

Exploring stress and conformity to feminine norms as drivers of the *glass ceiling effect*. A study among female employees in the Technological Sector

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Clara Amarante
Master of Arts in Human Resource Management
Part Time
National College of Ireland

Abstract

There has been an increased interest in the last few decades in the study of gender inequality and in particular on its implications in the workplace.

Most research has focused on investigating whether concepts such as the *glass ceiling effect* actually exists. However, few studies have focused on what are its possible drivers. For that reason, this paper aims to investigate whether stress and conformity to feminine norms are possibly two of the invisible drivers of the *glass ceiling effect*. This will be explored by measuring if there is a relationship between the participant's level of conformity to feminine norms and their level of stress, and by measuring the existence of a relationship between their position (managers/non managers) and both their levels of conformity to feminine norms and stress.

Through a cross sectional quantitative research, 30 females in managerial positions and 63 females in regular positions, all of them working in the Technological sector, completed the Conformity to Feminine Norms Inventory (CFNI) (used to determine their perception of female social gender) and The Perceived Stress Scale (PSS-14) (used to measure their level of stress).

The findings show that there is no relation between the levels of conformity and the levels of stress of the females in this sample, neither are there significant differences in the results obtained by both managers and non-managers in either the CFNI nor the PSS-14. In conclusion, the results don't support the hypothesis suggested in this study, that is, it cannot be said that stress and conformity to feminine norms are drivers of the *glass ceiling effect*. Hence, more research is needed to determine what its drivers actually are which will help to understand why it happens and, in turn, will help to address the issue.

Declaration

I declare that the work being submitted here for examination to the National College of Ireland (NCI) in consideration of the award of a Master of Arts in in Human Resource Management, is wholly generated by my own individual effort and does not breach copyright law. All materials consulted in the process of researching the dissertation have been properly cited and referenced. This work has not previously been used to obtain any other degree and/or post grade in NCI or any other institution. The work was supervised by Dr. April Hargreaves.

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Abbreviations

Continuing Professional Development (CPD)

Central Statistics Office (CSO)

Conformity to Feminine Norms Inventory (CFNI)

The Perceived Stress Scale (PSS-14)

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Introduction

For the last number of decades, the participation of females in the workforce has grown (Bosworth and Lee, 2017; Noh *et al.*, 2017; Shanmugam, 2017; Ortiz-Ospina and Tzvetkova, 2016; Kailasapathy, Kraimer, and Metz, 2014; Kalantari, 2012; Hagelskamp *et al.*, 2011; Lipinska-Globelny and Wasiak, 2010; Apperson *et al.*, 2002; Beatty, 1996; Simon, 1995). Consequently, as a result, there has also been an increased interest on gender inequality, that is, gender discrimination that results in inequality in opportunities faced by females (Fernandez and Campero, 2017; O'Callaghan and Jackson, 2016; Fang and Sakellariou, 2015; Javdani, 2015; Kocabacak and Kalkan, 2015; Efthymiou, Vitsilakis, and Gakis, 2012; Kalantari, 2012; Channar, Abbassi, and Ujan, 2011).

If we look at the figures more specifically in the Republic of Ireland, according to the Central Statistics Office (CSO) of Ireland, data from 2016 show how only 33% of the employees in managerial positions in this country are female. Data also show how females are concentrated mainly in Administrative and Secretarial positions, as well as in caring, leisure and customer services. In associate professional and technical positions, females represent 41.8%, in process plants and machines operatives 14.2% and in skilled trades only 9.9%. Not only that, but, in addition, figures also show how 55.1% of the percentage of 23-34 year olds in 2016 with 3rd level education was female, while 42.9% were male, and still, there is a majority of males holding higher positions in the workforce.

Different concepts have been defined to explain this situation and became the frequent object of study. The most common is the *glass ceiling effect*, described as the existence of invisible and unbreachable barriers impeding females being promoted and getting wage increases (Efthymiou *et al.*, 2012).

Many research has focused to date on the study of the existence/non-existence of the *glass ceiling effect* (Bosworth and Lee, 2017; O'Callaghan and Jackson, 2016; Fang and Sakellariou, 2015; Efthymiou *et al.*, 2012; Channar *et al.*, 2011), however not so many tried to identify what are its drivers. It has been considered important in this paper to investigate its drivers in order to understand why it is happening and then, as a result, being able to end with this unequal situation. More in particular, the focus has been put on investigating stress and conformity to feminine norms as two of the possible drivers of the *glass ceiling effect*.

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Part Time
National College of Ireland

The reason why stress has been chosen to be investigated is due to the evidence found in the literature showing, on one hand how people's performance decrease when they are stressed (Deng *et al.*, 2019; Jamal, 2016; Ismail *et al.*, 2015); and, on the other hand, how the level of job performance might have an influence on the decision of promoting someone within an organization (Capelli and Conyon, 2018; Grama and Sorin, 2011).

The reason why the conformity to feminine norms has also been chosen is due to the invisible nature of the barriers causing this situation (O'Callaghan and Jackson, 2016; Fang and Sakellariou, 2015; Efthymiou, *et al.*, 2012; Channar, *et al.*, 2011). As a result of this circumstance, it has been considered important in this research to focus on a more basic level, which is the socialization process that, according to Bilton *et al.* (1987) is not intended and happens informally and at an unconscious level.

This paper will investigate the perception that females have of female social gender and how this might have an influence on their levels of stress. Furthermore, this paper will also study the influence that the conformity to feminine norms and the stress levels experienced by the participants in this research have on the position achieved within the organization.

Ultimately, the aim of the investigation is to explore if conformity to feminine norms and stress are drivers of the *glass ceiling effect*.

The sample participating in this paper was taken from the Technological Industry, as this is the area where the author worked which facilitated the accessibility to a larger sample. According to the CSO of Ireland, only 5.3% of the total number of females in the country work in Technological activities, even though the Technological industry is the sixth (out of thirteen) most common industry chosen by females in which to work. Of the total workforce in this sector, 42.6 % are female. Since 2013, the number of Technology companies being set up in the country is growing (Leddin, 2019); if this keeps happening the figures just provided might also continue growing. However, at the moment this is an industry still dominated by males, which makes it a favourable area to study the *glass ceiling effect*. Furthermore, this is a concept that seems relatively unexplored in the sector as very little literature has been found.

This is a cross-sectional quantitative research study, where possible influences between confounding variables (levels of conformity to feminine norms and levels of stress) are

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studied. Possible differences in these two confounding variables between two groups (female managers and female non-managers) are also studied.

The participants are part of a non-random convenient sample. They were selected based on the fact that they worked in the Technological Industry, based on their position (managers/non-managers) and based on their gender (only females were invited to participate). They completed the CFNI, used to determine their perception of female social gender, and PSS-14, used to measure their level of stress.

Literature Review

GLASS CEILING EFFECT

One of the consequences of *Gender Inequality* is the *Gender based segregation* or *Occupational segregation by sex*: the unequal distribution of employees in the workplace based on their gender. This can be vertical, explained by a disproportionate clustering of males at the top of occupational hierarchies and of females at the bottom; or horizontal, which describes the fact that, at the same occupational level (that is, within occupational classes or even occupations themselves) males and females have different job tasks (Kocabacak and Kalkan, 2015; Efthymiou, *et al.*, 2012). Research shows how, for example, there is a clear vertical and horizontal segregation in both technical/ technological and managerial positions, with these positions being mainly covered by males, while females remain in clerical positions, labour-intensive, low-wage and unskilled jobs or unskilled jobs without specialization (Efthymiou, *et al.*, 2012).

Different concepts have been defined to explain *Gender Inequality* and have become the frequent object of study. Firstly, we have the *Glass ceiling effect* that has been defined as the existence of invisible and unbreachable barriers impeding female ascending to higher positions and getting wage increases (O'Callaghan and Jackson, 2016; Fang and Sakellariou, 2015; Efthymiou, *et al.*, 2012; Channar, *et al.*, 2011). Secondly there is the *glass doors effect* that refers to females being segregated into lower-paying firms (Javdani, 2015). Thirdly the *sticky floors effect* has been defined as the existence of discriminatory employment patterns that impede females moving both vertically and horizontally within the organization (Fang

and Sakellariou, 2015; Efthymiou, *et al.*, 2012). Fourthly there is the *leaky pipeline* idea, referring to females' tendency to abandon their careers early and/or any ambition of career advancement (Efthymiou, *et al.*, 2012). And finally, the *bottleneck* refers to the existence of restricted possibilities for female to be promoted from low or middle level to higher level positions (Efthymiou, *et al.*, 2012). The main aim in research has been to investigate how real these metaphors are, and what is the effect they have on females' careers (O'Callaghan and Jackson, 2016; Fang and Sakellariou, 2015; Javdani, 2015; Efthymiou, *et al.*, 2012; Channar, *et al.*, 2011).

