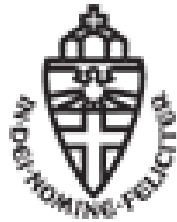


Master thesis

Gender inequality in the recruitment and selection of postdocs



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Chapter 1: Introduction

Nowadays, there is a growing amount of postdoc positions. Davis (2009) states that these positions are progressively getting more common in the whole academic world. A postdoc has been defined as a newly qualified researcher with a Ph.D and/or MD backgrounds, working autonomously in research at universities or related institutions (Stanford et al., 2009). Furthermore, the postdoc position has not a tenured contract and the length of this academic position is ranging from one to five years (Bessudnov, Guardiancich & Ramon, 2015). During this time, the postdoc develops as a researcher. In other words, this position can be seen as a trial period, where a researcher does a research independently for the first time after his/her promotion (Arensbergen, Hessels & Muelen, 2013) and therefore, strengthens his/her publication record (Bessudnov et al., 2015).

The growing amount of postdoc positions can be explained by the fact that governments encouraged universities to put more focus on creating a knowledge economy. Universities received a lot of financial incentives from (temporary) funding opportunities to increase the number of postdoc positions (Theodosiou, Rennard & Amir-Aslani, 2012) because postdocs were seen as a way to increase publications and knowledge (Tollebeek, Verstraete & Van den Perre, 2013). In the Science, Technology, Engineering and Mathematics (STEM) fields, the postdoc position is a preliminary requirement for an academic career (Miller & Wai, 2015). So, after the PhD, the postdoc position has become a first step for a permanent academic career. The postdoc position has grown in the Social Science and Humanitas (SSH) fields as well, but is not recognized as a requirement to obtain an academic career in this field (Bessudnov et al., 2015).

Stuck in the postdoc phase

As previous explained, postdocs are an increasing important group. This because they are highly educated, specialized and productive professionals (O'Grady & Beam, 2011) who contribute to economic and social growth in European countries (Hayrinen-Alestalo & Peltola, 2006). Moreover, they are responsible for new discoveries and innovations (Davis, 2009) and can be seen as the source of future productivity, since they are the platform from which the next generation of researchers embarks on independent research careers (Mitchell et al., 2013). Furthermore, they have the potential to become key players, bridging knowledge between national and international scientific and scholarly networks (Horta, 2009).

Although the importance of postdocs is recognized, the development into an academic career is very hard. As Bessudnov et al. (2015) state, the transition from graduation to academic

employment may be full of uncertainty, and a tenured job is not guaranteed. Several international studies demonstrated that a postdoc function is no longer a short-term entrance into a stable academic career, but more likely a longer-lasting experience (Fitzenberger & Schulze, 2014; Stanford et al., 2009) and can be seen as a career in itself (Bessudnov et al., 2015). Because of the financial incentives, there was a dramatic rise in the number of postdoc positions, but there is not a corresponding rise in the number of tenured academic positions (Akerlind, 2009). The postdocs that are looking for a permanent academic position but who are 'stuck', attain postdoc position after postdoc position (Van Balen, 2010). The follow up of multiple postdoc positions means a long wait for a tenured academic position and seems to reduce the opportunities to achieve such an academic position. This, because postdocs age and become more specialized (Van Balen, 2010). As a conclusion, postdocs seem to be trapped between their own ambitions and a lack of academic career opportunities (Weijden, Teelken, Boer & Drost, 2015).

Postdocs aim to prevent the follow up of multiple postdoc positions by attaining a postdoc in another country. These postdocs aim to increase their international mobility and international network. This can create advantages for the young professional researchers when they are applying for a tenured academic position, because international mobility is recognized as an important aspect for an academic career (Vandevelde, 2001). However, it is not only recognized as an important aspect, but in some countries also as a criterion for the selection of early academics in the future academic career path. Especially in the STEM field it is seen as an unwritten rule that it reflects the researchers' excellence (Herschberg, Benschop & Van den Brink, 2016).

Women in academia

Previous research identified a group that has reduced opportunities to achieve a tenured academic position. Women are less likely to obtain academic positions and the academic world is still described as masculine-centred or masculine (Chesterman, 2002; Hannah et al., 2002; Jackson, 2002; Kettle, 1996; Reay, 2004). Researchers have been focusing on the 'leaky pipeline' which refers to the fact that the percentage of female full professors does not reflect the proportion of qualified women, due to the decrease of female academics at every stage of the appointment process (Pell, 1996; Osborn et al., 2000; Rees, 2002). The phenomenon of the 'leaky pipeline' can be applied across national boundaries and different disciplines (Rees, 2002). However, the percentage of women in many disciplines already drops considerably after the doctorate phase

(EU, 2015). Moreover, Baker (2008) identifies an higher attrition rate for women doctorates. This means that there is already a lower probability that women will attain a postdoc position. In the research of Van den Brink (2010) a lack of transparency in HR policies is given as a reason for the under-representation of women in academic careers. Previous research shows that HR policies for postdocs are underdeveloped (Thunnissen & Fruytier 2014; Thunnissen, Boselie & Fruytier, 2013; Mitchell et al., 2013) or lack quality standards (Felisberti & Sear, 2014) which is the case for the recruitment policies. Another reason for the under-representation of women in academic careers is the fact that gender plays a role in evaluation and selection.

Research goal and question

Previous research shows that attaining an academic position is harder for women and this already starts in the postdoc phase (EU, 2015; Baker, 2008). Firstly, because of the underdeveloped HR policies for recruitment and selection of postdocs and secondly, because gender plays a role in the selection of academics and can lead to gender inequality (Heilman, Wallen, Fuchs, & Tamkins, 2004; Rudman & Glick, 2001; Vinkenbunrg, Van Engen, Eagly, & Johannesen-Schmidt, 2011). This research will examine if there are differences in the recruitment and selection process of male and female postdocs and if these differences result in gender inequality.

Because the attainment of a postdoc position abroad is getting more common, this research aims to make a comparison for four European countries. Since societal gender regimes can be more or less strongly differentiated and hierarchical in different contexts, one can presume that women's ability to conform to the inherently "masculine" expectations associated with academic excellence and promotion criteria will vary considerably from one country to another (Van den Brink, 2010). The recruitment and selection procedures and gender policies focused on the recruitment and selection in these four countries, will be taken into account.

Another focus of this research is the comparison between two disciplines of the academic world. This because the academic world cannot be seen as one world. Academic disciplines vary in terms of their structural and cultural contexts (Cownie, 1998; Becher & Trowler, 2001; Musselin, 2002) and these contexts shape own organizational practices and processes, such as recruitment and selection (Van den Brink, 2010). This means that there is a reason to believe that there are differences in the recruitment and selection of postdocs between the two disciplines. As explained earlier in this chapter, the postdocs position has a different role in these disciplines, since it is a preliminary requirement in the STEM fields but not obligated in the SSH fields. Next

to this, the STEM field has a stronger masculine culture than the SSH field and this might create differences in the recruitment and selection of female and male postdocs (Van den Brink, 2010).

This research has a two folded goal, it aims to contribute to theory and it aims to contribute to policy by giving policy recommendations. The theoretical aim is to identify differences in the recruitment and selection process of male and female postdocs, that result in gender inequality in order to contribute to current studies on gender inequality in academic recruitment. Since, previous research focused on gender inequality in the latter positions of an academic career, this research will contribute by examining gender inequality in the recruitment and selection of the beginning of an academic career, namely postdocs. The policy aim is to give policy recommendations for the recruitment and selection of postdocs.

The research question of this research is formulated as follows:

What differences between men and women in the recruitment and selection process for postdoc positions result in gender inequality?

Research design

This research is an international comparative analysis based on secondary data from the Garcia project. This research focuses on differences between men and women in the recruitment and selection process of postdocs. In the academic world multiple postdoc positions exist. This research focuses only on one particular postdoc position, which is based on the data of the Garcia project. The Garcia project investigates the career opportunities for early academics in six European countries. This research focuses only on four of the countries, since in only four countries a comparable postdoc position exists. In every country, the data is gathered in two disciplines (STEM and SSH) which gives this research the opportunity to make a comparison between the two different academic disciplines as well. Country reports and interviews will be analysed to reveal differences in the recruitment and selection process of postdocs that result in gender inequality.

Theoretical relevance

Attempts to shift the gender bias in European academia towards a more balanced position have been on the agenda for some decades (EU, 2009). Much recent research on the academic profession from a gender perspective has been framed around the dual notions of the “glass ceiling” and the “leaky pipeline” but postdocs have received relatively little attention in the

academic landscape (Bulmahn, 2001). This research is scientifically relevant while it examines differences in the recruitment and selection process for male and female postdocs that result in gender inequality. By doing so, new insights in differences between men and women that result in gender inequality for early academics will be identified. Moreover, this research enables to give new insights on the perspective of gender. This because this research focuses on the perspective of gender for postdocs. Previous studies on gender inequality in recruitment and selection have been focussing on other groups in the academic world. It will also contribute to current studies on gender inequality in academic recruitment by making a comparative analysis for four European countries, while this provides the insights on gender in an international context.

Societal relevance

The number of females in academia remains unbalanced, in every position of the academic career. This unbalance already starts for postdoc positions (EU, 2015; Baker, 2008). Since the postdoc position is the beginning of an academic career, it is important that the positions are filled by the best candidates. As the amounts of postdocs positions are increasing, this research will contribute to the HR policies for the recruitment and selection of postdocs, as they are underdeveloped. From previous research, it is known that academic recruitment often goes via informal networking (Evans, 1995; Fogelberg et al., 1999; Husu, 2000) and it is expected to be the same for postdoc recruitment. Networking and gender are intertwined and the advantages of networking that occur for men does not seem to occur for women and could even enhance gender inequality (Benschop, 2009). So, this research examines the recruitment process of postdocs and will recognize differences between men and women during the recruitment process. Furthermore, it will reveal differences in the selection process of postdocs. Gender plays a role in the evaluation of men and women, which can result in gender inequality in the selection process. As the postdoc position is an important step for the beginning in an academic career, candidates that are not recruited and selected have no opportunities to continue as academic researchers. In this way, they will not be able to be a part in the academic world. By identifying the differences that result in gender inequality in the recruitment and selection process of male and female postdocs, this research can contribute by giving policy recommendation for the HR policies for the recruitment and selection of postdocs. Young professional female researchers should get the same chance as young male researchers and they should not have the feeling that they are excluded from a further academic career (Reay, 2000).

