Large-scale Survey of Work and Life in Scientific & Technological Profession in Japan under Emergency Declaration due to COVID-19 and Requests to Japanese Government

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

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Questionnaires by Google Form during May 15 - June 13, 2020

Respondents: 11,112
Male: 7,882
Female: 3,140
No intention to answer: 90

Fig. 1 Gender
70.9% Male
28.3% Female
0.8% No intention to answer

Fig. 2 Age
17.9% 25-34 y. o.
28.7% 35-44 y. o.
27.5% 45-54 y. o.
20.9% 55 or more y. o.

4.5% 24 or less y. o.
0.5% No intention to answer

Less than 45 years old: 51.1%
Researchers of various areas responded. “Others” includes non-STEM areas.
Fig. 3.2 Job Title

- **Research technician**: 5.2%
- **Research associate, Assistant professor**: 14.4%
- **Associate professor**: 20.7%
- **Professor (PI)**: 20.5%
- **Executive (Dean, executive board or equivalent)**: 1.6%
- **Student or graduate student**: 9.7%
- **Others**: 5.6%

*Lower title: 42.0%*
Current Employment Status

**Fig. 3.3** Employment Status

- **Limited-term (Including appointed, postdoc, temporary staff):**
  - Female: 33.6%
  - Male: 25.1%

- **No limited-term (Including regular employment, self-employment):**
  - Female: 51.1%
  - Male: 60.8%

- **Tenure tracked employment (Being allowed undergo review for a no limited-term employment):**
  - Female: 3.9%
  - Male: 4.4%

- **Student or graduate student:**
  - Female: 10.8%
  - Male: 9.0%

**Fig. 3.3a Employment Status by Gender**

Employment of **Limited term**: Female 33.6% > Male 25.1%
Current Working Situation under Emergency Declaration

Fig. 6 Working status

- 32.4% Working home in full
- 17.3% Working once or twice a week
- 24.5% Working more than three days a week
- 25.8% Unchanged status

74.2% working almost home

Fig. 7.1 Working Time of Research

- 12.8% Increased
- 56.4% Decreased
- 30.7% Unchanged

Fig. 7.3 Quality of Research

- 7.7% Better
- 53.8% Worse
- 38.5% Unchanged

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Anxiety about Research Situation

Fig. 7.4 Level of Anxiety

- Very much: 25.5%
- A little: 54.2%
- No: 20.3%

Fig. 7.3b Anxiety Level by Quality of Research

- Better: 9.8%
- Worse: 46.2%
- Unchanged: 44.0%

Fig. 7.4a Anxiety Level by Current Job

- Limited-term: 31.1% (Very much), 51.9% (A little), 17.0% (No)
- No limited-term: 20.7% (Very much), 56.2% (A little), 23.1% (No)
- Tenure: 25.6% (Very much), 55.7% (A little), 18.7% (No)
- Student: 37.7% (Very much), 50.2% (A little), 12.1% (No)
- No intention to answer: 30.5% (Very much), 32.6% (A little), 36.8% (No)

Limited-term & Students feel more anxious.

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Anxiety about Research Situation in Detail

Fig. 7.5 Reasons of Anxiety

- Continuation of the current employment: 19.7%
- Review for tenure tracked employment: 3.0%
- Influence in career path: 31.0%
- Research expenses execution: 34.6%
- Contents and quality of experiments or researches: 73.4%
- Instruct or supervise students: 41.7%
- Human relationship in affiliated institution: 16.1%
- Others: 10.7%

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The most mentioned anxiety about conducting the research was "interruption of fieldwork due to mobility restrictions", followed by "anxiety about continuity and quality of research due to restrictions on facilities, equipment, and research content".

For anxiety due to lack of time for research, many respondents claimed increased work on infection control, preparation for teleclasses, and housework, childcare, and nursing care.
The majority of respondents reported spending more time on education and making changes to the content of education, but the quality of education has decreased.
84.6% of the survey respondents had concerns about education.

Fig. 8.4 Anxious about the status of education

Fig. 8.4a Quality for Education vs. Anxiety

Respondents who answered that the quality of education has declined are more concerned.
Anxiety about Education

Fig. 8.5 Description of Anxiety about the Status of Education
Anxiety outside of Research/Education

Fig. 9.1 Anxiety outside of Research/Education

<table>
<thead>
<tr>
<th></th>
<th>Very much</th>
<th>A little</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td></td>
<td>15.2%</td>
<td>55.4%</td>
<td>27.9%</td>
</tr>
</tbody>
</table>

Limited-term is the most anxious about life outside of research and education, followed by students.

