Inventory of gender equality problems at the School of Engineering Sciences (SCI School) - working paper

KTH Royal Institute of Technology 2019-2020

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1   Background

In 2019, as part of Gender Mainstreaming at KTH (JIKTH), the School of Engineering Sciences (SCI School) decided to conduct a *survey of problem areas within the organisation from an employee perspective, and with a focus on gender*. The aim of the survey was to identify problems related to gender equality, diversity and equal treatment (JML) and to document them in such a way that the material could be used elsewhere in the organisation, both in order to identify possible measures and to establish future work. The method used to conduct the inventory of problems was to interview women and men at the SCI School about work environment, career opportunities, and JIKTH. To make sure they were interviewed anonymously, the interviews were conducted and compiled by two external consultants from ImplementDiversity AB (procurement S-2019-1571 in accordance with the Public Procurement Act). Other parts of the project, including the initial idea, were led by Carlota Canalias, Linda Lundström and Lisa Prahl Wittberg. During the course of the project, its design and performance analysis were also discussed with KTH Equality Office and KTH's Vice President Anna Wahl.

In February 2019, the SCI School had nearly 1,200 employees in research and teaching, comprising 20% women and 80% men, with distribution as shown in Table 1.

Table 1. The gender distribution of the most common categories of staff at the SCI School in 2019.

Employees Q1 2019	Women	Men	Percentage women	Percentage men
Professors	11	92	11%	89%
Associate Professors	17	66	20%	80%
Assistant Professors	4	8	33%	67%
Researchers and research	42	200	17%	83%
PostDoc	19	77	20%	80%
Doctoral students	71	225	24%	76%

2   Method: qualitative study through interviews with open questions

The interview study included a total of 47 people: 30 women and 17 men (see Table 2). Faculty, doctoral students, PostDocs, researchers and members of the school's management group were interviewed. All women within the faculty at the SCI School were invited to participate in the interview study, a total of 32 women, of whom, 21 chose to participate. All women employed as doctoral students, PostDocs and researchers were also invited via the SCI School's women's network, and 9 participated in the study. When it comes to men, a random selection of 52 men was made who were invited to participate in the interview study. A reminder was sent out. 12 men agreed to participate. The entire management group at the SCI School was also interviewed, which included five men. Therefore, a total of 17 men participated.

Table 2. Gender and title of the interviewees.

Interviewees	Women	Men
Professors	6	8
Associate Professors	10	5
Assistant Professors	5	4
Researchers	2	-

PostDoc	1	-
Doctoral students	6	-
Total	**30**	**17**

External consultants (ImplementDiversity AB) were engaged to carry out the interviews in this study based on the interview guide in Appendix 1.

The interview guide was drawn up by the project managers and consisted of eight open questions, which means that the study is qualitative. The report on the results below shows that someone, some, several, or many of the interviewees said or highlighted something now and then in the interviews. This indicates the extent to which it was brought up during the interviews. However, it should *not* be mixed up with a quantitative expression of how many or what percentage of the interviewees shared the perception or experience, since whether a particular aspect is brought up (or not) in an interview with open questions may depend on a range of different things. Had everyone been asked about the specific aspect in question, we would be able to answer quantitatively about how many agreed or disagreed. In some cases, the report on the results below shows that all interviewees, or all interviewees in a particular group, mentioned one specific aspect. For example, all the interviewees considered that formal and informal support is a prerequisite for success in their academic career. In addition to the summary analysis of the responses by the interviewees, the different themes reported will be illustrated using several quotes from the interviewees.

3 Empirical results from the interviews

3.1 Academic environment at the SCI School

Women and men describe the work environment and work culture in a similar way. Many of the interviewees expressed their satisfaction with the work environment and culture at the workplace. While the academic environment is described as positive, the interviews highlighted cultural issues, expressed to a varying degree depending on the research environment.

Positive work environment:

- encouraging, friendly, good contact with colleagues
- openness, responsive, support and cooperation
- motivating to work with what you are passionate about

Negative culture:

- Tough discussions, comments, competitive situations
- Jealousy
- Funding - creates great pressure, fear, uncertainty, tension
- Limitless working hours and workload
- Successful professors can do as they wish

3.1.1 Positive descriptions of the work environment

When it comes to the positive aspects, the majority of doctoral students and PostDocs describe their work environment and workplace culture in positive terms. Many of the senior personnel interviewed also describe their work environment and workplace culture as positive. The academic environment is described as encouraging, friendly, good contact with immediate colleagues, openness, listening to each other, responsive and attentive, supporting each other and helping with what you can, you can ask for help, good cooperation, good conversational tone, relaxed environment, motivating, interesting discussions and interactions with colleagues about your research, pleasant atmosphere, everyone rooting for each other, high ceilings, positive interactions and positive atmosphere in the group, everyone seems happy and nobody seems subdued, feels like an inclusive environment in coffee/lunch room, a great variety of people, and people can be odd.

Good cooperation. Easy to get help. Good conversational tone. (Woman, doctoral student)
There are plenty of colleagues who support each other, to help each other if possible, things do not get hidden or obstructed in that way. (Male, professor)

Some describe it as being very good locally in their own group, but worse at departmental level, and even worse at school level. Some point out that there are far too few (or none) networked and contacts at the school/school level.

The environment in my research group is good; we help each other, cooperate with each other, and are able to hold discussions with other groups. It's working fine at the moment. But for the department as a whole, there should be more cooperation, that resources for teaching and research can be seen throughout the department. (Man, associate professor)

3.1.2 Negative descriptions of the work environment

The interviewees also described cultural issues; at different levels and in different contexts, and that the culture differs within different subjects. Some describe it as aggressive in some places, as well as condescending towards junior and less knowledgeable personnel, with a lack of encouragement, no one dares to speak or ask questions, problems with cooperation, territorial thinking, jealousy - not saying congratulations or giving positive feedback (you got the prize, I'm saying nothing), not rooting for each other, overtly competitive situation all the time, professors who "square up" to each other and internal competition between professors, go-getter mentality of management, the "weak" who don't draw in the big money have to do what the others don't want to do. One interviewee described one of these environments as:

An inclusive and demanding culture, but not an encouraging environment, and if you don't make the cut, you won't be caught and helped back up. But if you are a talented researcher, proactive and ambitious, then it's a fantastic environment.

