

FEMIN-ICT

Project Result 1 – Action 4

Final Report

Project number: 2021-1-SE01-KA220-VET-000034758

Abstract: The information provided below is a result of desk and field research that took place in the context of the Erasmus+ funded project FEMIN-ICT. FEMIN-ICT is a partnership between 7 organizations based in 6 EU countries and aims to bridge that gap by encouraging more women to pursue the sector, upskilling them, providing them with inspiration and role models and promoting their equal participation, representation, and treatment in the ICT* sector. This research, including dissemination of surveys and conduction of Focus Groups including the Target Group** were held by the entities that are part of the Consortium*** in their respective countries and all the information is available in the Google Drive that the Consortium shares. This report aims to analyze and draw conclusions from that research.

Definitions:

*ICT: Information and Communications Technology. It covers any job position which produces results that will store, retrieve, manipulate, transmit, or receive information electronically in a digital form (e.g., personal computers including smartphones, digital television, email, or robots).

**Target Group: Women in the ICT sector, women interested in pursuing the ICT sector, employers, labour agencies, academia, municipalities, the private sector.

***Consortium: IMPACTHUB STOCKHOLM AB (Sweden), IKIGAI (Spain), CSI CENTER FOR

SOCIAL INNOVATION LTD (Cyprus), Associazione Co-cò (Italy), Women On Top (Greece), The

Square Dot team (Belgium), STIMMULI FOR SOCIAL CHANGE (Greece).

Disclaimer:

This project is funded with the support of the European Commission. The information and views set out in this document are those of the author(s) and do not necessarily reflect the official opinion of the European Commission. Neither the European Union institutions nor any person acting on their behalf may be held responsible for the use which may be made of the information contained therein.

Secondary Research:

- The first observation that can be made through the available existing research, is the lack of information on women in the ICT sector specifically. Most of the information acquired from most partners is under the “STEM” umbrella when it comes to women’s lack of participation. Therefore, ICT as a “newer” profession with even fewer female representation is lacking research regarding female participation. Other findings that came from the desk research conducted for the purposes of this project are the following:
 - **Gender Stereotypes:** STEM fields are often viewed as masculine, and teachers and parents often underestimate girls’ math abilities start as early as preschool. In primary education, STEM attitudes do not differ between girls and boys, while girls do not endorse gender stereotypes. Indeed, girls often outperform boys in grades and ICT literacy tasks. Given these differences in attitudes and performance, it is quite interesting that girls expect to be less successful than boys in STEM related careers and that fewer girls than boys are interested in a STEM career at the beginning of high school. (Zacharia Z, et al 2020, Hill C et al, 2010).
 - **Male-Dominated Cultures:** Because fewer women study and work in STEM, these fields tend to perpetuate inflexible, exclusionary, male-dominated cultures that are not supportive of or attractive to women and minorities (Hill C et al, 2010).
 - **Fewer Role Models:** Girls have fewer role models to inspire their interest in these fields, seeing limited examples of female scientists and engineers in books, media and popular culture (Benderly BL, 2019). There are even fewer role models of Black women in math and science (FarheenS, 2021).

Disclaimer:

This project is funded with the support of the European Commission. The information and views set out in this document are those of the author(s) and do not necessarily reflect the official opinion of the European Commission. Neither the European Union institutions nor any person acting on their behalf may be held responsible for the use which may be made of the information contained therein.

- Math Anxiety: Primary school teachers, who are predominantly women, often have math anxiety they pass onto girls, and they often grade girls harder for the same work, and assume girls need to work harder to achieve the same level as boys (Wang L, 2020).
- Confidence gap: Many girls lose confidence in math by third grade. Boys, on the other hand, are more likely to say they are strong in math by 2nd grade, before any performance differences are evident (Cvencek D et al, 2011). This could also lead to women not pursuing those types of careers. In primary education, STEM attitudes do not differ between girls and boys, while girls do not endorse gender stereotypes. Indeed, girls often outperform boys in grades and ICT literacy tasks. Given these differences in attitudes and performance, it is quite interesting that girls expect to be less successful than boys in STEM related careers and that fewer girls than boys are interested in a STEM career at the beginning of high school (ZachariaZ, et al, 2020).
- Girls' interest is linked to their environment: negative stereotypes, lack of self esteem and lower self-assessment, lack of mentors, lack of spatial skills hold girls back from pursuing STEM in the future. (FarheenS, 2021, HillC et al, 2010).
- Women in Universities: even women who choose STEM are less satisfied with the academic working environment and are more likely to leave it early than their male counterparts. Due to the lack of women in STEM, women are seen as a representation of their entire gender, which leads to more pressure and further marginalization by their male peers (Hill C et al, 2010).
- Unpaid labour is heavily expected from women (childcare, elderly care, domestic chores) and the pandemic put even more burdens on women which led to many women quitting their jobs or not being able to assume as much responsibility as their male counterparts (Calo X, et al, 2021). Therefore, when a crisis happens women tend to quit their jobs because they are overwhelmed by the other responsibilities falling on their shoulders (Gogoi P, 2020).