Outline of this research

This research paper is structured as follows: chapter 2 starts with a contextual overview of the characteristics of the postdoc as meant in his research. Then, it continues with recruitment policies and gender policies in the recruitment and selection process of postdocs for the four countries of this research. Next to this, it will give theoretical insights in the recruitment and selection process of postdocs. Chapter 3 will elaborate on the methodology and explain the procedure for the secondary analysis. In chapter 4 the results will be discussed and chapter 5 will provide a discussion and conclusion.

Chapter 2: Contextual overview and theoretical background

This chapter will give more insights in the interpretation of the postdoc as meant in this research. It aims to explain this position at two different disciplines for all the four countries of this research. Furthermore, it will give insights in the recruitment procedures and gender policies in the recruitment procedure of academics, for the four countries. These first sections reveal the contextual overview of this research. Then, the chapter will continue with the theoretical insights. Firstly, by giving theoretical insights in the recruitment process for postdocs and secondly by addressing the selection criteria. In this last part, gender in the selection process is discussed.

The postdoc position

This part will contextualise the characteristics of the type of postdoc position as meant in this research. There are different types of postdocs positions in the academic world. Bessudnov et al. (2015) conclude that there are multiple interpretations and variations of the postdoc position across disciplines and countries. Because of this, there is no uniform definition of a postdoc available (Van der Weijden et al., 2016). Since this research is an international research, it is important that the interpretation of the type of postdoc position is comparable for all the four countries of this research. So, this part will reveal the characteristics of the type of postdoc position as investigated in this research. The characteristics of the postdoc position will be revealed for the two disciplines STEM and SSH and the four countries of this research. Only by ensuring that in every country and discipline a comparable type of postdoc position is investigated, an international comparison can be made.

As found in the Garcia project, there are two different types of postdoc positions in the Netherlands and Switzerland. These are fellowship postdocs and project postdocs. Fellowship postdocs are funded by fellowships, which are acquired by the postdocs themselves. This means that postdocs decide themselves (in consultation with a host institution) where they will take their grant. In this way, they are not recruited and selected, but they approach research project leaders themselves (Herschberg, Benschop & Van den Brink, 2016). This group of postdocs is already recognized for their academic excellence, since they establish the research project and acquire research funding independently (Akerland, 2009). The second type of postdoc positions are funded by external grants. After project leaders acquire these external grants, they need to recruit and select postdocs to fill the research projects (Herschberg, Benschop & Van den Brink, 2016). This means that the postdoc does not have much influence on the research agenda, since it is already determined by the project leader. There is a strong difference in the recognition of academic excellence and prestige for the two groups. The first group has a higher recognition in academic excellence and prestige compared to the second group. In this research, there is a focus on the second type of postdoc positions, since the first type cannot be recruited and selected. The following definition of a project postdoc will be used in this research: A project postdoc can be described as a newly qualified researcher with a PhD and/or MD background, working autonomously in research at universities or related institutions but without a tenured contract, for a period ranging from one to five years (Stanford et al. 2009, p.3).

In Switzerland, this description is applicable for the postdoc to both the disciplines. Although, the difference exists that a postdoc position is a requirement for a future career in the STEM discipline, while this is not the same in the SSH discipline (Schechter et al., 2016). So, for the STEM discipline it is a requirement to become a postdoc in order to achieve an academic career, and for the SSH discipline it is a possible step but not an obligation, to obtain a tenured academic position.

In the Netherlands, the previous described definition to describe a postdoc is applicable. The same difference in disciplines can be found as in Switzerland. So, for the STEM discipline it is a requirement for an academic career and for the SSH discipline it is a possible first step in an academic career in which the young professional researchers can increase their publication record (Van Balen, 2010).

In Italy, there were no official postdoc research positions in the past. There were only positions which are translated as 'work as an assistant for a specific project', and these positions

where the closest to a postdoc position. However, in the recent years, standard programs for postdoc positions have been opened in Italian universities (Fasone et al., 2016) and the previous description can be used to explain the postdoc position in Italy. There are no differences in the postdoc position for the disciplines STEM and SSH.

For Belgium, the previous described definition is applicable and there are no differences between the SSH and STEM disciplines (Soen, 2016).

So, to conclude the project postdoc position is comparable for every country in this research. In the Netherlands and Switzerland, the postdoc position is recognized as a preliminary requirement for a future academic career in the STEM fields. As this research focuses on the differences in the recruitment and selection of postdocs between the four countries, the next paragraph will reveal insights in the recruitment process and gender policies in the recruitment process for every country of this research.

The procedure and gender in the recruitment policies

Every year, the company Deloitte writes country profile reports about European countries, in which they elaborate on the research institutions in a country. In these reports, they address national strategies, recruitment strategies, the number of women in research professions, working conditions and international mobility opportunities. The reports of the year 2014, are the latest available reports, and these are used in this research to give an overview of the recruitment and selection procedures, with an elaboration on the gender policies for the recruitment and selection for the four countries of this research. Additionally, the data of the Garcia project is used to complete the overview.

In Italy, the level of open recruitment for academic positions has increased in the past years. In an open recruitment process, an advertisement is placed in scientific journals, daily newspapers, internet, or other public media. In this way, everyone with appropriate qualifications and experience has the opportunity to apply for the vacant position (Van den Brink, 2010). The level of openness and transparency is not what it should be yet, but the process is under way. Open recruitment is obligated for all academic positions. The Memorandum of Understanding developed by the Italian Ministry of Education, Universities and Scientific Research, aims to promote equal opportunities at the academic level. This was the first time that a national strategy was developed to increase the participation of women and girls in science. Although gender

inequality is recognized, there are not a lot of concrete measures developed to prevent it. There are universities that apply quotas or the measure that prefers the selection for the underrepresented gender, to promote gender balance. This is not the case for all universities (Deloitte, 2014).

In the Netherlands, universities are seen as autonomous employers with their own personnel and recruitment policies, and there is no legal instrument which can influence the autonomy of the institution. In this country, open recruitment for academic positions is not an obligated method of recruitment, so a closed recruitment process exists as well. In a closed recruitment process, the vacancy is not announced publicly, and academics invite 'suitable' candidates through formal or informal channels (Van den Brink, 2010). In the Netherlands, there are no national measures, targets, or quotas to ensure a representative gender balance for researchers at any level of the career ladder. Universities can apply their own measures (Deloitte, 2014).

In Belgium, there is the same autonomy for universities as in the Netherlands. However, the federal state encourages institutions to recruit as openly as possible. All universities have action plans on gender equality in academia and a new legislation on research funding puts emphasis on more gender balance at universities. This fosters equality between women and men for all academic positions, for permanent faculty as for postdoc positions (Deloitte, 2014).

In Switzerland, universities have their own regulations for recruitment procedures. However, most universities have policies to encourage open and transparent recruitment and they provide guidelines for formal recruitment procedures, but this is not always with a selection committee. Next to open recruitment policies, universities have gender-fair recruitment procedures. Universities in Switzerland recognized the need for equal opportunities and there are measures that aim to create more gender-balance in academia. There are measures with a special focus on young women academics. These support young professional female researchers in the beginning of their academic careers (Deloitte, 2014).

In summary, there are differences between the four countries regarding open and closed recruitment for academic positions. In all four countries there are gender policies for the recruitment of academics, but most of the policies are not focused on early academics. This is only the case in Switzerland. This contextual overview will be used in this research to put the data in an adequate perspective. After describing the contextual overview, this chapter will now

continue with a theoretical part about the recruitment and the selection process. The next part will give theoretical insights in the recruitment of academics and these insights predict expectations for the recruitment of postdocs.

The recruitment process of postdocs

Examining the recruitment policies in the four countries, it can be recognized that open recruitment with formal selection procedures is not always the case. As found in previous research, the recruitment and selection in the academic appointment system is often described as an opaque process in which an inner circle of elites selects new professors and junior academics in an informal closed decision making process (Evans, 1995; Fogelberg et al., 1999; Husu, 2000). There is an expectation that this opaque process also exists for the recruitment and selection of postdocs. The expectation is that the project leader who acquired the funding for the postdoc position, makes use of their (informal) network for the recruitment and selection of the postdoc.

According to Benschop (2009) networking and gender are intertwined. This is largely explained by the mechanism of homophily. Homophily (i.e. love of the same) is the principle that contact between similar people occurs at a higher rate than among dissimilar people (McPherson, Smith-Lovin, & Cook, 2001). A related phenomenon is homosociality, which refers to seeking, enjoying and/or favouring the company of the same sex. Because of this, people tend to interact more with people from the same sex (Ibarra, 1993; Mehra, Kilduff, & Brass, 1998; Bogatti & Foster, 2003). Network studies have shown differences between men and women, both in the structures and the outcomes of networks (Ibarra, 1993, 1997; van Emmerik, 2005) which are social support, information exchange, improved performance (Flap & Völker, 2004), status attainment (Lai, Lin & Leung, 1998), career advantages and competitive advantage (Ibarra, 1997; Van Emmerik, 2006). As Benschop (2009) concludes, the advantage of networking for men does not seem to occur for women and could even enhance gender inequality. Several researchers found that informal recruitment systems create unintended gender inequality (Harris, 2002; Khurana, 2004; Teigen, 2002).

This research will discover if there are differences in the recruitment of male and female postdocs by identifying the recruitment process. Furthermore, this research will recognize if the differences in recruitment result in gender inequality. The phase after recruitment is selection. The next section will reveal insights about gender in the selection process.

