

761030_CARBAFIN

Carbohydrate-based fine chemicals: Development of a glycosylation platform cell factory and optimization of downstream processing for the sustainable production of glycosides.

H2020-NMBP-BIO-2017

Deliverable D7.11:

Report on output of online questionnaire of “gender aspects in biotech jobs”

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1 Objective of the Deliverable

The H2020 project CARBAFIN is developed and implemented under major contribution of female consortium members (41% female consortium members, female project managers). However, the team recognized a lack of gender balance in leading positions at consortium member organisations. The team therefore decided to conduct an online survey on the consortium members' opinion on gender equality in their organisation with the aim of creating awareness for gender equality issues and assisting the implementation of improvement measures.

2 Methodology

2.1 Questionnaire design

The questions were designed by four female members of the CARBAFIN dissemination and exploitation team, all of them with a scientific educational background in life-sciences. We therefore explicitly do not want to raise the impression or expectation that the questionnaire design and evaluation was done by people skilled in conducting opinion polls.

In order to facilitate participation, the questionnaire design was kept simple aiming at a filling time of below five minutes. The opinion poll was implemented as a google form as shown in Figure 1.

The underlying data of the survey can be found at <https://doi.org/10.5281/zenodo.6456921>.



CARBAFIN - survey

Gender aspects in biotech jobs



Topic: assessment of equal opportunities for all genders, main support measures
(time to fill: ~5 minutes)



Age

1. <30
2. 30-45
3. >45

Gender

1. female
2. male
3. divers
4. prefer not to say

I am hired for

1. Up to 20 hours
2. 21 - 30 hours
3. 31 - 40 hours

Children

1. My youngest child is below age 10
2. My youngest child is below age 18
3. My youngest child is 18 or older
4. I do not have children

Thank you for your participation



How well achieved do you feel equal opportunities for you personally in your employment situation?
(from a gender focused viewpoint)

1 2 3 4 5 6 7 8 9 10

no equal opportunities totally equal opportunities

Regarding your organization, how equal would you rate opportunities for all genders?

1 2 3 4 5 6 7 8 9 10

no equal opportunities totally equal opportunities

With special focus on leading positions in your organisation, how equal would you rate opportunities for all genders?

1 2 3 4 5 6 7 8 9 10

no equal opportunities totally equal opportunities

Please choose the three, in your opinion most important topics to reach equal opportunities for all genders



- Flexible working hours
- More equal distribution of care work/ "unpaid" work (household management, care taking, social commitm ...
- Equal distribution of parental leave times and part-time work
- Equal payment for equal work
- Better chances to combine leading positions with parenthood/care taking
- Equal funding opportunities
- Changes in company culture
- More commitment to take the lead, power and responsibilities
- Training (e.g. handling of conflicts, negotiations ...)
- Mentorship, coaching
- Gender awareness in speaking and writing
- Integration in supporting networks
- Availability of child care
- Weitere...

Room for statement/ wish list to reach equal opportunities for all genders to be delivered to employers in general/ EU/ policy makers via the H2020 project CARBAFIN (max. 500 characters)

Langantwort-Text

Titel...



Figure 1. Design of the CARBAFIN's "gender aspects in biotech jobs" online survey.

2.2 Data collection

The questionnaire was distributed by leading CARBAFIN consortium members to their working groups involved in the CARBAFIN project. The environment which is assessed by this survey is therefore the life-science/biotechnological+ chemical production field, including administration/consulting. The consortium comprises three university institutes, a research center, four company partners (including three SMEs) and a consulting organization. While no exact number is known, the authors estimate that the questionnaire was distributed to around 150 people. 74 people filled the questionnaire.

A question concerning the institutional background (industry, research) was intentionally not included, as with this further information a tracing of the answers to single consortium members might have become possible.

The form did not collect any personal data like mail address or username.

2.3 Data evaluation

Data from all answers was exported as csv-file and imported in MS excel. Data evaluation was done in excel. Due to the number of totally received answers (74) we clearly want to state that we are aware that some subgroups evaluated by averaging are very small and results should not be overinterpreted.

Results were not taken into account if only one person in a category answered the question in order to make it impossible to trace answers back to a single individual.

The underlying data of the survey can be found at <https://doi.org/10.5281/zenodo.6456921>.

3 Results

3.1 Data basis

With a return of around 50%, the opinion poll result is characteristic for an employee survey. Table 1 summarizes the participants sub-grouped into following dimension: gender, age, age of children and working hours/week.

Table 1. Participants sub-grouped into gender, age, age of children and working hours.

	female	male	total
total	40/53%	34/47%	74
No children	30/75%	16/47%	46/60%
Children <10	8/20%	10/30%	18/26%
Children <18	1/3%	4/12%	5/7%
Children ≥18	1/3%	4/12%	5/7%
<30	18/45%	7/21%	25/34%
30-45	16/40%	15/44%	31/42%
>45	5/13%	12/35%	17/23%
No age given	1/3%		1/1%
≤ 20 h/week	3/8%	3/9%	6/8%
21-30 h/week	12/30%	2/6%	14/19%
31-40 h/week	25/63%	28/82%	53/72%
No hours given		1/3%	1/1%

The distribution of answers between male and female was almost balanced, with a slightly higher female contribution (53% female participants). Distribution between other subgroups will be discussed in the according subsections.

In the following sections, first the answers to the questions aiming at the achievement of equal opportunities for all genders will be discussed, later the answers regarding the most important improvement measures will be addressed.

3.2 Evaluation of opinion towards “Achievement of equal opportunities for all genders”

3.2.1 Focus on differences according to gender

Assessment of “achievement of equal opportunities for all genders” was asked for in three levels, (a) for the personal situation, (b) for the situation in the employing organization and (c) for leading positions in the organization. With ratings from 7.0-8.5 from 10 possible “equal opportunities

achieved” levels, the overall content with achieved gender equality is high, although not perfect (see Figure 2). However, these numbers reflect only the average.

