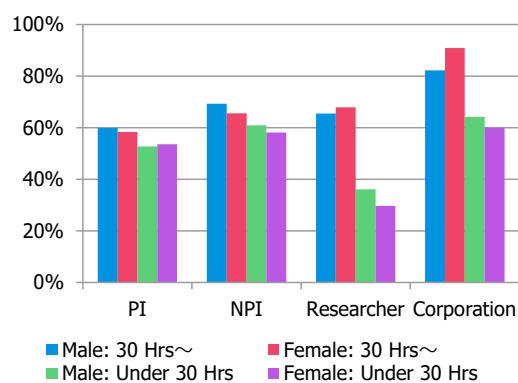
**Figure 4.5 Extending Limited-Term Employment (Single Answer)**

## Employment Status and Average Annual Salary (Figure 4.6), Health and Pension Plans for Limited-Term Employment (Figure 4.7b, Figure 4.8b)

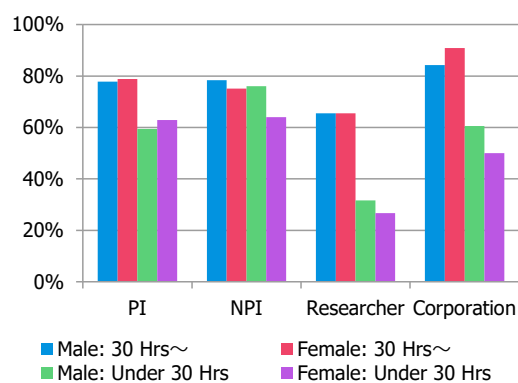
In all occupational fields, limited-term jobs have lower annual salaries than no-term jobs, and the tendency for women to have lower salaries than men, regardless of occupational field or employment status, has not changed since the third survey. In particular, the average annual salaries of limited-term researchers have been on a downward trend since the third survey (Figure 4.6). As for health and pension plans, the enrollment rate remains low for female researchers with contract hours of less than 30 hours, and for those with contract hours of 30 hours or more, the enrollment rate has decreased nearly 30% compared to the previous survey (Figure 4.7b, Figure 4.8b).



**Figure 4.6 Employment Status and Average Annual Salary (University / Technical College and Research Institution) by Occupational Field / Gender (only those that work 40 hours or more per week at the workplace)**



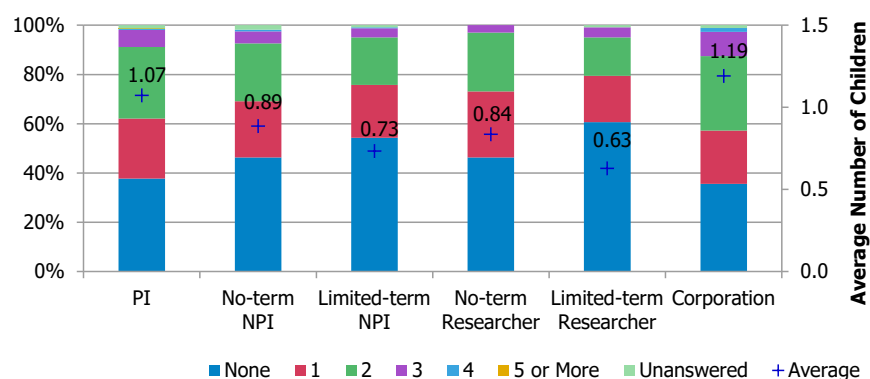
**Figure 4.7b Health Plan Enrollment: Enrollment Ratio (Single Answer)**



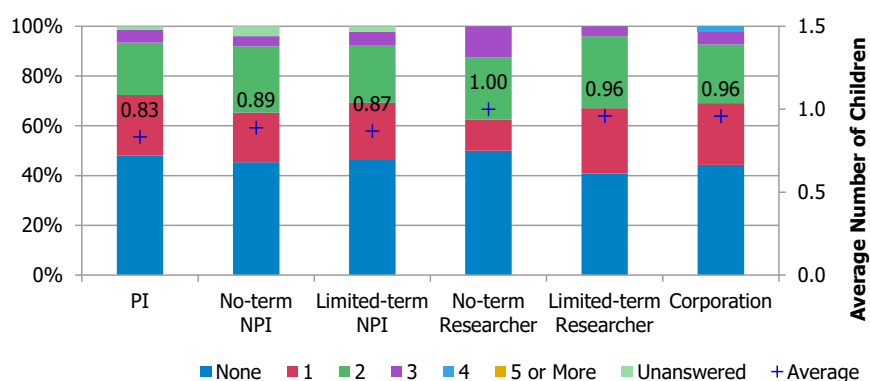
**Figure 4.8b Welfare/Mutual Pension Plan Enrollment: Enrollment Ratio (Single Answer)**

### Limited-Term Employment and Child Raising (Figure 4.9a, b), Childcare Leave for Limited-Term Researcher (Figure 4.10)

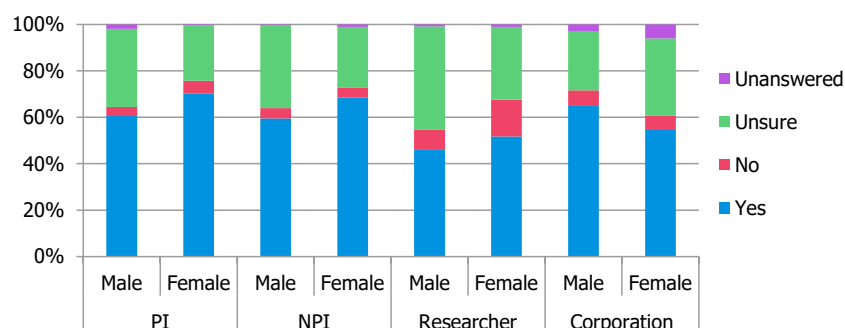
In the 35 to 39 age group, considered the child-raising generation, the percentage of those with children was highest among limited-term female researchers at 59%, while limited-term male researchers had the lowest, and their average number of children was also small (Figure 4.9a, Figure 4.9b). The ratio of those that take childcare leave decreases for both genders as job position becomes lower. Furthermore, the ratio of women that take leave is higher than men for all job positions, and women have a higher awareness of childcare leave programs than men (Figure 4.10).



**Figure 4.9a Number of Children by Gender / Job Position (males ages 35 to 39 only) (Single Answer)**



**Figure 4.9b Number of Children by Gender / Job Position (females ages 35 to 39 only) (Single Answer)**

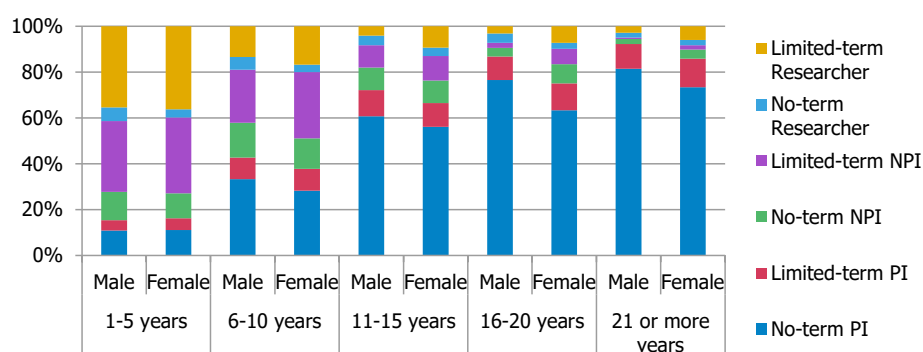


**Figure 4.10 Childcare Leave for Limited-Term Employment (Single Answer)**

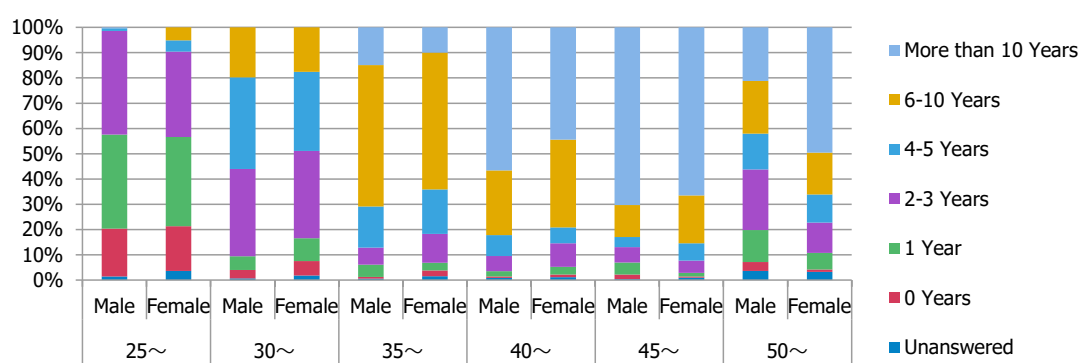
## 4.2 Aging of Limited-Term Employees

### Elapsed Years after Obtaining Degree and Employment Status (Figure 4.12), Total Years of Limited-Term Employment by Age/Gender (Figure 4.13)

As time elapses after obtaining a degree, a shift to an upper job position (no-term PI) can be observed. However, about half of those that obtained a degree six to ten years ago and 30% of those that obtained a degree 11 to 15 years ago are still under limited-term employment. The difference between genders is small immediately after obtaining a degree, but the difference widens over time. Ratio of women under no-term employment is lower than that of men while the ratio of limited-term researcher / NPI is high. Additionally, number of years spent under limited-term employment is longer for women (Figure 4.12). The age groups with high percentage of limited-term employments have spread to the upper age groups compared to the previous survey (Figure 4.13).



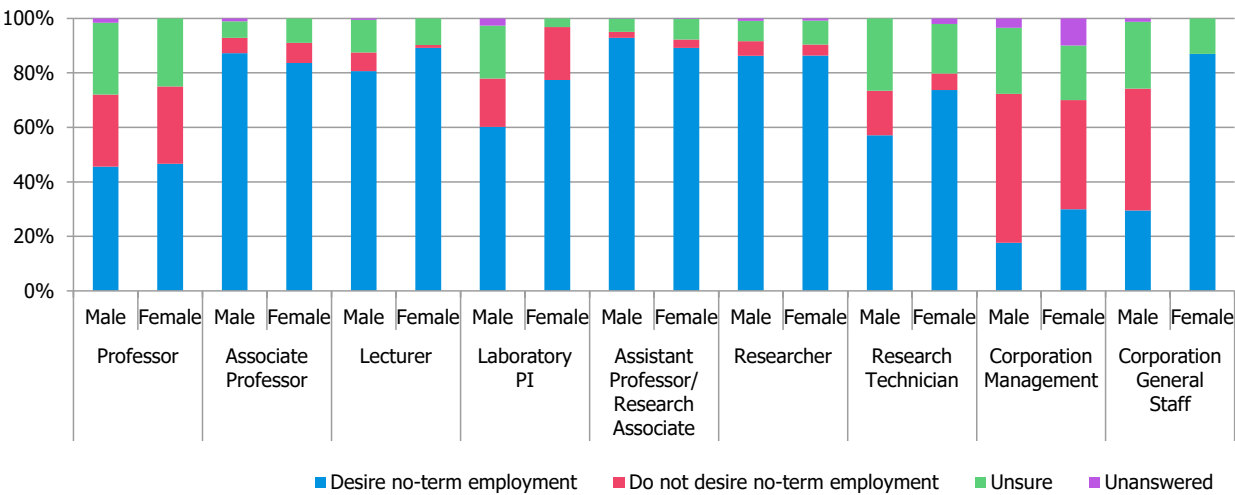
**Figure 4.12 Employment Status by Elapsed Years after Obtaining Degree for University / Technical College and Research Institution**



**Figure 4.13 Total Years of Limited-Term Employment by Age/Gender (Single Answer)**

**Job Position of Limited-Term Employee and Desire for No-Term Employment (Figure 4.14)**

For university and research institution, the ratios of respondents that do not want to be a no-term employee was less than 7% for all job positions other than Laboratory PI, whereas for Laboratory PI the ratio was high for both genders. Especially among men, the ratio has risen since the last survey reaching about 20%.

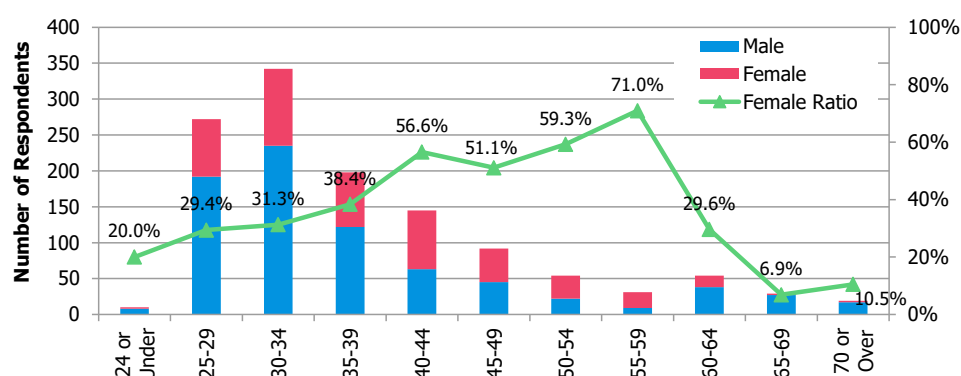


**Figure 4.14 Desire for No-Term Employment by Current Job (Single Answer)**

## 4.3 Employment Conditions of Limited-Term Researchers / NPIs

### Male-Female Ratio of Limited-Term Researchers (Figure 4.15)

The number of limited-term researchers is highest in the early 30's age group and declines in the older age groups. However, even in the 50's and older age groups, the number does not reach zero showing that the limited-term researchers are aging. The female ratio among limited-term researchers tends to increase with age, exceeding 50% in the 40's and over age group. This indicates that when limited-term researchers try to advance their careers, women are in a more difficult situation than men leaving them no choice but to continue as limited-term researchers (Figure 4.15).



**Figure 4.15 Limited-Term Researchers by Age Group and Ratio of Females (Single Answer)**

Compared to the previous survey, the total working hours of researchers have decreased, but there is still a tendency to work beyond the contracted working hours. In particular, limited-term researchers have the longest average working hours compared to other occupational fields. In the case of limited-term NPIs, the time they can devote to research is decreasing even though they are working beyond their contracted working hours, and the reason is thought to be that they are busy with work other than research. Although the difference in working hours between genders is small, for limited-term NPIs and corporate researchers, women work longer hours than men.

Limited-term researcher is positioned as transitional occupation in the career path of a researcher. Therefore, the annual salaries are lower than other occupations, and it hardly increases with the researcher's age. For this reason, as the age of limited-term researcher increases, the gap in the annual salaries compared to other occupational fields widens. Looking at the gender difference in the annual salaries of limited-term researchers, salaries of women continue to be lower than those of men.

## 4.4 Tenure Track

### Ratio of Tenure Track Employment by Age (Figure 4.22), Elapsed Years after Obtaining Degree (Figure 4.23)

Ratio of tenure track employment is highest for women aged 30 to 35 and men aged 35 to 40, at about 25% each. In the other age groups between 30 and 45, it is 15% to 20% for both men and women (Figure 4.22). In addition, about 20% of both men and women have had their degree for 15 years (Figure 4.23) showing that compared to the previous survey the age groups of those settling with tenure-track jobs have expanded.



Figure 4.22 Tenure Track Employment by Age (Single Answer)

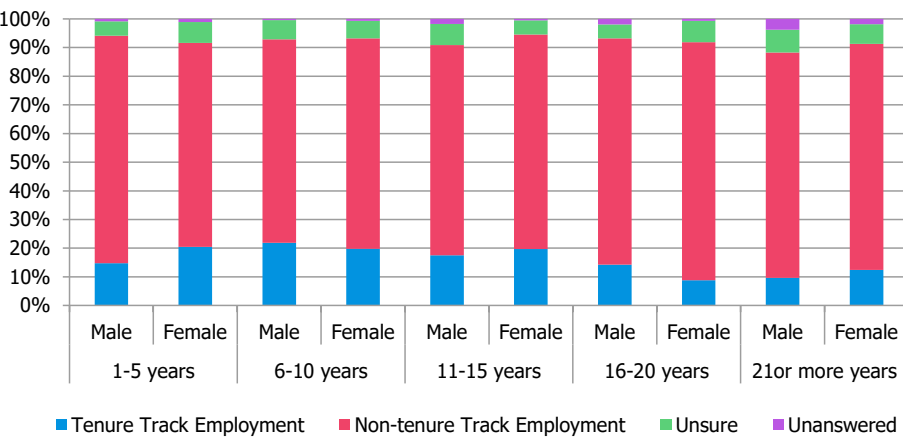
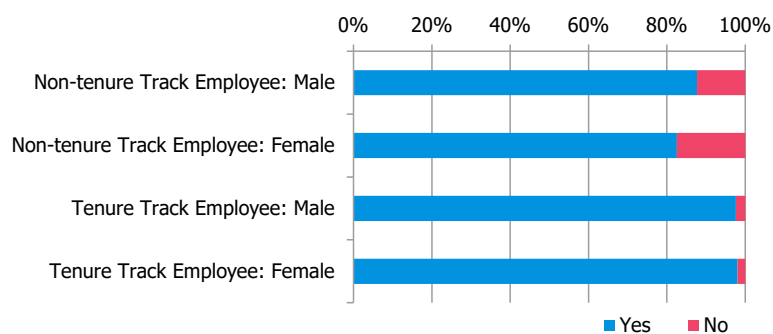


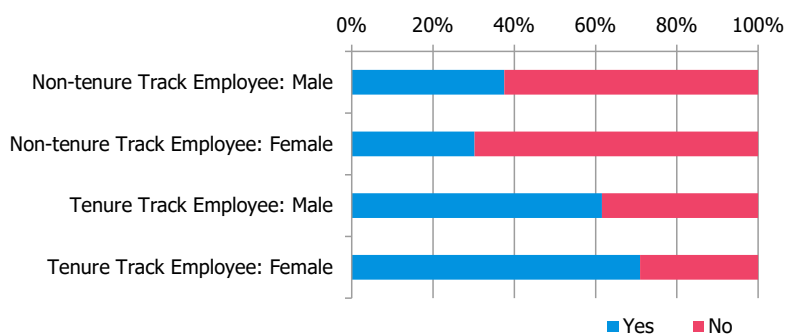
Figure 4.23 Tenure Track Employment and Elapsed Years after Obtaining Degree (Single Answer)

### Childcare Leave and Employment Extension for Tenure Track Employees (Figure 4.28a, Figure 4.28b)

For both men and women, more than 98% of tenure track employees and more than 90% of non-tenure employees took childcare leave, an improvement from the previous survey (Figure 4.28a). Although approval of term extension after childcare leave has improved compared to the previous survey, it is still low for both men and women at around 60% to 70% for tenures and around 30% to 40% for non-tenures (Figure 4.28b).



**Figure 4.28a Childcare Leave for Tenure and Non-Tenure Employees (Single Answer)**

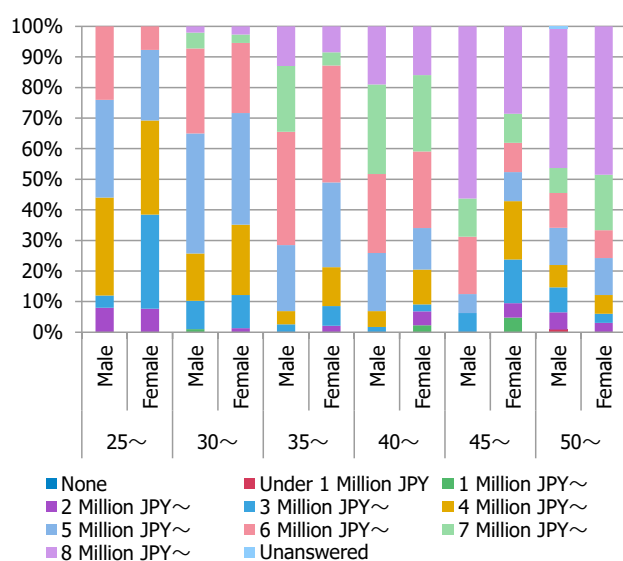


**Figure 4.28b Employment Extension for Tenure and Non-Tenure Employees after Childcare Leave (Single Answer)**

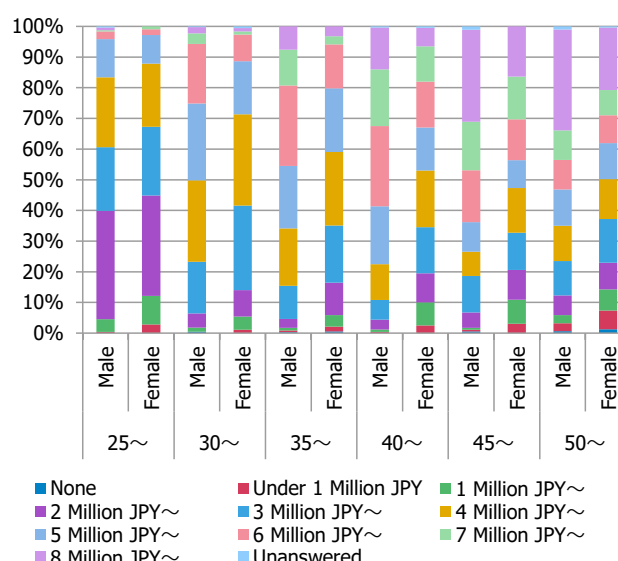


## Annual Salaries and Research Work Hours of Tenure Track Employees (Figure 4.27a, Figure 4.27b) (Figure 4.29)

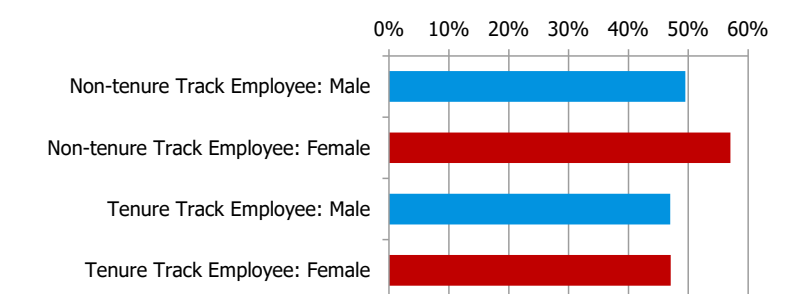
Annual salaries are about 10% higher for tenure track employees than non-tenure employees, and the difference widens as age increases with women's salaries being lower than that of men. About 70% of tenure track men aged 45 to 50 have annual salaries of 6 million yen or more while only about 40% of women in this age group receive the same. This is the age group that exhibited the largest gender gap. The annual salaries of tenure track men aged 45 to 50 are remarkably high, but this may due to the annual-based salary system (Figure 4.27a, Figure 4.27b). The time allocated to research during the working hours has dropped to less than 50%, excluding non-tenure women, and it is now more difficult to secure research time than it was when the previous survey was conducted (Figure 4.29).