Gender in the selection process

Brouns (2000) concludes that gender plays a role in the evaluation and selection because of differences between women and men. Some of these differences are based on gender stereotypes. Gender stereotypes are consensually held beliefs about the typical traits, characteristics and behaviours of men and women (Eagly & Karau, 2002). These beliefs about the attributes of women and men are based on expectations which are normative. They describe qualities or behavioural tendencies believed to be desirable for each sex (Eagly, 1987). Research shows that in the whole world male stereotypes are more associated with science than female stereotypes (Miller, Eagly & Linn, 2015). As a consequence, the gender and their expectations on scientific competences are deeply embedded in patterns of thinking of both men and women (Carnes, 2012). An important aspect of (gender) stereotyping is that it often occurs unintended (Van Vianen & Willemsen, 1992; Greenwald & Banaji, 1995) but can result in differences between men and women.

This research identified four themes in which differences between men and women are recognized. The differences between male and female postdocs can result in gender inequality during the selection process. The four fields academic excellence, family responsibilities, international mobility and behaviour and communication skills will now be discussed in this order.

Academic excellence

The first theme is related to academic excellence. This construct has primary been discussed in terms of productivity, peer review, citation indexes, internationally refereed publications, and membership of editorial boards (Basu, 2006; van Raan, 2005). Since postdocs are in the beginning of their academic career, academic excellence only refers to publications in international journals. There are no expectations that postdocs have experience in the other indicators.

The indicators of academic excellence are often seen as unproblematic and self-explanatory because they are grounded in meritocracy, and therefore recognized as objective and neutral indicators of academic excellence. In this way, academic excellence is a gender-neutral construct. However, Brouns and Addis (2004) conclude that academic excellence is extremely difficult to define. This because it is not a universal fact or a natural given and it would be misleading to treat it as a simple, easily measurable attribute. Previous research states that the claim of neutrality and objectivity does not hold for the construct of academic excellence.

Various researchers identified elements of academic excellence that reproduce structures of inequality based on gender (Hearn, 2004, Nkomo, 2009). So, there is a growing recognition that 'excellence', as it has been defined and measured in academia, is tied up with aspects of gender and can exclude women (Asienberg & Harrington, 1988; Valian, 1999; Bailyn, 2003; Van den Brink, 2010). Van den Brink, Brouns and Waslander (2006) conclude that academic excellence is based on a conception of masculine reasoning and values. This can also be recognized in the way the ideal academic is described. The ideal academic is described as someone who gives total priority to work and has no outside interests and responsibilities and reflects a masculine stereotype (Bailyn, 2003; Bleijenbergh, Van Engen, & Vinkenburg, 2012). This means that the ideal academic has little room for private life outside academia, assuming that academics do not have responsibilities in raising children, and no care obligations outside work (Knights and Richards, 2003; Fletcher et al., 2007). So, people who have care responsibilities are systematically unable to meet the requirements of the ideal academic, who gives full priority and all his time and energy to his academic work (Bailyn, 2003).

So, based on theory there are assumptions that academic excellence is not a gender-neutral construct and could result in differences in the evaluation of male and female postdocs. This research will examine how academic excellence is taken into account during the selection process of male and female postdocs. Next to this, I will examine if difference between male and female postdocs are recognized and if these differences result in gender inequality during the selection process.

Family responsibilities

The second theme is related to family responsibilities. In general, postdocs have the age from 30 until 35 years and are in the phase of starting a family. Especially in the early stages of an academic career, tensions between family and career opportunities seem to occur. Although, these tensions are more recognized by women and this can be explained by two reasons. Firstly, because of biological childbearing which leads to a break in their resume, and secondly because of stereotypes and their social positions (Benschop & Brouns, 2003). This means that family responsibilities tend to be ascribed to women (EU, 2012). As most of the family workload ends up for women, they are being distracted from their career-related obligations (Applebaum, Lefkofridi & Broch, 2016) and are more likely to include children as an important consideration in their career planning (Mason & Goulden, 2002; Martinez et al., 2007). Female postdocs have the feeling that they have to choose between giving priority to their professional career or their

family life, and these feelings are not recognized by male postdocs (Tomàs, Lavie, del Mar Duran, & Guillamon, 2010). Therefore, female postdocs aspire a form of dual or combined commitment to their families and their jobs more than male postdocs. This makes them disadvantaged in the highly competitive academic labour market (Marry & Jonas, 2005).

Next to this, the research of Heilman and Okimoto (2008) shows that having a family can create gender inequality in the evaluation of job applicants due to gender bias. This research shows that mothers who are working, are disadvantaged compared to fathers who are working or employees without children, in the recruitment and selection process. This because the decision makers have reduced expectations about mothers' professional commitment and competences. The phenomenon is called motherhood bias (Cuddy, Fiske, & Glick, 2004; Heilman & Okimoto, 2008). However, previous research shows that women with children who remain full-time academics publish on average, the same volume of work as women without children and have careers that are very similar to those of childless women (Valian, 1999; Long, 2001).

Thus, due to gender stereotypes and their social position, women are expected to be responsible for taking care of the family. In this research, I will examine if differences between male and female postdocs regarding family responsibilities are recognized. Moreover, I will examine if differences that have been found result in gender inequality in the selection process

International mobility

The third theme is related to international mobility. As explained before, research shows that women's choices of postdoc positions are more influenced by family formation. The same occurs for geographic location and international mobility. The motivation of women for taking a postdoc position is connected with the geographic location, because there is a desire to live in the same place as their partner and this is less recognized for male postdocs (Flint, 2011). Research has shown that female candidates can be more reluctant to go abroad for some years, when they have children or a partner who does not want to move (Benschop & Brouns, 2003). However, it is not only being reluctant to go abroad, having a family can also have the consequence that there are no opportunities to go abroad anymore, because of difficulties with visa and finding housing and work for partners.

This research will examine if there are differences between male and female postdocs regarding international mobility. Next to this, I will examine if differences that have been found result in gender inequality in the selection process.

Behaviour and communication style

The fourth theme is related to behaviour and communication style. There are differences in the communication style and behaviour of men and women and these also occurs during job interviews. Gender stereotypes and uncertainty are seen as reasons for these differences.

Women have a higher uncertainty and limited self-confidence, while men have exaggerated self-confidence and limited modesty (Alvesson & Due Billing, 2009). Men now better how to hide uncertainty (Van Tol, 2014). Because of the higher uncertainty, women always tend to see themselves as less, which can make them behave extremely modest or extremely hardworking to proof that they can do it (Westra, 2017). If women behave modest during a job interview, they will not be recognized for their competences. However, women who come across as too ambitious and competitive, will be seen as bitches and are disadvantaged as well. This because of the congruent gender norms that women are supposed to be reflective and self-conscious without a direct communication style (Juodvalkis, Grefe, Hogue, Svyantek & DeLamarter, 2003). Men on the other hand, can behave modest and are still recognized for their competences. Next to this, they can get away with displaying a macho and competitive style and it still has a positive influence on their expected competences. In fact, such an approach is often preferred to a more consensual, and modest behaviour (Phelan, Moss-Racusin & Rudman, 2008).

Next to behaviour there are differences in the language of men and women.

Characteristics of language are linked to personal features and competences. Female language is associated with negative features and competences at the workplace. The soft voice, asking intonation and the use of diminutives are associated with uncertainty and a lack of authority, which does not fit with the ideal academic. The lower voice and strong expressions in male language is perceived as more reliable and acceptable at the working place (Naezer, 2007; Van Amelsfort, 2010).

Based on these findings, there are reasons to believe that there are differences in the behaviour and communication style of male and female postdocs during job interviews.

In this research, I will examine if differences in the behaviour and communication style of male and female postdocs are recognized and if these differences result in gender inequality in the selection process.

In summary, this research will examine if there are differences for male and female postdocs in the recruitment and selection process. In order to do so, the recruitment process will be identified and examined for differences between male and female postdocs. The last section of

this chapter shows four themes in which differences between men and women are recognized. In this research, I will examine if these differences occur during the selection of male and female postdocs. Moreover, I will examine if differences that have been found during the recruitment and selection process result in gender inequality.

Chapter 3: The Method

This chapter provides the methodological details of how this research was conducted. It starts with the justification of the research design. After this, it will continue by giving an overview of the Garcia project and the participating universities that gathered the data. Then, it will provide an overview of the data that is used for this research. The chapter will end by giving an explanation how the data is analysed.

Research design

This research is a secondary analysis of qualitative data. A secondary analysis involves the use of existing data, collected for the purposes of a prior study, in order to pursue a research interest which is distinct from that of the original work. This may be a new research question or an alternative perspective on the original question (Hinds, Vogel & Clarke-Steffen, 1997; Szabo & Strang, 1997). This research has an alternative perspective since it is only focused on postdocs. An advantage of a secondary research strategy is that the researcher has a large amount of data quickly. A disadvantage is that the researcher has no control about the content of the data, because the data is already collected. As a result, it can limit the analysis of the research (Crossman, 2016). The data that I am going to use in this research, is collected in a research of the recruitment and selection of early academics in six European countries. This research will narrow the scope by focusing only on one specific group, namely postdocs. Furthermore, the scope is narrowed on four European countries instead of six. This research will make a systematic comparative analysis of the differences between men and women during the recruitment and selection process of postdocs. By making this comparison, new insights in the production of gender inequality in the recruitment and selection of postdocs will be given. In this research I will operate within the interpretive tradition. Within this research there is no aim to discover the one and only truth, but there is an interest in the understanding of perceptions, feelings and meanings. As a researcher I have the awareness that facts are coloured by perceptions of human beings and their social context and that statements in interviews cannot be recognized as facts (Anderson, 2009).

Garcia project

The data is collected in the context of the Garcia research project, which stands for Gender in the Academy and Research: Combatting inequality and Asymmetries. The project is supported by the 7th framework Program of the European Union and started in February 2014 and ended in February 2017. There are six European countries that participate in this project, namely The Netherlands, Belgium, Italy, Switzerland, Iceland and Slovenia. For every country, there is one university that participates in the project with a research team. Every research team is writing a working paper on a topic linked to the research project. Every research team gathers the data that is needed for all the different working papers. This means that every research team conducts the interviews and collects the documents in their own country that are needed for all the working papers of other research teams. After the collection, every research team makes an analysis of the data and writes a country report for every working paper. The responsible research team of the topic makes an overall working paper with the different country parts and overall conclusions.