Someone points out that there are external demands on KTH to climb in the ranking lists, and when successful researchers are in this kind of environment, the university rewards the go-getter attitude. The university does not recognise the negative work environment, but only focuses on success.

The interviews also described the circumstances and conditions in academia, which itself isn't necessarily negative, but has a negative impact on workplace culture and work environment.

Several describe the academic environment as providing greater freedom than other workplaces, freedom when it comes to both *what* you work with as well as *when* and *where*. But on the other hand, the academic environment demands that individuals are more self-driven, more enterprising, build networks, and grab for themselves. *Freedom is positive, but also tough*: tough academic discussions, tough comments on manuscripts, tough criticism at conferences, and competitive situations between colleagues, especially if seeking funding from the same financiers. All of this may lead/leads to a harsher climate at the workplace. Most "run their own race" as researchers (with the support of the department), their own projects, have their own problems, and this independence and autonomy also affect the workplace.

Several mention how the intense competition, competing with each other in terms of research results, publications, and applications as well as funding, has a negative impact on the workplace climate. One of the doctoral students interviewed also described the intense competition between doctoral students, which is negative for the culture and work environment.

Highly competitive. The situation with the competition at the department is deplorable/sad, it should be supportive there. (Woman, associate professor)

Everyone has run his or her own race. Not very much cohesion in the department. It saddens me. (Man, associate professor)

Many highlight funding as a problem, that it creates a lot of pressure for everyone to bring in their own funding and to finance a large part of their own salary. This creates fear and uncertainty. Funding requirements contribute to the stress, which spills over into the work environment. Several mention that tension is created if individuals or research groups apply for the same funding or positions. Lack of job security is also highlighted as something that adds to the stress, short-term employment, and that you can "never" get permanent employment.

But this funding situation is a problem, the idea that you should bring in a large part of your salary yourself. This pressure causes stress, and it spills over into the work environment. It puts people under pressure, who then lose objectivity, creating conflict, not least between individuals chasing the same resources. (Man, professor)

Another stress factor highlighted are the limitlessness working hours, many people work very long hours, and that the norm is to work a lot. Several point out that if they want to be number one and successful then they have to invest a lot of time, and that the work is also passion-driven for many, which also means that they want to devote a lot of time to it. Some say that it's very difficult to be off work and take a holiday. Referee requests are constantly coming in, and during parental leave, for example, the research field does not stand still in the meantime. Several say it is difficult to cope with everything and have the capacity for research, teaching and assignments. In addition, if you are good, you just get more assignments. One difficulty that is highlighted is that there aren't any managers who say, "You've done a good job - now you can/should go home", or "Now you must take care of yourself". That's something you have to be able to deal with yourself. Some point out that it is easy to get burned out, that both women and men suffer burnout and that many have been close to hitting the wall.

The work environment is generally good but everyone is overworked, many hit the wall, working with small margins. (Man, associate professor)

Complaints about academia: It's like being self-employed, never finished with work, working as much as you want. If you are not at work right now, there's a risk that someone else on the other side of the world is doing the research instead (while you are asleep, having fun, etc.). You have to work a lot, work, work, work. But we are human, who have a right to a private life. (Woman, doctoral student)

When you have a management position, you have an overview of your employees. As a leader, you should be aware of, and have the expertise to detect how your employees behave and feel, and ask them if you can help. Be mindful of people's needs.
Ability to detect when people feel unwell mentally, such as with a link to burnout and stress. (Woman, PostDoc/researcher)

Some also mention *that more governance in the form of regulations, documentation*, need for investigations, etc., results in more administration and causes everything to take longer, which is also stressful.

The difference in status between research and teaching is described as potentially having a negative impact on the workplace:

If the research is not going well, you have lower status in the eyes of others. The others talk behind the backs of those who only teach. They are looked down upon. You are stuck as an associate professor. Both men and women, even those who are very successful in teaching, are looked down upon. Personally I become very satisfied when the teaching is going well, but it has a high price. (Woman, assistant professor)

There is this strange friction between research and teaching. Research is vital to your aura. Teaching, women can do it, but it is not valued. Uppsala University and Stockholm University have increased the status of teaching in comparison with KTH. (Woman, associate professor)

Some mention that many participate in research projects and collaborate with people around the world, but there are not as many collaborations locally, and many work individually instead. This also has a negative impact on workplace culture and the work environment. Some have experienced a lot of jealousy between people at KTH, and that it's easier to collaborate with colleagues abroad. Others suggest more collegiality and collaboration in the education, and even the "small things" in order to share each other's stress, and believe that more collaboration locally would result in a different/better culture.

Some mention that the clear hierarchy within academia affects workplace culture. There is partly an emphasis on the *collegiate power perspective*, that professors have a lot of power, and that this can cause friction with the line management. Individuals who bring in large amounts of funding dominate the environment and have a lot of power, and the feeling is that they are also given a lot of leeway to behave as they wish. There are many codes, what to do and what not to do, as professor/head of department there is a hierarchy and respect that is total, even though it sometimes seems to be very informal. The hierarchy leads to an assistant professor not being given the same respect as a professor, they are not listened to in the same way. Someone gives examples of how the hierarchy is also visible in the physical work environment: during the latest relocation, rooms were allocated according to academic title, something that cements the hierarchical structures. Some highlight that certain individuals can behave as they please behind the protection of their academic success – "X is of course a talented physicist". Some describe the hierarchical nature of the research field, and if you make an enemy (for example, by pointing out that something is bad) high up in the hierarchy, and the person takes revenge on you, it can be disastrous for your academic career.