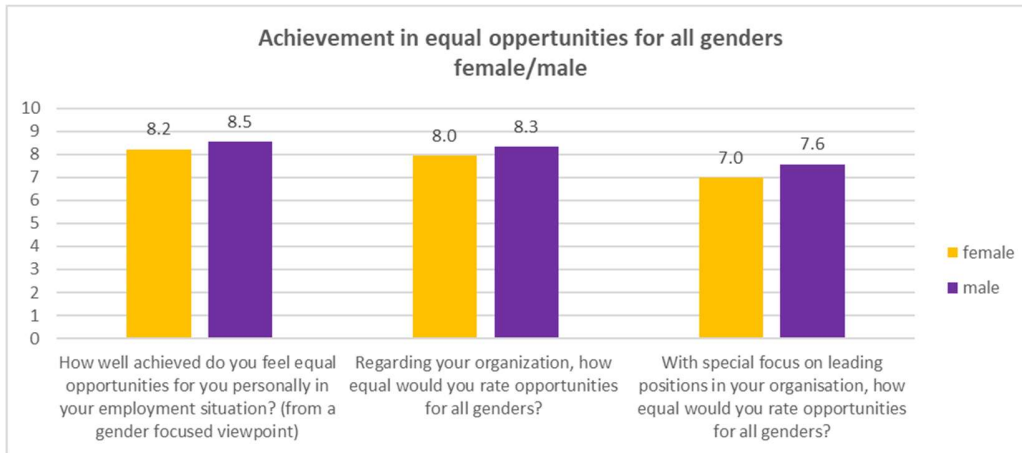


Figure 2. Assessment of “achievement of equal opportunities for all genders” by employees in CARBAFIN environment (life-science/ biotechnological + chemical production).

Single individuals rated their situation distributed over all levels. 46% with 10 from 10, but others down to only 2 from 10 achieved (see Figure 3). Generally, women see equal opportunities by 0.3-0.6 levels less well achieved than men, as well for their personal situation as also regarding the organization and leading positions. All participants, no matter of which gender, are slightly more content with their personal situation compared to assessment of the employing organization and see a clearly worse situation (by approximately 1 level) regarding leading positions.

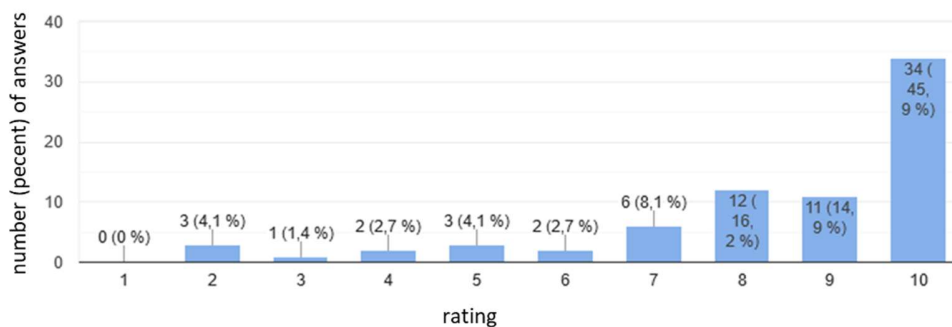


Figure 3. Distribution of ratings to the questions “How well achieved do you feel equal opportunities for you personally in your employment situation? (from a gender focused viewpoint)”.

3.2.2 Focus on differences according to age

When looking in further detail to the situation of female and male of different ages (categories were “below 30”, “30-45” and “above 45” years) the group which sees achievement of equal opportunities most critical is women between 30-45 (see Figure 4). In assessing their personal situation <30, male and female are located quite similarly around a level of 9. However, at age 30-45 the rating of women for their individual gender equality drops by 2 levels to 7 while men at that age only slightly rate worse than below age 30. Males rate their personal situation increasingly worse with increasing age, with a drop by 1.3 levels from age <30 to age >45 (rating drop from 9.2 to 7.9). Women below age 45 rate equal opportunities for leading positions especially low with (6.3-6.9), while men rate here with 7.7-8.0. Participating women above 45 however rated achievement of gender equality unexpectedly high at all three levels, on the personal situation with 9.5 but also on leading positions with 9.0 (men of same age rated here only with 7.2). It has to be taken into account here, that while 35% of male participants are above age 45 only 13% of women participants (in absolute numbers 5) belong to this age group. One possible reason for the high ratings in this group therefore could be, that women who themselves made it to positions with long term perspectives (maybe even leading positions) do not see in retrospective real gender related obstacles in the career path. Another possible reason could be, that many or all of the 5 women above age 45 answering the survey come from the same organization, which might be one that enables gender equality clearly above average. We did not ask for further indications like “job in research/industry/administration” in more detail, therefore no more detailed assessment of the female group age >45 is possible. The absolute low number of female participants age >45 however is remarkable, as it raises the question what happens to elder female in general, in a working environment like CARBAFIN in the life-science/ industrial production sector.

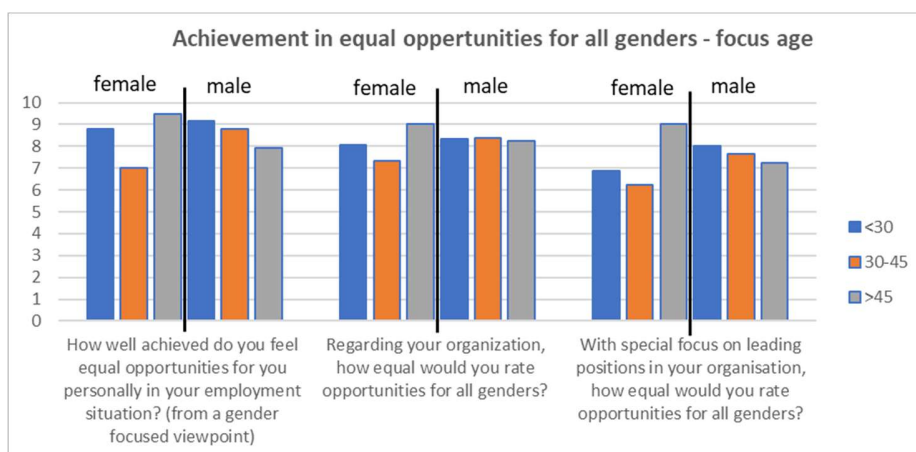


Figure 4. Assessment of “achievement of equal opportunities for all genders” by employees in CARBAFIN environment (life-science/ biotechnological + chemical production) differentiated by age.