The data

This section will give an overview about the data that is used. This research does not conclude all the six countries of the Garcia project, because there are two countries where the postdoc position as formulated in this research does not exist. Since, in these two countries the position is not comparable to the other four countries, these countries are not taken into account. So this research focuses on four European countries, and for all these countries a STEM and SSH department is selected.

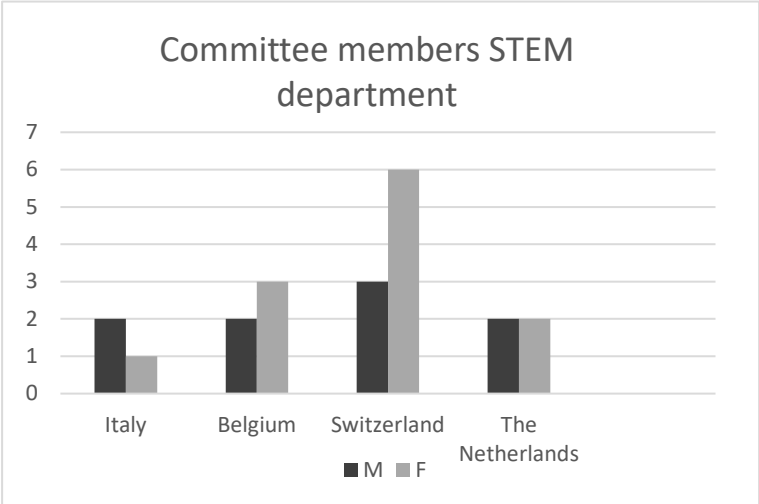
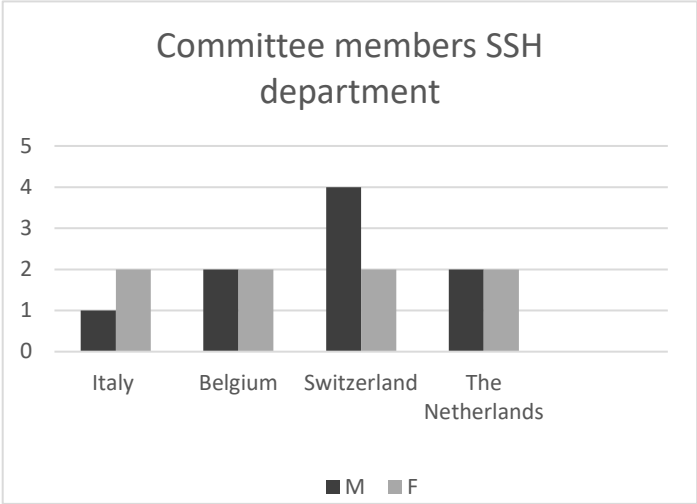
Every country wrote two reports as part of the Dutch working paper 'deconstructing excellence'. The first report identified the gap between formal and actual selection criteria for early academics and the second report identified gender practices in the construction of academic excellence. As explained earlier, every research team gathered the data in their own country that was needed for all the working papers of the research project. For this working paper, every research team conducted interviews with the committee members of selection committees for postdocs and held focus groups with committee members. In the Netherlands interviews with postdocs were conducted as well. Next to this, they collected job descriptions and HR documents about the recruitment policies for postdocs in the period from 2010 until 2013. So, every research team made an analysis of the documents and the semi-structured interviews and focus groups. After these two types of analysis, the reports per country were written. In these reports, the topics: resistance for data gathering, the context, power and gender are discussed.

Every research team gathered the data in their own country and mother language. This means that I cannot use all the HR documents, job descriptions and interviews directly. The interviews are summarized in English, so these are used as data for the analysis. For the other parts I am going to analyse the reports per country. The Dutch language is my own language so for this country I will analyse all the collected data. This refers to the transcripts of the interviews, the job descriptions and the HR documents. As a consequence, I will analyse the data of the Dutch university more deeply than for the other three countries.

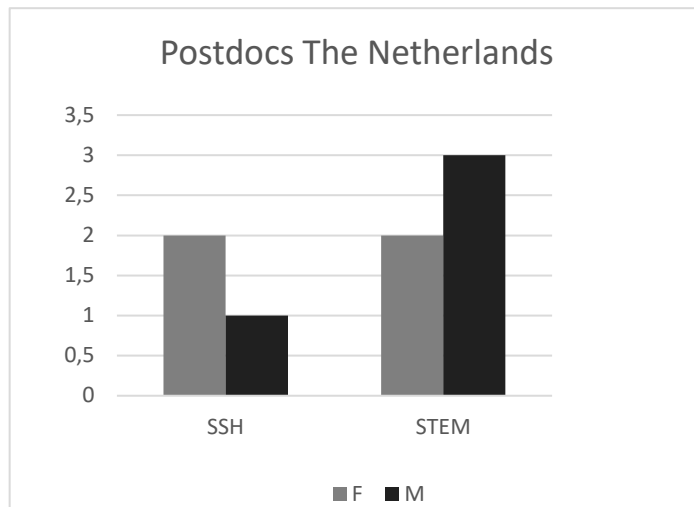
Ethics

Although I did not collect the data myself, I still have to be aware of ethics in research. The researchers who conducted the interviews guaranteed the respondents that they will stay anonymous. I have to make sure that the transcripts and interviews will not become public. Next to this, I will not mention the departments of the universities because some of the departments are rather small. Because of the smallness, respondents cannot be guaranteed anonymity when the department and gender are mentioned.

The following graphs will show the number of interviews with male and female committee members, per department per country.

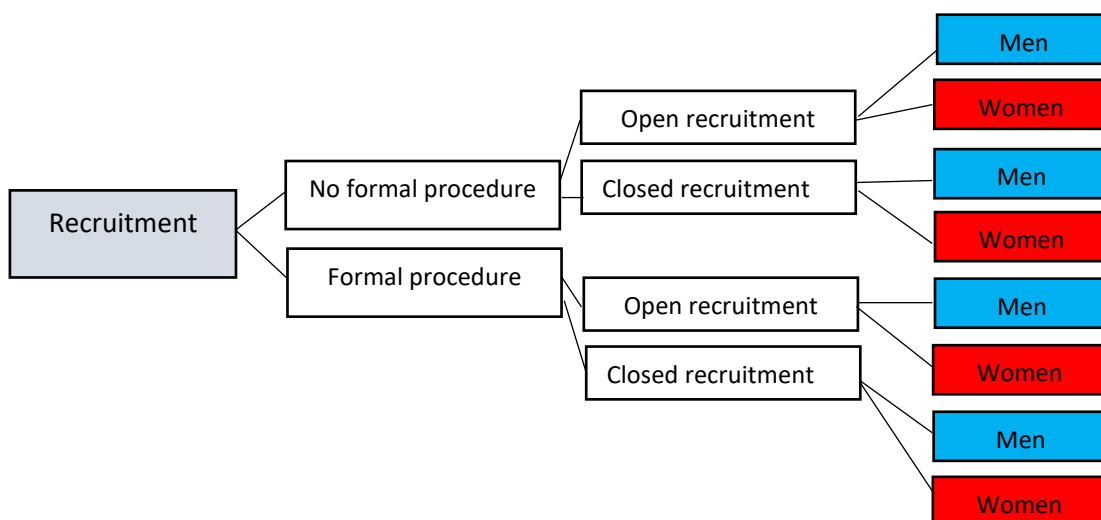


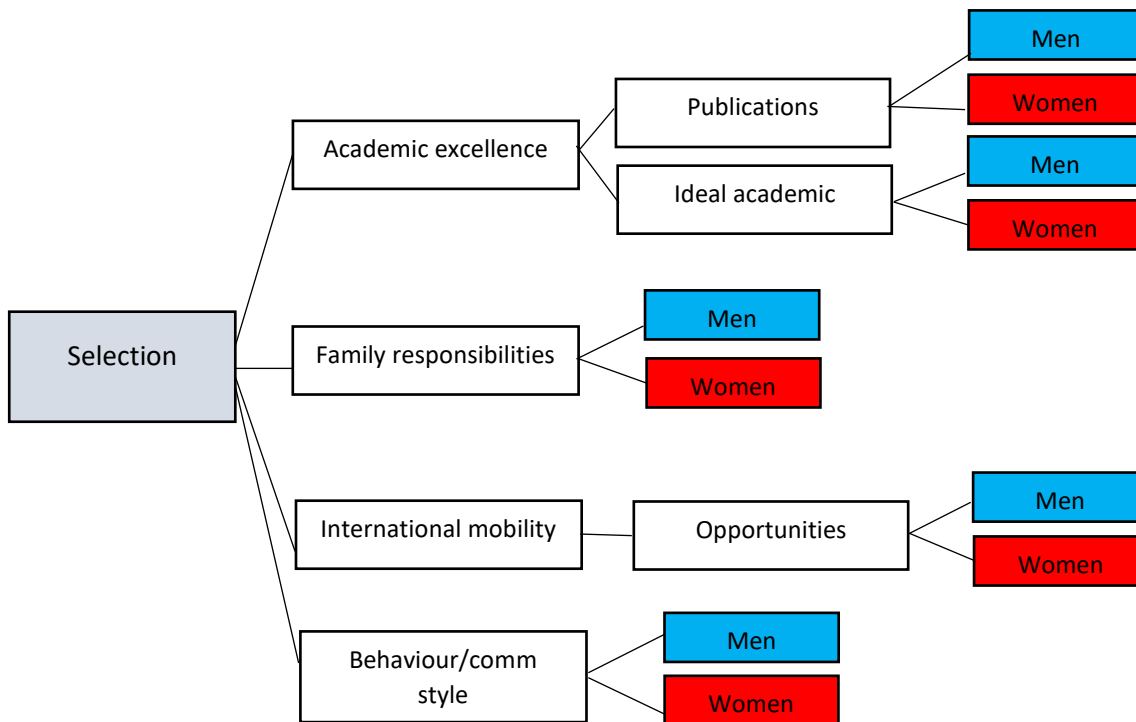
In the Netherlands interviews with postdocs are held as well. The following graph shows the number of interviews with male and female postdocs per department.



