

The Impact of Gender Stereotype on Women's Career Choice and Relevant Factors

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Abstract: Women have always been treated unfairly in society because of their gender. Society often has biases on the working and studying ability of female. Gender stereotype, which is the origin of these bias, may significantly affect behavior and cognition of women. This suggested that the fact of women and men showed different career patterns might be influenced by gender stereotypes. These types of biases are not only explicit, but also can be implicitly associated to people's mind. Both explicit and implicit stereotypes may cause negative impacts on career choices of women, as women might believe themselves as untalented in specific fields, which are referred to the masculine fields. People live in a social world, so that when they betray the gender stereotype, they might feel threatened on their social identity. Although gender stereotypes may all have negative effects towards all women's selection of career, the impacts can have a variety of extents under different conditions. Most previous studies mentioned in this report are cross-sectional studies and did not include interventions. Therefore, the comparison between distinct influential factors and the dynamic changes of stereotype across different periods remain unclear. In future research, longitudinal and intervention studies should be conducted to further understand the negative impacts of gender stereotype.

Keywords: gender stereotype, career choice, stereotype threat

1. Introduction

Gender stereotype is permeated society and showed significant effect on selection and cognition of public. Gender stereotype means the reflection of general expectations about men and women as a binary categorization [1-2]. It was caused by biological difference between men and women. Level of oxytocin and other hormone and different body strength could both affect behaviour. Men are judged by task performance in society more compared to women. Social roles of women are put into greater emphasis than men, for example being a wife, or being a mom. However, there are some individual men and women who show reversed trend, and the general conclusion is not suitable for them. Moreover, there is no evidence that there is any difference between the brain structure of men and women, and the level of increase in hormones in both male and female infants is same six months after birth [1].

Even though there is no significant evidence to explain of gender difference, most people still use gender stereotypes to classify others. It is simple and efficient to utilize gender stereotypes to estimate the behaviour of unknown individuals and to understand the difference of large groups from others.

However, gender stereotype would reinforce perceived boundaries between genders and influence the judgement of ability of men and women. Under gender stereotypes, female students are considered that they have less talent than male students in science areas, even though they have better grades. This would cause an environment with low self-confidence in women under educational contexts, as they are always seen unexcelled to professional areas. This would not only change the potential social judgements to studying and working ability of male and female, but also influence the evaluation they actually get, which means the career development of men and women would be significantly affected [1]. Women might be discriminated as incapable and not competent to do the science and profession related jobs, therefore the opportunities for prestigious positions and promotions would be less for women than men. Previous study suggested that former statement is the main reason why women have lower incomes than men, which is the discrimination caused by gender stereotypes from job market.

Performance in the fields of science and business might be impacted by the gender stereotype belief. For example, men are considered as better risk takers in general expectation than women [2]. Most positions with high salary were believed as man-suitable jobs, which cause less women to set these careers as their future goals when they were young. Moreover, it is hard for them to change their mind after deciding their career goals, because a large amount of time is needed to learn professional knowledge and practice to get relevant experiences. Even though women changed their mind when they got rid of gender stereotype, they have no time and energy to start all over again but stay in the initially decided career. Few scholars analyzed the effect of gender stereotype from the perspective of women on career choice. Therefore, this review will analyze the effect of gender stereotype on career selection of women. The aim is to investigate the relationship between career choice and gender stereotype belief within women themselves, through an analysis of data from previous research.

