



# *JOURNAL OF THE ACADEMIC SOCIETY FOR QUALITY OF LIFE (JAS4QoL)*

2017 VOL. 3(3) 2:1-10

## PSYCHOLOGICAL DETERMINANTS OF OCCUPATIONAL GENDER DIVISION: A STUDY FOCUSING ON GENDER STEREOTYPES AND SELF- EFFICACY

Tomoko ADACHI

Department of Human Sciences, Osaka Kyoiku University, 4-698-1, Asahigaoka, Kashiwara-shi, Osaka, Japan  
[adako@cc.osaka-kyoiku.ac.jp](mailto:adako@cc.osaka-kyoiku.ac.jp)

---

Citation: ADACHI, T. Psychological Determinants of Occupational Gender Division: A Study Focusing on Gender Stereotypes and Self-Efficacy *JAS4QoL* **2017**, 3(3) 2:1-10.

Online: <http://as4qol.org/?p=2019#art2>

Received Date: 2017/08/22 Accepted Date: 2017/09/29 Published: 2017/09/30

---

### **ANNOUNCEMENT**

- The 2017 International Conference on Quality of Life was held in Penang Malaysia on August 20<sup>th</sup>-21<sup>st</sup>.
- Proceedings as well as photos and other information from past conferences can be found on our website.

MORE INFORMATION AT [HTTP://AS4QOL.ORG/ICQOL/2017/](http://AS4QOL.ORG/ICQOL/2017/)

---

### **ALSO OF INTEREST IN THIS ISSUE:**

Role of Community Pharmacists in Medication Management: Current and Future Prospects in Asia

Mohamed Azmi Ahmad HASSALI

AVAILABLE AT [HTTP://AS4QOL.ORG](http://AS4QOL.ORG)



# Psychological Determinants of Occupational Gender Division: A Study Focusing on Gender Stereotypes and Self-Efficacy

Tomoko ADACHI

Department of Human Sciences, Osaka Kyoiku University, 4-698-1, Asahigaoka, Kashiwara-shi, Osaka, Japan ([adako@cc.osaka-kyoiku.ac.jp](mailto:adako@cc.osaka-kyoiku.ac.jp))

## Abstract

Psychological mechanisms of occupational gender divisions in Japan were investigated. Relationships among ratios of men to women in employees, as well as gender differences in stereotypes, gender role identities, and self-efficacy were examined in Japanese youth ( $n = 720$ , Mean age 21.66 years;  $SD = 1.07$ ). Both men and women had stereotypical perceptions that identified occupations employing more men as masculine, more women as feminine, and occupations with less gender gap as gender neutral. Comparing self-efficacy scores indicated that men had higher self-efficacy than women for male-dominated occupations, whereas women had higher self-efficacy than men for female-dominated occupations. Results of hierarchical multiple regression analyses suggested that a combination of masculine and feminine gender role identities had beneficial effects on self-efficacy for a wider range of occupations, with masculine identity exerting a more powerful influence. Implications for vocational and educational interventions focusing on gender stereotypes and gender role identity were discussed.

**Keywords:** gender; stereotypes; career self-efficacy; gender role identity

---

Citation: ADACHI, T. Psychological Determinants of Occupational Gender Division: A Study Focusing on Gender Stereotypes and Self-Efficacy. *JAS4QoL* 2017, 3(3) 2:1-10.

Available online at  
<http://as4qol.org/?p=2019#art2>

Received: 2017/08/22  
Accepted: 2017/09/29  
Published: 2017/09/30

©2016 JAS4QoL [as4qol.org](http://as4qol.org)

---

## 1. Introduction

Much progress has been made in recent years in bridging the gender gap. However, occupational gender divisions still remain in contemporary Japanese society. Women gain nearly equal access as their male counterparts to education, but nevertheless, they remain underrepresented in traditionally male-dominated occupations such as engineers, university professors, and aircraft pilots (Ministry of Health, Labour, and Welfare 2016). Gender imbalances are not limited to the underrepresentation of women in male-dominated occupations, but conventionally female-dominated occupations such as flight attendants, kindergarten teachers, and dietitians have less than 10% of male employees (Ministry of Health, Labour, and Welfare 2016). As indicated by these labour statistics, people face gender-based barriers even today because only a limited degree of gender mobility has been achieved. This study inves-

tigated the deep-rooted occupational gender divisions in the Japanese labour market using psychological concepts including gender stereotypes, self-efficacy, gender role identity, and gender role attitudes.

### **1.1 Gender Ratio and Stereotype Formation**

Gender stereotypes are over-generalized beliefs about gender that are differentially related to men and women (Williams & Best 1982; Williams, Satterwhite & Best 1999). For instance, men are expected to be independent, decisive, good at math, and breadwinners, whereas, women are regarded as dependent, talkative, considerate and responsible for household work. People also apply these stereotypical views to occupations by expecting men to pursue male-dominated careers and expecting women to pursue female-dominated careers. Even elementary school children make gender-specific interpretations about occupations, implying that children have already acquired a well-developed knowledge about relationships between occupation and gender (Liben, Bigler & Krogh 2002). These gendered ideas about occupations are preserved even in adults, such that both men and women possess definite opinions about which occupations are associated with which gender (Oswald 2003).