Analysis

The comparative analysis is conducted by reading and re-reading all the summaries or transcripts of the interviews, the country reports and the HR documents and job descriptions of the Dutch country. The first type of coding is open coding, based on the meaning that emerges from the data. This prevents a bias and the overseeing of important parts in the data. After the first round of open coding, the data will be analysed with a deductive coding method. So, the codes were developed beforehand based on theories. As this research focuses on differences between men and women, for every aspect the last division in coding is differentiated between men and women. As mentioned earlier, the interviews of Belgium, Italy and Switzerland consist only of summaries in English. So, for these interviews I was not able to analyse the whole interviews and quotes.





Chapter 4: Results

This chapter will provide an overview of the results of the secondary analysis. This chapter starts with the recruitment process for postdocs. For the four countries of this research the recruitment procedure and gender measures in recruitment will be addressed. After this, it will continue with the selection criteria that are found in the job descriptions. These criteria are primarily based on Dutch job descriptions, and the country reports are used to reveal insights in the job descriptions of the other three countries. After this, the chapter will continue with the selection process. The four themes as recognized in theory will be discussed for the four countries of this research. This part will reveal if there are differences between male and female postdocs, and if these differences result in gender inequality in the selection process.

The recruitment procedure

In the Dutch university, there is no formal procedure for the recruitment and selection of postdocs. The project leader who acquired the funding of the position is responsible for the recruitment and selection. Respondents of both departments argue that there are times that they publish the vacancy openly or make use of personal networks. Nevertheless, respondents from the STEM department argue that most of the recruitment goes via network channels instead of

open recruitment. Most of the times, there is no formal selection committee but colleagues are asked for an opinion about the candidates. Respondents from the SSH department state that in case of open recruitment a selection committee is composed. In this case, the head of the department is often a member of the selection committee. Nevertheless, the data show that in many cases closed recruitment is used via informal networks, without a selection committee. A committee member states *'the recruitment at the postdoc level, it depends mostly on the old boys network and the wheelbarrows you have, this is how it happened for me as well, if I look back'* (STEM, M). With this quote, the respondent explains that recruitment for postdocs often goes via informal networks which tend to be the 'old boys networks'. Especially in the STEM department most of the project leaders who acquired the funding and who are responsible for the recruitment are men. As they tend to have a preference for the similar sex, there are more men part of the academic networks than women, which refers to the 'old boys networks'. A reason for the preference of closed recruitment via informal networks is because of the time pressure that comes with the recruitment of postdocs. This refers to the pressure to find a candidate who can do the job and who can start at short notice.

In the Belgium university, there is no standardized call or formal procedure for the recruitment of postdocs. The project leader who acquired the funding of the position is responsible for the recruitment and selection. According to the respondents, this person often uses an internal and external mailing list to spread the vacancy for the position to academics in the same field. In this way, the vacancy is not published openly. Next to this, respondents mention that there are also cases in which the responsible person already had someone in mind for the postdoc position, thanks to their informal or external network. When this happened, the vacancy was not published openly either. By having someone already in mind, the time pressure to find the adequate person who can start at short notice is tackled. This shows that there is often made use of an informal and closed recruitment process and this is applicable to both the STEM and SSH departments.

In the Italian university there is a formal procedure with an open call and a selection committee for the recruitment of postdocs. However, the data show that there is a preliminary process before the formal procedure officially starts. This preliminary process consists of closed recruitment in which the responsible person for the recruitment makes use of internal and external networks to spread the vacancy. There is a difference between the STEM department and SSH department. In the STEM department there is a preference for using the external network by spreading the position and requirements through international contacts,

because international candidates are preferred. In the SSH department there is a preference for a candidate that they know from internal networks. This refers to someone they directly know from working together, or indirectly because of the working experience with colleagues. Before the formal procedure starts an informal meeting takes place. This can be an invitation to hold a small seminar or a small meeting to get to know each other. When there is decided who can fill the position, a vacancy will be made tailored to the qualities of the chosen candidate. This vacancy will be published openly and a selection committee will be selected, consisting of the person in charge of the fund and two colleagues. Due to the tailored profile, other candidates are not stimulated to apply. There is never disagreement between the committee members, since there is often only one candidate and next to this, only one candidate that fits the tailored profile perfectly. The closed recruitment process before the official recruitment procedure is used in both the STEM and SSH department.

The directive of the Swiss university gives guidelines that promote formal recruitment procedures for postdocs. For the recruitment of postdoc positions funded through the main budget of the university, a selection committee is established and the vacancy is published openly at the webpage of the university. This committee is composed of at least two members, including the Director of the Department or Institute. According the directive, there is no selection committee needed for postdoc positions that are funded through external sources. In this case, it is the responsibility of the person in charge of the funding to propose the hiring of a suitable candidate (Directive 1.34, p. 2). For such kind of positions it is not mandatory to publish the vacancy openly on the University website. Both the departments make use of open and closed recruitment. According to the Respondents from the STEM department there are two reasons to make use of networks instead of open recruitment. First of all, because the STEM department is in a small field, in which everyone knows each other. Secondly, because of the obligation to leave the university after the PhD, so they cannot recruit PhD candidates. Although, these reasons do not explain the need for closed recruitment. In reality, the underlying reason for informal recruitment is time pressure. As the projects of postdoc positions have its time constraints, the recruitment of postdocs comes with time pressure to find the adequate candidate. Although, it is not a formal procedure for all postdoc positions, respondents from both departments argue that they prefer to set up an informal selection committee instead of making the decision on their own. This because they like to hear more opinions and they believe it is important that everybody who needs to work with the postdoc can get along.

To sum up, an element of the recruitment and selection of postdocs that is mentioned in all the four countries is time pressure. As the projects of postdoc positions need to be conducted in a certain time frame, responsible supervisors experience pressure to find a candidate who is able to do the research and can start at a short notice. The difficulty with openly recruiting is that you can select excellent candidates, but who decline the position because they received better opportunities. Then the process of recruitment starts all over again. Therefore respondents argue that they prefer low-risk candidates. These are mostly candidates that they already know, that are suitable, fit in the department and willing to take the position. These findings show that because of time pressure, candidates tend to be selected based on already known candidates that are suitable and have a low risk and these low risk candidates are primarily found in informal networks. So, the data show that closed recruitment via networks is often used in all the countries and both the departments. As a consequence, by not publishing the vacancy openly, only candidates that are part of the networks are able to apply. Even more in the STEM department than in the SSH department, there is mentioning of the ‘old boys network’ since the majority of the academic positions that enable the acquiring of grants for postdocs positions are men. Since women are mostly not part of these ‘old boys networks’, there are chances that the responsible person for the postdoc position overlook female talents and that they can get lost because of informal hiring. Therefore, in all four countries and both the STEM and SSH department, closed recruitment result in gender inequality in the recruitment process of postdocs.

Gender in the recruitment process

In the Dutch university only the STEM department has a gender measure for the recruitment of postdocs. The measure refers to having a preference for the underrepresented gender in case of equal qualifications. Most of the respondents are aware of the measure, but they argue that it is never the case that two candidates are equally qualified. *‘In my experience, it was never the case that two candidates are equally qualified, it happens that you have a certain expectation and that two or three candidates meet that expectation, but it never happened that they are completely equally qualified’* (STEM, F). A postdoc respondent from the STEM department states about this measure *‘I don’t want to be given any special attention or something like that, just because I am a woman’* (STEM, F). Moreover, committee members and postdocs from both departments argue that they believe that gender should not play a part

in academic recruitment and selection, because you aim to select the best candidate. Although, female committee members of the SSH department gave examples in which they felt that gender played a role in the selection process.

In the Belgium university only the STEM department has a gender measure, which refers to having a preference for the underrepresented gender in case of equal qualifications. Although this measure formally exists, it is not really used in practice. Firstly, because respondents are not aware of the existence of the measure. Only one respondent remembers the mentioning of women being favored in the case of “equally excellent” candidates. Secondly, because respondents agree that it is never the case that there are two candidates that are equally excellent, this means that there is already a preference for one of the two candidates. Furthermore, they believe that gender should not play a part in academic recruitment and selection because you aim to select the best candidate and this is not linked to gender.

In the Italian university both the STEM as the SSH department have a gender measure for the recruitment of postdocs. This measure refers to having a preference for the underrepresented gender in case of equal qualifications. Although most of the respondents are aware of the measure, it is not clear if it is actually put in place. This cannot be found in the transcripts of the interviews and the information from the country reports. However, respondents state that gender should not be a criterion for the selection of postdocs.

The Swiss university of this research developed an equality action plan which aims to create more gender balance for all the positions after the doctorate phase. The following note is added to every vacancy; *concerned to promote women's access to academic careers, the University encourages women to apply* (Directorate 2005, Art. 1.3.1, p. 8). Next to this, for the recruitment of postdoc positions the measure to have a preference for the underrepresented gender in case of equal qualifications exist for both the STEM and SSH department. Respondents from the STEM department are aware of this measure, but argue that it does not work sufficiently and that new innovative measures are needed. Respondents from the SSH department are also aware of the measure, but they agree that it is not effective. One states that she believes that if in case of a male and a female candidate that are equally excellent, the female candidate will not be selected.

To conclude, in all the four countries gender measures for the recruitment of postdocs exists that aims to select more female postdocs. Although, the existence of these measures the data

show that committee members do not use the measure to select more female postdocs instead of male postdocs. This because respondents are not always aware of the measure and even if they are aware, they do not believe in the effectiveness. According to the respondents, gender should not be a criterion in the recruitment of postdocs because you aim to select the best candidate and this is not connected to gender. The next section will reveal the selection criteria in job descriptions that were openly announced.

Selection criteria in job descriptions for the STEM and SSH departments.

For this research I analysed the selection criteria in job descriptions that were announced openly. These job descriptions were found on the webpage of the Dutch university. There are four criteria that are mentioned in all the job descriptions. First of all, the PhD. For both the fields the PhD is not only an important criterion, it is also a requisite for the position. In both the disciplines there are job descriptions that do not require a PhD in a specific area, but in the discipline, such as social sciences or physics. Most of the times there is mentioning of having an interest or knowledge in the more specific area of the research. The second criterion is methodological experience and there is a difference between the disciplines. For the SSH fields it is more often generated to experience in qualitative or quantitative methods, while for the STEM fields, the method is mentioned more explicitly with techniques, implementations and models. This difference can be explained. For the positions in the SSH fields more possibilities for the method in a qualitative or quantitative way exist, while the positions in the STEM fields require a specific method. A third criterion is language. In the job descriptions of the SSH fields there is more often mentioning of having a good command in Dutch and English, while in the job descriptions of the STEM fields only having a good command in English is mentioned. The last criterion is publication record or track record of previous research. In the job description of the STEM fields there is more mentioning of publications in international journals than in the SSH fields. After analysing the job descriptions, it can be concluded that the selection criteria for the STEM and SSH fields are quite similar.