3.2.3 Focus on differences according to age of children

Overall, 38% of all participants have children, 63% have none. While 75% of female participants do not have children, 47% of men do not. 96% of participants <30 do not have children, 44% of female and 53% of male have children between age 30-45. However, for female >45 only 20% have children, while 92% of male >45 have children (with numbers based on 5 female and 12 male participants in this age group). So next to the fact that only few women of age 45 or older answered the survey (maybe because not much more of them were part of the project related working groups), from these women almost only one had children.

Female employees without children are clearly more content with their individual equal opportunities than women with children below age 10 (difference of 1.3 levels of 10 possible, see Figure 5). For women with older children no information can be given, as too few answers per category were given. Male participants rate their personal situation worst when having children between 10 and 18 (7.5 vs. 8.6-9.0), all other ages of children do not cause major changes in rating compared to having no children.

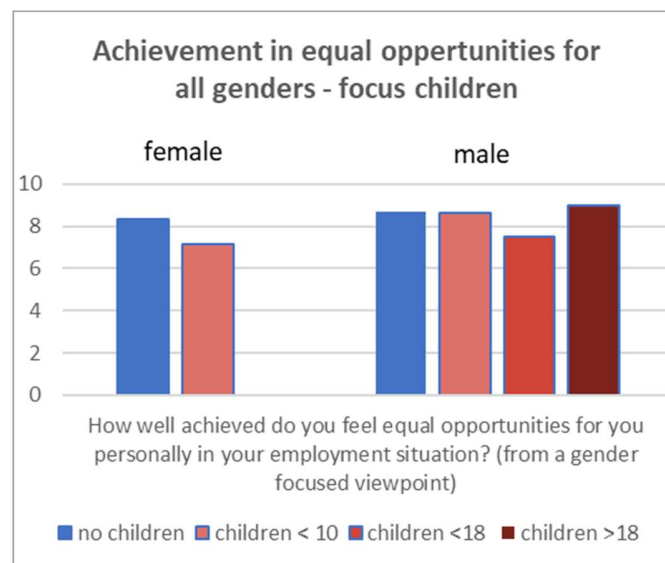


Figure 5. Assessment of “achievement of equal opportunities for the personal/individual situation” differentiated by age of children (if any).

3.2.4 Focus on differences according to weekly working hours

With regard to working hours per week, 8-9% as well of female as of male participants are employed for up to 20 hours per week. 30% of all women and 6% of all men work 21-30 hours per week, 63% of women and 82% of men work 31-40 hours. For all hired more than 20 hours no differences in rating of their individual content with equal opportunities can be seen (see Figure 6) regardless of the weekly hours hired for. In the group of people hired for 31-40 hours per week men in average rate their content with personal equal opportunities 8.5 out of 10, women 7.9. Employees hired for less than 20 hours are highly content with their situation (rated 9.3 out of 10). In this group the number of female and male as well as males/females having children or not is quite evenly distributed. Again, one possible explanation could be that these in total 6 individuals could be employed by the same organization, which enables also hiring for less than 20 hours per week and by this meets the needs of employees, that obviously do not see a low number of working hours as restriction from a gender equality perspective.

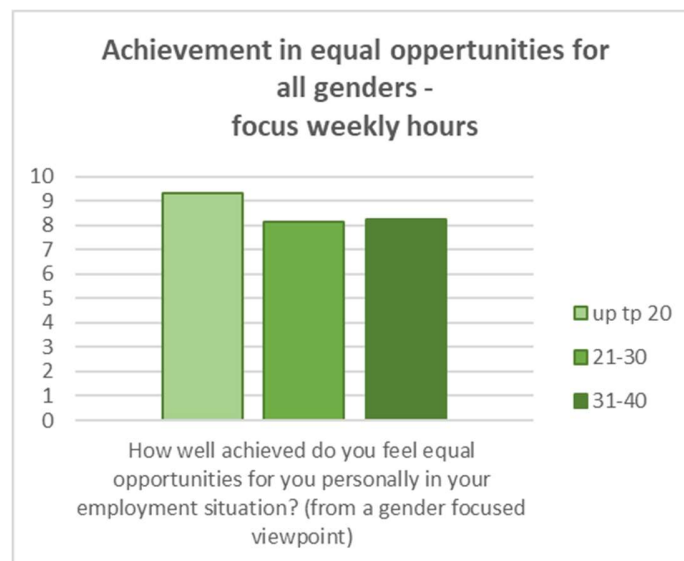


Figure 6. Assessment of “achievement of equal opportunities for the personal/individual situation” differentiated by working hours per week.

3.3 Evaluation of highest ranked improvement suggestions to reach equal opportunities for all genders

3.3.1 Improvement measures ranked most important overall

A second part of the survey asked for the opinion on improvement measures that should be taken to enable more equal opportunities for all genders. Each participant could choose three possibilities and also add own categories. Table 2 lists the 13 choices given in the formular as well as three measures added by participants.

Table 2. List of improvement measures to reach gender equality, three to be chosen in the survey.

Improvement measures to be chosen (three most important) to reach gender equality	
1	Flexible working hours
2	More equal distribution of care work/ unpaid work (household management, care taking, social commitment...)
3	Equal distribution of parental leave times and part-time work
4	Equal payment for equal work
5	Better chances to combine leading positions with parenthood/care taking
6	Equal funding opportunities
7	Changes in company culture
8	More commitment to take the lead, power and responsibilities
9	Training (e.g., handling of conflicts, negotiations...)
10	Mentorship, coaching
11	Gender awareness in speaking and writing
12	Integration in supporting networks
13	Availability of childcare
Extra categories added by participants	
14	Menstrual leave/work from home (1-2 days)
15	Awareness of social pressure
16	An objective job rating system

As shown in Figure 7 “Flexible working hours” and “Equal payment for equal work” were the two options most often voted for (18% of all votes each), followed by “Better chances to combine leading positions with parenthood/care-taking” (15%) and “Equal distribution of parental leave time and part-time work” (12%). “Integration in supporting networks”, “Training (e.g., in handling of conflicts, negotiations)” and “Gender awareness in speaking and writing” were only in around 1% from all votes named as one of the three most important measures to reach gender equality. Additionally mentioned by single participants were measures such as “Menstrual leave/work from home (1-2 days)”, “Awareness of social pressure” and “An objective job rating system”.