It is very hierarchical. Some are elevated to "God" status, and other people revolve around this person. (Woman, associate professor)

No one thinks about the best interests of everyone, everyone thinks about his/her own best interests. Very hierarchical and individualistic, and you can go quite far with it. (Woman, associate professor)

Individuals who bring in large amounts of funding dominate the environment and have a lot of power. They are untouchable. It is quite simply not very equal. (Man, associate professor)

It is a culture, a workplace with large egos, which makes things difficult sometimes. (Man, professor)

Some point out that the _leadership structure does not provide optimum conditions for good management and leadership_: temporary managerial appointments, no direct long-term footing, someone is appointed manager of his/her colleagues, etc. There is a risk that managers neither dare nor want to deal with difficult issues, something that negatively affects workplace culture and the work environment.

Several point to the fact that the work is time-consuming, that the vast majority have so much to do and so little time, which means that there is no time at the workplace to socialise, share coffee breaks and take lunch, etc. This affects how well people know each other with the risk that they will not develop so many personal ties. Some request more joint activities with colleagues. Time constraints also mean there is rarely time for reflection or joint discussions. Subjects that, for example, should be discussed in more depth, according to some of the interviewees, are funding and the system of funding requirements, as well as the stress and pressure involved in the work. Someone finds that time constraints and stress disrupt good initiatives.

The culture - we find faults and criticise everything to the extreme. We rarely give someone a pat on the back. We should be better at telling someone they have done something well. (Man, associate professor)

When it comes to the psychosocial environment, I think there is a certain tendency to treat soft issues as fuzzy and not worthwhile. There is no point in taking courses in teaching and learning. There is a jargon and attitudes linked to it. It's only the subject that counts, and everything else is just a pretence. (Man, professor)

Some of the interviewees (both women and men) recruited from outside Sweden emphasise the exclusion of those not coming from within the system. They describe the difficulties of understanding the system, such as with funding and the lack of support.

I started from an unfavourable position at KTH because everyone already knew the system and I had to start from scratch. When you are employed at my level you are naturally expected to get by on your own. I didn't know what funding I should focus on, etc., and no one told me or gave me any guidance. But you learn with time. At another university there was a system where each new employee was assigned an experienced person to help him/her navigate the system and to give them guidance. (Man, professor)

3.2 Experience of support and setbacks in academia

The analysis of the interviews clearly reveals that everyone considers support to be an important and a crucial factor for orienting themselves in academia. The support manifests itself in different ways and in different forms, such as through supervisors and mentors, colleagues, international networks, etc. By contrast, experiences of setbacks are described to a _much greater extent_ by women than by men. The setbacks described by women, clearly experienced by women to a far greater extent, manifest themselves as follows:
- Questioning a person's competence
- To not be taken seriously, to be interrupted, to not be listened to
- Experience of not being included in meetings, networks, contexts
- As a woman, to be included precisely because of gender
- Comments on appearance/behaviour
- As a woman, to be expected to do "housework" (i.e. taking care of students, arranging coffee breaks)

3.2.1 Support

All interviewees, regardless of gender, emphasised the high importance of getting support in order to cope with and orient themselves in academia. They gave examples of how they received such support from their supervisors (during their doctoral studies, but also for a long time after completing their doctoral studies), from formal and informal mentors, professors and other senior colleagues, from research colleagues on an equal level in the research project or at the division, from

colleagues in their national or international networks, and some mentioned that such support was provided by colleagues in their management groups. Several emphasised that _informal networks play an important role in providing support_. The support is described as being in the form of individuals actively believing in someone and recognising his/her competencies, providing further motivation and encouragement, and guidance on how to write applications, clarification of how information channels work, invitations to or advice on networks, tips on which funding and positions to apply for, giving backing in the form of references and recommendations, making nominations for different assignments, giving feedback on articles, explaining the importance of authorship and the author list on publications, giving guidance on career planning and drawing up a career plan, and someone who is available to raise issues and share reflections with, as well as about how to be able to handle tough situations that arise during a career. Several also mention that _KTH's career support programmes and courses (e.g. mandatory courses in teaching and learning) have provided good support_ and opportunities to build networks to share experiences with others. _Some women emphasise that support from other women means a lot,_ to be able to hold discussions and exchange experiences and support one another, and that _women who have gone far in their career are important as role models_.

All interviewees said they had received such support, in some form and to different extents, during their time in academia, apart from one man who felt that he had never had such support but had only experienced competition. Several said they had received more support as junior personnel, but experienced reduced support and greater competition as more senior personnel. And that they generally recognise a greater desire to support junior personnel because they do not represent competition. While others said that they only received encouragement when they became senior personnel. Several reveal that they are active in supporting younger personnel now that they are in more senior positions themselves. Many point out that each individual needs to be active him/herself in building up a network. Some describe how once they have had one position/several positions, they become more visible, and then receive more offers and nominations in more contexts.

I have not received support in the form of "apply for this" when it comes to a position or funding, and I have never heard "you can take this route". But many good people have encouraged me to continue, "you are very good", as well as colleagues today who give a lot of encouragement. Scientifically and internationally, there have been people who have given encouragement, inviting me to good places as a lecturer, etc. (Woman, associate professor)

I have received support and encouragement in recent years. People propose me; and I get nominated by colleagues for different positions/assignments. It really got going once I was promoted to professor. Before then I encountered opposition. No one helped me before that. (Woman, professor)

Yes, clearly it was so; it must have been so. Just being good is not enough. More of a culture that the support is around you. "It works like this", "you have to do this" - to get on, to get funding, etc. A position as associate professor became formally vacant - "you must apply". (Man, professor)

I have received poorer support to get research funding. The other groups have a much more well-oiled procedure for applications, with much more focus. Like an industry. They helped each other, peer review. For myself, it was more up to me. I didn't know I was behind with the research, that I should balance research with school assignments. (Man, associate professor)

3.2.2 Setbacks

Responses from women and men differ on this issue, so the answers are reported separately. As mentioned earlier, this is not a quantitative study that measures occurrences. In addition, almost twice as many women as men have been interviewed. It is nevertheless remarkable how many more examples women give of encountering opposition, being belittled or overlooked, than the far fewer examples given by men. Below, the responses from women are reported first, and then from men.

