

CROSS-CULTURAL FEMINIST TECHNOLOGIES:

The Role of Feminist Values in Bringing Gender Equity to the Tech Sector in the Netherlands

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Abstract

This study aims at understanding the role of feminist values in bridging the gender gap in the technology sector in the Netherlands. Statistics show that inherent inequalities are observed in the Dutch tech sector, namely the underrepresentation of women in the industry, the prevalence of male dominance in senior management positions, and the gender pay gap. These structural problems in tech contribute to the marginalization of women and other underrepresented groups in the industry and as such create serious implications for the wider society, such as less diverse tech teams that may result in biased technologies leading to discriminatory consequences. Hence, there is a push to diversify the workforce to integrate feminist values into the design systems of technologies. Several initiatives have sprung in recent years in the Netherlands to promote more women and diversity in tech and create a more equitable tech industry, which will be referred to as #WomenInTechnology initiatives in this thesis. This study analyzed how these initiatives construe feminism and embed such values in their missions. For this purpose, in-depth interviews as a qualitative research method were conducted with 8 representatives of #WomenInTechnology initiatives. The results of the interviews uncovered valuable insights into the extent of impact and approaches of feminist initiatives in the tech scene in the Netherlands. The findings reveal the industry's approach to diversity, the discourse of a Dutch feminism indigenous to the cultural context of the country, and the guiding values shaping the mission of the #WomenInTechnology initiatives. Overall, a marked shift in the tech scene has been identified with diversity promotion increasingly becoming an area of interest to companies. To conclude, this study contributes to the gaps in the literature on diversity and inclusion in tech and values in design.

Keywords: Diversity and inclusion, gender equity, technology, values in design, feminist values

List of Abbreviations

- CSR Corporate Social Responsibility
- EIGE European Institute for Gender Equality
- HCI Human Computer Interaction
- SET Science, Engineering, Technology
- SMEs Small and Medium-Sized Enterprises
- STEM Science, Technology, Engineering, Mathematics

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[Preface]

To everyone who has helped me realize this thesis...

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And to my family, without whom I could not have come this far, you mean the world.

1 Introduction

Gender parity has been an area of interest for academics and practitioners for a long time, especially with the rising awareness towards gender equality in the mainstream media. This situation specifically manifests itself in the technology sector, which continues to be an overwhelmingly male-dominated sector where women are globally underrepresented, underpaid and discriminated against as in many other sectors. The technology sector is of particular importance as technology has increasingly become incorporated in all aspects of life, creating a new digital culture, and inherently shaping our behaviours and attitudes. As Emily Chang (2018), the writer of the US bestseller *Brotopia: Breaking Up the Boys' Club of Silicon Valley*, has put it: "The scarcity of women in an industry that is so forcefully reshaping our culture simply cannot be allowed to stand" (p. 14).

Moreover, since technology is a highly male-dominated sector, the processes of tech design, creation and development carry more risk of reproducing patriarchal and biased structures. This builds on already existing unequal creations and implications encountered across different sectors, for example male-defined urban spaces (Rakow, 1988), male-dominated architectural designs and systems (Doyle, Forehand & Senske, 2017), and gendered designs of autonomous auto-mobility (Hildebrand & Sheller, 2018). Recently, gendered, as well as racial biases have been observed in artificial intelligence (AI) developments, resulting in discrimination towards certain groups. In 2018, for example, Amazon's AI-implemented hiring tool was found to be biased against women in the recruitment process as it was not rating the candidates in a gender-neutral way. (Dastin, 2018). The machine-learning technology implemented in the hiring tool was loaded with resumes submitted to the company over the course of 10 years which largely came from men, resulting in an unintentional preference towards male candidates.

Much of the existing research and academic literature about the gender parities in the tech sector is centred around the United States, home base to Silicon Valley, the innovation hub of the big tech (Park, 2019), where the percentage of women in the labour force was 56.7 in 2015 (U.S. Bureau of Labour Statistics, Current Population Survey 2015), while the percentage of women in the computing occupations was even lower, at 25 per cent (Ashcraft, McLain & Eger; 2016). The lack of gender diversity is present in many tech companies, ranging from small-scale start-up tech firms to large corporations. A research conducted on major industry anchors such as Netflix, Amazon, Microsoft, Google, Apple, Facebook, etc. revealed that female employees made up between 27 and 47 per cent of the total workforce in 2018; however, the percentage of those who work at actual tech or management level jobs at such companies is lower (Richter, 2018). Among those women who work at tech companies and who hold tech occupations, the percentage of women of colour holding these jobs is even lower, with Latin women holding 1 per cent and Black women 3 per cent of the computing occupations in 2015 (Ashcraft,

McLain & Eger; 2016). Moreover, women with STEM occupations are more likely to leave their career path compared to other women with professional occupations, with the percentage of women who retain their career in professional STEM jobs diminishing regularly (Glass, Sassler, Levitte & Michelmore, 2014). Glass et al. (2014) suggest that workplace conditions and experiences and a lack of access to creative technical roles are some key factors that lead to high rates of attrition among women in tech occupations and not solely family reasons. A 2017 study on “tech leavers” found that unfairness was the major driving factor behind the turnover rates in the tech sector, while certain groups of people including people of colour, LGBTQ persons, and women were considerably more likely to have negative workplace experiences and be exposed to unfairness (Scott, Klein & Onovakpuri, 2017). From a business perspective, the turnover rate resulting from the unfairness costs tech companies around sixteen billion US dollars yearly (Scott et al. 2017). The study points out to diversity and inclusion initiatives as recommendations for what companies can do to avert high turnover rates and enhance workplace fairness (Scott et al. 2017).

The question remains how such gendered dynamics are manifested in diverse cultural contexts outside of the much-covered context of the US, such as the Netherlands where feminism as a movement has taken a different trajectory. In fact, the case of the Netherlands is even more notable as research results show that the country is among the lower-ranking countries worldwide in terms of female representation in STEM (Booy, Jansen, Joukes & Schaik, 2011), despite the country’s reputation for its liberal and progressive culture as well as an egalitarian society, as represented in its egalitarian approach to LGBTI rights. Yet, in 2018, women made up 46,42 per cent of the total workforce, and 15,56 per cent of the workforce employed in the tech industry, with a gender pay gap accounting for 18,40 per cent (2018 Women in Tech Index, 2018).

The Netherlands constitutes a unique example in the context of the labour market and the labour force participation by gender, as the country yields the largest rate of part-time employment among other EU and OECD countries with 50.1 per cent of the employed people working in part-time jobs, whereas the mean of the 28 EU member states is 19.2 per cent (Eurostat, 2019). It is interesting to note that males constitute 27.5 per cent of the part-time workers whereas the rate goes as high up as 75.6 per cent for females (Eurostat, 2019). The high share of women in part-time jobs translate into fewer hours of work, resulting in an increased gender gap in earnings and pensions, as well as a slower advancement into managerial positions for women and unequal division of unpaid domestic labour (OECD, 2019). Moreover, this asymmetrical division between men and women is also observed in the educational fields, where female ICT (Information and communications technology) students in the Netherlands accounted for less than 6 per cent, scoring under the 17 per cent EU average (Eurostat, 2018). A 2018 report on the Dutch labour market showed that the Netherlands scored variously on

different gender equality indicators, scoring well in education level, legal protection, and digital and financial inclusion of women, while scoring poorly in four factors relating to the labour market: paid working hours, monthly salaries, occupation in senior positions and students in STEM fields (Graven & Krishnan, 2018).

However, with the statistics pointing at the poor conditions of gender parity in the Dutch tech sector, there is a range of initiatives working with the aim of pushing for a more diverse and inclusive technology sector in the Netherlands. An extensive yet not exhaustive list of the initiatives is as follows: The Code to Change, Ladies that UX Amsterdam, PyLadies Amsterdam, Codam, SheSharp, Women in AI, Rails Girls and Women in Tech. These initiatives work with various ambitions including promoting female talent, increasing female visibility, raising awareness for the gender gap in specific areas of technology, promoting diversity in technology, and helping girls and women embrace technology in diverse areas.

The rationale to focus on the Dutch tech scene, besides its unique labour market characterized by high rates of part-time employment and its implications on the economic well-being of women, is also reinforced by the country's thriving position in the industry. Amsterdam is one of the fastest growing start-up hubs in Europe and the Netherlands is home to a large number of multinational companies' headquarters in Europe (Startup Genome, 2019). Therefore, as a thriving and attractive hub for investors and businesses as well as job seekers, the Netherlands stands as a unique case with the potential of reconstructing a more equitable, diverse and inclusive tech sector.

Hence, the focus of this research lies within the aforementioned initiatives' efforts and practices in bridging the digital gender gap and redefining a more equitable tech sector. Herewith, the main research question is as follows:

RQ: What is the role of feminist values in bringing about gender equity to the tech sector in the Netherlands?

This study also tries to find answers to two sub-questions. The first sub-question inspects the nature of dominant feminist discourses in the Netherlands, and the founders' perceptions of feminism. Accordingly, the first subsequent question is:

SQ1: How is feminism understood, constructed, and deployed by leaders within feminist tech initiatives?

Another important concept to apprehend is the stance of the tech scene in relation to the efforts of these initiatives to promote an increased female presence and meaningful and sustained involvement. Therefore, the second sub-question is as follows:

SQ2: What are the main challenges that these initiatives face in their efforts to increase female visibility and meaningful sustained involvement in the tech sector and what are their best practices?

The state of women in tech in the Netherlands has been widely researched into, as diversity is a hotly debated topic in both academic and business circles as well as in the media. Several research reports analysing the Dutch market are available, explicitly capturing the gender inequalities and the state of diversity in the tech sector as well as the rest of the labour market. Moreover, the above-mentioned problem of biased technologies is largely recognized, and there is growing attention to integrating values into the design of technologies, and landmark studies in the field of values in design and feminist technologies have been identified for this research. However, the impact of feminist tech initiatives in the Netherlands on the Dutch tech scene and its attitude towards diversity is an area largely unexplored thus far. For this reason, it is important to address the problem of gender inequality as well as the state of feminism in the Dutch tech scene from a focused perspective of the previously mentioned #WomenInTechnology initiatives. From an academic perspective, it is integral to fill in these gaps in the literature and contribute to a better understanding of the topic by bringing new findings to the research area.

The purpose of this research is therefore twofold; first to delve into the nature of these initiatives to understand the strategies behind these formations of trying to bring more women into the tech sector; and second, investigating the challenges faced with while striving for raising awareness towards gender equity and attempts for creating a change in the national industry, which will also provide an analysis of the tech scene's position towards diversity. With these objectives at its core, this research will serve to raise awareness of the longstanding gender inequalities and have a positive impact on pushing further for a more diverse, inclusive and equitable tech sector and the integration of feminist values into the design systems. Hence, it will provide a better comprehension of diversity and inclusion initiatives' work for the promotion of more women in the tech industry from a critical approach, which is essential not only from an academic lens, but also for the societal progress and economic development as a nation.

In the upcoming sections, first a literature review will be provided to form a grounded theoretical framework. This will help identify the gaps in literature as well as present the specific viewpoint that will be taken for this study and enable a more systematic investigation of the research topic. Next, the methodology of this research will be presented, which was chosen as qualitative interviews. Finally, the findings and results of the research will be presented and discussed.

2 Theoretical Framework

This research aims at analysing the labour market conditions in the Netherlands in terms of diversity inclusion in the tech scene, the dominant discourse of feminism and the values shaping the mission of #WomenInTechnology initiatives. For that end, this theoretical framework will lay the ground for the key topics to be covered including inequality in the workplace, inclusionary and exclusionary policies and women's participation, approaches to diversity in the workplace, diversity in technology and women, values in design and feminist values, and lastly the peculiarities of the Dutch case. These theoretical concepts will be explained, discussed and critically reflected on in this section.

2.1 Inequality in the Workplace

In the last century, society has been undergoing drastic structural changes, with a dramatic increase in the rate of female labour force participation in most industrialized countries (OECD, n.d.). Statistics indicate that there has been a convergence in the rate of female labour force participation in most industrialized countries, towards a positive trend in the integration of more women into the labour market (OECD, n.d.). However, despite the increasing trend in female labour force participation, there still remains other factors that create inequalities in the workplace and the labour market and reinforce the gender gaps. Most significant and structural gender inequalities that still persist in the labour market stem from 4 foundational factors: employment, hours worked, wage gap, and occupation (Pettit & Hook, 2009). A recent report by the ILO (2019) on labour market inequality and growth shows that these underlying casual factors still continue to define the existing inequalities in the labour markets today, as significant discrepancies between men and women are observed in the labour force participation rate (employment), part-time and unpaid care work (hours worked), and sectoral and occupational segregation. Moreover, gender pay gap persists to be a global phenomenon, with the OECD average at 13.2 percent (OECD, 2020), and the European Union average at 14.8 percent (EC, 2020). These factors culminate in the underrepresentation of women in the labour market and in top-managerial and decision-making positions, the gender pay gap, gender segregation in occupations, unpaid domestic labour mostly practiced by women, the glass ceiling, a metaphor used for describing the unseen obstacles that prevent women from progressing upwards in organizations to top positions (Johns, 2013; Baxter & Wright, 2000), and the "leaky pipeline" problem, a metaphor used to describe the gradual filtering out women from STEM fields both in education and professional careers (Blickenstaff, 2005, p. 369). It is worth mentioning here that women tend to leave these fields more than men, resulting in the skewed distribution of the leaky pipeline between men and women (Blickenstaff, 2005).

Moreover, other acts of discrimination that adversely impact gender equality in the workplace are forms of hostile and benevolent sexism, including sexual harassment, bullying, and lobbying (Stamarski & Hing, 2015), as well as the workplace incivility which correspond to lesser forms of mistreatment harbouring disrespect and apathy for others (Andersson & Pearson, 1999). Although discrimination in the workplace is not limited to women, they are more often than not subjected to such forms of discrimination (Branscombe, 1998; Schmitt, Branscombe, Kobryniewicz & Owen, 2002; McLaughlin, Uggen & Blackstone, 2012) and feel more imperilled by such acts than any other group (Barling et al., 2002). Besides, extensive research and data persistently set out that sex segregation in the labour market create the dichotomy of male- and female-dominated professions, with lesser wages accruing to the latter compared to the former (de Ruijter & Huffman, 2003; Blau & Kahn, 2003), producing the gender pay gap to the detriment of women (Arulampalam, Booth & Bryan, 2007). For this reason, this research will approach the phenomenon of gender inequality in the labour market with a specific focus on women in the workplace while taking into consideration these forms of inequalities.

2.2 Inclusionary & Exclusionary Policies and Women's Participation

Institutional settings and arrangements play a significant role in the employment structures of the society. In an empirical analysis, Pettit & Hook (2009) show that different countries have different degrees of gender inequality in the workplace and that no single argument can explain this cross-national difference, as every nation has different underlying institutions and systems as well as cultural norms that reinforce or recreate inequalities across different layers of the labour market. One of the underlying institutional factors that have a key impact on the inequality mechanisms in the labour market is inclusion and exclusion policies, such as arrangements of child care, parental leave, and unionization which play a complex and contradictory function in the labour market as they are instrumentalized in the allocation of labour, affecting occupational sex segregation in various ways (Pettit & Hook, 2009). On one hand, a wide range of research suggests that part-time employment promotes the integration of more women into the labour market by offering more flexible working hours that balance women's professional careers and domestic labour such as childcare and household affairs (Blossfeld & Hakim 1997; Fagan & O'Reilly 1998; Pfau-Effinger 1998; Boeri, Del Boca & Pissarides 2005). Thus, countries with more part-time employment rates are expected to yield higher rates of female labour participation (Petit & Hook, 2009). However, in most cases, the higher labour participation of women does not translate into higher levels of equality, as inequalities in the workplace is a complex and multifaceted problem.

Inclusionary policies such as part-time employment opportunities sometimes adversely affect women's employment, whereas public childcare policies promote women's labour force participation

(Pettit & Hook, 2009). Part-time employment, through which more women than men prominently participate in the labour market (Stier & Epstein, 2000; OECD, 2017), tends to have a significant negative impact on women's economic independence mainly by means of hours worked, occupational sex segregation and gender pay gap (EIGE, 2014; Bardasi & Gornick, 2008; van Osch & Schaveling, 2017). Research shows that high levels of occupational sex segregation take place between part-time and full-time laborers due to part-time penalties which incommensurably incur to women, as part-time labour is traditionally considered "women's work" (Bardasi & Gornick, 2008, p. 38), and vice-versa full-time labour is considered appropriate for men (Eagly & Steffen, 1986; Pedulla & Donnelly, 2017), hence the problematic gendered nature of part-time work. Similarly, exclusion policies also create contradictory implications on women's participation in the labour force, through unionization practices and parental leave policies. Unions have been criticized for supporting full-time employment, whereby excluding part-time workers which mostly consist of women (Pettit & Hook, 2009). The effects of unionization on wage compression and gender pay gap have been widely researched into, whose results emerge contradictory (Card, Lemieux & Riddell, 2003; Shamsuddin, 2010).