Krefting, Berger and Wallace (1978) explored determinants of occupational gender stereotypes and reported that jobholders' gender was the best predictor of stereotypes and that people regard the predominant gender of employees in a particular profession as the appropriate gender for holders of that occupation, whereas the job content of an occupation made a unique, but only a small contribution to the formation of stereotypes. Similarly, masculine versus feminine occupational images reflect the proportions of male and female jobholders (Glick, Wilk & Perreault 1995). Moreover, female to male ratio had a significant impact on occupational stereotypes, whereas other factors such as earnings, working hours, and average age has a minimum impact (Adachi 2013).

These results suggest that people create occupational gender stereotypes based on the dominant gender of jobholders, which in turn results in choosing career alternatives that are congruent with existing gender stereotypes. To understand this better, the relationship between the dominant gender of jobholders in an occupation and gender stereotypes was investigated by comparing gender balanced and unbalanced occupations. Also, the effect of gender stereotypes in gender neutral occupations having less pronounced gender differences in jobholders was also examined.

### **1.2 Self-efficacy**

Self-efficacy is defined as a person's beliefs about his or her abilities to successfully perform designated behaviours (Bandura 1977). Since the introduction of this concept into the field of career research by Betz and Hackett (1981) and Hackett and Betz (1981), numerous studies have regarded self-efficacy as a core concept in understanding and facilitating career development among different populations (Betz 2004). Current findings on the role of self-efficacy in career decision making indicate a relationship between self-efficacy and managerial ambitions (Annelies 1999), occupational considerations (Gore & Leuwerke 2000), and interests (Rottinghaus, Larson & Borgen 2003). Also, a number of studies have demonstrated the critical role of self-efficacy in understanding the disproportionate distribution of men and women in different occupations.

Some studies have highlighted detrimental effects of gender stereotypes on self-efficacy. For instance, Lerdpornkulrat, Koul and Sujivorakul (2012) indicated that the endorsement of stereotypes such as men are better than women in physics has a negative impact on self-efficacy among female students. Moreover, Sweida and Reichar (2013) found that female entrepreneurs have to contend with embedded masculine gender stereotypes even today and that the activation of gender stereotypes lowers self-efficacy of entrepreneurs. On another note, a study conducted by Muldoon and Reilly (2003) reported the negative effect of gender stereotypes among men, by demonstrating that the stereotype of nursing as a career better suited for women acted as a barrier for male nursing students. As a result, they argued that gender stereotype could be one reason why female-dominated professions fail to attract more men. Most studies investigating relationships between gender stereotypes and self-efficacy have focused on specific occupational fields, without including different occupational alternatives. Therefore, this study was designed to investigate relationships between self-efficacy and the ratio of men to women in a wide range of occupational fields.

### **1.3 Gender Role Identity and Gender Role Attitudes**

It is important to consider the socio-psychological and biological aspects of gender when examining gender differences in career development. Bem (1974) first proposed the idea of psychological androgyny, defined as having high scores for both masculine and feminine gender role identities. In a study conducted in 1975, Bem reported that androgynous people displayed situationally effective behaviours across masculine and feminine type of situations. This suggests that the combination of masculine and feminine gender role identities increases adaptability to a wide range of occupational settings. Subsequent studies have explored the role of masculinity and femininity in explaining gender differences in careers. Muldoon and Reilly (2003) for example confirmed the central role of gender role identity by demonstrating that psychologically androgynous students had broader occupational horizons and were least affected by gender stereotypes. Ngo, Foley, Shuang and Loi (2014) compared effects of masculine and feminine roles in career success. Their study highlighted the central function of masculinity, which exerted strong and positive effects on self-efficacy, whereas femininity had a less significant effect. Hence, it is possible that combinations of masculine and feminine gender role identities have positive effects on career self-efficacy, with masculine identity exerting a more powerful influence.

The concept of gender role attitudes provides more information regarding gender differences in career self-efficacy. Gender role attitudes are described as beliefs and expectations about what is acceptable and appropriate in society for men and women to do (Chatterjee & McCarrey 1991). Its effects on the career decision process have been well documented. For instance, egalitarian attitudes toward women's rights, roles, and privileges are known to increase confidence in managing obstacles to career exploration and to exert a positive impact on self-efficacy for engaging in behaviours necessary for career development (Gushue & Whitson 2006). Moreover, it has been reported that male students contribute to traditional perceptions of gender roles and that these traditional gender role attitudes result in an unwillingness to become early childhood educators, which is a traditionally female-dominated occupation (Rentzou 2013). A recent study conducted with Japanese students has reported that effects of gender stereotypes on self-efficacy differed according to gender role attitudes, such that gender role attitudes served as a moderator neutralizing the effects of stereotypic occupational concepts (Adachi 2014). Taking these findings into consideration, it was predicted that egalitarian or androgynous gender role identities would expand possible career alternatives for men and women, whereas a traditional gender role identities and attitudes would be expected to narrow their potential.