3.2.3 Women - examples of situations where they experienced setbacks and obstacles, or situations where they were belittled or overlooked, or encountered opposition

All of the women interviewed, apart from a few individuals, state that they, to a varying extent, experienced setbacks and obstacles, or situations where they were belittled or overlooked, or encountered opposition. In several examples, but by no means all, there is a common theme of women in an environment dominated by men.

Examples of situations where they encountered opposition, were belittled or overlooked were: comments on appearance and behaviour; comments from colleagues that the students are happy to have a young woman as a teacher; being interrupted and not listened to; that in the role of teacher they are expected to take more care of the students; and that students share personal problems with them. At a conference, where most attending are men, others greet the male colleagues, but not the female. Not receiving any support, or even encountering opposition, while seeking promotion. Some highlight a problem when they were/are doctoral students of not being taken seriously. Some describe how they think about how they should dress in order to be taken seriously, that they want to downplay their gender so that people will focus on their competence, and also to reduce the risk of sexual harassment (in this case at an international conference). One describes how she was belittled in a recruitment interview.

Examples are also given of stereotypical assumptions about women, such as that only women are asked to organise the coffee buns and that the woman gets the "kitchen questions" (e.g. questions about where the forks are, or how the dishwasher works) despite other male colleagues being in the room. The interviews also give examples of where these kinds of stereotypical assumptions about the role of women have a negative impact on their professional role:

We organised an international conference. The five of us who organised the conference stood together, I was asked all of the administrative questions. (Woman, associate professor).

Often when I/we present research in an international context, despite me having done everything, they ask the questions to my male colleagues, who are better known in the field. (Woman, associate professor).

I was at a conference that started with lunch. I found some female colleagues and sat down with them and we ate lunch. The conference organiser walked around the lunchroom to assemble the participants for the start of the conference. At our table of a group of women, the organiser said: "They don't belong to us". But we definitely did. (Woman, assistant professor)

Some give examples of how they are not invited to meetings they should be invited to, or not invited in different contexts where others are invited, such as to speak at a workshop/conference in their field or when well-known researchers in their field are visiting. Several point out that it's impossible to know whether it is because of being a woman or something else, that events are wide open to interpretation. Some describe it as "*to be filtered out before even being aware of it, to be excluded and overlooked without being made aware of it*".

Some point out that men, both among colleagues on the same level as the women and among more senior personnel, have become friends, done things together and cooperated, *but that the woman have been excluded*.

I started as a PostDoc at the same time as a man. The male PostDoc and the supervisor became best friends, which caused the information to flow in a very strange way. I didn't receive important information, career advice, and information on vacant positions from my supervisor, but from my male PostDoc colleague, who received it from the supervisor. (Woman, assistant professor)

Men in my division share a friendship; they do favours for each other. I'm never included in that type of thing. As a woman, I'm a little more isolated; I have a different type of relationship with men, more formal, more polite. (Woman, doctoral student)

Some of the women stated that they did not experience any particular difficulties until they publicly defended their doctoral thesis, perhaps sometimes a few comments that they could dismiss. But it has become more problematic once they have become more senior personnel, they are *perceived as more of a threat with increasing seniority*.

Several give examples of how they experience being invited to join applications and in various other contexts *only* because they are women.

I have often felt that I have been reluctantly invited. I often feel like a "token", like the female professor to include in certain different contexts and applications. For example, I received an invitation from another university - "We need a female co-applicant, do you want to join us?" Very humiliating. I think if people express themselves in this way then women should say No. (Woman, professor)

Several of the women interviewed said that they had *received comments about them receiving grants and funding, or positions and assignments, only because they were women*, or that there would be no problem for them to get funding or positions because they were women. Some also described that once they had received funding, these grants suddenly became less desirable or worth having. Several also described how events (such as receiving grants, being awarded a prize, getting through a docent lecture, being promoted to associate professor or professor) were not celebrated at the division or in the research group, as is normally the case for other colleagues (everything from no congratulations, no cake/coffee break, to the event not being reported at the workplace).

Then the funding was suddenly not such a good thing to have. It was very desirable before I was awarded with it. I didn't receive any appreciation or attention for my award, but was told that I'd received the funding because I was a woman. I thought I wasn't good enough, that I lacked ability, it affected my very deeply, that I am not worthy of these grants, that I just get everything served up. (Woman, professor)

Several give examples of *their competence and title being called into question*, and that the students, guests, as well as other employees at KTH think that they are secretaries or administrators.

"Are you a PostDoc? Doctoral student? Masters student? No, I'm a professor" (Woman, professor)

When I started at KTH, everyone assumed that I was working, that I would be working in administration, they hadn't understood that I had joined as a doctoral student with my own money for four years of doctoral studies. (Woman, associate professor)

Yes, your competence is called into question the whole time. When I became director of studies I was asked, "Do you have the competence for this?" Then I was an associate professor. (Woman, professor)

When I was applying to be docent I was told, "apply for it, but you won't get it", and I got it. The same applied in the case of a directorship, "You'll not be appointed, don't apply", I got it. (Woman, professor)

When I got my position and during my first day at KTH, the professor said, "Well, you got in, I thought it was the other one, the guy who got the job". It must have been the manager (a woman) who changed the decision. Another colleague then stepped in to defend me and said it was a great decision. When I find myself in these situations, I get shocked, I don't know what to say. (Woman, associate professor)

Some highlight that women feel they have to work especially hard and "prove" they are competent and know their subject. That the expectations of them are much higher than for men, and that there is *no room for women to make any mistakes* - not even when they write on the board - it must always be right.

