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A Microdata Analysis of the Gender Pay Gap in South Korea: How do social norms and gender role attitudes affect the labor force participation of Korean women?

Senior Project Submitted to
The Division of Social Studies
of Bard College

by
Yoonhee Park

Annandale-on-Hudson, New York
May 2016

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1. Introduction

Why does South Korea have the highest gender pay gap compared to other developed countries? Why is South Korea one of the worst discriminators against women in the labor market? According to the Organization for Economic Co-operations and Development (OECD), South Korea has had the highest gender pay gap for over 10 years among the member countries of OECD.

The gender pay gap is the difference in earnings between male and female. It is defined as the average difference between men and women's aggregate earnings, expressed as a percentage of men's earnings. Many organizations have measured how the pay gap varies across demographic groups such as race and gender. The gender pay gap in many countries has declined after the law mandating equal treatment of women in the labor market passed. The gender pay gap in South Korea in 2013 was 36.6 percent, almost as high as what the gender pay gap was in the United States forty years ago. However, the gender pay gap in South Korea has not decreased as significantly with 36.6 percent in 2013. The gender pay gap is measured by the weekly work hours and earnings for men and women, and the pay gap reveals that countries with relatively high rewards to skill. Relatively large sectorial differentials will tend to have larger pay gaps (Blau and Kahn, 2003). Many researchers have examined the determinants of gender pay gap in countries with different wage and institutional structures. The variables include level of education and age or potential labor market experience.

Besides those two commonly examined variables that are correlated to the causes of the gender pay gap, it is also important to look into more specific socio-economic factors that are correlated to gender inequality. Historically, many researchers have identified four factors that

have significantly caused the gender pay disparity. The four causes are occupational segregation, different patterns of labor market participation, stereotypical view about gender roles, and the remaining unexplained portion. Goldin (2014) argued that "wage discrimination" still exists and can be examined by estimating the effect of gender after holding constant as many socio-economic variables as possible. Wage discrimination is different from discrimination that has been discussed historically. Discrimination is when a man and a woman with identical skills and experience receive different wages. Wage discrimination is when women earn less money after choosing flexible jobs and working fewer hours. These differ women's wage from male counterparts who are as qualified as they are. Women tend to invest more time in household responsibilities in their own families. A number of women quit their jobs for childcare are to blame for the gender pay gap because this reduces the number of high-income female wage earners. Given that women tend to stay home due to household responsibilities, this study is particularly interested whether choices to stay home for household responsibilities occurs due to social norms or gender stereotypes. Variables that are directly correlated to the gender pay gap are controlled, such as age, years of schooling, marital status, union status, employment status, and etc. The variables measuring social norms and attitudes will be examined along with other more conventional determinants of the gender pay gap. If the gender coefficient becomes smaller in absolute value after adding the social norm variables, it means social norms partially explain the wage gap. If it is no longer significant, it means social norms completely explain the gap that was examined previously. Lastly it the gender coefficient is still non-zero; it means social norms explain part of the gender pay gap but not everything.

The key research question that this study specifically investigates is whether the social norms of South Korea cause the pay gap between Korean men and women even after

controlling the socio-economic variables. The hypothesis of the research is that the social norms in South Korea do account to the gender pay gap and leads South Korea to have the highest gender pay gap. In order to measure this, data from "Family and changing gender roles" (2012) from ISSP (International Social Survey Program) is used and analyzed using STATA. This data gives measurements of social norms and attitudes regarding gender roles. The data is conducted through a questionnaire that includes different gender role attitude questions, and specific questions that suitable into this topic are chosen and used to generate social norm index variables.

Breakdown of the project

In this project, I will examine the effects of social norms like gender stereotypes, attitudes towards working mothers, and attitudes towards having children to the gender pay gap. Both sociological and economic approach to the gender pay gap in South Korea can be found in the discussions and the data analysis. Also, this approach will involve an overview of the economic history and status of women in Korea before and after the Asian Financial Crisis in South Korea.

Chapter 2 defines the gender pay gap and introduces the decompositions of the gender pay gap. Chapter 3 provides historical background of the economic development in South Korea and how women's status has changed over time. Also, this chapter will discuss the most recent South Korea's gender pay gap measures. Chapter 4 contextualizes different social norms in South Korea that can affect the gender pay gap, which are gender role stereotypes, Korean women's labor force participation, traditions, and religion. Chapter 5 specifically focuses on the goal of the paper, which is to examine the wage discrimination of women in South Korea by using socio-economic variables and some index variables that measure social attitudes about

women. Finally, Chapter 6 provides statistical results and discussion on potential limitations as well as policy implications, and Chapter 7 is conclusion of the study.

2. Overview of the Gender Pay Gap

2.1 What is the gender pay gap?

The gender pay gap is the difference in earnings between male and female. It is defined as the average difference between men and women's aggregate earnings, expressed as a percentage of men's earnings. The gender pay gap is measured by weekly work hours and earnings in men and women, and the pay gap reveals that countries with relatively high rewards to skill and relatively large sectorial differentials will tend to have larger pay gaps (Blau and Kahn, 2003). Hence, despite the lower earning potentials in women, international comparisons of the gender pay gap have provided interesting facts about international differences in wage setting institutions. In previous work on international differences in the gender pay gap (Blau and Kahn, 1996b), it was proven that the primary reason for the gender pay gap is the level of wage inequality. In 2003, Blau and Kahn examined the effect of the wage structure to the gender pay gap and concluded that the wage structure affects the gender pay gap in the United States.

Many studies have examined variables that are directly correlated to the gender pay gap, and the two main sources are education and age. Education is correlated to the level of education and years of schooling, and age is correlated with potential labor market experience that can be used to measure differences in earnings between men and women. Most recent study from Kahn and Blau (2016) found that occupational differences between men and women

account nearly 50 percent of the pay gap, which is a larger portion than in 1980. Women nowadays have moved into historically male-dominated jobs especially in white-collar fields than in blue-collar fields. However, the gender pay gap in larger in white-collar fields because these jobs demand longer and less flexible hours, hence penalize for wanting flexibility. Also, wage discrimination after controlling socio-economic factors may account for 9 percent of the gender pay gap. There could be indirect discrimination against women and discourage women from pursuing high-paying careers in the first place.

2.2 Decomposition of the Gender Wage Gap

Historically, there are factors that have caused the gender pay gap, and researchers identify these factors. Due to a significant role of discrimination against women in the labor market, there is difference in occupations, work experience, and labor market participation between men and women.

Occupational segregation

Men and women tend to choose professions in different fields. A high percentage of women have low paying jobs than high paying jobs, whereas a high percentage of men have high paying jobs than low paying jobs. A large number of women tend to have occupations like teachers, nurses, secretaries, retail sales clerks, and etc., whereas men tend to have occupations like doctors, lawyers, engineers, and scientists. Many researchers have independently analyzed different statistical data, indicating that the earning difference between men and women is partially caused by the occupational difference between men and women. In one of the previous studies (Boraas and Rodgers, 2003), the gender pay gap was explained by using the microdata

analysis, and revealed that women have a higher likelihood of working in female dominated jobs, which typically have below average wages. This means that women have a tendency of working in low paying jobs compared to men. Correspondingly, a study conducted by Mulligan and Rubinstein (2008) revealed the evidence that the change in the gender pay gap from 1970s to 1990s is due to the change in the occupational composition of women in the labor force over time. Like this study, many researchers support the same idea that the occupational segregation account for the gender pay gap, and thus change in the occupational segregation varies the gender pay gap. Significance of the effect of occupational segregation was determined. This study will look into occupational gender segregation in Korea to examine the relevancy of it to the gender pay gap in Korea. This study expects that occupational segregation occur due to social norms and gender stereotypes in Korea. Social norm and gender attitudes in Korea will further be discussed in Chapter 4.

Wage discrimination and undervaluing women's work

Many researchers have examined the average wage differentials among different demographic groups to provide evidence of discrimination in the labor market. Baldwin, Butler, and Johnson (2001) also analyzed the causes of direct discrimination against women in the labor market by observing men's behaviors towards women in the hierarchical model. Their model shows discrimination against women under the occupational segregation that male employers treat women differently even though they are as qualified and present identical productive characteristics as male workers.

Direct discrimination can also be presented in the occupational setting where women from the same educational background as men end up being placed in low paying industries. In

the study of occupational differentials between men and women, Oaxaca (1973) analyzed the male and female wage differentials, and found that female workers are not considered equally qualified as male workers. Also, there is a factor that affects women's career choices. Since there are many responsibilities women take at home while men can work and gain more work experience, women tend to go for low paying jobs that require less experience of work. Also, Women invest less time in jobs than men do, which can be measured by years of work. Additionally, since men invest more time, they have higher levels of experience that helps them to get promoted.

Discrimination against female workers can also be seen in the wage setting. The gender differences in the level of experience cause the wage differentials between men and women because men have a higher chance to get promoted with higher level of experience. Blau and DeVaro (2006) analyzed the likelihood of promotion of men compared to women. These researchers believed that this also causes the wage differences between men and women because promotions are accompanied by thee increase of wages, and therefore this leads to the wage differences between men and women. Similar to the approach from Olson and Becker (1983) on promotion rates in men and women that they found lower promotion rates for women than for men.

In many developed and developing countries, the law mandating equal treatment of women in the labor market has passed and adopted. The European Community has its first antidiscrimination legislation within the Treaty of Rome in 1957, and the Equal Pay Act of 1963 in the United States. There's also an International Human Rights Law, the statement on the equal pay in 1951. This was passed at the General Conference of the International Labor Organization (ILO).

"Each Member shall, by means appropriate to the methods in operation for determining rates of remuneration, promote and, in so far as is consistent with such methods, ensure the application to all workers of the principle of equal remuneration for men and women workers for work of equal value." (*Source*: ILO: Equal Remuneration Convention, 1951)

Although there are various acts of equal pay and equal opportunities in some countries, direct and indirect discrimination still exist. Blau and DeVaro (2006) and Olson and Becker (1983) examined that men have higher promotion rate compared to women even if men and women enter the same industries with the same salary. While Men get promoted and get higher pays, most women get fewer opportunities to get promoted for higher pays. Therefore this ultimately leads to difference in earnings between men and women.

These finding supports the consequence of the discrimination against women in the labor market. The findings also revealed that there are many outcomes that cause the inequality in earnings because men are generally more favored than women with higher level of experience and higher investment of their time in the labor market. This existing phenomenon can be found in Korea and their gender inequality in the labor market will be discussed further in Chapter 4 along the social norms.