**Figure 4.27a Annual Salaries of Tenure Track Employee by Age and Gender (Single Answer)**



**Figure 4.27b Annual Salaries of Non-Tenure Track Employee by Age and Gender (Single Answer)**



**Figure 4.29 Average Time Spent on Research at Workplace for Tenure and Non-Tenure Employees (Single Answer)**

## Chapter 5 Important Issues: Program and Policy Awareness

### 5.1 Awareness of Recent Laws and Policies (Figure 5.1-5.4)

Unlike the time of the fourth large-scale survey, the Fifth Basic Plan for Gender Equality (Cabinet approval on December 25, 2020) was formulated in 2021, and in accordance with this Plan, the 6th Basic Plan for Science, Technology, and Innovation of 2022 (Cabinet approval on March 26, 2021) continues to clearly state numerical targets for the recruitment of new female researchers. Specifically, 1) the percentage of newly hired female researchers at universities shall be 20% for science, 15% for engineering, 30% for agriculture, 30% for medicine, dentistry and pharmacy, 45% for cultural science, and 30% for social sciences by fiscal 2025; 2) the percentage of female faculties (lecturers and above) in university science and engineering shall be 12% in science and 9% in engineering by fiscal 2025; 3) the percentage of female professors (president, vice president, professors) shall be increased to 20% as soon as possible and to 23% by fiscal 2025.

The degree of awareness among all respondents was highest with the Fifth Basic Plan for Gender Equality. This was followed in order of awareness by The Act on Promotion of Women's Participation and Advancement in the Workplace, the Leading Initiative for Excellent Young Researchers, and the 6th Science, Technology, and Innovation Basic Plan. This order was unchanged from the corresponding laws and policies in the previous fourth large-scale survey report of 2017 (Figure 5.1). Awareness of recent laws and policies (Figure 5.2) has increased compared to the previous survey. The awareness rate of The Act on Promotion of Women's Participation and Advancement in the Workplace increased 6% from the previous survey to 40%, which is on par with the 42% awareness rate of the Fifth Basic Plan for Gender Equality. Additionally, the 6th Science, Technology, and Innovation Basic Plan increased by 5% compared to the corresponding 5th Science and Technology Basic Plan in the previous survey.

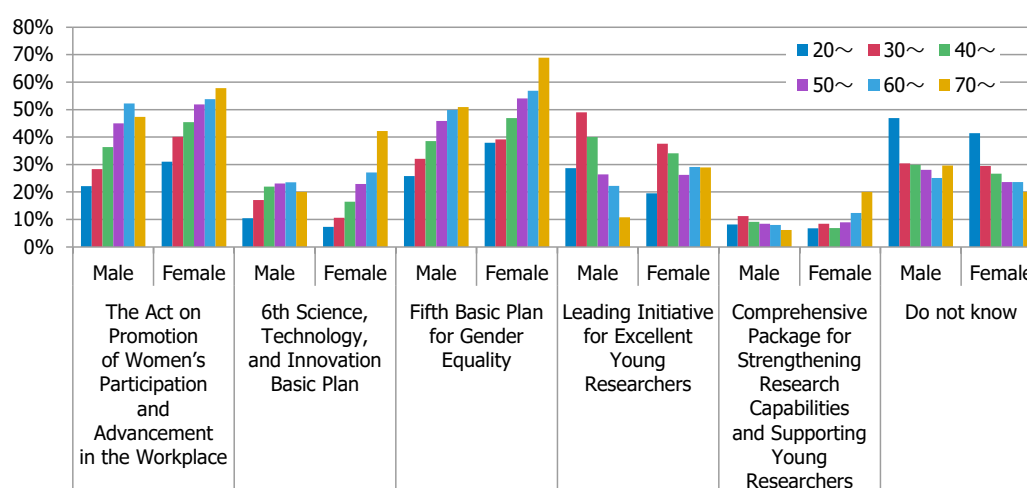
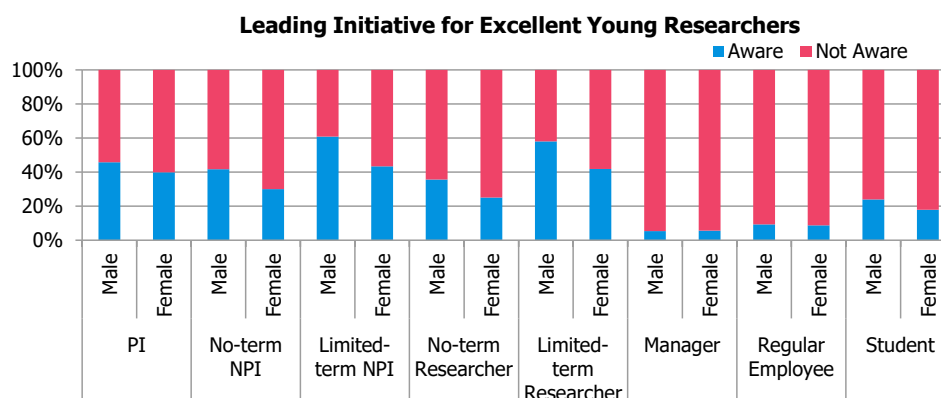
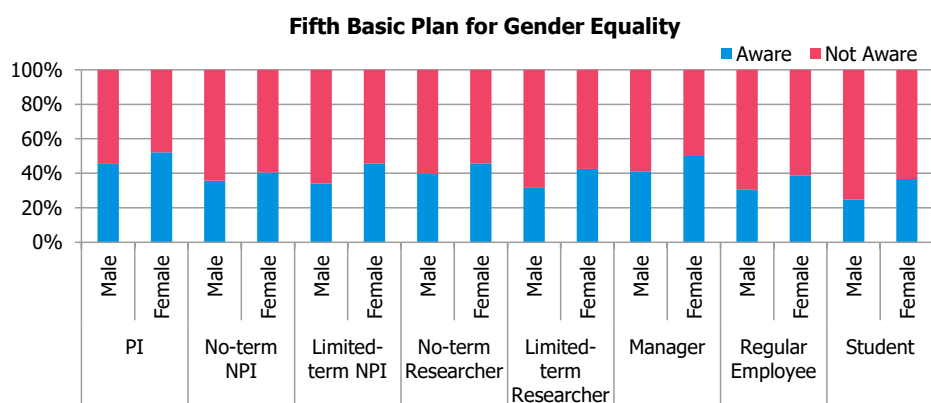
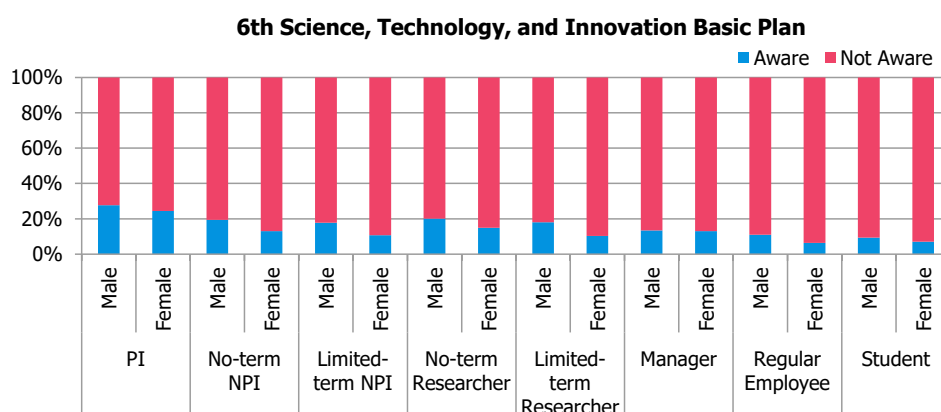
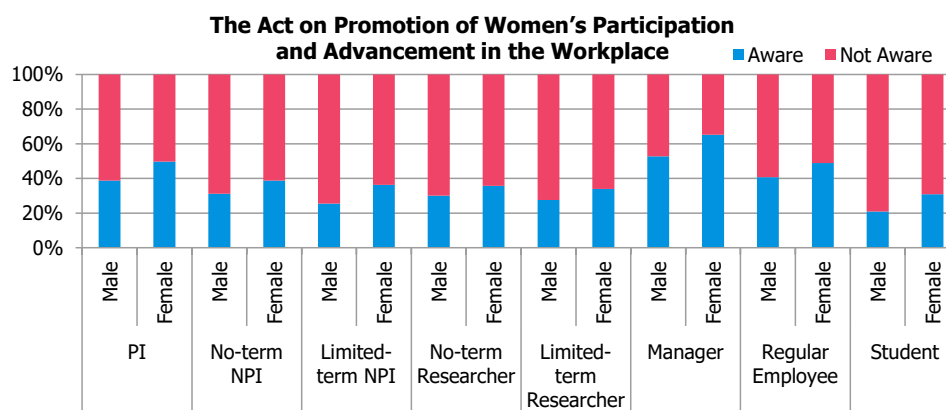
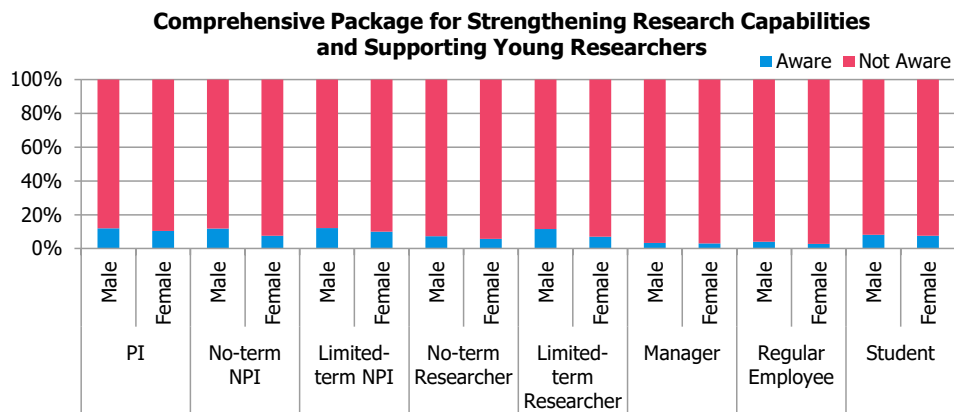


Figure 5.1 Awareness of Recent Laws/Policies by Age Group and Gender (Multiple Answers)

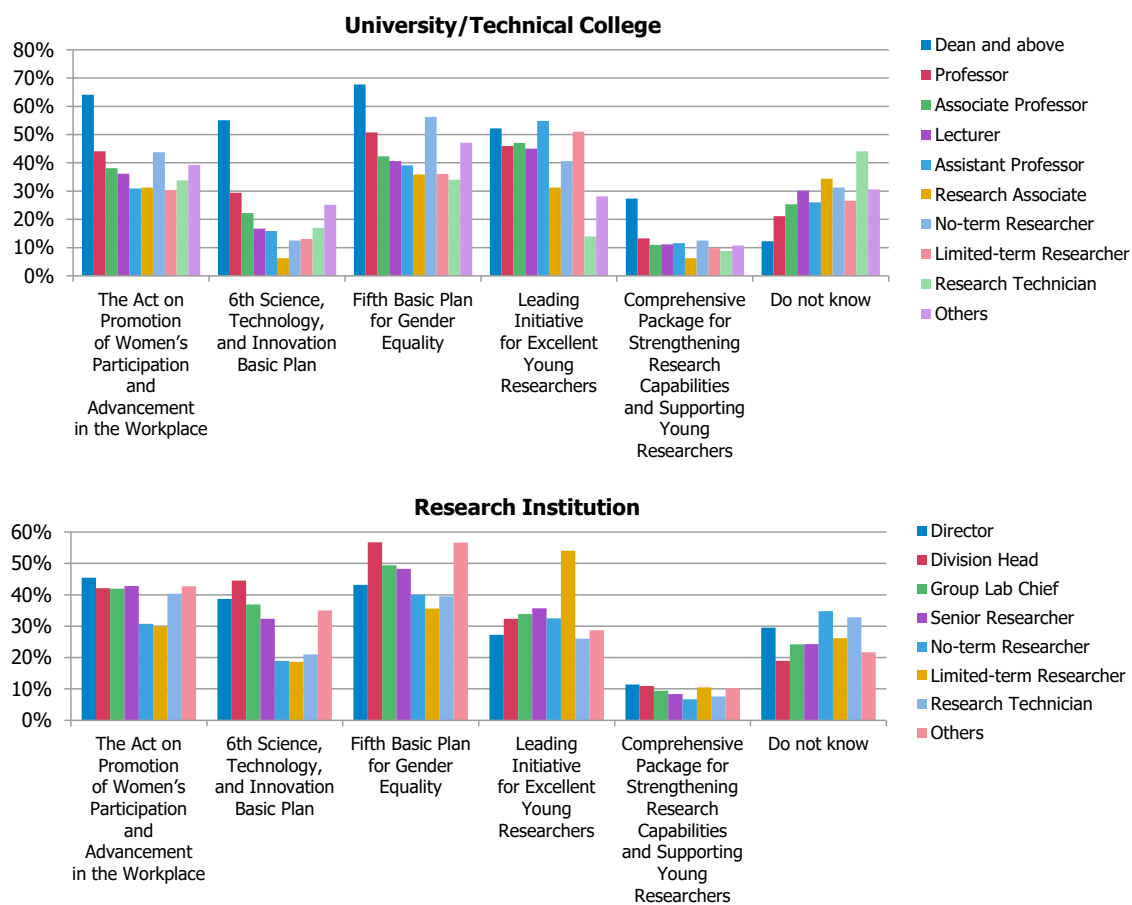


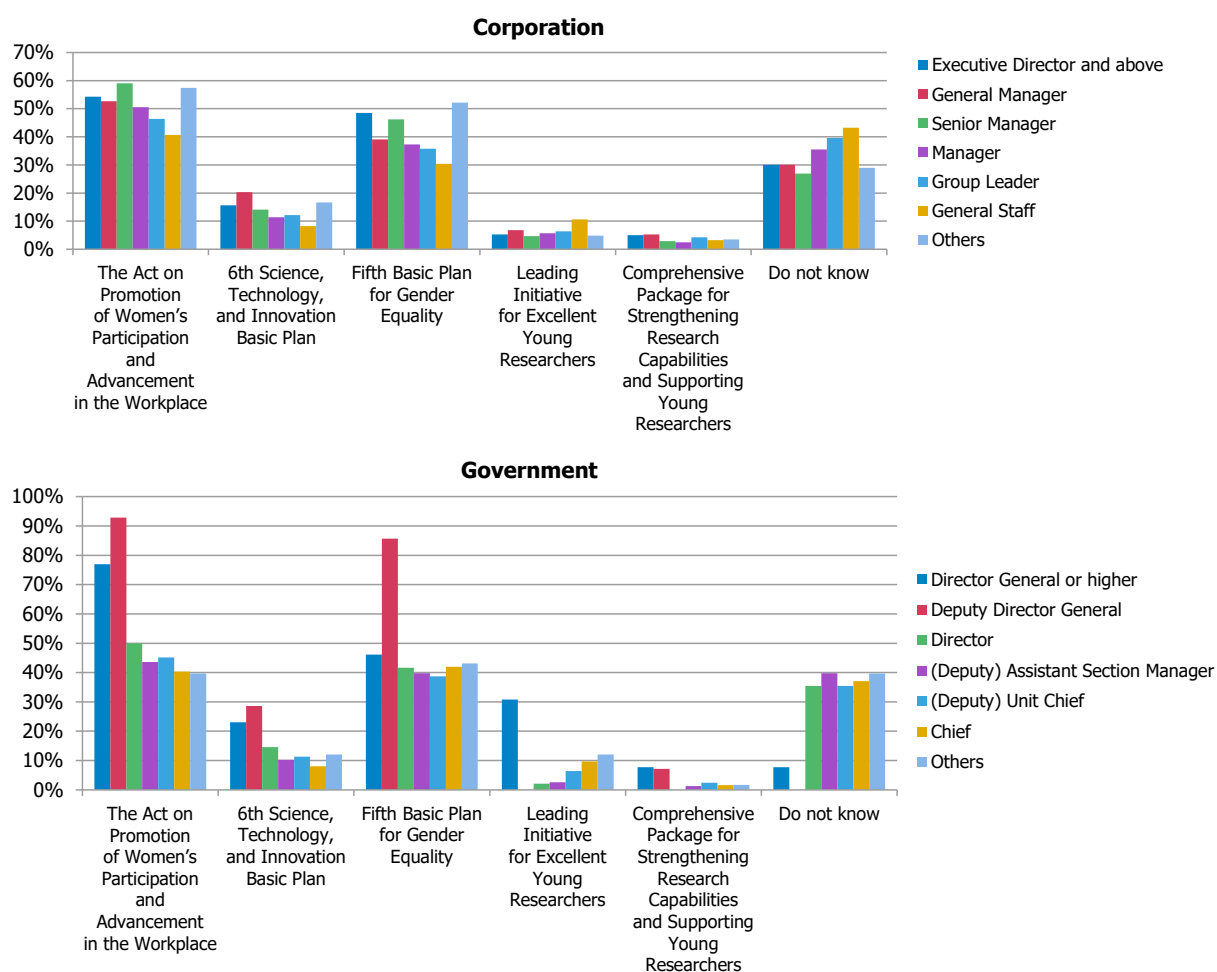


**Figure 5.2 Awareness of Recent Laws/Policies by Occupational Field**

Comparison by organization and job position reveals that in university / technical college and research institution, the awareness of The Act on Promotion of Women's Participation and Advancement in the Workplace, the 6th Science, Technology, and Innovation Basic Plan, and the Fifth Basic Plan for Gender Equality were prominently high among deans and directors (Figure 5.3).

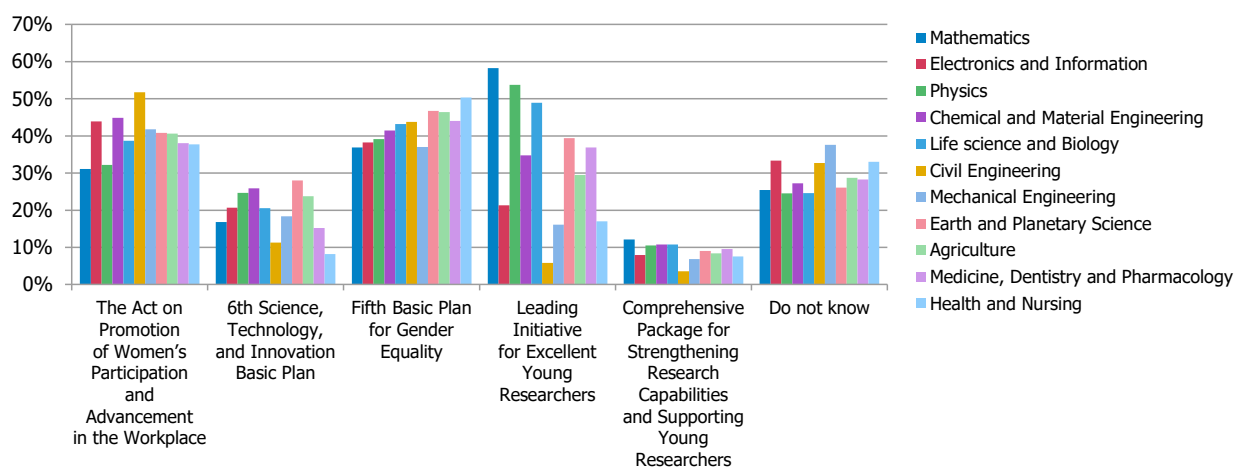
In corporation, The Act on Promotion of Women's Participation and Advancement in the Workplace and the Fifth Basic Plan for Gender Equality were overwhelmingly recognized in all job positions (Figure 5.3).





**Figure 5.3 Awareness of Recent Laws/Policies by Job Position (Multiple Answers)**

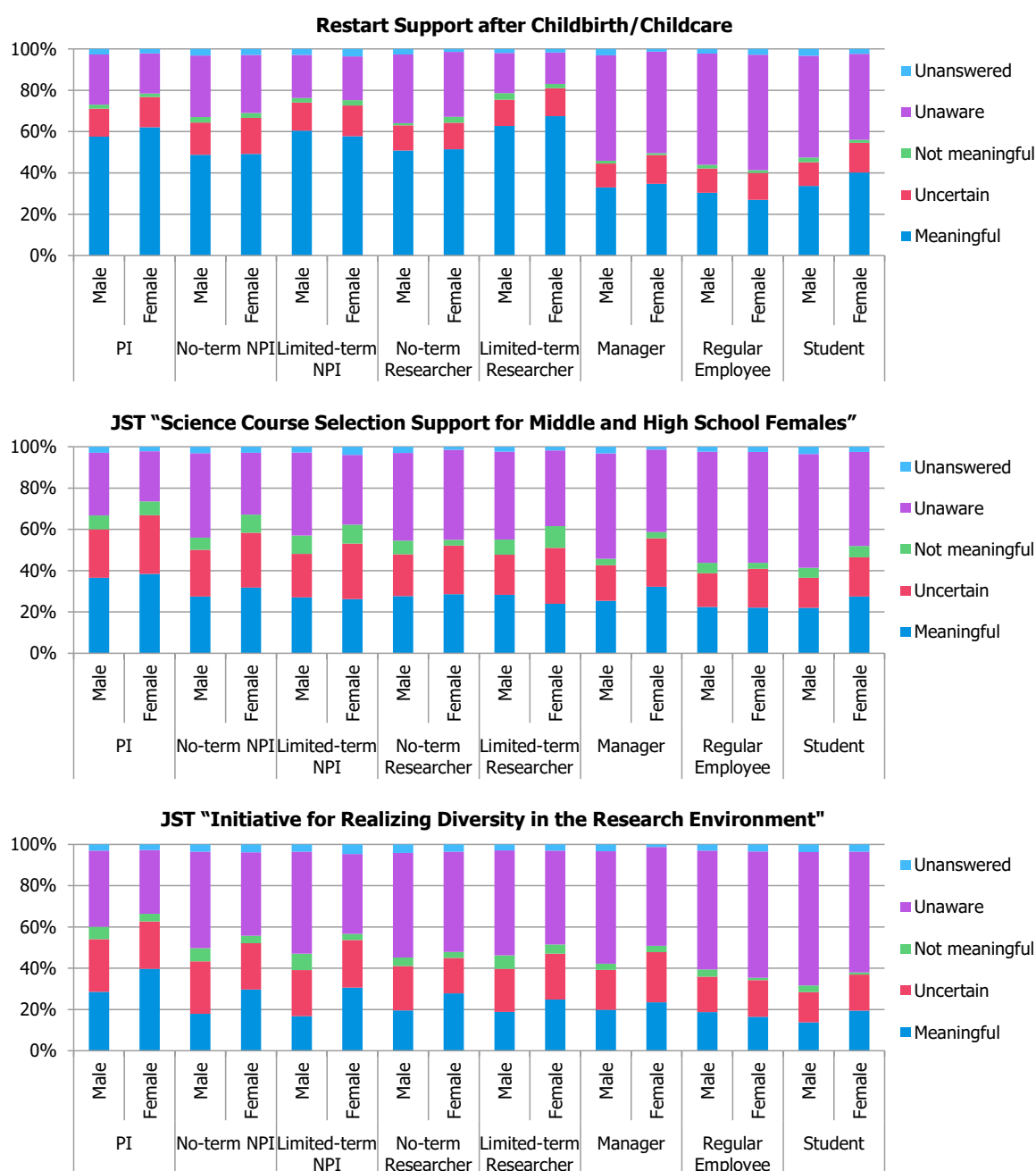
Regarding the Leading Initiative for Excellent Young Researchers program, there was a large difference in the degree of awareness when compared by area of specialization. Awareness was high with those in the areas of mathematics, physics, life science / biology, earth / planetary science, and medicine/dentistry/pharmacology (Figure 5.4). These areas correspond with areas of specialization in which many of the respondents are under limited-term employment. It can be said that there is a high level of interest among researchers who are confident they can move on to no-term employment.