2. The Overall Association between Gender Stereotype and Choice of Major

2.1. The Effects of Gender Stereotype and Stereotype Threat

Implicit associations included unconscious biases in the society, which will influence the first impression to a person and cause stereotype. This could enhance the large obstacle that prevent the closing of the gender gap. For example, under implicit associations, women were considered as less talented unconsciously in gender, science, technology, engineering, and mathematics (STEM) fields. This means the negative implicit associations will cause gender stereotype to influence women's choice to field and career. Dunlap and Barth investigated whether STEM will be affected by implicit associations of women, which use 240 college female students that half of them studied in STEM majors and the others studied in female-dominated majors (FDMs) as sample, by using an online test [3]. The test of gender-career and career identity Implicit Associations Test (IAT) was developed to measure participants' implicit association between gender identity and career choice. Participants were required to categorize careers to male-science career or female person career, and science career or person career. According to this study, implicit associations play a significant role in influencing college major decisions. Interest in STEM and exposure to STEM activities may also have an impact on these implicit associations and related major choices. Moreover, this study clearly demonstrates differences in personal identification with STEM fields among women. would be considered first the results for career identity, the work of social identity and stereotype threat theorists. The choice of women to pursue and persist in a STEM career is influenced by implicit STEM identities and gender-STEM career associations. This persistence can be attributed to pre-existing associations, which can expand current knowledge and have implications for improving efforts that examine these factors starting in elementary school [3].

As the effect of stereotype caused by implicit associations to career and fields choice was determined, gender stereotype has been separated to two branches: self-stereotype and stereotype by others. Self-stereotype would be caused by implicit belief, which means the belief of oneself will affect his or her behaviour. For example, women might consider themselves as less talented on STEM field and not choose STEM area jobs and professions. This study was conducted by Dunlap and Barth, which was about career stereotypes and identities within women to themselves [4]. The study investigated implicit beliefs within oneself and major choice for college students in STEM and female-dominated Fields by using self-report. The sample was 117 college STEM or FDMs majored women and their partners in romantic relationship whether majored in STEM or not, Participants were told to categorize careers into self, other, science and person career. Higher positive scores mean weaker stereotypical associations. More stereotypical would show on females in FDMs, compared to male STEM majors. The couple major group was the most relevant effect. This study supports the idea that the career selection of talented individuals, were linked to implicit associations related to STEM, especially for women. Both males and females significantly showed beliefs that their majoring STEM fields have strong associations with the field they chosen and themselves. Although this study has conducted over a year, the time is not enough to alter male's implicit beliefs about STEM majoring and future career. Therefore, implicit belief will affect women and men's career choice significantly as they all chose the professions that they believed have strong connection and suitability to them, and it is difficult to change their mind [4].

The strong relationship between stereotype and field choice may because of the negative effect of stereotype threat. Stereotype threat refers to the risk of confirming negative stereotypes, which would create high cognitive load and reduce academic focus and performance. Petzel and Casad conducted a study about the negative effect of risk-taking on stereotype threat, in a sample of 1013 STEM undergraduate students from two universities [5]. In study 1, self-report that was several rating scales was used to investigate several aspects: demographics, risk-taking, math and science attitudes, math and science expectations, Sense of belonging, commitment to STEM career, self-esteem, challenge and threat appraisals, stereotype vulnerability, gender identity, and self-efficacy. Study 1 revealed higher risk-taking of men compared to women. In study 2, participants were asked to finish several tests, included math tests and self-report of difficulty of math tests. In study 1, women reported lower risk-taking compared to men, which is consistent with past research. This suggested that women with high risk-taking could receive less effect of gender stereotype. There is a contradictory result in study 2 compared to previous research. The interaction between risk-taking and condition is significant, with stereotype threat that elicit cardiovascular challenge states among women higher in risk-taking. This indicates that female can take more risks that might exhibit beneficial cardiovascular caused by stereotype threat. Therefore, although women are considered to be more likely to avoid risks than men, risk-taking showed strong connection to positive academic among women in STEM [5].