Parental leave policies are also important factors in the reproduction of inequalities in the market, as they are criticized for reinforcing the accustomed labour divisions as they entrench the traditional gendered female caregiver and male breadwinner model (Haas, 2003). In addition, research shows that after experiencing a career break, women are faced with more challenges and disadvantages in the search for a new job compared to men (Keith & McWilliams, 1999; Zikic, Burke & Fiksenbaum, 2008), and this situation particularly manifests itself in the case of married women with young children (Rodriguez & Zavodny, 2001). However, appropriate parental leave policies which efficiently enable male parents to benefit from the leave to provide childcare at the household, whereby eroding the dichotomized male breadwinner and female caregiver model, can be instrumental in rendering the workplace and related policies of a more gender-egalitarian nature (Ciccia & Verloo, 2012). Incentives for equal parental leave opportunities for both parents can also be influential in recognizing the social importance of the unpaid care work (Haas, 2003).

Moreover, the sex segregation in the labour market results in gender inequalities beyond the economic aspect, spilling over to other spheres of social life. Apart from the economic disparities created as a result of the discrepancies between part-time and full-time employment, the socio-cultural corollaries of part-time work also need to be brought into attention. The widespread part-time employment of women reinforces the gender norms and stereotypes that execute that men work at full-time jobs as the breadwinners of the household (Pedulla & Donnelly, 2017) and that women are the nurturers and the homemakers (Sheridan, 2004). Such gender roles allocating specific skills to men and women and accordingly appropriating them corresponding places in the society and the workplace are

problematic and have been the foci of many studies (Eccles, 1987; Vella, 1994; Alesina, Giuliano & Nunn, 2013; Lindsey, 2015). Sheridan (2004) argues that as long as such gendered social stereotypes continue to exist, both on individual and institutional levels as they are recreated and entrenched within organizational structures which then shape individual values and norms, policies will fall short of making a change in the gendered nature of part-time employment. Hence, she draws attention to the importance of challenging the deeply rooted gendered assumptions of men and women's role in the society. These gendered norms and assumptions about the role of men and women, and their consequent place in the labour economy eventually perpetuate the existing inequalities, aggravating the economic disparities between men and women to the disadvantage of the latter by debilitating their economic independence.

However, as the inequalities in the workplace are of a complex and multi-layered nature, to break down these, more norms and ingrained practices have to be challenged apart from the gender stereotypes while also acknowledging the existence of multiple inequalities. A widely acknowledged theory that has been developed by Collins (1990) is the concept 'matrix of domination' to capture the complex nature of oppressive systems operating on multiple levels of inequalities including race, gender, and class. Similarly, Acker (2006) has developed the concept of inequality regimes to capture the existence of these complex and interwoven inequalities in organizations, defined as "loosely interrelated practices, processes, actions, and meanings that result in and maintain class, gender, and racial inequalities within particular organizations" (p. 443). Her analysis suggests that these inequalities can be changed through challenging, however difficult it may be (Acker, 2006). This difficulty stems from more factors other than the culturally ingrained gender stereotypes, as power relations are also part of the inequality regimes. The interests of those in position of powers, mostly being white men who dominate top positions at organizations, tend to preponderate the interests of those who are the bearers of the inequalities. Acker (2006) proposes that change is possible when (1) limited set of inequalities are targeted, (2) social movements outside organizations are combined with legislative consolidation alongside the effective involvement of the members of the organization, and (3) a coercion or threat of loss are involved such as holding employers accountable when not abiding by the equality supporting law through funding cuts. Moreover, as such inequalities in the labour market are increasingly being acknowledged, more efforts are being made by organizations to diversify the workforce (Saxena, 2014). Yet, the extent to which these efforts have been successful in the long run and the relationship between companies and initiatives advocating for diversity and inclusion in the workforce remain under examined. Hence, this research will also investigate through interviews with these initiatives whether companies collaborate with them in their efforts to diversify the workplaces. The next sections will focus on the discourses about diversity in the workplace, and thereafter in the tech scene.

2.3 Approaches to Diversity in the Workplace

The problem of gender inequality in the workplace is deeply related to the question of diversity, the implications of which on businesses have been widely scrutinized. The literature on diversity in the workplace and its ramifications from a business perspective is broadly split into two dominant discourses. First strand of research consists of the opponents of diversity in the workplace, known as the 'diversity-as-process-loss' perspective (Herring, 2009). Advocates of this perspective argue that diversity in the workplace has implications that are apt to bringing about negative outcomes such as significant potential costs, jeopardized group coherence and increased conflicts due to heterogeneity (Tsui, Egan & O'Reilly, 1991; Skerry, 2002; Gallego-Álvarez, García-Sánchez & Rodríguez-Dominguez, 2010). Second line of discourse contrarily points out to the positive outcomes, with extensive research arguing for the benefits of diversity in the workplace including enriched workplace with better resources for problem solving (Cox, 2001; Page, 2007; Herring, 2009), positive customer perceptions (Sen & Bhattacharya, 2001), increased profits and direct returns on investment, boosted creativity and performance (Herring, 2009), and wiser crowds (Page, 2007). Moreover, alongside the business-related benefits, it is argued that a diverse workforce is also beneficial for individuals through the collection of varied perspectives culminating into larger contributions (Page, 2007).

However, research that focuses on the business outcomes of a diverse workplace fails to acknowledge that the workforce diversity is also a problem about inequalities, and that it has to be studied on multiple levels of analysis including power, status, and employment patterns (DiTomaso, Post & Parks-Yancy, 2007). Critical research has approached the question of diversity in the workplace from both discourses' perspectives, acknowledging both negative and positive possible outcomes. For instance, in an empirical research, Herring (2009) shows that diversity and heterogeneity in the workplace will possibly lead to conflict, however this will encourage the group to go beyond uncomplicated solutions while provoking creativity and greater problem-solving. The results of the research show evidence for positive benefits of racial and gender diversity for businesses (net profits) and administrative functioning (Herring, 2009). Similarly, DiTomaso et al. (2007) also lay emphasis on approaching the issue of diversity from a more holistic perspective that acknowledges the drawbacks of diversity so that benefits can be retained. In the age where globalization is the key driving force to growth and development, diversity and inclusion are increasingly seen as fundamental to creating a work environment where workers from diverse groups and cultures can best perform, inducing innovation, growth and success in the long-run (Green, López, Wysocki & Kepner, 2002; DiTomaso et al., 2007; Deo, 2009). These theories will guide the researcher in her analysis of the state of diversity in the Dutch labour market and will serve as a basis for inquiry. The emphasis on promoting equality in the

workplace is even more significant in the technology sector, which is traditionally male-dominated and characterized by distinct gender segregation. Therefore, the next section will approach this problem with a particular focus on women in the technology sector.

2.4 Diversity in Technology and Women

The question of inequality in the workplace is saliently observed in particular industries, of which technology is considered to be one characterized by perpetual gendered impediments (Cech & Blair-Loy, 2010). There exists a wide range of theories and starting points explaining the source of the gender gap in the technology sector, with essentialism and social construction being the most dominant theoretical perspectives in the literature (Trauth, 2002). Essentialist theory applied to IT argues that the gender gap in the tech sector stems from the considerably inherent biological differences between the two sexes. This explanation, however, perpetuates the gendered disparities in occupations and the stereotypes surrounding these by reinforcing patterns such as women being more fit in human-centred fields whereas men in technical and math-centred fields (Charles & Bradley, 2009), largely considered as more prestigious career path choices (Buser, Niederle & Oosterbeek, 2014). In the sense that it overlooks the structural problems and reduces the reasons for gender gaps in technology fields to individual grounds, this theory shows similarities with the meritocratic ideology discourse, which argues that individual success is dependent upon human capital and effort which are remunerated with superior pay and position (Cech & Blair-Loy, 2010). Accordingly, advocates of the meritocratic ideology argue that the system is fair and just, and that gender inequality in tech stems from the lack of human capital, thus relating failure to individuals' own lack of efforts and motivation (Cech & Blair-Loy, 2010), showing similarity with the neoliberal approach associating success with individual efforts. However, research shows that differences in the human capital is not the sole reason behind the gender pay gap (Bakker, Tijdens & Wilkens, 1999; De Ruijter, van Doorne-Huiskes & Schippers, 2003). On the other hand, social construction theory associates women's underrepresentation in IT to societal forces, arguing that the gender gap in technology is rooted in the sector's male-dominated construction, making it conflicting and incompatible with the socially constructed femininities which are kept out of the male IT domains (Trauth, 2002). Similarly, the discourse of structural explanations for gender inequality also argues that the structural barriers in the sector hinder women's success in the labour market, such as the glass ceiling theory (Cotter, Hermsen, Ovadia & Vanneman, 2001). However, both theories yield significant limitations in their explanations of gender and technology. They are both treated as fixed and monolithic phenomena, rejecting to acknowledge the fluidity of gender (Sweetnam, 1996) as well as the intersectional experiences of discrimination (Crenshaw, 1989; Collins, 1990; Acker, 2006). Another limitation embodied in the social constructivist theory is that by attributing female underrepresentation

in the technology sector to merely societal factors, women are assigned a passive role and are incapacitated of their individual decisions, creativity and initiatives (DeLamater & Hyde, 1998).

Other theories relating to social factors that may be influential in women's underrepresentation in STEM fields such as 1) gendered socialization which advocates that the binary gender roles imposed differently on girls and boys create the negative stereotypical assumption that girls are worse in science and maths, which consequently blunt their interest in STEM fields (Reinking & Martin, 2018; Gunderson, Ramirez, Levine & Beilock, 2012); 2) peer groups, which play a significant role on the behaviour development of adolescents, may have a discouraging influence on young girls' motivation and interest for maths and science (You, 2011; Leaper, Farkas & Bloom, 2011); and finally 3) the stereotypes associated with STEM professionals particularly that the field is male-oriented and involving social isolation, which is an unfavourable attribute of the female gender (Reinking & Martin, 2018). This study will also approach the problem of women's underrepresentation in STEM fields and investigate whether these factors are influential in the manifestation of such a problem in the Dutch context.

Yet, despite all the stereotypes surrounding why STEM jobs are more appropriate for the male gender, this cultural norm is increasingly being challenged as many initiatives and organizations have been striving to achieve a more equitable tech sector while companies are increasingly working on strategies for diversifying their workforces. A recent report by EIGE (2018) shows that the sex segregation in the labour market also has negative effects on macroeconomic levels. Sex segregation is more and more considered as leading to inefficiency and rigidity in the labour market, as the overrepresentation of men in certain sectors brings forth a waste of human labour, which is urgently needed in fast-growing industries in the European Union, particularly in STEM fields (RSE, 2012; EIGE, 2018). The STEM fields undoubtedly exhibit the 'leaky pipeline' problem, as more women than men tend to leave these sectors, contributing to the male-domination of the sector especially in highest ranking positions (Blickenstaff, 2005; RSE, 2012; EIGE, 2018). This problem emanates from the progressive underrepresentation of women in these fields, as along the pipeline more women move away from such career directions (Cronin & Roger, 1999).

Cronin & Roger (1999) have developed a conceptual framework through which they analysed how certain initiatives in the UK that advocate for the integration of more women into higher education in SET fields perceive the problem of women's underrepresentation in these fields and how they redress it. Their research is worthy of attention as it points out to the different underlying positions of the initiatives with regards to how they approach women's underrepresentation in SET fields. Their findings suggest that these initiatives diverge from each other based on their different approaches to underrepresentation of women in SET. The basis of this divergence stems from (1) whether they identify a problem within SET that block more women and girls from pursuing education in these fields and

hence need to be challenged so that they become more inclusive, or (2) whether they approach the problem from a perspective that focuses on how to better fit women into these fields, rather than critically investigating possible problems and deterrent factors within the fields (Croning & Roger, 1999). Many of these initiatives, according to research findings, fell within the scope of the latter approach, failing to acknowledge SET sectors as highly gendered sectors with an overwhelming male domination, and instead perceive them as neutral and objective. These initiatives sought to solve the problem of women's underrepresentation in SET fields outside of those fields (Croning & Roger, 1999). On the other hand, other initiatives that critically approached the nature of these fields refused to accept them as neutral and objective and asserted that they have a masculine culture which needs to be critically examined and changed (Croning & Roger, 1999). As such, they present an important study on initiatives for more women in SET education, however this research is outdated as it focuses on a different national context two decades earlier, from the perspective of educational inequalities, and as such overlooks the inequalities in the workplace, and fails to capture the peculiarities of the Dutch tech sector inequalities and current market labour structures that pressure companies to diversify their workforces. Furthermore, it overlooks the current efforts by tech companies to ensure that the gender perspective is represented and embedded in the algorithmic design of platforms, in other saying the values in design perspective.

Until the late 20th century, technology was largely considered to be value-neutral (Barnard, 1997). However, this idea has been challenged by many scholars, as it is increasingly being recognized that technology accommodates a value system, estranging it from neutrality and opening up an ethical discussion surrounding technologies (Winner, 1980; Whelchel, 1986; Feenberg, 2002; Verbeek, 2011; Miller, 2020). The acknowledgment of technology as inholding values has led to the discussion of values in design, which will be discussed in the next section. This study will contribute to the literature by pushing this perspective further by adopting a critical, feminist thinking approach to the investigation of this problem through an analysis of similar initiatives in the Netherlands that work for women in tech.

2.5 Values in Design

As mentioned earlier, the highly male-dominated nature of the technology industry poses a particular risk of yielding patriarchal and biased structures, which are manifested through the values embedded in technologies via their design and creation. Apart from the aforementioned structural problems in the labour market and the technology sector, further complications in technology that result from these embedded values are being increasingly highlighted and examined by researchers, academics and writers. More than 20 years ago, Friedman (1997) brought attention to the biased computer systems by explaining this as the "systematical and unfair discrimination against certain

individuals or groups of individuals in favour of others” (p. 23). 20 years later, this situation continues to persevere with even more serious implications as technological advancements spread and impact people’s lives.

Examples of biased technologies are manifold, including aforementioned Amazon’s AI system which was recovered to show bias against women when hiring, Apple’s new credit card which was investigated after being heavily criticized for its biased credit decisions to the detriment of women, or BERT, Google’s latest development on AI systems for language processing which sedulously corrected the pronoun ‘hers’ to ‘his’, again indicating for a biased computing system (Condliffe, 2019; Vigdor, 2019). Such examples are significant indicators of biased technologies, but they are not exhaustive. Nevertheless, there is growing interest and attempt in designing systems that identify the embedded values in technologies as well as integrate moral human values in their design systems (Friedman, Kahn, Borning & Huldtgren, 2013; Van den Hoven, 2007).

Much research has been conducted about design systems supporting human values whose focus have been on a wide range of values such as privacy, human welfare, universality, autonomy and so on. One of the most reviewed approaches for integrating moral values into technologies is the Value Sensitive Design (VSD), a “theoretically grounded approach to the design of technology that accounts for human values in a principled and comprehensive manner throughout the design process” (Friedman, Kahn, Borning & Huldtgren, 2013, p.55). The underlying rationale of VSD also reflects its methodological approach, which identifies and pins down first the fundamental values of a particular design system and second the stakeholders involved. Although VSD is a sound starting point to critically approach the value-embedded nature of technologies and it provides a useful conceptual framework for the inclusion of moral values, it falls short in capturing the feminist values that also need to be implemented in the design systems in order to deconstruct the gendered biases implemented in technologies and develop technologies that are in support of a more comprehensive set of human values including core feminist principles. Next section will critically approach the integration of feminist values into design technologies.

2.6 Feminist Design

As technology is a gendered phenomenon (Rakow, 1988; Wajcman, 2009; Faulkner, 2001; Sørensen, 1992; Cockburn, 1992; Rode 2011) that continues to have male-dominated design, creation and production processes, the research on technology also calls for a methodological framework that is capable of capturing this gendered perspective. For this, the application of a feminist theoretical framework to this research is deemed essential and called for. In line with this objective, a critical and exploratory feminist approach to research will be applied to this study. Many feminist scholars have

developed theoretical agendas for feminist-values incorporated technological design and deployment systems. Doyle, Forehand and Senske (2017) proposed a framework named computational feminism, built upon previous feminist theories such as techno-feminism, cyberfeminism, and fourth-wave feminism, by virtue of the lack of an ethical discourse embedding human values in developing technologies. They draw attention to the need for more just and inclusive technologies aware and considerate of the gender inequalities and its relevant implications.