**Figure 5.4 Awareness of Recent Laws/Policies Overall by Area of Specialization (Multiple Answers) (excludes students)**

## 5.2 Support Programs Currently Underway for Female Researchers (Figure 5.5)

When the perception of each support program was compared, it was found that: 1) Restart Support after Childbirth/Childcare (RPD system), 4) Childbirth and Childcare Consideration in Scientific Research Grants, and 5) / 6) Strategic Basic Research Programs and FOREST (Fusion Oriented REsearch for disruptive Science and Technology) for considering childbirth and child-caring had high awareness rates of 70 to 80% (slightly higher for women) in university / technical college and research institutions, and that about 60% of both PIs and NPIs perceived the programs to be “meaningful”. On the other hand, less than 20% of respondents thought that 3) Initiative for Realizing Diversity in the Research Environment (formerly Supporting Activities for Female Researchers) was “meaningful”. This is not surprising considering the number of adopted projects is less than 10 per year at universities and research institutions nationwide (Figure 5.5).



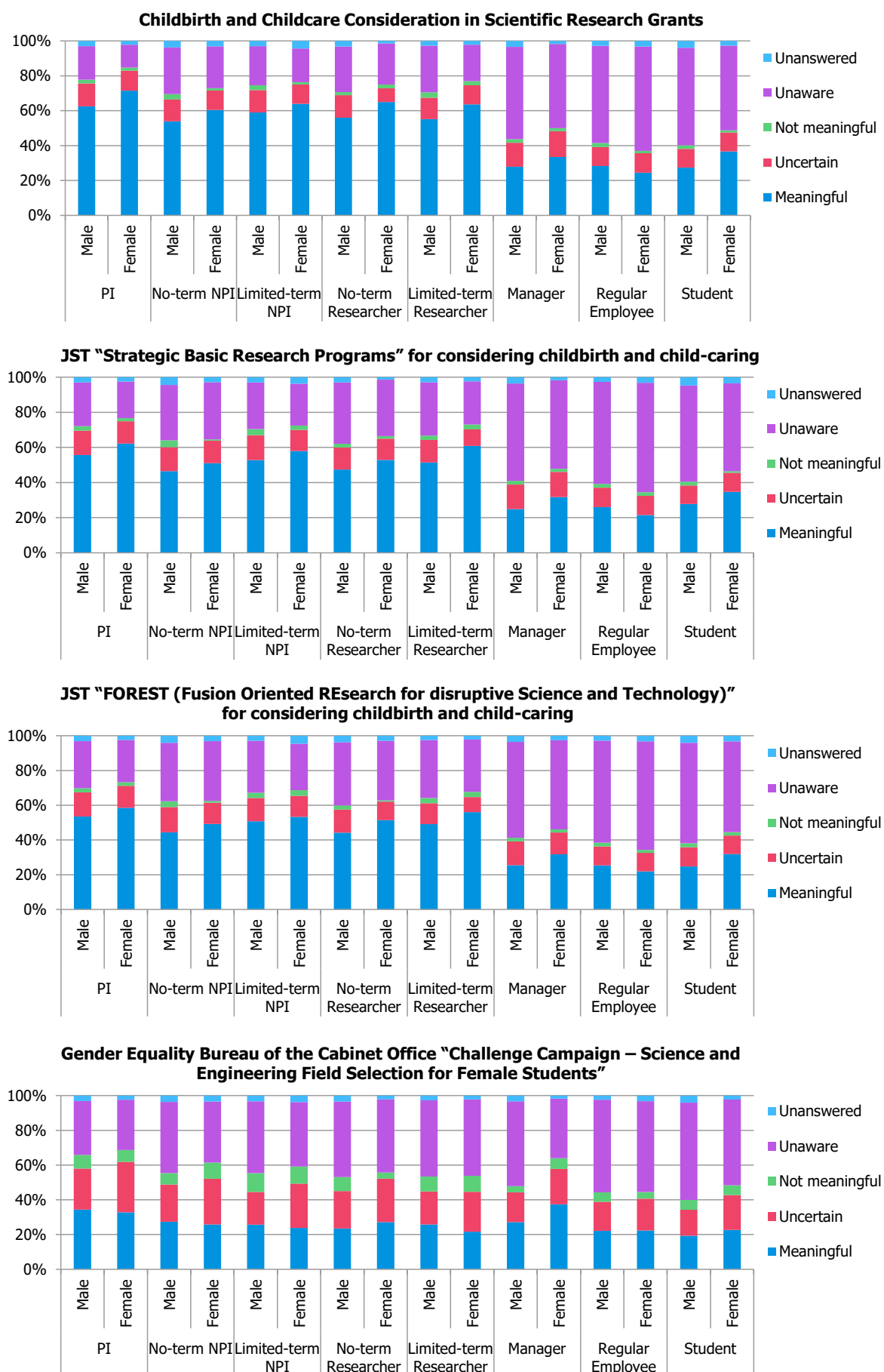
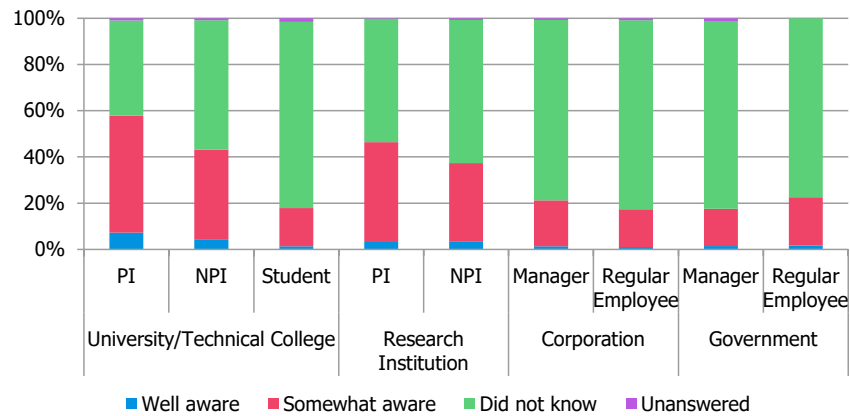


Figure 5.5 Perception of Recent Policies Overall by Occupational Field

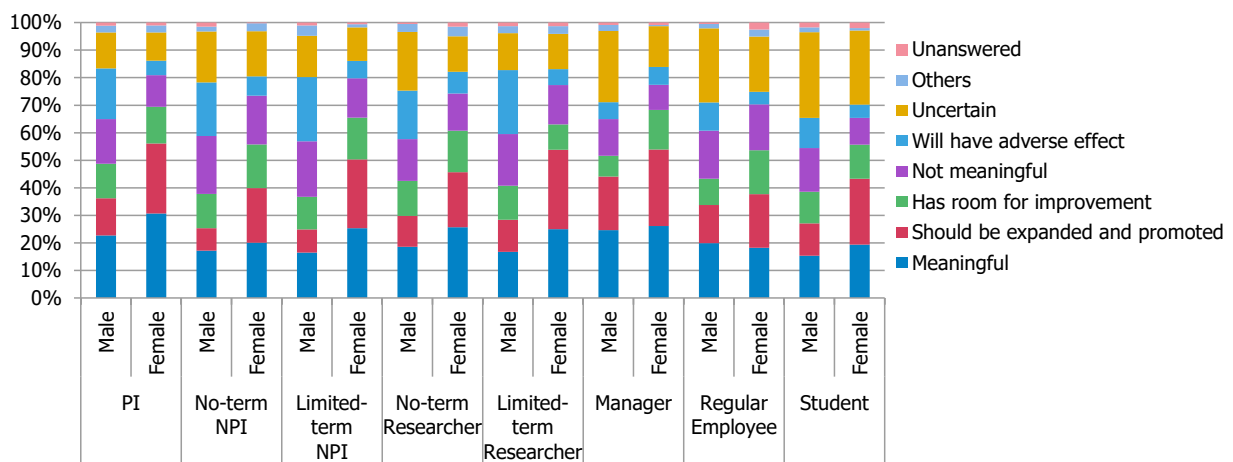
### 5.3 Numerical Targets for Hiring Female Researchers (Figure 5.6-5.9)

Investigating the awareness of numerical targets for hiring female researchers, only 4% of all respondents answered that they were “well aware”. On the other hand, 60% of men and 51% of women answered that they “did not know”. The rate of awareness was higher among women than men (Figure 5.6).



**Figure 5.6 Awareness of Numerical Target for Newly Hired Female Researchers by Occupational Field**

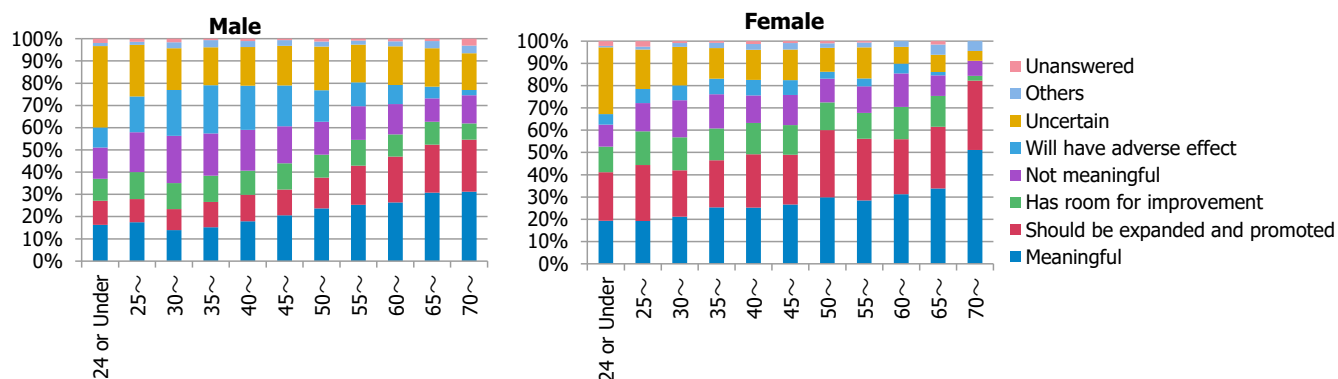
In almost all occupational fields, a higher percentage of women responded that numerical targets for hiring female researchers were “meaningful”, while a higher percentage of men responded that numerical targets “will have adverse effect” (Figure 5.7). Among these male generations, the percentage of respondents who answered that it is “not meaningful” or “will have adverse effect” remains high, which is a serious issue for Japan.



**Figure 5.7 Perception of Numerical Target for Newly Hired Female Researchers by Occupational Field**



Comparing by age group, the percentage of positive responses such as “meaningful” and “should be expanded and promoted” were lowest among men in their 30’s but increases with age (Figure 5.9). In the case of women, a certain number (20% or more) of the opinion that it “should be expanded and promoted” exists in all age groups. In addition, there is a tendency for the percentage of people who express some kind of opinion regarding numerical targets, regardless of whether it is positive or negative, to increase with age.



**Figure 5.9 Perception of Numerical Target for Newly Hired Female Researchers by Age Group**

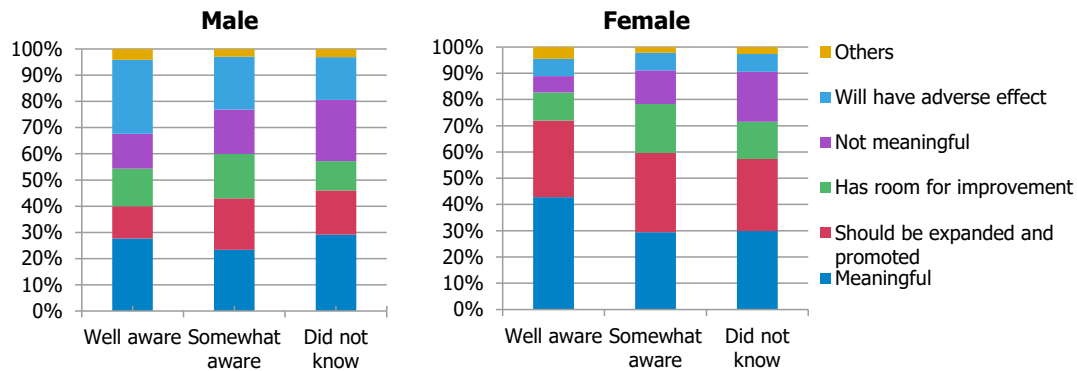
## 5.4 Perception of Numerical Targets from Respondents with High Awareness (Figure 5.10-5.12)

Regarding the awareness (Q41.1) of numerical targets for new female researchers, the level of awareness among respondents in managerial positions was generally good with 20% or more answering that they are either “well aware” or “somewhat aware” (Figure 5.10).



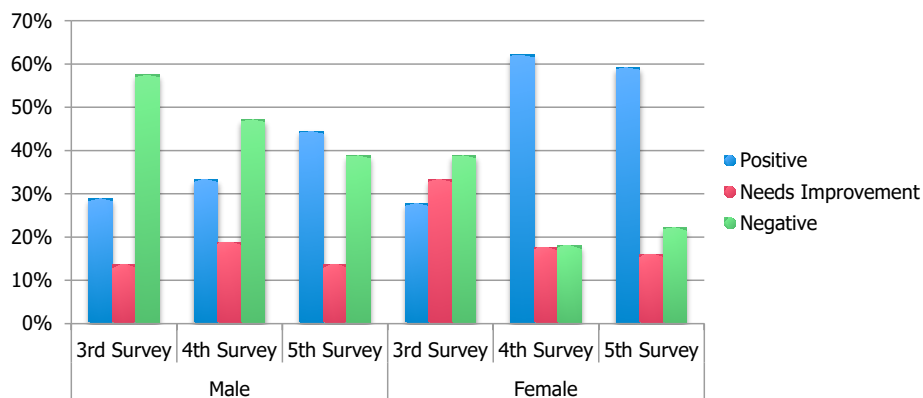
Figure 5.10 Awareness of Numerical Target by Job Position for Each Organization

Comparing the male and female respondents who answered that they are “well aware” of numerical targets, 40.0% of male respondents answered positively (total of “meaningful” and “should be expanded and promoted” responses). However, the figure for women was 72.0%, indicating a large gap in awareness (Figure 5.11). Among the men who are familiar with numerical targets, 28.2% answered that the targets “will have adverse effect”, which significantly differs from 6.6% of women that answered the same. There is a huge difference in perception between men and women.



**Figure 5.11 Awareness of Numerical Target and Perception on Significance (excludes "uncertain")**

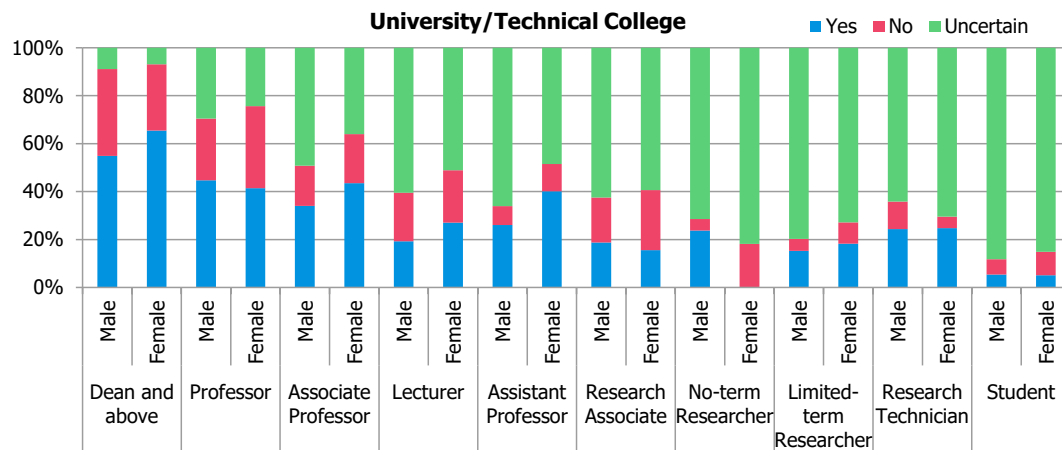
The number of positive responses from men has steadily increased, but negative responses have also risen to 38.8%. The possible “backlash” against the active hiring of women through recruitment specialized or limited to women is a concern (Figure 5.12).



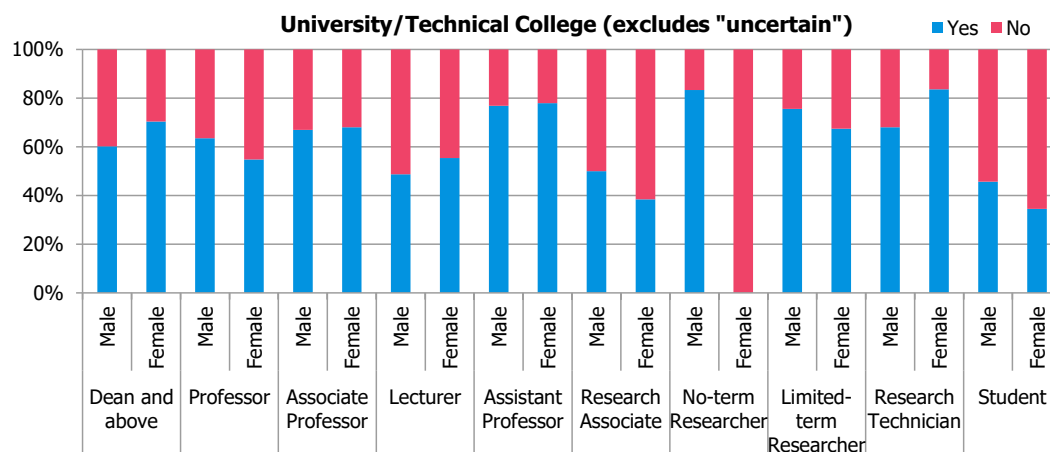
**Figure 5.12 Awareness of Numerical Target and Perception on Significance Compared with Third and Fourth Surveys (excludes "uncertain")**

## 5.5 Female Hiring Targets of Affiliated Organizations (Figure 5.13-5.30)

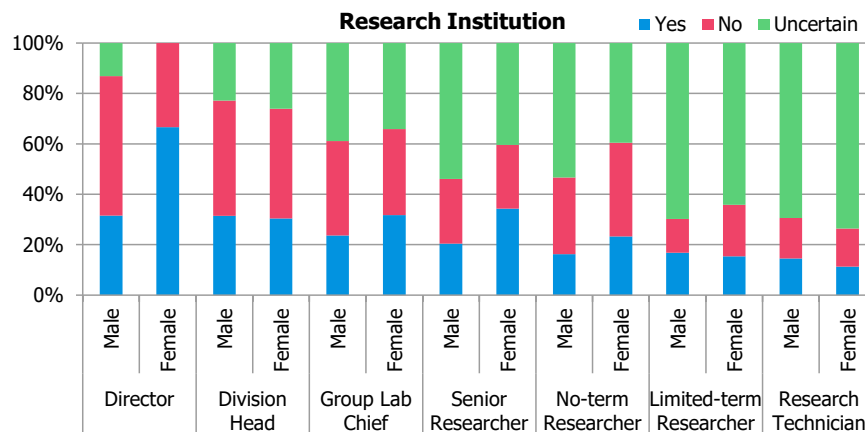
When female respondents from university / technical college who are in a position to make personnel decisions (executives and professors) were asked if they are aware of female hiring targets, the percentage that mentioned the existence of set targets increased compared to the fourth survey (Figure 5.13, 5.14). As for the research institution, the awareness of women remained high as in the previous survey, and although slight, there was an increase in the awareness of men (Figure 5.15, 5.16). From general managers to general staff, there was no significant difference between genders in corporation, and about 80% replied that there are no numerical targets (Figure 5.18).