The precarious position of a Limited-term and a student is highly anxious, both in research life and in personal life.

Fig. 9.1a Anxiety Level by Current Employment Status

<table>
<thead>
<tr>
<th>Employment Status</th>
<th>Very much</th>
<th>A little</th>
<th>No</th>
</tr>
</thead>
<tbody>
<tr>
<td>Limited-term</td>
<td>21.1%</td>
<td>56.0%</td>
<td>21.5%</td>
</tr>
<tr>
<td>No limited-term</td>
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<td>38.8%</td>
<td>25.9%</td>
</tr>
</tbody>
</table>
Fig. 9.2 Reasons of Anxiety by Current Employment Status

- Continuation of the current status: 30.0%
- Education of child (children): 33.7%
- Partner's job: 8.9%
- Health/Health of family: 67.8%
- Others: 13.7%
Obstacles/Problems in Working

- Childcare task increased
  - Male: 16.6%
  - Female: 25.5%

- Nursing care task increased
  - Male: 3.1%
  - Female: 18.6%

- Housekeeping task increased
  - Male: 12.4%
  - Female: 30.4%

- Limitated possibility of transfer in long distance
  - Male:...
  - Female: 15.0%

- Inability to travel domestically and internationally
  - Male: ...
  - Female: 54.3%

- Cost of network access and additional equipments for...
  - Male: 21.6%
  - Female: 23.7%

- Preparing for online courses
  - Male: 49.5%
  - Female: 51.7%

- Others
  - Male: 9.1%
  - Female: 11.8%

**Fig. 10.a  Obstacles by Gender**

- Both males and females are severely obstructed by the inability to travel.
- The burdens of housekeeping and childcare are chosen more often by females than males.
Requests of Support for Research

Fig. 11a  Requests by Gender

- Both males and females selected extension of the research grant period most frequently.
- Females express needs for extension of grant period, employment period and deadlines of reports more frequently than males.
Fig. 12a Requests of Support for Research in Detail

- Expand teleworking style: Male 50.1%, Female 42.7%
- Improve network environment: Male 50.1%, Female 47.6%
- Expand web meeting: Male 51.0%, Female 47.9%
- Expand web conference: Male 43.7%, Female 37.9%
- Introduce/Continue online courses and supervision in researches: Male 61.3%, Female 65.9%
- Online access for office procedures in affiliated institution: Male 33.3%, Female 31.9%
- Off-institutional use of Computers: Male 31.2%, Female 31.4%
- Supply cost to improve network environment for working home: Male 44.7%, Female 40.6%
- Off-institutional access for the research articles through VPN: Male 42.1%, Female 36.4%
- Others: Male 7.0%, Female 5.7%

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Want to continue Working Home? If so, Describe Reasons.

Both females & males reply Yes in major. Female’s reason relies on family.

- **Partner**: 73.4% Yes, 7.1% Others
- **Adult(s) more than 18 years**: 64.4% Yes, 8.9% Others
- **Parent(s)**: 64.8% Yes, 9.2% Others
- **Baby (Babies) or Pupil(s) in Pre-school**: 74.8% Yes, 7.2% Others
- **Pupil(s) in Elementary/Middle school/High school**: 74.0% Yes, 6.7% Others
- **Others**: 64.8% Yes, 8.5% Others

**Female** Living with whom

- Male: 51.9% Yes, 15.6% Others, 32.5% No
- Female: 58.2% Yes, 13.2% Others, 28.7% No
Survey Wrap-Up

(1) Due to various restrictions under the emergency declaration, about 80% of respondents have anxiety for research and education.

(2) Limited-term employees and students are most anxious.

(3) Increased childcare/nursing/housekeeping has caused obstacles in work, especially against female researchers.

(4) The majority of both female and male respondents want to continue working from home even after the end of the COVID-19 pandemic.
Requests to Japanese Government from EPMEWSE

(I) **Extend the period of** employment and research grant

(II) **Postpone the deadline** of research reports and reviews for tenure track

(III) **Support** jobs researchers who were obliged to return to Japan

(IV) **Expand** web meeting, web conference and official teleworking by improving network environment

(V) **Reform** awareness to improve the environment of Female’s status in working