Javdani (2015) finds clear evidence that the *glass ceiling effect* experienced by female comes from their segregation in lower-paying firms and how there is an efficiency wage model by which high-paying firms discriminate against females, that is, the *glass ceiling effect* comes from a *glass door effect*. In addition, he found a clear *glass door effect* within firms. Efthymiou *et al.* (2012) found that *sticky floor effect* is less intense than *bottleneck* and also that vertical segregation increases at higher management level. Channar *et al.* (2011) found that the *glass ceiling effect* and *sticky floor* happen for females in both the public and the private sector, although more in the private one. Fang and Sakellariou (2015) found that practically all European and transition countries show *glass ceiling effect*, while in Asia *sticky floors* are almost exclusively prevalent and there is no clear evidence of *glass ceiling*. However, on the contrary, O'Callaghan and Jackson (2016) were unable to conclusively demonstrate the existence of a *glass ceiling effect* in the academic workforce. Finally, some studies would even find the *glass ceiling effect* positive as they found a negative relationship between female board membership and firm performance (Bosworth and Lee, 2017). With the exception of Javdani (2015) these studies were investigating the existence of the concepts above without mentioning behind them. Following Javdani's proposal, this paper, rather than focusing on the existence of one of them (*glass ceiling effect*), will be focused on investigating if 2 factors (conformity to feminine norms and stress) could possibly be some of its drivers, due to the little number of studies found in the literature in that line of research.

STRESS AS DRIVER OF THE *GLASS CEILING EFFECT*

The reason to investigate whether stress is one of the drivers of the *glass ceiling effect*, is because its increase is one of the issues that females could face in business as a consequence of Gender Discrimination (Duxbury, Stevenson and Higgins, 2019; Noh *et al.*, 2017; Harryson, Alex and Hammarstrom, 2016; Offer, 2014; Channar *et al.*, 2011). In addition, numerous research shows how females are generally more stressed at work than males (Duxbury *et al.*, 2018; Offer, 2014; Limiñana-Gras *et al.*, 2013; Gardiner and Tiggemann, 2010; Apperson *et al.*, 2002). Also a number of investigations show how people perform less well when they are stressed than when they are not (Deng *et al.*, 2019; Jamal, 2016; Ismail *et al.*, 2015). These findings, along with the results shown by other studies highlight that the level of job performance might have an influence on the decision of promoting someone within the company (Capelli and Conyon, 2018; Grama and Sorin, 2011), gives meaning to the idea of investigating the existence of a relationship between stress and *glass ceiling effect*.

Some other issues that occur due to Gender Discrimination experienced by females in business are a decrease of satisfaction and motivation, commitment and enthusiasm (O’Callaghan and Jackson, 2016; Offer, 2014; Channar *et al.*, 2011) and inequality in recruitment and selection process (Fernandez and Campero, 2017), training, payment, benefits and social protection (Kocabacak and Kalkan, 2015). Additional consequences are more concentration in lower ranks of the hierarchy and in monotonous and repetitive jobs, sexual harassment (Kocabacak and Kalkan, 2015) and a lower participation rate in Continuing Professional Development (CPD) (Chuang, 2015). For example, in relation to the recruitment and selection process, Fernandez and Campero (2017) found how external candidate pools are already gender stratified, hence, not only internal processes are contributing to the *glass ceiling effect*, but also external. Regarding CPD, Chuang (2015) show how fewer females than males would invest in their CPD. This could be due to situational, dispositional and institutional barriers likely to be caused by females’ social roles, and gender inequality, such as family and time constraint, cost and work constraint, lack of support systems and lack of career advice and resources. In any case, that lack of investment by female on CPD seems to be connected to the leaky pipeline effect (Chuang, 2015; Efthymiou, *et al.*, 2012; Adya, 2008).

CONFORMITY TO FEMININE NORMS AS DRIVER OF THE *GLASS CEILING EFFECT*

There are many factors used in the literature to explain gender inequality. These include: demographic, organizational and sectoral, social and cultural factors and personal/individual differences that shape perceptions of and experiences in their careers (Chuang, 2015; Kocabacak and Kalkan, 2015; Efthymiou, *et al.*, 2012; Adya, 2008).

Following the factors named above, this study will focus on the social and cultural factors. More specifically, it will focus on the Social gender, which is based on the idea that gender and gender differences are created by society. The “socialization process” determines what is the ideal behaviour for someone of a specific sex (Kalantari, 2012). According to Bilton *et al.* (1987) the socialization process is not intended and happens informally and at an unconscious level as a consequence of the social interaction between individuals. Through the socialization process, members of a particular society learn the values and norms of their culture and tend to replicate them. This unintended and unconscious nature of the process could partially explain how the drivers of the *glass ceiling effect* are invisible and is the reason why the conformity to feminine social norms in particular has been chosen as the object of study. Mahalik *et al.* (2005) considered femininity as the extent to which females conform with the norms that dictate what is considered to be adequate in a particular society and/or culture for females. These norms are transmitted and easily identifiable in each culture and/or society. To assess the level of conformity that individuals have to feminine norms, Mahalik *et al.* (2005) created the Conformity to Feminine Norms Inventory (CFNI) instrument that is also used in this paper to the same end.

Expectations such as females being more sensitive or being caregivers and homemakers and become nurses (Limiñana-Gras *et al.*, 2013) or teachers, and males expected to be more independent or aggressive and become a soldier or an engineer, are constructed by the social gender. Also, for example, more specifically within the work environment, females are expected to be less willing to ask for promotions or negotiate a salary increase, as well as be less willing to pursue and/or accept outside offers or appear too bossy (Fang and Sakellariou, 2015). In addition, some studies argue that females in the workplace are more focused on “soft skills” such as relationship, communication, equity, collaboration, fairness, respect or work-life balance and in sharing information to build relationships (Fapohunda, 2013).

Hence, the above would suggest that the decisions people make in both their family and work roles would be enormously determined by their role identities (Shanmugam, 2017; Kailasapathy, *et al.*, 2014; Limiñana-Gras *et al.*, 2013; Hagelskamp, *et al.*, 2011; Mahalik *et al.* 2005).

LINK BETWEEN STRESS AND CONFORMITY TO FEMININE NORMS

The two main roles that are being considered in this paper have just been mentioned above and are work and family. Greenhaus and Beutell (1985) described the work-family conflict as a type of inter-conflict that appears as a consequence of the role pressures from the two domains being mutually incompatible. This conflict could be time-based, stress-based or behaviour-based. In this paper we are focusing on the stress-based type of conflict.

In every society, the family role, both domestic and caring, has remained mainly the responsibility of females despite of the increase of females in the labour market (Duxbury *et al.*, 2018). Particularly in Ireland, we see how, according to the 2016 statistics from the CSO of Ireland, in this country the employment rate is 59.5% for females and 69.9% for males. However, 98% of the people remaining in the home and looking after the family are female while 2% are male. These figures may suggest that females might be facing more difficulties when trying to reconcile their family/social roles (mother/wife) with their work role, hence, higher levels of stress.

This is further supported by Offer (2014) who found that mothers are usually held accountable for the care of children and household care as well as being more likely to be criticized for being involved excessively at work, that is, working long hours. However, fathers are still supposed to be the main breadwinners in the family, and therefore are not so criticized for working too much. These findings overall highlighted how mothers' mental labour (planning, organisation and management of everyday activities) may contribute to their stress and gender inequality among dual-earner families. Noh *et al.* (2017) also support this idea through their research on the association between the number of family members and the stress level in both genders. They found that the probability of perceiving stress in females increased in proportion to the number of family members as, they concluded, the

expectations of females being the main person responsible for domestic and care work, can be a source of stress.

Equally, Harryson, *et al.* (2016) argued that traditional housework practices may result in a resignation reaction that at the same time can increase stress among both male and female and contribute to a poorer psychological health and general well-being. In females' cases, it can also damage their self-esteem and limits their autonomy. Finally, Duxbury *et al.* (2018) argued that females experience significantly higher levels of stress than their male counterparts. They found that, although work-overload, family over-load and total-overload are related to perceived stress regardless of gender, females have higher family demands, hence they experience higher levels of family-role overload, and consequently, more stress correlated specifically to that family- role than men.