Disclaimer:

This project is funded with the support of the European Commission. The information and views set out in this document are those of the author(s) and do not necessarily reflect the official opinion of the European Commission. Neither the European Union institutions nor any person acting on their behalf may be held responsible for the use which may be made of the information contained therein.

Primary Research – Surveys and Focus Groups (group interviews)

The consortium also conducted surveys and focus groups in the countries their entities are based in. The Target Group was divided into two categories: different questions for women already in or interested in the ICT sector and different questions for the stakeholders of the Target Group. The conclusions that were reached for each country are the following:

Cyprus

According to Cypriot stakeholders, the main barriers women face in the sector are internalized misogyny, lack of role models. One stakeholder who is a partner at a major company said that “men in power want to hire mini versions of them”.

Existing good practices on a national level are very few. There are some actions from non-profit (as well as from private sectors such as universities) that actively promote the inclusion of women in ICT through intensive programs, summer schools, scholarships etc. For instance, there is the “Girls in STEAM” academy trying to not only train but also provide role models for young girls. There are trainings, workshops, conferences for women but it’s more in the vein of entrepreneurship. There are some work places that due to covid offer a more flexible schedule and the ability to work from home, which, for women, studies have shown to be a double edged sword. Yes they might have more flexibility, but wouldn’t they be expected (even passively) to do more unpaid labour and care-giving?

It seems like the main motivation for employers and stakeholders in general to care about this issue, is if it affects how they look from the outside. If they miss out on funding or opportunities because they do not meet some criteria that were set either internally, either from national, regional or EU institutions, that the motivation needed to meet those mandates. A stakeholder that works in academia said that there was a lot of resistance initially when she started to push for more female representation in her sector. The fact that a lot of EU-funded projects require a gender equality plan helped (Horizon). Some people in the private sector and in academia still just want to tick a box. There needs to be stronger governmental support in this area. Also, career counselling needs to change rapidly. The career advice that students of all levels receive do not reflect the current labour market’s needs in Cyprus nor abroad.

Disclaimer:

This project is funded with the support of the European Commission. The information and views set out in this document are those of the author(s) and do not necessarily reflect the official opinion of the European Commission. Neither the European Union institutions nor any person acting on their behalf may be held responsible for the use which may be made of the information contained therein.

When asking for women in the sector's perspective on this, they blamed mostly issues like gatekeeping and nepotism. The solutions they propose are for systemic change, more visible role models and flexible/remote working networking and mentoring. Women in ICT have also brought up the outdated career counseling. "We need to upskill the youth and university students and have degrees available for the current labour market."

Greece:

"The leaky pipeline phenomenon": women who study STEM in higher education do not necessarily move into a relevant career.

One point that was brought up was that recruitment of women is not problematic, but what is missing is promotion. One of the women professionals who participated pointed out that women either do not move into a career in positions such as software engineering but even though this is their field of study they move into biomedicine or design. "*Women professionals take on many tasks and take initiatives to prove their worth and stand out. All the above results on them being efficient*" Ultimately though, women do not leave their position nor move to another one. They put a lot of thought into it especially if they have a family. A general observation is that few women study STEM and there are therefore few women in ICT careers. Three of the participants brought in examples of their own company cultures and attempts to acknowledge the global trend of the recognition of the employees' need for work-life balance. It was recognized that gender stereotypes hurt both men and women because they create expectations in the work environment based on the gender of the employee. It was suggested by the participants that there is a clear need for companies to establish procedures and regulations so that employees can share incidents of sexism and discrimination and get appropriate responses. Participants brought in examples of discrimination and gender-based stereotypes that prevented their opinion to be equally respected and heard in the male dominated environments. An interesting point that was raised was that women do not easily move to a different position or job because they value stability, that makes it feasible for them to work and take care of their household and children which is something that is mainly expected to be done by them.