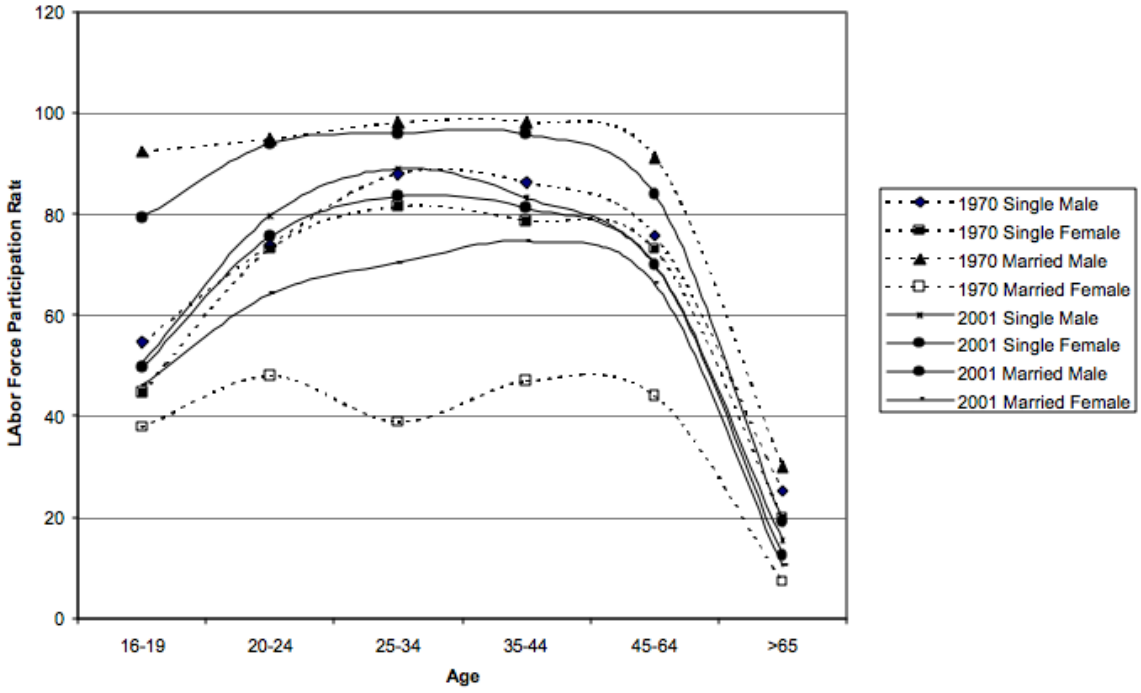
Women's labor force participation and Human capital theory

Gender differences in human capital can be seen as one of the contributors to the gender pay gap. Human capital theory groups some important factors together, such as education, training, and period in the labor market. Education and periods in the labor factor play very important roles because differences in these two factors in male and female have different underlying outcomes.

Polachek (2004) studied the human capital theory; specifically how human capital theory narrows the gender pay gap and has narrowed the gender pay gap in the United States from 1890 to early 1990s. Human capital theory is an economic theory that studies secular changes in male and female human capital acquisitions and earnings. This theory also states that all human behavior is based on the economic self-interest of individuals operating within freely competitive markets. According to human capital theory, there is a direct relationship between one's incentive to invest in training and the time one expects to work over one's lifetime. This suggests that women's human capital investments have to be intensified compared to men's since women's participation in the labor market has enormously increased. Therefore, rising female human capital investments suggest a narrowing in the gender pay gap. During the period 1890-2001, women's earnings should have grown relative to men's since the human capital investment suggested narrowing the pay gap. In fact, women's earnings did grow during this period in the case of the labor market in the United States.

Due to the decrease in the gender pay gap caused by the changes in human capital investments in women, many researchers are convinced to look into human capital theory to predict the trends in the gender wage gap. Polachek concluded in the study that the gender pay gap diminishes as male-female lifetime work expectations become more similar. Polachek also believed that the human capital model links expected lifetime labor force participation to one's incentive to acquire training. Catalyst is a research organization designed to expand options for women in upper business jobs. According to Catalyst, the biggest barrier to women's advancement was personal and family responsibilities. To illustrate this factor, a survey of married males, married females, single males, and single females, and their labor force participation rates are depicted in patterns for the United States in 1970 and 2001, as shown in

graph 1. On the vertical axis, it shows labor force participation rates, and the horizontal axis indicates age. The graph shows that the labor force participation rates indicate the proportion of each gender-marital status group. This is not surprising because women, in many countries, are expected to take more household responsibilities than men. The most important fact about this finding is how quickly married female labor force participation rose over 30 years. However, even in 2001, married women's labor force participation is still about one third less than married men's.

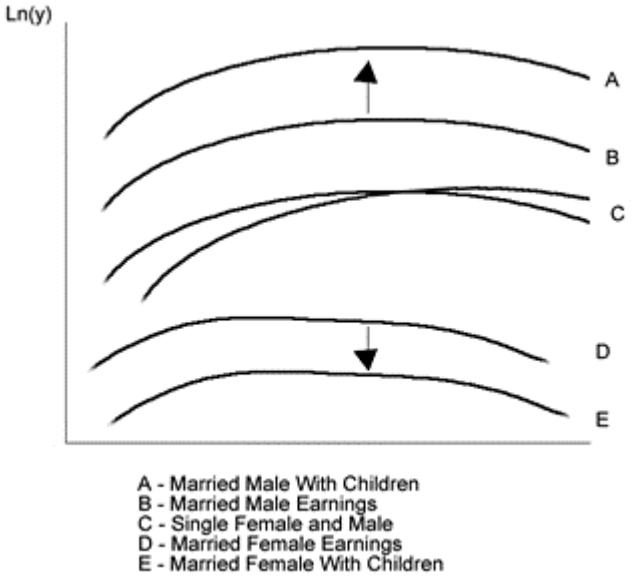


Graph 1. US Labor Force Participation by Marital Status

(Source: U.S. Census Bureau, Statistical Abstract of the United States 2002, Table No. 568)

Also, not surprisingly, married women with children earn the least compared to married male and females without children. Goldin (1990) examined the gender pay gap by taking the median annual earnings of women in the labor force as full-time and took the same thing for men. Goldin has analyzed data over years and found out that there is a "wage discrimination" against

women. It was found after holding lots of variables constant. Goldin argued that the differences are due to the fact that the women have more responsibilities that they take seriously than their jobs, even those without kids. In figure 2, age-earning profiles for men and women are plotted by marital status. It shows that married men with children have the highest earnings among the 6 groups it has categorized, and married women with children have the lowest earnings. It is not so surprising that this graph shows that married women with children have the lowest earnings. Goldin calls this a 'temporal flexibility'. Married women with children tend to look for more flexibility, and refuse to do good assignments that allow them to travel to different places, or refuse to stay long hours to finish up their work which is not helpful if they are expecting promotions. This is due to having household responsibilities or family responsibilities that requires them more time and attention than their jobs. This also limits them to go back to work once they resign.



Graph 2. Age-Earnings Profiles by Gender, Marital Status, and Children

(*Source*: Polachek, W. Solomon, "How Human Capital Model Explains why Gender Wage Gap Narrowed. 2004, Figure 6, p. 39)

Similarly, Blau and Kahn (1992) have the same findings in their international study of the gender earnings gap. They recognized that the gender gap among single men and women are negligible. However among married women and men, married women earn far less than married men. Also, the minor finding from the studies is that having children play a big role in the gender wage gap. As it is shown in graph 2, having children and not having children makes a huge difference in earnings among married and unmarried individuals. Married women who tend to stay home longer to take care of children receive even lower wages than before because they work less time. However, opposite patterns appear for men. Married men with children earn more. Women's human capital depends majorly on their marital status and household responsibilities. Interestingly this is a very common phenomenon in many developed countries like Korea, Japan, Singapore, and Hong Kong. For instance, women are expected to become the ideal 'mothers' in Korea. The Korean society presents images of 'ideal women' to guide women to become mothers who invest most of their time taking care of their children rather than investing it in their professions. Factors that determine women's labor force participation in Korea will be discussed in Chapter 4.

Stereotypes in educational and career choices

In previous sections, a number of explanations of the earnings difference between men and women are discussed. In fact, it is important to notice that gender stereotype exists and affects the gender pay gap. As it was discussed, occupational segregation between men and women leads to the earnings difference since women's reluctance to choose technical and male-dominated occupations. Schneeweis and Zweimüller (2012) argue that the occupational segregation occurs even before individuals enter industries, it occurs even during obtaining

education. They found that considerable differences between men and women could be found in the fields of studies before we could discuss about the occupational segregation. They also suggest that there is a high degree of gender segregation in fields of studies, strongly under coeducational settings because they reinforce gender stereotypes.

Schneeweis and Zweimüller suggested some gender stereotypes in their study. One of the gender stereotypes can be seen in an educational institution. In school female students are lack in confidence in male-dominated subjects like math and science. This is due to the dominating behavior of boys in the classroom and unequal treatment of teachers towards female students can be found and cause lack of confidence of female students. In addition, female students are expected from parents to study female-dominated subjects because gender stereotypes indicate that women are expected to become housewives eventually rather than professionals. In contrast to this, interesting case can be seen from single-sex education. The researchers argued that single-sex schooling gives more freedom in exploring interests and abilities, while coeducational settings reinforce gender stereotypes. They conducted an analysis of the institutional conditions of the Austrian education system, and the results show that girls are doing better in male dominated subjects like math and science. Also, these girls are more likely to choose male-dominated subjects in single-sex classes than in coeducational classes. In other words, coeducational settings appear to reinforce gender-stereotypes, while single-sex schooling gives more freedom in choosing and exploring interests and abilities for female students. Single-sex schooling evidently helps female students to study historical male-dominated subjects and this also supposedly helps female students to avoid gender stereotypes of what they have to study. Due to this finding, the researchers suggest that occupational segregation occurs even in school settings and this can become an important determinant of the

gender wage differences. Therefore, if the policy is targeted at providing equal opportunities in the labor market, education policy and the question of coeducation versus single-sex schooling with its consequences for female students to choose occupations is very important.

Besides the reinforcement of gender-stereotype in school settings, there are also stereotypes towards adult women for obtaining much higher education and after obtaining higher education. In the study by Chevalier (2007), it was found that gender differences in career expectations explained 18 percent of the gender pay gap, with women who are much more likely to expect to take a break from work for family reasons. In other words, men also expect their partners to take a break for family and household responsibilities. In addition, there is a slight different stereotype of Asian women.

Sarmento (2012) critically discussed gender in Southeast Asian countries and evolution of gender concepts in the context of gender identity. Sarmento discussed some values related to traditional female roles as well as their recognition in political and social fields, which are traditionally characterized by male dominated fields. Over decades, the empowerment of women has changed the trends of female roles from the past. However such gender stereotypes still exist. In Psychology, gender stereotype is defined as ideas about men and women's traits and capabilities and how people should behave based on their gender. According to this study, the gender stereotypes involve traditional female roles and occupational expectations in South and Southeast Asian Countries. Also, there is a large number of women have been employed as teachers in primary or higher secondary schools in these countries. Nayar (1988) reveals that there are patterns of continuity, discontinuity, and change in the occupational mobility of women in three societies--Sri Lanka, Nepal, and India-- that there is a growth and evolution of education and teaching as a profession for women in traditional Asian societies. This finding

involves the fact that women teachers take their occupation almost as an extension of their family roles. According to Soucy (2001), women's magazines in these societies show that the connection between happiness, family, and love is explicit. This gives women the idea that there is inside/outside dichotomy where male dominates outside and female supervises inside. In Indonesia, everyday language shows that when a couple is the same age, age, and the man as older refer the woman as a younger individual. Therefore, a relationship that positions men above women in a hierarchy of reference is seen as romantic. Expected gender roles and marriages are presented through media and magazines, and this builds prejudice and stereotypes of men and women very effectively. Hence, this affects women and their career choices because they are concerned about their roles as housewives and mothers.