I think there is a perception that women are 'allocated in' precisely because they are women, and that women are not recruited based on their competence. This devalues the competence and titles of women. Quality requirements/the evaluation template is different for women than for men, men do not need to meet the same high requirements. I've seen research applications where I have been told that if I, as a woman, had written them then they would have never been successful due to lack of quality. There have been improvements in this area, but generally it takes longer for women to be appreciated. (Woman, associate professor)

Men belong here without being challenged and therefore have enormous leeway compared to women. If you are always challenged about why you belong here you eventually start to doubt yourself (Woman, associate professor)

Some women (and one of the men says he's heard about this) describe limitations compared with colleagues who are men when it comes to resources, such as access to labs, offices for their group, as well as working/getting work done in the workshop.

Some women describe how they felt that they have not been invited to participate in research applications or involved in various research contexts. In some cases, they think that it's perhaps due to social or expertise reasons, or because they don't know which channels and forms to use, while in other cases it is obvious that they should be invited and participate in the application (and this has also been confirmed by colleagues and management).

3.2.4 Men - examples of situations where they experienced setbacks and obstacles, or situations where they were belittled or overlooked, or encountered opposition

The men interviewed give far fewer examples of situations where they have encountered opposition, have been belittled or overlooked, or have experienced setbacks and obstacles. Many of the setbacks described by men are related to the academic review system.

I can't think of any examples, except that you don't get all the projects you apply for, and you don't get your articles published in the journals you want. Everyone encounters setbacks. (Man, professor)

The interviewees gave the following examples of setbacks, obstacles and situations where they encountered opposition, were belittled or overlooked: Not winning support for requests when it comes to duties, such as teaching, and being ordered to do it even though they should develop in other areas. Not having been invited to participate in research applications and research contexts. Having discussed ideas that became scientific works and then not receiving recognition for their contribution. Having been subjected to master suppression techniques. Having been encouraged to apply for positions but then to not even be invited to interview, or having been second in line for a position but not being offered the position when the first in line declines and the position is re-advertised instead. Two describe how they have encountered opposition to applying for promotion or docent qualifications. One describes how he did not pass the interview but was not given any clear explanation of shortcomings in the interview and asked for more transparency over the requirements for "approval".

I have felt that I've been overlooked on several occasions. There was a conference at KTH in my subject area; I was not invited to participate. (Man, professor)

3.3   Views on the JML situation and JML work at the SCI School

There is a high awareness among many interviewees of unconscious prejudices and discrimination, especially among women, but also among some men. At the same time, there is an *impatience* and a feeling that the *JML work is inadequate*, and that the individual does not always take enough responsibility for the solution.

Many employees consider this to be a problem that doesn't concern them; it's not me who needs to think about this. It is the JML Group, the head of department, and the head of school who think about this. The JML Group will find a solution, they take courses, they will solve it. I don't need to get involved. Much of this type of thing is entrenched in our culture and our work environment. But everyone is responsible for this work, as professor, supervisor, colleague, teacher, parent, you need to think about this. When we reach enough people who take responsibility, who speak out, respond, act - then there will be change. (Woman, professor)

3.3.1   Views on the current JML situation

The vast majority of interviewees have observed differences for women and men within the SCI School and within academia. One difference highlighted by many is that it is "obvious" that women are in the minority.

From starting as a doctoral student, women are in the minority. There is a minority problem - as a woman, it is difficult to hide. It may be possible, but with very great effort, to constantly relate to being a woman. The majority doesn't understand that the minority needs to relate to it the whole time. (Man, professor)

Several point out that the imbalanced gender ratio, which also increases further up in the academic hierarchy, means that women have fewer role models of the same gender. But the fact that there are few women also means that if, for example, a woman takes sick leave, the "easy" conclusion is that genetic predisposition (biology) causes women to take sick leave.
Some of the women describe how their colleagues are unaware of *what it means to be a woman and in the minority at the workplace*.

People have good intentions but don't understand my situation, I am a woman, I am young, and I am an outsider. They laugh about gender. They don't realise how difficult it is for me. (Woman, associate professor)

Why? Due to the way things are, not everyone feels equally comfortable in certain situations; there is no equality for minorities. Even if the numbers were the same (50/50 gender), it would not be OK if people were treated differently. There is discrimination based on how the system is structured, how people behave, etc. (Woman, doctoral student)

Diversity is important - something we miss. Everyone is welcome: women, men, with a Swedish background and a foreign background. But there should be another diversity as well, such as social background, personality. (Man, associate professor)

Some of the men interviewed emphasised that they have not seen it in practice nor understood that conditions may be different based on gender, but would like to understand and see how they should change their behaviour in order not to be a part of this. Others describe how conversations and cooperation with female colleagues have made them aware of how different the conditions at the SCI School are for women and men. Some men say that they have specifically noticed that female colleagues do not have the same status in relation to students, and as teachers are not shown the same respect.

I have heard of female colleagues who have experienced differences, but I have not seen it myself. But I have noticed their reactions. (Man, associate professor)

We talked a lot when we were assistant professors, and it made me realise that things were a lot more difficult for her. I wouldn't have noticed it if I hadn't been close and talked with her. (Man, associate professor)

There is a much lower acceptance of mistakes or sub-100% performance for women than for men. I can allow myself to do something well enough, and then maintain that what I did was very good. I think the system is considerably harder on women. For example, the students are less accepting of women who are not properly prepared. There is a vulnerability in the teaching situation and feedback can have a serious impact. I've seen this when teaching in parallel with a woman. (Man, professor)

Not for my own part at the division or department. But I have seen it happen to others in meeting rooms. I have seen examples of "the good girl" who sat with her hand raised waiting to speak, with several dominant older male professors all talking at the same time. One example was where a woman held up her hand to speak and was then told by one of the professors that 'you don't need to hold up your hand'. It was very clear that the male professors were totally unaware that it could be perceived as being negative. (Man, professor)

I have a young colleague, 40-45 years old, who says: "I will only employ men. Women are difficult". Women become difficult when they point out problems. (Woman, associate professor)

The difference between genders most mentioned by both women and men is that the interviewees feel that women have more commissions of trust. Several women also mention that they can't help but wonder whether they were asked *only* because they were women. Even men who organise grading and other committees confirm that they quite often get the comment, "Oh well, you need a woman". Someone also mentions that the objective for gender composition in different contexts may cast suspicion on women in a prominent position (are they there because of their suitability or gender?). Some women mention that if you finish one assignment then as a woman you quickly get a new assignment. And if you are good at taking responsibility then you get more assignments, while someone guilty of mismanagement avoids them.