### **1.4 Purposes**

This study was designed to assess degree of occupational self-efficacy and examine its predictive validity after considering the effects of gender stereotypes, gender identity and gender role attitudes. The following hypotheses were tested. Hypothesis 1: Men and women would recognize male-dominated occupations as being masculine and female-dominated occupations as being feminine, whereas, gender neutral occupations would have no gender stereotypes. Hypothesis 2: Men and women would have lower self-efficacy for opposite gender dominated professions, whereas no gender differences would be observed for gender neutral occupations. Hypothesis 3: Gender role identity and gender role attitudes would explain unique variations in self-efficacy above and beyond the effects of gender and gender stereotypes.

## **2. Methods**

### **2.1 Participants**

Japanese youth aged between 20 and 23 years who were registered as survey monitors with an internet survey company were invited to participate in an online survey. All survey procedures were in accordance with the Helsinki Declaration of 1975, as revised in 2008. Valid responses were obtained from 720 people (360 men and 360 women, mean age 21.66 years (SD=1.07). They gained points by completing the questionnaires, which could later be exchanged for money. Of the participants, 60% were university students, 28.9% were employed and 11.1% were unemployed.

## 2.2 Instruments

### *a) Occupational titles*

Thirty occupational names were adopted from Adachi (2013). Ten were male-dominated occupations with 30% more male jobholders than women, including carpenters, system engineers, janitors, and college and university professors, whereas ten were female-dominated professions with 30 % more female jobholders than men, including salesclerks, dietitians, and kindergarten teaches. The remaining ten occupations were gender neutral having a gender difference among jobholders of less than 30%, such as physical therapists, occupational therapists, pharmacists, and insurance agents.

### *b) Occupational gender stereotypes*

Participants indicated their gender stereotypes regarding the 30 occupations on a 5-point rating scale ranging from 1 (very masculine) to 5 (very feminine). The alpha coefficients for ratings in this study were 0.88 for male-dominated occupations, 0.53 for gender neutral occupations, and 0.82 for female-dominated occupations.

### *c) Occupational Self-efficacy*

Participants indicated their confidence about successfully engaging in each of the 30 occupations using a 5-point rating scale ranging from 1 (no confidence at all) to 5 (very confident). The reliability coefficients in this study were 0.90 for male-dominated occupations, 0.84 for gender neutral occupations, and 0.85 for female-dominated occupations.

### *d) Gender role identity*

Twenty items on masculinity (e.g. self-reliant, analytical, and acts as a leader), and 20 items on femininity (e.g. cheerful, sensitive to other's needs, and tender) were adopted from the Japanese translation (Azuma 1991) of Bem Sex Role Inventory (Bem 1974). Participants indicated how well each item described them using a 7-point rating scale ranging from 1(never true) to 7(very true). Azuma (1991) has reported internal consistency of 0.87 for the masculinity scale and 0.84 for the femininity scale. The coefficient alpha in this study was 0.92 for the masculinity scale and 0.93 for the femininity scale.

### *e) Egalitarian gender role attitudes*

Short form of the Scale of Egalitarian Sex Role Attitudes (SESRA-S: Suzuki 1994) containing 15 items, which is a shortened version of the original 40 item scale was used. A sample item on the form is, "Domestic duties should be shared by man and woman." Participants indicated their attitudes about each item on a 5-point rating scale ranging from 1 (strongly disagree) to 5 (strongly agree), such that a higher score reflected more egalitarian and a lower score reflected more traditional gender role attitudes. The internal consistency of the scale reported by Suzuki was .91 and that of this study was 0.83.

## 3. Data Analyses

First, mean scores for occupational gender stereotypes and self-efficacy for male-dominated, female-dominated, and gender neutral occupations, gender role identity (masculinity, femininity) and gender role attitudes were computed. Subsequently, mixed-design ANOVAs using a 2 (gender)  $\times$  3 (occupational gender dominance) were performed on occupational gender stereotypes and occupational self-efficacy to test Hypotheses 1 and 2. Thirdly, to test Hypothesis 3, three steps hierarchical multiple regression analyses were conducted with self-efficacy for each male-dominated, female-dominated, and gender neutral filed as a dependent variable. Participant's gender was entered at the first step, then gender stereotypes for each male-dominated, female-dominated, and gender neutral occupation was entered at the second step, and lastly, gender role identity and gender role attitudes were entered at the third step to examine the unique contribution of gender role identity after controlling for the contribution of occupational gender stereotypes.