The country reports show that the criteria mentioned above are also recognized in the job descriptions for the three other countries and the same (small) differences between the STEM and SSH departments are recognized. Only, the job descriptions of Italy and Switzerland show differences with the other countries. In the Italian job descriptions, specific skills and/or personal attitudes are mentioned. Examples are the ability to create relationships with businesses, excellent communication skills, specific methodological skills, willingness to

travel and the ability to work autonomously within interdisciplinary team. This suggests that the vacancies are tailored to a person. By making the vacancy more specific by adding specific skills or personal attitudes, the changes are higher than only the pre-selected candidate applies and will be selected. This difference is seen for both the Italian STEM and SSH department. The difference of Switzerland is already explained in the gender measure part. The Swiss job descriptions have the additional sentence '*concerned to promote women's access to academic careers, the University encourages women to apply*' (Directorate 2005, Art. 1.3.1, p. 8).

To conclude, the selection criteria found in openly published vacancies are quite similar among the four countries and the two disciplines of this research. Only, the exception of tailored vacancies in Italy and the additional sentence to promote female academics in Switzerland exists. So, this reveals that the selection criteria for postdocs are comparable among the four countries. The next part of this chapter will reveal the findings of the four themes as mentioned in theory.

Gender in the selection process

This part will reveal differences between men and women in the selection process. The four themes as recognized in theory will be discussed in the following order: academic excellence, family responsibilities, international mobility, behaviour, and communication styles. For every theme, all the four countries and the two disciplines will be discussed. This part will reveal if differences between male and female postdocs result in gender inequality in the selection process of postdocs

Academic excellence

According to the Dutch committee members of the STEM department, academic excellence is described as a combination of publications, reference letters of former supervisors and showing own initiative. A committee member states '*It is also really a subjective experience, you notice it because you recognize that they show own initiative and they become more independent*' (STEM, M). This quote shows that academic excellence is recognized as a subjective construct, but the subjectivity is not linked to gender. The committee members of the SSH department describe academic excellence as taking own initiative, independency, and publications. '*The quality of publications is more important than the amounts*' (SSH, F). In both departments publications are seen as a fundamental aspect for academic excellence and the predication of future potential of candidates.

Postdoc respondents from both the departments recognize publications as a criterion for academic excellence, they feel a pressure to publish as much publications as possible. *'It is not like that they take you away the money if you haven't produced enough. The problem is that eh in this field eh if you, if you don't produce, you will not get to the next stage... So, there is this continuous push towards publishing more, having more results and sometimes also, I mean you push yourself to publish more'* (STEM, M). Respondents from both departments have the feeling that the focus on amounts of publications has increased in the last years *'You can recognize a change, now it starts already in the first years to try to publish as much, earlier it was more focused on just writing the dissertation, and less on publications'* (SSH, F). So, based on these findings, postdoc candidates experience a lot of pressure of publishing because of the expectations that without a certain amount of publications, a next step in an academic career will not be possible.

As perceptions of the ideal academic reflect ideas and perceptions about academic excellence, committee members were asked about their perceptions during focus groups. A female respondent gave an example in which she felt insecure of meeting the masculine notion of the ideal academic during her job interview. *'One of those full professors in that committee, my boss, yes, he, I really like him but he really lives in the 50s constructions. He comes home and the dinner is served and he does not do anything, so he can totally focus on his career. So, he thinks that if you for example work part time in the end you cannot meet the written and unwritten criteria to make an academic career. In my case, at home we divide things or try to do that as fair as possible, so I won't be working 70, 80 hours, that is just not possible. When you are confronted with such statements and ideas during a job interview, you think: should I quit now, because I do not have such situation at home... it is not possible. So, at the moment that, yes, that kind of professors with fossil ideas still take part in committees, that kind of messages are still being conveyed'*. This male committee member during her job interview brings up the masculine notion of the ideal academic. He mentions full time commitment, of working 70-80 hours a week. And as an example, part time work in combination with other aspirations or responsibilities is not enough to pursue in an academic career. Because of these statements and ideas, women who cannot meet the unwritten criteria of full time commitment, are made insecure and discouraged to pursue an academic career. Next to this, a male respondent gave the example of the masculine career trajectory. This because there are expectations of the ideal type of academic career path, and the time frame in which a postdoc should switch to an assistant professor position. Although someone could have reasons to make

the switch at a latter age, such as children, the expectation about the time to switch into a new academic position does not change and there is no recognition of possible other responsibilities in the beginning of an academic career.

The Belgium respondents, recognize academic excellence as an indispensable criterion for the selection of postdocs. It is based on publications; the amounts and the journal in which the publications are publicized. Publications in an international journal are preferred because they refer to a higher level of excellence than national journals. Furthermore, there is mentioned that the relative small amount of publications that candidates have, should be seen as an indication of future potential of candidates. A male respondent from the SSH department mentions that there should not only be a focus on the amounts of publications during the evaluation of the CV. This because it will eliminate young researchers, such as women who have had a child after their PhD and therefore published less.

Committee members were asked about their perceptions of the ideal academic during focus groups. A male respondent mentioned the need for change. He explains that if we want researchers that are working 60 hours or more every week, like expected from the traditional image of the ideal academic, then we are still in the time that researchers are more married to their research than being married to their wives and families. In this way, the academic world will lose a lot of good male and especially female researchers. So, according to him, there is too much focus on the 'traditional' and male image of the ideal academic. An interesting element in his example is the use of his language. He speaks about the academic being married to wives. By referring to being married to wives, he implies that academics are men or lesbians.

According to the Italian respondents, academic excellence is seen as an important criterion for the selection of postdocs in both departments. At the STEM department, academic excellence is seen as a 'blind' criterion and as a sort of undisputable faith, primarily focused on amounts of publications and the journal of publications, while at the SSH department there are more nuanced interpretations subjective to different understandings. This refers more to the ability to work with people from different backgrounds, new methods, and new contexts. So, publications and especially publications in international journals in collaboration with other researchers are seen as an indicator for this aspect.

There was no focus group in which committee members were asked about their perceptions of the ideal academic. Nevertheless, committee members made references during the interviews of not having full time commitment because of other responsibilities and the

negative influence on an academic career. There are not many examples and situations given but this shows that the masculine notion of being full time committed is in place.

According to the Swiss committee members, academic excellence is an important criterion for the selection of postdocs in both the departments. It is seen as a combination of different factors but the publication record is fundamental to identify an excellent candidate. For the publications, amounts and the journals of publication are important. Especially in the STEM department, international journals are preferred. Nevertheless, respondents mention the difficulty of recognizing academic excellence in candidates, due to the relative small amount of publications and research experience. So, the publication record indicates the potential of candidates and expectations of academic excellence.

During the focus groups, committee members were asked about their perceptions of the ideal academic. They refer to the well-rounded academic that balances performance in research, teaching, organisational wellbeing and knows how to set aside time for non-academic activities such as, playing sport and family-life. Although, it is not clear how many time and especially, when researchers can have this time for non-academic activities. Furthermore, the possibility of working part time is problematized in both departments. This because it causes time loss for experiments and the impossibility to be successful in an academic career. So, although the ideal academic should create time for non-academic activities, working part time does not fit with the image of the ideal academic and in both departments, part time work is connected to women because of motherhood and family responsibilities. So, women who are or will become mothers do not fit with the image of the ideal academic. Even though female postdocs are mostly not mother yet, expectations that they will become mothers in the future results in a disadvantage. This represents that the masculine notion of the ideal academic is still in place.

To conclude, in all the four countries, academic excellence is seen as a gender-neutral construct that is based on the objective indicator of publications. In reality, the construct is gendered and committee members have no or little awareness of the gendered construction. Only in Belgium the remark is made that giving a focus on the amounts of publications, might result in the elimination of researchers that have reasons for less publications, such as young women who have had a child. Nevertheless, amounts of publications and publications in international journals are seen as a sign to predict academic excellence of candidates. All the postdocs from the Netherlands mention that they feel the pressure of publishing as much as possible, as they have the feeling that they are evaluated on publications. The perceptions of the ideal academic

reveal that the masculine notion is still in place because of the focus on full time commitment. In all four countries, the ideal academic refers to someone with a fulltime commitment and dedication to academic work and no other responsibilities, which reflects the idea of academic excellence. In all four countries women are linked to motherhood and family responsibilities. Because of these other responsibilities, women are seen as unable to meet the standards of the ideal academic. So, for all the four countries and both the disciplines, the difference in academic excellence for male and female postdocs results in gender inequality in the selection process.

Family responsibilities

Dutch committee members of both departments link family responsibilities to women and not men. Next to this, they have assumptions that family responsibilities create difficulties in an academic career. Because of the link of family responsibilities and women, these difficulties are only ascribed to female postdocs. Female postdocs without children recognize the problematic of starting a family in the start of an academic career. *'It's harder for women um because like you need to be pregnant for nine months, which as far I get from my peers are experienced, um like it's going to affect your working capabilities, especially your thinking capabilities. And um and then like when the child is really small it's also easier for a woman to take care of the child'* (STEM, F) but as she continues she states that might be not only for women problematic. *' I um I read an interesting article about the young dad who wanted to be more involved like with their children but they were also um met with some social pressure. So, it's not um I think except for like straightforward biological um needs of a little child like when the infant, I think it's more or less for both genders, the I mean general environment'* (STEM, F). This quote reveals that it is socially more accepted that women take the responsibility for taking care of the family than men. If a man would like to take care of family responsibilities, it is not as easy as for a woman.