Costanza-Chock (2018) developed a theory called 'design justice', built upon the values in design framework, which systematically analyses the values embedded in design systems and calls for ethical considerations of design systems and the inclusion of marginalized voices into the design processes by acknowledging intersecting inequalities. Another framework proposed to examine the values embedded in technologies design systems is the feminist HCI theory, presenting an agenda that 1) integrates specific feminist perspectives in HCI, 2) demonstrates how "technologies construct and perpetuate gender and the ensuing implications for the practice of design" (Bardzell, 2010, p. 1301), and 3) ensures a more meticulous scientific approach to integrate feminist values into HCI. Resting upon the feminist standpoint theory, advocating for making women's viewpoint and experiences the starting point for social science research (Collins, 2002; Clough, 1996; Harding, 2004), as one of the main supporting pillars to the methodological system of research, this framework offers a research method that incorporates both theory and practical design solutions (Bardzell, 2010). This approach to research prioritising the marginalised voices and experiences also conforms with the rationale of bringing gender equity to the tech sector by encouraging the participation of women, the outsiders of the industry.

Bardzell (2010) introduces 6 core that need to be implemented in the HCI systems: "pluralism, participation, advocacy, ecology, embodiment, and self-disclosure" (p. 1305). First, the commitment to pluralism ideally rejects the idea of a universal point of view to design as universalism is incompetent in capturing the diversity and complexity of people, which results in marginalizing certain groups. As such, pluralism encourages a more sensitive approach to design that is more inclusive and diverse (Bardzell 2010). Participation rests upon the participatory design movement and advocates that "the people destined to use the system play a critical role in designing it" (Schuler & Namioka, 1993, 1, p.xi), whereby actively including all the stakeholders in the design processes (Bardzell, 2010). Advocacy encourages designers to develop dynamic and modern design solutions while also being critical of their own position and actions (Bardzell, 2010). This value is consistent with the women's agency theory emphasizing that women also have the capacity to act independently, make free choices and be accountable for the individual choices and actions they make, a key notion in feminist thinking (Eduards, 1994). Ecology raises awareness towards the effects of the artefacts in their broader environments (ecological systems) and in relationship with the stakeholders (Bardzell, 2010). Embodiment is an active

attempt in pushing for acknowledging technology as a gendered phenomenon and incorporating this gendered perspective into HCI to investigate the different ways in which men and women are encountered with technology (Bardzell, 2010). The last value is self-disclosure, which advocates for the full transparency of technological design systems and its effects on its users by also calling for the awareness of the users (Bardzell, 2010). The principle also translates into the full self-disclosure of the researcher in terms of his/her position, goals and values in the context of the research (Bardzell & Bardzell, 2011).

Although these values are introduced to be applied in the context of a feminist HCI, they still present a useful and in-depth framework that can be applied to the context of examining the nature of the #WomenInTechnology initiatives at the focus of this study. It should be emphasized that only if enacted as a collection, they constitute a grounded and well-structured methodology (Bardzell, 2010). However, a gap in literature has been identified as to the set of values necessary to implement in the nature of activist feminist organizations in tech. Therefore, this research will take into consideration these feminist values in a continuum and investigate if they exist in such form in the nature of the #WomenInTechnology initiatives while also contributing new findings to the literature by inquiring about these initiatives. Most of the efforts to bring gender equity to the workplace and the research on it centres around top-down policies, conducted by national governments and realized via national policies. Hence, this research will also investigate the aforementioned questions and nature of these initiatives with a critical reflective approach at its core. Before moving on to the analysis of these initiatives, the peculiarity of the Dutch labour market and the technology sector also need to be presented. Therefore, the next section will focus on the Dutch context, in order to better grasp the problems from the national context.

2.7 Focusing on the Dutch Case

The case of the Netherlands is particularly unique and worthy of attention as it incorporates a history of contradictions, moving from a pillarized society structured by strict moral values to a liberal and progressive one, prominently in the context of its gender and LGBT-related policies. The liberal and progressive nature of the Dutch culture also manifests itself in the core values of the society such as equality, freedom of lifestyle, opinion, faith and so forth (Core values of Dutch society, 2014). However, this liberal outlook is not a long-standing tradition, as the recent past exhibits a history of complex and struggling efforts to achieve gender equality. Until recently, the Dutch society was characterized by severe sexual morality and strict gendered segregation (Bleijenbergh & Bussemaker, 2012), unlike its liberal sexual politics today.

Dutch society in the 20th century presents an interesting case in terms of its moral values and social structuring, especially when compared to today. Until the late 20th century it was characterized by strong religious doctrines dictating every aspect of social and political life and indoctrinating the significance of traditional family values that confined women to the private sphere as caregivers and situated men as the breadwinner of the household (de Vries, 1981). This gendered segregation, which started to dismantle after the 1970s, made it extremely difficult for women to participate in both political and economic spheres, as the idea that a woman's place was in the home was repeatedly perpetuated by the pillarization system and the policymakers at its top (Spiecker & Steutel, 2001; Leijenaar, 2013). With the process of de-pillarization and tremendous efforts by feminists and women's organizations, structural changes took place in the late 20th century that led to an increased importance of individual rights, the implementation of anti-discrimination policies, a momentum in the political and economic integration of women gaining great momentum, and the introduction of more equalitarian tax systems (Bleijenbergh & Bussemaker, 2012). Female labour force participation, which was severely restricted by the state until the mid-20th century, went up from 29.5 per cent in 1975 to 44.2 in 1990 and surpassed 50 per cent by 2000 (Labour Force Participation Rate, 2020).

Despite a historical background of systematic inequalities and segregation between men and women, today the Netherlands is committed to gender equality which is enshrined in its policies (Gender & LGBTI Equality Policy Plan 2018-2021, 2018). Yet, it still faces difficult challenges in the face of achieving full gender equity, as inequalities are particularly manifested through the labour market. The most outstanding problems are threefold: First, the female labour participation rate is low at 58.3 percent as of 2018 (World Bank, 2020), while the rate of male labour force participation in the Netherlands is at 69 percent (World Bank, 2020). Statistics suggest that the overall low labour force participation rate may be a structural problem in Dutch labour market. Second, although there has been a positive trend in the female labour force participation rate, much of this increase derives from the high rate of part-time employment of women. Most of the women taking part in the labour market are doing so through part-time employment, at a rate of 75.8 per cent as of 2018 (World Bank, 2020). And third, few women are being promoted to senior positions (Dutch Ministry of Education, Culture and Science; n.d.). A 2018 report demonstrates that 56 per cent of all recent graduates in higher education were female, as compared to the 6 per cent of all C-level positions in listed companies and 25 per cent of all managers female (Graven & Krishnan, 2018). Besides, women, by way of generating the larger share of part-time employees tend to be more often faced with other occupational discriminations, as part-time workers are less likely to be offered higher paying jobs in better positions or promotion opportunities (Meyer, 2013; Garnero, 2016). According to human capital theorists, educational training largely accounts for unequal labour market outcomes and occupational differences between sexes (Becker,

1964). In addition to this, research shows that academic choices of youngsters in the Netherlands varies significantly by gender (Buser, Niederle & Oosterbeek, 2014). Although there are no considerable differences between the academic performances of boys and girls, boys are significantly more prone to choosing academic fields in math and science (Buser et al., 2014). However, there hasn't been sufficient research about the direct effect of gender on academic path and professional career choices. Hence, different choices in educational training choices cannot fully account for the labour market inequalities. Together, these problems hinder women's economic independence in the Netherlands.

Nonetheless, they are recognized by the Dutch state, as the government has made the economic independence of women one of its priority policies as part of its 2018-2021 Gender & LGBTI Equality Policy Plan. By this means, there is space and potentiality for the Netherlands to improve its situation. In addition to this, the government has also pointed out to safety, security and acceptance of women and LGBTI persons and gender diversity and equal treatment as other current problematic issues relating to gender in its most recent Gender and LGBTI Equality Policy Plan (Gender & LGBTI Equality Policy Plan 2018-2021, 2018). In this way, the government has also committed to 1) the tackling of harassment and violence against women and LGBTI persons and hence, assurance of greater safety, security and acceptance; and 2) providing better media representation of women and LGBTI persons, promoting gender diversity among children and juveniles, and equal treatment. However, as this study will focus on the labour market inequalities in the Dutch context from the perspective of women in tech fields and fem-tech initiatives fostering their inclusion into these fields, other questions that are more central to this research will investigate how feminist values are instrumentalized in bringing about gender equality to the Dutch tech sector. Such questions will include the investigation of the core feminist values shaping the nature and essence of the fem-tech initiatives in question and their function in fostering diversity and more women's participation in the tech fields. Thereby, this research will approach the problem of gender inequality in the labour market from the perspective of women, with a specific focus on the Dutch labour market and its technology sector.

2.8 Summary

To recapitulate, gender inequality in the labour market is a long standing and multi-faceted problem, with employment, hours worked, occupation and pay gap as the major sources of these inequalities (Pettit & Hook, 2009; ILO, 2019). These problems are significantly persistent in the technology sector, where women are consistently underrepresented and marginalized. Underrepresentation and marginalization of women and other diverse groups from the tech fields, apart from the social aspect of the inequalities in the labour market, lead to the creation of biased technologies, which spawn discriminatory practices towards certain groups. It is widely argued that

including more diversity into the design of technologies and hence more values and perspectives will unequivocally help increase the visibility of underrepresented groups in tech and foster the design and creation of better technological artefacts. However, this inclusion is not the ultimate solution for creating more equitable technologies, as feminist values and design systems also need to be addressed and implemented for creating more equitable and sustainable technologies. The theoretical frameworks developed by Bardzell (2010), Friedman et al. (2013), Costanza-Chock (2018) and Forehand and Senske (2017) are landmark studies that will function as the groundwork for this study. Yet, it is important to highlight that they all fall short of identifying the peculiar values needed to be implemented in the context of the Dutch tech sector, where the labour market has spawned distinctive inequalities. For that reason, this study will distinctively take on a critical approach by examining the role of feminist values in bringing gender equity to the tech sector in the Netherlands by analysing a select number of #WomenInTechnology initiatives and their perspectives on diversity and the tech sector.

3 Method

3.1 Research Design

This study will attempt to understand how feminist values play a role in bringing gender equity to the Dutch tech sector by critically examining a select number of #WomenInTechnology initiatives. Hence, the nature of this study and the research question require an exploratory approach to reach a conclusion. As the focus of this study is to understand the ways through which feminism plays a role in the Dutch tech sector, feminist values will be at the core of this research. To be able to understand why diversity and inclusion are important values to incorporate into the design systems of technologies, the literature review has already provided insights into the importance of diversity at the workplace and the approach of value-sensitive design.

Qualitative research methods will be followed for data collection and data analysis as this method allows for more in-depth analyses of the research subject, as opposed to breadth (Patton, 2014). This method is applied to questions investigating experience, perspectives, and meaning attached to things by people (Carson, Gilmore, Perry & Gronhaug, 2001; Hammarberg, Kirkman & de Lace, 2016; Denzin & Lincoln, 2005), and this research will be concerned with the meanings attached to feminist values and personal views on the state of diversity within the tech sector and the values necessary to implement in it, therefore the collected data will be of descriptive qualitative nature. Also, qualitative methods observe “settings and people holistically, in the context of their pasts and current situations” (Carson et al., 2015, p. 9), and this study will be conducted from a feminist perspective in the Dutch cultural context, again supposing the necessity for applying qualitative research methods. Moreover, these methods involve an interpretative approach to the analysis of data (Denzin & Lincoln, 2005; Guest, MacQueen & Namey, 2011), meaning that the researcher’s own interpretation and critical analysis are an inherent part of the research and analysis of the results processes.

For such a study requiring meaning-making, interview is the most favourable method amongst other qualitative research methods, as it is used for creating meanings of central themes in the world of their subjects (Kvale, 1996) and learn the story and experiences behind these subjects by pursuing in-depth information on these themes (McNamara, 1999). Semi-structured interviews will be conducted for this research for several reasons. First, they provide a better comprehension of social phenomena and more elaborate insights on these phenomena from the respondent’s perspectives (Silverman, 2010). As this study aims at investigating personal perceptions of various initiative representatives about the tech scene in the Netherlands and the core values shaping the mission of these initiatives, semi-structured interviews will allow for flexibility for the researcher to adapt the interview guide accordingly

with the newly surfacing themes. Second, based on the previous theories and studies, several themes were identified that will be essential in guiding the data analysis and interpretation processes. This will allow the researcher to follow an established direction derived from theory while inquiring new findings. As this study will examine whether a set of feminist values as presented by Bardzell (2010) can be identified in the context of the Dutch activism for women in technology, both open-ended and theory-driven questions (Galletta, 2013), will be formulated for the interviews. And finally, these themes will form the basis for further exploration of the perceptions of the selected initiatives regarding gender equity in the Dutch tech sector and feminist values of design, which will be enabled by the nature of semi-structured interviews (Barriball & While, 1994).

3.2 Sampling

The population of this research is initiatives located in the Netherlands that encourage girls and women's participation in technology and support diversity in tech. From this population, a non-random purposive sample of 8 initiatives was drawn, meaning that the sample is not fully representative of the wider population, however, is implementable to the research question and thus falls within the scope of this study. Purposive sampling as a non-probability sampling method was applied for the selection of this dataset as it allows the researcher to deliberately choose the participants assumed to be the most appropriate choice due to their particular perspective and characteristic on the given topic (Etikan, Musa & Alkassim, 2016; Cresswell & Plano Clark, 2011; Patton, 2014).

The researcher aimed at building a sample reflective of the diversity within the population (Kuzel, 1992; Barbour, 2001), and hence 8 initiatives were chosen as the sample for this study. These are as follows: The Code to Change, Ladies that UX Amsterdam, PyLadies Amsterdam, Codam, SheSharp, Women in AI, Rails Girls and Women in Tech. They were selected as the sample for this study for two reasons: First, they have been mentioned in stories by online media houses (such as sifted.eu and project.amsterdam), implying that they are gaining attention from the media for their diversity policies and innovative approaches (Lewin, 2019 & Project.Amsterdam, n.d.). Second, the sample in this way encompasses a diverse range of initiatives who come together under the common goal of promoting inclusivity and diversity in the tech sector, yet also diverging in terms of the different areas of technology that they choose to focus on. Thus, although not representative of the wider population, the sampling process aimed to capture diversity within the population to provide rich data.

First, the Code to Change, seeks to bring diversity and inclusion to the tech sector by organizing conferences and innovative mentorship programs (Code to Change, n.d.). Their explicit objectives are ensuring women's access to information communication technologies, their economic empowerment and achievement of gender equality (Code to Change, n.d.). Ladies that UX Amsterdam, is the local

chapter of the worldwide Ladies that UX community whose mission is to empower women and augment their visibility and promote inclusivity and diversity in the tech community (Ladies that UX Amsterdam, n.d.). They organize mentorship programs where people with diverse expertise are introduced and challenged to work on their ambitions, giving priority to women in view of the gender imbalance in the sector. PyLadies Amsterdam, also the local chapter of the broader PyLadies community, prioritised diversity in technology as their mission. They have a unique hands-on approach through which workshops, discussions, and mentorship programs are organized to endorse inclusivity and diversity among Python coders (PyLadies Amsterdam, n.d.). Their mission statement is to promote, train and enhance a diverse Python community. Codam, a full-time programming college in Amsterdam that offers free education to anyone (Codam, n.d.). Their unique and innovative approach to teaching coding is based on a peer-to-peer learning model (Codam, n.d.), through which members learn coding from each other. Achieving gender equality, providing equal opportunity and creating a more diverse and inclusive workforce are defined under the mission of the non-profit organization of Codam. SheSharp, is an Amsterdam-based non-profit organization promoting more diversity and inclusion in tech and entrepreneurship (SheSharp, n.d.). It organizes events with a wide spectrum of specific topics ranging from big data to cryptocurrencies to give chance to the underrepresented people to speak up, share, learn and contribute to the sector (SheSharp, n.d.). Women in AI Netherlands, again the local chapter of the wider global non-profit Women in AI, is endeavouring for a gender-inclusive AI with the mission of increasing women's participation and representation in AI. They particularly focus on start-ups and the state of diversity within start-ups (Women in AI, n.d.). Rails Girls Netherlands, the local chapter of the wider global community, has defined its goal as making technology more accessible to girls and women. They organize events across the Netherlands with particular focus on Ruby on Rails (Rails Girls NL, n.d.). Lastly, Women in Tech Netherlands, the local chapter of the wider global organization, has adopted the double mission of closing the gender gap and making technology more attractive to women. They define their work as a global movement working to create sustainable change and impact through empowering women to succeed in STEM fields (Women in Tech, n.d.).