Table 1. Descriptive Statistics and Correlations between Variables

	1	2	3	4	5	6	7	8	9	10
1. Gender	—									
2. Stereotypes for male-dominated field	-.13 **	—								
3. Stereotypes for gender neutral field	-.02	.06	—							
4. Stereotypes for female-dominated field	.10 **	-.54 ***	.54 ***	—						
5. Masculinity	-.11 **	.12 **	.20 ***	.09 *	—					
6. Femininity	.10 **	-.03	.18 ***	.22 ***	.56 ***	—				
7. Egalitarian gender role attitudes	.21 ***	-.04	-.04	-.02	-.08 *	-.04	—			
8. Self efficacy for male-dominated field	-.33 ***	.28 ***	.10 **	-.10 **	.44 ***	.22 ***	-.09 *	—		
9. Self Efficacy gender neutral field	-.02	.10 **	.16 ***	.08 *	.46 ***	.44 ***	.02	.76 ***	—	
10. Self Efficacy for female-dominated field	.10 **	.11 **	.12 **	.04	.44 ***	.47 ***	.06	.65 ***	.88 ***	—
$\alpha$	—	.88	.53	.82	.92	.93	.83	.90	.84	.85
Mean	1.50	2.05	3.03	3.67	3.85	4.17	3.33	2.52	2.87	2.79
SD	0.50	0.53	0.33	0.52	0.93	0.89	0.53	0.82	0.72	0.73

Note: gender 1=male, 2=female \*\*  $p < .01$ , \*\*\*  $p < .001$

## 4. Results

### 4.1 Preliminary Analyses

The mean, standard deviation, and correlations between variables that were investigated are presented in Table 1. Gender stereotypes and self-efficacy were moderately correlated in male-dominated occupations ( $r=.28$ ) and less correlated in gender neutral occupations ( $r=.16$ ), whereas no significant relationship was found for female-dominated occupations. Moreover, masculinity and femininity were moderately correlated with self-efficacy for all three types of occupations (ranged from  $r=.44$  to  $r=.47$ ), with the exception of a weak relationship between femininity and male-dominated occupations ( $r=.22$ ). Egalitarian gender role attitudes did not show any significant relationships with self-efficacy (ranged from  $r=.02$  to  $r=.09$ ), and consequently, it was deleted from the regression analyses described below.

### 4.2 Comparison of stereotype scores

Mixed-design ANOVAs were performed for occupational gender stereotypes and occupational self-efficacy for male-dominated, female-dominated, and gender neutral occupations using a 2 (gender)  $\times$  3 (occupational gender dominance) design; with occupational gender dominance as a within-subjects factor. A significant interaction was observed for occupational gender stereotypes,  $F(2, 1436) = 11.03$ ,  $p < .001$ . Results of simple main effect tests indicated significant effects of occupational gender dominance for men and women. Multiple comparisons revealed that stereotype scores for female-dominated professions (male  $M=3.62$ ; female  $M=3.73$ ) were higher than for gender neutral occupations (male  $M=3.04$ ; female  $M=3.03$ ). Moreover, scores for male-dominated (male  $M=2.12$ ; female  $M=1.99$ ) and gender neutral occupations were significantly higher than for male-dominated occupations, indicating that both men and women perceived male-dominated occupations as masculine, and female-dominated professions as

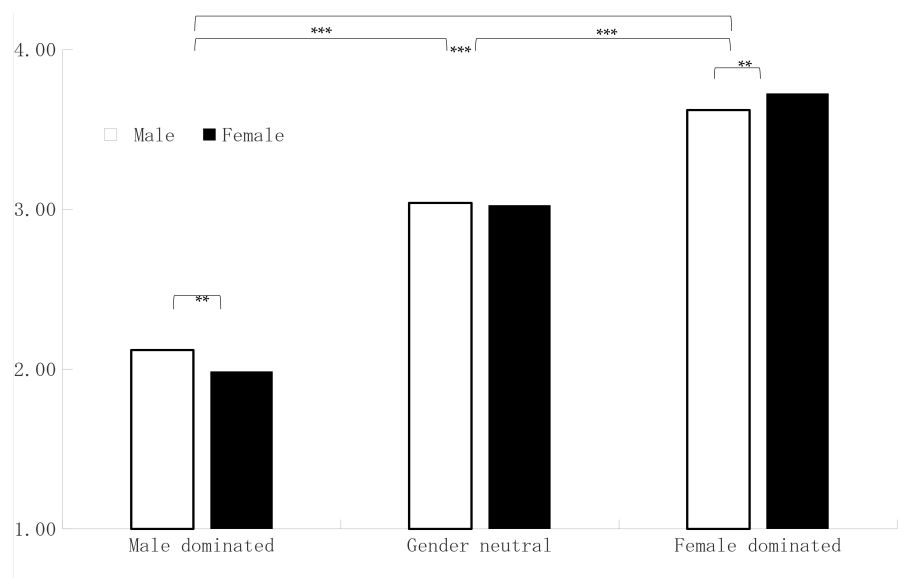


Figure 1. Occupational Gender Stereotypes scores for Male dominated, Gender neutral, and Female dominated Fields

feminine. In addition, the score for gender neutral occupations was close to the mid-point, suggesting that these occupations were perceived as neither masculine nor feminine. Therefore, Hypothesis 1 of this study was supported.