In the socio-psychology study by Cuddy, Crotty, Chong, and Norton (2010), they examined and discussed stereotypes of East Asian women and cultural differences between Westerners and East Asians. Their experimental design brings evidence of how culture shapes the contents of gender stereotypes. They found the characteristic that reflects a fundamental value in South Korea and in the United states: interdependence in South Korea and independence in the United States. Furthermore, with their experimental results researchers argued that gender stereotypes are not universal, hence they are moderated by cultural values. The stereotype says that Asian women are interdependent than Asian men is not universal cross-culturally. However it is perceived and viewed in certain way through different cultural contexts. Asian women are perceived as submissive, oriental, and supportive. These commonly known stereotypes do affect the way Asian woman are perceived in many societies, like work force, public places, school, and etc. Since stereotypes about women form prejudice of women and expected characteristics of women, it is also important to look into women's self-images

and attitudes toward other women. Since societies that women live in form such images for them, it is possible that those images can become the norm, thus women tend to set their life goals according to the norm.

As different types of stereotype of women, especially Asian women, were discussed, some findings involved additional evidence about occupational segregations between men and women, even before choosing the career fields. It was suggested that it occurs even in school while deciding fields of study. Female students feel pressurized from school and other male students in the same class when performing excellence in male-dominated subjects like math and science. This encourages female students to school non male-dominated subjects like social studies. Lastly, there is an expectation of women to take a break for family reasons like household responsibilities, and take care of children and elders. Next section specifically focuses on kinds of responsibilities that are expected from women and how those expectations limit women's freedom of choosing between occupation and household work.

Motherhood and expectations about women's roles

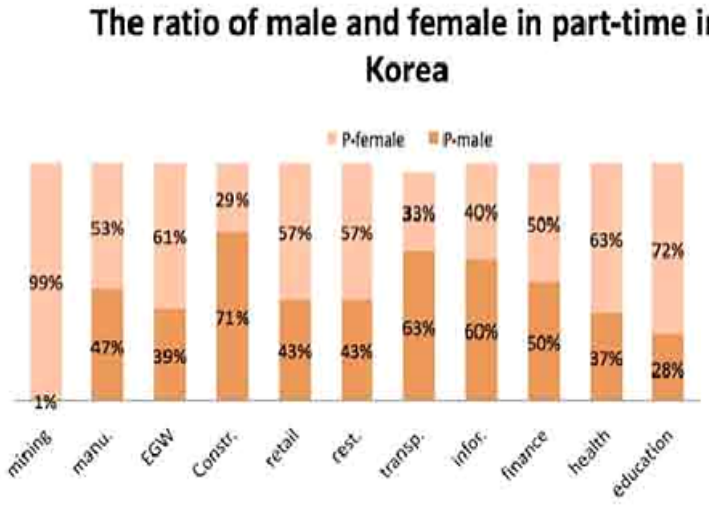
Having household responsibility to take care of children for women is somewhat not as strong evidence as it used to be in the gender pay gap. However, it is still useful for identifying its causes.

Since 1960s, traditional family roles, specifying husbands as breadwinners and wives as housekeepers, have changed as women are becoming independent by participating more in the labor market. From the 1950s to 19070s, lots of women with children often dropped out of the labor market. However in 1990, the employment patterns of White, Black, and Hispanic have converged, and women stopped having the obligation to leave their workforce to bear their

children. By 2000, 74 percent of mothers were in the labor force with more full-time jobs than part-time jobs according to a study by Bachu and O'Connell (2001). Even though this has narrowed the gender pay gap over time, increasing women's labor market participation does not mean women employees are considered equally as male employees. The term motherhood penalty has become a phenomenon in several studies for explaining the problematic intersection between work and family for women. This term started to become significant due to the key finding that average wages of mothers are less than those of women without children. Mothers encounter systematic disadvantages, and these results in a pay gap between non-mothers and mothers. This is a very important factor that has to improve in order to remove such penalty for women with children to get back to the work force.

Another interesting finding is about attitudes towards mothers. According to a study conducted by Marks and Huston (2002), a questionnaire survey about attitudes and beliefs of mothers about work, motherhood, and combining the two roles as well as the issues surrounding childcare. This revealed that there is a tendency that people, in general, could discriminate mothers who work full-time and worked part-time, and those who have no paid work in terms of their work commitment. One of the very interesting findings of this study is that some women's reason to choose to work full-time or part-time is because they find aspects of motherhood boring, exhausting, stressful, and socially isolating. This is more significant and more honest than women's ideological beliefs about motherhood. Therefore, women who find motherhood not as worth as earning money end up going back to the labor force due to other factors like financial struggles. However, there a discrimination against mothers exists in the labor market.

The influence of motherhood and the evidence of 'motherhood penalty' on the gender pay gap are apparent before women become mothers. The childcare is a prior issue to mothers when women are expected to take a break for family reason while men are not. Even if women are encouraged to participate in the labor force, women are still expected to distribute their time for household responsibilities. Bryan and SevilaSanz (2008) found that married women's household tasks were less time flexible then were men's. For example, women have household responsibilities that have to be done at a fixed time very day such as preparing meals, which may build negative effects on career in the long run. In Korea, women seek for jobs that are flexible because some women are expected to be both mothers and wage earners at the same time to support their families financially. As it can be seen in graph 4, there are occupations where there are more women than men in the fields of mining, manufacturing, EGW (electricity, gas and water), retail, restaurant, health, and education.



Graph 3. Distribution between men and women in part-time in Korea (*Source:* Lee (2013) Understanding the Reality of Occupational Gender Segregation in Korea and Japan*, figure 12-Distribution between men and women in part-time in Korea*)

Women prefer these jobs because they are flexible. Also, some retail jobs are considered self-employed jobs because some women could work for their family members or work for

themselves. Also, some of these jobs guarantee permanent employment, like jobs in educational institutions. Lots of women decide to become teachers in schools because teachers are known as one of the most flexible jobs for them to have. Even after becoming mothers they could always take time off and get back whenever they are ready, however teacher is not high paying profession. Expected gender roles and women's decision-making in careers is discussed more in depth in chapter 4.

3. Gender Pay Gap in South Korea

3.1 Overview of the economic history of South Korea

A number of economists have traditionally analyzed cultural values in economic development because of its complexity and ambiguity in the relationship between culture and economic development. It was assumed by neoclassical economists that cultural factors still remain other conditions the same. In other words, they did not believe that cultural factors matter in the context of economic development. However, Max Weber (1950) believed that culture does have an effect on economic development. In his book, *The Protestant Ethic and the Spirit of Capitalism*, Weber analyzed the rationalization of culture to trace out the significance of divergences for socio-economic development. He also argued that the absence of ethic in Asia was the reason for some region's lower level of economic development. After Weber, Harrison (1985) argued, based on his study of economic development in South American countries over twenty years that differences in economic development among countries are caused by cultural differences.

There are some countries that historically achieved economic success in East Asia, such as South Korea (hereinafter referred to as Korea). A number of scholars have examined the cultural factors to East Asian economic development and have recognized that East Asian countries share Confucianism as common cultural influence. Nam (1994) also argued that culture in Korea contributed significantly to its national economic development for almost three decades from the early 1960s. As one of the managers of Korean economic development during the 1960s to 1970s in the positions of Finance Minister and Deputy Prime Minister, Nam has identified six factors that are accounted for Korea's economic growth. Four of those factors are related to culture. Pye (2000) agrees that the role of cultures has a huge impact on the economic development in East Asia. However, it is important to get the context right in cultural analysis. Pye raised problems with other analysis on the culture because it was jumped all the way from generalized cultural characterizations to economic outcomes without taking into account all the intervening variables. Given that culture plays an important role in many East Asian countries' economic development, it is crucial to consider social norms of each country on the side in the context of economic development.

The economic growth in Korea is considered a miracle because Korea was once colonized by Japan. After Korea gained independence from Japan in 1945, Korea had experience an extreme economic disorganization after the sudden separation of the Korean economy from the Japanese economy. Also, due to the partition in Korea along the 38th parallel between South Korea and North Korea, it had severe effects on the South Korean economy. Since Korean economy was highly dependent on Japanese economy, industrial establishments and employment in Korea declined drastically after 1945. In addition to the drastic decrease in domestic manufacturing, Korea also faced a severe food shortage that was developed during the

war. The economy of Korea received lot of help and assistance from the United Nations and the U.S. foreign economic assistance. Due to much assistance, Korea's economy dramatically improved, especially during 1958-1959 period.

Kim and Voos (2007) described the Korean economic crisis in their literature. The Asian financial crisis in the late 1990s drastically affected Korea's economic structure and its labor market. The interaction of the Asian financial market crash and the weakness of domestic Korean financial institutions have caused a serious recession in Korea. In 1990, Korea's current account balance started to deteriorate due to the appreciation of the Korean currency (won) and the recession of the world economy. Even though there was an unexpected growth in the stock market in mid 1990s, it added much higher risk of the capital withdrawal by foreign investors. In fact, there was a rapid withdrawal of foreign investors in 1997 in response to the financial crisis. This is especially done by the movement of the US dollar was a large part of the high risk that was caused in the stock market.

Kim (2006) also highlighted the causes of the 1997-98 Korean financial crises. In the literature, it was pointed out that it was truly a liquidity crisis due to serious mismatches in maturity, in currency, and in the capital structure in the balance sheets of the financial and non-financial sectors of the economy. During this financial crisis, many people lost jobs. However, in combination with the International Monetary Fund (IMF) and the Korean government on December 3 1997, Korea was offered a bailout with $58.4 billion. Out of which $23.4 billion was reserved to be used if needed, and the remaining $35 billion was used in structural reforms and implementations of new monetary and fiscal policies. In the study by Na and Moon (1999), they explicitly explained social impact of the Korean financial crisis. During this period, unemployment increased from 0.5 million in June 1997 to 1.5 million in June 1998. Over a

year, unemployment increased by 1 million, it almost tripled. Most of the unemployment occurred due to the bankruptcy of small and medium sized firms, which suffered from the credit crunch, caused by a tightened control of loans among highly performing banking sectors. The changes in educational distribution in the labor market strongly reelected on an unfortunate pattern that labors in manufacturing and operative lost their jobs. In their words, unemployment increased among those with high school diplomas or less, both in terms of numbers and shares.

Na and Moon also discussed about how the financial crisis had impact on income inequality and poverty. An increase in unemployment rate has generated very little income in many households as well as the overall income distribution. Due to the currency crisis, household income inequality produced many households with zero labor earnings. In fact earnings of many wage earners had declined which increased the income gap between wage earners and asset holders. The income distribution was very depended on sectors that wage earners were employed at. For example, the manufacturing sector has the most lost jobs and has compressed the labor earnings distribution among production workers. In other words, production workers were affected by the crisis the most, and their earnings belonged to the lower tail of wage distribution. Also, young and less educated individuals were affected as well compared to old and educated workers. This additionally caused the inequality and age differentials. Most of these factors have caused labor earnings inequality in the Korean labor market.