A postdoc from the SSH department with children enjoys the flexibility of a postdoc position and the combination of family responsibilities. *'The flexibility eh, when the children are sick I just can stay at home, I think that is pretty unique for a job, you just have to make sure your end product is finished and you are free to decide how you do it. That is also a reason why I wanted to do a postdoc position, because of the wish for children'* (SSH, F). Although, it is important to note, that this person did not want to proceed in an academic career. Because of this, she does not feel the pressure to be excellent or competitive to find a new academic position. Other female postdocs argue that they would not like to start a family

because of the feeling that they will not be able to reach the next level of an academic career. This feeling is less recognized by male postdocs, they do not perceive family responsibilities as a problem for their academic careers.

According to Belgium respondents from both departments, family responsibilities are immediately linked to women, and not to men. The responsibilities seem to create difficulties for women because it leads to high demands in the already competitive environment. Furthermore, maternity leave results in a 'gap' of their resume, which has a negative influence on an academic career. The link between family responsibilities and women is recognized for female postdocs and there is no mentioning of a direct link between family responsibilities and male postdocs.

The Italian male respondents link family responsibilities immediately to women, because of the biological aspect of childbearing. Thanks to this biological aspect they are also seen as being responsible for taking care of the child and this has negative consequences for an academic career. Female respondents recognize family responsibilities as a source of discrimination for females, this because only women are linked to family responsibilities. Next to this, there is a lack of support and services from the society, in case of having a child. These findings are applicable to both the STEM and SSH department.

Swiss committee members of both departments link family responsibilities to women and not to men. The family responsibilities are linked to inequality issues and given as a reason why women are less successful in the academic world. Nonetheless, respondents argue that starting a family, happens after the postdoc phase. Furthermore, it is mentioned that only after getting children, the prejudices start or emerge.

To conclude, in all four countries family responsibilities are immediately linked to women and not to men. This link is based on the gender stereotype that women are better at household tasks and raising children. Committee members of both the STEM and SSH departments agree that family responsibilities have a negative influence on an academic career and this already starts in the postdoc phase, except in Switzerland. The results show as well that the negative influence of family responsibilities also disadvantages women that are not even mothers yet. Although, the average age of postdocs is the same in the four countries, the starting of a family seems to happen after the postdoc phase in Switzerland. The gender stereotype that women are responsible for taking care of the family result in differences in expectations of dedication to

academic work for male and female postdocs. This difference result in gender inequality in the selection process for both the two disciplines in the Netherlands, Belgium, and Italy.

International mobility

In the Dutch STEM department, international mobility is recognized as a formal selection criterion for a future academic career. A committee member states '*A doctoral student cannot get a postdoc position in our university or other universities in the Netherlands*' (STEM, M). So, candidates are expected to have international research experience in other research environments that could help with the creation of an international network. A female postdoc argues on the problematic of being international mobile and family. '*It is a pretty big sacrifice. If you want to start having a family and if you do start a family, it is a huge sacrifice to move your kids around to different countries when they are young. That is not very good for them either*' (STEM, F). A committee member of the STEM department considers the difficulty of being international mobile combined with family responsibilities as one of the reasons for the small number of women in his discipline.

In the SSH department international mobility is recognized as an important criterion, but the focus is only on having an international network which can be accomplished by going to (international) conferences. In both department male and female postdocs get opportunities to go to these conferences. Female candidates argue that going to these conferences will be more problematic when they start a family '*So that's one of the challenges. What do you do with kids when you must travel, when you must go to conferences*' (SSH, F) while male postdocs do not recognize this as a problem. '*I just became father, so now I don't want to go to conferences, but next year probably yes, I don't think this will be a problem*' (SSH, M). Male and female postdocs from both the departments agree that the criterion international mobility can be difficult, because of the desire to live close to partners. '*Yeah when you are as old as a postdoc, you start to be old enough to have found a partner. A partner you want to keep for the rest of your life and so it's difficult, you don't want to compromise on this. But this does happen, one of the male postdoc left theoretical physics and just moved to some other physics in order to have a job to stay together with his wife*' (STEM, F).

The Belgium committee members of both the STEM and SSH department believe that international mobility is important and recognized as a criterion for the selection of postdocs. It is valued because of the exposure to other cultures, a change of context and the creation of an international network. Not having international experience is a weakening point. Respondents from both departments named international mobility as being a demand that is hard to fulfil for

researchers that aim to settle down and build families. But the difficulty is especially recognized for female researchers. Committee members argued that they have decreased expectations of international mobility for female researchers, because of family and motherhood reasons. Respondents do not give real examples or situations in which they explain why it is more difficult for female postdocs than for male postdocs.

The Italian committee members of both the departments mention international mobility as a criterion for the selection of postdocs. The importance is recognized because it aims to improve the team's efficient functioning and the achievement of goals, since more projects are composed of people from all over the world. Having international mobility is recognized as an added value because it enables postdocs to work in international groups. In both departments, international mobility is recognized as a problematic aspect for female postdocs, but not for male postdocs. Committee members mention the expectation that women have to renounce part of their international mobility because of the biological process of giving birth and family responsibilities. Men are never mentioned in relation to family responsibilities, or the impact of these responsibilities on international mobility. So, it seems that men, regardless of their family status are expected to continue with their work and plans such as going abroad for a postdoc position.

In Switzerland, international mobility is a formal selection criterion for both the STEM and SSH department. It is an obligation for all doctoral students to spend at least one year abroad before they can apply for a postdoc position at a university in Switzerland. This measure stimulates international mobility among postdocs. Furthermore, international mobility refers to having a network by going to conferences, this can be national and international conferences. Both male and female candidates are expected and able to go abroad to acquire new and different knowledge before they can return to a swiss university. According to the respondents, problems of being international mobile are not linked to gender and can happen to both male and female postdocs.

To sum up, although male postdocs from the Dutch university recognize difficulties with international mobility as well, committee members from both departments seem to agree that women candidates have a harder time fulfilling this criterion. The same is recognized in Belgium and Italy, because motherhood and family responsibilities are linked to women. The difficulty of going abroad and meeting the standards of international mobility particularly holds for female postdocs because of these responsibilities. So, female postdocs are expected to be

unable to be international mobile because of family responsibilities. However, the results show that even female postdocs who are not mothers are disadvantaged due to the link of family responsibilities and women. This difference result in gender inequality in the selection process. For these three countries, the findings are applicable to both the STEM and SSH department. In Switzerland, there is no difference between male and female postdocs for international mobility between male and female postdocs. For both the Swiss STEM and SSH department, there are no differences that result in gender inequality in the selection process.

Behavior and communication style

In the Netherlands, only respondents from the STEM department discussed examples of behaviour and communication styles of male and female postdocs in job interviews. A female respondent state *'Or if you're a woman, maybe you're less um you know, less strong in um imposing your opinions, competing with other people, cause women like cooperation rather than competition. So, that's the thing that happens to women. When you tend to stand your ground and um say 'okay, you're not gonna walk all over me' then you are indeed seen as a bitch... If you're too, if you're soft-mannered and you know, you give up then you're too soft. If you're um you know stating your ground and your keeping your convictions and tell them to everybody and oh then you're a bitch. It's like aaah'* (STEM, F). This example reveals the stereotype that women prefer to cooperate instead of compete with each other. Furthermore, it shows the feeling of frustration that if women come across as ambitious and competitive, they are perceived as bitches, while as they are modest they are not recognized for their competences. A male respondent argues that he noticed a difference in presentation style between male and female postdocs. *'you know, women also have good ideas, but you have to ask more and dig deeper before they will tell you them. Men have less problems with just saying aloud new ideas and being open for criticism, because just screaming new ideas can also result in negative critics... for women it takes longer before they tell their ideas and you know, when the job interview is just one hour and you have to ask further and further, sometimes it is just too late. I think it is difficult because asking further can also make them feel attacked, which makes them insecure to speak'* (STEM, M). With his quote, he shows that he is aware of the difference between men and women and the consequences of this difference, but he states that handling this difference is difficult and he does not know the solution to handle this difficulty.

A respondent from the STEM department in Belgium states that it is important to recognize everyone, and that female communication styles of having a sweet voice and being less competitive does not mean that the candidate is less qualified.

In the Italian university, there is no mentioning of this field in the summaries of interviews or in the country reports. Based on the data there are no results for this field, so, there cannot be explained if there are differences between male and female postdocs.

In the STEM department of the Swiss university a difference between men and women in handling competitiveness is addressed. The respondents argue, that men present themselves as much more motivated and willing to work long hours and days to compete, while women seem to be afraid to compete in the hard academic world.

To sum up, this theme was not an explicit part of the interviews, therefore there are not so many results. Only respondents of the STEM department in the Netherlands, Belgium and Switzerland mentioned something about the communication style and behaviour of male and female postdocs. A difference based on gender stereotypes is recognized. According to the respondents, women present themselves as less competitive and a female respondent gave the example of the difficulty in this part for women. When women present themselves as competitive, they are perceived as bitches and not valued for their competences. So, women, are supposed to be self-conscious and not too direct, otherwise it has a negative influence on their expected competences. The difference in behaviour and communication style for male and female postdocs results in gender inequality in the selection process.

Chapter 5: Discussion and conclusion

This chapter starts with the conclusion. After this, the contribution of this research to theory will be provided. Then, the part will continue with the differences between the two disciplines and the differences between the four countries. After this, the limitations of this research will be discussed. It will continue with recommendations for future research. The last section of this chapter are the recommendations for the HR policies for the recruitment and selection of postdocs.

Conclusion

This research aims to answer the research question ‘*What differences between men and women in the recruitment and selection process for postdoc positions result in gender inequality?*’

Previous research showed that the recruitment of academics often goes via informal and closed recruitment (Evans, 1995; Fogelberg et al.,1999; Husu, 2000). This research reveals that the recruitment of postdocs is primarily closed as well. The project leader is responsible for the recruitment and often distributes the vacancy via internal and external networks, or has already someone in mind for the project. This because there is a preference for low risk candidates that are suitable and can start at short notice, and these candidates are expected to be found via networks. By making use of networks, only candidates that are part of the networks can apply. As there are more male professors that are the project leaders for postdoc positions, and networking preferences of men identifying with men seem to occur, the recruitment of postdocs goes via the 'old boys networks' instead of networks with an equal representation of men and women. This results in a difference for male and female postdocs, as the network provides higher chances for men to be informed about postdoc positions. So, this difference in the recruitment process result in gender inequality. Furthermore, differences in the selection process between male and female postdocs are recognized. In the four themes of academic excellence, family responsibilities, international mobility and behaviour and communication style, differences between male and female postdocs are identified. Moreover, the results reveal that these differences between male and female postdocs result in gender inequality in the selection process.