#### 4.3 Comparison of self-efficacy score

The comparison of occupational self-efficacy scores is shown in Figure 2, which indicates a significant interaction ( $F(2, 1436) = 210.61, p < .001$ ). Results of simple main effect tests revealed significant effects of gender for male- and female-dominated occupations. Men ( $M=2.79$ ) had higher score than women ( $M=2.24$ ) within male-dominated professions, whereas women ( $M=2.87$ ) had higher score than men ( $M=2.72$ ) within female-dominated professions. No gender differences were observed in gender neutral occupations. Simple main effect tests also showed significant effects of occupational gender dominance for both sexes. Multiple comparisons revealed that neutral professions ( $M=2.89$ ) were higher among men than male-dominated ( $M=2.79$ ) or female-dominated occupations ( $M=2.72$ ) and male-dominated professions were higher than female-dominated professions. Among women, female-dominated professions ( $M=2.87$ ) and gender neutral occupations ( $M=2.85$ ) were higher than male-dominated professions ( $M=2.24$ ), which supported Hypothesis 2.

#### 4.4 Predictors of occupational self-efficacy

To examine the determinants of occupational self-efficacy, three step hierarchical multiple regression analyses were conducted for male-dominated, gender neutral, and female-dominated occupations with occupational self-efficacy as the dependent variable. After controlling for gender (coded as a dummy variable such that 1= males and 2= females) at the first step, occupational gender stereotypes were entered at the second step, and gender role identity (masculinity and femininity) was entered at the third step. Results are presented in Table 2. It can be seen that gender had a significantly negative regression ( $\beta = -.33$ ) and accounted for 11% of the variation in self-efficacy for male-dominated occupations. Entering occupational gender stereotypes at the second step explained an additional 6% of variance and it showed a significant regression ( $\beta = .24$ ). Adding the gender role identity at the third step explained an additional 14 % of the variance with masculinity showing a significant regression ( $\beta = .35$ ). Gender did not make any significant contributions for gender neutral occupations. Occupational gender stereotypes entered at the second step accounted for 3% of the unique variation in self-efficacy and it showed a significant regression ( $\beta = .16$ ). Entering gender role identity at the last step accounted for 23% of the unique variation in self-efficacy, with both masculinity and femininity and also indicated a significant regression ( $\beta = .30$  and  $\beta = .26$ , respectively). Moreover, gender showed a significant positive regression ( $\beta = .10$ ) and accounted for 1% of the variation in self-efficacy in female-dominated occupations. Introducing occupational gender stereotypes showed neither unique variance nor significant regression. Entering gender role identity at the last step accounted for 27% of the unique variation in self-efficacy, with both masculinity and femi-

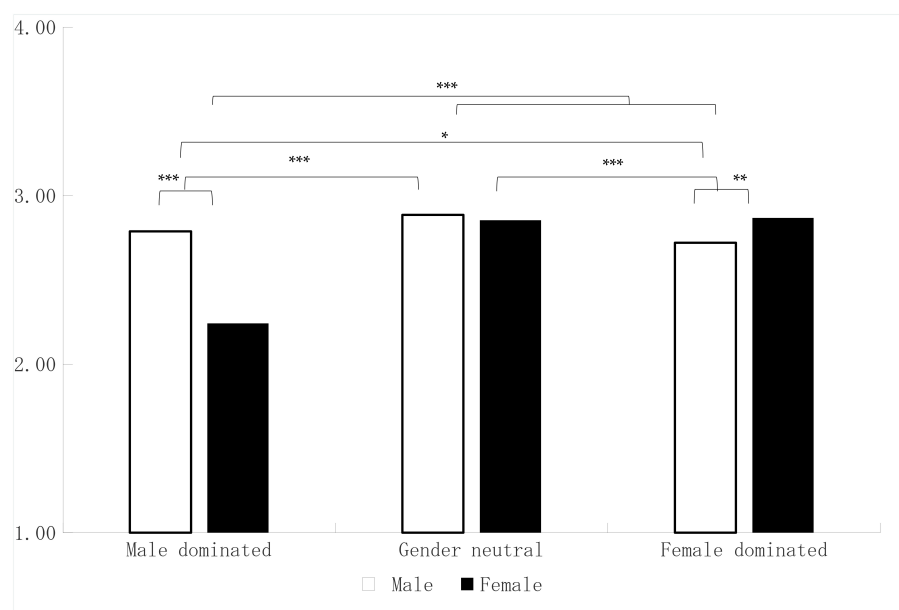


Figure 2. Self-Efficacy scores for Male dominated, Gender neutral, and Female dominated Fields

ninity showing a significant regression ( $\beta=.28$  and  $\beta=.32$ , respectively). Therefore, Hypothesis 3 was partially supported.