As a woman you have to accept lots of things and say Yes even though you don't want to. But you will also get asked about things that men don't get asked about, it is of course an advantage. But there is also a lot of, "We'll have a woman". (Woman, associate professor)

Some of the interviewees (both women and men) emphasise that it is the same people (mostly men) who are chosen for leading positions at KTH, such as the reflection group, board of directors, teaching issues, centre of excellence leaders, and commissions of trust at the Research Council, and the next in line to be chosen are the "crown princes" of these individuals. Men are also excluded (not recommended, not included in a network) if they are not considered to be crown princes. It is also mentioned that women, in general, will not be elected to the same extent as men (even when competent women are standing) in faculty meeting elections (KTH Board, faculty assembly, faculty council, etc.). A few women are elected, but the faculty meeting seems to believe more in men, and even men of average competence will be elected. Several women and men are of the opinion that it seems to be that men get/take high-status assignments that give a lot of power, and women to a greater extent get/take lower-status assignments.

The usual, the same seek the same in the assessment of qualifications, there is a bias in it in academia. (Man, professor)

There is no conscious discrimination around me. It is much deeper than that. Many decisions are made and a lot is done based on gut feeling. It goes wrong sometimes. I have realised that I am a part of it myself. (Woman, professor)

I applied for several teaching positions before I got one. If I'd any doubts whether I fitted in at KTH I might have stopped trying. Then I became an associate professor, built up the activity and got management positions, where they recognise potential rather than proven ability. I've been blessed with the male silver spoon. There have also been tough situations, where I think if I'd been a woman and questioned myself I wouldn't have stayed. There has never been any doubt of that kind. Because I fit into the template - I have not been challenged by the organisation. (Man, professor)

Some of the interviewees mentioned that one difference they have noticed is that they feel that women seem to have more teaching than men.

What could be the reason for that? I think they don't want to say No. If you are not in a secure position, but working in temporary employment long-term, then you say Yes. Then you want to take on more in order to secure your position. I know men who feel the same way. It may be a way for women to show that they are needed, and perhaps also to show that they are good, not just in research. (Woman, associate professor)

Other differences brought up in the interviews included the interviewees feeling that women take responsibility to a greater extent than men for social gatherings and meetings, as well as what else is needed for the infrastructure (but which do not provide useful qualifications), such as inviting lecturers to, and organising, lunch lectures. One of the interviewees said that their division had held a constructive discussion on how this responsibility could be shared more equally between women and men. Women mentioned that they (and not their male colleagues) are asked to take care of the psychosocial work environment: "*So and so is feeling sad. These two don't work together. Can you fix that?*". Someone felt that women are more cautious with their applications when it comes to qualifications, while men are more creative. Someone else mentioned that men are more aggressive when they negotiate their salary, as well as in meeting situations. The interviewees consider it important that the person leading the meeting should ensure that all views are heard, and that the

people who dominate too much are held back. Someone felt that women in leadership roles devote a lot more time to them and that women in commissions of trust are better prepared.

If, for example, a woman sitting on a committee has read the whole report, the man will not have done so. (Woman, professor)

There is an expectation that women will adhere to some kind of standard of pleasantness. If I am determined then I am a dragon. You unconsciously take a step back. Being so hard-programmed to meet the standard of pleasantness, I become vague and may not get what I want. A determined woman takes a lot of risks. While being determined is expected of a man, it means that men have more room for manoeuvre. (Woman, professor)

The most difficult thing to deal with is the informal help that some get, some are included in various contexts, others are excluded. (Woman, associate professor)

Of course you have your "troughs" - of all of the things I have been able to do, what is because I am a certain gender? (Woman, associate professor)

As a manager, the level of service you get from service functions varies. A woman who is a manager is expected to do a lot more. This creates both irritation and stress. (Woman, professor)

As a man, the service you get from the administrative staff differs from what women get. A man who behaves a little erratically gets the pieces picked up around him. Women cannot allow themselves to even need for pieces to be picked up around them. I don't think men see that in general - that the administration would even act differently. (Man, professor)

Some women state that they often get comments about their appearance, while others have never had that. A man tells of how he has noticed that there is a difference in the way colleagues talk about women and men. That colleagues (men) especially comment on which women have been with other colleagues, but also, for example, how much (different) women eat. He has very rarely heard that men at the SCI School comment about other men's appearance or non-professional aspects in general.

Some highlight situations where they have encountered the attitude that when female students or doctoral students drop out, it's because the women were not suitable for this type of studying or for this subject. Instead of asking the question: *Why do they drop out?* Based on the culture and conditions at the workplace or in the education.

Something also brought up is how at a conference it is "unproblematic" for men who are in the early stages of their career to go out for a beer with professors and senior personnel within their research subject, allowing them to have discussions and build networks. It is more provocative when a man and a woman do the same thing, not least a senior man and a junior woman, it becomes much more sensitive. This is an obstacle for women and does not give them the same opportunities.