These initiatives were contacted and meetings for interviews were arranged individually. Due to the global pandemic of Covid-19, the size of the sample had to be reduced to 8 initiative representatives, and interviews were conducted virtually through digital platforms, namely Zoom.

3.3 Operationalization

The theoretical framework and sub-questions were utilized to create an interview guide which served as the basis for the interviews. The questions in the interview guide were arranged accordingly to the two sub-questions previously introduced. The comprehensive version of the interview guide can be

found in Appendix A. In this section, the topics investigated through interviews and the questions that were asked will be presented.

The first sub-question inquires the dominant discourse of feminism in the Netherlands, whether a peculiar form of feminism can be found in the Netherlands and the interviewees' personal perceptions on the concept of feminism and their rationale for working in this field. For this, questions investigating this topic included:

- What motivated you to join/establish this organization?
- What do you think it means to be a feminist today and do you consider yourself a feminist?
- Do you think there is such a thing as Dutch feminism?

The second sub-question investigates the state of the tech scene in the Netherlands. For this, projects and activities of the initiatives as well as different types of partnerships they had with different stakeholders were asked about. This section also investigates the business model of the organizations. The following questions as an example were asked about:

- Is there a particular project that you feel strongly about and feel proud of, and if there is, why?
- What are the biggest challenges you face with these projects, and the solutions that you came up with to overcome them?
- Among the partners listed on your website, who are your core partners? What does partnership with them entail?
- Apart from those partners, are there other funding available to maintain the sustainability of the organization?
- Is there a partnership in place with the Dutch government?

In addition to these, other questions investigating which values mainly shaped the mission of these initiatives were asked. Exemplary questions include:

- Are there other best practices and policies that you support?
- What are some of the core values that define the work of this organization?
- There is growing interest in integrating human values into the design of technologies. How do you feel about that? Does your organization actively pursue this?
- What is your vision for the future? Where do you see this project going in the future?

As semi-constructed interviews were chosen for this research, the researcher had the flexibility to shape the flow and form of the questions accordingly with the trajectory of the interviews. However, the nature of the interview guide was left unchanged and minor changes to the questions respected this nature presented above.

3.4 Data Collection

The initiatives were searched for on LinkedIn and on their own websites and their founders were contacted through their LinkedIn pages. In cases the founders or other senior employees were not available, they referred their colleagues for the interviews. To successfully conduct theoretically grounded interviews, Boyce & Neale's (2006) guide for in-depth interviews was followed. Thus, a 6-step process was implemented for the process of data collection. First the sample was identified, and second, information on the sample was collected prior to the interviews to individually tailor the interview guides according to the respondents. This prior study on the initiatives and their representatives allowed for the researcher to conduct the interviews preparedly. Next, during the process of data collection, several steps were followed to ensure that the time limit of 45-60 minutes was used most efficiently. When contacting individual interviewees, prior to the interviews, first an introduction to the research topic was presented and the purpose of the research was explained. This step was repeated for a second time during the interviews, conducted via Zoom. All of the interviews were conducted in English.

In regard to the ethical concerns of qualitative research, there are several measures that the respondent should follow responsibly (Sanjari, Bahramnezhad, Fomani, Shoghi & Cheraghi, 2014;). To that end, several practices were applied to this study. First, informed consent from the interviewees was sought for as to the nature of the study and the data to be collected. They were informed transparently of the research purpose and the researcher's identity. Confidentiality was also ensured by refraining from personal and uncomfortable questions and making the data collection process overt. Hence, if the respondents asked to stop the interview at any point or avoid answering a question, the researcher conformed. Respondents' preference of anonymity was asked about, and all of the interviewees consented to being recorded and their names being mentioned in the research.

During the interviews, warm-up questions were introduced initially to facilitate the transition to more in-depth questions and accommodate the respondent to the flow of the interview. Following these, the interview guide led the researcher to delve into more personal and elaborated questions derived from the theoretical framework. Throughout this procedure, follow-up and probe questions were also introduced when necessary to ensure the collection of information-rich and in-depth data from the interviewees. Towards the end of the interview, the researcher remarked the last question. Following the last question, the interviewees were asked if they wanted to add or mention anything further, or whether they had any questions for the researcher. The average time length of the interviews was 49 minutes, however in case all the questions were not asked about within the predetermined time limitation, the researcher took the initiative of extending the time allocated for the interview if the interviewee was available. Upon the completion of all the questions, recording was terminated, and interviewees were thanked for their time and participation in this research. The fifth

and sixth steps of the in-depth interview guide by Boyce & Neale's (2006) included analysis and reporting of data, which will be presented next.

3.5 Data Analysis

Following the completion of the interviews, the transcriptions and the analysis of the findings were both done by the researcher. All the interviews were transcribed verbatim, meaning that an exact word-for-word transcription was produced based on the recorded verbal data (Poland, 1995). The transcription of the verbal data prepared the raw data for analysis. For the analysis of the data, thematic analysis was chosen since it allows for identifying and reporting potentially similar patterns and themes (Braun & Clarke, 2006). A thematic analysis method of descriptive and exploratory nature was implemented here to analyse the collected and transcribed data, a commonly used method employing non-probabilistic sampling techniques (Guest et al., 2011). Prior to the process of producing codes and creating relevant themes derived from the data, the transcripts were re-read by the researcher multiple times, allowing the researcher to get familiar with the data. At the same time, the researcher took notes and highlighted parts deemed important for the attainment of the research. A mixed method following both inductive and deductive approaches was undertaken for the analysis of the data.

First, the highlighted parts from the transcripts were carried in form of quotations to an Excel file, where they were listed one under the other. This enabled the researcher to inductively derive the initial codes from these quotations, as at this step the data was very fragmented (Elo & Kyngäs, 2008). These initial codes consisted of the key words or phrases from the transcripts, deemed relevant in the research context. This step was one of the challenges of the manual coding technique, as many repetitive codes emerged from the dataset. Yet, this also enabled the researcher to see the most and the least repetitive codes.

The open codes were then translated into meaningful groups, the axial codes, which were broader in scope. This step allowed for the researcher to extract the most relevant codes from the initial open codes and create more refined codes. After filtering of the open codes for the creation of more meaningful axial codes, a deductive approach was undertaken to identify the selective codes. These codes, which were most extensive in scope among all codes, were created on the basis of the previously introduced literature with the purpose of testing the relation between the landmark theories and the newly emerging findings (Elo & Kyngäs, 200). Nine selective codes were identified, which were instrumentalized in the creation of meaningful and overarching themes. These themes were then prepared to be presented as the sub-sections for the findings and analysis section, meaning that they were meticulously defined and renamed. The nine selective codes were regrouped under three main which were re-arranged accordingly to the sub-questions.

The final step of the analysis process carried out the reporting of the three main and nine sub-themes into the order of the sub-questions as introduced in the introduction: feminism in the Netherlands and within the initiatives, the tech scene in the Netherlands and diversity, and the values in design. These concepts were redefined as the following: perceptions of feminism, a change in scenery, and values and norms in #WomenInTechnology.

3.6 Validity & Reliability

Validity in a qualitative research refers to the suitability of the choice of methodology throughout the entire research to the study subject, sample and research question, and consequently is concerned with the validity of the results and conclusion with the sample and research area (Leung, 2015). This study is concerned with the different perspectives and points of views of the sample, and therefore the application of in-depth interviews is decided as the most appropriate methodology, as it allows for in-depth analyses and meaning making in the context of the given area of research (Kvale, 1996; McNamara, 1999). To that end, non-probabilistic purposive sampling was implemented as the sampling method, allowing the researcher to deliberately choose the sample from the designated population, ensuring the appropriateness of the choice of sample. The data acquired through in-depth interviews were analyzed using thematic content analysis method to inductively produce relevant codes and themes with the aim of answering the research question (Loffe & Yardley, 2004). The creation of codes and themes were done rigorously and systematically through a combination of analysis of the frequency of codes and meanings of the codes in their contexts (Loffe & Yardley, 2004), thus strengthening the validity of the research methods.

Reliability, as opposed to the concept replicability of the research results in quantitative research methods (Kvale, 1996; Leung, 2015), refers to consistency and integrity in a qualitative research (Carcary, 2009). The reliability of this research was ensured through the transparency of the data acquired and the methods implemented to analyse these data with the use of verbatim transcripts, interview guide and reference to quantitative aspects when possible, such as the frequency of the codes as analyzed in Excel tables (Patton, 1999). Moreover, the research was conducted based on a theoretical framework, enabling the researcher to stay in the context of the research with the detection of findings and production of results.

4 Findings and Analysis

This study aims at analysing the role of feminist values in bringing gender equity to the technology sector in the Netherlands. For this reason, interviews with 8 #WomenInTechnology initiatives in the Netherlands working to bridge the gender gap in the tech sector were conducted in a semi-structured way. The findings of these interviews will be presented in this section in accordance with the sub-questions previously introduced. These questions investigated first, the concept of feminism according to the initiatives and the feminist discourses in the Netherlands, second, the challenges faced with in their efforts to bridge the gap in the tech scene and the best practices to overcome them, and finally, the values that shape the mission of these initiatives respectively. Hence, findings will be presented in the following order: perceptions of feminism, the changing tech scenery in the Netherlands, and overarching values and norms in #WomenInTechnology.

4.1 Perceptions of Feminism

The first sub-question investigating the contemporary concept of feminism within the initiatives and in the Netherlands revealed the overarching theme of perceptions of feminism, under which two sub-themes were identified: confusion about feminism and the two-sided Dutch feminism.

4.1.1 Confusion about feminism

When asked about their opinions on feminism and whether they considered themselves to be feminists, from the eight respondents who were interviewed, seven of them identified themselves as feminists, while also expressing their beliefs about the confusion and connotations surrounding the concept of feminism. Erol, a feminist herself, said:

Feminism did get a bad reputation in our world these days. Some people think of it as a negative word. But I don't think that's the case.

(E. Erol, Ladies that UX Amsterdam, 25.05.2020)

Another respondent, Marochko, who also identifies as a feminist today, said that she has not been always identifying herself as a feminist, as she also had confusions about the meaning of feminism before entering the workforce.

I think it was kind of seen as a bad word so I would often downplay it and say, "I'm not a feminist, of course, I believe that feminists are extreme people", or that was the perception when I was growing up. But the more I worked in tech spaces and I was present in the

workforce, the more I really resonated with being a feminist and really embracing that term.

(A. Marochko, SheSharp, 04.05.2020)

This type of personal confusion and negative connotations relating to feminism is also observed in other respondents. Van Rijswijk, who is working as the organizer of the organization Rails Girls, also expressed a similar previous experience with the concept feminism. Although she identifies as a feminist today, she did not so previous to working in the tech community. Van Rijswijk shared:

I wasn't born a feminist. To be honest, I wasn't a feminist until I became active in the tech community. Now, for sure I'm a feminist, but I'm not hardcore.

(R. Van Rijswijk, Rails Girls, 07.05.2020)

What is interesting here is that both Marochko and van Rijswijk, despite not identifying as feminists before, started associating with the feminist thought once they entered the tech scene in the Netherlands and had negative experiences in the workplace. Van Rijswijk explained that her negative experience of being excluded from the tech scene pushed her in the direction of feminism and decided to start a community for women with similar negative experiences in the tech scene.

We tried to be part of the Rails and Ruby community before, but it was not a safe place for us, and we were not taken seriously. (...) The reason why these communities actually came up to being is that we were excluded initially, there was not any spot for us within that scene.

(R. Van Rijswijk, Rails Girls, 07.05.2020)

Another confusion about the concept of feminism that exists today is regarding who can and cannot be a feminist, or who represents the feminist archetype. The findings suggest that it is a common misbelief that feminism is reserved for people who identify as female, or not as male. Dr Antoine, Chairwoman and President of Women in Tech, expressed this confusion as:

A lot of people are confused about what it means to be a feminist because both men and women can be feminists, you don't need to be a woman to be a feminist.

(Dr C. Antoine, Women in Tech, 20.05.2020)

When people think of feminism, they think of someone who looks like me (as a reference to young women of Caucasian origins) and it is not necessarily broadening your horizons. But we're going through a new wave of feminism now where it is embodying a lot of different things at the same time, and intersectionality is very important, so white women also support other minority

groups such as transwomen, or other groups.

(A. Marochko, SheSharp, 04.05.2020)

Similarly, Marochko also pointed out to the confusion about who can be a feminist and what a feminist should look like and highlighted that being a feminist is not a matter of gender, sex, or physical appearance, as it is the belief in the equality of sexes.

I absolutely think that anyone who believes in gender equality on all levels should identify as a feminist.

(A. Marochko, SheSharp, 04.05.2020)

Similarly, other respondents have also stressed the concept of equality within feminism:

Feminism is not putting women at a different spot or at a higher spot or whatever. The way I see feminism is that we make sure that everyone is equal. So, it's not the fact that you put women at a different spot or at a higher spot. But if we see the topic as equal people, we are first human.

(L. Stamm, Codam, 07.05.2020)

I'm a feminist and I think the definition for feminism is that you want equal rights for men and women, or if you're nonbinary as well of course, so equality for all genders.

(E. Erol, Ladies that UX Amsterdam, 25.05.2020)

The confusion about feminism also reflects the confusion about who can join the programs of #WomenInTechnology initiatives as this has been observed in applicants' questions:

For example, we often get the question: "Oh is it only for ladies? Can we attend if we're a guy?" And we always say yes, we have our doors open to anyone no matter your gender, sex, race whatever it may be.

(E. Erol, Ladies that UX, 04.05.2020)

We got a lot of questions like "I'm a male, am I allowed to join?". We say of course. (...) For me it doesn't matter who you are, if you are eager to learn Python, you're welcome.

(A. Galyeva, PyLadies Amsterdam, 07.05.2020)

Here, the respondents remarked that women are prioritized in their applications as they need to be leveraged more because of the current inequalities in the labour market. Yet, they also highlighted that the communities are open, welcoming and inclusive to anyone and everyone wishing to join. As such, a contradiction emerges as to the target audience they want to reach, that is women in technology, and the values that they stand by, hence the dilemma of targeted activism versus inclusivity. Inclusivity emerges as one of the central values defining the mission of #WomenInTechnology initiatives, however, as long as women are the determined target audience, the message of inclusion is toned down and weakened. The prioritization of women and its reflection on values will be presented under the Values and Norms in #WomenInTechnology section, as it relates more to the underlying value of equity over equality.

4.1.2 Two-sided Dutch feminism

When asked about their opinions whether a dominant form of feminism existed in the Netherlands, a common understanding stood out as to dominant forms and discourses of feminism may vary depending on different cultural contexts. In addition to this, it is widely agreed upon that a unique type of feminism that is indigenous to the Dutch society can be observed in the Netherlands.

Dutch feminism is very different from what I'm used to from South Asia, and it could be very different from global feminism as well.

(I. R. Gill, The Code to Change, 01.05.2020).

Feminism can mean different things depending on the markets, on the times. (...) It makes a huge difference if you're a person from a Middle Eastern background, Slavic background, or American backgrounds.

(E. Logunova, Women in AI, 06.05.2020)

However, a divergence in the nature of the Dutch feminism is observed as two contrasting themes emerged from the interviews. The first theme, which came as a surprising finding, is the positive perception of part-time employment. As previously shown, the rates of part-time employment are particularly high in the Netherlands, most specifically for women as 75.8 percent of them participate in the labour economy through part-time employment (World Bank, 2018). Although a wide range of research shows that part-time employment leads to discrepancies in the labour market and hinders women's economic independence (EIGE, 2014; Bardasi & Gornick, 2008; van Osch & Schaveling, 2017), a different standpoint emerged from the interviews, that is the positive perception of the prevalence of

part-time employment among women and that the infrastructure enabling it have contributed to a different type of feminism in the Netherlands.

There are a lot of women working part-time in the Netherlands, but that might also be feminism, that you sometimes choose to stay at home and that you can afford to do that.
(E. Erol, 25.05.2020, Ladies that UX Amsterdam)

For Erol, part-time employment empowers provides women ability and flexibility to not join the labour market full-time, and hence is empowering through the freedom of choice. Marochko explained that the prevalence of part-time employment is interrelated to the traditional family values and the importance of a balanced family and work life in the Netherlands, and that through part-time employment, women have the freedom and opportunity to focus on both family and career, which is peculiar to the labour market conditions in the Netherlands.

