

Description of the Initiative

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Finland is a pioneer in gender equality and very often given as an example as "the best country in the world for a career woman", see for example the recent report from the World Economic Forum. [1] Indeed, Finland has gone a long way in its work on gender equality. For example, it was the first country in the world to give women both the right to vote and stand for election (1906). It is observable in higher-level education, where women constitute 56% of university students. More women study subjects in the social and health-care sectors and in the humanities, art and education sectors. Some 22% of students studying engineering sciences are women; and 32% of students in mathematics and computer science are women – this is significantly higher than in other OECD countries. [2]

As advanced its work on gender equality is, Finland still has a long way to go to address the problem. A specific form of the Finnish inequality of chances is often referred to as "the glass ceiling"; another name for it in Finland is "the old boys' club". This means that even though it seems that everyone has an equal fair chance at career advancement, senior positions, and recognition in general, it turns out in practice that (almost as if by magic), chances for women diminish quickly as the level of seniority increases. This is apparent in all areas of the society, including the academic world. The glass ceiling leads quickly to a vicious cycle: once the perception of it is spread enough, less women "push through the ceiling", and even fewer succeed. Our initiative at Computer Science at Åbo Akademi University focuses on solving this problem early on and blocking the perception of the glass ceiling by making female role models clearly visible, having strong female leaders in the department in various positions (group leaders, senior lecturers and professors), who in turn tend to bring even more women around them. Hand in hand with the usual explicit policies of equal chances and gender balance, this approach shows clear signs of success and becomes a positive feedback loop: more women enter the system, work on their careers, led by strong role models showing that the glass ceiling either does not exist or it may be broken through.

Åbo Akademi University (ÅAU), the only Swedish-language university in Finland, is very small in comparison to other higher-education units. It strongly and explicitly supports the philosophy of gender equality. The idea was investigated and analysed in depth at ÅAU already in 2011, where the study was based on interviews, as well as focus groups gatherings and assessed the theory (strategies) and practice (implementation). [3] The report served as one of the inputs for "Plans for Equality and Equal Treatment at Åbo Akademi University 2015-2017" [4], which first describes the status quo and then recommends actions for improvement in the fragile or problematic areas. It mentions that "ÅAU endeavours to create equal opportunities for advancement for women and men and to develop working conditions so that they suit both genders." It also states that "In areas where the gender distribution is uneven, i.e. the underrepresented gender is less than 40 % of the category; positive discrimination may be applied in accordance with the equality act."

The Information Technologies (IT) Department is a part of the Natural Sciences and Engineering Faculty. It consists of Computer Science and Computer Engineering Departments. The high number of women working here, especially in Computer Science, on research and teaching positions is quite unique. The Department acknowledges the intrinsic value of every person and group that promotes dignity, understanding, and mutual respect, and welcomes diversity. Females who work and study here certainly contribute to the overall organization with such characteristics. The focus on the female aspect in our organisation has been visible over the years and certainly cannot be considered as a recent initiative. In particular, there are quite many females representing senior-level staff and attributing their research journey to the Department and guidance of female-superior. They have served as role models and true mentors showing that progressing with career is not only doable, but also rewarding and worthwhile. By being an example the female-leaders in Computer Science have proved that women are equal on the arena of research topics and they often exceed the overall expectations with their stamina and perseverance. The Department has a long practice of inviting female reviewers and opponents to the doctoral dissertations. Female opponents serve as role models, too, although being from the outside of the Department.

In most cases work and career of females has to pool resources with their private lives. Pregnancy and related medical conditions, as well as family life are also taken under consideration at the Department, by e.g. enabling an employee to work from home in case an employee is located further from work or in case the environment at home is better supporting her productivity and well-being. Furthermore, working remotely is possible on certain days, regardless of health conditions. This type of job-flexibility is empowered by providing adaptable working hours, which in sequence allows having longer breaks within the work-day. Moreover, maternity and parental leaves are not obstacles when it comes to being updated with the work at the Department that is ongoing. This policy helps women on the leave to stay informed and facilitates her comeback to work later on. There are also part-time work possibilities, e.g. after coming back from maternity leave or due to some change in private life, which requires reducing the workload.

Finally, we present excerpts of testimonials written by the employees at our Department that were sent to support the Minerva application.