It became clear during the focus groups that there is a recognized need for company culture and policies to change, encourage and support women. Participants shared company strategies to encourage women's involvement and career success. The examples that were brought up were the promotion of women to higher positions to create role models, promotion of work-life balance by offering employees the opportunity to choose the pace of their work as well as in a company's case hiring of women over 50 years old in ICT positions. One participant shared the strategic plan

Disclaimer:

This project is funded with the support of the European Commission. The information and views set out in this document are those of the author(s) and do not necessarily reflect the official opinion of the European Commission. Neither the European Union institutions nor any person acting on their behalf may be held responsible for the use which may be made of the information contained therein.

of her company that was developed throughout numerous years after observing that there are fewer female ICT graduates moving into ICT careers, to organize small-scale career orientation in public schools to encourage girls to go into ICT careers.

There was a general consensus among the participants that family and role models play a very important role in the perpetuation of behaviors that encourage gender stereotypes both in the professional and personal life. The need for proper education both in the families, by encouraging males to take on family responsibilities as well as (public) school education that enhances STEM skills and does not identify hard skills and ICT skills as male skills was brought up. The need to engage men in these efforts towards fighting sexism and stereotypes that do hurt women more but they also hurt them was mentioned. A need for male role models who are involved in family life was brought up. The power of role models and the need for more women who both teach ICT but also hold leading roles in positions in the ICT that are considered harder and more complicated was emphasized.

Belgium:

Concerning the question on equal participation of women in the sector, most answers were “stakeholder pressure” or “CSR profile”.

Main barrier: women find it difficult to develop in ICT initially because they themselves believe they are not capable of doing so. It is internal self-doubts and low self-confidence that are an obstacle to their development. In addition, the attitude of the environment also plays an important role. If their circle does not encourage them to get involved and, on the contrary, influences them negatively, their chances of getting involved are greatly reduced. Finally, the bias of employers, clients and colleagues, i.e. the environment in the workplace, which underestimates and reduces the importance and potential of women in ICT, was also mentioned.

In this respect there are flexible working hours, teleworking, but also more socio-economic provisions such as baby/elderly/disabled care for employees, vouchers to pay for health/education care for employees' families, the possibility of part-time work. It is extremely important to have and ensure this balance because it leads to a better quality of life and gives work opportunities to more people.

Finally, we asked the question "What kind of support do you need to create gender-responsive environments?" and the answers we received are: more training funding, government support, employee interest with a strong emphasis on the latter.

Women were found to have no particular gaps and weaknesses regarding digital media. However, there is a reluctance on the part of employers to offer leadership positions to women. Technology is used to a very high degree in Belgium, but often gaps are identified in the

Disclaimer:

This project is funded with the support of the European Commission. The information and views set out in this document are those of the author(s) and do not necessarily reflect the official opinion of the European Commission. Neither the European Union institutions nor any person acting on their behalf may be held responsible for the use which may be made of the information contained therein.

workplace, by both men and women. As far as technology in the public sector is concerned, efforts are being made to improve it.

Sweden

In Sweden, companies are aware that they need to implement practices for more diversity in the workplace. The decision to do so, generally comes from outside pressure that includes legal pressure, investors, comparison to competition and the sector, and not necessarily from within the organisation. The decision of actively creating initiatives within the organisation to be inclusive, are a way for companies to adjust to current needs/trends and be competitive within the industry. An interest of decision-makers is to keep themselves applicable and ensuring that people want to work on their place and keep themselves relevant.

Even though Sweden ranks high in gender equality, there are still gaps. Swedish businesses have acted slow in giving importance on building diverse teams. Women still take more parental leave. More men are on senior positions and usually women hesitate to take more workload.

Hiring managers are actively searching to hire more women, however it takes way more time to recruit women, it is more difficult to find and part of the problem is that they need to recruit fast. Speed is a big problem in the startup scene, because it usually is prioritised over diversity and inclusion.

Societal barriers: there are more challenges in women applying for jobs: if men feel they fulfilled 60% of the requirements, they would apply. Women usually wait until they have 90% of the prerequisites in a role description. It is difficult to retain women as well, because they are usually the minority within departments/floor, they do not feel comfortable, safe by being the only female in the team. In terms of social support, Sweden has all the infrastructure to encourage more women in the ICT sector, for example childcare is accessible and extensive in terms of hours.