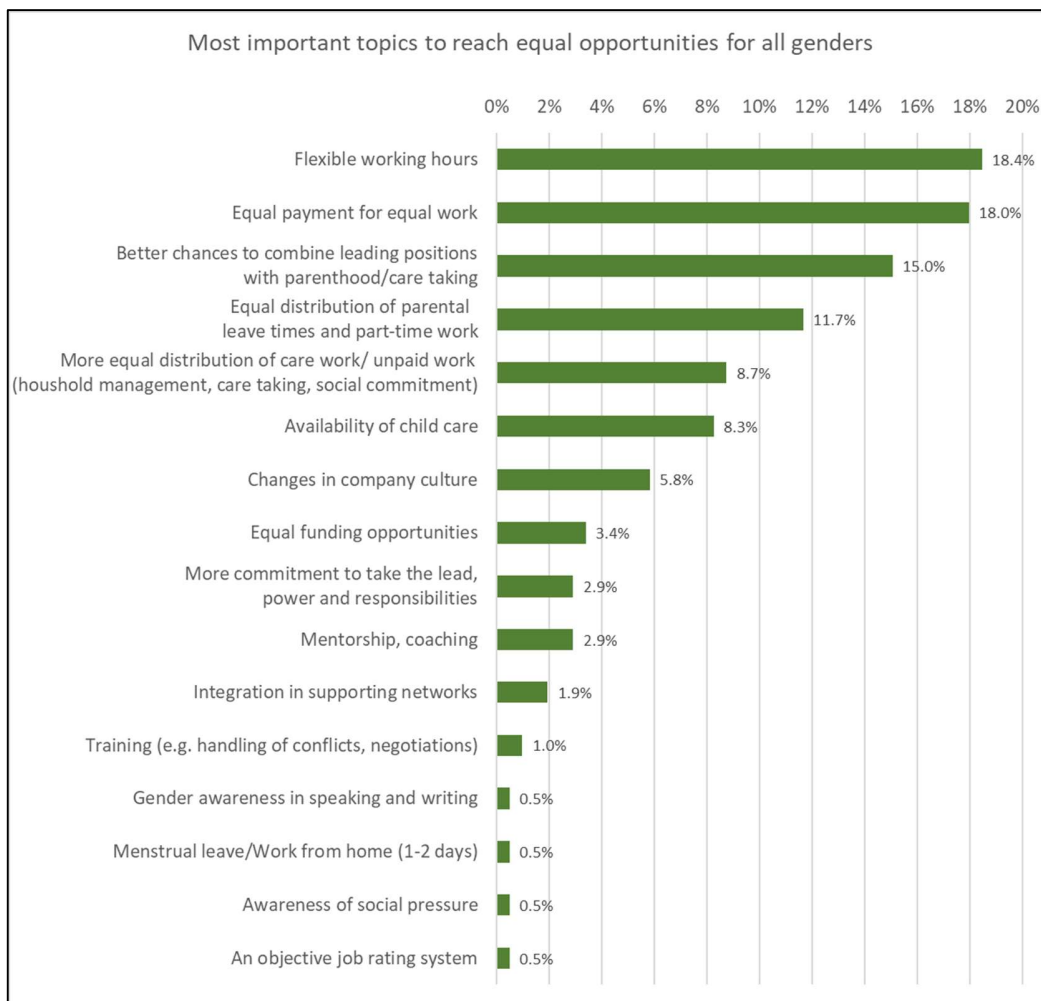


Figure 7. Measures to improve gender equality ranked according to votes given when asked for the three most important measures to be taken.

3.3.2 Improvement measures ranked most important according to gender

When comparing suggested most important improvement measures to reach gender equality given by men and women (see Figure 8), both genders chose “Equal payment for equal work” to be highly important with 17.4% of female votes and 18.6% of male votes. For females this was the overall most important measure while male ranked “Flexible working hours” significantly higher (23.7%). “Better chances to combine leading positions with parenthood/care taking” are important for both genders (16.5% female votes, 13.4% male votes), women rank “Equal distribution of parental leave time and part-time work” significantly more important than men (15.6% female votes, 7.2% male votes). Women find mentorship, coaching and training more

important than men. For males “Equal funding opportunities” are of significantly higher importance, they also rank “More commitment to take the lead, power and responsibilities” higher.