"(...) During my undergraduate studies, I was the only female student in my year. (...) I have several times been offered salaried positions at the department as teacher, research assistant and doctoral student. (...) I am invited at least once a year to give guest lectures in courses for undergraduate students. I find this to be an excellent opportunity to act as a role model and build a positive image of women in IT." – *Jeanette Heidenberg, PhD, Innovation and Business Architect at Ericsson*

"(...) The presence of women has often improved communication within the group and provided for a pleasant work atmosphere. I therefore strive for manning my project groups with both male and female researchers. I find it admirable to see that the female researchers that I work with usually have managed to find a workable balance in work and their family lives." – *Ralph-Johan Back, Professor in Computer Science*

"Coming from a country with its roots deep into the male dominant culture, I was used to always put an extra effort and to take a further step to be able to compete with my fellow male classmates. The reason my experience at Åbo Akademi stuck as an everlasting memory is not because I have been benefited from a gender equality policy, not because I was well treated as a lady! It stuck because I was treated as me, only me, without any appendix. I was treated, acknowledged, received and appreciated as me, based on my own merits, nothing less, nothing more. That is the memory that stuck." – *Sepinoud Azimi, Postdoctoral Researcher in Computer Science*

"I have been working in Computer Science at Åbo Akademi University for almost two decades now (...), starting as a PhD student supervised by Prof. Kaisa Sere and Prof. Ralph-Johan Back. Kaisa has been the first prominent female figure at the department, acting as a fierce role model for the younger generations. Now, so many years later, I am a research group leader and I try in my turn to encourage and promote women in Computer Science." - *Luigia Petre, PhD, Docent, Associate Professor in Computer Science*

"I grew up as a researcher amongst other female scientists and had the opportunity to watch their successes and how they develop their careers. Both of my PhD supervisors acted as strong female role models. I am aware that IT is considered as a men's world, but it is hardly noticeable in the scenery we have here, at Computer Science Department." – *Marta Olszewska, Postdoctoral Researcher in Computer Science.*

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Evidence of the Impact of Initiative

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This document demonstrates the positive impact of the initiative supporting female careers at the Computer Science Department of Åbo Akademi University and supports the material describing the initiative. The collected evidence is concentrating on the quantitative data, since the qualitative data (parts of testimonials) have been included in the "Description of the Initiative" document. The measurable impact of careers of women within institution can be observed from several perspectives: bachelor, master and PhD levels of students, as well as employees at different stages of their career. We examined the former for period 2010-2015, whereas the latter for period 2011-2015. Note that the exact numbers of students and employees were anonymised (e.g. lack of y-axis in charts).

Impact of the initiative on student level is particularly visible when the students are making more conscious decisions about their career path, meaning enrolling at the Master and PhD level. The data collected for student enrolment at the bachelor level showed that Computer Science has gained interest in recent three years, which will most likely be reflected in MSc enrolment in next few years. PhD enrolment has been generally balanced. However, interestingly enough, in year 2011 solely women were admitted to the PhD program in Computer Science (see Figure 1).

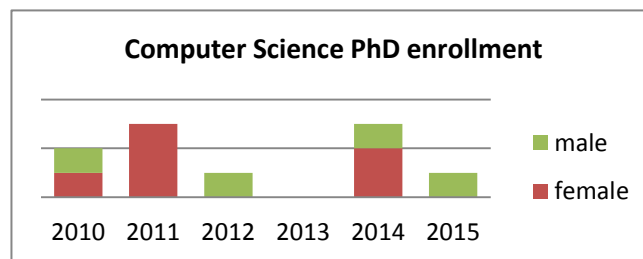


Figure 1 Enrolment to the PhD program in Computer Science

The final examination of students on various levels presents a growing trend of female graduates on the advanced level of studies, in particular MSc and PhD level. While the former oscillates around 25% with some fluctuations between the years, the latter is steadily increasing, which is visualised in Figure 2. Both statistics can be attributed to the fact that women seem to be more career-driven and persistent, thus they feel the need to accomplish what they committed to, i.e. once they enrol to a program they most likely graduate from it. According to Eurostat data [1] about tertiary education, women (age 20-29) are 12.4% of graduates in mathematics, computer science and technology, which according to TechRepublic portal [2], makes it hardly about 6.7% as MSc graduates. Computer Science Department is quite unique in this context, as it there are 24% of women MSc graduates (years 2010-2015).