All the studies above focus on social structural factors (e.g. gender and family) but the link between the perception females have of female social gender and the stress they experience is not being studied. Little literature has been found in this regard. However, Simon (1995), when studying the gender differences in stress due to multiple role involvements realized that the focus was only on social structural factors and decided to focus on the perception that males and females had of the feminine and masculine roles in society instead. He concluded that the differences in the meaning of roles can help explain gender differences in well-being. In a similar approach, Kailasapathy *et al.* (2014) focused on the social gender role orientation of a number of couples and its effect on work-family conflict, concluding that individuals that valued a traditional gender role orientation experience an increase of work-family conflict. Based on these two investigations, the first Hypothesis of this paper was formulated and its aim is to find if there is any evidence to say that a traditional perception of the feminine role increases the level of stress.

COMPARISON BETWEEN FEMALE MANAGERS AND NON-MANAGERS

Due the difficulties encountered in finding literature comparing the levels of stress and conformity to feminine norms between female managers and non-managers, it is important to highlight the results obtained by different authors that would help to back up the rationale of

the second hypothesis in this paper. Lipinska-Grobelny and Wasiak (2010), when studying the job satisfaction and gender identity of female managers and non-managers, found that female managers have a less traditional gender orientation and more positive affect (more job satisfaction and reduced stress) at work. Apperson *et al.*, (2002), when studying work-family conflict in female managers expected, based on literature review, to find that female managers have higher levels of stress than male managers and female non-managers due to the combination of gender and higher position. However, their findings show that female and male managers had similar levels of work-family conflict, which, they explained, was due to the fact that females pursuing managerial positions were less conflicted by the demands of work and family roles, that is, they appeared to have a less traditional role orientation.

Finally, Beatty (1996) found, not only that females in managerial positions did not show higher stress levels, but that possibly stress decreases as female get to higher positions. This result was consistent with one of the models that Beatty based her study on. This is the Karasek model by Karasek and Theorell (1990) (cited in Beatty, 1996; Robert, 2011) whose authors postulated that people under conditions of higher control, would have lower levels of stress. Following this model, a condition of higher control would be a managerial position, and our female managers would feel less stressed in managerial positions as they would have higher levels of control, which is what the second hypothesis suggests.

Research questions

There are more studies around the *glass ceiling effect* that focus on its existence/non-existence and its consequences, than in the causes of it. Due to this gap found in the literature, this paper focuses more on investigating some of its possible drivers.

Among the very few studies concentrated on investigating the drivers of the *glass ceiling effect*, some focus on the social structural factors as a possible way of explaining it. However, the results found don't seem to be conclusive in understanding why it is happening. This gap is addressed in this paper by focusing on a more basic level, which is the socialization process, and analyses if the perception females have of the female social gender, that is their conformity to feminine norms, might affect their levels of stress.

Stress is also chosen to be explored as a driver of the *glass ceiling effect* due to the evidence found in the literature showing how people's performance decreases

when they are stressed and how the level of job performance might influence people whether or not people are promoted.

Then the investigation goes further by trying to determine if the levels of stress influenced and the conformity to feminine norms have an influence on the position (managerial/non managerial) female can achieve within the organization. This is due to a gap in the literature comparing the levels of stress between managers and non-managers.

In conclusion, the purpose of this research is to understand, on one hand, the impact that female employees' perception about the female social gender might have on their stress levels and, on the other hand, how the level of stress and conformity to feminine norms can have an influence on how far they can get in their career. Would stress and conformity to feminine norms be two of the drivers of the *glass ceiling effect*?

Two hypothesis are considered. Please see below:

Hypothesis A: female employees who have higher levels of conformity to feminine norms will experience higher levels of stress

Hypothesis B: female in managerial positions have lower levels of conformity to feminine norms and lower levels of stress.

Methodology

DESIGN

This is a cross-sectional quantitative research study, where possible influences between the confounding variables levels of conformity to feminine norms (four levels: Very low conforming, not conforming, conforming, and very high conforming) and levels of stress (three levels: high, moderate and low) are studied. Possible differences in these two confounding variables between two groups (female managers and female non-managers) are also studied.

Clara Amarante
Master of Arts in Human Resource Management
Part Time
National College of Ireland

MATERIALS

The participants in this investigation had to complete CFNI, which was used to determine their perception of female social gender, and PSS-14, which was used to measure their level of stress.

The 84-item inventory called Conformity to Feminine Norms Inventory (CFNI) was created by Mahalik *et al.* (2003) as a tool to be used by professionals to assess the conformity that females in the United States of America had to femininity norms. In this paper the CFNI is being used to determine the perception of feminine social gender of the participants in this study, helping us to understand the way in which females experience and respond to femininity issues. The inventory has 84 items organized in an 8-factor structure. The items reflect behaviours, feelings and thoughts that adhere to a particular norm associated to feminine gender roles. The factors are: Nice in Relationships (norm: develop friendly and supportive relationships with others); Thinness (norm: pursue a thin body ideal); Modesty (norm: refrain from calling attention to one's talents or abilities); Domestic (norm: maintain the home); Care for Children (norm: take care of children); Romantic Relationship (norm: invest self in romantic relationship); Sexual Fidelity (norm: keep sexual intimacy contained within one committed relationship); and Invest in Appearance (norm: committing to maintain and improving physical appearance). The statements can be answered on a 4-point Likert scale (I strongly agree=1, I agree=2, I strongly disagree=3, I disagree=4). Some of the items in the inventory need to be reversed, subsequently the scores are obtained from reversing the scores on the positive items (Items 9, 11-14, 17, 19, 22, 24, 25, 27, 28, 30, 35, 36, 38, 39, 41-45, 47, 51, 52, 55-58, 61, 68, 69, 71-76, 79, 81-83) and then summing across all 84 items. Then also, in order to score the factors, the items belonging to the pertinent factor must be summed after reversing the negative items. The Cronbach alpha coefficient reliability for the CFNI for the women in the study was 0.88 for the total score, and in relations to the factors it went from 0.77 for Romantic Relationship to 0.92 for Caring for Children (Mahalik *et al.*, 2005). The higher female score in the Inventory, the more conform to feminine norms they are, going the range of scores from 0 to 336.

The Perceived Stress Scale (PSS-14) is a 14-item instrument created by Cohen, Kamarck and Mermelstein (1983). This scale was developed to measure to what extent people perceived

the demands in their life surpassed their ability to cope. More specifically, the degree to which people found their lives unpredictable, uncontrollable and overloading. That is, it measures to what extent people appraised as stressful the situations in their life. Hence, in this paper the PSS-14 was used to measure the level of stress of the individuals subject to study. The Scale has 14 items that can be answered in a 5-point Likert scale (Never=0, Almost never=1, Sometimes=2, Fairly often=3 and Very often=4). Some of the scores need to be reversed, subsequently, the scores result from reversing the scores on the seven positive items (Items 4,-7, 9, 10, and 13) and then summing across all 14 items. The examination of the internal consistency of the scale showed that the Cronbach alpha coefficient was 0.84, 0.85 and 0.86 for each of the 3 samples (Cohen *et al.*, 1983). The higher people score in the scale, the more stressed they are, going the range of scores from 0 to 56.

SAMPLE

A non-random convenient sample of females working in the Technological sector was invited to participate in this study. Participants were all working either across a variety of departments from a Technological Company either within the IT Department of a company from a different Industry. The selection of the sample was based, first on the fact that they worked in the Technological Industry, and second on the work position (managerial or non-managerial) they held in the company. Only females were invited to participate in the research.

The study was finally carried out with a total of 93 females of which 30 were employed in managerial positions while 63 held regular positions.

DATA COLLECTION

The chosen participants were contacted either by email or by message through LinkedIn. The email/LinkedIn message, contained a brief explanation of the research and what it would involve and a link to Survey Monkey, so that people could complete the Inventory and the Scale in a completely anonymous manner. This Survey Monkey Link contained an

information sheet with more a detailed explanation of the research, a consent form with an

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explanation about the anonymous, voluntary and confidential nature of the investigation. It also had a box that participants had to compulsorily tick saying Yes in order to be able to continue and that gave their consent to use their answers as part of the investigation. If the participants said No, they would have not been able to continue. Following these were the inventory and the Scale, which were merged together so that the participants did not have to open two different links, as this could possibly increase the risk of disengagement and withdrawal. The completion of both Inventory and Scale took between approximately 10 and 15 minutes. The participants did not have to provide any sort of personal information apart from the type of position they held in the organization (managerial/non managerial).

The Survey Monkey account where the participants answered the survey was password protected. The answers were transferred from Survey Monkey to an Excel spreadsheet saved in the author's computer. After that, in order to do the Statistical Analysis, the information was also stored into an electronic file in SPSS. Both the Excel Spreadsheet and the electronic file in SPSS, as well as the computer itself, were password protected.