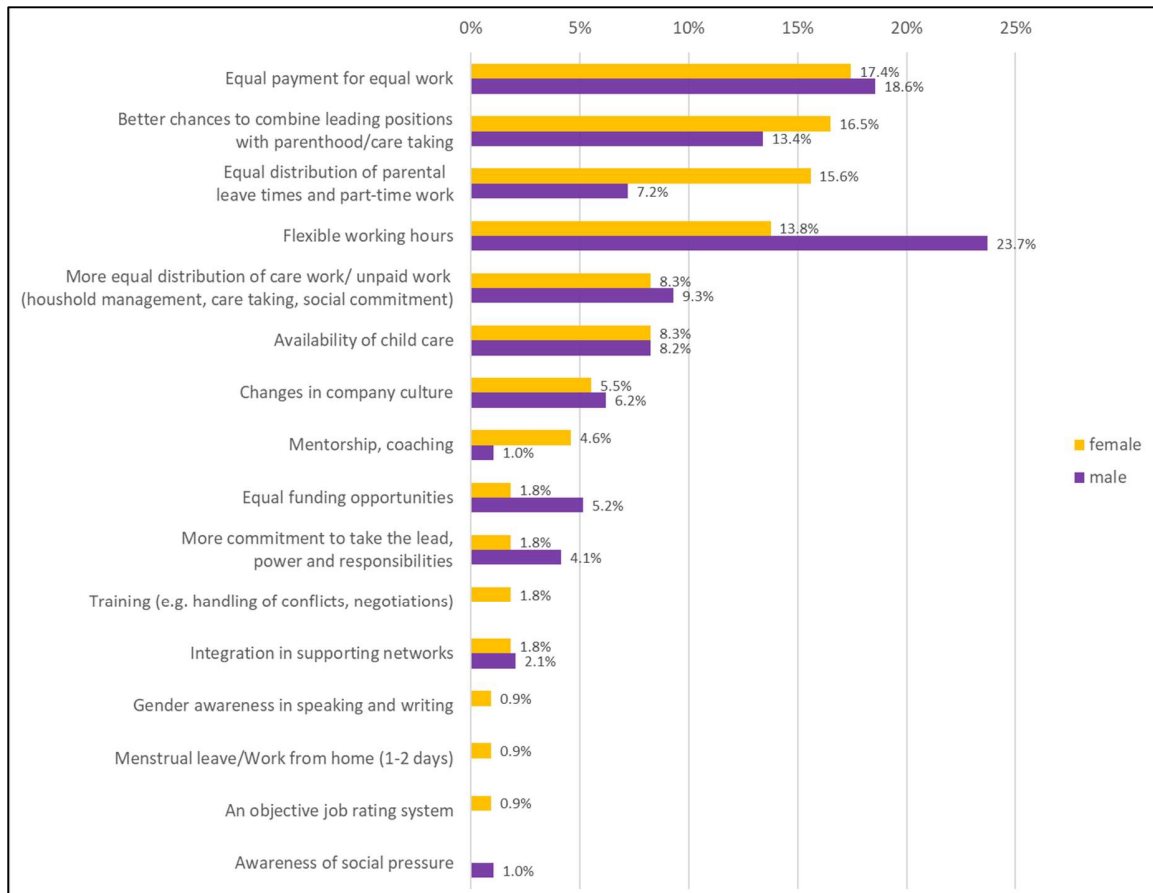


Figure 8. Assessment of relative importance of measures to improve gender equality. Participants were asked for the three most important measures to be taken. Results are shown separately for male and female participants.

3.3.3 Improvement measures ranked most important according to age

When looking at results in more detail with answers differentiated by age groups (see Figure 9), one remarkable result is that for participants <30 measures towards flexible working hours are less important than for people >30. In contrast for people <30 measures towards “Better chances to combine leading positions with parenthood/caretaking” are of high importance. When looking at results for female and male participants separately (see Figure 10), it becomes clear that this measure is especially emphasized by women <30. Males <30 rank “Availability of childcare” significantly higher than females <30. For participants above age of 30 “Flexible working hours” and “Equal payment for equal work” are of significant importance. “Equal distribution of parental leave times and part time work” is seen significantly more important by male and female below 45 than by elder participants, with generally higher importance seen by women than by men.

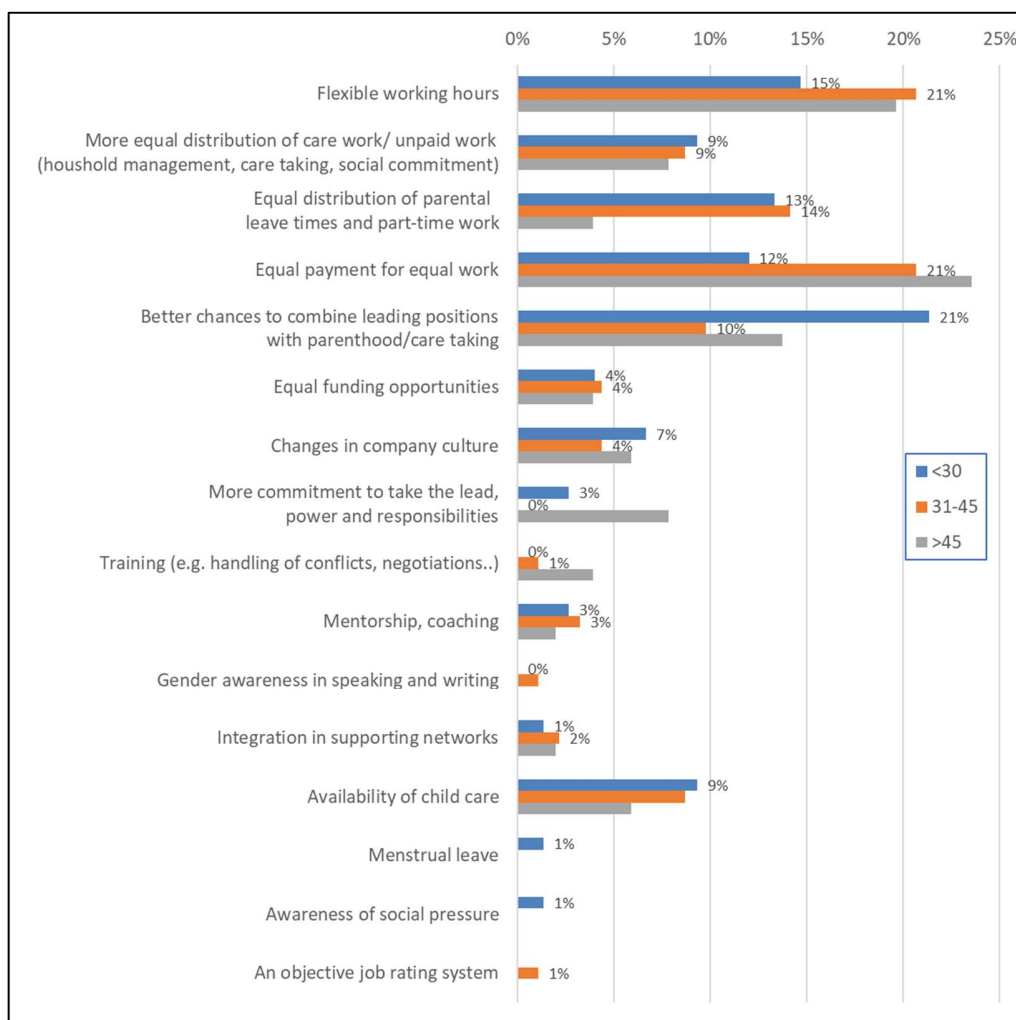


Figure 9. Assessment of relative importance of measures to improve gender equality. Participants were asked for the three most important measures to be taken. Results are shown differentiated by age of participants.