As the determinization of buffering of stereotype threat by risk-taking, the influence of stereotype threat on perceptions of STEM would need to be further studied. In this study, Fordham, Ratan, Huang and Silva investigated the relationship between stereotype threat and video game context and perceptions of STEM, in a sample of a group of female students who have an average age of 21.47 years, by using questionnaires and tests [6]. The questionnaire was used contained an open-ended question about the study's purpose. A first-person shooter game was played by participants and several aspects were measured: In-game performance (player's kill-to-death ratio), gaming efficacy (measured on a Likert-type scale), and gaming hours. This study suggested that the gender-related stereotype threat significantly affected the gaming context that may extend into gendered perceptions of STEM fields. This showed that the prevalence of gender stereotyping in the game context has the effect on STEM fields gender disparity, scilicet, women's underrepresentation of in game contexts caused underrepresentation of STEM of women. Moreover, using of an avatar with high identity

salience will increase in game performance for both males and females, which means although the stereotype threat related expectations were not showed, the effect of stereotypes also be reflected, although the positive direction is for men players. According to this study, the effect of stereotypes threat is significant on player performance within context, which could reflect the increasing of acceptance of stereotype-consistent attitudes about STEM [6].

2.2. Cultural Differences of the Association

Different cultural environments might impact the effect of gender stereotype on career choices to a different extent, as various beliefs towards women would occur in different regions. This concept could be explained by regional traditional gender stereotypes, which means an obsolete concept causing harm and limitation to a certain group in a specific region. For example, in regions with strong regional traditional gender stereotype, women showing their hair and skin will be considered as unwomanly and profligate. Goedderz and Calanchini conducted a study, which is about the representation of women in the workforce and regional traditional gender stereotypes in a sample of women in 45 countries across five continents, by using data from self-report [7]. The data of regional traditional gender stereotypes was collected from survey, which had a strongly positive correlation. This study suggested that the representation of women in the workforce, particularly in managerial positions, was negatively impacted by regional traditional gender stereotypes. Moreover, this finding was similar with previous work in 2005 and 2015, which indicated that even 10-20 years later, regional gender stereotypes are still significant reason of the employment gap. One surprised finding is that regional traditional gender stereotypes had no correlation to parental policies, which means there was on reflection of floor effects in the case of mothers with varied parental leave. Therefore, regional traditional gender stereotypes significantly affected gender employment gap. Women have less opportunity to represent in the workforces of countries in which people more strongly associates careers with male and family with female [7].

3. Relevant Factors and the Impacts

Gender belief included gender disparities, gender identity and gender typicality, to combine these biases as an unconsciously cognitive gender difference. Gender disparities is the difference in society between men and women caused by gender bias and discrimination in certain field. For example, less women chose to study STEM majors than men. Moreover, gender identity is the behaviour that people believe is what been expected from their gender, as men should act in masculine ways and opposite way for women. Gender typicality suggested that people will do behaviours that they believe is typical and as same as other with same gender. Pownall and Heflick evaluated the effect of gender belief on degree disparities using online questionnaires to identify their gender, academic subject, and gender typicality in 171 male and female undergraduate students studying for a mathematics degree or psychology degree at UK institutions [8]. The gender, subject studying, and eight dependent variables in questionnaire (attainment, gender-role contentedness, gender typicality, stereotype endorsement in math and psychology, and be sex role inventory of feminine, masculine, and neutral of sample) were measured. It was found that females chosen either psychology or mathematics have different patterns of masculinity and femininity, which is women who study psychology degree has higher rate in femininity compared to low masculinity students who studying in math. For men, students who studying in psychology had more femininity when they had high masculinity and moderate masculinity, but not at low masculinity. However, difference with previous research shown that both men and women have no straightforward difference in gender beliefs either they are studying psychology or mathematics. This study indicates that although psychology students have higher femininity rate, women femininity was only higher at low levels of masculinity, men scored higher

on feminine traits only if they were also high in masculinity. Thus, the result suggested that different pattern of gender belief will contribute to women's career choice and major choice, but some of these effect of gender beliefs is not related to men [8].