DATA ANALYSIS

The quantitative variables in this study (conformity levels according to the CFNI - Very low conforming, not conforming, conforming, and very high conforming - and stress levels according PSS - low, moderate and high) were indicated in terms of frequency and percentage. In relation to the quantitative variables, (scores of the CFNI factors, total score of the CFNI, scores of each question of the PSS, and total score of the PSS) the mean, the standard deviation (SD) and the pertinent minimums and maximums (min-max) were used.

In order to determine the existence of differences in the percentage distribution according to the conformity levels of the CFNI and the stress levels of the PSS between managers and non-managers, a Pearson Chi-Square test was used. A T-test for independent samples was used to establish differences between quantitative scores of both PSS and CFNI between managers and non-managers. In order to determine the existence of significant differences in the stress levels obtained in PSS-14 based on the different conformity levels groups, a one-way ANOVA was performed. To compare each conformity level group, a Bonferroni

correction was used. All of this with a level of significance $p < 0.05$. The data analysis was carried out through SPSS version 25.0 (IBM, inc).

Results

A one-way ANOVA ($p < 0.05$) was performed to investigate the association between the conformity levels obtained in the CFNI and stress levels as measured by the PSS-14 ($F = 1.478$; $p = 0.226$). No significant differences between groups was found. When comparing the conformity levels among and between each other through the Bonferroni correction ($p < 0.05$), no significant differences were found at any level. These results are shown in **Table I**. **Table II** shows PSS-14 scores based on conformity levels.

Table I. Differences in stress levels based on PSS-14 Scale and conformity levels (n=89)

Comparison of stress levels based on CFNI conformity levels	Mean differences	CI 95% [Lower limit-High Limit]	p-value
Conforming – Very high conforming	-1,010	[-6.77-8.79]	1.000
Conforming – Not conforming	1.495	[-6.11-9.10]	1.000
Conforming – Very low conforming	4.846	[-4.30-13.99]	0.937
Very high Conforming – Low conforming	2.506	[-3.39-8.40]	1.000
Very high Conforming – Very low conforming	5.856	[-1.92-13.64]	0.272
Low conforming – Very low conforming	-1.495	[-9.10-6.11]	1.000

Note. P-value < 0.05 ; comparison based on Bonferroni correction; PSS-14= Perceived Stress Scale; CFNI= Conformity to Feminine Norms Inventory.

Table II. PSS-14 Scores based on conformity levels (n=89)

CFNI Conformity Levels	PSS-14 Mean (SD) (min-max)
Conforming	28.23 (8.20) (13 – 44)
Very high conforming	29.24 (8.02) (16-48)
Low conforming	26.73 (8.75) (9-48)
Very low conforming	23.38 (9.97) (8-39)

Note. PSS-14= Perceived Stress Scale; CFNI= Conformity to Feminine Norms Inventory.

Table III shows average scores obtained in the CFNI and the differences observed between managers and non-managers. A T-test for independent samples was conducted to investigate differences in total CFNI scores and its 8 factors individually between the groups. In relation

to the CFNI Total score, no significant differences were found between managers and non-managers ($t= 1.621$; IC 95% [-18.72-1.99]; $p=0.111$). No significant differences were found either between groups in the 8 factors, except for “*Have nice relationships*” ($t= 2.126$; IC 95% [-5.360-(-0.181)]; $p=0.036$) and “*Involvement with children*” ($t= 1.621$; IC 95% [-6.833-(-0.233)]; $p=0.036$).

Table III. CFNI Scores based on the 8 factors and total score (n=93)

CFNI Factors	Non-managers (n=63) Mean (SD) (min-max)	Managers (n=30) Mean (SD) (min-max)	<i>p-value</i>
Have nice relationships	35.76 (5.79) (20-50)	38.53 (6.04) (24-51)	.036*
Involvement with children	19 (7.76) (0-35)	22.53 (6.85) (4-36)	.036*
Thinness	19.25 (5.47) (9-33)	19.90 (5.37) (12-33)	.594
Sexual fidelity	15.42 (5.31) (3-28)	15.06 (5.04) (4-30)	.756
Modesty	14.31 (4.74) (1-24)	14.80 (3.68) (8-26)	.625
Involvement in Romantic relationships	12.03 (3.82) (5-25)	12.80 (3.76) (5-23)	.364
Domestic	16.39 (3.62) (6-24)	16.90 (3.42) (11-24)	.526
Investment in appearance	12.14 (3.55) (2-21)	12.16 (3.74) (3-20)	.976
CFNI total score	144.33 (21.32) (104-213)	152.70 (24.13) (115-235)	.111

Note. *P-value* <0.05 for *t-test* for independent samples; CFNI= Conformity to Feminine Norms Inventory; Higher score=more conformity.

A Chi-Square Pearson Test was used to compare the CFNI percentages of conformity (conforming / very high conforming/ low conforming / very low conforming) between managers and non-managers. No significant differences were observed either between the groups analysed in this paper ($\chi^2=3.352$; $p= 0.341$). These results are shown in **Table IV**.

Table IV. Comparison based on the CFNI Conformity Level between managers and non-managers

Conformity Levels	Non-managers (n=63) n (%)	Managers (n=30) n (%)	<i>p-value</i>
Very low conforming	10 (15.9)	3 (10)	.341
Not conforming	26 (41.3)	9 (30)	
Conforming	20 (31.7)	11 (36.7)	
Very high conforming	7 (11.1)	7 (23.3)	

Note. *P-value* <0.05 for Chi-Square Pearson test; CFNI= Conformity to Feminine Norms Inventory.

Clara Amarante
Master of Arts in Human Resource Management
Part Time
National College of Ireland

In relation to the PSS Total Scores captured in **Table V**, a T-test for independent samples was conducted to compare the levels of stress between the groups. The results obtained didn't show any significant differences between managers and non-managers ($t= 0.912$; IC 95% [-2.102-5.664]); $p=0.364$) with the exception of two of the questions: Questions 6 (***“In the last month, how often have you felt confident about your ability to handle your personal problems?”***) ($t= 2.015$; IC 95% [0.006-0.873]; $p=0.047$) and question 10 (***“In the last month, how often have you felt that you were on top of things?”***) ($t= 2.168$; IC 95% [0.036-0.837]); $p=0.033$).

Table V. PSS Scores based on managers and non-managers

Questions	Non-managers (n=63) Mean (SD) (min-max)	Managers (n=30) Mean (SD) (min-max)	<i>p</i> - <i>value</i>
In the last month, how often have you been upset because of something that happened unexpectedly?	2.19 (1.02) (0-4)	2.27 (0.78) (0-4)	.731
In the last month, how often have you felt that you were unable to control the important things in your life?	2.42 (1.11) (0-4)	2.30 (0.87) (1-4)	.607
In the last month, how often have you felt nervous and “stressed”?	2.68 (1.08) (0-4)	2.77 (0.81) (2-4)	.711
In the last month, how often have you dealt successfully with day to day problems and annoyances?	2.19 (1.02) (0-4)	2.27 (0.78) (0-4)	.731
In the last month, how often have you felt that you were effectively coping with important changes that were occurring in your life?	1.30 (0.91) (0-4)	1.07 (0.82) (0-3)	.253
In the last month, how often have you felt confident about your ability to handle your personal problems?	1.31 (1.00) (0-4)	0.87 (0.93) (0-3)	.047*
In the last month, how often have you felt that things were going your way?	1.52 (0.91) (0-4)	1.33 (0.80) (0-3)	.354
In the last month, how often have you found that you could not cope with all the things that you had to do?	2.13 (1.04) (0-4)	1.87 (1.04) (0-4)	.262
In the last month, how often have you been able to control irritations in your life?	1.44 (0.88) (0-3)	1.33 (0.71) (0-3)	.581
In the last month, how often have you felt that you were on top of things?	1.80 (0.85) (0-3)	1.37 (0.99) (0-4)	.033*
In the last month, how often have you been angered because of things that happened that were outside of your control?	2.19 (0.95) (1-4)	2.20 (0.76) (1-4)	.974
In the last month, how often have you found yourself thinking about things that you have to accomplish?	3.24 (1.05) (0-4)	3.10 (0.75) (2-4)	.511
In the last month, how often have you been able to control the way you spend your time?	1.67 (1.02) (0-4)	1.50 (0.86) (0-3)	.444
In the last month, how often have you felt difficulties were piling up so high that you could not overcome them?	2 (1.20) (0-4)	1.87 (1.00) (0-4)	.601
PSS total score	27.88 (8.99) (8-48)	26.10 (8.12) (10-48)	.364

Note. *P*-value <0.05 for *t*-test for independent samples; PSS-14= Perceived Stress Scale; Higher score=High stress level.