5. Discussion

The present study assessed occupational gender stereotypes, gender role identity, and gender role attitudes among Japanese youth and examined the predictive powers of these variables on occupational self-efficacy. The result of comparing gender stereotype scores showed that masculine versus feminine gender typing was affected by gender dominance among jobholders. Namely people recognized occupations dominated by men as masculine and the occupations dominated by women as feminine, Moreover, this tendency was consistent among both men and women. These results replicated findings of prior studies reporting relationships between the gender of jobholders and gender stereotypes (Krefting, Berger & Wallace 1978; Glick, 1995; Adachi 2013). Additionally, these results demonstrated the absence of gender stereotyping in gender neutral occupations having less than 30% jobholders of either gender. These findings suggest that gender ratio among jobholders in a given profession has a profound effect on the formation of stereotypes.

According to Oswald (2003) one psychological mechanism of occupational gender division could be the activation of traditional gender stereotypes, which contributes to self-efficacy for traditional occupations and draws people to these occupations. Oswald (2003) also indicated the possibility that even after entering certain occupations, gender stereotypes influence worker’s decision to stay or leave that profession, which might also reinforce existing occupational gender disparities. Therefore, this process could become a vicious spiral of gender ratio, stereotype formation, and occupational gender divisions.

As predicted, there was a relationship between participant’s gender, occupational gender dominance and self-efficacy. Women possessed higher self-efficacy for female-dominated professions, whereas they had lower self-efficacy for male-dominated occupations. Therefore, this study, which was conducted in a different time period and a different culture, replicated the lower efficacy among women for male-dominated occupations reported by Bez and Hackett (1981). Moreover, as reported by Adachi (2014), it is not only women that show reduced self-efficacy for professions dominated by the opposite gender: Men also exhibited less efficacy for female-dominated professions, implying that people find it hard to identify same gender role models in opposite gender dominated professions and as a result have difficulties in cultivating self-efficacy for that field. Providing role models for opposite gender dominated professions should be one effective solutions for reducing gender stereotypic views on occupations and for reinforcing self-efficacy for a given occupation (Pelaccia et al. 2010). As expected, no gender differences were found for gender neutral professions with a balanced gender ratio among jobholders.

Theory of circumscription and compromise maintains that once gender stereotypes are formed, they exert profound effects on career choices and career development (Gottfredson 1981). People restrict their occupational preferences to ones that match their gender in order to be socially acceptable and eliminate career alternatives that project different gender types. Therefore, both men and women become more confident and more interested in occupations in which they observe more workers of the same gender

Table 2. Summary of Hierarchical Regression Analyses Predicting Self-Efficacy

Independent variable /step	Male-Dominated			Gender neutral			Female-Dominated		
	1	2	3	1	2	3	1	2	3
Gender	-.33 ***	-.30 ***	-.27 ***	-.02	-.02	-.02	.10 **	.10 **	.11 **
Stereotypes		.24 ***	.20 ***		.16 ***	.06		.03	-.07
Masculinity			.35 ***			.30 ***			.28 ***
Femininity			.06			.26 ***			.32 ***
R <sup>2</sup>	.11 ***	.17 ***	.31 ***	.00	.03 ***	.26 ***	.01 **	.01 **	.28 ***
ΔR <sup>2</sup>		.06 ***	.14 ***		.03 ***	.23 ***		.00	.27 ***

Note gender 1=male, 2=female \*\**p*<.01 \*\*\**p*<.001

(Gottfredson & Lapan 1997). The other important finding of this study were obtained from hierarchical multiple regression analyses and concern the determinants of self-efficacy. Results showed that after controlling for gender and occupational gender stereotypes, socio-culturally developed gender; namely, gender role identity explained the unique variance in self-efficacy. Femininity was related to self-efficacy for gender neutral and female-dominated occupations whereas, masculinity was related to self-efficacy for all three types of occupations. These results are consistent with the findings of Muldoon and Reilly (2003), who reported that psychologically androgynous individuals are least affected by perceived sex-typing of careers, and that masculine or androgynous individuals possessed higher occupational self-efficacy than feminine individuals.

It is noteworthy that masculinity was positively related to self-efficacy for female-dominated professions, which suggest that both masculinity and femininity are beneficial, though masculinity had a consistent influence over self-efficacy for a wide range of occupations including female-dominated ones. This finding is consistent with Weisgram, Dinella and Fulcher (2011) who reported that both masculinity and femininity were predictors of endorsing altruistic values. These results imply that researchers and educators must not only guarantee equitable opportunities for educational access, but also have to endeavour to eliminate the so called “hidden curriculum” in school setting, including stereotypical descriptions of men and women in textbooks (Jackie F. K. Lee 2014), gender specific use of language, and gender imbalances in school staff (Kreitz-Sandberg 2007).

Egalitarian gender role attitudes failed to show any relationship to self-efficacy. This could be because the SESRA-S is focused on general attitudes regarding lifestyle, such as the work-life-balance, household work, and child care responsibilities. As a result, gender role attitudes might not have been related to perceptions of one’s capabilities for performing designated behaviours. Therefore, these results partially supported Hypothesis 3.