There was always this dichotomy that existed where you have to be either be a career-focused woman or a family-focused woman, you can't be both. I think in the Netherlands having these family resources in place allows for women to be both family and career oriented, which doesn't exist in many countries. Usually these two dichotomies exist in opposition to each other, and you can't be both. The Netherlands does particularly well by allowing for those two to exist together.

(A. Marochko, SheSharp, 04.05.2020)

Similarly, Dr Antoine also mentioned the changing infrastructure in the Netherlands that accommodates working parents through the prevailing part-time employment practices.

The challenge for women is particularly when they enter into motherhood, so having a child and thinking about what comes next. For a long time, the infrastructure in the Netherlands did not accommodate women being at home and being able to work. Now, we see much more thought about that, there's paternity leave which has been extended also from a governmental perspective, and many companies are also now adopting practices to allow men to have a longer period of time on paternity leave, as well as the maternity leave.

(Dr C. Antoine, *Women in Tech*, 20.05.2020)

In spite of the positive perception of the part-time employment practices as enabling a balance between work and family life, it is largely agreed upon that there is still a long way to go under gender equity is achieved in the Netherlands. Dr Antoine pointed out:

There's an opportunity for us as a country to change the way we look at that (family-career dichotomy) and to be even more progressive towards supporting women getting back into work, in addition to raising a family. You can do both with the right support and infrastructure around you.

(Dr C. Antoine, Women in Tech, 20.05.2020)

However, it needs to be highlighted that despite the positive perceptions of the family-work life balance enabled in the Netherlands, a recent report shows that the Netherlands falls behind other European countries in terms of its parental leave opportunities (Teow, Goel, Carney & Cooper, 2019). In fact, parental leave policies and the prevailing part-time work culture reinforce the gendered division of the Dutch labour market (García & Pazos-Moran, 2015), aggravating the occupational segregation and worsening the economic welfare of women. Thus, although part-time employment opportunities have enabled women to work while also raising children, it is interesting that another dichotomy continues to be, that is the unequal appropriation of unpaid care work to women, hence the unequal division of paid and unpaid work between men and women.

Findings suggest that childrearing is still largely considered to be the responsibility of women. Yet, to achieve gender equity in the labour market, parental policies need to be designed in a way to promote co-responsibility (García & Pazos-Moran, 2015) whereby equally allocating the care responsibilities among parents and fostering a more balanced combination of paid and unpaid work (Plantenga, 2002). In the current labour market, men mostly work at full-time jobs while women at part-time jobs, creating a skewed division of care work largely performed by women, hence the one-and-half earner model common in the Dutch society (Plantenga, 2002). However, as observed from the findings, part-time work culture has been largely normalized in the Netherlands (Visser, Wilthagen, Beltzer & van der Putte, 2004), and is perceived positively due its distortion of the family-work life dichotomy, despite of it being at the expense of women's economic independence.

The second facet of the Dutch feminism is not necessarily perceived as a positive and empowering one, as it is criticized by some of the respondents for not being inclusive or representative of diverse groups. Many respondents criticized Dutch feminism for being representative of the white demographic and brought attention to the prevalent racist behaviour that still exists in the country.

I think in the Netherlands, feminism is still reserved for white people and the access to opportunities is still very unequal. While the family-work life balancing is great, there's still a lot of racism towards particular communities that exist in the Netherlands, so I'd like to see more feminism and more opportunities available for women within these groups here.

(A. Marochko, SheSharp, 04.05.2020)

The Dutch are said to be a very tolerant and welcoming nation, but I don't think that's always true. I've seen instances where they're not welcoming in relation to race, immigration, gender and LGBTQ rights.

(E. Erol, Ladies that UX Amsterdam, 25.05.2020)

Another respondent expressed similar opinions about the elitist inclination of Dutch feminism favouring white people and turning a blind eye to the experiences of women of colour.

Feminism here represents the white demographic of the country very much and I feel that it's quite laid back. There is a gap between the feminism that the white demographic represents as opposed to what the women in colour face. (...) For example I know some initiatives that are doing great work, but they don't always get the kind of recognition and results that they should because they come from a different ethnic background. And I think that this is still a gap that needs to be bridged, something that still needs to be addressed here.

(The respondent requested to stay anonymous for this quote)

The problem of unequal access to opportunities of the initiatives was also highlighted by Marochko, as she said that initiatives composed of expats and those of Dutch people did not have the same access to resources.

There are a lot of groups Dutch groups as well, and they have access to opportunities, being Dutch, that we don't have as an international group.

(A. Marochko, SheSharp, 04.05.2020)

The contradictory nature of these two themes that emerged shows that a unique, two-sided feminism can be observed in the Netherlands. On one hand, it reflects the peculiarities of the Dutch culture and its normalization of part-time employment, as this is positively perceived by allowing women to have a more balanced work-family life and focus on both. This finding is unexpected, as it

contradicts an extensive array of research suggesting that part-time employment stimulates gender inequalities in the labour market. Although part-time employment has previously been instrumental in integrating many women into the Dutch labour market during the 1980s (Yerkes & Visser, 2006) and breaking down the traditional culture and norms around housewifery (Knijn, 1994; Pfau-Effinger, 1998), today it is functioning as a retrograde step in the path towards gender equity in the labour market. Public policies and instruments have been designed to support the family-career balance in the Netherlands, accommodating the Dutch culture (McDonald, 2013). However, to tackle the occupational sex segregation, close the gender pay gap, and obviate the cultural norms and traditions around unpaid care work, these norms and institutional settings around part-time employment need addressing, and perhaps modernizing. Nevertheless, these findings show that peculiarities in different labour markets and cultural contexts may result in different systems.

On the other hand, the findings suggest that while the positive perception of part-time employment is one aspect of Dutch feminism, another aspect yields contradictory values such as white privilege, unequal access to opportunities, and racial discrimination. Nevertheless, one notion that all respondents congruently agreed upon is that there still remains a lot of work to do to achieve equity in the Netherlands.

We have taken care of basic rights in the Netherlands for women. But we are nowhere near equal in terms of gender equality. And there's still a gap that needs to be bridged, something that still needs to be addressed.

(I. R. Gill, The Code to Change, 01.05.2020).

So, feminism is usually associated with the rights of women. (...) As feminists, we don't need to ask for the general rights anymore, but supporting women in the decision-making process, or for me personally, lobbying the rights of women, female entrepreneurs or women in corporate careers, to take an active stance and be heard.

(E. Logunova, Women in AI, 06.05.202)

4. 2 A Change in Scenery

Findings show that there is a changing tech scene in the Netherlands that is generally observed on two levels. The first change is observed on a macro-level, as many companies of different scales from start-ups to big tech companies as well as certain public bodies of the Dutch government are increasingly becoming invested in diversity. The second change is observed on a micro level, as the number of diversity initiatives promoting women in tech has increased, they have provided a safe place

for like-minded women in a highly male dominated sector, and consequently amplified the visibility of women. These findings will be presented respectively in detail in the following subsections: diversity as a 'thing', and a place for women.

4.2.1 Diversity as a 'thing'

One of the main overarching themes that surfaced from the interviews is the increasing interest of different stakeholders, ranging from start-ups to big corporations and the Municipality of Amsterdam, in diversity and inclusion. A recent research on women in the workplace has demonstrated that companies are increasingly prioritizing gender diversity and that this trend is expected to progressively continue in the future (McKinsey Company, 2019). However, the extent to which different companies in the Netherlands invest in promoting diversity and creating more diverse work teams variably depends. In this sense, the findings point to contrasting patterns in terms of companies' efforts and sincerity of commitment to creating more diverse teams and supporting diversity promoting initiatives. Yet, the overarching finding is that no matter the underlying reasons, many companies are increasingly involved in diversity, as diversity is a 'thing' nowadays.

A lot of companies are looking for diversity. Diversity is a thing these days.

(R. Van Rijswijk, 07.05.2020, Rails Girls)

I've been talking to a lot of organizations, and you can see also across the corporations that diversity and inclusion is a hot topic.

(E. Logunova, Women in AI, 06.05.2020)

The initiatives interviewed are most commonly working on a volunteering basis and all of them are non-profit organizations. Hence, most of them rely on partnerships and sponsorships with companies to maintain the sustainability of the organization, so different partnerships, arrangements and sponsorships are in place with different companies customized by each party's needs. However, the extent to which companies and corporations are truly invested in creating diverse workforces or supporting these diversity initiatives depends, as some companies are head-on invested in diversity, while others are falling short of providing impactful support to bridging the diversity gap. As such, the marketplace behaviour in striving for diversity is split into half: lack of impactful support for diversity from some companies on one hand, and real investment and leading diversity efforts of some companies on the other.

In terms of lack of impactful support, many respondents have expressed frustration about companies' hesitancy to be fully invested in diversity promotion and recruitment of women from these initiatives' programs.

Connecting women to job opportunities in the tech industry was a challenging part because the tech industry, we noticed, would love to host meetups, give us space, pizza and wine for our meetups. But in terms of real investment, many of them still lacked. (...) For example, we said we would prefer an apprenticeship model where you actually compensate for the person, it's not a full salary but at least you give them something. And big companies did not want to become our full-time partners and invest in this model, they were too spoiled for choice. Especially big corporations.

(I. R. Gill, The Code to Change, 01.05.2020)

The lack of real investment and impactful support from big companies is a problem that needs to be addressed to build more sustainable relationships between companies and diversity initiatives and to create lasting impact in the industry. Woolthuis, Lankhuizen & Gilsing (2005) suggest that one of the reasons why market failures, such as the one mentioned by Gill, happen is due to poor interactions between actors in the market and companies' failure to be flexible and adaptable to new technologies and market demands, such as diversity inclusion in this context. In a research based on clustering innovation policy in the Netherlands, they show that sustainable and successful collaborations and relationships can be built if different stakeholders such as companies, customers, organizations, governments and institutional conditions (legislations and rules) are efficiently involved in cooperation (Woolthuis et al. 2005). However weak network failures and capabilities' failures such as companies' reluctance to make an innovative leap of diversifying their workforces may result in the aforementioned dead-ends such as connecting women to job opportunities. Thus, the involvement of other third-party actors into collaboration with diversity initiatives could result in more sustainable relationships, such as support from the governmental level or intermediary agencies to enable better communication between different parties.

Similarly, many respondents raised concerns about how even though companies seem to be invested in diversity and inclusion, this most of the time came off as a façade for publicity reasons, to show that they support diversity and inclusion because diversity is a 'thing' and it's trendy, or because of organizational requirements such as diversity quotas. However, this lack of impactful support and hesitancy to take the necessary steps sets back companies in terms of making a real change to promote more diversity within their teams and in the labour market.

When I was working at this company before, we had gender parity more or less, but at the leadership table not a single woman was making decisions for the company, so it was almost like a façade.

(A. Marochko, SheSharp, 04.05.2020)

Big companies all have inclusion and diversity departments, but unfortunately the thing they care about is their publicity and big talks with big words. But when it comes to actions, nobody wants to do it, which is really sad. So, the biggest challenge is to find sponsors who really want not to speak about this, but actually do something and act on this. It's really hard to find these people.

(A. Galyeva, PyLadies Amsterdam, 07.05.2020)

Companies are sometimes involved with diversity initiatives to show how cool they are in backing these diversity initiatives. Those companies are willing to partially support us, especially when it comes to branding. But actually, taking in those women and giving them a chance within their own companies, that has been a little heart breaking for us as an organization. I think our supporters were more than willing to absorb those women, but then when it comes to the decision of higher management, which is probably not women, that is when they hit the ceiling.

(I. R. Gill, The Code to Change, 01.05.2020)

I think particularly in the Netherlands, where it is quite international, oftentimes women are hired especially within start-ups to hit a diversity quota. And it's like "Right, we have one female engineer, tick, we've ticked the box, and we don't need it anymore", but that is very alienating to women who work for these companies. People need to think about inclusion beyond just ticking a box.

(A. Marochko, SheSharp, 05.05.2020) tap into the critical mass for social change in the workplace for women

The underrepresentation of women in the workforce, especially in decision-making positions, may also contribute to the bottleneck of failure to successfully cooperate with these companies, as women tend to be more interested in women's issues (Bratton, 2005), and lack of women in these positions may simply hinder any attempts at diversity inclusion and cooperation with these initiatives. Moreover, empirical research shows that the presence of more women and diversity on directory

boards positively impacts companies' social responsibility behaviour and enhances the success of CSR campaigns of companies (Konrad, Kramer & Erkut, 2008; Fernandez-Feijoo, Romero & Ruiz-Blanco, 2014; Setó-Pamies, 2015; Cuadrado-Ballesteros, Martínez-Ferrero & García-Sánchez, 2017). Hence, in addition to the weak network failures and capabilities failures discussed above (Woolthuis et al. 2005), the lack of female representation in decision-making boards could be one of the reasons why these companies, especially big ones, seem insufficient to engage in impactful and sustainable diversity inclusion campaigns. Overall, the lack of impactful support from companies can be explained by the critical mass theory suggesting that a critical female mass on decision boards improves companies' level of innovation (Torchia, Calabrò & Huse, 2011), as the lack of impactful support from companies can be linked to the lack of a critical female mass on decision boards.

Findings show that although some companies are invested in diversity and inclusion, the way they are acting on it falls short of bringing sustainable and impactful change to the labour market, and ends up alienating women working in tech spaces, which then sometimes results in women leaving those jobs because they feel alienated and excluded, hence the leaky pipeline problem observed in the tech sector and STEM education fields.

When you work in a company, the higher you go up, the more men there are. And then women have the tendency to even drop out more because of that reason, because simply there is no one like you. And that's actually really tough because it means it's a snowball effect.

(L. Stamm, Codam, 07.05.2020)

They (men) hold the decision-making, the C-level positions and they are known as corporate leaders in history. And that makes it hard for women to grow in the vertical, in the hierarchy.

(E. Logunova, Women in AI, 06.05.2020)

Moreover, research shows that an increase in the number of women studying sciences does not necessarily lead to an increase in the number of women choosing science as a professional career path, hence the paradox of critical mass theory (Etzkowitz, Kemelgor, Neuschatz, Uzzi & Alonzo, 1994). Etzkowitz et al. (1994) call attention to the need to change the institutional settings including childcare and parental leave policies as well as hiring practices to tackle the leaky pipeline problem. This shows that although an increase in the number of female representation in decision-making boards is an improvement towards more sustainable cooperation between companies and diversity initiatives as well as more successful CSR campaigns on diversity, this has to be backed up by institutional support for creating a lasting change in the market.

On the other hand, another unexpected finding emerged as respondents have brought attention to smaller companies that are more heavily invested in leading diversity efforts with them. When the initiatives reach an impasse with big companies, SMEs as well as start-ups appear as the go-to firms for recruiting women from the initiatives' programs. Gill, having expressed frustrations with big corporations' lack of real investment, explained:

Well if big companies are not willing to hire, this is where we look towards smaller companies. Small and medium-sized enterprises and the start-up sector are good go-to sectors for the people who graduated from our bootcamps.

(I. R. Gill, The Code to Change, 01.05.2020)

The same challenge is also observed with other initiatives, as Galyeva has also pointed out that big companies are usually insufficient in terms of real action, and in those cases, smaller companies are again the go-to ones.

The bigger the company, the harder it is to get some action points from the company. (...) Then we forget about big names and just concentrate on the smallest ones. And there are a lot of caring people who are really eager to share their premises, but this is mostly for small companies again, and not big ones.

(A. Galyeva, PyLadies Amsterdam, 07.05.2020)

On the other hand, the programs and events of these initiatives have been successful in terms of showing the industry the need for such organizations to promote women and diversity in tech, stimulating changes in the tech scene regarding diversity and inclusion.

Once they saw that there is a clear need for this, a lot of companies started their own internal boot camps, they started to promote women internally as well, and they started to encourage them to join our programs in different capacities maybe as speakers, guest lecturers, mentors or boot camp instructors.

(I. R. Gill, The Code to Change, 01.05.2020)

Another point of support and partnership that is widely common is between these initiatives and StartupAmsterdam, a centre for start-ups in the tech scene, run by the City of Amsterdam, Gemeente Amsterdam. As such, this point of cooperation is the only prevailing partnership of the diversity initiatives and the Dutch government. Most of the respondents said that the Dutch government was not involved in supporting their programs in a financial way, however they all pointed

out differing types of partnerships with StartupAmsterdam. These partnerships with StartupAmsterdam include collaboration for events and promotions of tickets, supporting female entrepreneurs in Amsterdam.

We're working with StartupAmsterdam and joining our efforts to tackle this problem of diversity in tech and gender equality together. The Municipality of Amsterdam is one of our strategic partners through StartupAmsterdam, but they don't give funding yet. They did a lot to promote our work among companies and networks whenever we launch a new program, a new bootcamp, and we are in their portfolio of diversity initiatives so whenever companies come to them, they always recommend us, and this is how we are getting a lot of conversations with big companies, banking companies and the fintech sector.