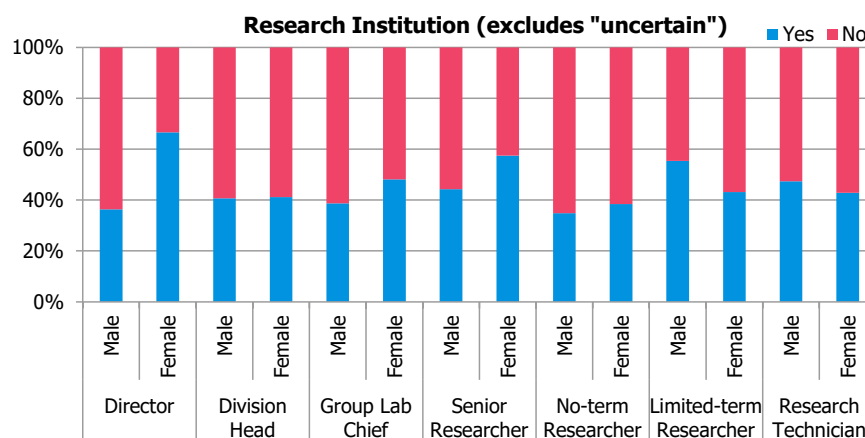
**Figure 5.13 University / Technical College: Awareness by Job Position of Numerical Target for Female Hiring**



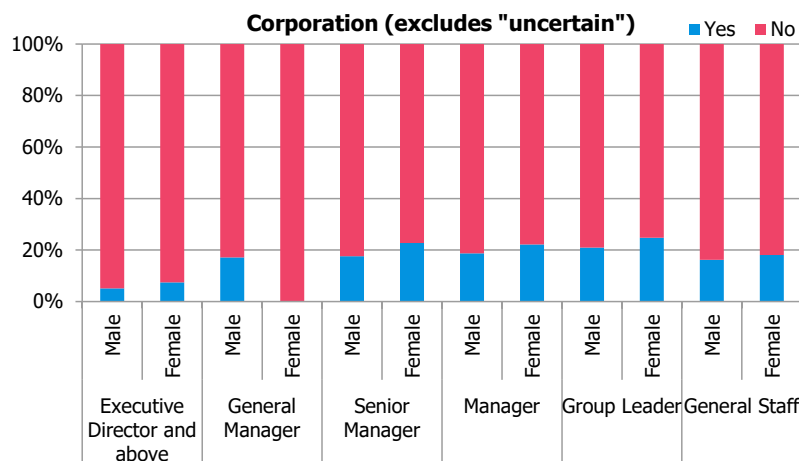
**Figure 5.14 University / Technical College: Awareness by Job Position of Numerical Target for Female Hiring (excludes "uncertain")**



**Figure 5.15 Research Institution: Awareness by Job Position of Numerical Target for Female Hiring**

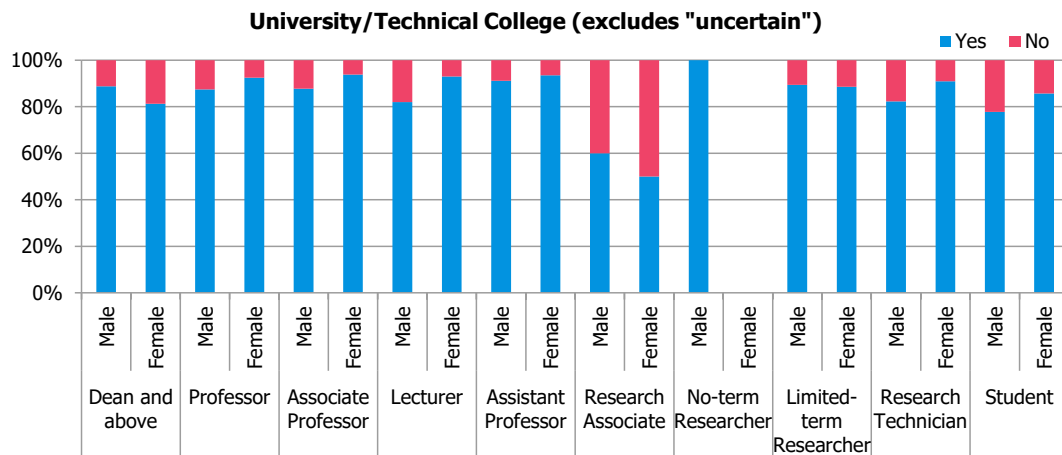


**Figure 5.16 Research Institution: Awareness by Job Position of Numerical Target for Female Hiring (excludes "uncertain")**

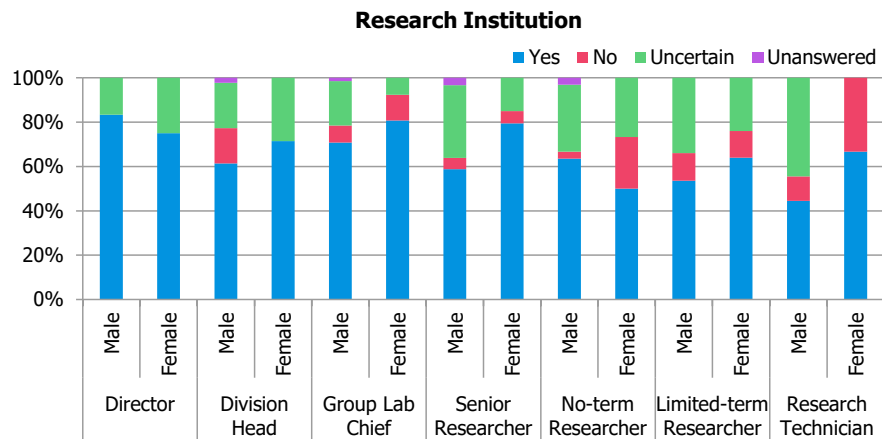


**Figure 5.18 Corporation: Awareness by Job Position of Numerical Target for Female Hiring (excludes "uncertain")**

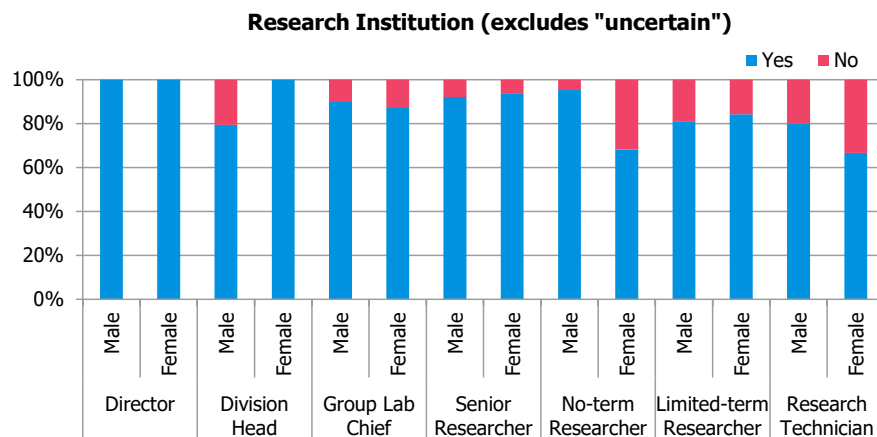
Regarding the disclosure of numerical targets for hiring women, more than 80% of assistant professors and above in university / technical college answered that their organization's numerical targets are disclosed (Figure 5.20). In research institution, a higher percentage of respondents answered that the targets are disclosed when compared with university / technical college (Figure 5.21, 5.22). However, it should be noted that the actual numbers of directors were 12 men and 4 women, and the actual number of division heads were 44 men and 7 women. In corporation, the ratio of the "uncertain" response, including those who did not answer (purple), was higher than that of university / technical college and research institution (Figure 5.23, 5.24). The number of respondents who answered that the targets are not disclosed was also higher with corporation as well.



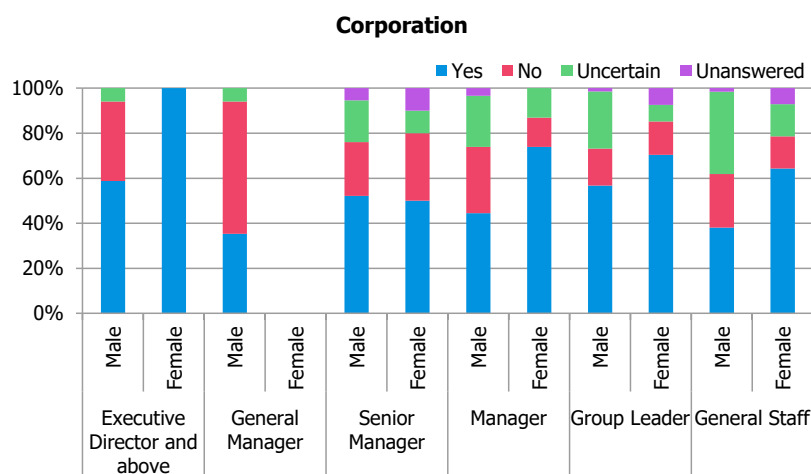
**Figure 5.20 University / Technical College: Awareness by Job Position of Publicized Numerical Target for Female Hiring (excludes "uncertain")**



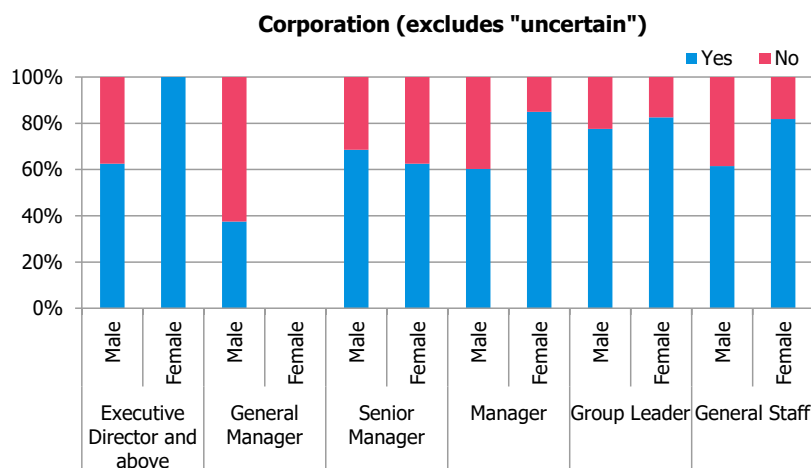
**Figure 5.21 Research Institution: Awareness by Job Position of Publicized Numerical Target for Female Hiring**



**Figure 5.22 Research Institution: Awareness by Job Position of Publicized Numerical Target for Female Hiring (excludes "uncertain")**

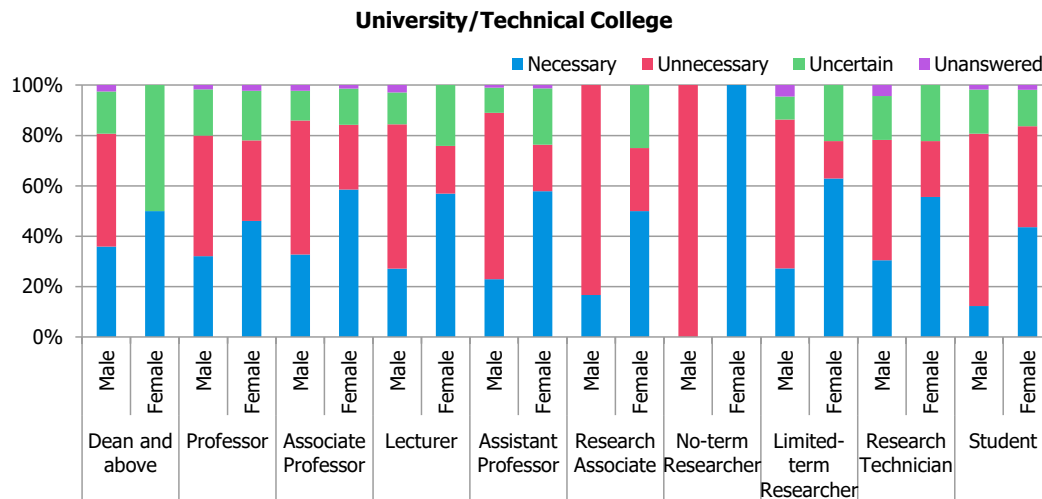


**Figure 5.23 Corporation: Awareness by Job Position of Publicized Numerical Target for Female Hiring**

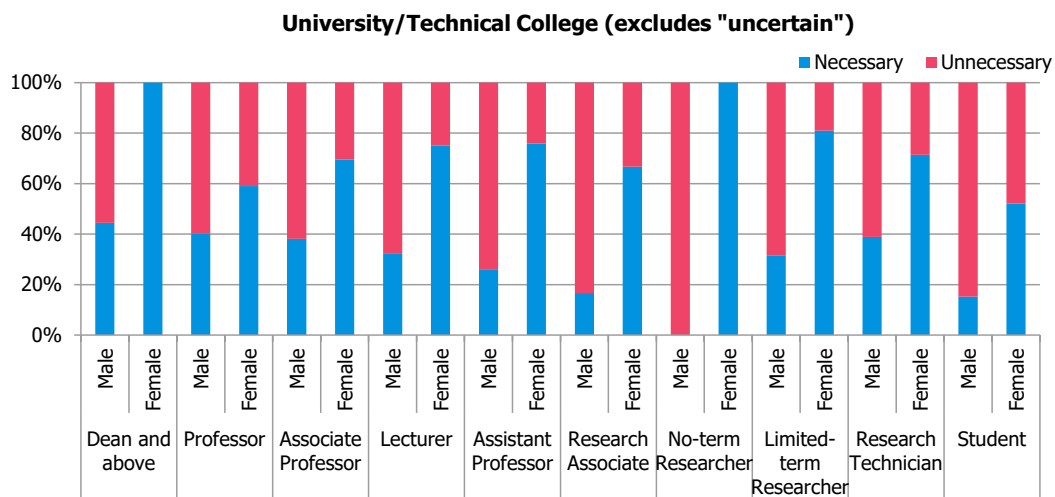


**Figure 5.24 Corporation: Awareness by Job Position of Publicized Numerical Target for Female Hiring (excludes "uncertain")**

There was an extremely large difference between male and female executives in university / technical college regarding the necessity of numerical targets (Figure 5.25, 5.26). Furthermore, the percentage of women who think numerical targets are necessary far exceeded that of men in all job positions without exception. It is also characteristic that the gender gap becomes more pronounced as the position moves downward from professor to research associate in university / technical college. In research institution, the gender gap somewhat narrows, but women's response that numerical targets are necessary still outnumbers the response from men (Figure 5.27, 5.28). The situation is reversed in corporation, and more men and women answered that numerical targets are not necessary (Figure 5.29, 5.30).

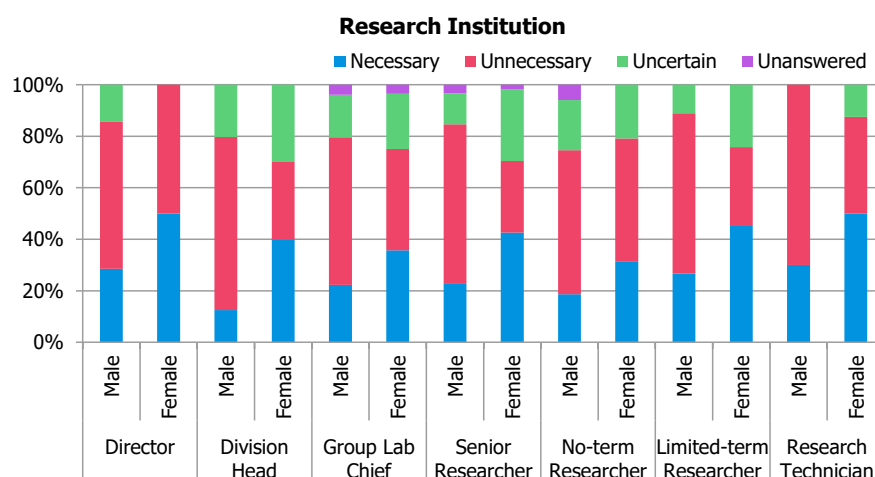


**Figure 5.25 University / Technical College: Perception by Job Position on Necessity of Numerical Target**

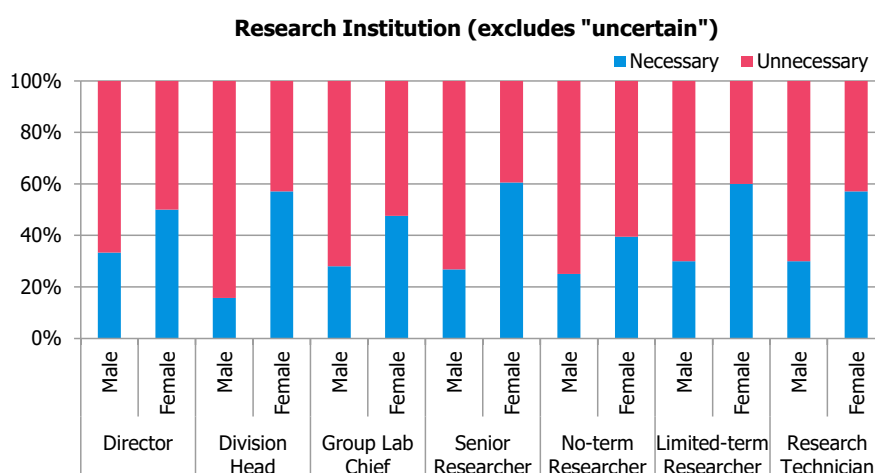


**Figure 5.26 University / Technical College: Perception by Job Position on Necessity of Numerical Target (excludes "uncertain")**

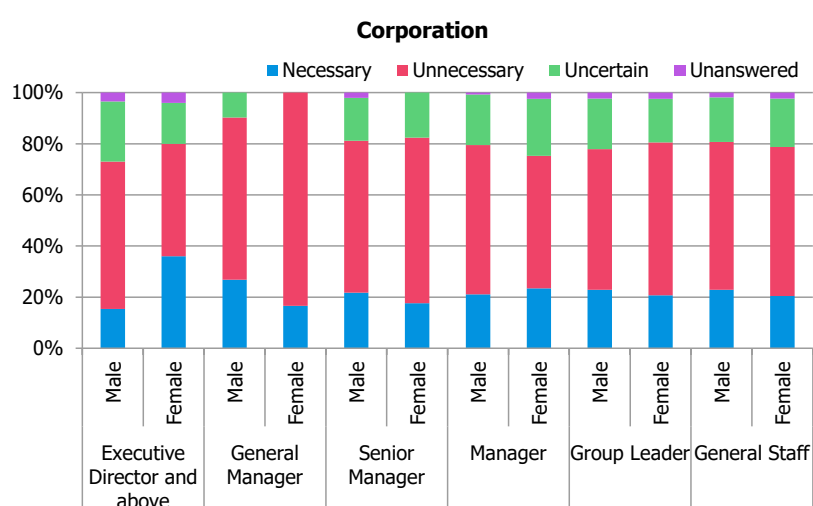




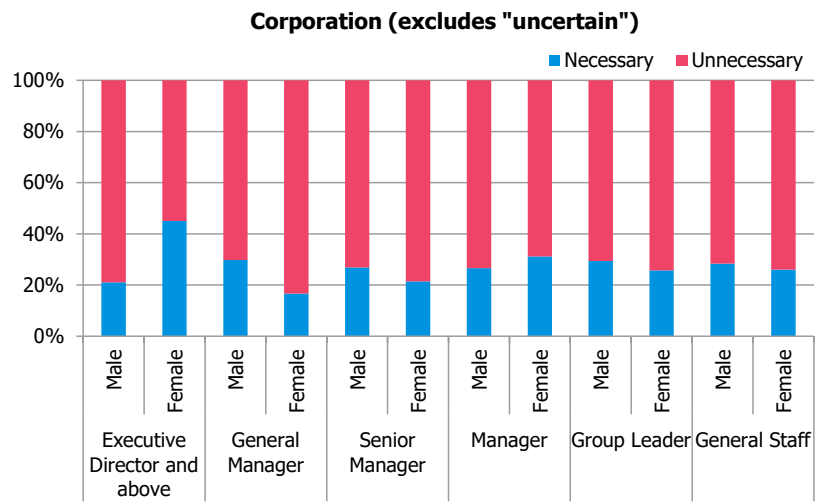
**Figure 5.27 Research Institution: Perception by Job Position on Necessity of Numerical Target**



**Figure 5.28 Research Institution: Perception by Job Position on Necessity of Numerical Target (excludes "uncertain")**



**Figure 5.29 Corporation: Perception by Job Position on Necessity of Numerical Target**



**Figure 5.30 Corporation: Perception by Job Position on Necessity of Numerical Target (excludes "uncertain")**

## 5.6 Chapter Summary

In order to raise Japan's ratio of women in research institutions and other institutions of higher education to the level of other countries, formulating measures to support female researchers and giving priority support to universities offering an environment that balances life events and research are insufficient. Continuous efforts to implement organizational reforms are essential.

Creating a system to mutually evaluate department heads on the "management side" of university / technical college and research institution, and introducing and continually using a system that quantifies decisions with GEMST Index, which is then reflected in the budget, will enable researchers and engineers to recognize the various efforts. This will allow Japan to catch up with other countries. It is hoped that such visible efforts will be made under the leadership of the government.

Referencing not only the United States but also recent European countries, drastic organizational reforms as a country, such as the active introduction of a quota system, are desired in order to drive positive actions at universities and other institutions. The government should take responsibility for explaining to the public that the promotion of diversity is an essential measure for maintaining Japan's excellent research capabilities, then design a system and promptly implement it.

## Chapter 6 Written Comments

The free written comments received during the fifth large-scale survey have been analyzed and the respondents' characteristics along with the current situation, problems, perception and desires of the natural science researchers and engineers have been compiled in this chapter.

### 6.1 Respondents' Characteristics

Among the 3,719 comments received, 1,036 (28%) were from women. Overall, 21% of female respondents and 18% of male respondents submitted comments (Figure 6.1). Many of the comments received were from men and women in their 30's to 50's (Figure 6.2). The ratio of comments from women aged 40 and over was higher than that of men (Figure 6.3). The number and ratio of received comments compiled by occupational field are shown in Figure 6.4 and Figure 6.5, respectively.