Clara Amarante
 Master of Arts in Human Resource Management
 Part Time
 National College of Ireland

A Chi Square Pearson Test was performed to investigate differences in stress levels between manager and non-manager groups. No significant differences ($\chi^2=3.182$; $p= 0.204$) in stress levels (low/moderate and high) were found between the groups. The results are illustrated in **Table VI**.

Table VI. Comparison based on Stress levels from PSS between managers and non-managers

Stress levels	Non-managers (n=59) n (%)	Managers (n=30) n (%)	p-value
Low	10 (16.9)	2 (6.7)	.204
Moderate	41 (69.5)	26 (86.7)	
High	8 (13.6)	2 (6.7)	

Note. P-value <0.05 for Chi-Square Pearson test; PSS-14= Perceived Stress Scale.

Discussion

The present study tried to determine if stress and conformity to feminine norms were possibly two of the drivers of the *glass ceiling effect*. The suggested hypothesis contemplated a relationship between the level of conformity to feminine norms of a group of females working in the Technological Industry in Ireland and their levels of stress, and also a relationship between the position held by these females (managers/non-managers) and their levels of stress and conformity. In light of the results, it can be stated that both of the hypotheses suggested in this paper are rejected, hence it cannot be said that stress and conformity to feminine norms are drivers of the *glass ceiling effect*.

The first hypothesis suggested that females with a traditional perception of female social gender will have higher levels of stress. This statement is rejected as the results show how the levels of stress were not altered by the different levels of conformity to feminine norms. This hypothesis was made under the assumption that females who had a perception of females as the main caretaker and homemaker, would have higher levels of stress as their role at home would come into conflict with their role at work.

The lack of significant difference in the stress levels among the whole sample could be better explained than the conformity levels, by other variables such as healthy habits (Gerber *et al.*, 2019; Puterman *et al.*, 2010; Cartwright *et al.*, 2003), personality (Borkoles *et al.*, 2018;

Chinaveh, 2014) or the level of Emotional Intelligence that the person has (Por *et al.*, 2011; Nikolaou and Tsaousis, 2002).

Although no statistically significant differences were found between stress levels of higher and lower gender conforming females, non-significant differences were observed: Females who scored higher on gender role conformity had higher levels of stress compared to females that scored lower on the gender role conformity.

The lack of statistical significance in this study could be due to the small sample size and low power of this study. Previous similar studies obtained larger sample size and higher power increasing the robustness of these studies (Duxbury *et al.*, 2018; Noh *et al.*, 2017; Offer, 2014; Limiñana-Gras *et al.*, 2013; Lipinska-Grobelny and Wasiak, 2010; Sanchez-Lopez *et al.*, 2009; Kalisapathy *et al.*, 1995).

Although the results of this study didn't show that the levels of conformity had an influence on the stress levels of the sample, the trends of higher gender conformity relating to higher stress and lower gender conformity equating to lower stress is in agreement with Simon (1995) and Kailasapathy *et al.* (2014). However, the results conflict with the approach contemplated by Simon (1995) and Kailasapathy *et al.* (2014), who suggested respectively that, differences in the meaning of roles can help explain gender differences in wellbeing (more specifically, females would be more stressed by the work-family role conflict), and that people with a more traditional perception of social gender would have a higher work-family conflict. The results in this paper also contradict the results obtained by other authors (Duxbury *et al.*, 2018; Noh *et al.*, 2017; Harryson *et al.*, 2016; Offer, 2014) that showed how the traditional perceptions of social gender that the subjects in their samples had, resulted in them experiencing higher levels of stress.

The second hypothesis suggested that females in managerial positions have a less traditional perception of female social gender and also lower levels of stress. The results show that managers' CFNI total score is slightly higher than non-managers. However, no significant differences are found between the two groups. Also, when looking individually at the 8 factors of the inventory the results between the groups are very similar and a significant difference was only found in the factors "Have nice relationships" and "Involvement with children". Hence, looking at the results obtained in the CFNI by both managers and non-

Clara Amarante

Master of Arts in Human Resource Management

Part Time

National College of Ireland

managers, the first part of this statement must be rejected, which means that, as a whole, there are no differences neither in the perception that female managers and non-managers have of female social gender.

The lack of significant difference in the stress and conformity levels among managers and non-managers could be explained by variables such as healthy habits (Gerber *et al.*, 2019; Puterman *et al.*, 2010; Cartwright *et al.*, 2003), personality (Borkoles *et al.*, 2018; Chinaveh, 2014) or level of Emotional Intelligence (Por *et al.*, 2011; Nikolaou and Tsaousis, 2002); and sociocultural and economic changes (Mahalik *et al.*, 2005; Leddin, 2019) respectively, rather than by the position they hold within the organization.

These findings conflict with the results obtained by Lipinska-Grobelny and Wasiak (2010) that showed how female managers had a less traditional gender orientation than female non-managers.

Finally, looking at the results obtained by both groups in the PSS-14, the second part of the second hypothesis must also be rejected because no significant differences were found in the levels of stress of managers and non-managers when doing the statistical analysis. This would mean that, as a whole, there are no significant differences in the stress levels between both groups. Only when looking at the questions individually, significant differences are found in Q6 (***"In the last month, how often have you felt confident about your ability to handle your personal problems?"***) and Q10 (***"In the last month, how often have you felt that you were on top of things?"***).

These findings are in conflict with the results obtained by Beatty (1996) which showed how females in managerial positions not only didn't show higher stress levels, but that possibly stress levels decreased as they got to higher positions. They also contradict the findings made by Apperson *et al.*, (2002) about female managers having similar work-family conflict to males possibly due to a less traditional role orientation. In comparison to this paper's results, these author's findings would have verified the second part of the second hypothesis argued in this investigation, which was that females in managerial positions have a less traditional perception of female social gender and also lower levels of stress.

The discussed conflicts between results could be possibly better understood by looking at Mahalik's investigation (Mahalik *et al.*, 2005). As expressed by them, females experience numerous sociocultural injunctions that determine feminine norms and the conformity to those norms depends on the adherence to them. Sociocultural norms are usually different in each culture and society, hence potentially, the sociocultural norms encountered by females in Ireland might be different to the ones experienced by females in other countries. This could be due to the big economic and social changes experienced by the country in the last 4 decades. Although in the last 40 years there has been up and downs, the economy has gradually significantly grown, especially during the Celtic Tiger period (mid-1990s to 2000) when many North American technology companies set up in Ireland, and then from 2013, when the country was officially out of the recession period that started in 2008, up until now (Leddin, 2019).

Moreover, throughout these years, the Catholic Church has lost a lot of its power over various social justice issues and systems. In May 2015, a Referendum was celebrated in Ireland to amend the existing Constitution over the legalisation of same-sex marriage. A total of 1.9 million people (60.2% turnout) participated, 62% of them voted Yes against 38% who voted No. After this Referendum Ireland became the first country ever to approve the same-sex marriage by popular vote (Caollaí and Hilliard, 2015). Following this Referendum, another one took place in May 2018, this time to vote for a Repeal of the Eight Amendment, by which females could not access legal abortions in Ireland. For this vote the turnout was 64.5% (more than 2 million people), one of the highest ever seen for a Referendum in the history of the country. 66.4% voted in favour of Repeal and 33.6% against it. After 30 years of debate, finally in 2019 a new law allowing access to abortion in Ireland was created. Some politicians even talked about a "new era for Irish women" (Abortion Rights Campaign, 2019; O'Carroll and Duffy, 2018).

Also, according to the 2016 Census of CSO of Ireland, the population has grown from less than 3.5 million in 1979 to more than 4.5 million people in 2016, many of them (11,6%) immigrants from all over the world and the people are more educated than ever (56.2 % of people aged 15 to 39 possessed a third level qualification). All these circumstances, in

conjunction with the recent fight for women's rights, might possibly have driven a dramatic change in mentality and lifestyle in the country.

Hence, the sociocultural, religious, economic and demographic factors mentioned above could explain the absence of significant difference in the conformity levels to the traditional feminine norms between managers and non-managers better than the position they hold in the organization as suggested in the second hypothesis.