3.2 Status of women workers in Korea

There was earnings inequality between Korean men and women as well. Traditionally, sons were preferred to daughters, which have caused Korea's low birth rate even today. Kim

and Voos (2007) argued that industrialization in Korea took advantage of this social situation. The majority of young females from rural areas were in light manufacturing industries in the 1960s because young women were attracted to factories by opportunity to study beyond the mandatory education level. At that time, grade 6 (now grade 9) is the mandatory education level. Due to this, there were special industry-affiliated schools for the young females to attend after the working hours. During this time period, it was common for a young female with only 6 years of mandatory education to work 80 hours a week in order to support her family and for her brother's college education.

In 1970s, majority men were working in heavy manufacturing industries such as steel, auto, and shipbuilding development in Korea. In other words, there was a shift from female-dominated light manufacturing to male-dominated heavy manufacturing. Korean women continued to experience various forms of discrimination, especially segregation in occupations and less income with less job opportunity than men. The labor division became very significant during this period because women started to earn less and had less opportunity to achieve human capital through education and job training. According to the Seoul Women Workers' Association (1997), the Korean society started to view men as the primary breadwinners and women as the primary care givers in the family.

The gender pay gap between men and women in Korea continuously narrowed over the course of the economic development. However, there was still an ongoing trend with difference in wage, working hours, level of education, segregation in occupations, and differences in productivity-related attributions. In 1980, female wage earners earned 44.5 percent of what male wage earners earned. This ration increased to 53.4 percent in 1990, 58 percent in 1995, 61 percent in 1997, and finally 62.8 percent in 2003 according to the Korean Women's

Development Institute (2000; 2004). This point was focused by Monk-Turner and Turner (2004) as well as earlier in this paper that the male-female employment ratio has increased significantly after the passage of an equal pay law in 1988 has passed. More details regarding the improvement of the pay ratio between female wage earners and male wage earners will be discussed in Chapter 4.

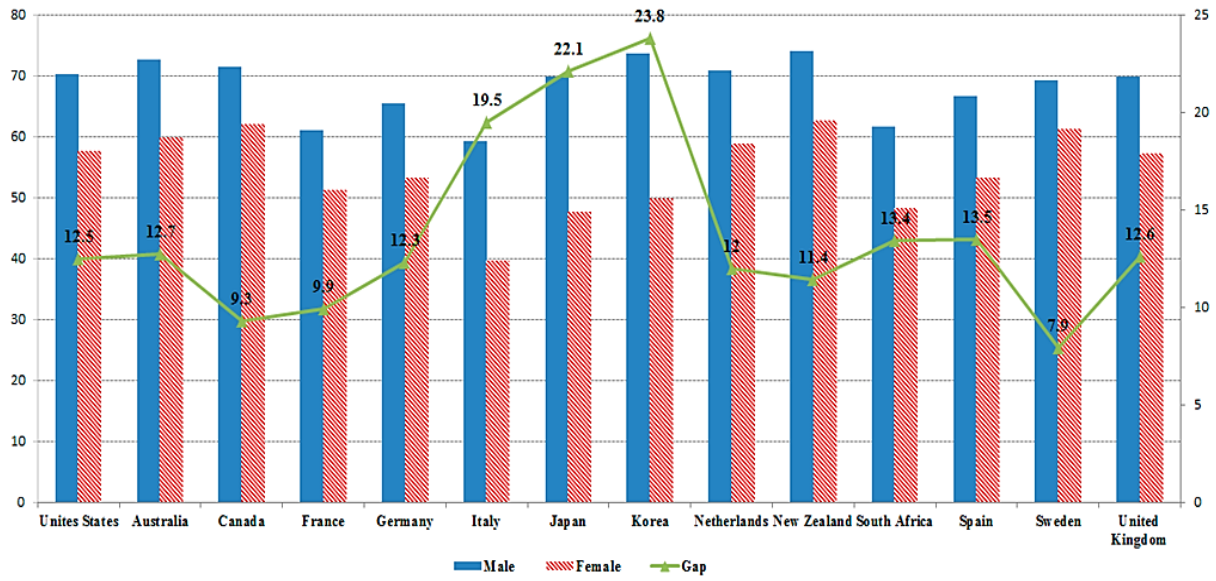
The financial crisis had a negative impact on employment in Korea. Both men and women were affected by the crisis and the employment rate dropped significantly after the financial crisis. Furthermore, unemployment rate stayed higher for men than women. However this is a discouragement to women because more women than men gave up looking for jobs during the financial crisis. There was a large discouragement of women by types of industries as well. Kang, Park, and Soo (1994) discussed that women suffered the severest decline in service industries and in small and large sized companies, whereas for men the decline was mostly in manufacturing industries and small-sized companies.

3.3 Why does South Korea have the highest pay gap?

Since the independence in Korea from Japan, there has been a history of income inequality in Korea. Income difference between men and women became significant during the Asian Economic Crisis and during the economic development in Korea. The question to be asked now is why Korea has had the highest gender pay gap in the past 10 years? Difference in earnings between men and women has marked in the Korean economy. Over the past 10 years, Korea has reached the highest gender pay gap among the OECD countries. In other words, men in the labor market in South Korea have enjoyed higher economic returns compared to women in the labor market. This is even after controlling for the effects of education, union

memberships, and level of experience, and other variables. Monk-Turner and Turner (2000) examined that in 1988 women wage earners in Korea earned 50.4 percent of men's wages. Also, the researchers examined that the relative earnings of women to men is due to direct discrimination and different socio-economic factors.

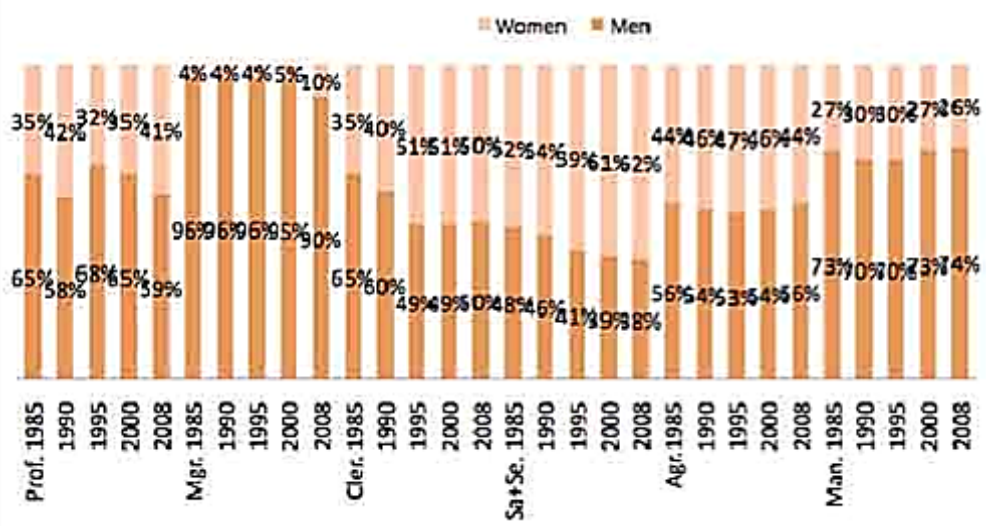
The researchers also pointed out the explanation of the gender differences in earnings. They are known as occupational sex segregation and human capital theory. This simply means that women and men are employed in different industries with different level of experience and education. As it was discussed in chapter 2, Human capital theory, wage discrimination, and occupational sex segregation partially explain the gender pay gap. In fact, these three explanations help us understand and examine the gender differences in earnings in the Korean labor market. Human capital theorist has argued that women invest less in their human capital, namely education and work experience that makes them less valuable employees. Interestingly, the International Labor Organization (ILO) also has recognized the highest male-female earnings gap of 55 percent in Korea, which was greater than in any other countries. Given that the human capital theory explains the difference in motives between men and women in the labor market, women in Korea have acquired less education on average than men have. In late 1980s, Korean men on average have completed 10.55 years of schooling whereas Korean women on average have completed 8.58 years (see Monk-Turner& Turner 2000; Statistical Yearbook of Education 1991). During the same period, female labor force participation rose to 47.2 percent in 1991 from 26.8 percent in 1960, which is over 20 percent. In 1997, women's labor force participation increased to 49.5 percent.



Graph 4. Labor force participation rates by gender and the gap, 2012 (*Source: ILO*)

According to ILO, Korea has experienced the biggest increase in the labor force participation of women among thirteen other countries, including the United States and Japan. However, it is important to emphasize that the increase in the female labor force participation was captured mostly in farm households than nonfarm households. Although Korean women's labor force participation has increased significantly over 15 years, women tend to participate in occupations that are low paying.

Nonetheless, Occupational sex segregation and discrimination still exists in Korea. It is also historically significant even though the labor force participation rate of Korean women has increased. Graph 5 shows the occupational distribution between men and women in Korea from 1985 to 2008 by occupational groups. Occupational groups include all professionals: technical and associated; Managerial: all managerial, legislative and administrative; clerical and secretarial; sales and services; and finally all manual.



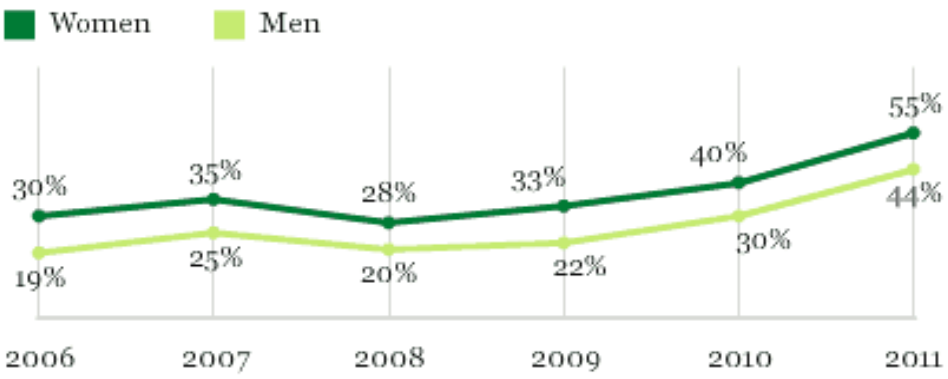
Graph 5. Occupation by male and female in Korea (*Source: ILO data,* Employment for detailed occupational groups by sex in 1985, 1990, 2000, and 2008)

As shown, high paying jobs like professionals and managerial occupations have more men than women, whereas there are more women than men in sales and service and clerk jobs which are low paying. Male employees hold the largest share of managerial jobs: 96 percent in 2985, 95 percent in 2000, and 90 percent in 2008. This difference evidently indicates that Korean men and women tend to choose professions in different fields. There are fewer women in the high paying occupations than there are low paying occupations. Women tend to have occupations like teachers, nurses, secretaries, retail sales representatives, whereas men tend to have occupations like doctors, lawyers, engineers, and scientists.