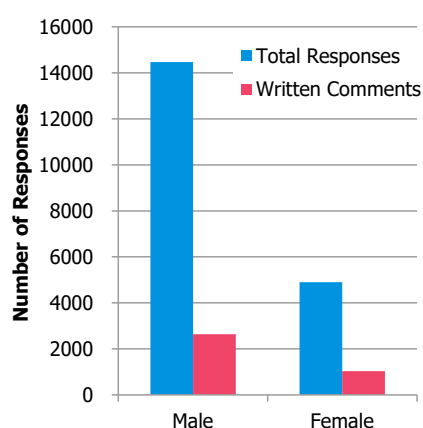


Figure 6.1 Total Responses and Written Comments

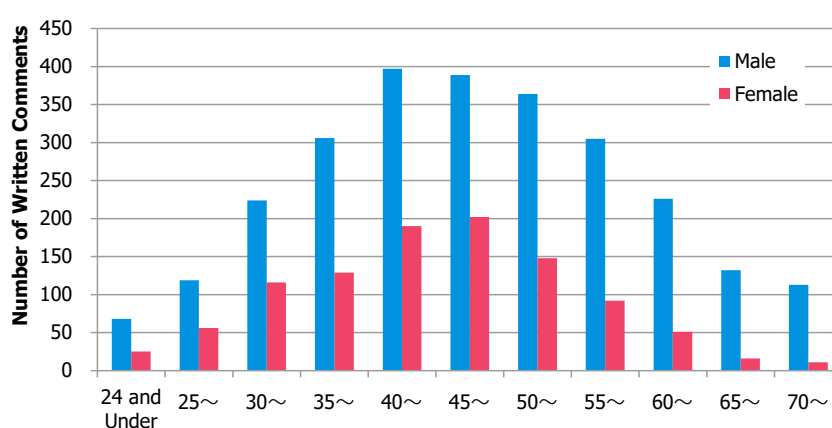


Figure 6.2 Number of Written Comments by Age/Gender

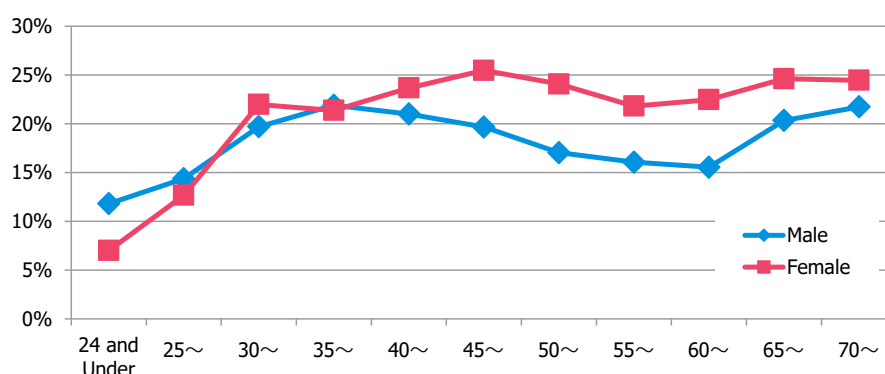


Figure 6.3 Ratio of Written Comments by Age/Gender

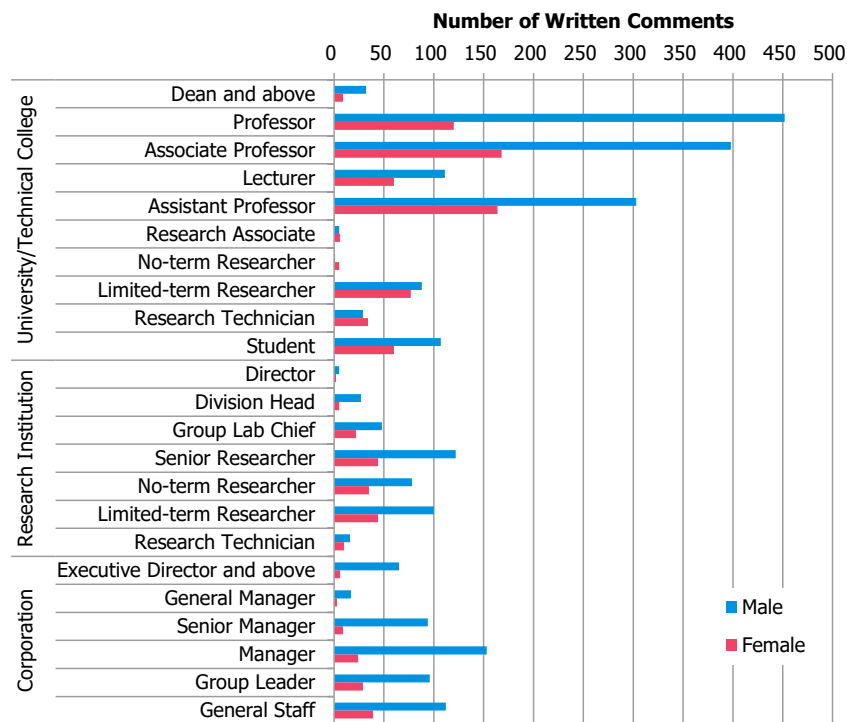


Figure 6.4 Number of Written Comments by Occupational Field

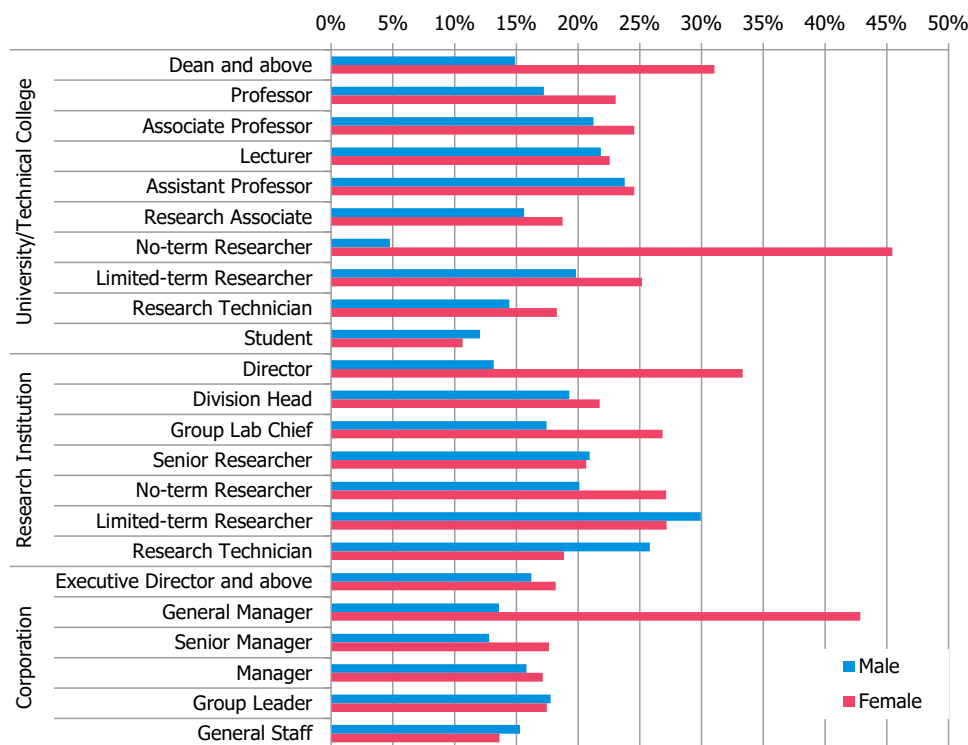


Figure 6.5 Ratio of Written Comments by Occupational Field

## 6.2 Frequently Mentioned Topics

Figure 6.6 shows the topics that were frequently mentioned and the number of comments received for each.

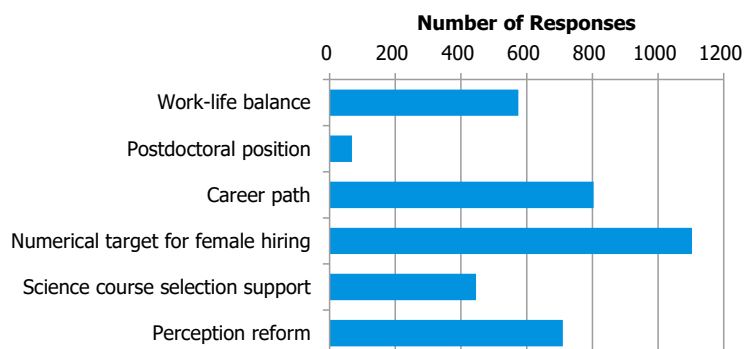


Figure 6.6 Frequently Mentioned Topics and Number of Comments

### (i) Work-Life Balance

There were 575 comments related to work-life balance. As a result of analyzing the comments, it was revealed that there is a huge difference in the situation regarding work-life balance between researchers/engineers in corporations, where gender equality initiatives are progressing, and researchers in public institutions such as universities, where there is very little progress.

#### ① Improving Working Environment including Long Working Hours

Comments addressing improvement needs to the working environment accounted for 37% of the comments related to work-life balance. These comments were mainly from men and women who belonged to universities and many of them were from the child-raising generation in their 30's and 40's. On the other hand, comments received from people who belong to corporations stated that steady progresses are being made in promoting the active participation of women and in improving the working environment for both genders. This is not to say that measures do not exist, but that implementation varies from organization to organization.

**<Immediately improve environment where workload is excessive and long working hours necessary to cope with it>**

- Long working hours are the root cause of various problems that prevent gender balance. It is most important to improve the situation in which employees are forced to work long hours (limited-term employee's insecurity that there is no next unless results are produced). (Male, 30's)
- It is necessary to reform the way "men" work. Reforming the way men work will naturally create a society in which women can work equally. Promoting the active participation of women and reforming the way men work go hand-in-hand. (Female, 40's)

**<Work concentrates on women who are low in number creating a harsher situation>**

- Outstanding female researchers are extremely busy due to additional duties such as serving as a committee member to meet numerical targets. It is doubtful whether such an image will give hope to female students. (Male, 50's)
- Projects to promote gender equality tend to place a burden on female teachers, staff, and students. It is necessary to reduce the other duties of those involved in these projects, and also have men participate in the projects. (Female, 20's)

**<No one, including students, wants to become a researcher, nor is it recommended>**

- The number of students, both men and women, wanting to become a faculty member is decreasing. If long working hours and the increasing odd duties are not eliminated, neither women nor men will want to become a faculty member. (Male, 40's)

**② Relocation, Separate Living, and Dual Career Support**

Comments related to relocation and separate living were relatively few with only about 40 comments. In this fifth survey, there were many calls from men asking for dual career support, and it is thought that this reflects the fact that the younger generation is shifting toward being actively involved in childcare. There were also many requests for enhanced compensations when forced to live separately from family, as well as requests for continuing remote work.

**<Need support measures for cohabitation>**

- There are many outstanding researchers who give up on research activities because they cannot balance childcare and research while living separately from their spouse. There is a need for a system that allows employees to stay in their desired work location while raising children. (Male, 30's)

**③ Childbirth, Childcare, and Nursing Care**

Childbirth, childcare, and nursing care were the most commonly addressed topics covering 61% of the comments related to work-life balance issues. Again, the majority of the comments were from people affiliated with universities, and about two-thirds of the comments were from men and women in their 30's to 40's, which is considered as the child-raising generation.

**<An environment in which people can choose both work and children is important>**

- I received a scientific research grant, but I lost my affiliation due to pregnancy, childbirth, and childcare and had to let the grant go. Even if affiliation can be secured, entering a child into a nursery school is not possible without income. Regardless of gender, a balance between childcare and research is desired. (Female, 30's)
- I often hear stories about supervisors that lack understanding because they never took part in childcare. I feel that young researchers are active in regards to childcare, but there are many researchers who cannot take part in childcare because of their superiors. (Male, 30's)
- Since there is no consideration for men who take childcare leave, it is difficult for men to cooperate in reducing the burden on women. Consideration and institutional support for men are overwhelmingly lacking. (Male, 40's)
- It is necessary to take measures (reform national systems, reform mindset of those without children) so that the period of leave associated with childbirth and childcare does not become a "work disadvantage" for both men and women. (Male, 30's)

## (ii) Limited-Term Researcher (Postdoc) Position

### <Uncertainty about the future>

There were 68 comments (approximately 2% of comments) regarding the limited-term researcher (postdoc) position of which 41 were from men and 27 from women. Limited-term employment coincides with the early stages of women's careers, when they are facing life events such as childbirth. Therefore, there were many concerns about the lack of continuity and uncertainty about future prospects.

### <Increasing the number of female researchers>

Although recruitment limited to women is attracting attention, there are criticisms toward it when no progress is being made in reforming systems regarding childbirth and childcare to which many have voiced concerns.

- I feel that I am being treated favorably because I am a woman. However, I think term limits should be given priority and addressed now. The thought of a limited-term employment is unsettling and trying to calmly going through pregnancy, childbirth, child-raising, or research itself is difficult that one even considers the option of leaving. (Female, 30's)

### <Career after limited-term employment>

It has been pointed out that after a term ends, age becomes an obstacle when searching for the next employment.

### <Awareness and involvement of employers> <Problem with women's awareness?>

Some young people point out that employment in a form that is not stable, including the current limited-term employment of young people, is an aspect of labor exploitation. On the other hand, employers perceive situations have relatively improved. Therefore there is a discrepancy between the two sides. In addition, it is pointed out that the voices of young people are not taken up and that employers are aiming for short-term problem solving.

- If top management is motivated, the ratio of female teachers in senior positions can be quickly increased. Trying to match hiring targets by recruiting limited-term assistant professors through recruitment only for women will not serve as a long-term solution. (Female, 50's)

### <Male researchers' dissatisfaction with limited-term positions and gender equality policies>

It is worth mentioning that from the standpoint of men already in an unstable limited-term position, the efforts to increase the number of female researchers are viewed as causing the sense of instability regarding their position to grow even higher. This indicates the lack of progress in sharing problem awareness.

## (iii) Career Path

Nearly half of the respondents were concerned with the recruitment, promotion, and evaluation of women. Both men and women fear that remaining too persistent with the ratio of women will distort evaluation standards.

### ① Recruitment and Promotion of Women

- Because of the move to increase female ratio, I sometimes feel that I have been selected based on my gender rather than my ability. Although it is a blessed environment, I need to always work desperately not to disappoint, and it makes me feel uneasy. (Female, 40's)
- If personnel affairs at a university are entrusted to university management, the members involved in the evaluation will be biased towards men, and as a result, women may not be properly evaluated. (Female, 40's)



## ② Budget, Employment, Treatment, and Research Environment

- Even before considering the problem of gender equality, the treatment of researchers (especially young people) is too terrible. It is only natural that not only women but also men stop choosing science and technology fields. (Female, 50's)
- I think most laboratories cannot cover for the decline in research capabilities during childcare or maternity leave, regardless of gender, due to lack of staff or budget. Continuous and stable base budget allocation is top priority. (Male, 30's)
- In general, the suitable age for childbirth and childcare coincides with limited-term employment, so unless employment is stable, I think that it is a path that only people who are prepared to remain single for a certain extent would choose. (Female, 30's)
- Many men have ill feelings about the preferential treatment of women. Since it is difficult for women to enter existing jobs in an era of dwindling posts, it is desirable to create additional posts exclusively for women. (Female, 50's)

## ③ Role Models, Career Paths for Women (Continuing/Returning to Work), and Age Limits

- There were female seniors around me, so I myself was not too concerned, but it seems that there are cases when there are no female researchers around, there are no role models to look up to and women unfortunately give up on research jobs. (Female, 30's)
- Foremost in creating an environment in which it is easy for young women to enter the field of science and technology, there are not enough female role models. In addition to existing positions, it is necessary to prepare enough new positions and secure a wider range of human resources. (Male, 30's)
- Compared to male researchers, female researchers close to me are often single or have no children. Evaluation of research achievements is male-based. We need a system that allows women returning from childcare to continue working as a researcher. (Male, 50's)

## ④ Couples with Separate Surnames / Using Maiden Name

- A law requiring one of the researchers to change their surnames due to marriage is extremely disadvantageous. I was told by the administrative staff to correct my name on my research achievements, and I was unable to put my research funds into my bank account. Please improve the situation. (Female, 40's)
- A change in surname is a huge disadvantage in the career of a researcher. I would like to have couples allowed to use separate surnames as soon as possible. (Male, 20's)

## ⑤ Others

- There are many events where the presenters are all men. Names and photos posted on the website are all men. There is no reason for female students to aspire to science under such circumstances. It's like writing on the homepage that women are not allowed. (Female, 50's)

#### (iv) Numerical Target for New Female Researchers

Ten percent of men and 31% of women who responded to this measure expressed supportive opinions. On the other hand, 70% of men and 55% of women dissented. Figure 6.7 shows the ratio of major dissenting comments. In the background is the misunderstanding of the intentions behind such measures as “utilizing excellent and diverse human resources” and “promoting a change in awareness regarding gender equality”. The representative opinions are given below.

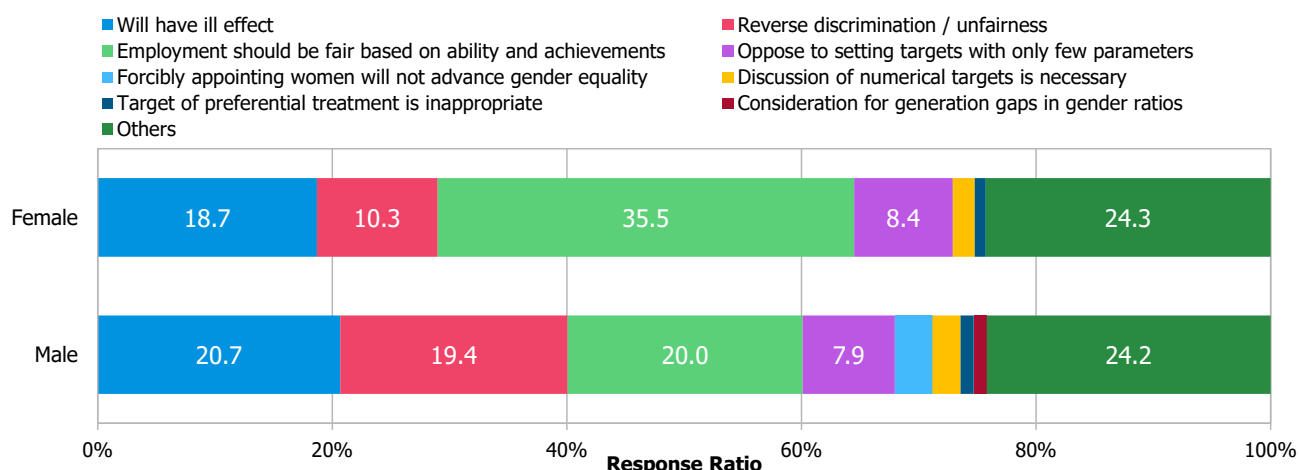


Figure 6.7 Dissenting Opinions regarding Numerical Targets for Female Researcher Hiring

#### ① Agreement with Numerical Targets

- Japanese society has a tendency to conform strongly with peer pressure unless it is forced otherwise, so measures should be taken with this in mind. (Male, 50's)
- Maintaining a certain proportion of women will change the connection between women and the male-dominated atmosphere of the entire work environment. (Female, 20's)

#### ② Disagreement with Numerical Targets

##### <Will have ill effect>

- If only a numerical target for the ratio of women is set, unqualified women may be hired, and the evaluation of women will decline as a whole causing a backlash. (Female, 40's)
- Depending on the research field, outstanding personnel may disappear from the university, and many fields will fall into decline. (Male, 50's)

##### < Reverse discrimination / Unfairness >

- A society that favors women creates inequality for men. (Male, 40's)
- If women are given preferential treatment, it will be discriminatory. (Female, 40's)

##### < Employment should be fair based on ability and achievements >

- Limiting recruitment of faculty members to women poses a problem in terms of fair ability evaluation. (Male, 40's)
- An environment should be created in which individuals can demonstrate their abilities regardless of gender. Is it necessary to decide on a gender ratio? (Female, 30's)

**<Oppose to setting targets with only few parameters>**

- Only setting numerical targets when a field lacks women is unreasonable. (Male, 50's)
- Policy to increase female ratio while ignoring the shortage of female human resources is unnatural and raises other issues. (Female, 30's)

**< Forcibly appointing women will not advance gender equality >**

- Men and women should be equal. Giving preferential treatment to women will not solve the problem. (Male, 50's)

**<Discussion of numerical targets is necessary>**

- I have doubts about the policy to increase the ratio of women for new hires. (Male, 30's)
- Measures should be considered for research institutions, fields, businesses, etc. where the ratio of women is particularly low. (Male, 50's)

**<Target of preferential treatment is inappropriate>**

- If one of the only few recruitments is limited to women, it will be the young male researchers that ends up paying the price of the previous generation. (Male, 30's)
- Regardless of gender, there are differences such as being single, no children, and those with children. I don't feel the need to "uniformly support women". (Female, 40's)

**<Consideration for generation gaps in gender ratios>**

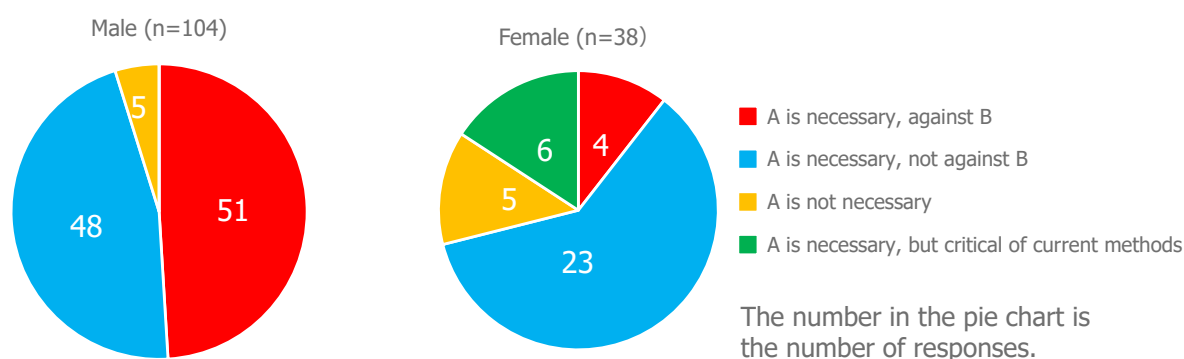
- Systems that do not even give opportunities to young men, such as recruitment only for women, should be abolished. (Male, 30's)
- It pushes burden on certain generation and class. (Male, 40's)

**<Others>**

- I would like to see a tenacious push toward raising awareness and improving the environment. I oppose setting a numerical target for the ratio of women. I think incentives are good. (Male, 60's)
- Even if numerical targets are set, they are often achieved through cross-appointments, and it does not create new employment. (Female, 20's)

### (v) Supporting Middle and High School Female Students Advance to Science Courses

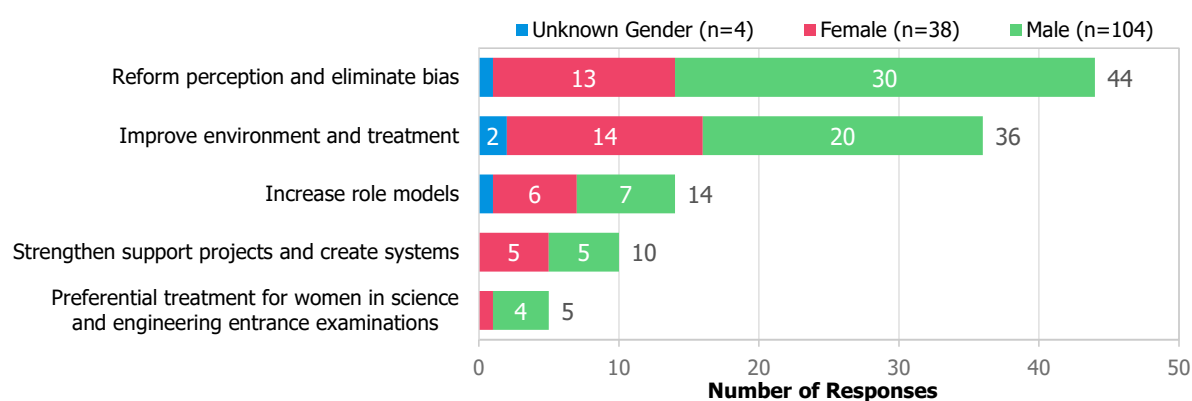
There were 146 comments (104 from men, 38 from women) that referred to the promotion of career choices for middle and high school students, and among those, 90% (132 comments) mentioned the necessity of programs to support female students advance to science courses.



**Figure 6.8 Opinions on (A) Supporting Female Students Advance to Science Courses and (B) Numerical Target for Female Researcher Hiring**

There are clear characteristics in the male responses, and about half are opposed to numerical targets for female researchers (Figure 6.8). Men believe gender imbalance should be corrected, but the solution is not to give preferential treatment to women in employment. Instead, the number of women who advance to study science should be increased. Including those who did not clearly oppose the numerical targets, majority of men (95%) positioned support for women's advancement into science and technology as the trump card for resolving the gender imbalance.

Although criticisms from women regarding numerical targets were few, there were criticisms and dissatisfactions with the current programs that support female students advance to science courses. There were opinions such as “it is unreasonable to recommend female students to study science” due to the poor treatment of female researchers. Additionally, there were some negative opinions (5 comments) about supporting women's advancement to science, which was the same number of comments from men, and ratio-wise it was high.



**Figure 6.9 Requirements for Further Encouraging Science Courses to Female Students**

The most frequently cited requirement (Figure 6.9) necessary to further encourage female students to advance to science courses was “reform perception and eliminate bias”, which is to dispel the mindset that girls are unsuitable for science courses. In particular, there were many opinions that it is important to educate parents/guardians and middle/high school teachers.