(I. R. Gill, The Code to Change, 01.05.2020)

However, despite the availability of different types of partnerships and arrangements, the most prevailing challenge mentioned by most of the respondents is the financial challenges, and the need for sponsorships from private and public sectors. As such, while the tech scene in the Netherlands is undergoing a change with respect to increasing involvement of diverse actors in diversity and inclusion, there is still much to be changed until equity is achieved and the industry eludes from male domination. To this respect, although companies are committed to diversity inclusion to various extents, there is a need to double down on diversity efforts, put those commitments into action and move beyond what might be criticized as corporate virtue signalling, that is companies' engagement in virtuous and socially responsible behaviour to boost corporate reputation and forge better ties with stakeholders (Gray, Sütterlin, Siegrist & Árvai, 2020).

4.2.2 A place for women

The second aspect of the changing tech scene in the Netherlands is the availability of more communities for women in tech now compared to less than a decade ago when these initiatives first began their work around the country. As such, the proliferation of such diversity initiatives has provided a safe space for women with similar experiences and a common interest in technology.

Once I realized that the gender gap is something that's also prevailing in Europe as well, that's when I started the Code to Change here in the Netherlands. And when I started this, my work, there were no or few women in the tech community in Amsterdam, and there was no platform.

(I. R. Gill, The Code to Change, 01.05.2020)

Van Rijswijk has also pointed out the unavailability of platforms for women in tech and mentioned that the ones that existed were not welcoming, inclusive or friendly, which are values that she as the organizer of Rails Girls as well as other initiatives are trying to ensure in the community as well as the rest of the tech scene through partnerships with companies.

We were not welcome in the community of Ruby on Rails before, and that's why we created our own community, a safe space for women to attend and feel welcome.

(R. Van Rijswijk, Rails Girls, 07.05.2020)

All of the organizations interviewed started their work around mid to late 2010s, and many remarked the unexpected and overwhelming demand they got from participants to join their programs and events, indicating the significant need for such platforms for women in tech. In less than a decade, the number of diversity initiatives working to encourage women's participation in tech and empower them has increased, and it has become a trend in the industry to be supportive of diversity and inclusion.

So many people were signing up so quickly to come to our events, and for every event we hosted, we were sold out within a day or two, there was tons of interest. (...) And our main target audience is women who work in tech spaces, but we also have events that are accessible to as broad of an audience as possible. But we do try to have that underlying thought of being a tech-oriented event.

(A. Marochko, SheSharp, 05.05.2020)

When we first opened the call for applications, we were so surprised because we mostly wanted to do a small group of 25 women, and we were hoping we would get a few from Amstelveen, we would get some from Amsterdam, maybe one or two from Utrecht. And when we opened the call, we put it on our Twitter and Facebook pages. We got more than 150 applications in the first round, and most of them from all over Europe. And some from the globe as well and we were just so overwhelmed with the response that we got. And this was organic, really no advertisement, just our immediate network. And that's when we really saw how big a need there was and that's when our partners and allies that we were working with globally also saw it.

(I. R. Gill, The Code to Change, 01.05.2020)

Our first event that we ran about a year ago at Elsevier, we had 50 people that signed up for that event and I think that night we had more than 300 that showed up. It just was mind blowing because we saw that there's clearly a need for this in the Netherlands.

(Dr C. Antoine, Women in Tech, 20.05.2020)

Alongside the need for platforms for women in tech to come together, a commonly shared value among these platforms is the importance of creating a safe, welcoming and inclusive space for women and other underrepresented groups. The change in the tech scene therefore can be said to have evolved from no space for women to come together and connect, to many platforms providing a safe space for women in tech and working for increasing female visibility in tech. Moreover, the negative experiences in the workplace and in other communities such as Van Rijswijk's example of not being welcome in the Rails on Ruby community have also amplified the need for a safe and accessible space for women. Van Rijswijk also shared an experience in the tech community before starting the Rails Girls community as the following:

I became the organizer of the monthly Amsterdam Ruby Meet up and found out that there were a lot of men, or maybe only men. And this struck me that there were not a lot of women, not a lot of diversity there. But the fact that I was organizing it already made it easier for women to come to the meet up as they felt that this was a safe space for them to join. So, the more I organized, the more women showed up actually and it just became a more accessible space for women to show up and meet.

(R. Van Rijswijk, Rails Girls, 07.05.2020)

The importance of building a community of women in tech has been highlighted by most of the respondents for several reasons. First, the need for creating safe and welcoming spaces for women to connect with, share their experiences and learn has been repeatedly remarked. Erol, who was first attending meetups before embarking upon her work in the organization, shared:

I really enjoyed going to the Ladies that UX meetups and it was one of those places where I would always leave inspired, excited and ready to go and do things because everyone was very welcome, and you could talk about anything and everything. And I would always be learning things but also, there was a nice vibe in the community, so I like being a part of that.

(E. Erol, Ladies that UX Amsterdam, 25.05.2020)

To have a community where women can connect with other women who work in similar roles, where they can empathize and relate to you about some of the frustrations that you experience in the workplace, it got really important. I think it was vital to really build some of these connections and allow opportunities for them to learn from one another and just share similar experiences.

(A. Marochko, SheSharp, 05.05.2020)

And second, the need for the community and its significance have been emphasized through its function as a support system. When these organizations are faced with difficulties, challenges or need to ask for help, it is very common to turn to the community and seek for help from within the community, as it has grown over the years.

One solution is always to turn to our community. So, if we cannot find a speaker, a host, we ask the community and someone somewhere will then help or suggest someone else that can help, and I think that's been the best solution.

(E. Erol, Ladies that UX Amsterdam, 25.05.2020)

We try to support other communities as well. And support can be informational support, it can be helping with sharing mentors, sharing speakers, just sharing our network or open our network for other possibilities.

(A. Galyeva, PyLadies Amsterdam, 07.05.2020)

One of the ways through which the increasing number of #WomenInTechnology initiatives has been impacting the tech scene is by raising awareness in the industry and drawing attention from the companies. In this manner, they have helped give exposure to women from their programs to companies through recruitment programs, events and other programs.

And we literally saw those women (encouraged by their companies to join the programs) go higher up within their organizations. They started to get noticed, they were on the stage, they were out there, and their managers started to pay attention to them. These women who were previously overlooked for everything, overlooked for assignments, for promotions, they became more visible within their own companies. And the kind of job opportunities that they started to get after that, it was amazing to see how it all progressed over the years and their careers as well.

(I. R. Gill, The Code to Change, 01.05.2020)

A lot of smaller companies as well as a lot of start-ups, they host a lot of our events primarily for recruitment purposes. And that's a win-win as well for the community since a lot of women do sometimes have difficulties securing employment. And after these events, we've had a lot of job offers given to our community and that's been really helpful for them, especially if they're trying to find a new job offer or to at least get exposure to new companies.

(A. Marochko, SheSharp, 05.05.2020)

In brief, these initiatives have been impacting the industry through an increased availability of safe and welcoming spaces for women to connect with, share experiences, learn and develop themselves to advance in their careers. More than providing a safe space, the connections these initiatives cater by connecting women to the job opportunities in the tech scene and to tech companies has also been visible and worthy of attention. Overall, the growing awareness in media, increased conversations and mobilized actions about diversity inclusion put pressure on companies to diversify their work teams. Moreover, there is growing pressure on companies to create social progress, as corporate success is no longer solely dependent upon financial gains (Gray et al., 2020). In terms of uncovering the real impact of #WomenInTechnology initiatives in in tech and measuring their success, a quantitative research investigating the changes in the tech scene with regards to the changing employment patterns in the recent years such as the change in the composition of prestigious and senior positions which would prove beneficial, as these positions continue to be highly dominated by men and occupational segregation perseveres.

4.3 Values and Norms in #WomenInTech

Overall, this research aimed at discovering the underlying values that shape the mission of the #WomenInTechnology initiatives. Therefore, the third and most extensive overarching theme that emerged from the interviews is the elemental values and norms that shape the work of these initiatives. Some of the findings that relate to the values and norms in #WomenInTechnology that have been presented in the previous chapters won't be further discussed here. These included the safety, welcoming, inclusivity, and the importance of creating a community hardwired with such values, and they are considered as integral and complementary to the findings that will be presented here. The values and norms in #WomenInTechnology initiatives that came to light through the interviews are categorized under five themes as follows: equity vs. equality, empowerment through technology,

making role models and challenging traditions, diversifying practice and finally striving for impact. Furthermore, these represent a cross-cultural set of values as the interviewed sample composed of women from different cultural backgrounds including Turkish, Dutch, Pakistani, Canadian, Ukrainian, and Russian.

4.3.1 Equity vs. Equality

Although feminism is largely considered as the equality of all sexes by the respondents, there is particular emphasis placed on the cruciality of equity over equality. Gender equity does not imply exact equality between men and women (McDonald, 2000), but rather relates to perceptions about fairness and opportunity (McDonald, 2013). Respondents have largely pointed to the 50-50 representation, or in other words equal representation, of men and women in the tech scene as the end-goal. However, they have also stressed the importance of the means utilized to achieve this goal, where the concept of equity over equality emerges.

Our end goal is to have 50-50 in meetups, in our workshops, and in the whole industry, and when we will have this, there will be no need to have the PyLadies name anymore. Then we can just rename ourselves to Python something and we will just focus on doing our work.

(A. Galyeva, PyLadies Amsterdam, 07.05.2020)

The prioritization of women due to the current imbalance in the market is also observed in other initiatives. Stamm explained that they have been developing strategies to make their programs more attractive for women.

We always have 120 spots and it's open to everyone, but we noticed that the stream of male candidates applying was much higher, so we decided to have 60 spots for male and 60 spots for female candidates, and also to do only all-female open days to attract more women. And for a lot of girls and women it was actually even a bigger reason to sign up for Codam, because they knew that there will be more people like them, and it will be a safe space. (...) And for the future, one of the goals is definitely to have a 50-50 male-female ratio of students.

(L. Stamm, Codam, 07.05.2020)

Other respondents have also explained that in certain cases they prioritize women, however the way through which they did differed from each other. For example, Galyeva said that they tried to prioritize and promote female workshop givers to give them a boost in confidence, while Erol explained

that for workshop givers they did not have a preference, whereas for mentees they prioritized women in the applications.

Achieving 50-50 representation in tech is essential in terms of removing barriers to mobility. However, if efforts for equity remain limited to the goal of achieving 50-50 in tech, the dilemma of equality of outcome vs. equality of opportunities rises. Equal representation may translate into equal outcome in the sense that more women will be employed in tech, however, this does not necessarily provide equal opportunities as it overlooks other problems in the industry, such as the glass ceiling. In 2017, the share of women in managerial positions in the Netherlands was 26 percent and the high-level occupations with the biggest cluster of women were in the fields of education and care (Statistics Netherlands, 2019), industries with lower-paying professions (PwC, 2019). Whereas men overwhelmingly occupied high-level positions in ICT and management with a share of at least 90 percent (Statistics Netherlands, 2019). Hence, even if equal representation in the tech sector is achieved, as long as high level tech occupations and management positions continue to be dominated by men and the male dominated professions keep on yielding higher wages compared to the female dominated ones, inequalities will likely continue to persist. All in all, “gender equity is about perceptions of fairness and opportunity rather than strict equality of outcome” (McDonald, 2013, p. 983).

Another respondent explained why they prioritized women and other disadvantaged groups by pointing out to other problems in the industry including pay gap and glass ceiling while laying emphasis on the necessity of equality of opportunities as follows:

Sometimes some people, this may be women, poor people, black people, or any disadvantaged group, they need more opportunities. So, imagine we have this wall in front of us that we almost look over but cannot see beyond. And I'm a small person, I'm so much smaller than the average Dutch guy. So, if we were all equals, we would all get a 50 centimetres high box to step on. But if I stand on that box, I still cannot see over the wall, whereas this other person, who is taller than me can. So, I need a box that is 1 meter high. But then it's not fair according to some, and they also want that box even though they could see over the wall before. So, it's more about the access to opportunities and creating these opportunities for people. Because we are not the same to start with and we are not equal. If we were equals, we would have earned the same amount of money, and there would be no pay gap, or no glass ceiling.

(R. Van Rijswijk, Rails Girls, 07.05.2020)

So, as an underlying value in the nature of these initiatives' work, the notion of equity over equality translates into giving priority and opportunities to unrepresented, minority groups, particularly women. As shown above, discrepancies are observed in the ways that equity over equality is perceived

by #WomenInTechnology initiatives. However, one way this value is commonly instrumentalized by these initiatives is through the power of technology, which will be discussed in the next section.

4.3.2 Empowerment through technology

One way through which women are encouraged to join the tech scene or those who are in the tech scene are promoted and supported is through technology. The main goal of equity over equality hence morphs into empowering women, a concept predominantly shared by #WomenInTechnology initiatives. Although different forms of female empowerment is observed among their practices including economic empowerment, digital empowerment, social empowerment, encouraging women's participation in tech and boosting their confidence level, the ultimate unifying element is the utilization of technology as a tool for the end-goal of economic empowerment of women, so that they equally participate in the labour market, have equal access to opportunities and to the resources available, and eventually closing the gender gap.

What I try to do is to create and shape a mission around an alignment with the sustainable development goals from the United Nations and there are five goals that we've chosen to focus on. And that goal #5 itself in fact is all about gender equality and empowering girls and women. And so that's the core of everything that we do. (...) And we have programs in place that are helping us make progress in exciting and stimulating and encouraging more women and girls to get into technology in their education and careers, as well as giving them the confidence as good human beings to be great in business.

(Dr C. Antoine, Women in Tech, 20.05.2020)

One mechanism through which women are empowered by these initiatives and that came up the most often is boosting confidence in women, showing that they can give speeches at events, build products, and as such, they are encouraged to move forward from there and eventually thrive in the industry.

It's nice to see someone give their first talk and then find that they like that, that they can do that. (...) Then I see those people writing more blog posts, giving more speeches, attending events. And then they are given more opportunities because of that. (...) So, it's nice to see people speak at our events and then progress in their careers.

(E. Erol, Ladies that UX Amsterdam, 25.05.2020)

We noticed that people who were one of the workshop givers before, they have more courage to participate and to be workshop givers in the future as well as participate in different conferences. So, it's like a boost for them.

(A. Galyeva, PyLadies Amsterdam, 07.05.2020)

We did a physical boot camp for three days just to get women interested in technology, and to expose them to the idea of let's build something in three days, and just to boost the confidence level and show them 'Wow I built this, I can do this'. That is simply the motivation they needed to then take it off from there, as some of them would immediately find opportunities because then they knew how to re-market themselves and how to reinvent themselves.

(I. R. Gill, The Code to Change, 01.05.2020).

In some cases, the boost of confidence for encouraging women is done through providing training for digital skills, or updating their skills because as Gill accentuated, technology is rapidly changing, and it is essential to keep up with the advancements in order to keep on thriving.

My principle belief is that technology can really fast track gender equality and the path we want to take towards gender equality. Even if you are an established technologist and you're working, you need to keep your skills updated every few months, otherwise you'll become redundant. So, it is important that we empower women digitally because when we give them digital skills, it gives them the opportunity to be more economically independent.

(I. R. Gill, The Code to Change, 01.05.2020)

Female empowerment is also observed in the internal structure of these initiatives, as Logunova explained:

We try to ensure that there is no stagnation in the membership, meaning that ambassadors can't stay more than a certain amount of years agreed upon from two to maximum three years. There is a board of advisors that also has a rotation, there is a voting procedure and that brings in new blood. And that helps more women to feel empowered to stand out and bring you the network.

(E. Logunova, Women in AI, 06.05.2020)

The notion of empowerment, in addition to being embedded in the internal compositions of the initiatives, is also observed in the relationships between #WomenInTechnology initiatives, as they work to help and promote each other as well within the community.

There are different organizations, and we don't compete with each other, we are all about the same mission: Empower women or men with the power of technology. So, there's always a way to work together.