The social and economic changes mentioned might have driven a change in mentality and lifestyle that, in turn, might have also had an influence on the stress experienced by people. As well as these circumstances' possible influence on the results of the CFNI, they can also have had an influence on the results obtained by the sample in the PSS. Furthermore, a number of variables that have not been investigated in this paper could possibly be having an impact on the levels of stress experienced by the participants of the investigation. For example, those levels of stress could be influenced by the practice of regular physical exercise (Neves, Loots and Niekerk, 2014; Puterman *et al.*, 2010; Edwards, 2006; Salmon, 2001; Brown & Siegel, 1988) or other healthy habits (Gerber *et al.*, 2019; Mikolajczyk, El Ansari and Maxwell, 2009; Cartwright *et al.*, 2003) as well as by the individual's type of personality (Borkoles *et al.*, 2018; Kaiseler *et al.*, 2018; Lynn, Gillian and Cindy, 2018, Chinaveh, 2014; Lau *et al.*, 2006). The levels of stress could also be influenced by the level of Emotional Intelligence that the subjects of the sample have, an effect that has been investigated by different authors (Por *et al.*, 2011; Mikolajczak, Menil and Luminet, 2007; Sy, Tram and O'Hara, 2006; Oginska-Bulik, 2005; Nikolaou and Tsaousis, 2002), showing that this is negatively associated with stress levels.

Emotional Intelligence could possibly be the variable responsible for the significant difference observed between managers and non-managers in the dimensions "Have nice relationships" and "Involvement with children", where managers have obtained higher scores, meaning that their relationships with people are better and that they are more involved with children. These two dimensions would be related to the ability to relate to others, which is a sphere of emotional intelligence.

So, ultimately, all the variables outlined (regular physical exercise, healthy habits, type of personality and Emotional Intelligence) could explain the lack of significant difference in the

stress levels of managers and non-managers, as opposed to the position they hold in the organization, as suggested in the second hypothesis, These variables could also account for the lack of significant difference in the stress levels among the whole sample better than the conformity levels could, as suggested by the first hypothesis.

Conclusively, based on the results obtained in this study, it could be argued that there was no clear evidence found that stress and conformity to feminine norms are drivers of the *glass ceiling effect*.

Limitations, recommendations and implementations

There are a number of limitations in this research that should be highlighted. Some of them, such as, the need to create an adapted version of the CFNI for the Irish population, the lack of demographic variables introduced in this investigation, the need to take into account some individual differences, the need to find a more representative sample or the subjective nature of the results or are explained here.

It is important to highlight too that, when making any comparisons between the results obtained in this research and the results obtained by any other authors, should be done cautiously. This is due to many factors, such as sociocultural or demographic, being beyond the author's control because, due to time constrains, they were not measured here despite possibly explaining those differences.

In order to assess the level of conformity to feminine norms by the subjects in this study, the original CFNI created by Mahalik *et al.* (2005) to be used among females in the United States of America was used here with the same purpose. It would have been ideal to use an adapted version of the CFNI to Irish population, however it was not found in the literature. Hence for future similar studies in this area or in the case of a continuation of this same research, it is recommended that a version of this tool adapted to the sociocultural injunctions that Irish females experience be constructed. This will obviously result in increased time needed and give rise to higher economic costs in order to complete a study. These extra time costs would be the result of the need to carry out different studies to determine whether the instrument is valid and consistent, for example, are the current factors relevant or need to be changed in

order to establish a factor structure more adapted to the Irish population? It would also be good to evaluate the temporal stability of the CFNI scores through a test-retest examination after a 2-3-week period at least, as per recommendation of Mahalik *et al.* (2005). The economic cost would be reflected on the need to hire at least 2 extra full time researchers dedicated to, first finding a sample of around 750 people (Sanchez-Lopez *et al.*, 2009; Mahalik *et al.*, 2005) to whom to provide the Inventory to, and second carrying out the factor analysis and after that analysing the results obtained.

Irish females, like the Spanish participants of the sample in Sanchez-Lopez *et al.* (2009) research, scored less than the American females from the Mahalik *et al.* (2005) research. It would be interesting to investigate the reasons for that difference in the results. Could this be due to the big economic, social, religious and demographic changes experienced by the country in the last 4 decades mentioned in the discussion? That hypothetic change of mentality and life style could be investigated by the creation of an Irish version of the CFNI.

For example, Sanchez-Lopez *et al.* (2009), following the International Test Commission, adapted the CFNI to the Spanish population and obtained a similar factors structure to the one found by Mahalik *et al.* (2005). The scores obtained by the Spanish population were lower except for the *Domestic* factor where the score was higher, which means that Spanish females were less likely to conform to feminine norms than females in the United States of America. Those differences seemed to be due to social factors rather than educational or generational, as they compared, in both studies, samples with different ages and education level and the differences found among them were lower than the differences found when comparing the samples from the two studies (Sanchez-Lopez *et al.*, 2009). This is something that unfortunately cannot be determined in the present paper as the relevant demographic information needed to allow us to do that was not gathered.

Since this investigation was focused on making the study as anonymous as possible and also due to time constrains, demographic data such as education level, marital status and parental status were not gathered. This was unfortunate as this type of data would have allowed further hypotheses to be formed. Equally it would have helped to examine new multiple explanations of the causes of the different levels of stress and conformity to feminine norms found in the study. For example, would being a mother have increased the level of stress

experienced by female employees? This would be a very interesting line of investigation to continue with if anyone was concerned about it, in which case they should know that the subject has already been investigated in the past not only in relation to stress levels (Beatty, 1996; Simon, 1995) but also more focused specifically on work-family conflict (Duxbury *et al.*, 2019; Noh *et al.*, 2017; Shanmugam, 2017; Harryson *et al.*, 2016; Apperson *et al.*, 2002; Kailasapathy *et al.*, 2014; Offer, 2014; Hagelskamp *et al.*, 2011).

Would the education level attained by an individual be related to the levels of stress experienced? This is also a very interesting area of study and equally investigated in the past (Robotham and Julian, 2006; Smith, Oliver and Innocenti, 2001), as is the relationship between level of education and perception of gender roles (Sanchez-Lopez *et al.*, 2009; Mahalik *et al.*, 2005;). Multiple combinations between demographic variables could be investigated, however, the time constrains related to both the data collection and the data analysis, were one of the reasons why these were not considered in this paper. So, if any future researchers decided to follow this line of enquiry, they should bear in mind the time costs associated with the fact that the tool would need to be more elaborate and appropriately adapted in order to gather that information. Also the demographic data would have to be coded and more statistical analysis and interpretation would be necessary.

If anyone decided at a later date to expand the line of enquiry opened by this investigation, it would also be important to take into account some individual differences in the participants that could explain the discrepancies in their stress levels. For example, Kaiseler *et al.* (2018) and Lynn *et al.* (2018), found that people with a Type D of personality had maladaptive coping and lower levels of performance, and other authors found that different types of personality was related to the use of different coping strategies (Borkoles *et al.*, 2018; Chinaveh, 2014; Lau *et al.*, 2006). Also, different research (Por *et al.*, 2011; Mikolajczak, Menil and Luminet, 2007; Sy, *et al.*, 2006; Oginska-Bulik, 2005; Nikolaou and Tsaousis, 2002) showed that individuals with a high level of Emotional Intelligence would be less prone to be stressed.

Also, this sample population was recruited from the Technological Industry, which is a very particular sector with peculiar characteristics compared to other industries. These peculiarities might stand in the way of the generalization of these results to the whole

population. For example, in this industry it is easier to find more flexible work positions that allow females to work remotely, which might lead to them having a better work-life balance (Wheatley, 2012), possibly contributing somehow to an improvement of their general well-being (Casey and Grzywacz, 2008). Hence, it is suggested a more representative sample of the whole Irish female population is used. That would mean finding females working in different industries and, as already mentioned above, with different demographic characteristics (different education level, marital status, maternity, age, etc...). In order to make the sample representative, it will also be necessary for it to be bigger. Considering that the total population of female employees in Ireland is relatively small compared to, for example, Spain or the United States of America, it does not seem impractical to pursue this line of research. However, again, there will be economic and times costs associated. The economic costs would be reflected by the need to hire at least 2 additional researchers who should be fully dedicated to the task of finding the subjects of the sample. It is difficult to calculate the time cost associated to this task. In the case of this paper, the sample was a non-probability one based on convenience, where the subjects were contacted by word of mouth through friend's and acquaintance's acquaintances. The process took around 4 weeks. However, in the hypothetical case that the work started in this investigation was continued, the sample could be chosen in a more organized manner by connecting with the right contact in each organization (Human Resources? Line Managers? Department of Learning and Development?) who would facilitate the access to their employees.

Finally, another limitation to take into account would be the subjective nature of the results, as the perception of stress levels that people have might change over time. Cohen *et al.*, (1983) highlighted in their study how perception of stress levels might vary depending on daily hassles, major events and changes in coping resources, and how the validity of the tool could be diminished after a period of time from about 4 to 8 weeks. Therefore, it is advised to monitor the stress levels of the participants throughout an extended timeframe. This could be done by either administering the PSS-14 again every 8 weeks until the end of the investigation or by considering the use of a tool with a long-lasting predictive validity.