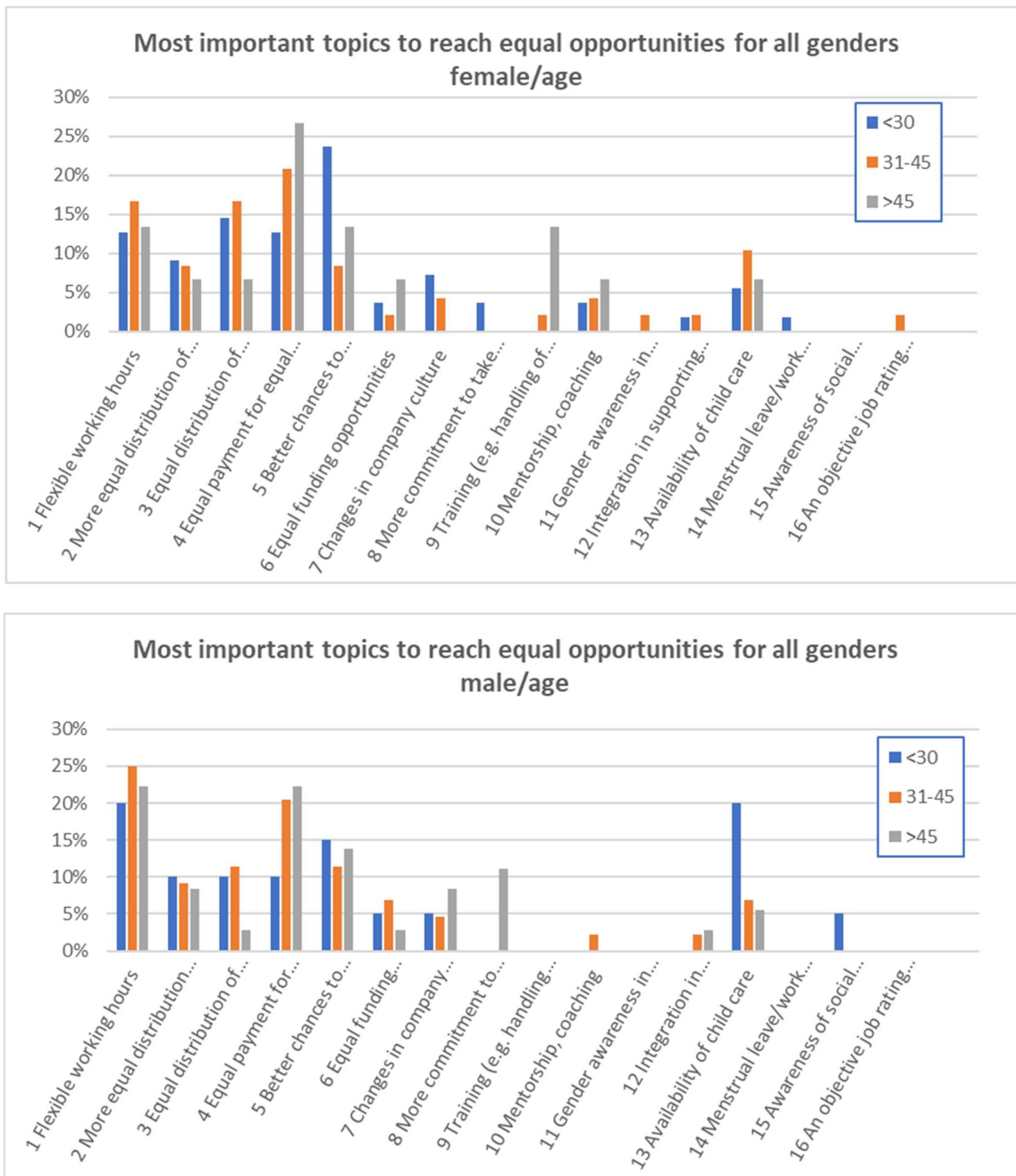


Figure 10. Assessment of relative importance of measures to improve gender equality. Participants were asked for the three most important measures to be taken. Results are shown differentiated by age of participants for females (upper panel) and males (lower panel).

3.3.4 Improvement measures ranked most important according to having children and their age

“Flexible working hours” is a high ranked measure for male with and without children and women with children, an opinion however not so much shared by females without children (see Figure 11). Interestingly, people without children rank “Better chances to combine leading positions with parenthood/ care taking” significantly higher than people with children. This result is based on the high importance of this measure for young people, who do not have children yet. Women with children rank “Equal distribution of parental leave times and part-time work” significantly more important than women without children (20% vs. 12.5%), however, men rank this measure even less often (9.1% without children, 7.1% with children) (see Figure 12). In contrast for men with children “Equal payment for equal work” is highly important (23% with children vs. 14% without children), while women with children find this measure less important than women without children (13% vs 19%).