Due to the difference in ratio between men and women by different occupational groups, Lee (2013) argues that policymakers and scholars to seek individual equality in the labor market should eliminate the occupational segregation and discrimination against women. Lee believes that this is a big problem to solve in order to eliminate more problems like low fertility rate and aging societies. Also, discrimination against women often forces women to juggle between having children and a career. Yet sometimes women tend to seek for jobs that are flexible which

are low paying jobs. Discrimination against women in terms of wage setting has improved over time. However the improvement varies by occupational groups. Given that occupational segregation and wage discrimination against women are correlated to each other. Lee suggested policies that need to be implemented in a way that one eliminates the other.

Happiness level or life satisfaction level could matter for anyone who works hard to achieve goals in lives. Both women and men who are career-driven work hard for their goals but discrimination has discouraged women from being treated the same way as their male counterparts. Women's lifetime happiness index was evaluated by Morales and Mcgeeney (2012) using a "thriving" measure of many countries including Korea. The concept "thriving" measures the increases or decreases in the happiness rating. The higher the thriving measure, the happier they are. In Korea, women have evaluated their life more positively than Korean men have. Korean women's positive life evaluations reflected their Korea's high employment rate among women. This is interesting given that women in Korea on average earn 38 percent less than men in 2011 with the largest gender pay in the world. Graph 1 shows how women's happiness level has increased over time. However, the labor force participation gap between men and women are shown in graph 2. This fact emphasizes once again that even from the international comparisons of annual labor force participation, Korea has the highest gap from 1970-2012.

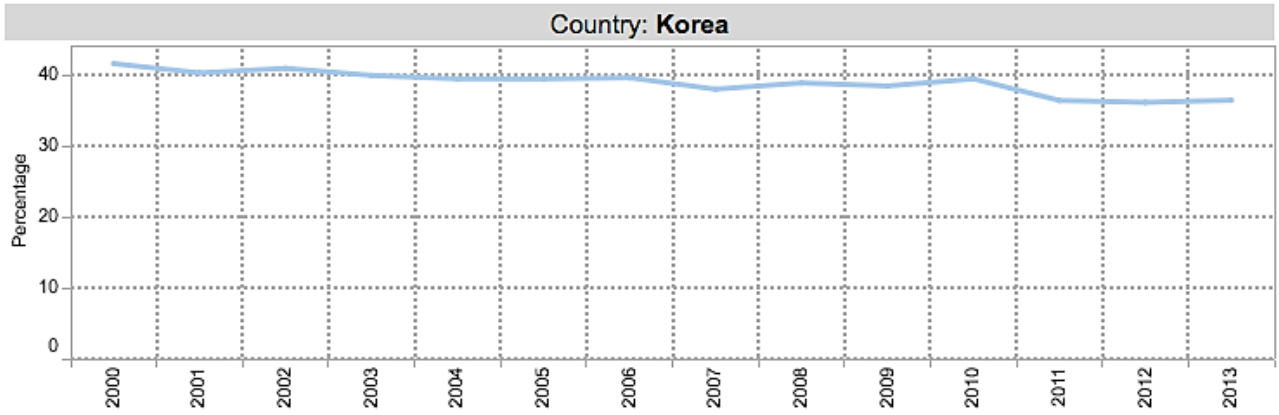


Graph 6. Thriving measure in South Korea between men and women (2006-2011; Source: Gallup)

The rapid economic growth in Korea has beneficially helped both men and women getting jobs as well as their happiness ratings. However, difference in earnings between men and women is still very significant and needs to be revised with better women-friendly policies to narrow the gap in earnings.

3.4 South Korea's most recent gender pay gap

The gender pay gap in Korea has gone down, but is not so drastic. Since 2000, the gender pay gap in Korea has declined although the gender pay gap in Korea has decreased around 5 percent. For the past 10 years, it basically has gone done about 4 percent total. In contrary, average gender pay gap of OECD countries has gone down from 18.0 percent in 2000 to 15.0 percent in 2013. In 2015, South Korea's gender pay gap has reached 34.9 percent, which is approximately 2 percent lower than the gender pay gap in 2013. Labor force participation of Korean women has reached 55.5 percent in 2015 where the average annual salary of Korean women is $22,262.73 (US dollar) as shown in table 1.



Graph 7. Gender pay gap in South Korea from 2000 to 2013 (*Source: OECD, Gender Wage Gap*)

It seems like both the difference in the labor force participation between men and women and the gender pay gap needs to be paid attention. The gender pay gap of 34.90 percent gives average women's earning of 631 Korean won when average men earn 1000 won. In addition, the labor force participation of Korean women is almost 30 percent lower than the labor force participation of Korean men.

	South Korea (2015)
% Gender pay gap	34.90%
Average annual salary for a woman	$22,262.73
Average annual salary for a man	$40,000.00
Labor force participation of women	55.50%
Labor force participation of men	76.10%

Table 1. Gender Pay Gap in South Korea in 2015 (*Source: The Global Gender Gap Index 2015*)

The economy in Korea has a recognizable growth such as rapid industrialization and a rapid growth of educational achievement among the developed countries in Asia. However, this

rapid development has caused some wage inequality that Korean women, on average, earns only 50 percent of Korean men's earnings in 2004. As being geographically located in Asia, Korea reflects some very interesting characteristics of institutions and culture that help to understand the difference in the gender pay gap in the international level.

4. Gender Norms and Attitudes in South Korea

Historically, discrimination against women in Korea was affected by cultural and social factors. As socio-economic variables that are correlated to the causes of the gender pay gap in Korea, it is also crucial to discuss how cultural and social factors have influenced gender inequality. Korea is one of the most developed countries in Asia accompanied by Japan, Singapore, and Hong Kong. However Korea has carried the highest gender pay gap over the last 10 years compared to other developed countries. Korea's economic development is recognized and often referred to as a "miracle". However, rapid industrialization in Korea is combined with declining wage inequality due to an overall rapid growth of educational achievement. Due to its economic position as one of the developing countries, resulting in more severe labor market discrimination and penalties to Korean women at work is experienced. Therefore, combination of labor market discrimination and penalties to Korean women cause a high gender earnings gap. In fact, the gender pay gap has decreased in Korea, but it is not as significant as the gender pay gaps in other countries like the Japan. The gender pay gap in Japan was 33.8 percent in 2000, and it has gone down to 26.6 percent in 2013, whereas it was 41.7 percent in 2000 and has reached 36.6 percent in 2013. The gender pay gap in Korea in 2013 is almost 3 percent higher than the gender pay gap in Japan in 2000, which proves that the improvement in the gender income inequality is not so significant. The goal of this chapter is to look into unique

social factors like stereotypes, gender norms, and institutional discrimination that could account for Korea's gender pay gap in depth from sociological perspectives.

Stereotypes and undervaluing women's work

Has women's status in Korea been substantially improved as Korea experienced rapid economic development and modernization? The answer is yes, but it is not a significant improvement. In order to understand Korean women's status in the Korean society, there has been a growth of importance of women's participation in high paying industries. In Korea, white-collar workers are often called 'chaebol', indicating individuals in the highest social class. Korean people dream about becoming a chaebol, and this is because there is a huge income inequality that chaebols earn excessively more than wage earners in the low and middle classes. This has brought a new insight to women's labor participation and gender relations in the changing national economy.

In 1970s and 1980s, female white-collar office workers were viewed and referred to as somewhat demeaning hint of inferiority than their male counterparts. In a study conducted by Park (2005), stereotypes of Korean women as office workers are introduced. Female office employees in chaebol and one's impression as a female employee in Korea are noted. In Psychology, gender stereotypes are defined as ideas about men and women traits and capabilities and how people should behave based on their gender. Park addressed that women were regarded as inferior, submissive, and 'decorative' in the eyes of men workers in the office. These gender stereotypes of Korean women had the effect of deterring one from even considering employment in a Korean company as a career option. Most importantly, this study

suggested that this is not just a rare experience of one, but also this affected lots of female office workers in the Korean labor market.

Traditionally, women who work in Korean offices are known as ‘yeo-sa-won’, which indicates a female staff, and have often referred to as ‘flowers of the office’. As ‘flowers’ they served to brighten up the atmosphere of the office. They were offered a limited range of tasks commanding low status and poor remuneration. Until mid-1980s, female office workers were almost always high-school dropouts, and sought for relatively simple and fragmented tasks under orders from male supervisors. Also, it was discussed by Park and Kang (1994) that there were some tasks that were considered as ‘women’s work’ such as cleaning, decorating the office, making tea for workers and visitors, and etc. It’s very controversial because in the word ‘office’ may imply modernization and development, whereas for women the floral association implies a traditional and patriarchal ideology. Even though social institutions in Korea have endured almost consistent development and modernization, the cultural climate seems to remain deeply conservative and traditional. This steady culture affects Korean women because they still frequently face disadvantages and obstacles arising from the strong traditional culture.

Economic development and modernization in Korea have carried on the tradition of having women inferior than men in the labor market. The question to be asked is whether we could still call this a successful development when it failed to guide the right human interaction. The issue concerned by Park is with the female labor force participation that women are merely exploited and marginalized while the nation pursues its capitalist economic interests. The explanation for the failure to liberate women is related to the issues of cultural and traditional ideology, which plays a crucial role in shaping the gender stereotypes in Korean society.

What then is the culture in Korea like? The Confucian law of nature influenced Korean culture as it was discussed in the history of the economic development in Korea in Chapter 3. Confucianism portrays manual workers, minors, and women as inferiors. Confucian law of nature stresses a set of hierarchical order of human relationships based on age, sex, and inherited social status. Traditional Korean Society, during development and modernization, strictly adhered to Confucian principles that were oppressive to women, who were supposed to be restricted by their role as daughter, wife, or mother? The economic progress in Korea has liberated women and their social status and their living conditions in modern society. Since Confucianism is often regarded as one of the most important traditional sources of the country's character and principles, it has a huge impact on Korean society and institutions. Korea is currently a nation of mixed religions with the influence of different cultures. However, the Confucianism principles still remains significant in Korea. Modern Korean society seems to feel the strong influence of this historical culture in their everyday life. Park conducted some interviews with female employees in Korea, and one of the interviewees stated "Korean culture means Confucian tradition". Due to the persistency of the Confucian traditions in Korea, many blame Confucianism and its values for gender inequality in Korea. One of the Korean researchers who dealt with this is Choi (1994), who argued that the Confucian tradition has prolonged the negative discrimination against women. It is evident from this historical fact that the deep-rooted Confucian ideals of male superiority still influence the lives of Korean women, even today. Confucian heritage has positive factors in the development of Korea, especially with its value in government and educational institutions. However, negative sides of it still affects Korean women's status. This illustrates a controversial belief among the population in Korea that it is just a social norm without being questioned.

As it was discussed in Chapter 2, direct discrimination and undervaluing women's work is one of the universal causes of the gender pay gap in the world. In the case of Korea, the existence of gender stereotypes and Confucian traditions make Korean society to consider Korean women inferior to men. Therefore Korean women do not get the same opportunities to get promoted or to be considered as qualified as their male counterparts. This norm has changed over years, but there is still a remaining discrimination against female workers due to gender stereotypes in Korea, even today.