## **6. Conclusions**

The current study reinforced previous work by endorsing the relationship among gender ratio, gender stereotypes and self-efficacy. The other important finding of the study is the absence of gender stereotyping and gender differences in self-efficacy for occupations having less gender gaps. These results suggest that people recognize occupational professions having more men as being masculine and assume that they are appropriate for men and recognize occupations having more females as feminine and assume that they are appropriate for women. These stereotypes in turn affect access versus avoidance behaviours, and therefore, gender disparities remains unchanged, which is an unending repeating cycle. In the process of career development, young people lacking work experience might be more susceptible to biased notions about gender and occupation. Educators and career guidance counsellors should spearhead the movement to counteract these stereotypes by enabling young people’s access to precise information to better understand different occupations. This could include interventions incorporating the collection of information about different occupations and teaching methods of processing this information, as well as providing role models who are active in non-traditional occupations.

Future studies that might be beneficial include investigating the relative impact of stereotypes in combination with other sources of information about self-efficacy, including personal achievements, vicarious learning, verbal persuasion, and emotional arousal. Career support targeting young people that incorporate teaching about psychological mechanisms of stereotypes and informational sources would help people in Japan and other Asian countries to solve persistent occupational gender divisions.

## **7. Acknowledgments**

This research was supported by Japan Society for the Promotion of Science Grants-in-Aid for Scientific Research <KAKENHI> Grant Number 15K04062.

## **8. Conflicts of Interest**

The author declares that there is no conflict of interest regarding the publication of this article.

## 9. References

- Adachi, T. 2013. Occupational gender stereotypes: is the ratio of women to men a powerful determinant?. *Psychological Reports* 112: 640-50. DOI: 10.2466/17.07.PR0.112.2.640-650.
- Adachi, T. 2014. Occupational Gender Stereotypes among University Students: Their Relationships with Self-Efficacy and Gender Role Attitudes. *Japanese Association of Industrial/ Organizational Psychology* 27: 87-100.
- Annelies, E.M. Vvan Vianen. 1999. Managerial self-efficacy, outcome expectancies, and work-role salience as determinants of ambition for a managerial position. *Journal of Applied Social Psychology* 29: 639-665. DOI: 10.1111/j.1559-1816.1999.tb01406.x.
- Azuma, K. 1991. Psychological androgynyII: examination on Japanese translation of BSRI. *Waseda University School of Education Academic Studies* 40: 61-71. (In Japanese)
- Bandura, A. 1977. Self-efficacy: toward a unifying theory of behavioral change. *Psychological Review* 84: 191-215. [https://doi.org/10.1016/0146-6402\(78\)90002-4](https://doi.org/10.1016/0146-6402(78)90002-4).
- Bem, S. L. 1974. The measurement of psychological androgyny. *Journal of Consulting and Clinical Psychology* 42: 155-162. DOI: 10.1037/h0036215.
- Bem, S. L. 1975. Sex role adaptability: one consequence of psychological androgyny. *Journal of Personality and Social Psychology* 31: 634-643. DOI: 10.1037/h0077098.
- Betz, N. E. 2004. Contributions of self-efficacy theory to career counselling: a personal perspective. *The Career Development Quarterly* 52:340-353. DOI: 10.1002/j.2161-0045.2004.tb00950.x.
- Betz N. E., & Hackett, G. 1981. The relationship of career-related self-efficacy expectations to perceived career options in college women and men. *Journal of Counselling Psychology* 28: 399-410. DOI: 10.1037/0022-0167.28.5.399.
- Chatterjee, J. & McCarrey, M. 1991. Sex-role attitudes, values and instrumental-expressive traits of women trainees in traditional vs non-traditional programmes. *Applied Psychology: An International Review* 40: 281-297. DOI: 10.1111/j.1464-0597.1991.tb00991.x.
- Glick, P., Wilk, K., & Perreault, M. 1995. Images of occupations: components of gender and status in occupational stereotypes. *Sex Roles* 32: 565-582. DOI: 10.1007/BF01544212.
- Gottfredson, L. S. 1981. Circumscription and compromise: a developmental theory of occupational aspirations. *Journal of Counselling Psychology* 28: 545-579. DOI: 10.1037/0022-0167.28.6.545.
- Gottfredson, L. S., & Lapan, R. T. 1997. Assessing gender-based circumscription of occupational aspirations. *Journal of Career Assessment* 5: 419-441. DOI: 10.1177/106907279700500404.
- Gore P. A. Jr. & Leuwerke, W. C. 2000. Predicting occupational considerations: a comparison of self-efficacy beliefs, outcome expectations, and person-environment congruence. *Journal of Career Assessment* 8: 237-250. DOI: 10.1177/106907270000800303.
- Gushue, G. V. & Whitson, M. L. 2006. The relationship of ethnic identity and gender role attitudes to the development of career choice goals among black and Latina girls. *Journal of Counselling Psychology* 53: 379-385. DOI: 10.1037/0022-0167.53.3.379.
- Hackett, G. & Betz, N. E. 1981. A self-efficacy approach to the career development of women. *Journal of Vocational Behaviour* 18: 326-339. DOI: 10.1016/0001-8791(81)90019-1.
- Jackie F. K. Lee. 2014. A hidden curriculum in Japanese EFL textbooks: gender representation. *Linguistics and Education* 27: 39-53. DOI: 10.1016/j.linged.2014.07.002.
- Krefting, L. A., Berger, P. K., & Wallace, M.J. Jr. 1978. The contribution of sex distribution, job content, and occupational classification to job sextyping. *Journal of Vocational Behaviour* 13: 181-191. DOI: 10.1016/0001-8791(78)90043-X.
- Kreitz-Sandberg, S. 2007. Gender and Education: Perspectives on Schooling in Japan and Comparisons from the Philippines. In: Derichs, C. & Kreitz-Sandberg, S.(eds.): *Gender Dynamics and Globalization. Perspectives on Japan within Asia*. Münster: Lit publisher, pp. 143-165. ISBN-13: 978-3825897611.
- Lerdpornkulrat, T., Koul, R., & Sujivorakul, C. 2012. The influence of ability beliefs and motivational orientation on the self-efficacy of high school science students in Thailand. *Australian Journal of Education* 56: 163-181. DOI: 10.1177/000494411205600205.
- Liben, L. S., Bigler, R. S. & Krogh, H. R. 2002. Language at work: children's gendered interpretations of occupational titles. *Child Development* 73: 810-828. DOI: 10.1111/1467-8624.00440.
- Ministry of Health, Labour and Welfare 2016. 2015 Year's Basic Survey on Wage Structure. (in Japanese). Available online: <http://www.e-stat.go.jp/SG1/estat/List.do?bid=000001058843&cycode=0>. (Accessed on 20 Mar 2016).
- Muldoon O.T & Reilly J. 2003. Career choice in nursing students: gendered constructs as psychological barriers. *Journal of Advanced Nursing* 43: 93-100. DOI: 10.1046/j.1365-2648.2003.02676.x.
- Ngo, H. Y, Foley, S., Shuang, M. J., & Loi, R. 2014. Linking gender role orientation to subjective career success: the mediating role of psychological capital. *Journal of Career Assessment* 22: 290-303. DOI: 10.1177/1069072713493984.
- Oswald, P. A. 2003. Sex-typing and prestige ratings of occupations as indices of occupational stereotypes. *Perceptual and Motor Skills* 97: 953-959. DOI: 10.2466/pms.2003.97.3.953.
- Pelaccia, T., Delplanq, H., Triby, E., Bartier, J. C., Leman, C., Hadeff, H., Pottecher, T., & Dupeyron, J. P. 2010. Gender stereotypes: an explanation to the underrepresentation of women in emergency medicine. *Academic Emergency Medicine* 17: 775-779. DOI: 10.1111/j.1553-2712.2010.00793.x.
- Rentzou, K. 2013. Greek male senior high school students' attitudes and perceptions towards early childhood education and care. *International Journal of Adolescence and Youth* 18: 45-62. DOI.org/10.1080/02673843.2012.655442.