So in summary, if anyone decided to continue the same line of enquiry initiated on this paper, it would be recommended to: first, find a larger sample and also more varied (with larger

demographic characteristics and working in a wider range of industries) to make it more representative of the general population. Two extra researchers fully dedicated to it would be needed. After that, it is also suggested an adapted version of the CFNI for the Irish population be created, with the aim of overcoming the sociocultural differences with the sample in the United States from the original study. In order to do this, the two extra researchers already mentioned would also be fully dedicated to it. It would also be necessary to introduce more demographic variables and to be vigilant of the time linked subjectivity of the results.

On the positive side of things, one of the strengths of this research is that, due to its anonymous nature, there is less risk of social-desirability bias, which is the tendency by people to respond to the questions in a survey in a way that makes them look favourable in front of others, rather than responding accurately (Krumpal, 2013). Also, both the CFNI and the PSS -14 showed high levels of internal consistency in the past based on the results of the Cronbach alpha coefficient. These two points might encourage future researchers to use the same procedure and tools.

Additionally, another strength of this paper is its originality, due to the fact that there has not been a lot of research on the drivers behind the *glass ceiling effect*. So, although the hypotheses here suggested have not been verified for this particular population, it would be a good idea to continue this line of enquiry with other samples, such as, for example, females above the *glass ceiling effect*. What are the level of conformity to social norms and the levels of stress of females in higher positions?

Finally, it is important to highlight that the aim of this research when investigating if stress and conformity to feminine norms were drivers of the *glass ceiling effect*, was to find a way to repair that unequal situation, which is one of the manifestations of Gender Inequality. In order to do that, regardless of the possible causes, it is necessary that organizations undertake a number of actions.

A review of current policies (Efthymiou *et al.*, 2012) should be done to make sure that they are Gender Equality compliant. After that, under an inclusive and integral approach, a number of human resources gender-sensitive policies and processes should be first developed and then implemented in the workplace. One such policy would be based around the importance of family and community service to, for example, support females willing to go

back to work after maternity leave, and to be conscious of the fact that females' careers are not always linear (Shanmugam, 2017).

Other policies should be oriented towards identifying and eliminating the *glass ceiling effect*, such as pay equity policies, equal recruitment and selection policies, recruitment and outreach policies oriented towards gender equal candidate pools, or equal promotion policies (Fernandez and Campero, 2017; Javdani, 2015).

A policy focused on work-life balance would include flexible hours, the opportunity to work remotely and access part time positions (Adya, 2008); Also, policies are needed: to address job segregation encouraging females to work in non-traditional industries and positions (Fang and Sakellariou, 2015); to create awareness courses and events on gender equality, career paths and training programmes specific for females, especially in leadership; to facilitate information gathering practices about gender inequality in the workplace, female networks (already implemented by organizations such as General electrics, Johnson & Johnson or Lehman brothers); to provide workplaces with kindergarten and paternity leave policies (Kocabakac and Kalkan, 2015); and finally, to implement motivational tools specific for females (Lipinska-Globelny and Wasiak, 2010).

Conclusions

In light of the results of this investigation, it can only be concluded that there are no differences in the stress levels based on the levels of conformity of females working in the Technological Industry in Ireland, and that there are no differences between the levels of stress and conformity of female managers and non-managers working in the Technological Industry in this country. Therefore, it is not possible to say that stress and conformity to feminine norms are drivers of the *glass ceiling effect* for females in this industry in Ireland. These results are non-generalizable to the entire population as the sample was not representative enough.

It now feels necessary, that in order to be able to generalize the results to Irish Society, the development of further research in this area, covering not only females working in the Technological Industry but also Irish females working in other professional fields. To the

Clara Amarante
Master of Arts in Human Resource Management
Part Time
National College of Ireland

same end, it also feels necessary to take into consideration, when doing further investigation, a number of demographic variables (age, level of education, maternity, marital status, etc...) as well as the development of an Inventory measuring the conformity to feminine norms that is specifically adapted to the Irish population.

Finally, the fact that, in light of the results obtained, stress and conformity to feminine norms have been rejected as drivers of the *glass ceiling effect* it is even more important to keep investigating the roots of Gender Inequality, as understanding them could possibly be the only way to reduce that Inequality in the future. There are numerous studies showing its existence (Bosworth and Lee, 2017; O'Callaghan and Jackson, 2016; Fang and Sakellariou, 2015; Efthymiou *et al.*, 2012; Channar *et al.*, 2011), but not as many that focused on its drivers (Javdani, 2015) so it seems important to try and investigate now what barriers exactly are preventing females from advancing in their carriers and attaining higher positions. For example, Javdani (2015) suggested that the *glass ceiling effect* experienced by females comes from their segregation in lower-paying firms and how there is an efficiency wage model by which high-paying firms discriminate against females, that is, it comes from a glass door effect. Fernandez and Campero (2017) suggest that this issue has already commenced at the Recruitment and Selection process. Hence, what are the causes for that glass door effect or for the bias in the Recruitment process in the first place? There is a long way ahead where a lot of work needs to be done in researching both the drivers of Gender Inequality and how to prevent it, and also in implementing processes and procedures to put an end to the situation.

Personal Learning statement

The researcher, apart from the experience gained during the first year of the Masters, had little to very basic researching skills before the completion of this dissertation. During its completion the researcher learned how tedious and unpredictable the research process can be (no actions plans or deadlines seem to be effective), but also how it is extremely rewarding and enlightening at times too. Certain skills that were supposed to be some of the author's strengths, such as planning and organizational skills or time management, were tested to the limit. Unfortunately, other skills such as creativity and critical thinking, were not developed as much as was wished or were given the opportunity, throughout this investigation process,

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to flourish. This may have been a result of a number of external influences, in particular due to job requirements, but also because of personality traits, and family and social constraints.

And finally, some other skills, such as the management of vast amount of information, the prioritization of information based on its relevance and the identification of trustworthy information, which previously had been only utilised in the past during the first year of this Masters, were fully developed.

The researcher thankfully had the support of a supervisor, but still needed to acquire an independent learning style which they were not used to and there was a steep learning curve involved. However, it was also important to realize how necessary it is to be able to ask for help, and that that is not incompatible with having the certainty that one is capable of doing it.

Overall, this experience of composing a dissertation has been very challenging, specially the statistical side of it, for all the reasons already listed, and was time consuming, but also immensely enriching personally.

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Appendix

Information Sheet

First of all, I would like to thank you for agreeing to participate in this investigation.

Your participation will involve the completion of an Inventory and a Scale through Survey Monkey. You should have received a link to them through email.

This research is part of the final dissertation of my Masters in Human Resources. There is no intention of dissemination of the results, which won't be shared with anybody apart from my Supervisor and the Evaluation Board in the National College of Ireland.

Please note that both the Scale and the Inventory are anonymous. Please also note that the information will be codified in a computer where only myself will have access through private and personal credentials

The aim of this research is to comprehend if stress is one of the invisible causes behind the glass ceiling effect (invisible and unbreachable barriers impeding females being promoted) within the IT Industry. That is, to comprehend to what extent the participant's level of stress is stopping them from getting to higher positions. All participants are female and work within the IT Industry, these are the reasons why you have been asked to participate in this research.

Finally, please be aware that participation in the study is voluntary.

Please feel free to contact me if you have any further questions regarding the nature of the study. See contact details below.

claraamarante34@gmail.com

085 236 4898

Clara Amarante
Master of Arts in Human Resource Management
Part Time
National College of Ireland

Consent form

- I have had the purpose and nature of the study explained to me in writing and I have had the opportunity to ask questions about the study.
- I understand that participation involves the completion of a scale and an inventory.
- I understand that I will not benefit directly from participating in this research.
- I understand that all information I provide for this study will be treated confidentially.
- I understand that in any report on the results of this research my identity will remain anonymous as I did not provide my name on any documents and submitted both the questionnaire and the survey anonymously by email.
- I understand that signed consent forms and the results from my Scale and Inventory will be retained in Clara Amarante's private computer until [*the exam board confirms the results of my dissertation*].
- I understand that under freedom of information legislation I am entitled to access the information I have provided at any time while it is in storage as specified above.
- I understand that I am free to contact any of the people involved in the research to seek further clarification and information.

Compulsory box to be ticked by participants in order to be able to continue and that gave their consent to use their answers as part of the investigation

* 1. I understand all the above and would like to take part on the research

Yes

No

NEXT

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CFNI Instructions

Please read carefully

The following pages contain a series of statements about how people might think, feel or behave. The statements are designed to measure attitudes, beliefs, and behaviors associated with both traditional and non-traditional feminine gender roles. For example, the statements are about issues such as appearance, taking care of others, sexuality, and relationships.