Korean women's labor force participation

Increase of the number of women in the labor force participation has introduced a new norm to the Korean society. The new norm is to have two major responsibilities, being a wage earner and a mother. There have been women friendly policies to encourage women to enter the labor market, which is mainly about implementing better childcare policies. However, patriarchal traditions still expect women to take full responsibilities as mothers and housewives in Korea. For example, a woman who fully devotes her lifetime to raise her children will be considered as a 'good mother'. In contrary, a working mother who cannot stay with her children all the time may contradict to the society's definition of being a 'good mother'. Therefore, this society's definition of working mothers forms an obstacle in building attitudes towards working mothers. One very common social phenomenon is that some traditional people seek for daughter-in-laws who are willing to fully give up on their careers and become housewives. Alternatively they expect their daughter-in-laws to eventually quite their jobs to serve their role as mothers. Therefore, it is evident that women are under social pressure to make decisions in their career, whether to stay or leave in their jobs. According to a study conducted by Kim

(2008), Korean working mothers expressed strong confidence in their self-images as career women. Working mothers try to support their children better by taking advantage of their strong financial position. However, majority of these working mothers expressed much higher stress level and guilty conscious level about being away from their children during their working hours or getting childcare support from their family members such as mother-in-laws. In addition, working mothers in Korea get limited access to childcare facilities when they have inflexible work hours. According to the Korea National Statistical Office (2005) on their statistical report on women in the labor market, 38.4 percent of married women in Korea quit their jobs at least once in their career lives, while 77.5 percent of the reasons for quitting were related to parenting hardships as a working mother. Working mothers not only have a high degree of stress, but also have contemplation resigning from their careers. This strongly addresses how significant the existence of gender stereotype and traditions are and how gender role stereotypes and traditions affect Korean women's career decisions. Parenting is affected by family expectations of women as roles of mothers and housewives, and family expectations of women are built by the patriarchal society. In addition, it is evident that Christianity is also one of the minor factors that maintain the patriarchal tradition in Korea.

Historically Korea is heavily patriarchal with a conservative tradition in gender roles. Korea is not known to have strongly affected by religion in their society. In fact, Korean Buddhism serves a long history and cultural influence. However, there is increase of Christians and other religious groups since the mid-20th century. Communities of Christians have existed prior to 1880s, and increased rapidly when the King of Korea and his family supported Christianity. Although there have been traditions of different religion groups in Korea, religiosity in Korea is not significant. However, a growing body of research on parenting and

religion emphasizes the significance of the roles of religious faith in parenting (Kim, 1996). Traditional Korean motherhood is rooted in conservative interpretations of Confucianism, which defines women's role as mothers after marriage and requires mothers' unconditional dedication to their children. Confucianism justifies that it is natural for men to have their masculinity and dominance over women. From a historical viewpoint, Confucianism restricted interaction between men and women and implemented strict gender roles. Nearly all marriages were arranged and were often completed while the bride and groom were still young children. Wives were taught to refrain from talking and moving during ritualistic wedding, and this practice addresses the restraint and submission of women. The very conservative tradition still exists in Korea through Christianity. The Christianity has impacted on the education of modern Korean society in terms of shaping women's self-identity and self-developing. Christianity helped to perpetuate the traditional self-image of Korean women through its doctrines. And it has also brought America's Christian teachings on the role of women in home and society. Two relevant questions were raised in a study conducted by Kim (1996). First question is how the blending of American Christian culture affected the educational situation in Korea, and the second question is how it affected the women's self-development. It was argued by feminists for years that the Bible is a product of patriarchy and has significantly influenced women's self-development. The Bible is served as one type of doctrine in Korea. For example, Kil Young-Sook, the wife of a physician and an elder of Fellowship Church, the Bible is her major reading material. Mrs. Kim accepts the Bible unconditionally and stops herself from raising any doubts and skepticism about her belief. A lot of female Christians admit the biblical implications for women's roles and status and accept the teachings literally. Therefore, there is a long history and tradition in Korea to consider men more importantly than women. The tradition also

oppresses women and educates them to consider themselves inferior to men. Due to the expectations that were continued historically, women tend to invest less time in occupations in order to serve the expected roles. Human capital theory was explained by Polachek (2004) from chapter 2 how it has helped the United States to decrease their gender pay gap by implicating economic self-interest within freely competitive markets. This helped women in the U.S. to participate in the labor market more and to increase their lifetime work expectations. This theory needs to be implicated in Korea effectively in order to help women in Korea to realize their self-interests and potentials rather than have them act according to interests of those expect Korean women to serve as mothers and house caretakers. Women in Korea have taken a long time to realize that this is a discrimination against women, yet this is considered just as social norms or traditions that has not been questioned. The question that is still worth considering is whether this is still applicable in today's society in Korea. Korea has economically developed a lot and has implemented a lot of the Western cultures; however has this changed women's status better?

Korea was influenced a lot by the Confucian principles, and the influence has both positive and negative effects to economic and social development. As it was discussed, negatively Confucian principles made women inferior to men. However, without Confucianism, the economy in Korea would not have developed because Confucianism promoted the role of ethics as an element in good public administration and government interventions. Confucianism helped Korea to build very strong educational institutions, which was the first step in achieving modernization. Korea has evolved from a state of poverty to newly industrializing countries in the World. However, development has not improved women's status, hence has an adverse impact on women. Since the 1970s, many scholars including Park (1993) argued that the

process of economic modernization marginalized women economically and socially and increased their dependence on men. The female labor force participation rose from 28 percent to 47 percent between 1960 and 1989. Alongside the increase of the female labor force participation, In 1990s, Korean women have gained more opportunity to be educated in universities and freely enter paid employment as workers in offices alongside male workers in the 1990s; the major strategy of Korea's economic development has been export-led oriented industrialization. In other words, there were lots of effectively mobilized large quantities of low wage and unskilled labor. This changed female participation in the national economy as well. Korean women not only contributed to the nation's industrialization, but also to agricultures. However, after the rapid growth of Korean women's labor force participation, there has not been a significant increase of Korean women's labor force participation since then.

Motherhood and institutional discrimination

Korean women, like most women in developing countries, have faced struggles and challenges from economic, social, and cultural changes. Also, Korean women had their gender roles and status affected by these challenges. Park (2005) believed that working women in the Korean labor market and women from other developing countries undergo and share similar experiences through the recent industrial development. Historically from 1970s, there is a rapid increase in female-labor participation in manufacturing industries as it was discussed. According to Lim (2002), these industries are sensitive to wage costs and female labor is typically cheaper than male labor because female workers do light jobs compared to male workers. One of the important consequences of gender differentiation is what is referred to as in many literatures, women's 'secondary status' in the labor market. Lim argues that women have

difficulty of juggling between labors and raising children, and women eventually choose low-paying and more flexible jobs.

Even though there has been a great integration of married women into the labor market since the 1980s, women still struggle at handling between being a mother and a wage earner. Due to the fear of low birth rate, there have been policy reforms in relation to childcare in Korea in order to support working mothers. Kim (2005) discussed about how it is common that not all mothers could rely on their family members for taking care of their children. Kim found Evident for this phenomenon in the study that the family plays a significant role in mothers' reconciliation process. Especially for children under age 2~3, most mothers search for childcare providers from their extended family network. Through this process, working mothers focus on looking for the right childcare provider for them and focus on their work in the meantime. There are some childcare options for working mothers in Korea. In a survey conducted by Rice and Wilber (1979), most of the men and women expressed a desire to have children in day care due to their time constraints and limited access to other responsibilities. There were about five different childcare options available in Korea in 1980s, and parents could choose one of these according to the amount of expenses they were able to afford. Parents who are looking for non-expensive childcare tend to choose of the community childcare centers, whereas some rich parents who can afford at higher expenses would get a personal nanny. Having various options of childcare support, there is a significant increase in women's labor market participation. However, another problem that are drawn from having the childcare options is that there is a very large demand in the childcare centers from many parents, which increased the price of private and public childcares drastically. In addition to this, there is a large demand of childcare support from many families. Due to this, supply could not meet the large demand for rooms for

childcare support. This is another problem that should be addressed for the future childcare policy implication.

Like other working mothers in the world, Korean women face motherhood penalty, which is introduced in chapter 2. Working mothers in Korea are forced to leave their jobs after getting married or having children because employers decide to disqualify them for their expected household responsibilities. Currently, Korean society is facing goals to figure out a better way to support female workers and working mothers. However, from the most recent news in Korea, on March 16th 2016, the existence of the substandard tradition was addressed by one of the big corporations. Public and lots of media for privately suggesting female employees to quit their jobs after employers were informed by the employees about their wedding schedules criticized the corporation. It is important to emphasize that those female employees were not married yet, hence just came up with their wedding schedules. However, this corporation was still encouraging them to leave their jobs. This is not surprising because there have been several cases like this in many big and small corporations that they forcibly encourage female employees to leave their jobs after getting married or after getting a child. One other relevant case was in 2013; Namyang Dairy Product Co. was condemned for having trampled on rights of the women workers. Namyang sells products such as milk, baby formula, yogurt, and etc. and the majority of consumers are mothers. However, shamefully Namyang Corporation forced women employees of its headquarter to resign on the ground of pregnancy and marriage, reported by YTN News. When female employees inform their supervisors about having children, the company pushes them through conversion from regular to non-regular workers of married female employees without a guaranteed maternity leave as well as 10% reduction in wages. The Korean Women Workers Association (2013) addressed their irritated

feelings about this happening and they stated that even after having the Equal Employment Opportunity Act and Labor Standards Act, discrimination against female workers still exist. Thus, strengthening the punishment has to happen in order to avoid further happenings.

It appears that the rights of female workers have not been improved significantly in Korea and ongoing discrimination needs to be addressed. Korea has managed to increase women's labor market participation, but it seems to be difficult to avoid institutional discrimination against women. Indeed, Korean women are trying to overcome their obstacles and to gain equal opportunities as their male counterparts. Korean women are fighting for their self-interests and potentials other's expectations on their future career goals. According to Boyer (1991), there are many women in rural areas who serve themselves as housewives because rural areas are populated majorly with conservative and traditional people. On the contrary, in urban areas there are many goal-oriented women, who seek for opportunities to raise their social status. Having a distinction between urban and rural areas will take time for them to merge into one culture. Urban areas like Seoul and Busan are very populated and are mixture of many cultures because of the globalization as well as its increase in tourism. Merging different cultures and traditions in Korea may help the society to recognize problems with the conservative Confucian cultures. The realization may help them to come up with better policies to help women's equal rights in the labor market.

Schooling and its influence on the field of study

Single-sex schooling started in Korea in order to draw a distinction between male and female students. It was believed that the single-sex schooling would help students focus on studying because single-sex schooling will prevent any source of distractions and discrimination

based on gender. Single-sex schooling is now helping female students to build their interests in male-dominated subjects with less gender role pressure as it was argued by Schneeweis and Zweimüller (2011). However, this seems to be not applicable in Korea because even in all girls high schools, majority of female students choose fields in social science more than science and mathematics. In table 1, it shows the top six all girls' high school in Korea and their ratio of in STEM (Science, Technology, Engineering, and Mathematics) and social science in years of 2014, 2015, and 2016. It shows that there are barely any significant changes in the ratios of female students in the fields of STEM and social science. In other words, there is no significant increase in the number of female students in STEM.