(E. Logunova, Women in AI, 06.05.2020)

From a broader perspective, although it appears that the notion of female empowerment through technology is a progressive attempt at encouraging women to gravitate towards technology and increase women's representation, the way through this is done highly overlaps with the neoliberal approach to feminism and its consequent creation of a neoliberal feminist subject, defined by her individuality and entrepreneurial mindset that drive her towards success whilst being aware of the current inequalities and the ways to overcome them (Rottenberg, 2014). The neoliberal feminist approach places great emphasis on individualism and hence defines women's emancipation through her own individual efforts for achieving success. Furthermore, a particular path designated for the emancipation of women is identified with an economic model that creates the perfect equilibrium between family and career through the right calculation (Rottenberg, 2014). It has been previously shown that part-time employment was largely perceived as positive due to its peculiar appropriation to the Dutch culture by enabling of a more balanced work and family life for women, hence conforming with the neoliberal feminist ideal of a happy family-work balance (Rottenberg, 2018). In addition to this, the emphasized value of empowerment through technology bears significant resemblance to the neoliberal feminist thought by way of laying the burden of growing an interest to technology on women's shoulders. All in all, the feminist described by the respondents largely coincides with the neoliberal feminist subject. Hence, from a critical perspective, it is imperative to highlight that the discourse of neoliberal feminism widely overrides the socioeconomic and institutional structures that shape and perpetuate inequalities, as well as the role of the tech culture itself in reinforcing inequalities.

Moreover, as Costanza-Chock (2018) argued, to create just and equitable design systems, the necessity goes beyond the inclusion of diverse groups into the design processes of technologies, and advocates for full accountability and the most comprehensive participation possible by including those directly experienced by the design of technologies. As such, she makes a clear argument for the need to implement feminist design in technologies with 'full inclusion' highlighted as the most important value (Costanza-Chock, 2018).

4.3.3 Making role models and challenging traditions

Another problem mentioned by the respondents and associated with the underrepresentation of women in tech is the lack of female role models in technology.

We need more women in tech, but what do you do to get more women in tech? We need role models! And to see role models, you don't need to be a CEO, you can be a student, you can be anybody, if you are doing something, if you are acting, reaching people, talking to people and helping people, you can be a role model.

(A. Galyeva, PyLadies Amsterdam, 07.05.2020)

Promoting female role models in tech appears as an important mission for raising diverse future leaders in tech that more diverse groups of people can look up to and for encouraging young girls' participation in tech by providing them with influential female figures that they can hold up as examples, because they lack such figures.

When I was growing up, I didn't have a role model and I wasn't encouraged to go into tech either. So, that kind of like sucked.

(R. Van Rijswijk, Rails Girls, 07.05.2020)

With our workshops we nurture talent in teenagers, so they become speakers. That's how we also ensure impact and difference by seeing more role models and speakers on stage. And that's why programs like role models become so interesting for people, for women because you can just look at this wonderful woman and be inspired and encouraged.

(E. Logunova, Women in AI, 06.05.2020)

For Women in Tech, the need for more female role models in tech has been instrumentalized by developing a role model program as well. Dr Antoine explained:

There are not enough women role models, especially in technology, to look to and say, "I want to be like that person that I really admire, and I want to have a career like hers". So, role modelling is really important to stimulate even more women and girls to get into technology and create more individuals to be great role models.

(Dr C. Antoine, Women in Tech, 20.05.2020)

Creating more female role models appears an important mission because of the low number of female students in STEM fields and the leaky pipeline problem also present in the Netherlands (Booy et al., 2011). Nevertheless, more female role models in tech can also challenge the stereotypical norms

around the STEM fields dictating that these fields are more appropriate for boys and men (Reinking & Martin, 2018). More female role models in tech creates a transformative potential in education by inspiring and encouraging young girls to pursue education in STEM fields. Thus, the mission of creating more role models is deeply related with another underlying notion of these initiatives, that is the problems with the current education system. Although the lack of role models in tech is also related to problems stemming from the education system, it doesn't appear as the only reason behind the need for challenging it. The problems with the traditional education system that were highlighted by the respondents include shortage of students in STEM fields, the discriminatory treatment of boys and girls regarding their academic choices, the lack of a more profound technology aspect in the curriculum, and unequal access to education.

The latest number of people studying IT in the Netherlands is around 3,000 people, but we need 15,000 people in this field every year, and that number is only growing. So, that means that every year we have a shortage of 12,000 people being educated within this field, which is actually a really big number. And as a result, we don't have enough educated people that can work in this work field.

(L. Stamm, Codam, 07.05.2020)

Moreover, she also pointed to the inadequate technology aspect of the education system, adding:

When you finish your studies, there's a giant gap in between the skills that you actually need in order to work at a company. Because technology is not a very important aspect in education.

(L. Stamm, Codam, 07.05.2020)

Van Rijswijk further elaborates on the lack of a technological aspect in traditional education, saying:

In our programs, we will try to teach and inform as much as we can, because schools these days they tell a lot, but it's on the surface, they touch a lot of points, yet never a deep dive. So that's what we do, we do a bit of a deep dive and expose you to technology and then it's up to you to decide whether you like it and whether you're interested.

(R. Van Rijswijk, Rails Girls, 07.05.2020)

Another problem identified within the education system is the different treatment of boys and girls regarding their academic choices in a way to discourage girls from pursuing education in STEM fields. This finding is in support of the gendered socialization theory showing that binary gender roles imposed differently on boys and girls reinforce negative stereotypical assumptions that STEM fields are not appropriate for girls (Reinking & Martin, 2018; Gunderson et al., 2012). Dr Antoine gave an example of this from the Dutch context, saying:

Here in the Netherlands, at the age of 14 as a student you have to choose between either maths and sciences or humanities and social sciences. And although boys and girls really score the same in their testing at that time, they are getting different messages from their teachers, their parents and their surroundings. Girls and boys are being directed towards different paths, as boys are being encouraged and flattered to go in the direction of maths and sciences, girls are getting the opposite message. And so, we're missing an opportunity because at this point in time in a young girl's life, when they're hugely creative, they are being told not to go into maths and sciences and again they are lacking role models that they can look up to.

(Dr C. Antoine, Women in Tech, 20.05.2020)

4.3.4 Diversifying practices

The most prominent theme that emerged from the findings is the cruciality of diversity and inclusion, and therefore the exigence to diversify the design and creation processes of technologies, decision-making bodies, as well as testing groups for eliminating biases from technological artefacts and products by integrating various perspectives into the product development processes. This value appears as the most prominent theme as the importance of diversity has been accentuated by all of the respondents throughout the interviews.

Respondents have widely acknowledged that the problem of biased technologies stem from the lack of women and diversity in design and creation processes of technologies, as well as decision-making mechanisms, and they have highlighted the importance of having more women at these stages of product development for better and more accessible products and services.

I believe that the reason there are biases in the design systems and these apps that are being built, is because there are not many women designing it. (...) And if we tackle the issue of gender diversity in teams that are building it, this problem is solved, which is why we need to push for more women in those teams.

(I. R. Gill, The Code to Change, 01.05.2020)

When women come into the conversation, it improves the product design, it improves the accessibility, it improves the enablement of the solution, in a very positively drastic way. And so we need women at the table, we need them to be part of the thought process, the design process that builds the delivery and that goes as far as technology is concerned into the codes that we're writing and into the products that we're developing and delivering. It's essential to have female brains equally represented.

(Dr C. Antoine, Women in Tech, 20.05.2020)

Diverse teams are dynamic teams, they are happier, and they code faster. Another reason why a diverse team works better is when you have women or people of different cultures within your team, you get to know each other better, and work better as a team. And also, if you're selling a product, a general product that both men and women use, it's nice to have a women's view on it as well, or the entire group which means more diversity. That's why companies should have more diversity in their teams.

(R. Van Rijswijk, Rails Girls, 07.05.2020)

The need for having more diverse teams at the various stages of technology design and creation is also highlighted for creating more accessible products and services to a wider group of people, as the current biases in technologies lead to discrimination towards certain groups. As mentioned previously, the examples of biased technologies are manifold, and respondents have also provided examples of biased technologies that are part of people's daily lives, such as health apps that rule out menstruation cycles, an example of gender bias in technologies, or sensor soap dispensers that do not recognize dark skinned people, an example of racial bias in technologies. Therefore, the importance of having diversity at various stages of product development is not limited to gender, as other elements need to be taken into account as well.

What I'm trying to do is find ways to attract more women and girls, and not just women and girls, but also dark-skinned people, LGBTQ persons, people with different religion, sexuality, ethnic background... It's like everything, everyone, as diverse as possible.

(R. Van Rijswijk, Rails Girls, 07.05.2020)

Every person is biased and people working in tech when they are writing codes, they also have biases and then those are reflected into the codes, intentionally or unintentionally. That's why we need to have some filtering to check for those biases, and to have this filter, we need to include various people as coders and dataset builders who are diverse from gender to race, to

the skin colour, to the places of origin, to the mentality, emotional level, and so on. You really need to have this palette of all the colours of society to be involved in filtering the created open source datasets.

(E. Logunova, Women in AI, 06.05.2020)

If I put a problem on a table and around the table, there are only the same kinds of people, and you will ask the question, what is the solution to this problem, you will always get the same answers. If you have different people looking at the problem, you will get innovation because you will get different answers. So, you want to have different people, different backgrounds, different colours, different interests, different opinions, different values.

(L. Stamm, Codam, 07.05.2020)

On the other hand, although creating diverse teams is the end-goal for eliminating biases in technologies and for achieving gender equality in the labour market, some respondents highlighted that the ways through which companies ensure diversity and inclusion in their teams are also of importance, as the corporate cultures may also need to be questioned and practices need to be diversified to be further inclusive.

Many start-ups particularly in the Netherlands do the VrijMiBo thing on Fridays where people get together, drink and have pizza or whatever. But that's not super inclusive because of many reasons and it creates an us vs. them mentality. That's why these cultural norms that are built into the start-up mentality need to be broken down a little bit and companies need to diversify their practices as well in order to become more inclusive.

(A. Marochko, SheSharp, 05.05.2020)

We work with a lot of different companies who see the value. And these companies don't only want to be associated with diversity, but they want to lead it every day. And even though they may not be perfect yet in the sense of whether they have enough women or whether they support people of colour. So, we design different programs to persuade them to change and reshape their corporate culture and become more diverse, and not just gender diverse but diverse in every aspect of the human race.

(E. Logunova, Women in AI, 06.05.2020)

As previously discussed, the identification of problems in the education system and the call for challenging them is a progressive step in the right direction as it addresses structural problems in education. And although a small share of the respondents has pointed to the need for challenging and

changing the corporate culture, as showed above, it appears as though this perspective is largely absent from other respondents.

4.3.5 Striving for impact

The last overarching value shared by all the #WomenInTechnology initiatives emerged as striving for creating an impact in the field, that is increasing the representation of women in tech, creating more diverse and inclusive work teams and corporate cultures, and inspiring more girls and women to go into the technology field. The organizations interviewed were not-for-profit organizations in the business of impact making, and therefore doing valuable work for the community is at the core of these initiatives.

If I've inspired one person today, then I've done my job. So, I think making that difference is why I show up to do this every day. And for me the vision is being attributed towards really seeing the numbers change and having more women in tech.

(Dr C. Antoine, Women in Tech, 20.05.2020)

Logunova explained that when working with different actors across the sector, whether this partnership would make an impact in empowering women is taken into consideration.

For us, what matters is the social impact that partnerships would create. And you need to think from all the perspectives of every stakeholder, how everyone can benefit from diversity, inclusion and working with women, because that's what we lack right now, more women who are empowered.

(E. Logunova, Women in AI, 06.05.2020)

Although different initiatives differ from each other in terms of their focus on specific areas of technology ranging from different coding languages to broader topics in technology, respondents also highlighted the importance of creating the bigger community of women in tech in striving for impact and such platforms working across collectively.

There are so many great groups in the Netherlands, it's great to see that and many times you'll see similar people attending both events so it's quite nice to see the communities working across together.

(A. Marochko, SheSharp, 05.05.2020)

So, initiatives like this (other diversity initiatives promoting women in tech), they create a huge impact because you first of all bring different communities together, and that's already one community, it is technology, you don't split it. Then you really ensure that based on your platform, they meet, they talk, they find great topics for corporations, and then you see beautiful projects being born. (...) So, you just need to create this platform that unites everyone. (E. Logunova, *Women in AI*, 06.05.2020)

It has also been highlighted that impact making can be realized by acting and taking real steps to make a change in the status quo.

If we just sit and say we need more women in technology and we are just talking about this without taking any steps, without any actions, in 200 years or in 1000 years, we'll have the same conversation again and again and again. I think it's a two-way conversation, we always have an impact by doing something or by not doing something. (A. Galyeva, *PyLadies Amsterdam*, 07.05.2020)

However, as these organizations are not-for-profit organizations working on a volunteering basis, one common challenge that is mutually faced by them is finding people equally invested in the same purpose of working for the good of the community.

One of the challenges is looking at the people who sincerely have passion for and believe in this mission and that really want to do something with their time, that contributes to making a difference in this space. People that will be with you for the longer haul and even though it's not always easy and it's all voluntary and you know you're doing it because it's good and it's the right thing to do and it's doing good for others. (Dr C. Antoine, *Women in Tech*, 20.05.2020)

I think this is the biggest challenge, to find people who really care or want to act, and not just think about it. (A. Galyeva, *PyLadies Amsterdam*, 07.05.2020)

Ultimately, this research aimed at analysing the role of feminist values in bringing gender equity to the tech sector in the Netherlands. The findings indicate that several values can be identified as shaping the mission of #WomenInTechnology initiatives that are working to close the gender gap in tech. The overarching values identified here were equity over equality, empowering women through technology, making female role models, challenging traditional education systems, diversifying practices

and striving for impact. As previously discussed, the set of values have to be taken into consideration collectively, as these values affect and supplement one another in their implementation and employment. It is clear that the set of values and norms in #WomenInTechnology initiatives show certain parallelism to the 6 core values identified as vital to the implementation of technologies by Bardzell (2010). Diversifying practices on every layer of technological processes as the core value underlying the #WomenInTechnology initiatives strongly aligns with the methodological approach introduced by Bardzell (2010).

5 Conclusion

This thesis aimed at understanding the underlying values structuring the mission of activist organizations in the Netherlands striving for gender equity in tech. The theoretical framework showed that the gender gap in tech is a globally prominent problem, with significant implications on the Dutch labour market. These problems, which were highlighted by the respondents during the interviewees, were found to be in support of the existing literature on the inequalities in the workplace presented in section 2.1. As a whole, three extensive and outstanding themes emerged: perceptions of feminism, a change in scenery referring to the changing tech industry and its approach towards diversity and inclusion, and feminist values adopted by the #WomenInTechnology initiatives. In this section, a summary of findings and limitations of research will be provided with critical discussions, while also setting the implications and directions for future research.

5.1 Summary of Findings

First of all, findings show that there still remain negative connotations and confusion associated with the word feminism, as respondents shared that they had conflictive experiences with the concept until they entered the workforce in tech and had negative workplace experiences themselves. This finding supports the theory presented above, suggesting that women are more often than men subject to discriminatory behaviour in the workplace (Branscombe, 1998; Schmitt et al., 2002; McLaughlin et al., 2012). Within this theme, a second and unexpected finding was that many of the respondents perceived the wide part-time employment opportunities available for women in the Netherlands positively, as a tool for enabling a more balanced work and family life for women. This finding was surprising for two reasons: First, it overlooked the prevalent theories suggesting that part-time employment has negative impact on women's economic independence through less hours worked, occupational segregation and consequent pay gap (EIGE, 2014; Bardasi & Gornick, 2008; van Osch & Schaveling, 2017; Pettit & Hook, 2009). Second, the family-work balance was mainly highlighted as advantageous for women, showing how care work was still largely associated as a women's job. Although the prevalence of part-time employment and the consequent freedom of choice of women point out a different type of feminism, one that is native to the Dutch context which satisfies an equilibrium between family and work life, the rates of part-time employment are still considerably higher for women than men, hence an asymmetrical and gendered division of labour between partners.

On the other hand, another thing that needs consideration in relation to the positive perceptions of part-time employment is its relation to happiness and satisfaction. Paradoxically, despite all the negative implications of part-time work including poor work conditions compared to full-time

work (Bardasi & Gornick, 2008), empirical research repeatedly shows that men are more satisfied with longer working hours whereas women with less (Booth & van Ours, 2007; Collewet & Koning, 2011; Gallie, Gebel, Giesecke, Halldén, Van der Meer & Wielers, 2016), hence their satisfaction with part-time work. Although this relationship between part-time employment and life satisfaction varies across countries, its gendered nature suggests that the gender identity model, arguing for a gendered distribution of household and market work between partners (Akerlof & Kranton, 2000), can be applicable to specific contexts, such as the Netherlands, a country that ranks among the top five happiest countries according to the World Happiness Report (Helliwell, Layard & Sachs, 2019) and where women (with partners) at part-time jobs enjoy high levels of satisfaction (Booth & Van Ours, 2010). Moreover, proponents of part-time employment point out that it is the most feasible alternative to inactivity, meaning that without part-time opportunities, women's participation in the labour market would decline sharply (Booth & van Ours, 2010; OECD, 2010). A 2018 report showed that the economic independence of 230,000 women could be bettered by augmenting their worked hours by five more hours per week in the Netherlands (Graven & Krishnan, 2018). However, in light of this potential for women to become more economically independent, it appears as though working more at full-time jobs is not a desired situation by most Dutch women, as they prefer working part-time (Booth & van Ours, 2013).