The language used in ads to communicate the job positions and the lack of more diverse role models, is if not the biggest problem. Since the early years of education, women are not encouraged enough to pursue a career in tech. It is seen as a complicated and difficult industry to be in and that it would also be time consuming.

Women tend to choose career paths that are more social i.e. nursing and fashion, with the idea that they will have more time. But further down the line, is more time consuming and the salaries are usually low. Benefits of salaries and overall benefits of choosing a career in tech are not emphasized enough or communicated in an attractive way that women decide to choose a career in this industry.

Disclaimer:

This project is funded with the support of the European Commission. The information and views set out in this document are those of the author(s) and do not necessarily reflect the official opinion of the European Commission. Neither the European Union institutions nor any person acting on their behalf may be held responsible for the use which may be made of the information contained therein.

The systematic problem includes that the workforce is framed around being part of a group of friends. Men tend to focus on networking, building relationships in the workplace. Women tend to work in isolation, usually because they are the only female in the teams, so men tend to hold "meetings after the meeting". Women tend to have a wider range of focus and ensure that they can deliver results, to prove that they're capable, because they tend to be treated as less able and not to belong.

From academic years, even though women tend to score higher and graduate in larger numbers, men focus on building relations that can later in their careers help them to advance later.

In Sweden, discrimination can be felt in a more subtle way. Women tend to take more parental workload and motherhood journey can be a setback to advance in the work latter, even though the childcare support system is good, parenthood does not affect men the same way.

Italy:

The importance of structural change was highlighted to get rid of gender stereotypes. It is not just about individual decisions, it is a matter of family and society. It was also discussed why there is so much pressure and fear of failure in the digital space. Due to the constant evolution, and the "flexibility" that leads to never having time off, it is intimidating.

A change is surely needed: where and with whom should more urgent and timely action be taken? Opportunities need to be created, to change forms of recruitment and training, to focus on educating young girls and encouraging them into the sector, encouraging start-ups.

Spain:

There seems to be a progress concerning work-life balance. Some have credited the pandemic as a good start of working from home and workplaces allowing more flexibility.

How confident do you feel around building a gender-responsive environment? A: The presence of women needs to increase and the equality strategies need to be implemented. The presence of female students in STEM is only around 14% and the equality campaigns are important for the future.

Is there something you heard that was discussed/implemented in another country/company and you think that can help increase women's participation/development or improve their treatment in the sector?

Disclaimer:

This project is funded with the support of the European Commission. The information and views set out in this document are those of the author(s) and do not necessarily reflect the official opinion of the European Commission. Neither the European Union institutions nor any person acting on their behalf may be held responsible for the use which may be made of the information contained therein.

A: Something that is important in the Aragon region of Spain and also in other regions and countries in Europe is having ICT available all over. There is an issue of having access to this in rural places. The pandemic made the role of the family more important and women play an important role. This is why it is important to have political campaigns and access to ICT everywhere.

There is not just one problem in Aragon. Geography is one issue, but we also need more young people with jobs. At the moment there is an issue of young adults who are debating if they should have children at all or if they should wait and have children later in life, which is what is happening now.

In the rural parts, there is an aging population. In order to be able to offer jobs in ICT, you need a reformation of the countryside. Without political will, it would be impossible.

Concluding remarks

- Across the board, women are expected to be the main or only contributors of domestic duties. Therefore, they tend to choose jobs that allow them more time to do that, they take less risks and while they do not offer less in the work despite the extra burden on their shoulders, their contributions are not seen as equally important. Women value stability. Women tend to also get promoted less and therefore climb the ladder slower.
- On the other side of the spectrum, there are some region-specific and country specific issues. In Cyprus for instance there is a huge miss-match with what the current labour-market looks like and will look like in the future and what career paths are being pushed.
 - Flexibility in work hours is deemed as important across the board and also better knowledge on female role models and increase of confidence of women in their own worth and abilities.
 - One of the main motivators seems to be outside pressure for change: either from stakeholders, or governmental, or EU or just social pressure to consider gender equality in the workplace.
 - Networking is an important skill for women to build.

Disclaimer:

This project is funded with the support of the European Commission. The information and views set out in this document are those of the author(s) and do not necessarily reflect the official opinion of the European Commission. Neither the European Union institutions nor any person acting on their behalf may be held responsible for the use which may be made of the information contained therein.