School	Class level	Fields of study	2014	2015	2016
Kyung-gi girls' high school	3rd year	STEM	2	2	2
		Social science	8	8	8
	2nd year	STEM	2	2	4
		Social science	8	8	6
Sook-myung girls' high school	3rd year	STEM	3	3	4
		Social science	7	7	6
	2nd year	STEM	3	3	4
		Social science	7	7	6
Eun-kwang girls' high school	3rd year	STEM	2	2	3
		Social science	8	8	7
	2nd year	STEM	2	3	4
		Social science	8	7	6
Jin-seon girls' high school	3rd year	STEM	4	4	5
		Social science	6	6	5
	2nd year	STEM	4	4	4
		Social science	6	6	6

Table 2. Top six girls' high school in Seoul and ratio of students studying fields in STEM and social studies in the years of 2014, 2015, and 2016. (Source: News of Seo-cho, Gangnam January 2016)

Therefore, from 2014 to 2016, ratios from these high schools have changed, but not significantly. There is increased number of students choosing STEM in two years. However, it is significant that there are still more students who choose social science over STEM. In fact, it is evident that there are more 3rd year students who choose social studies over STEM compared to the 2nd year students. Therefore, single-sex schooling is not helping female students in Korea to avoid social pressure of choosing fields of study as well as pressure from parents. The question is whether their decision is made according to their own interests or their parents' expectations on their careers. It is unfortunate that single-sex schooling in Korea has not helped female students as much as it was expected to. Family expectations to some students force female students' decisions on subjects to study, and it could also be the social stigma that states what female students should study. The presented data is from the best four all girls' high schools, which revealed that female students tend to choose non male-dominated subjects. Since single-sex schooling does not effectively encourage female students to study male-dominated subjects, there should be a better method to encourage them.

Occupational Segregation

Throughout the rapid economic development, modernization, and industrialization in Korea, gender occupational dynamics have changed. Korean women's labor force participation increased significantly starting in 1960s in industrial production sectors because the Korean economy from 1960s to 1980s developed mostly through exporting products to other countries.

Most of Korean women were working for low-paying jobs while male counterparts are at white-collar occupations. Women were mainly in sectors such as manufacturing, manual, retails, and health institutions.

According to the International Labor Organization (ILO), there are higher ratio of women in occupations such as clerks, service and sales workers, and elementary occupations in Korea in 1995. In reverse, there are higher ratios of men in occupations such as professionals, managerial, technicians and associated professionals, crafts and trade workers, and plant and machine operators. Strictly speaking, there are more men than women in high paying jobs like professionals, managerial, and senior officials.

Occupation	**Men**	**Women**
Legislators, Senior officials, and managers	4.6	0.3
Professionals	5.8	4.8
Technicians and associated professionals	11.8	7.8
Clerks	11.3	18.0
Service and sales workers	16.9	37.0
Crafts and Trade workers	22.4	11.1
Plant and machine operators	17.2	4.3
Elementary occupations	10.1	16.7

Table 2. Male-female ratio by 8 different occupational groups in 1995 (Source: International Labor Organization, 1995 report)

Having a flexible job is one of the most important factors when women seek for job opportunities because they are expected to take over household responsibilities eventually once they get married. Therefore, when considering becoming a working mother, they seek for jobs

that don't require too much time and investment. Interestingly, becoming a primary teacher is a norm among Korean women and their parents to become teachers when they are in primary or middle school suggest lots of Korean women. Teacher is a very flexible and long-term guaranteed occupation that women can have since the education in Korea is characterized by the three-level education system. The educational administrative system in Korea is subordinate to the central government and finance, personnel, and supervision is taken by the central government. Almost 80 percent of the fund for regional education comes from the central government. Teachers can take a leave of absence for pregnancy or marriage and can get back to school whenever they are ready to take responsibilities at school. Due to that cultural norm of becoming teachers in Korea, percentage of female teachers is almost at 78.70 in 2012 according to the World Bank. This finding includes full-time and part-time teachers, and the rate has increased exceptionally from 50 percent in 1992 to 78.70 percent in 2012. Huang, Yang, and Wu (2012) also compared gender distribution among school principals and teachers in some East Asian countries. The researchers also found that there was a significant difference between the ratio of male school principals and that of female ones in Korea. The ratio of male middle school principals was higher than that of females in Korea, whereas there is a higher ratio of female teachers in the middle school than male teachers. This unique gender distribution reveals that ones that take high-paying positions are mostly men in schools. And there are more female teachers who do not get paid as much as principals do.

According to table 2, 37 out of a hundred women work in service and sales jobs even after excluding the agricultural labor force. However, interestingly female sales and service workers in Korea are less likely to quit their jobs than clerical workers according to Brinton (2002). This phenomenon happens because sales and service jobs are more flexible and less

invested. Also, they do not require high educational level than clerical jobs, and are considered informal-sector labor. Some of the women in these fields are self-employed or family workers. Self-employed workers have a greater chance for job continuation than paid employees. Therefore sales and service jobs are very preferred by many women in Korea. Due to this, occupational segregation in Korea can be seen as a large number of women in fields like sales and service and primary educations and a large number of men in the fields like managerial and technicians. This is a similar case to occupational segregation in other countries, as discussed in Chapter 2. Interestingly, becoming primary and secondary teachers is a very unique social norm in Korea and is preferred by women. There are also men who are looking for partners who are primary teachers to have them take care of household responsibilities.

Stereotypes of women, gender roles, and attitudes about women in Korea partially account for the gender pay gap in Korea. Gender pay gap in Korea cannot be explained just by socio-economic factors that have commonly been used previously to explain the gender pay gap from international perspectives. It is clear that each country has its own social norms and cultural factors that may account for their own gender income disparity. It is essential to carefully research each country's social norm and culture to examine their gender pay gap in depth.

5. The Model

5.1 Dataset

In this study, I used microdata from the International Social Survey Program (ISSP). The ISSP is a survey program that groups data from over twenty countries and covers a number of important topics for social science research. It breaks down from cross-national perspectives to the individual national perspectives by developing questions that are meaningful and relevant to all countries. The most relevant dataset in ISSP to the gender pay gap study is "Family and Changing Gender Roles", from 2012. This dataset is also the most recent data that addresses the gender roles topic followed by 2002.

In the previous work on international perspectives and differences in the gender pay gap (Blau and Kahn, 1996; 2003; 2008), a micro-data from 1985-94 period for 22 countries from ISSP was used. The researchers used a dataset with a theme questions concerning social attitudes. This dataset contained social topics in social attitudes including respondents' education, earnings, age, marital status, work hours, and gender. Since the very dataset has been updated in ISSP in 2012 and has covered the same and more relevant variables from the past, I decided to use it to analyze the gender pay gap differences and characteristics of women in Korea.

5.2 Variables

The 2012 "Family and Changing Gender Roles" data includes not only years of education, earnings, age, gender, marital status, and working hours, but also answers to questions about opinions on working mothers, opinions about having children, and sharing household chores with partners. Using the existing variables in order to conduct the statistical

analysis that fits into the goal of this study generates Index variables. Existing variable that are used in this study are age, marital status, firm size, years of education, union status, gender, types of occupation, and employment status. Some variables are generated by using more than one existing variables to build variables that are needed, one of them is individual wage, calculated by regular payment (individual level of income) divided by regular hours worked by individuals. Social attitude indexes were generated as well, one is called 'traditionalprogressive' which measures conservativeness and progressiveness of individuals' attitudes towards working females, and another is called 'likedislikechild' which measures individuals' attitudes towards having children. Coding of each variable can be seen below:

Table 4.

Variable mean and standard deviation, South Korea (2012)

	2012		
	Total sample	women	men
Age	43.03 (13.58)	43.75 (13.44)	42.16 (13.72)
Marital status	0.62 (0.49)	0.66 (0.47)	0.56 (0.49)
Firm size	0.19 (0.39)	0.13 (0.34)	0.28 (0.45)
Professional worker	0.48 (0.49)	0.49 (0.50)	0.46 (0.49)
Years of education	12.43 (3.54)	11.89 (3.80)	13.09 (3.08)
Union status	0.13 (0.33)	0.10 (0.31)	0.15 (0.36)
Urban rural	0.81 (0.39)	0.80 (0.39)	0.82 (0.38)
Employment Status	0.62 (0.49)	0.54 (0.49)	0.71 (0.45)
TraditionalProgressive	13.37 (3.32)	13.33 (3.28)	13.42 (3.38)
LikeDislikeChild	11.67 (2.89)	11.97 (2.84)	11.29 (2.91)
N	1,034	568	466

Since this study is interested in these variables for Korea, other countries are initially removed from the data. After the removal, variables to use are summarized and re-formatted in a simpler way. For example, wages are converted into ln (wages). Marital status is converted into 1 and 0, 1 if married and 0 otherwise. Union status is converted into the same format, 1 if respondent is in a union and 0 otherwise. For gender, 1 is used for male and 2 is for female respondents, and professional worker is converted into 1 if respondent is a professional,

managerial, or administrative and 0 otherwise after categorizing types of occupation into 9 groups. Urban/rural group was converted into 1 if urban and 0 if rural. Employment status was generated from working hours that more than 1 hour for being employed and 0 for being unemployed. Finally index variables were generated by a scoring method. 'traditionalprogressive' is generated by adding cv5, V6, V7, V8, V9 which are the questions regarding individuals' attitudes towards working women and are scored in terms of 1 if strongly agree to 5 if strongly disagree. In order to make sure the consistency of these questions, V5 was converted into cv5 which is, 1 if strongly disagree in order to have 1 for being traditional and 5 for being progressive. Same method is used to generate 'likedislikechild' variable, V22, cv23, cv24, and cv25 are combined to measure individuals' attitudes about having children, 1 if strongly against having children and 5 if least against having children. Respondents' age is controlled to age less than 65. See Table 1 for coding of independent variables. \

5.3 Descriptive statistics of women in Korea

Since most statistical analysis in this study involves determination of factors that cause the gender pay gap in Korea as well as social status of Korean women, this section will summarize social status and characteristics of Korean women using the ISSP dataset.

Age and education

There are total of 568 female respondents among 1,034 total respondents in this study, as shown in figure 1. The average age of the female respondents are 43 ranged between 18 and 65. 36.38 percent of female respondents' average years of schooling is 12 years, and 18.45 percent of female respondents' is 16 percent, and 13.36 percent of them had 14 years of

schooling. This is not very different from male respondents' because there is 28.69 percent among 467 respondents, who completed 12 years of schooling, and 27.62 percent of them completed 16 years of schooling, and 16.06 percent completed 14 years.

Marital and employment status

Among the 568 female respondents, there are 376 married women, out of whom 339 are wage earners. There are 262 unemployed females, and there are 96 female who are unemployed and single, as shown in figure 4. In other words, 166 unemployed females are also married. There were more of married female participants than single female participants, and there were more employed females compared to unemployed females. Very interestingly there were more married working females than single working females in this dataset for Korea as shown on figure 4. Among the 376 married females, 192 respondents do not have any children and there are 77 respondents with 1 child, 84 of them with 2 children, 21 with three, and 2 of them had five children. There were 8 female respondents who are not married but have 1 child, and 8 female respondents who are not married have 2 children.