Thinking about your own actions, feelings and beliefs, please indicate how much **you personally agree or disagree with each statement** by circling SD for "Strongly Disagree", D for "Disagree", A for "Agree", or SA for "Strongly agree" to the right of the statement.

EXAMPLE ITEM:

It is important to let people know they are special SD D A SA

Circle **SD** if you **strongly disagree** with the statement.

Circle **D** if you **disagree** with the statement.

Circle **A** if you **agree** with **agree** with the statement the statement, or

Circle **SA** if you **strongly**

There are no right or wrong responses to the statements. You should give the responses that most accurately describe your personal actions, feelings and beliefs. It is best if you respond with your first impression when answering.

1.	It is important to let people know they are special	SD	D	A	SA
2.	I would baby-sit for fun	SD	D	A	SA
3.	I would be happier if I was thinner	SD	D	A	SA
4.	I would feel extremely ashamed if I had many sexual partners	SD	D	A	SA
5.	I feel uncomfortable being singled out for praise	SD	D	A	SA
6.	When I am in a romantic relationship, I give it all my energy	SD	D	A	SA
7.	It is important to keep your living space clean	SD	D	A	SA
8.	I spend more than 30 minutes a day doing my hair and make-up	SD	D	A	SA
9.	Putting energy into friendships is a waste of time	SD	D	A	SA
10.	I participate in activities that include kids	SD	D	A	SA
11.	I don't tend to worry about gaining weight	SD	D	A	SA
12.	If I was single, I would want to date a lot of people	SD	D	A	SA
13.	Being mean gets you ahead in life	SD	D	A	SA
14.	I tell everyone about my accomplishments	SD	D	A	SA
15.	Whether I'm in one or not, romantic relationships are often on my mind	SD	D	A	SA
16.	I clean my home on a regular basis	SD	D	A	SA
17.	I feel attractive without makeup	SD	D	A	SA
18.	I believe that my friendships should be maintained at all costs	SD	D	A	SA
19.	I find children annoying	SD	D	A	SA
20.	Being thin is important	SD	D	A	SA
21.	I prefer long-term relationships to casual sexual ones	SD	D	A	SA
22.	There is nothing wrong with bragging	SD	D	A	SA
23.	I pity people who are single	SD	D	A	SA
24.	I am comfortable when my living space is a little cluttered	SD	D	A	SA
25.	I'd feel superficial if I wore make-up	SD	D	A	SA

26.	I feel good about myself when others know that I care about them	SD	D	A	SA
27.	Taking care of kids is just not for me	SD	D	A	SA
28.	I would only diet if a doctor ordered me to do so	SD	D	A	SA
29.	I would feel guilty if I had a one-night stand	SD	D	A	SA
30.	When I succeed, I tell my friends about it	SD	D	A	SA
31.	Having a romantic relationship is essential in life	SD	D	A	SA
32.	I enjoy spending time making my living space look nice	SD	D	A	SA
33.	Being nice to others is extremely important	SD	D	A	SA
34.	I regularly wear makeup	SD	D	A	SA
35.	I don't go out of my way to keep in touch with friends	SD	D	A	SA
36.	Most people enjoy children more than I do	SD	D	A	SA
37.	I would like to lose a few pounds	SD	D	A	SA
38.	It is impossible to always be nice to others	SD	D	A	SA
39.	It is not necessary to be in a committed relationship to have sex	SD	D	A	SA
40.	I hate telling people about my accomplishments	SD	D	A	SA
41.	I can be happy without being in a romantic relationship	SD	D	A	SA
42.	I haven't cleaned my living space in the past week	SD	D	A	SA
43.	I get ready in the morning without looking in the mirror very much	SD	D	A	SA
44.	I would feel burdened if I had to maintain a lot of friendships	SD	D	A	SA
45.	When I want to relax, I don't want to be around kids	SD	D	A	SA
46.	I tend to watch what I eat in order to stay thin	SD	D	A	SA
47.	I would feel comfortable having casual sex	SD	D	A	SA
48.	I make it a point to get together with my friends regularly	SD	D	A	SA
49.	I always downplay my achievements	SD	D	A	SA
50.	Being in a romantic relationship is important	SD	D	A	SA
51.	I don't care if my living space looks messy	SD	D	A	SA

52.	I never wear make-up	SD	D	A	SA
53.	I always try to make people feel special	SD	D	A	SA
54.	Caring for children adds meaning to one's life	SD	D	A	SA
55.	I'd look better if I put on a few pounds	SD	D	A	SA
56.	I frequently change sexual partners	SD	D	A	SA
57.	I am not afraid to tell people about my achievements	SD	D	A	SA
58.	My life plans do not rely on my having a romantic relationship	SD	D	A	SA
59.	I do all of the cleaning, cooking and decorating where I live	SD	D	A	SA
60.	It is important to look physically attractive in public	SD	D	A	SA
61.	If a friendship isn't working, I'll end it	SD	D	A	SA
62.	I would feel empty if my life did not involve children	SD	D	A	SA
63.	I try to be sweet and nice	SD	D	A	SA
64.	I am always trying to lose weight	SD	D	A	SA
65.	I would only have sex with the person I love	SD	D	A	SA
66.	I don't seek recognition for my efforts	SD	D	A	SA
67.	When I have a romantic relationship, I enjoy focusing my energies on it	SD	D	A	SA
68.	There is no point to cleaning because things will get dirty again	SD	D	A	SA
69.	I am not afraid to hurt people's feelings to get what I want	SD	D	A	SA
70.	Taking care of children is extremely fulfilling	SD	D	A	SA
71.	I would be perfectly happy with myself even if I gained weight	SD	D	A	SA
72.	It would be enjoyable to date more than one person at a time	SD	D	A	SA
73.	I enjoy being in the spotlight	SD	D	A	SA
74.	If I were single, my life would be complete without a partner	SD	D	A	SA
75.	I rarely go out of my way to act nice	SD	D	A	SA
76.	I actively avoid children	SD	D	A	SA
77.	I am terrified of gaining weight	SD	D	A	SA

78.	I would only have sex if I was in a committed relationship like marriage	SD	D	A	SA
79.	I am only nice to people I like	SD	D	A	SA
80.	I like being around children	SD	D	A	SA
81.	I tend to eat whatever I want	SD	D	A	SA
82.	I don't feel guilty if I lose contact with a friend	SD	D	A	SA
83.	I feel uneasy around children	SD	D	A	SA
84.	I would be ashamed if someone thought I was mean	SD	D	A	SA

Please check to make sure you have answered all the items

PSS-14

INSTRUCTIONS:

The questions in this scale ask you about your feelings and thoughts during **THE LAST MONTH**. In each case, you will be asked to indicate your response by placing an "X" over the circle representing **HOW OFTEN** you felt or thought a certain way. Although some of the questions are similar, there are differences between them and you should treat each one as a separate question. The best approach is to answer fairly quickly. That is, don't try to count up the number of times you felt a particular way, but rather indicate the alternative that seems like a reasonable estimate.

	Never	Almost Never	Sometimes	Fairly Often	Very Often
	0	1	2	3	4
1. In the last month, how often have you been upset because of something that happened unexpectedly?	<input type="radio"/>				
2. In the last month, how often have you felt that you were unable to control the important things in your life?	<input type="radio"/>				
3. In the last month, how often have you felt nervous and "stressed"?	<input type="radio"/>				
4. In the last month, how often have you dealt successfully with day to day problems and annoyances?	<input type="radio"/>				
5. In the last month, how often have you felt that you were effectively coping with important changes that were occurring in your life?	<input type="radio"/>				
6. In the last month, how often have you felt confident about your ability to handle your personal problems?	<input type="radio"/>				
7. In the last month, how often have you felt that things were going your way?	<input type="radio"/>				

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| 8. In the last month, how often have you found that you could not cope with all the things that you had to do? | <input type="radio"/> |
| 9. In the last month, how often have you been able to control irritations in your life? | <input type="radio"/> |
| 10. In the last month, how often have you felt that you were on top of things? | <input type="radio"/> |
| 11. In the last month, how often have you been angered because of things that happened that were outside of your control? | <input type="radio"/> |
| 12. In the last month, how often have you found yourself thinking about things that you have to accomplish? | <input type="radio"/> |
| 13. In the last month, how often have you been able to control the way you spend your time? | <input type="radio"/> |
| 14. In the last month, how often have you felt difficulties were piling up so high that you could not overcome them? | <input type="radio"/> |