3.3.2 Views on the JML work

Eight of the interviewees responded that they did not know about the work of KTH and the SCI School with JML, and one knew about the work of KTH but not about that of the SCI School. The other 38 said they knew about the work. How much they know about the JML work varies, from knowing that it exists and having surfed the Web to find information for the interview, to being deeply engaged in the work in different ways.

The vast majority of the interviewees think that there is a need for continued work on gender equality at the SCI School. Reasons mentioned for this include the imbalanced gender distribution in higher positions compared to lower positions, and the difference in the gender distribution among students and those who then choose an academic career. Also mentioned are unequal conditions in the organisation and the unequal, or even unacceptable, behaviour of colleagues. And for more people to better realise their potential is also given as a reason. Another reason mentioned is that there is a challenge as to whether a problem exists at all - something that challenges everyone who deviates from the norm. That many argue that academia is completely meritocratic and that gender, etc., does not make a difference. Several point out that the work, initiatives and discussions, should include more "diversity/minorities" than just gender, and rather consist of work on equality or diversity (but without for that matter losing focus on gender).

Some men believe that JML work is to the disadvantage of the majority, i.e. men.

I have seen the negative side of gender equality. I was prevented from applying for grants because I am a man, due to the number of male and female applicants. (Man, professor)

Both women and men point out that one of the most important initiatives is to raise visibility, and avoid the effect of bias on decisions, ranking, etc. They reflect on how standards, perceptions and subconscious prejudices affect recruitment and promotion: when positions are advertised, when assessing applications (which ways to write and express yourself are encouraged?); and in expert opinions (do the expert's way of expressing themselves about different candidates trigger the recruitment committee's perceptions and subconscious prejudices?), when assessing candidates and decisions on which candidate should be employed or promoted. The interviewees consider that recruitment managers, recruitment committee chairs, and recruitment committees should be more aware and knowledgeable about unconscious bias by means of appropriate training, but also to then ensure that this is included in the recruitment process. Someone suggests that it would be interesting to include an observer during recruitments who looks for bias, just as a "test", in order to increase awareness and learning. Someone suggests reflections on bias and why it appears as it does, such as bias through the education system and perceptions of who is suitable for science, that it may explain why they don't have so many female doctoral students. And so increased awareness is demanded of how bias affects perceptions of who should do what in the workplace (book meetings, organise events, hold the meeting, have different assignments, etc.)

Some women emphasise that they have experience (their own or when helping doctoral students or other colleagues) that KTH's procedures and support systems for harassment, victimisation and discrimination do not function satisfactorily.

These reports of harassment stick. This is a major problem at KTH. Knowing this is the case prevents you from making a formal complaint. It's as if they believe it will fix itself. But it's important to make a formal complaint in order for it to be registered. Then you can follow it up if someone has more complaints against them. In our case, the person had been reported previously. He changed department and they couldn't follow it up. Then the wrongdoing can be repeated, because there is no documentation and no one is held responsible. When someone who has been reported previously applies for promotion, will this show up?(Woman, associate professor)

Yes, there is a need to continue working on it. It's important that management leads by example. Promoting JML will have an effect. (Woman, associate professor)

I am surprised; it is so painful to see resistance to gender equality in our division, at the SCI School, at KTH, in society, and in life. There is a feeling that it "comes from above" and that it is the men who are at a disadvantage.(Woman, associate professor)

Some highlight that much is unspoken in the workplace, and if you have a cultural background other than Swedish then much is difficult to understand, they demand more transparency and clarity. Some reveal, for example, that it is unclear at the workplace how you should and are expected to behave, what you must/should and must not/should not do. Some describe challenges in the working group that are due to colleagues having different cultural backgrounds. While others describe how wide ethnic diversity works very well in their working group. Some insist that there is an overall need for more knowledge and awareness of intercultural communication and cultural differences, your own and in the interaction with others. This applies to both employees with a Swedish background and employees from abroad at KTH, regardless of position and function.

Many highlight the need for education, but it must be high quality, be linked to an individual's daily work, and preferably also be subject-specific so that the individual can relate it to his/her own subject.

4 Conclusion - our interpretation of the results of the inventory of problems

The first parts of this working paper have presented the empirical results from the inventory of problems. In this concluding section we, the project leaders, would like to present a summary and our interpretation of the results, as well as our thoughts about the future.

4.1 Summary and interpretation

The inventory of problems shows that the SCI School has been a male-dominated environment with women in the minority. This is illustrated by the fact that women generally experience a significantly greater exclusion and vulnerability due to the following:

- Devaluation of/questioning a person's competence
- Lack of appreciation
- Being kept out of sight and not being taken seriously/listened to
- Not being included in meetings, networks, etc.
- Being perceived as included 'only' for being a woman and not for competence
- Comments on appearance/behaviour
- Expectation of doing "academic housework" (i.e. duties with lower status and remuneration)

The setbacks and situations described in the interviews are well in line with previous studies on the JML situation in work environments in which women are in the minority[*]. It is also a fact that the female participants described setbacks to a much greater extent than the male participants, despite being asked the same questions. Cumulatively, this suggests that the SCI School currently has a culture and a work environment that favour the majority (men) to a much greater extent than the minority (women).

Due to the setbacks experienced by women, we note that most women have developed "survival strategies" based on the fact that there is a great awareness on an individual level in most of these women of gender inequality within academia - to understand that some setbacks are not due to an individual's own ability can have a protective effect. A close colleague or mentor (woman or man)

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[*] Wahl, A., C. Holgersson, P. Höök & S. Linghag (2001/2011/2018) *It Will Sort Itself Out. Theories of Organisation and Gender*. Studentlitteratur, Lund.

with a good understanding of the minority problem can also provide invaluable informal support. That many interviewees in this inventory of problems, both female and male, held such a high level of this awareness is probably due to the JML work that has been done and is being done at KTH and the SCI School.