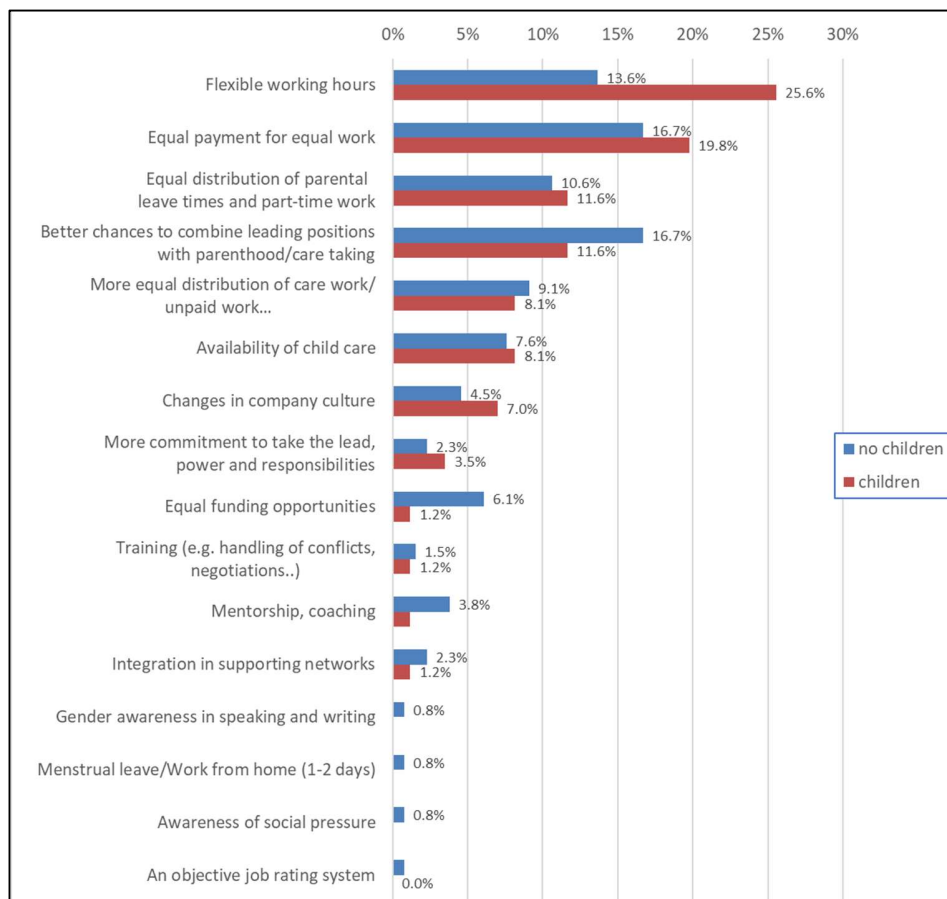


Figure 11. Assessment of relative importance of measures to improve gender equality. Participants were asked for the three most important measures to be taken. Results are shown differentiated by having children or not.

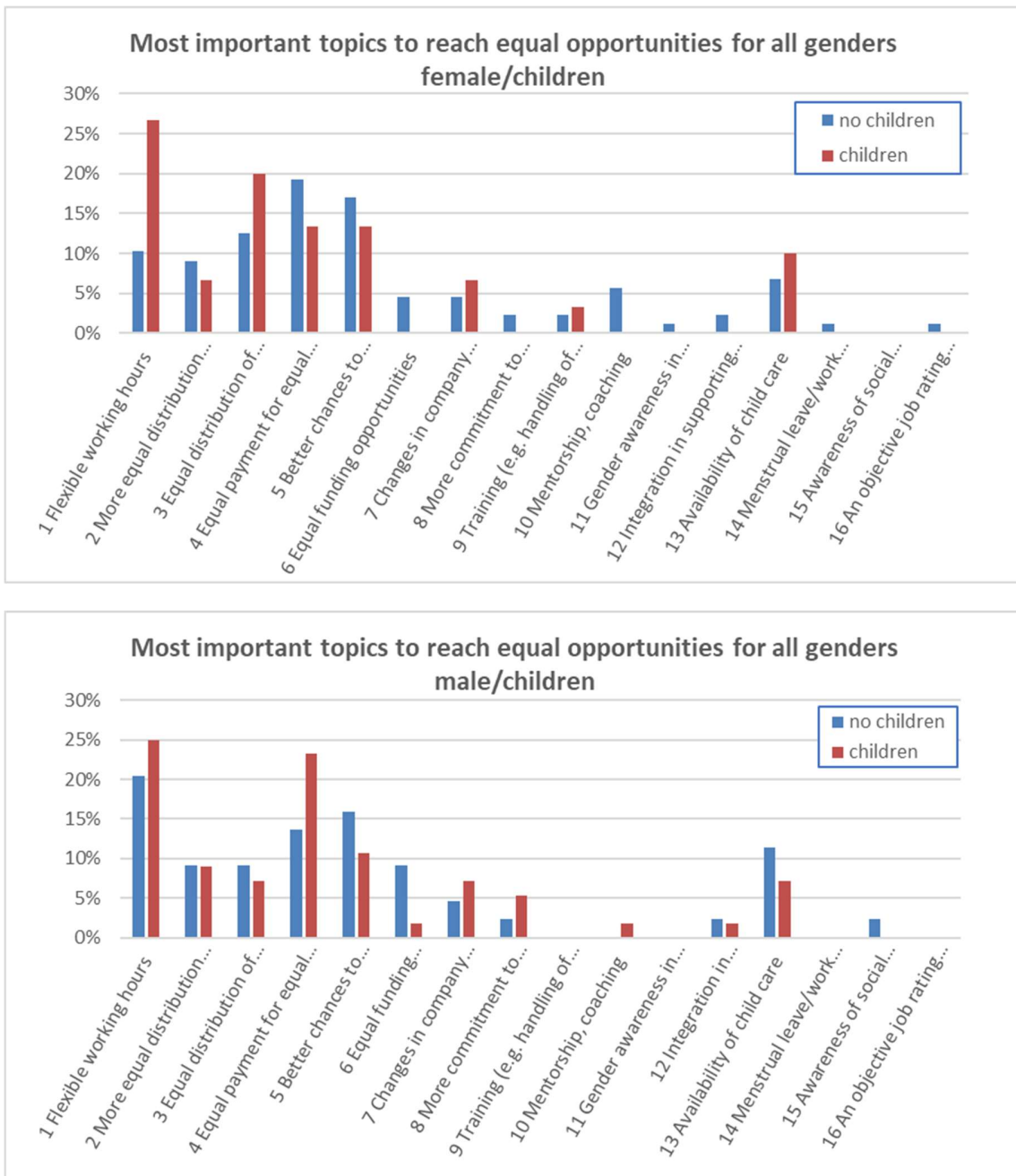


Figure 12. Assessment of relative importance of measures to improve gender equality. Participants were asked for the three most important measures to be taken. Results are shown differentiated by whether having children or not for females (upper panel) and males (lower panel).