Second, a change in the tech scene in the Netherlands is observed in two aspects; first, an increasing interest from various stakeholders in diversity and inclusion, and second, the proliferation of organizations for #WomenInTechnology, and hence, the naissance of safe, welcoming environments for women in tech. The first aspect is observed as many companies of different scales have become more focused on diversifying their workforces and more involved with #WomenInTechnology initiatives. Yet, findings show that the extent to which companies are invested in diversity and inclusion varies. Respondents have also largely expressed their frustrations with companies' lack of impactful support, especially with big corporations. The failure to build sustainable and strong relationships between certain companies and the #WomenInTechnology initiatives can be due to several reasons including lack of a critical female mass in decision-making positions that could push for better diversity practices (Torchia, Calabrò & Huse, 2011), lack of third-party actors and structural settings for facilitating the relationship between companies and initiatives, and companies' hesitance to take innovative decisions towards diversity inclusion (Woolthuis et al. 2005). However, the responsibility of changing the industry to be more diverse and inclusive should not fall solely upon the shoulders of women, as opposed to the neoliberal approach, and hence the cultural norms as well as institutional and societal settings also need challenging.

The second aspect of the changing tech scene in the Netherlands is the increasing number of tech platforms for women. Such platforms were missing until recently, and their proliferation paved the way for the emergence of safe, welcoming and friendly spaces for women. Although different initiatives tend to focus on different aspects of technology, it is observed that there is a wider community of women in technology that is growing and enabling more girls and women to participate in technology. One thing that needs highlighting is that these initiatives have helped bridge over between women and job opportunities in tech, generating employment for women. However, as there is no statistical data available to show the real impact of these job opportunities on the labour market, a quantitative research investigating this would help illuminate the actual impact of these initiatives on the changing employment patterns of women as a result of their work.

The last finding relates to the overarching values and norms in the #WomenInTechnology community. The most commonly shared and highlighted value was the prominence of diversity in the workplace, and in design, creation, development and decision-making processes of technologies and within the initiatives themselves. Although women are the primary target audience of these initiatives, this stems from the current inequalities in the contemporary labour market, and that the goal is to have work teams as diverse as possible. Yet, it is also observed that equal representation in tech also emerges as a widely shared goal among the #WomenInTechnology initiatives, signalling a neoliberal feminist approach to the problem of gender inequalities in the tech scene. This was also supported by the positive perceptions of some of the respondents on the part-time employments' benefits as enabling a more balanced career-family life, a concept highly appreciated and encouraged within neoliberal feminist thought (Rottenberg, 2014). It is important to note that as imperative it is to remove barriers to women's mobility in the workplace, efforts and practices to bring equity to the labour market requires a more holistic approach, transcending individual efforts and hence moving beyond neoliberal approaches to gender equality.

Other values that emerged as fundamentally shaping the mission of these initiatives were equity over equality, female empowerment through technology, making role models, challenging traditional education, diversifying practices as mentioned above, and lastly striving for impact. In accordance with the theoretical approach proposed by Bardzell (2010), these values collectively shape the nature of the diversity initiatives and present a set of values intrinsic to the Dutch context. Moreover, it is also important to note that although differences in the conceptualization of values can be observed between the values identified in this study and those proposed by Bardzell (2010), they essentially build up to the same inferences. These include a meticulous, sensitive and conscious approach to technologies, acknowledging technology as a gendered phenomenon and promoting the advocacy of women as well as other underrepresented groups affected by the use of technologies.

Lastly, these values have contributed new findings to the conversations about values in design that can be insightful in the context of the Netherlands. These include the need to challenge certain cultural norms in the Netherlands pertaining to the discourse of feminism and the traditional education system. The discourse of Dutch feminism has been found to lack inclusivity for other groups, and thus a more inclusive Dutch feminism that is representative of women of colour and other underrepresented groups seems essential. Problems with the education system in the Netherlands have also been pointed out, including the unequal access to opportunities and education, the lack of a comprehensive technological aspect from the curriculum and the underrepresentation of girls in STEM fields. These findings propound the value of the need for challenging traditional education in order to make it more inclusive and technology laden.

5.2 Limitations

Although this study provided a critical examination of the research topic and contributed new insights and perspectives into the field of research, it must be acknowledged that there are certain limitations attached. For this, several limitations pertaining to the sample need to be taken into consideration. First, other #WomenInTechnology initiatives have been identified, and these can be included in the research to further improve the sample. As this research is concerned with the personal opinions and perspectives of #WomenInTechnology initiatives, a broader sample can provide a more representative dataset that can capture more diversity and richness. Second, more than half of the sample were initiatives located only in Amsterdam. As such, enlarging the sample to a larger number would also allow the results of the research to be more representative of the rest of the country. The respondents were exclusively women, hence the sample did not represent a diverse spectrum of gender. As gender inequality is at the core of this research, having a gender-diverse sample would enable the results to be more representative and diverse. A final limitation regarding the sample that needs mentioning is that the cultural diversity of the sample could also be extended by including more people from other cultural backgrounds so as to capture a more cross-cultural perspective on the set of values.

Finally, one important limitation to take into consideration is due to the subjective nature of qualitative research methods. Although the researcher remained objective regarding the study area as much as possible throughout the research, qualitative research methods heavily depend on an interpretative approach (Denzin & Lincoln, 2005; Atieno, 2009; Anderson, 2010), and the findings of this study were the product of a detailed and meticulous process of analysis and evaluation by the researcher, hence the results may have been unwittingly influenced by the researcher's biases. Having said that, the researcher aimed for maximum objectivity through providing verbatim transcripts of the

conducted interviews as well as ensuring complete transparency during the coding and interpretation processes of data analysis.

5.3 Implications and Directions for Future Research

Chang (2018) simply explained: “If robots are going to run the world, or at the very least play a hugely critical role in our future, men shouldn’t be programming them alone” (p. 14), referring to the Silicon Valley and its male domination resulting in a ‘boys club’, and how this culture surrounding one of the biggest technology hubs in the world needs to be fundamentally challenged and changed. However, it would be a narrow-minded attempt at challenging the male-domination of the tech culture if this attempt is unable to go beyond the context of the Silicon Valley, as it is a blazing fact that gender inequality is inherently problematic in the Dutch tech sector as well. As such, challenging the male-domination as well as the tech culture itself are deemed essential for many reasons explained throughout this study. The Netherlands holds a great potential in terms of making a change in the industry, as its government is unequivocally dedicated to gender and LGBTI equality and its capital city has been ranked 15th among the ‘next Silicon Valley hubs’ around the world and displayed a fast-growing performance (Start-up Genome, 2019), making the city an attractive business and innovation centre for many actors.

This research has highlighted some of the existing inequalities as well as the bad practices in the tech sector from the perspective of #WomenInTechnology. In doing so, it has been shown that although a marked shift is observed in the Dutch tech, there still remains a long way to go until gender equity is achieved. However, the problem of gender inequality in the Dutch tech sector, as well as elsewhere, is a multi-faceted, structural and complex problem and as such, there is no silver bullet to put into effect. Yet, to tackle the gender inequality in the tech sector, a holistic approach is called for that unites the efforts of various stakeholders on different levels, including the national government as well as the local governments, big corporations as well as start-ups and SMEs, individuals in the society, organizations and unions. The interviews with #WomenInTechnology initiatives revealed several overarching values that shape their mission, which can be beneficial to the discourse of values in design. However, this study was limited to a select number of initiatives, hence was not fully representative of the wider women in technology community. For this reason, it would be useful in the future to conduct this research to a further extent, including more initiatives and perspectives.

Moreover, the findings showed that a variety of relationships and partnerships are in place between these initiatives and numerous stakeholders including certain branches of the government, a wide range of companies and other organizations. Therefore, it would also prove to be useful to enlarge the scope of this research to include these varying stakeholders and analyse their relationships with

these initiatives from other perspectives. This study showed that in the midst of a time when diversity is a trendy concept in the business world, the extent to which companies are fully involved in their intentions with diversity is disputed. Hence, a deeper look into the practices of these companies would shed light on their relationship with diversity and would enable clearer guidelines for tackling this problem. All in all, this study has contributed valuable insights to the discourses around gender inequalities in the tech scene from the viewpoint of diversity initiatives, a perspective that was previously largely missing from the literature. Alongside this contribution to literature, this study also helped make apparent the efforts of these initiatives, who brought attention to the importance of addressing the inequalities in tech and showcased which values should be instrumentalized in doing so.

Lastly, what needs to be kept in mind and further explored is how the current Covid-19 crisis has been and still is impacting human lives, in the sense that it has made significant changes to the normative working systems around the world in a short time by secluding non-essential workers to their homes, where they kept on working remotely. With regards to the technology sector, many companies adjusted to working remotely from home while the big tech seems to be the beneficiary of the crisis as a result of their innovative approaches to the challenges brought forth by the crisis (Wakabayashi, Nicas, Lohr & Isaa, 2020; Big tech's covid-19 opportunity, 2020). This has also been highlighted by one respondent, van Rijswijk, as she explained:

You can code wherever you want to, wherever, you don't have to be in the office. So, during this Corona crisis, we're working remotely. All of the developers are already doing that. It is different, don't get me wrong. But we all have our set ups at home so it's not like things are falling apart.
(R. Van Rijswijk, Rails Girls, 07.05.2020)

Moreover, in other respects, the crisis has disproportionately impacted essential workers by putting an incommensurable burden on their shoulders, both physically and emotionally. As previously mentioned, essential sectors such as health and education are largely female-dominated in the Netherlands (Graven & Krishnan, 2018; Statistics Netherlands, 2019), traditionally yielding lower wages compared to the male-dominated sectors (de Ruijter & Huffman, 2003; Blau & Kahn, 2003). Therefore, it is worth thinking about the implications of the crisis on women, as despite making up a significant part of essential workers, their work has been underpaid and underestimated (Robertson & Gebeloff, 2020). On the other hand, the burden of unpaid care work responsibilities, which increased during the crisis, was undertaken by women, reinforcing the existing inequalities (UN, 2020).

That is to say, it is time to think about what can be changed and enhanced in the current system, especially in the post Covid-19 recovery period, to create a more balanced work-life model that is in

support of the emotional as well as economic well-being of people. For this, policies and institutions need to be rehabilitated in a way to ensure equity of opportunity, also between part-timers and full-timers. As such, the Dutch case can be further scrutinized to investigate whether a more balanced trade-off between the penalties and premiums of part-time work can be achieved. As Dutch women appear to enjoy the pensions of part-time employment and the Covid-19 crisis has shown how the conventional work-life balance can be altered, an opportunity arises to re-think and re-design the normative work-life model. Furthermore, the post Covid-19 period foreshadows a period characterized by change and innovation, and as such fosters a viable environment to create more just and equitable design systems by taking a feminist approach to design and including more women in the design processes in order to create sustainable change.

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Appendix A – Description of Sample

| Name of Interviewee | Name of Initiative | Education Level | Cultural Background | Type of Organization | Position at the Organization |
|----------------------------|---------------------------|------------------------|----------------------------|------------------------------|---|
| Iffat Rose Gill | The Code to Change | Graduate degree | Dutch /Pakistani | Non-profit organization | Director |
| Ecesu Erol | Ladies that UX Amsterdam | Graduate degree | Turkish | Both non-profit & for-profit | Business analyst / Co-organizer |
| Amanda Marochko | SheSharp | Graduate degree | Canadian | Both non-profit & for-profit | Head of Strategic Partnerships / Co-founder |
| Alyona Galyeva | PyLadies Amsterdam | Graduate degree | Ukrainian | Both non-profit & for-profit | Principal Data Solutions Engineer / Organizer |
| Lisa Stamm | Codam | Undergraduate degree | Dutch | Non-profit organization | Head of Communications |

| | | | | | |
|--------------------|---------------------------|----------------------|---------|------------------------------|---|
| Eva Logunova | Women in AI Netherlands | Graduate degree | Russian | Both non-profit & for-profit | Freelancer / Ambassador at non-profit |
| Rayta van Rijswijk | Rails Girls NL | N/A | Dutch | Both non-profit & for-profit | Developer / Organizer |
| Dr Cara Antoine | Women in Tech Netherlands | Post-graduate degree | Dutch | Both non-profit & for-profit | Chairwoman & President / Chief Marketing & Digital Operations Officer |

Appendix B – Interview Guideline

I. Introduction

- Introduction of the research project and the purpose of the project
- Asking for the permission to record the interview for transcription purposes

II. Involvement with the initiative & Feminism

- What motivated you to join this organization? Can you share the backstory of how you decided to join/establish ... (the organization's name)?
- What was your background prior to joining/establishing ... (the organization's name)?
- What do you think it means to be a feminist today, and do you consider yourself a feminist?
- Is there such a thing as "Dutch feminism", meaning a Netherlands-specific type of feminism?

III. Projects and Activities

- Is there a particular project that you feel strongly about and feel proud of, and if there is, why?
- Who is the main target audience of these projects?
- What are the biggest challenges you face with during these projects? Can you give some examples?
- What are the solutions that you came up with to overcome these challenges?

IV. Partnerships & Financial Perspective

- (I know that ... is a non-profit organization). How do you maintain the sustainability of the organization from a financial perspective?
- Who are your core partners and what does partnership with them entail?
- Apart from those core partners, is there other funding available?
- Is the Dutch government involved in any way in supporting you?

V. Values & Code of Conduct

- What are some of the values that define the core of your work and that you deem pivotal in this community?
- What is your opinion on biased technologies and the discussions about integrating values into the design systems of technologies?
- Are there other best practices and policies that you support?

VI. Future

- Where do you see this project going in the future? What is the vision for short and long-term future?

Appendix C – Data Analysis: Exemplary Coding Scheme

| Sub-questions / Overarching themes | Sub-themes | Exemplary Codes |
|---|---|--|
| SQ1: Perceptions of Feminism | Confusion and negative connotations about the word feminism | Negativity associated with feminism Difficulty to resonate with feminism Confusion about who can be feminist Need to explain the focus on equality of feminism Embracing feminism as a result of negative experiences in the workplace |
| | A multifaceted feminism in the Netherlands | Feminism depending on cultural contexts Representative of the white demographic Hesitancy to address problems Positive perceptions of part-time employment Third way possible through work-family life balance > breaking the dichotomy Unequal access to opportunities |
| SQ2: State of the tech scene & approaches to diversity | Changing trends in the Dutch tech scene | Support from the local government (Municipality of Amsterdam / StartupAmsterdam) Companies increasingly interested in diversity Customized partnerships Diversity efforts by companies for show Hesitancy to take real action Shortage of impactful support from big companies SMEs and start-ups as the go to sectors |

| | | |
|-------------------------------------|---|---|
| | The rise of available and safe spaces for women with similar experiences and interest in technology | <p>Lack of a women in tech community before</p> <p>Lack of a platform for women</p> <p>Unexpected need for diversity initiatives</p> <p>Increased visibility and exposure of women</p> <p>Importance of the community of women in tech</p> <p>Safe, welcoming, inclusive, accessible spaces</p> |
| Overarching theme: | Equity over Equality | Unequal access to education and opportunities |
| Values in #WomenInTechnology | | <p>Need to prioritize women due to current inequalities</p> <p>Creating opportunities</p> |
| | Technology as a tool to empower women | <p>Digital inclusion & empowerment</p> <p>Economic empowerment of women</p> <p>Technology as a tool for gender equality</p> <p>Boosting the confidence level of women</p> <p>Encouraging women & girls to go into technology</p> |
| | Making role models | <p>Lack of and need for female speakers in tech</p> <p>Lack of and need for female role models in tech</p> <p>Role models to inspire young girls and women</p> |
| | Problems with the traditional education system | <p>Unequal access to education</p> <p>Limited access to technology education</p> |

| | |
|---------------------------------------|--|
| | Financial challenges of education |
| | Not inclusive enough |
| | Underrepresentation of females in STEM fields |
| | Leaky pipeline problem |
| | Lack of a technological aspect |
| Importance of diversity in technology | Lack of and need for women in design |
| | Biased and gendered technologies and data |
| | Benefits of diversity |
| | Changing corporate culture |
| | Underrepresentation of women in higher positions |
| | Filtering biases |
| Acting for impact making | Need for taking action |
| | Impact through community and partnerships |
| | Impact making as a motivation |