- Rottinghaus, P. J., Larson, L. M. and Borgen, F. H. 2003. The relation of self-efficacy and interests: a meta-analysis of 60 samples. *Journal of Vocational Behavior* 62: 221-236. DOI: [org/10.1016/S0001-8791\(02\)00039-8](https://doi.org/10.1016/S0001-8791(02)00039-8).
- Suzuki, A. 1994. Construction of a short form of the Scale of Egalitarian Sex Role Attitudes (SESRA-S), *The Japanese Journal of Psychology*, 64: 451-459. (in Japanese). DOI: [org/10.4992/jjpsy.65.34](https://doi.org/10.4992/jjpsy.65.34).
- Sweida, G. L., & Reichard, R. J. 2013. Gender stereotyping effects on entrepreneurial self-efficacy and high-growth entrepreneurial intention. *Journal of Small Business and Enterprise Development* 20: 296- 313. DOI: [10.1108/14626001311326743](https://doi.org/10.1108/14626001311326743).
- Weisgram, E. S., Dinella, L. M., & Fulcher, M. 2011. The role of masculinity/femininity, values, and occupational value affordances in shaping young men's and women's occupational choices. *Sex Roles* 65, 243–258. DOI: [10.1007/s11199-011-9998-0](https://doi.org/10.1007/s11199-011-9998-0).
- Williams, J. E. & Best, D. L. 1982. *Measuring Sex Stereotypes: A thirty-nation study* (Volume 6, Cross Cultural Research and Methodology), Beverly Hills, CA: Sage. ISBN: 9780803938144.
- Williams, J. E., Satterwhite, R. C., & Best, D. L. 1999. Pancultural gender stereotypes revisited: the five factor model. *Sex Roles* 40: 513-525. DOI: [10.1023/A:1018831928829](https://doi.org/10.1023/A:1018831928829).