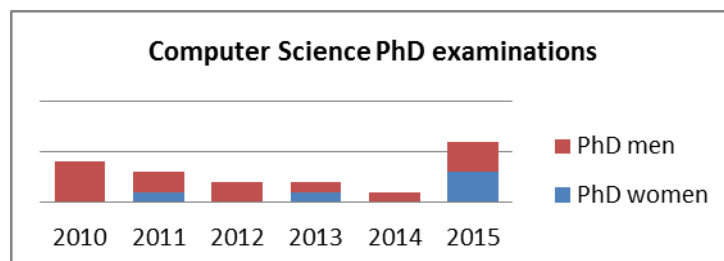


Figure 2 PhD examinations in Computer Science

In the report [1] it was mentioned that women are still somewhat underrepresented on most levels of decision making within ÅAU. The Åbo Akademi University Board 2014-2015 consisted of 30% women and of the ordinary members in the Collegial Body 37.5% were women. The data collected in 2013 showed that the Natural Sciences and Engineering Faculty (FNT), where Computer Science Department is a part of, was consisting of 526 employees, herein 33% of female.

Computer Science Department is diversified with respect to female presence also internally. Women work on different levels of professional ladder: as PhD students (level 1), postdocs and

researchers, as well as university teachers (level 2), senior researchers and senior lecturers (level 3) and professors (level 4). In Figure 3 we present the "career paths" of women in Computer Science throughout the years 2011-2015.

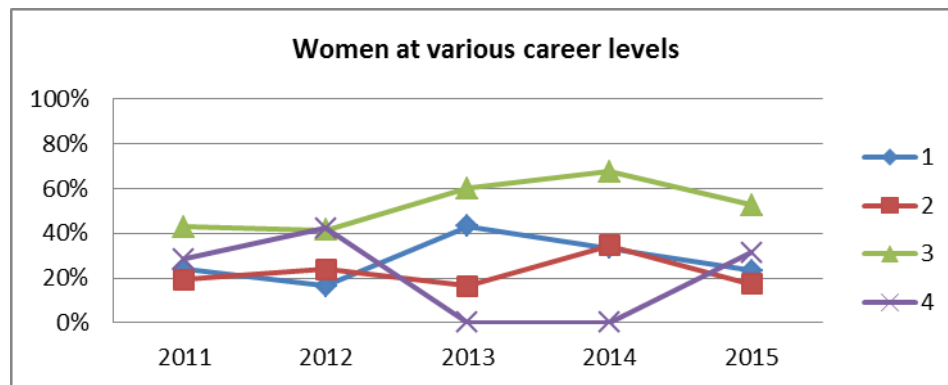


Figure 3 Women's career trends in Computer Science (all levels of employment)

Figure 3 shows that the ratio of women on level 1 was rising to get stable at about 30 % (last 3 years), on level 2 was stable at roughly 30% to recently fall (23%), which can be attributed to the advancement in career (several female became docents). The advanced career levels, 3 and 4, are the ones to be most impressive since they stand against the NCWIT report [2], which states that "the higher the faculty rank, the fewer the women". Number of women on level 3 was constantly growing (see the previous note for level 2). Note that the sudden drop in number of women in years 2013 and 2014 is attributed to a female professor passing away; yet, it was already amended in 2015. Another observation is that the career levels 1 and 2 (lower level), as well as 3 and 4 (advanced level) balance themselves, which indicates an established "women-friendly" ecosystem.

The Computer Science Department, herein Computer Science, is seeing to that there are female reviewers for the PhD theses and female opponents at the PhD dissertations. The data collected since 2010 shows that there were roughly 12% of female reviewers and 17% of female opponents, respectively, with a slightly increasing trend. The data are displayed in Figure 4. It is believed that having "external" role models supports our initiative even further.

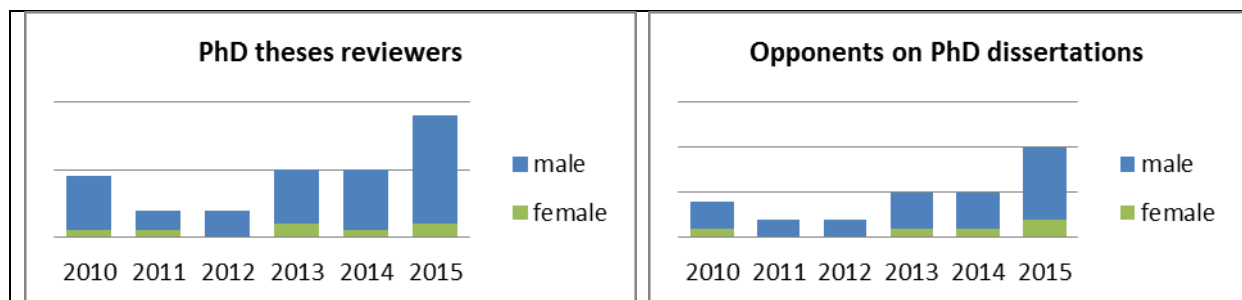


Figure 4 Female acting as reviewers of theses and opponents (external influence of women)

References:

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