## **(vi) Necessity of Perception Reform**

There were 297 comments from women (approximately 8% of total survey respondents), 535 from men (approximately 13% of total), and 4 from unknown genders regarding perception reform. The type of perception reform needed was classified into the seven categories of 1) society's perception, 2) men's perception, 3) classroom teachers' perception, 4) workplace superiors' perception, 5) women's perception, 6) family's perception, and 7) middle-aged and older people's perception. Among these, the most commonly cited was 1) society's perception, which accounted for 42% of comments addressing the need for perception reform. Furthermore, 57% of comments that cited the need to reform society's perception were from men in their 50's to 70's. It became clear that men, who are likely in decision-making positions, want to change the perception of society. Many opinions pointed at the social climate as the cause of the misguided perceptions, and that the entire Japanese people must change their mindset, breaking away from a society that does not allow diversity and seek change. In regards to 2) men's perception, the necessity to reform the mindset of men was received from all generations, even from men. Particular, there is a need to change the perception of men in senior positions as well as those men involved with personnel decisions. In terms of reforming 3) classroom teachers' perception, there is a need for female students themselves as well as the teachers to be aware of equality between genders, and throw away the notion that science is for boys and liberal arts is for girls, which already exists at the elementary/middle school level. Comments from women between the age of 20 to 40 accounted for 66% of comments addressing the need to reform 4) workplace superiors' perception. There were pressing complaints, such as the superiors' perception that long working hours are not a problem, and the closed-in environment created due to decisions made solely on the opinion of the laboratory supervisor. Sixty-one percent of comments related to the reform of 5) women's perception came from respondents between the age of 20 to 40, and there were extremely large number of comments from respondents involved in childcare and work/research. Sixty percent of the men's comments came from those who were aged 50 or older, and they included many harsh opinions toward women, such as calling for efforts to improve the abilities of women themselves. In reforming the 6) family's perception, many respondents pointed out the need to eliminate insensible bias. Issues related to perception reform are thought to be resolved only through combined measures aimed at a gender-equal society, recruitment of diverse human resources and education, and ongoing efforts are required in the future. Moreover, the culture climate that the people of Japan have created over a long period of time must be changed. It is necessary to disseminate this need of change as a problem for the entire nation to address.

## **(vii) Others**

There were a total of 743 comments that could not be classified into any of the previous six categories (i) to (vi).

### **<Policies/Systems/Measures/Support/Reforms>**

There were many comments that tied the gender equality problem with the sense of crisis towards the declining birthrate and decline of science and technology in Japan, and some also see it as a problem for the entire society.

- I think that there are many harmful effects to discussing separately by gender. I think that the decline of the research field as a whole is due to the lack of budget and preferential treatment for foreigners. (Male, 40's)

**<Doubts about gender equality and perception>**

There were 2.5 times more comments from men than from women, and the content differs significantly between genders.

- Is the rate of women advancing into the field of science and technology such an important factor? I believe that in the relevant field, full government support, which can be applied regardless of gender, will contribute more greatly to the development of the field. (Female, 20's)
- Men and women have different aptitudes. The difference in aptitude is the reason why many nurses are women and many researchers are men. It is more oppressive and discriminatory to ignore aptitudes and try to force a 50/50 gender ratio. (Male, 20's)

**<LGBTQ, sexual minorities, and diversity>**

All comments indicated the need to expand diversity, including sexual minorities.

**<Regarding the questionnaire>**

There were many comments that indicated problems with the questionnaire, such as the questions and choice of answers being biased, and the target being inclined toward public institutions.

## 6.3 Visualization of Comments through Word Cloud

Looking at the comments individually, while some comments are common to all age groups and genders, a broader look reveals that topics of interest tend to be different for each level. In particular, young men made many comments about hiring and personnel affairs, while many comments from women addressed childbirth and childcare. It is thought that these are the surfacing of difficulties faced by each of the concerned groups. In fact, the ratio of comments on recruitment and childbirth drops sharply in the age group of 50 and over, while comments on larger themes such as society and science/technology increase for both men and women. There is a need to understand and support the difficulties faced by men and women of each generation not only by the people concerned, but by the entire society, especially those in senior positions with decision-making powers.

Note: The comments cited in Chapter 6 are representative comments selected from those that addressed the same issue. Additionally, in the selection process, comments that included any content that could lead to the identification of individuals or content that would be considered defamatory were avoided.

## Chapter 7 Survey Wrap-Up

### Chapter 1 Summary of Results

#### 1.1 Basic Data

- Total number of responses: 19,505 of which 14,468 were males, 4,901 were females, and 136 were not disclosed (1,346 more respondents than the previous survey). The age distribution has shifted up about five years compared to the previous survey. Women were about five years younger than men.

#### 1.2 Working Conditions

- Limited-term employment: Women are employed longer and more frequently than men. Respondents currently under terms lasting “10 years or less”, which recorded the highest number responses in the previous survey, decreased sharply in this survey. It is speculated that this is due to the revision of the Labor Contracts Act (conversion to a labor contract without a term, etc.).
- Tenure track: Approximately 15% of respondents are under a tenure track employment, which is an increase from the 10% recorded in previous survey. About 80% of both men and women desire to work without term limits.
- Job change, relocation or leaving job: More than 70% of both men and women have experienced job change, relocation or leaving a job. The percentage of women who have experienced leaving a job is higher than that of men. The most common reason for job change, relocation or leaving a job was “further my career”. “Job relocation of family member”, “marriage”, and “caring for children” responses were higher for women than men. “End of contract” response was mostly received from respondents in their 40’s and younger.
- Benefits of limited-term researcher position: Although “can concentrate on research” and “opportunities to undertake new research” accounted for a large portion of the responses, the percentages dropped significantly from the previous survey. On the other hand, there was large increase in the “no advantages” response. This trend was prominent with those who are currently in limited-term positions
- Problems with limited-term researcher position: “Few positions available after the term ends” and “outlook is difficult since term is affected by research funding” accounted for a large proportion of the responses. The “fixed term prevents work on large or consistent topic” response increased slightly less than 10% from the previous survey.

#### 1.3 Work and Family

- Spouse / Domestic Partner: Those that have a spouse or domestic partner were about 20% higher for men than for women. The gender difference in the percentage of married couples is small until the early 30’s, but from the late 30’s onward, the percentage of women flattens out while the percentage of men gradually increases, resulting in a large gender gap.
- Occupation of spouse / domestic partner: Similar to previous surveys, about half of men’s spouses / domestic partners are unemployed. About 97% of women’s spouses / domestic partners have a job, with a large percentage of them being with universities / research institutions (research and technology positions).
- Number of children: Fifty-six percent of women do not have children, and those that have either one or two were about 20% each. Nearly 60% of men have children, and 41% have two or more.
- Average number of children by age: For men, the average number of children gradually increases with age and reaches two children by the age of 65 to 69. For women, the number reaches one at about age 35 and from there remains almost unchanged. As a result, the gap can be as much as double between men and women.

- Ideal number of children: For about 50% of both men and women, “two” is the ideal number of children. “Three” was the next highest response answered by 31% of men and 24% of women. Women have a large gap between the ideal number of children and the actual number (one).
- Reasons for not achieving ideal number of children: The top reason given was “financial” for men and “balance between career and childcare” for women. Continuing from the third survey, “financial” decreased while “job stability” increased. Women are more likely than men to select “understanding of workplace” and “spouse’s or domestic partner’s cooperation in child caring”.
- Caregiver for preschool children: About 80% of men answered “spouse or domestic partner” and the same percentage of women answered “day-care center”. Women that responded “self” jumped sharply from the previous survey to 42%, widening the gap between men.
- Necessary environment for R&D: “R&D time” and “R&D funds (including maintenance)” received the most responses exceeding 60%. Nearly 50% of the respondents also answered “streamline or separate administrative and odd jobs” and “environment for long-term research”.

#### 1.4 Gender Equality

- Reasons for low proportion of women: “Balancing family and work is difficult” was the most common response from both men and women. “Workplace environment”, “lack of role models”, “social division of labor between males and females”, and “returning after child/nursing care leave is difficult” responses also ranked high. Selection of these responses was about 10% higher for women.
- Reasons for low proportion of women in leadership positions: “Balancing family and work is difficult” was the most common response from both men and women. “Female ratio is low for the generation currently in leadership position”, “frequent early retirement or leave of absence”, and “lack of consideration for child and family care in performance evaluation” were also frequently cited with selection of these responses being about 10% higher from women than men. “Female supervisors not desired” and “evaluators tend to give priority to males” responses were also about 15% higher from women.
- Future requirements for promoting gender equality: Various awareness reforms were commonly cited by both men and women. “Reform female awareness” slightly decreased from the previous survey. “Reform male awareness” remained high for both men and women with little change from the previous survey. About half of the respondents selected the newly added “overcome (eliminate) insensible biases” selection. “Increase male participation in housework and childcare” received a high percentage of responses from both men and women. “Expand support of child and nursing care”, “improve work environment”, “encourage supervisor understanding”, and “expand types of working arrangements” responses were also frequently selected.

### Chapter 2 Important Issues: Gender Gap in Job Positions

- Similar to past surveys, as the position becomes higher, the percentage of women decreases.
- In all organizations, the job position index rises smoothly according to age, but the promotion of women lags men by about 10 years.
- The gender gap in the job position index showed an improvement trend up to the fourth survey, but has stalled in the fifth.

### Chapter 3 Important Issues: Child and Nursing Cares

- While there is no correlation between annual salary and the number of children for women, the number of children increases in proportion to annual salary for men. There is a strong tendency for women to bear the time burden and men to bear the financial burden for their children.
- Although the percentage of women taking childcare leave has increased since the fourth survey, 24.4% in university / technical college and 19.6% in research institution did not take childcare leave even when their children were of pre-school age. The percentage of men taking childcare leave remains low, but it has doubled since the fourth survey.



- About 50% of men answered that “leave was unnecessary” as the reason why they “did not take leave” or “took leave, but not as requested” for childcare. On the other hand, majority of women did not take childcare leave even though it was necessary. The reasons given by women were workplace environment, decrease in salary, and disadvantage in career advancement.
- More than 50% of women in university / technical college have experience living separately from their spouses / domestic partner. The average years of separation are longer for women, except for those in corporation. Additionally, about 50% of the men did not consider options to prevent separate living, and since the third survey, efforts to consider it have continued to decline.
- Approximately one-fourth of both men and women have a family member that requires nursing care, and in terms of age, the number begins increasing from the 50's, reaching a high between 60 and 65.
- When asked what are required to “maintain balance between work and child/nursing care”, many men answered “financial support for child and nursing care” and “expanded child-care facilities and services”. Depending on the job position, “workplace atmosphere” and “understanding from supervisor” also ranked high. In addition to these responses, “changes in awareness of male and female roles” also received a high number of responses from women.

## **Chapter 4 Important Issues: Limited-Term Employments and Limited-Term Researchers (Postdocs)**

### **4.1 Basic Data for Limited-Term Employment**

- Most men and women in corporation and government are employed without term limits, whereas a high percentage of those in university / technical college (28% of men and 42% of women) and research institution (28% of men and 34% of women) have term limits. The tendency for a higher percentage of women to be in limited-term positions than men has not changed, and 40% of women are in limited-term positions even after the age of 40.

### **4.2 Aging of Limited-Term Employees**

- Although job positions move up higher as years elapse after obtaining a degree, the percentage of women in limited-term positions is slightly higher than that of men for all organizations. In addition, about 70% of both men and women have been in limited-term positions for 10 or more years, and the percentage of those in limited-term positions over a long period has increased significantly since the previous survey.

### **4.3 Employment Conditions of Limited-Term Researchers/NPIs**

- The number of researchers in limited-term positions decreases as age increases, but it does not reach zero. Additionally, length of the terms is getting longer and the aging of the researchers is progressing. There was no major change in the tendency for the percentage of women working as limited-term researchers to increase with age. Women face more difficulties than men in finding stable employment above the researcher / assistant professor level.
- The average working hours for limited-term researchers (NPIs) are 49 hours/week for men and 42 hours/week for women, which are longer than for no-term researchers (NPIs). However, limited-term researchers (NPIs) tend to spend less time on research despite their longer working hours. It is assumed that the amount of work other than research is increasing even for limited-term researchers.
- Sixty-five percent of limited-term researchers earn between 2 million and 5 million yen a year, and even as they get older, salaries have already reached the ceiling for many. Furthermore, there is a gap in the average annual salaries between men and women. While some limited-term male researchers earn more than 5 million yen, female researchers' salaries top out at around 4 million yen. These average salaries are 1 to 2 million yen lower than the typical salaries of corporations, and the gap with the corporations widens even further as age increases.

#### 4.4 Tenure Track

- The percentage of men and women who are employed in tenure track jobs is highest among those aged 30 to 35, and there was a significant increase in this age group when compared to the fourth survey.
- The difference in annual salaries between tenure track and non-tenure track workers increases with age. Women's annual salaries are lower than that of men. After the age of 35, women see almost no increase in salaries, and after the age of 45, salaries begin to decrease.

### Chapter 5 Important Issues: Program and Policy Awareness

#### 5.1 Awareness of Recent Laws and Policies

- The degree of awareness among all respondents was highest with the Fifth Basic Plan for Gender Equality. This was followed in order of awareness by The Act on Promotion of Women's Participation and Advancement in the Workplace, the Leading Initiative for Excellent Young Researchers, and the 6th Science, Technology, and Innovation Basic Plan. The overall awareness has increased compared to the previous survey.

#### 5.2 Support Programs Currently Underway for Female Researchers

- Restart Support after Childbirth/Childcare (RPD system); Childbirth and Childcare Consideration in Scientific Research Grants; Strategic Basic Research Programs and FOREST (Fusion Oriented REsearch for disruptive Science and Technology) for considering childbirth and child-caring had high awareness rates of 70 to 80% in university / technical college and research institutions. About 60% of both PIs and NPIs perceived these programs to be "meaningful". On the other hand, the rating for the Initiative for Realizing Diversity in the Research Environment (formerly Supporting Activities for Female Researchers) was low with less than 20% of respondents perceiving the program to be "meaningful".

#### 5.3 Numerical Targets for Hiring Female Researchers

- The 6th Basic Plan for Science, Technology, and Innovation of 2022 (Cabinet approval on March 26, 2021) specifies numerical targets for female researchers. Specifically, 1) the percentage of newly hired female researchers at universities shall be 20% for science, 15% for engineering, 30% for agriculture, 30% for medicine, dentistry and pharmacy, 45% for cultural science, and 30% for social sciences by fiscal 2025; 2) the percentage of female faculties (lecturers and above) in university science and engineering shall be 12% in science and 9% in engineering by fiscal 2025; 3) the percentage of female professors (president, vice president, professors) shall be increased to 20% as soon as possible and to 23% by fiscal 2025. Among all the respondents, only 4% answered that they were "well aware" of the targets, and 60% of men and 51% of women answered that they "did not know".
- By gender, a higher percentage of women responded that numerical targets for hiring female researchers were "meaningful", while a higher percentage of men responded that numerical targets "will have adverse effect". The percentage of male respondents who answered "not meaningful" or "will have adverse effect" remains high.

#### 5.4 Perception of Numerical Targets from Respondents with High Awareness

- Comparing the male and female respondents who answered that they are "well aware" of numerical targets, male respondents that answered positively ("meaningful" and "should be expanded and promoted") was only 40.0%. However, the figure for women was high at 72.0%. Although the number of positive responses from men has steadily increased, negative responses have also risen to 38.8%. Among the men who are familiar with numerical targets, 28.2% answered that the targets "will have adverse effect", which is higher than the 6.6% of women that answered the same.

### **5.5 Female Hiring Targets of Affiliated Organizations**

- Regarding the necessity of numerical targets, the percentage of women who answered that the targets are necessary far exceeded that of men for all job positions in university / technical college. As the level of the job position moves downward, the gender gap becomes greater. In research institution, the gender gap somewhat narrows, but women's response that numerical targets are necessary still outnumbered the response from men for all job positions. On the other hand, in corporation, both men and women answered that there is no need for numerical targets.

## Appendix 1 Contents of Fifth Large-Scale Survey Questionnaire

### Fifth Large-Scale Survey of Actual Conditions of Gender Equality in Scientific and Technological Professions

Since EPMEWSE's establishment in 2002 (transitioned to a general incorporated association in August 7, 2020) with the cooperation of natural science-related academic societies, the number of member societies, including observers, has grown to 114. In order to understand the current situation surrounding researchers and engineers of natural science with regards to gender equality, the committee has previously conducted four large-scale surveys (2003, 2007, 2012, and 2016) with each survey receiving about 20,000 responses. The survey results have been cited frequently as valuable statistical evidence when discussing the various problems faced by female researchers and engineers.

Furthermore, proposals based on the survey results have been seen in government policymaking and subsequently various other measures addressing gender equality have gained traction.

This fifth large-scale survey targets over 500,000 society members. The continuity of the survey is extremely important in clarifying the current reality as well as changes in the awareness of gender equality issues, verifying the effectiveness of government programs, and identifying new issues. In the midst of the COVID-19 crisis, this survey's focus was placed on "work styles".

We would greatly appreciate the active cooperation of as many scientists and engineers as possible in completing the questionnaire.

For those that have taken part in the previous surveys, we would be thankful if you can again spare a moment of your time to participate.

Thank you.

Maki Iwakuma, 19th EPMEWSE Chair

Yoshiko Ishida, Large-Scale Survey Pre-Analysis WG Chair

The Japan Inter-Society Liaison Association Committee for Promoting Equal Participation of Men and Women in Science and Engineering (EPMEWSE)

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The questionnaire includes 44 questions and will require 20 to 30 minutes to complete. If you wish to pause the questionnaire, click the [Save] button and make note of the displayed URL. Go to the noted URL when you are ready to resume the questionnaire. Questions other than those labeled as "Required" can be skipped if you find them difficult to answer, but it is our hope that you would answer all questions.

Only respond to one questionnaire per person even if you are associated with several academic societies, and indicate each of the societies you are affiliated with in Q5.

Upon answering the questionnaire, please acknowledge the following.

All responses collected are treated statistically and anonymously without identifying the respondents. Protection measures will be strictly exercised in handling the database prepared from the questionnaire responses to prevent information leakage. The data will only be used for the promotion of gender equality activities according to EPMEWSE established guidelines

([https://djrenrakukai.org/doc\\_pdf/enq/database\\_guidelines.pdf](https://djrenrakukai.org/doc_pdf/enq/database_guidelines.pdf)). The copyright of the database along with analysis and tabulated results will belong to EPMEWSE. Additionally, if under prescribed procedures the committee decides it is appropriate, only the processed database (data subjected to processing for making it difficult to identify specific individuals, corporations or other organizations) may be allowed for use other than by the committee.

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Q1. Age as of April 1, 2021. **(Required)**

☐ Under 25 ☐ 25 - Under 30 ☐ 30 - Under 35 ☐ 35 - Under 40 ☐ 40 - Under 45 ☐ 45 - Under 50 ☐ 50 - Under 55 ☐ 55 - Under 60 ☐ 60 - Under 65 ☐ 65 - Under 70 ☐ 70 or Over

Q2. Gender. **(Required)**

☐ Male ☐ Female ☐ Prefer not to answer

Q3. What is your highest academic degree? **(Required)**

☐ Associate Degree ☐ Bachelor's ☐ Master's ☐ Doctor's ☐ Others

Q4. Tell us about your doctoral degree. **(Required)**

Q4.1 Do you hold a doctoral degree?

☐ No **(Go to Q5)** ☐ Yes (Course) ☐ Yes (Non-course) ☐ Yes (Both "Course" and "Non-course" )

(Note: "Course" doctorates are conferred upon those who complete graduate school courses, whereas "non-course" doctorates do not require enrollment in the graduate school.)

Q4.2 How long have you had the doctoral degree?

☐ 1 - 5 years ☐ 6 - 10 years ☐ 11 - 15 years ☐ 16 - 20 years  
☐ 21 years or more

Q5. Tell us about your certifications. **(Required)**

Q5.1 Do you hold any certifications? \*Other than a doctoral degree.

☐ No ☐ Yes Certifications you hold (list up to three) ( ) ( ) ( )

Q5.2 What certification will be most beneficial to advancing your career? \*Other than a doctoral degree.

☐ None **(Go to Q6)** ☐ ( ) certification

Q5.3 What is your plan for that certification?