This research exposes a connection between the themes when respondents speak about it. Respondents mention family responsibilities as a negative influence for academic excellence and international mobility. Family responsibilities are perceived to have a negative influence on the time academics can spend on their research. This influence on time means not having full time commitment, which results in not meeting the standards of the ideal academic, which impacts the image of academic excellence. Next to this, family responsibilities influences international experience opportunities which result in less international mobility. As family responsibilities are inseparable linked to women, it disadvantages the perceptions of academic excellence and international mobility for female postdocs. Moreover, this research shows that because of this inseparable link between women and family responsibilities, it also influences the image of female postdocs who are not mothers. Since there is no connection between men and family responsibilities, the disadvantage on academic excellence and international mobility does not seem to occur for male postdocs. So, these differences between male and female postdocs result in gender inequality.

The results show that committee members mention the importance of academic excellence, and selecting candidates on academic excellence. But the selection is mostly not based on academic excellence because of time pressure and the preference of low risk candidates. As the low risk candidates are primarily found in informal networks, there is no open search for the most excellent candidate via open recruitment. Closed recruitment has no guarantee to reach all the possible candidates, so it could be that because of closed recruitment excellent candidates are overlooked when they are not part of the networks. This research reveals that committee members do not recognize the problem of closed recruitment and have the feeling that they can select the best candidates in this way, which is problematic.

Contribution to theory

This research reveals that committee members of the recruitment of postdocs have a limited perspective on gender. Although the perspective on gender is limited, a strong image of gender exists. The images of both female and male postdocs are one dimensional. This because there are no variations between the image of female postdocs. Women are immediately linked to being mothers and family responsibilities, even when they are not mothers yet. Because of this direct link between mothers and family responsibilities, female postdocs are seen as unable to meet the standards of academic excellence and international mobility. So, the perceptions of the image of female postdocs are disadvantaged. Furthermore, there are no variations between the image of male candidates. The image of male postdocs fits more with academic excellence, as there are no expectations for other responsibilities. So, male postdocs are expected to have full time commitment and family responsibilities do not impact this image and expectation. Next to this, family responsibilities do not seem to influence international mobility opportunities for male postdocs. So, in all four countries there is still the image that men are a better fit in the academic world. Previous research has shown that gender and expectations on scientific competences are deeply embedded in patterns of thinking of both men and women (Carnes, 2012) and this seems to be the case for postdocs as well.

This research contributes to theory, while it reveals that differences between male and female postdocs already results in gender inequality in the postdoc phase. The differences are recognized in the recruitment process and the four themes of the selection process. The four themes reveal that family responsibilities have an influence on perceptions of academic excellence and international mobility and that this influence is negative for female postdocs. This research reveals that there is a limited perspective of gender in the recruitment of

postdocs. Committee members have a limited awareness that these perspectives of men and women influences the recruitment and selection of postdocs. As the postdoc position is an important step for the beginning in an academic career, candidates that are not recruited and selected have no opportunities to continue as academic researchers. In this way, they will not be able to be a part in the academic world. This means that because of the limited perspective on gender, young female researchers do not get the same opportunities and their qualities get lost. The recruitment and selection of postdocs has an influence on the whole academic world, as the postdoc positions is the beginning of an academic career. Especially in this begin phase, female and male postdocs should have equal opportunities to become an academic researcher.

Differences between the two disciplines

There are not a lot of differences between the two disciplines of this research. In all STEM departments, the gender measure of having a preference for female candidates in case of equal qualifications exists and this is not the case for all SSH departments. Nevertheless, the measure does not seem to result in an increase of female postdocs for the STEM departments. Another difference is that international mobility is recognized as a formal criterion in some STEM departments, while this never occurs in the SSH departments. However, there is no difference in outcomes if the criterion is formal or not formal. In both departments differences between male and female postdocs results in gender inequality. The other themes do not show differences between the STEM and SSH department. Beforehand, I would have expected more differences between the departments. This because there is a significant difference in the cultures and the role of the postdoc position.

Differences between the four countries

The four countries of this research show a lot of similarities in the recruitment and selection of postdocs. Although the contextual overview revealed differences in the recruitment of academics, these differences between countries are less recognized for the recruitment of postdocs. As expected from the contextual overview, only in Italy a formal procedure for the recruitment of postdocs exist. Although, in reality this formal procedure happens after informal and closed recruitment. Because of the preliminary process, the formal procedure does not really result in different outcomes of the recruitment process between the four countries, since closed recruitment happens in the other three countries as well. As Belgium and Switzerland encourage open recruitment for academics, the recruitment of postdocs seems to be primarily

closed. This preference for closed recruitment could probably be explained due to the projects of postdoc positions. Committee members of all countries mentioned the time pressure to find candidates who can start at short notice.

In the selection criteria of vacancies for postdoc positions only Italy and Switzerland revealed differences in comparison to the other countries. In Italy, the openly published job vacancies are tailored with specific skills and personal attitudes. Because of these tailored vacancies, there are higher chances that only the pre-selected candidate will apply, and that the postdoc position is guaranteed for the pre-selected candidate. In Switzerland the vacancies contain an additional sentence to encourage women to apply for the position.

In the selection process, Switzerland showed differences in comparison to the other three countries. Only in Switzerland, there is mentioning that the starting of a family does not happen in the postdoc phase but in latter stages of an academic career. This results in a difference for the themes family responsibilities and international mobility for Switzerland in comparison to the other three countries. Only in Switzerland there are no differences in family responsibilities and international mobility between male and female postdocs. This part reveals that there are few differences between the four countries of this research. This shows that for the recruitment and selection of postdocs, the same circumstances seem to occur.

Limitations

This research has several practical limitations to this research. A disadvantage of a secondary analysis is the fact that the data is collected for another purpose or research question. As the data is collected already, there are no opportunities to ask further if not all the elements of the research are mentioned. This is the case for this research. For example, there is no focus on gender stereotypes in the differences between male and female postdocs. Furthermore, this research could not reveal insights in the theme behaviour and communication style for all countries because this was not a topic in the original research.

Another limitation of this research is the difference in quality of data, which exists because of the multiple languages. Since, every country gathered data in their own language only for the Netherlands all the data could be used directly. For the other three countries, only the summaries of interviews and country reports are used. A disadvantage of the summaries, is that other research teams made them and selected information that they thought was relevant. Because of this, relevant information could get lost. Next to this, the summaries give very

limited information and do not really show a context, situations, examples, or quotes. Sometimes this made it harder to understand the real notion of the answers of the respondents. Because of this, the summaries are not always rich enough for a qualitative research design. The country reports give more opportunities for new insights and information of the differences between male and female postdocs. However, these are also made as a summary of findings and do not always address examples and quotes. So, this could not handle the difficulty of not being able to ask for further information or examples.

Further research

The advantage of the secondary analysis is that this research could make a comparison for the recruitment and selection of postdocs for four countries. This research revealed that there are a lot of similarities between the four countries of this research. These similarities show that in all four countries, differences between male and female postdocs exist, and that these differences result in gender inequality. As the postdoc position is recognized as an important first step of an academic career, I would like to recommend to gain more insights in how these differences between male and female postdocs occur and how they result in gender inequality. I believe that theories about gender stereotypes could be used in the future research to understand how differences between male and female postdocs arise. I would like to recommend that further research should be a qualitative research as this reveals more insights in the underlying opinions, motivations, and ideas of committee members. Furthermore, it would recommend to involve countries from different continents to reveal new insights. This because international mobility is an important aspect of the postdoc position, and new countries could reveal if the same differences between male and female postdocs are recognized. Furthermore, it is interesting to discover if in these other countries gender inequality in the recruitment and selection process of postdocs is recognized as well.

Policy recommendations

The second aim of this research was to give policy recommendations. This research shows that there are not a lot of formal procedure for the recruitment and selection of postdocs and in the case, that there a formal procedure, it is a fake procedure. Therefore, the recruitment of postdocs primarily goes via informal and closed recruitment which results in gender inequality/ less opportunities for female postdocs.

Because of this, I would like to recommend a formal procedure of open recruitment for all postdoc positions. All the vacancies of postdoc positions should be at least published on the webpage of the respective university. By an obligation of open recruitment, candidates are not dependent on their networks and it gives more candidates the opportunity to apply. This could have a positive influence for female, as well as male candidates. To prevent feelings of time pressure, projects that start at short notice should have a minimal time for application (two weeks).

Candidates should apply with their C.V. and a motivation letter. A selection committee of at least two persons should read all the incoming applications and select at least three candidates for interviews. During these interviews, all candidates should get the chance to explain their ideas and insights for the research project. As it could be that women find it more difficult to speak about these ideas, candidates should be informed about this question so that both men and women can prepare their ideas. This could prevent the feelings of fear to speak about the ideas of projects and give everybody an opportunity to reveal their ideas.

Furthermore, committee members are not allowed to ask about the wish of children for both male and female candidates. Next to this, committee members should become more aware that family responsibilities is not only the responsibility of women but also of men. Women are aware that the academic world is highly competitive and not as easily to combine with other responsibilities. Therefore, committee members should change their perspective that all female candidates want children or are responsible for taking care of children.

After the interviews, committee members should compare their expectations and decide together who the best candidate is.

Furthermore, I would like to recommend that universities monitor the amounts of male and female postdocs per department. This overview can help to become aware of significant differences in opportunities for male and female candidates. I believe that a quota is not the adequate way to increase the opportunities for female postdocs, as there should be a focus on finding the best candidate. By monitoring the sex of postdocs, it easily reveals if there are departments where there is a significant difference between the number of male and female postdocs. This could give the university the opportunity to speak with committee members, to reveal the problems of finding (good) candidates from the minority sex.

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