4 Summary and Conclusions

An online survey on achievements in equal opportunities for all genders and improvement measures to increase them was conducted in working groups participating in the H2020 project CARBAFIN. The questionnaire was distributed in three university institutes, a research center, four industrial partners (including three SMEs) and a consulting organization. The field covered by the survey is life-science/biotechnological+ chemical production including administration and consulting. 74 online questionnaires were filled, which is estimated to be a return quota of around 50%.

Participants were asked to rate how well achieved they see equal opportunities for all genders (a) for their personal situation, (b) in their organization and (c) for leading positions in their organization (rating from 0 to 10, where 10 is fully achieved).

- Overall, the individual/personal situation regarding “equal opportunities for all genders” was rated rather high with 8.4 out of 10.¹
- Ratings drop for the opinion on their organization to 8.1 and for leading positions to 7.2.
- Females rate in average 0.3-0.6 levels lower than males.
- When looking at results differentiated by the age of participants one remarkable result is a drop by 1.8 rating levels for the personal situation between females of age <30 to females between 30-45, which is even more than between women without children and women with children below age 10 (drop by 1.3 rating levels).
- Especially interesting is also the results for women >45, which are extremely positive in their assessment of achievement of equal opportunities as well for their individual/personal situation (rated with 9.5) as also for their organizations and even leading positions (still rated with 9.0). However, absolute numbers are remarkable here, as among all participants only 7% were women > 45, while 16% were males from this age group. One could speculate, that these few women might all be hosted by few organizations that enable gender equality well and therefore employees’ rate that high, while in other organizations/sectors women drop out of teams before age 45. Even more drastic is the situation when comparing if these individual participants have children or not. While only 20% of the few females >45 have children, 92% of the males >45 do. These numbers might suggest to women above 45 who “made their way” in their organization/career to keep eyes open in their surrounding for struggles of younger, especially aged between 31-45, and to support their agendas.

¹ Please note, that ratings given by individual participants are distributed on all levels from 2 to 10 for the assessment of their personal situation (see Figure 3). It could therefore be of special importance not only to concentrate on organization wide measures to achieve gender equality but to ask employees individually (e.g., in appraisal interviews) about their situation.

- Males rate their personal situation increasingly worse with increasing age, with a drop by 1.3 rating levels from age <30 to age >45 (drop from 9.2 to 7.9). Males with children between age 10-18 also rate significantly lower (7.5) than males without children (8.8) or with younger or older children.
- 8% of all participants are hired for less than 20 hours per week, the group comprises rather equally distributed male and female as well people with children and without. This group rates the individual situation significantly better than participants hired for more than 20 hours per week (9.3 vs. 8.2). Institutions or sectors that support part-time hiring might in general enable higher gender equality levels. From this survey no negative influence of part time work on equal opportunities for all genders can be deducted.

Moreover 13 improvement measures to reach equal opportunities for all genders were suggested and participants were asked to choose the three most important in their opinion.

- Overall *“Flexible working hours”* and *“Equal payment for equal work”* were the two options most often voted for (18% of all votes each female and male).
- *“Equal distribution of parental leave time and part-time work”* is seen clearly more important by women than by men (14% vs. 8% of all votes). This finding is true regardless of the age.
- *“Flexible working hours”* is regarded more important by men (23% vs. 14%). *“Flexible working hours”* is in general rated high by people with children.
- *“Better chances to combine leading positions with parenthood/caretaking”* is of especially high importance for women <30, while men <30 rate *“Availability of childcare”* very high.
- People above 30 and male with children rate *“Equal payment for equal work”* clearly more important than *“Equal distribution of parental leave time and part-time work”*, while for participants <30 both measures are equally important.
- Female with children regard *“Equal distribution of parental leave time and part-time work”* more important than *“Equal payment for equal work”*. The ranking might indicate that males are more worried about financial issues as hinderance for taking parental leave times. However, this statement does not seem to be true for men <30 anymore, which rather look for measures that make a combination of work and family time possible (flexible working hours, availability of childcare).
- Improvement measures regarded to be less important (5% of all votes or less) are *“Mentoring, coaching”* and *“Training (e.g., handling of conflicts, negotiations”* mainly chosen by females while men especially voted for *“Equal funding opportunities”* and *“More commitment to take the lead, power and responsibilities”*.
- Additional improvement measures added by participants were *“Menstrual leave/work from home (1-2 days)”*, *“Awareness of social pressure”* and *“An objective job rating system”*.

Individual statements to be delivered to employers/EU/politicians were the following:

“A woman in science often has to choose between career and having children, as a 0.5-1 year leave be damaging. Having affordable, nearby child caring facilities as well as equal parental leave is crucial to tap into a pool of talent and leadership qualities, we keep under-utilizing while most-needed.”

“Men should be forced to be on maternal leave as long as the woman is on maternal leave. Since we cannot make pregnant women more able to work, we need to reduce men’s’ ability to work.”

“Equal payment would be one major task, that comes from employer and from legislation. Equal social acceptance for persons who take care for children, elderly people, ... would be helpful as task from society. A person should not be stigmatized by only his/her professional success. A 50%/50% distribution for leading positions could help as well.”

“I would wish that only the individual performance is being used in assessing one's suitability for a given job (in Austria there is sometimes a strong focus on having more women, which - regrettably - in turn discriminates men applying for the job negatively).”

“It is not about to have a 50/50 distribution male/female. You can have 40/60 or 60/40, the important thing is competence.”

“Please reduce the costs for daycare to make working more attractive for mothers coming back from maternity leave. Costs should be equal in Germany and not different from state to state. In NRW, it will cost us almost 1.000,00 €,- for 2 kids from August 2022 onwards. That's way too much and many women would think twice if coming back to work is worth it if you basically work for nothing because childcare is so expensive.”

“Provide free childcare”

“No acceptance of jokes about women and sexually suggestive language”