☐ Already hold certification ☐ Preparing for certification ☐ No plans

Q6. To which academic societies do you belong? **(Check all that apply) (Required)**

☐ Unassociated

☐ Japanese Society of Breeding

☐ The Genetics Society of Japan

☐ Japanese Society for Biological Sciences in Space

☐ The Japanese Society for Hygiene

☐ The Japan Society of Medical Entomology and Zoology

☐ The Institute of Image Information and Television Engineers

☐ The Japanese Liquid Crystal Society

- ☐The Japanese Society for Horticultural Science
- ☐The Japan Society for Industrial and Applied Mathematics
- ☐The Japan Society of Applied Physics
- ☐The Japanese Association of Anatomists
- ☐The Oceanographic Society of Japan
- ☐The Chemical Society of Japan
- ☐Japan Society for Science Education
- ☐The Society of Chemical Engineers, Japan
- ☐The Japan Scientists' Association
- ☐Japan Association for Fire Science and Engineering
- ☐Particle Accelerator Society of Japan
- ☐The Japan Society of Mechanical Engineers
- ☐The Institution of Professional Engineers, Japan
- ☐The Japanese Society of Fish Pathology
- ☐The Ichthyological Society of Japan
- ☐The Japan Institute of Metals and Materials
- ☐The Society of Instrument and Control Engineers
- ☐The Japan Institute of Light Metals
- ☐The Crystallographic Society of Japan
- ☐The Japanese Society of Health and Human Ecology
- ☐Atomic Energy Society of Japan
- ☐Architectural Institute of Japan
- ☐The Japan Society for Aeronautical and Space Sciences
- ☐The Japanese Society of Hypertension
- ☐The Society of Polymer Science, Japan
- ☐Japan Association for Global Health
- ☐Japan Society of Computer Aided Surgery
- ☐Japan Society of Coordination Chemistry
- ☐The Japanese Society of Sericultural Science
- ☐Japanese Association for Oral Biology
- ☐The Magnetics Society of Japan
- ☐Japan Society for Lipid Nutrition
- ☐The Mass Spectrometry Society of Japan
- ☐Society of Automotive Engineers of Japan
- ☐The Japanese Geotechnical Society
- ☐The Japanese Society of Veterinary Science
- ☐The Society for the Study of Species Biology
- ☐The Japanese Society for Food Science and Technology
- ☐The Botanical Society of Japan
- ☐The Japanese Society for Chemical Regulation of Plants
- ☐The Japanese Society of Plant Physiologists

- ☐ Japanese Society for Plant Biotechnology  
(Name changed from Japanese Society for Plant Cell and Molecular Biology as of July 2020)
- ☐ The Phytopathological Society of Japan
- ☐ The Society of Japanese Women Scientists
- ☐ Japanese Women Engineers Forum
- ☐ Information Processing Society of Japan
- ☐ Society of Evolutionary Studies, Japan
- ☐ The Japan Neuroscience Society
- ☐ The Japanese Society for Neurochemistry
- ☐ Japanese Society of Nephrology
- ☐ The Japanese Forest Society
- ☐ The Japanese Society of Fisheries Science
- ☐ Japanese Society for Aquaculture Research
- ☐ The Mathematical Society of Japan
- ☐ Japan Society for Symbolic and Algebraic Computation
- ☐ The Japanese Biochemical Society
- ☐ The Ecological Society of Japan
- ☐ The Society of Eco-Engineering
- ☐ The Biophysical Society of Japan
- ☐ The Japan Society for Precision Engineering
- ☐ The Physiological Society of Japan
- ☐ The Japan Petroleum Institute
- ☐ The Ceramic Society of Japan
- ☐ Japan Society Histochemistry and Cytochemistry
- ☐ Japanese Society of Physical Fitness and Sports Medicine
- ☐ Protein Science Society of Japan
- ☐ Society of Geomagnetism and Earth, Planetary and Space Sciences
- ☐ Japan Geoscience Union
- ☐ Japanese Society of Animal Science
- ☐ Japanese Geomorphological Union
- ☐ The Geological Society of Japan
- ☐ The Japanese Society for Neutron Science
- ☐ Japanese Society of Gout and Uric & Nucleic Acids
- ☐ Japanese Society for DNA Polymorphism Research
- ☐ The Database Society of Japan
- ☐ The Iron and Steel Institute of Japan
- ☐ The Electrochemical Society of Japan
- ☐ The Institute of Electronics, Information and Communication Engineers
- ☐ The Astronomical Society of Japan
- ☐ The Japanese Society of Carbohydrate Research
- ☐ The Zoological Society of Japan

- ☐ Japanese Society of Soil Science and Plant Nutrition
- ☐ Japan Society of Civil Engineers
- ☐ The Ornithological Society of Japan
- ☐ The Japan Endocrine Society
- ☐ Japan Society of Endocrine Disruptors Research
- ☐ Japan Society of Civil Engineers
- ☐ The Japan Society of Tropical Ecology
- ☐ Combustion Society of Japan
- ☐ Japan Society for Bioscience, Biotechnology, and Agrochemistry
- ☐ Bioimaging Society
- ☐ Japanese Society for Bioinformatics
- ☐ Japanese Society of Developmental Biologists
- ☐ The Society for Reproduction and Development
- ☐ The Japan Society for Comparative Endocrinology
- ☐ The Japan Society of Vacuum and Surface Science
- ☐ The Physical Society of Japan
- ☐ The Japan Society of Plasma Science and Nuclear Fusion Research
- ☐ The Molecular Biology Society of Japan
- ☐ The Japan Society for Analytical Chemistry
- ☐ The Japanese Society for Synchrotron Radiation Research
- ☐ The Japanese Radiation Research Society
- ☐ The Japan Wood Research Society
- ☐ The Pharmaceutical Society of Japan
- ☐ Association of Wildlife and Human Society
- ☐ The Japan Society of Fluid Mechanics
- ☐ Primate Society of Japan
- ☐ Others ( )

Q7. What is your current employment status? **(Required)** \* If you are a JSPS Research Fellow, select “Employed” .

- ☐ Employed ☐ Unemployed (between jobs) ☐ Unemployed (retired) ☐ Entrepreneur, proprietor, etc.
- ☐ Student **(If student, answer Q7.1 and go to Q8. Student)**

Q7.1 What is your area of specialization? Choose the closest one from the categories below (If you are unemployed, answer Q7.1 thru Q18 about your most recent occupation). **(Required)**

- ☐ Mathematics ☐ Electronics and Information ☐ Physics ☐ Chemical and Material Engineering ☐ Life science and Biology ☐ Civil Engineering ☐ Mechanical Engineering ☐ Earth and Planetary Science ☐ Agriculture ☐ Medicine, Dentistry and Pharmacology ☐ Health and Nursing ☐ Others

Q7.2 What type of organization are you affiliated with? (If affiliated with multiple organizations, check the primary one) **(Required)**

- ☐ Corporation **(Go to Q8. Corporation)** ☐ National university **(Go to Q8. University/Technical College)**
- ☐ Public university (municipal) **(Go to Q8. University/Technical College)** ☐ Private university **(Go to Q8. University/Technical College)**



- ☐ Technical College ([Go to Q8. University/Technical College](#)) ☐ Other educational institutions ([Go to Q8. University/Technical College](#))
- ☐ Government ([Go to Q8. Government](#))
- ☐ Public research institution (including national research and development agencies) ([Go to Q8. Research Institution](#))
- ☐ Other research institutions ([Go to Q8. Research Institution](#)) ☐ Others ([Go to Q9](#))

Q8. What is your current title (position)? (**Check all that apply**) (**Required**) If the name differs, check the closest title or position.

Corporation:

- ☐ General staff ☐ Group leader or equivalent ☐ Manager or equivalent ☐ Senior manager or equivalent ☐ General manager or equivalent ☐ Executive director and above or equivalent ☐ Others

University/Technical College:

- ☐ Researcher ☐ Research technician ☐ Research associate ☐ Assistant professor ☐ Lecturer ☐ Associate professor ☐ Professor ☐ Executive (Dean and above or equivalent) ☐ Others

Government:

- ☐ Chief ☐ (Deputy) Unit Chief ☐ (Deputy) Assistant Section Manager ☐ Director ☐ Deputy Director General ☐ Director General or higher ☐ Others

Research Institution:

- ☐ Researcher ☐ Research technician ☐ Senior researcher ☐ Group lab chief ☐ Division head ☐ Director ☐ Others

Student:

- ☐ Associate degree student ☐ Graduate student (non-degree) ☐ Undergraduate student ☐ Graduate student (master's) ☐ Graduate student (doctoral) ☐ Research student ☐ Others

[\(If you are a student, go to Q19 regardless of choice\)](#)

Q8.1 Indicate the number of staff you have. If at a university, include the number of people you conduct research with or that you supervise (excluding undergraduate students). (**Required**)

[   ]

Q8.2 What is the amount of research/development expenses (yen) allocated to you or earned by you in FY2020? (**Required**)

- ☐ Not applicable ☐ 0 ☐ Less than 500 thousand ☐ 500 thousand - Less than 1 million ☐ 1 million - Less than 5 million ☐ 5 million - Less than 20 million ☐ 20 million - Less than 50 million ☐ 50 million - Less than 100 million ☐ 100 million or more

Q9. Choose the category that best describes your current occupation. (**Required**)

- ☐ Research/Education ☐ Technical Specialist (including Technology Development) ☐ Sales ☐ Others

Q10. What is your approximate annual salary (yen) including tax?

- ☐ 0 ☐ Less than 1 million ☐ 1 million - Less than 2 million ☐ 2 million - Less than 3 million ☐ 3 million - Less than 4 million ☐ 4 million - Less than 5 million ☐ 5 million - Less than 6 million ☐ 6 million - Less than 7 million ☐ 7 million - Less than 8 million ☐ 8 million - Less than 9 million ☐ 9 million - Less than 10 million ☐ 10 million - Less than 12 million ☐ 12 million or more

Q11. Tell us about your current employment.

Q11.1 How did you find your current employment?

- ☐ Open recruitment ☐ Referred to by academic advisor ☐ Referred to by upperclassman ☐ Referred to by friend/acquaintance ☐ Found on my own  
☐ Others (Specify) ( )

Q11.2 What is your current employment status?

- ☐ Limited-term (Including appointed, part-time, limited-term researcher, contract employee, temporary staff) ([Go to Q12](#))  
☐ No-term (Including regular employment, self-employment) ([Go to Q13](#))

Q12. For those who are currently on limited-term employment, answer the following.

Q12.1 How long is the term? [ ] years

[ ] years ([Enter integer](#))

Q12.2 Is it a tenure track employment? (After completing the term, you are allowed undergo review and switch to a no-term employment.)

- ☐ Yes ☐ No ☐ Unsure

Q12.3 Can employment be renewed?

- ☐ Yes ☐ No ☐ Only a limited number of times ☐ Unsure

Q12.4 How many years have you worked as a limited-term employee (exclude leave of absence and turnover periods)?

[ ] years ([Enter integer](#))

Q12.5 How many times did your affiliation change during your limited-term employment (exclude reorganization)?

[ ] number of times ([Enter integer](#))

Q12.6 Are you enrolled in your organization's insurance plans? ([Check all that apply](#))

- ☐ No ☐ Health plan (or short-term mutual aid) ☐ Pension plan (or long-term mutual aid)  
☐ Employment insurance ☐ Others ☐ Unsure

Q12.7 Are you allowed to take childcare leave?

- ☐ Yes ☐ No (Reason: ) ☐ Unsure

Q12.8 After maternity/childcare leave, is your employment term extended according to the length of leave?

- ☐ Yes ☐ No ☐ Unsure

Q12.9 Would you like to be employed in a no-term job?

- ☐ Yes ☐ No ☐ Unsure ([Go to Q14 regardless of choice](#))

Q13. For those who are currently on "no-term employment", answer the following.

Q13.1 How long have you been with your current job?

[ ] years ([Enter integer](#))

Q13.2 How many total years did you spend as a limited-term employee before your current job (exclude leave of absence and turnover periods)?

[ ] years ([Enter integer](#))

Q13.3 How many times did your affiliation change while you were on limited-term employment (exclude reorganization)?

[ ] number of times ([Enter integer](#))

Q14. Have you ever changed jobs, relocated or left/lost a job, regardless of the term of employment or contract period? **(Check all that apply)**

- ☐ Changed workplace for new occupation **(Go to Q15)**
- ☐ Changed workplace without changing occupation **(Go to Q15)**
- ☐ Changed occupation without changing workplace **(Go to Q15)**
- ☐ Left/lost job **(Go to Q15)**
- ☐ Never **(Go to Q16)**

Q15. For those who have changed jobs, relocated or left/lost a job, answer the following.

Q15.1 How many times have it occurred?

[ ] times **(Enter integer)**

Q15.2 What was (were) the reason(s)? **(Check all that apply)**

- ☐ Further my career ☐ Change in job content (or research topic) ☐ Better income ☐ Avoid relocation required by employer ☐ Job relocation of family member ☐ Workplace location ☐ End of contract ☐ Marriage ☐ Caring for children ☐ Caring for sick family member ☐ Concern for future ☐ Gender discrimination ☐ Difficulty with personal relations ☐ Unhappy with previous workplace
- ☐ Laid-off or dismissed ☐ Bankruptcy ☐ Others ( )

Q16. Tell us about your working hours.

Q16.1 Tell us about the working hours system in your employment contract. \*See below for details on each system.

- ☐ Not applicable ☐ Fixed working hours system ☐ Variable working hours system
- ☐ Flextime system ☐ Off-site discretionary labor system
- ☐ Discretionary labor system for professional work
- ☐ Discretionary labor system for management-related work ☐ Unsure

Q16.2 What is your contracted working hours per week?

[ ] hours **(Enter integer)** ☐ Unsure

Q16.3 Tell us about your current work style.

- ☐ Working from home or remote location is not allowed **(Answer Q16.4 to Q16.7)**
- ☐ Working from home or remote location is allowed **(Go to Q17)**
- ☐ Working from home or remote location is allowed with conditions **(Go to Q17)**

Q16.4 How many hours per week do you work at your workplace?

[ ] hours **(Enter integer)**

Q16.5 How many of the above hours are spent on R&D?

[ ] hours **(Enter integer)** ☐ Not applicable

Q16.6 How many hours per week do you work outside the workplace? \*Outside: Home or working space (excluding business trip locations)

[ ] hours **(Enter integer)**

Q16.7 How many of the above hours are spent on R&D?

[ ] hours **(Enter integer)** ☐ Not applicable **(Go to Q18)**

Q17. For those who are allowed to work from home or remote location, answer the following.

Q17.1 How many hours per week do you work at your workplace? If you only work from home or remote location, enter "0".

[ ] hours **(Enter integer)**

Q17.2 How many of the above hours are spent on R&D?

[ ] hours **(Enter integer)** ☐ Not applicable

Q17.3 How many hours per week do you work at home or remote location?

[ ] hours **(Enter integer)**

Q17.4 How many of the above hours are spent on R&D?

[ ] hours **(Enter integer)** ☐ Not applicable

Q18. How much time (average per day) do you spend on housework, childcare, nursing care, etc.

☐ 0 hours ☐ Less than 1 hour ☐ 1 - Less than 2 hours ☐ 2 - Less than 3 hours ☐ 3 - Less than 4 hours  
☐ 4 - Less than 5 hours ☐ 5 hours or more

Q19. Tell us about your future career path (If you are unemployed, respond as you would have in your most recent occupation). In the future, what type of position do you wish to be in (If you wish to continue in your present position, respond as such)? **(Check all that apply)**

☐ Work in an academic or research institution lab ☐ Leader of an academic or research institution lab  
☐ Work in academic or research institution administration ☐ Academic or research institution work other than the above ☐ R&D work in private sector ☐ Leader of R&D in private sector ☐ Work as a technician in the private sector ☐ Work in business management ☐ Other jobs in private sector ☐ Work in education ☐ Work in local government  
☐ Be an entrepreneur ☐ Work as a science and technology journalist ☐ Unsure ☐ Others ( )

Q20. What influenced you to choose the field of science and technology during your elementary, junior high, and high school years? **(Check all that apply)**

☐ Interests since childhood ☐ Proficient/Non-Proficient in subjects ☐ Course content at school ☐ Teachers at school (including club activities)  
☐ Teachers outside school (cram school, etc.) ☐ Family, relatives ☐ Friends and acquaintances ☐ School initiatives ☐ Extracurricular activities at school  
☐ Experiment classes and events held outside of school ☐ Books and TV programs ☐ Internet/SNS  
☐ Others ( )

Q21. Tell us about your overseas (other than your home country) research activities and work.

Q21.1 What do you think is the impact of overseas research activities and work on career development?

☐ Very positive ☐ Somewhat positive ☐ Both positive and negative ☐ Negative ☐ Unsure

Q21.2 Do you have overseas research activity and work experience lasting more than 6 months?

☐ Yes (with post in home country) ☐ Yes (without post in home country) ☐ None

Q22. Tell us about the limited-term researcher system and career development at universities / research institutes.

Q22.1 Compared to regular teachers and researchers, what do you think are the benefits of a limited-term researcher? **(Check all that apply)**

- ☐ Can concentrate on research ☐ Opportunities to undertake new research ☐ Can take part in a large-scale project ☐ Job changes and re-employment is easier ☐ Easier to balance work and personal life ☐ No advantages ☐ Unsure ☐ Others ( )

Q22.2 What do you think are the problems with a limited-term researcher? **(Check all that apply)**

- ☐ Outlook is difficult since term is affected by research funding  
☐ Fixed term prevents work on large or consistent topic  
☐ Few positions available after the term ends ☐ Age limit ☐ Salary is low  
☐ Significant salary gap depending on employment status ☐ Suffer loss of social security ☐ Difficult to receive childcare leave  
☐ Forced to transfer away from family ☐ Harassment problems ☐ No problems ☐ Unsure ☐ Others ( )

Q22.3 What do you think are the necessary approaches for ensuring career path for a limited-term researcher? **(Check all that apply)**

- ☐ Expand full-time positions allowing independent research in academic and research institutions  
☐ Establish full-time positions to allow continuation of research without going independent ☐ Eliminate age limit for limited-term researcher ☐ Eliminate age limit when hiring for academic and research institutions ☐ Provide opportunities to interact with other industries ☐ Expand professions involved with science and technology administration ☐ Employ mid-high teachers using special licensing ☐ Create and expand research administrator positions ☐ Establish a system to support entrepreneurship ☐ Education on science and society in graduate school ☐ Establish and expand career centers in academic and research institutions ☐ Support activities necessary for career development (participation in academic societies and training unrelated to the assigned project) ☐ Unsure ☐ Others ( )

(You are now halfway through the questionnaire. Please continue and answer the remaining questions.)

Q23. Do you have a spouse or a domestic partner?

- ☐ Yes **(Go to Q23.1)** ☐ No **(Go to Q26)**

Q23.1 What is your spouse's or domestic partner's occupation?

- ☐ Full-time homemaker **(Go to Q23.3)** ☐ Company employee (research/technical) ☐ Company employee (non-research/non-technical)  
☐ Academic or research institution employee (research/technical) ☐ Academic or research institution employee (non-research/non-technical) ☐ Government employee ☐ Self-employed  
☐ Student **(Go to Q23.3)** ☐ Others

Q23.2 Is your spouse's or domestic partner's occupation limited-term?

- ☐ Limited-term (Including appointed, part-time, limited-term researcher, contract employee, temporary staff)  
☐ No-term (Including regular employment, self-employment)

Q23.3 Do you or your spouse / domestic partner have experience living separately from the family due to work or education?

- ☐ Yes **(Go to Q24)** ☐ No **(Go to Q25)**

Q24. For those who have experience living separately, answer the following.

Q24.1 How many total years did you spend living separately?

[ ] years **(Enter integer)**

Q24.2 When faced with the circumstance of living separately, did you or your spouse / domestic partner consider relocating or switching jobs to avoid it?

☐ Consideration was made, and separation was resolved ☐ Consideration was made, but separation was not resolved ☐ Did not consider

Q25. Tell us about programs that provide aid when your spouse or domestic partner faces relocation.

Q25.1 Does your employer provide Dual Career Support Program? If yes, check those that closely match the available program(s). **(Check all that apply)**

☐ Relocation to commutable area ☐ Temporary leave ☐ No relocation for several years after marriage ☐ Others ( ) ☐ No support program ☐ Unsure

Q25.2 If your employer, the nation or a public agency provides Dual Career Support Program, would you use the program?

☐ Yes

☐ No (Reason(s) **(Check all that apply)**: ☐ Cannot relocate due to work matters ☐ Cannot relocate due to family matters ☐ Stability is highly questionable even after relocation ☐ Others( ) ☐ Unsure

Q26. Do you have children?

☐ Yes ☐ No **(Go to Q33)**

Q26.1 How many children do you have?

[ ] **(Enter integer)**

Q26.2 What are their age groups? **(Check all that apply)**

☐ Pre-school ☐ Elementary school ☐ Middle school ☐ High school ☐ College ☐ Adult ☐ Others ( )

Q26.3 Who was the primary caregiver (including secondary childcare) during working hours for your children before they entered elementary school? **(Check all that apply)**

☐ Self ☐ Spouse or domestic partner ☐ Family member living together ☐ Family member not living together/friend ☐ Day-care center ☐ Babysitter ☐ Others ( )

Q26.4 When your children were in elementary school, who was the primary caregiver (including secondary childcare) after school hours? **(Check all that apply)**

☐ Not applicable ☐ Self ☐ Spouse or domestic partner ☐ Family member living together ☐ Family member not living together/friend ☐ After-school day-care center ☐ Sitter ☐ Cram school/enrichment lessons ☐ Left home alone ☐ Others ( )

Q26.5 Who is the main caregiver when going on business trips or attending academic society functions? **(Check all that apply)**

☐ Self ☐ Spouse or domestic partner ☐ Family member living together ☐ Family member not living together/friend ☐ Babysitter you hired ☐ Childcare service provided by academic society ☐ Others ( )

Q27. Tell us about your childcare leave.

☐ Took leave as requested **(Go to Q28)** ☐ Took leave, but not as requested **(Go to Q28 then Q29)**

☐ Did not take leave **(Go to Q29)** ☐ Others ( ) **(Go to Q30)**

Q28. For those who have taken childcare leave, answer the following.

Q28.1 How long was the leave (average per child excluding maternity leave)?

About [ ] week(s) or about [ ] month(s) (Fill in one or the other) **(Enter integer)**

Q28.2 What was your working condition after returning from childcare leave?

- ☐Returned to same duties ☐Requested change of duties ☐Requested change of department ☐Assigned new duties ☐Assigned to new department ☐Promotion/advancement was delayed ☐Lost job ☐Retired
- ☐Others **(If you took leave, but not as requested, go to Q29. If you took leave as requested, go to Q30)**

Q29. If your childcare leave was not as requested or you did not take childcare leave, what was the reason? **(Check all that apply)**

- ☐Leave was unnecessary ☐Did not wish to take leave ☐Home environment ☐Workplace environment ☐No provision for leave existed
- ☐Provision existed, but term of office was inadequate to qualify ☐Could not enter daycare as desired ☐Others ( )

Q30. Tell us about your spouse's or domestic partner's childcare leave.

- ☐Took leave as requested **(Go to Q31)** ☐Took leave, but not as requested **(Go to Q31 then Q32)**
- ☐Did not take leave **(Go to Q32)** ☐Others ( ) **(Go to Q33)**

Q31. For those whose spouse or domestic partner have taken childcare leave, answer the following.  
How long was the leave (average per child excluding maternity leave)?

About [ ] week(s) or about [ ] month(s) (Fill in one or the other) **(If leave was taken as requested, go to Q33. If leave was not as requested, go to Q32)**

Q32. If childcare leave was not as requested or childcare leave was not taken, what was the reason? **(Check all that apply)**

- ☐Leave was unnecessary ☐Did not wish to take leave ☐Home environment ☐Workplace environment ☐No provision for leave existed
- ☐Provision existed, but term of office was inadequate to qualify ☐Could not enter daycare as desired ☐Others ( )

Q33. What do you think is the ideal number of children to have?

Q33.1 Ideal number: [ ] **(Enter integer)**

Q33.2 If the number of children you have (or plan to have) is less than ideal, what is the reason? **(Check all that apply)**

- ☐Not applicable (not less than ideal) ☐Financial ☐Physical/Health ☐Job stability
- ☐No chance to meet potential partner ☐Did not meet the right partner
- ☐Spouse or domestic partner does not want children ☐Spouse or domestic partner did not want children
- ☐Balance between fertility treatment and work ☐Balance between career and childcare ☐No provision for childcare leave
- ☐Provision for childcare leave did not exist ☐Term of office is inadequate to qualify for childcare leave
- ☐Term of office was inadequate to qualify for childcare leave ☐Spouse's or domestic partner's cooperation in child caring



☐ Understanding of workplace ☐ Social environment for children to grow ☐ Others ( )

Q34. Tell us about nursing care.

Q34.1 Do you currently have or in the past had a family member that require(d) nursing care?

☐ Yes ☐ No

Q34.2 Are you aware of nursing-care leave program?

☐ Yes (**Go to Q34.3**) ☐ No (**Go to Q35**) ☐ Unsure (**Go to Q35**)

Q34.3 If you answered "yes" above, does your or your spouse's / domestic partner's workplace have a nursing-care leave program?