Fear towards punishment might be another significant influence of gender stereotype, which could link to stereotype threat. The negative stereotype will cause negative evaluation to a task. This might be associated with the level of fear towards punishment as women who evaluated negatively under stereotype, they may have different action because of various level of fear to punishment. Moya and Expósito evaluated the effects of gender stereotype on sensitivity to punishment and fear of negative evaluation in a sample of 110 undergraduate psychology students from the University of Granada took part in the study voluntarily and without financial compensation by using questionnaires [9]. The dependent variable was Iowa Gambling Task (IGT) total score, and the moderators were sensitivity to punishment and fear of negative evaluation (FNE). This study showed that under a stereotype threat condition, females will score lower on the IGT than others, which suggested women make more disadvantageous risk decisions than men. This also means women under stereotype condition are less willing to take risks than men under same conditions. Women have stated that they will monitor their performance as a result. It was found in the results that women with higher FNE scores will have a lower IGT score than others, which suggests that they made more risky choices while being fearful to be evaluated. However, study showed that people high in FNE has greater difficulty to perform tasks effectively and a tendency to make less risky decisions. Therefore, the stereotype threat seems to be a trigger to activate the fear of being negatively evaluated by others [9].

For example, women who have never had children would receive negative impression in employment, because they are considered that they might take a career break in order to have children. The violation of gender stereotype might create guilt. Aarntzen, Derks, Steenbergen and Lippe investigate the relationship between internalized gender stereotypes and guilt level in working parents, in a sample of 135 mothers and 116 fathers in study 1 which used a questionnaire, and 105 mothers in study 2 which using a longitudinal study and questionnaire [10]. In study 1, participants were told to imagine a work-to-family conflict (WFC) situation and state the level of guilt on a scale, which had a result of high mean on guilt. In study 2, a questionnaire about background characteristics were assessed in 5 minutes in first day and a 5-minute online survey about level of guilt each day during experiment through a 5-point rating scale. Through study 2, the results were that women associated more with family and men associated more with work. Study 1 suggested that when under WFC condition, father with more traditional implicit gender stereotypes will fell less guilty than fathers with egalitarian gender stereotypes did, which had no difference with mothers. Furthermore, study 2 suggested that mothers have different understandings of an objectively similar workday, which depends on how much they implicitly associate women with childcare and work. When examining real-life day-to-day fluctuations, there is a connection between mothers' implicit gender stereotypes and their feelings of guilt from WFC. According to these findings, gender stereotypes regarding work, such as men being the primary breadwinners or women being the primary caregivers, influence the cognition and behaviour of both fathers and mothers [10].

4. Conclusion

In summary, gender stereotypes are significantly influential in women's career choice. These influences were from within and surrounding environmental biases, and from education to the job market as a chain reaction. Previous findings suggested that higher risk-taking ability will buffer the level of gender stereotype, because the fear towards punishment would be lightened. As the higher fear towards punishment is, the effect of gender stereotype on career choices would increase. Moreover, gender belief is a significant factor that affects gender stereotype as people may feel guilty when they do not follow the gender stereotype and belief. In different regions, although different level

and effect of gender stereotype on career choices would occur because of various cultures, the influence of gender stereotype is observed in all of the regions being studied.

The studies included in this report most are cross-sectional studies rather than longitudinal studies, so the change through long-term period cannot be seen. For example, the influence on a group of stereotypes in different periods cannot be studied. This means the effect of time and different types of stereotypes are not able to be investigated. Furthermore, these studies are not intervention studies and had no controls. This means the difference between each gender stereotype and each factor cannot be studied, which are not able to suggest which stereotype has more influential and can be caused by which factor. In future research, longitudinal study should be conducted to see the changes of stereotype over time, which could provide a better understanding of changes of stereotype in one individual in the growth process. Moreover, the interventional study should be conducted either to make comparison between each type of stereotype on career choices or to rank the contribution of various influential factors of gender stereotype. This could help the advancement of research on gender stereotype and equality, to provide better growth and employment environment to women.

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