However, the interviews unfortunately reveal that a proportion of employees at the SCI School remain unaware of the minority problem. Some express a resistance to JML work and claim that it puts women at a significantly superior advantage. But the most common expression of resistance revealed by the interviews is a more passive resistance in the form of disinterest. This is a relatively common way of expressing opposition to work on gender equality in organisations where women are in the minority. There is a general attitude that the work on JML is someone else's problem, and there is a lack of awareness that the entire organisation, i.e. all employees, holds the responsibility to solve work environment issues. In women, this leads to a strong impatience and a feeling that change is not being implemented quickly enough. There is also a widespread fear in the school's women's network that the JML work is about to stop and that the visions of equal opportunities for men and women in academia will never be realised.

4.2 Forwards

The work carried out so far at the SCI School with networks and mentors for women can be considered as being emergency "first aid" measures in order for women to be able to survive in this environment. What is needed going forward is continuous work on change that leads to transparent processes such as career support, and to a work environment with greater inclusiveness and gender equality. This will benefit both the minority and majority and is, as far as we can see, the only way to be able to increase the proportion of women at the SCI School in the long term. Change in the work environment consists of ***Collective responsibility and measures to create awareness.***

Our system currently contains structures that reinforce the culture of the majority. A culture in which men are considered as being the norm and women are considered as deviations, and do not fully belong in academia. In this context, we would also like to highlight the importance of transparent and inclusive processes and procedures. In the inventory of problems, many participants reflected on the challenges and the loneliness involved in being colleagues and competitors at the same time. For someone in the minority, these typical challenges in the academic environment become even greater and more difficult. Anyone in the minority, or not corresponding to the norm, risks being filtered out to an even greater extent in a selection process, of not being considered for assignments, or of not to getting important support from a mentor. It may also be a question that someone in the minority is not provided with information about what is required for a certain position, advancement or assignment, and is therefore not applying or signalling interest despite holding the qualifications. It is of the utmost importance that all employees are made aware of the consequences of gender inequality, not only at the individual level but also for the academic environment as a whole.

Changing a work culture is a question of giving every employee, especially in the majority group, knowledge and awareness of problems in gender equality so that everyone feels responsibility for and wants to contribute to the work on change. Management must clearly show it is taking responsibility in order for this to be possible. It is not just a question of supporting the process but also of being a leading actor in the work on change. It should be made clear that a docent's subject responsibility also includes ethics and work environment in the larger perspective. In other words, having responsibility for promoting a healthy research environment as well as safeguarding academic citizenship. In this respect, it is particularly important to have an open discussion based on existing research. Our hope is that the material we present here shall be helpful in a way that awakens reflections in everyone. We would like this working paper to be used to raise awareness of what it is that makes our work environment unequal as well as what would be the consequences in both the

short and long term of maintaining the status quo. It is no longer possible to say: "it does not happen with us".

We would like to thank all interview participants for their time and commitment.

Carlota Canalias, Linda Lundström and Lisa Prahl Wittberg

Stockholm, December 2020.

Appendix 1 Interview Guide in Swedish and English

Interview Questions SCI KTH

1. Could you briefly describe your academic career? And do you feel you have reached the position or level that you want? (In terms of research, teaching, academic qualifications, publications, employment, etc.)
2. Can you give examples of situations where you have been encouraged and/or supported (formally or informally)? For example, if you have had mentors, in applying for advertised positions, applying for funding, participating in projects, nominated for roles, participating in networks, etc.
3. Can you give examples of situations where you experienced setbacks and obstacles, or situations where you have encountered opposition, have been belittled or overlooked?
4. Have you noticed any differences in working conditions, prerequisites, and results for women and men at the SCI School/within academia? For example, in terms of positions, salaries, resources, hardware/equipment, development opportunities, expectations, commissions of trust, and work environment?
5. How would you describe your workplace, work environment/culture? What is good/not so good?
6. In addition to being knowledgeable in your subject area, a good researcher and a good teacher - do you think there are any particular perceptions or expectations for how to behave or act in order to be successful within academia? If yes, to what extent do you think this is enabling or limiting to you and your colleagues?
7. Do you have any suggestions for improvements/changes within academia (academic career)? Generally? For more equal conditions for women and men (if this is a shortcoming)?
8. JML (Gender Equality, Diversity, Equal Treatment)
   - Do you know about the work of KTH and the SCI School with Gender Equality, Diversity, Equal Treatment (JML)?
   - Do you think work on gender equality is needed at the SCI School? Why/why not? If yes, what suggestions do you have for activities and initiatives that should be included?

Interview Questions SCI KTH

1. Looking back, how would you describe your academic career journey, and do you feel that you have reached the position or level that you want? Regarding research, teaching, academic qualifications, publications, employment, etc.

2. Can you recall instances or situations when you have been encouraged and/or supported (formally or informally)? For example - encouraged to apply for positions or financing, invited to participate in projects or networks, nominated for positions, etc.

3. Can you recall any instances or situations of adversity or obstacles such as discouragement, exclusion or having been overlooked? For example – excluded from meetings or networks, belittled through comments or other actions or not having been informed of important information, etc.

4. Have you noticed any differences in working conditions, opportunities and results for women and men at the SCI School and in the academic world? For example, who holds certain positions, salary, resources, hardware/equipment, development opportunities, expectations, management duties, commissions of trust, workplace environment.

5. How would you describe your workplace environment and culture? What is positive/less positive?

6. In addition to having a high level of knowledge and expertise with your academic area and being a good researcher and teacher – do you think there are any other expectations on how to behave or act in order to become successful within academia? If yes, to what extent do you think that such expectations are enabling or limiting for you and your colleagues?

7. Do you have any suggestions on how having a career in academia could be improved generally? And for more equal conditions for women and men (if it's an issue today)?

8. JML (Gender Equality, Diversity, Equal Treatment)
   - Are you familiar with KTH's and the SCI-school's work with Jämställdhet Mångfald Likabehandling JML?
   - Do you believe efforts around gender equality at SCI-school are needed? Why/Why not? If yes, what activities or efforts do you think are needed?