☐ Yes ☐ No ☐ Unsure

Q35. What do you think are required to maintain balance between work and child/nursing care? (**Check all that apply**)

**【Awareness Reform】**

☐ Changes in "work as center" concept ☐ Changes in awareness of male and female roles

☐ Workplace atmosphere ☐ Understanding from supervisor

☐ Relationship with child and nursing care service providers ☐ Others ( )

**【Program Reform】**

☐ Shorter working hours ☐ Work support ☐ Variety of provisions for leave of absence ☐ Alternate staffing while on leave

☐ Provision for working at home while on leave ☐ Work sharing ☐ Flexible working hours

☐ Improve employment system ☐ Provision for working from home ☐ Various ways of working and career paths

☐ Others ( )

**【Financial Support】**

☐ Financial support for child and nursing care ☐ Public subsidies for employer of person on leave

☐ Financial support for long distance care (such as care allowance, transportation discount, etc.)

☐ Others ( )

**【Facility and Service Improvement】**

☐ Expanded child-care facilities and services ☐ Sick child care ☐ Expanded after-school care for children

☐ Expanded nursing-care facilities and services (including home) ☐ Expanded municipal childrearing support ☐ Unsure

☐ Others ( )

Q36. What sort of environment and opportunities are necessary for furthering R&D? (**Check all that apply**)

☐ Not applicable ☐ R&D time ☐ R&D assistant ☐ R&D funds (including maintenance) ☐ Joint researcher ☐ R&D freedom ☐ Streamline or separate administrative and odd jobs ☐ Opportunity to present results ☐ Understanding from supervisor ☐ Understanding from management ☐ Environment for long-term research ☐ Common purpose/communication within the research group ☐ Appropriate evaluation of the performance and capabilities ☐ Guidance from supervisors ☐ Opportunity to educate students ☐ Expectations from the surrounding ☐ Others ( )



Q37. Tell us what you think about the ratio of women in the workplace.

Q37.1 Why do you think there are fewer women than men in science and technology fields? **(Check all that apply)**

- ☐ Educational environment
- ☐ Home environment
- ☐ Workplace environment
- ☐ Social bias
- ☐ Female with masculine quality is preferred
- ☐ Social division of labor between males and females
- ☐ Lack of role models
- ☐ Less hiring compared to males
- ☐ Lack of consideration for child and family care in performance evaluation
- ☐ Male-oriented mindset
- ☐ Difference in male and female abilities
- ☐ Difference in male and female qualifications
- ☐ Ratio of males is higher
- ☐ Research/technical work cannot be imagined
- ☐ Image of research/technical workplace is not good
- ☐ Outlook is uncertain
- ☐ Salary is low compared to males
- ☐ Working hour is long
- ☐ Achieving managerial position is difficult
- ☐ Cross appointment system
- ☐ Balancing family and work is difficult
- ☐ Returning after child/nursing care leave is difficult
- ☐ Lack of information while a student
- ☐ Others ( )

Q37.2 What do you think is (are) the reason(s) for the low proportion of women in leadership positions in science and technology fields? **(Check all that apply)**

- ☐ Balancing family and work is difficult
- ☐ Frequent early retirement or leave of absence
- ☐ Females do not seek promotion as much as males
- ☐ Lack of role models
- ☐ Lack of consideration for child and family care in performance evaluation
- ☐ Age restriction on research funding
- ☐ Evaluators tend to give priority to males
- ☐ Consciousness of being at the same level / peer pressure
- ☐ Difference in male and female abilities/qualifications
- ☐ Insufficient female performance
- ☐ Female supervisors not desired
- ☐ Female ratio is low for the generation currently in leadership position
- ☐ Others ( )

Q37.3 Which of the following do you think is (are) necessary in improving the proportion of women in science and technology fields? **(Check all that apply)**

- ☐ Aggressive hiring
- ☐ Promotion to managerial positions
- ☐ Facilitate promotions/salary increases
- ☐ Increase R&D funds
- ☐ Employ research assistants
- ☐ Consideration of life events in performance evaluations
- ☐ Relaxation of age restrictions for research funding applications
- ☐ Reduce non-research/non-primary workload
- ☐ Provide opportunities for domestic and overseas studies
- ☐ Increase opportunities to participate in conferences as speakers, chairs or organizers
- ☐ Increase opportunities for receiving awards
- ☐ Provide leadership training
- ☐ Cross appointment system
- ☐ "Gender equality measures"
- ☐ Others ( )

Q38. Are you familiar with any of the following laws or basic plans and related programs? **(Check all that apply)**

- ☐ The Act on Promotion of Women's Participation and Advancement in the Workplace (Effective April 1, 2016)
- ☐ 6th Science, Technology, and Innovation Basic Plan (Cabinet Approval March 26, 2021)
- ☐ Fifth Basic Plan for Gender Equality (Cabinet Approval December 25, 2020)
- ☐ Leading Initiative for Excellent Young Researchers (Formulated March 2016)
- ☐ Comprehensive Package for Strengthening Research Capabilities and Supporting Young Researchers (Formulated January 2020)
- ☐ Do not know

Q39. Tell us what you think about the national policies and support programs currently underway for female researchers. Check the applicable boxes.

	Meaningful	Uncertain	Not meaningful	Unaware
(1) Restart Support after Childbirth/Childcare (Japan Society for the Promotion of Science RPD Program) (2006 - )	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(2) JST "Science Course Selection Support for Middle and High School Females" (2006 - )	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(3) JST "Initiative for Realizing Diversity in the Research Environment (Formerly Supporting Activities for Female Researchers)" (2011 - )	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(4) Childbirth and Childcare Consideration in Scientific Research Grants (Applications accepted several times per year/relaxation of age limit)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(5) JST "Strategic Basic Research Programs (CREST, PRESTO, ACT-X, etc.)" for considering childbirth and child-caring (Research interruption / extension allowed, comeback support, etc.)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(6) JST "FOREST (Fusion Oriented REsearch for disruptive Science and Technology)" for considering childbirth and child-caring (5-year extension, etc.)	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
(7) Gender Equality Bureau of the Cabinet Office "Challenge Campaign – Science and Engineering Field Selection for Female Students"	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Q40. Although the Fourth Basic Plan for Gender Equality and the 5th Science and Technology Basic Plan set a target for the hiring of new female researchers, it was not achieved and was postponed. Do you think it is necessary to accelerate efforts to improve this situation?

- ☐ Accelerate existing initiatives (introduce penalties)  
☐ Introduce new initiatives (add new initiatives such as a quota system)  
☐ Improve existing initiatives over time ☐ No need to improve ☐ Do not know ☐ Others ( )

Q41. In the Fifth Basic Plan for Gender Equality (approved by the Cabinet on December 25, 2020) and the 6th Basic Plan for Science, Technology, and Innovation (approved by the Cabinet on March 26, 2021), a target has again been specified for the hiring new female researchers (Note 1). In addition, new targets (Notes 2 and 3) for the ratio of female faculty members were also specified.

(Note 1) By fiscal 2025, the proportion of newly hired female researchers at universities shall be 20% for science, 15% for engineering, 30% for agriculture, 30% for medicine, dentistry and pharmacy, 45% for cultural science, and 30% for social sciences.

(Note 2) By 2025, the percentage of women faculties (lecturers and above) in university science and engineering shall be 12% in science and 9% in engineering.

(Note 3) Increase the percentage of female professors (president, vice president, professors) to 20% as soon as possible, and to 23% by 2025.

Q41.1 Are you aware of this numerical target?

☐ Well aware ☐ Somewhat aware ☐ Did not know

Q41.2 What do you think is the significance of adopting a numerical target?

☐ Meaningful ☐ Should be expanded and promoted ☐ Has room for improvement ☐ Not meaningful  
☐ Will have adverse effect ☐ Uncertain ☐ Others ( )

Q41.3 Is there a numerical target for hiring of female researchers in your organization?

☐ Yes ([Go to Q41.4](#)) ☐ No ([Go to Q41.5](#)) ☐ Uncertain ([Go to Q42](#))

Q41.4 If there is a numerical target, is it made public?

☐ Yes ☐ No ☐ Uncertain ([Go to Q42 regardless of choice](#))

Q41.5 If there is no numerical target, do you think it is necessary to set a target?

☐ Necessary ☐ Unnecessary ☐ Uncertain

Q42. Do you think the laws, basic plans and programs mentioned above, have helped progress gender equality in science and technology fields since the fourth questionnaire survey (November 2016)?

Q42.1 In your affiliated organization:

☐ Progressing gradually ☐ No change ☐ Progressing backwards ☐ Uncertain

Q42.2 In you affiliated academic society:

☐ Progressing gradually ☐ No change ☐ Progressing backwards ☐ Uncertain

Q42.3 In the world as a whole:

☐ Progressing gradually ☐ No change ☐ Progressing backwards ☐ Uncertain

Q42.4 Do you feel an increase in the number of female researchers/engineers around you and an improvement in their promotion and treatment?

☐ Progressing gradually ☐ No change ☐ Progressing backwards ☐ Uncertain

Q43. What do you think is required in the future to promote gender equality? ([Check all that apply](#))

☐ Reform female awareness ☐ Reform male awareness ☐ Overcome (eliminate) insensible biases ☐ Increase male participation in housework and childcare ☐ Separate surnames for married couples ☐ Improve work environment

☐ Give females priority during certain periods ☐ Introduce hiring quotas ☐ Eliminate various age limits ☐ Improve evaluation system ☐ Encourage supervisor understanding ☐ Expand types of working arrangements ☐ Expand remote work

☐ Expand support of child and nursing care ☐ Introduce limited-term employment ☐ Improve limited-term employment ☐ Eliminate limited-term employment ☐ Form a female researchers/engineers network ☐ Comparative studies and policies to meet international standards ☐ Clarification of national

policies ☐ More leadership from the heads of the nation and institutions ☐ Funding for policies ☐  
 Expanded promotion by national/local government or employers ☐ Expansion of social security system  
☐ More education pertaining to gender equality ☐ Others (    ) ☐ Nothing required

Q44. Please feel free to describe, in 100 words or less, any opinions you have regarding gender equality in science and technology fields.

[ ]

This concludes the questionnaire. Please make sure to click the “Send” button.

Thank you for your time and cooperation.

## Appendix 2 The Data of Each Scientific Society Attended

Official Names (of societies)	Number of Respondents				Number of Members				Response Ratio
	Males	Females	Total	Female Ratio	Males	Females	Total	Female Ratio	
Japanese Society of Breeding	267	94	363	25.9%	1129	264	1393	19.0%	26.1%
The Genetics Society of Japan	137	80	218	36.7%	600	161	761	21.2%	28.6%
Japanese Society for Biological Sciences in Space	20	16	36	44.4%	151	57	208	27.4%	17.3%
The Japanese Society for Hygiene	59	37	96	38.5%	900	461	1361	33.9%	7.1%
The Japan Society of Medical Entomology and Zoology	17	9	26	34.6%	264	63	327	19.3%	8.0%
The Institute of Image Information and Television Engineers	42	4	46	8.7%	2309	80	2389	3.3%	1.9%
The Japanese Liquid Crystal Society	27	5	32	15.6%	614	63	677	9.3%	4.7%
The Japanese Society for Horticultural Science	276	109	389	28.0%	1508	406	1914	21.2%	20.3%
The Japan Society for Industrial and Applied Mathematics	120	18	139	12.9%	1296	89	1385	6.4%	10.0%
The Japan Society of Applied Physics	711	144	859	16.8%	18075	1305	19380	6.7%	4.4%
The Japanese Association of Anatomists	150	82	234	35.0%	1734	415	2149	19.3%	10.9%
The Oceanographic Society of Japan	285	64	352	18.2%	1248	152	1400	10.9%	25.1%
The Chemical Society of Japan	970	232	1211	19.2%	19275	2578	21853	11.8%	5.5%
Japan Society for Science Education	87	31	119	26.1%	1136	258	1394	18.5%	8.5%
The Society of Chemical Engineers, Japan	407	74	485	15.3%	5957	670	6627	10.1%	7.3%
The Japan Scientists' Association	37	12	49	24.5%	2738	362	3100	11.7%	1.6%
Japan Association for Fire Science and Engineering	14	2	16	12.5%	1086	51	1137	4.5%	1.4%
Particle Accelerator Society of Japan	79	10	92	10.9%	906	36	942	3.8%	9.8%
The Japan Society of Mechanical Engineers	506	56	565	9.9%	32083	1146	33229	3.4%	1.7%
The Institution of Professional Engineers, Japan	1749	104	1859	5.6%	18437	517	18954	2.7%	9.8%
The Japanese Society of Fish Pathology	37	6	43	14.0%	282	47	329	14.3%	13.1%
The Ichthyological Society of Japan	144	12	156	7.7%	1067	85	1152	7.4%	13.5%
The Japan Institute of Metals and Materials	462	62	526	11.8%	4494	282	4776	5.9%	11.0%
The Society of Instrument and Control Engineers	183	25	209	12.0%	4721	162	4883	3.3%	4.3%
The Japan Institute of Light Metals	223	29	252	11.5%	1745	88	1833	4.8%	13.7%
The Crystallographic Society of Japan	162	35	200	17.5%	905	127	1032	12.3%	19.4%
The Japanese Society of Health and Human Ecology	57	48	105	45.7%	204	281	485	57.9%	21.6%
Atomic Energy Society of Japan	186	37	226	16.4%	5705	322	6027	5.3%	3.7%
Architectural Institute of Japan	624	308	933	33.0%	29567	5681	35248	16.1%	2.6%
The Japan Society for Aeronautical and Space Sciences	61	7	68	10.3%					
The Japanese Society of Hypertension	11	6	17	35.3%	3827	1231	5058	24.3%	0.3%
The Society of Polymer Science, Japan	501	136	638	21.3%	6799	998	7797	12.8%	8.2%
Japan Association for Global Health	25	61	86	70.9%	367	661	1028	64.3%	8.4%
Japan Society of Computer Aided Surgery	16	2	18	11.1%	615	45	660	6.8%	2.7%
Japan Society of Coordination Chemistry	104	17	121	14.0%	927	120	1047	11.5%	11.6%
The Japanese Society of Sericultural Science	27	16	44	36.4%	340	80	420	19.0%	10.5%
Japanese Association for Oral Biology	44	34	80	42.5%					
The Magnetics Society of Japan	69	10	79	12.7%					
Japan Society for Lipid Nutrition	16	19	35	54.3%	189	128	317	40.4%	11.0%
The Mass Spectrometry Society of Japan	51	40	92	43.5%					
Society of Automotive Engineers of Japan	75	3	79	3.8%					
The Japanese Geotechnical Society	120	17	138	12.3%	7159	406	7565	5.4%	1.8%
The Japanese Society of Veterinary Science	213	131	346	37.9%	2408	771	3179	24.3%	10.9%
The Society for the Study of Species Biology	67	35	103	34.0%	236	87	323	26.9%	31.9%
The Japanese Society for Food Science and Technology	218	111	330	33.6%	1731	593	2324	25.5%	14.2%
The Botanical Society of Japan	314	163	479	34.0%	1287	433	1720	25.2%	27.8%
The Japanese Society for Chemical Regulation of Plants	70	23	94	24.5%					
The Japanese Society of Plant Physiologists	364	168	537	31.3%	1482	467	1949	24.0%	27.6%
Japanese Society for Plant Biotechnology	123	58	183	31.7%	608	188	796	23.6%	23.0%
The Phytopathological Society of Japan	82	42	124	33.9%	1385	307	1692	18.1%	7.3%
The Society of Japanese Women Scientists	0	81	81	100.0%	4	259	263	98.5%	30.8%
Japanese Women Engineers Forum	0	20	20	100.0%	3	110	113	97.3%	17.7%
Information Processing Society of Japan	235	54	291	18.6%	17848	1910	19758	9.7%	1.5%
Society of Evolutionary Studies, Japan	161	53	215	24.7%	963	239	1202	19.9%	17.9%

## Appendix 2 The Data of Each Scientific Society Attended

Official Names (of societies)	Number of Respondents				Number of Members				Response Ratio
	Males	Females	Total	Female Ratio	Males	Females	Total	Female Ratio	
The Japan Neuroscience Society	649	310	971	31.9%	4413	1396	5809	24.0%	16.7%
The Japanese Society for Neurochemistry	114	61	177	34.5%	886	310	1196	25.9%	14.8%
Japanese Society of Nephrology	20	16	36	44.4%	8162	3179	11341	28.0%	0.3%
The Japanese Forest Society	189	78	269	29.0%	1790	434	2224	19.5%	12.1%
The Japanese Society of Fisheries Science	755	116	874	13.3%	2561	406	2967	13.7%	29.5%
Japanese Society for Aquaculture Research	142	11	153	7.2%	675	28	703	4.0%	21.8%
The Mathematical Society of Japan	494	75	575	13.0%	4701	338	5039	6.7%	11.4%
Japan Society for Symbolic and Algebraic Computation	27	1	28	3.6%	351	0	351	0.0%	8.0%
The Japanese Biochemical Society	502	204	713	28.6%	5764	1676	7440	22.5%	9.6%
The Ecological Society of Japan	536	231	774	29.8%	2968	956	3924	24.4%	19.7%
The Society of Eco-Engineering	38	11	49	22.4%	345	52	397	13.1%	12.3%
The Biophysical Society of Japan	421	114	538	21.2%	2314	407	2721	15.0%	19.8%
The Japan Society for Precision Engineering	49	9	58	15.5%					
The Physiological Society of Japan	482	175	664	26.4%	2006	574	2580	22.2%	25.7%
The Japan Petroleum Institute	52	8	60	13.3%	2532	126	2658	4.7%	2.3%
The Ceramic Society of Japan	108	16	124	12.9%	3573	334	3907	8.5%	3.2%
Japan Society Histochemistry and Cytochemistry	58	36	94	38.3%	492	184	676	27.2%	13.9%
Japanese Society of Physical Fitness and Sports Medicine	233	93	326	28.5%	2924	863	3787	22.8%	8.6%
Protein Science Society of Japan	192	53	247	21.5%	1028	226	1254	18.0%	19.7%
Society of Geomagnetism and Earth, Planetary and Space Sciences	36	16	53	30.2%	627	81	708	11.4%	7.5%
Japan Geoscience Union	303	142	447	31.8%	6122	2560	8682	29.5%	5.1%
Japanese Society of Animal Science	262	92	357	25.8%	1346	331	1677	19.7%	21.3%
Japanese Geomorphological Union	25	9	34	26.5%	344	38	382	9.9%	8.9%
The Geological Society of Japan	100	35	135	25.9%	2966	318	3284	9.7%	4.1%
The Japanese Society for Neutron Science	86	11	97	11.3%	558	43	601	7.2%	16.1%
Japanese Society of Gout and Uric & Nucleic Acids	6	5	11	45.5%	465	88	553	15.9%	2.0%
Japanese Society for DNA Polymorphism Research	24	10	34	29.4%	335	103	438	23.5%	7.8%
The Database Society of Japan	59	13	73	17.8%					
The Iron and Steel Institute of Japan	177	18	196	9.2%	7981	284	8265	3.4%	2.4%
The Electrochemical Society of Japan	146	25	171	14.6%					
The Institute of Electronics, Information and Communication Engineers	251	36	289	12.5%					
The Astronomical Society of Japan	108	27	137	19.7%	2825	396	3221	12.3%	4.3%
The Japanese Society of Carbohydrate Research	57	35	92	38.0%	648	194	842	23.0%	10.9%
The Zoological Society of Japan	314	138	457	30.2%	1574	409	1983	20.6%	23.0%
Japanese Society of Soil Science and Plant Nutrition	78	42	123	34.1%	1519	377	1896	19.9%	6.5%
Japan Society of Civil Engineers	525	70	597	11.7%	35437	2142	37579	5.7%	1.6%
The Ornithological Society of Japan	61	30	91	33.0%	937	222	1159	19.2%	7.9%
The Japan Endocrine Society	81	26	108	24.1%	6135	2980	9115	32.7%	1.2%
Japan Society of Endocrine Disruptors Research	9	8	18	44.4%	314	84	398	21.1%	4.5%
Japan Society of Civil Engineers	38	23	62	37.1%	602	168	770	21.8%	8.1%
The Japan Society of Tropical Ecology	34	22	56	39.3%			369		15.2%
Combustion Society of Japan	15	1	16	6.3%	872	10	882	1.1%	1.8%
Japan Society for Bioscience, Biotechnology, and Agrochemistry	709	267	982	27.2%	7341	2536	9877	25.7%	9.9%
Bioimaging Society	44	22	66	33.3%	190	51	241	21.2%	27.4%
Japanese Society for Bioinformatics	69	27	97	27.8%	713	101	814	12.4%	11.9%
Japanese Society of Developmental Biologists	164	92	260	35.4%					
The Society for Reproduction and Development	48	26	75	34.7%	579	188	767	24.5%	9.8%
The Japan Society for Comparative Endocrinology	71	21	92	22.8%	291	46	337	13.6%	27.3%
The Japan Society of Vacuum and Surface Science	160	34	194	17.5%	1534	105	1639	6.4%	11.8%
The Physical Society of Japan	1683	233	1937	12.0%	14798	1020	15818	6.4%	12.2%
The Japan Society of Plasma Science and Nuclear Fusion Research	91	10	102	9.8%	1400	53	1453	3.6%	7.0%
The Molecular Biology Society of Japan	934	516	1461	35.3%	8815	3162	11977	26.4%	12.2%
The Japan Society for Analytical Chemistry	121	62	183	33.9%					
The Japanese Society for Synchrotron Radiation Research	167	27	194	13.9%	1097	85	1182	7.2%	16.4%
The Japanese Radiation Research Society	63	35	100	35.0%	628	180	808	22.3%	12.4%
The Japan Wood Research Society	159	56	216	25.9%	1397	374	1771	21.1%	12.2%
The Pharmaceutical Society of Japan	279	145	428	33.9%	11651	4443	16094	27.6%	2.7%

## Appendix 2 The Data of Each Scientific Society Attended

Official Names (of societies)	Number of Respondents				Number of Members				Response Ratio
	Males	Females	Total	Female Ratio	Males	Females	Total	Female Ratio	
Association of Wildlife and Human Society	45	15	61	24.6%	361	121	482	25.1%	12.7%
The Japan Society of Fluid Mechanics	112	10	122	8.2%	982	27	1009	2.7%	12.1%
Primate Society of Japan	33	31	64	48.4%	359	110	469	23.5%	13.6%
Unassociated	921	454	1393	32.6%					
Others ( )	3019	1253	4296	29.2%					
Total	27753	8840	36841	24.0%					

Note: The number of society members were obtained from EPMEWSE's study of "Female Ratio of the Affiliated Societies in 2021."

[[https://djrenrakukai.org/doc\\_pdf/2021\\_ratio/2021ratio\\_table\\_202110120a.pdf](https://djrenrakukai.org/doc_pdf/2021_ratio/2021ratio_table_202110120a.pdf)] (Japanese)