Among the 306 female wage earners, the average wage is 49,098.59 Korean Won. One of the female wage earner's wages is 108,185.7 won, which is the highest in the dataset, as shown on figure 5. There are total 306 female wage earners, which is more than 50 percent of the female respondents. Among the 536 female wage earners, 268 female workers are professional workers and 268 are nonprofessional workers, as shown in figure 6. Among the 569 female respondents, 28 of them work in firms that have more than 9999 employees, and 496 of them work in very small firms that have employees less than 1000. Most of the female

respondents are not part of any labor unions; only 59 of them said they were part of some union, not specified.

Looking at differences in mean variables in 2012 (see Table 5). Comparison of variables between men and women are listed with mean and standard deviations.

Table 5.

Variable mean and standard deviation, South Korea (2012)			
	2012		
	Total sample	women	men
Age	43.03 (13.58)	43.75 (13.44)	42.16 (13.72)
Marital status	0.62 (0.49)	0.66 (0.47)	0.56 (0.49)
Firm size	0.19 (0.39)	0.13 (0.34)	0.28 (0.45)
Professional worker	0.48 (0.49)	0.49 (0.50)	0.46 (0.49)
Years of education	12.43 (3.54)	11.89 (3.80)	13.09 (3.08)
Union status	0.13 (0.33)	0.10 (0.31)	0.15 (0.36)
Urban rural	0.81 (0.39)	0.80 (0.39)	0.82 (0.38)
Employment Status	0.62 (0.49)	0.54 (0.49)	0.71 (0.45)
TraditionalProgressive	13.37 (3.32)	13.33 (3.28)	13.42 (3.38)
LikeDislikeChild	11.67 (2.89)	11.97 (2.84)	11.29 (2.91)
N	1,034	568	466

5.4 Attitudes about working women and having children

There are different social attitude questions from ISSP that respondents answered with a number ranged from 1-5, 1 for strongly agrees and 5 for strongly disagree. 'traditionalprogressive' measures attitudes about working women using scoring methods. The scoring ranged from 5 to 25, five different scores are added, and therefore 5 stand for the most traditional and 25 stands for the most progressive characteristics. As shown in figure 10, female respondents do not significantly have strong opinions about working women. Among 568 female respondents, 19.68 percent of respondents scored between 5 and 10, which are considered very and somewhat traditional. 54.66 percent of the respondents scored between 10 and 15, which are considered between traditional and neutral, and 43.58 percent of respondents

scored between 15 and 20, which are considered between neutral and progressive. Finally, 2 percent of respondents have very or somewhat progressive thoughts about working females. Therefore, almost 90 percent of the respondents are considered almost neutral which is not so significant. Similar attitudes were found in male respondents as well. Among the 466 male respondents, almost 75.59 percent of the male respondents are considered to have neutral attitudes towards working females in Korea.

Attitudes about children in the family are measured by the scoring method as well. Answers from four questions about respondents' attitudes about having children are scored between 1 to 5, 1 for having positive attitudes and 5 for having negative attitudes. Score 12 is considered neutral; there are 14.26 percent of respondents who are neutral about having children. Scores less than 12 are considered to have positive attitudes about having children, which is 37.85 percent in this data, which is shown in figure 12. In the contrary, there are almost 47.89 percent of the respondents who have negative attitudes about having children. Interestingly, different characteristics can be found among the male respondents about this issue. There are 48.82 percent of participants who have positive attitudes about having children, which is more than female respondents. Also, there is 23.96 percent who have negative attitudes about having children. 48.93 percent of male respondents have positive attitudes about children in the family. 14.37 percent of the male respondents have neutral attitudes, and finally 36.7 percent of male respondents have negative attitudes about children in the family.

6. Results and Discussion

As the variables were described above, we are looking at the relationship between socio-economic factors and earnings difference between men and women. We are also interested in obtaining possible relationship between the relative pay of Korean women to men and attitudes of Korean women. The analysis will start with a main model.

6.1 Results and Analysis

Multi Regression Model

$$lnwages = \beta_0 + \beta_1 gender + \beta_2 age + \beta_3 yrsedu + \beta_4 totalchildren + \beta_5 firmsize + \beta_6 maritalstatus + \beta_7 \text{profworker} + \beta_8 urbanrural + \beta 9(dummy\ traditional) + \beta_{10}(dummychildlovers)$$

The first control variable that is used in the multivariate analysis (multiple regressions) is age. Since we are assuming that age can vary wages of individuals, gender is the first control variable. Second control variable is total number of children, and thirdly firm size, and lastly years of education are used. These control variables are expected to affect the wage difference in Korea. Dummy variables are also added in order to bring more of the socio-economic variables, and are represented as a numerical value of 0 or 1. Dummy variables are urban/rural, marital status, union status and professional worker status.

$$lnwages = 10.361 - 0.3605(gender) - 0.0029(age) + 0.0351(yrsedu) - 0.00734(totalchildren) - 0.33557(firmsize) + 0.08047(maritalstatus) + 0.34395(\text{profworker}) + 0.10359(urbanrural)$$

In the estimated multiple regression model, which can be seen in figure 14, we can see that there is a negative relationship between wages and gender with a coefficient slope of -0.3605. With control and dummy variables, the relationship is significant with $P<0.005$. The confidence interval at 95% confidence level is from -0.486298 to -0.234794. Also, we could see that the R-

squared is 0.2294, which shows that 22.94% of the variation of the wages can be explained by the variation of gender. In other words, women earn 36 percent less than what men earn.

Gender wage difference is 36.05 percent in the standard model, and now social norm variables are added to the regression.

lnwages= 10.2904 - 0.357(*gender*) + 0.00245(*age*) + 0.03739(*yrsedu*) - 0.01084(*totalchildren*) + 0.3263(*firmsize*) + 0.0752(*maritalstatus*) + 0.3463(profworker) + 0.0923(*urbanrural*) + 0.09227(*dummy traditional*) + 0.03796(*dummy childlover)*

Estimated coefficients have changed from -0.3605 to -0.357 and are both statistically significant. Social norm and attitude variables have affected the coefficient, but not quite recognizably. Dummy variable for traditional respondents and child lovers are used in the multivariate regression and affected the pay gap slightly. However, these two variables are statistically not significant in the regression model. The same model with only female respondents was analyzed with the two social norm dummy variables. Two social norm dummies were positively correlated to the wages of women in the regression model with only female respondents with +0.2484 and +0.0816 coefficients. R-squared is 0.2139 and Prob>F is less than 0.001.

lnwages= 9.1114 + 0(omitted; *gender==2*) + 0.006413(*age*) + 0.0594(*yrsedu*) - 0.05076(*totalchildren*) + 0.3811(*firmsize*) - 0.0651(*maritalstatus*) + 0.3722(profworker) + 0.09253(*urbanrural*) + 0.2484(*dummy traditional*) + 0.0816(*dummy childlover)*

The same model was regressed with only male respondents to examine the effect of social norm dummy variables to male respondents' wages. Both dummy variables are negatively correlated to the wages of male respondents. In order words, these two social norm attitude dummy variables negatively affect the wages to male respondents. However, the coefficients are very small, which are -0.05096 and -0.0105 and are not statistically significant. This regression has a R-squared of 0.1689 and its Prob>F is less than 0.001.

lnwages= 10.443 + 0(omitted; *gender==1*) -0.003(*age*) + 0.0137(*yrsedu*) + 0.01137(*totalchildren*) + 0.3266(*firmsize*) - 0.2786(*maritalstatus*) + 0.3372(profworker) + 0.1029(*urbanrural*) -0.05096(*dummy traditional*) -0.0105(*dummy childlover)*

Probit model

Due to this insignificance, dummy variables for 'traditionalprogressive' and 'likedislikechild' are generated for traditional respondents. The probit regression model is used to examine the relationship between employment status and social norm factors in men and women and verify their difference in social attitudes. The purpose of using this model is to estimate the probability that an observation with particular characteristics may fall into a specific one of the categories, which in this case is employment status. As shown in figure 18, dummytraditional and dummychildlover are not statistically significant, however there is an interesting output for female respondents. With 535 observations, the log likelihood is -340.895, and the likelihood ratio chi-square of 57.84 with a p-value of 0.0001 reveals that the model as a whole is statistically significant.

employstatus = 0(gender; omitted) +0.0182(age) + 0.0902(yrsedu) - 0.17174(maritalstatus) – 0.7741(profworker) – 0.2513(urbanrural) + 0.09598(totalchildren) – 0.18987(dummy traditional) + 0.02884(dummy childlover)

There is a negative relationship between employment status and traditional attitudes about working females with -0.18987 an estimated coefficient and a positive relationship with respondents with positive attitudes about having children in the household. However, these estimated coefficients are not quit statistically significant. Similar pattern are shown with male respondents.

employstatus = 0(gender; omitted) +0.0189(age) + 0.06388(yrsedu) - 0.76935(maritalstatus) – 0.4625(profworker) – 0.4347(urbanrural) + 0.3865(totalchildren) – 0.0984(dummy traditional) – 0.3295(dummy childlover)

There is a very strong relationship between the employment status and marital status in male respondents with a -0.7693 estimated coefficient. Dummy variables are statistically not significant and have very similar patterns with female respondents.

6.2 Discussion

It was expected that the two social norm factors could affect the earnings difference between men and women in the data. However, the estimated coefficient before adding the social factors is -0.3606, and it is -0.3570 after the dummy variables of conservativeness (traditional) and positive attitudes about children in the family added in the regression model. The earnings difference was expected to decrease after adding the two social norm attitude factors, and the estimated coefficient decreased by 0.01, which is not a significant decrease. Interestingly, dummy variables were positively correlated with female respondents' wage. Even though their effect was not statistically too significant, they have positive correlation with the wages. This implies two different outcomes. Firstly, women's traditional characteristics affect women's wage in Korea positively. Secondly it reveals that women's positive attitude about children in the family is also positively correlated with wages of women. First outcome is not expected because traditional individuals are expected to invest more time on household responsibilities, therefore it was expected that traditional characteristics would be negatively correlated with Korean women's wages. Second outcome is not an expected finding. Though it could be considered not significantly effective because it was an index variable that was generated with questions regarding respondents' attitudes about children in general. People could have a positive idea about children in the family and could still be earning a high level income. Male respondents' attitudes about working women and children did not seem to affect their wages statistically in the regression model.

In order to particularly look into likelihood among the interested variables, probit regression model is used to see the probability that these factors could affect on the employment status of Korean men and women. It was expected that having traditional characteristics would lead women to be unemployed than employed. In order to particularly examine this, dummy variable for traditional characteristic was generated and used in our probit regression model and is expected to affect the employment status negatively. In other words, dummy variable for 'traditional' is used in the probit regression to see the relationship between employment status and respondents' traditional attitudes about working women. In the probit regression for female respondents, coefficient is negative for attitudes about working women. This reveals that respondents with traditional attitudes about working females have a negative relationship with the employment status. This can be interpreted in a way that traditional individuals are more likely to be unemployed than employed. For the dummy factor for child lovers, which is built from the 'likedislikechild' factor with scores less than 12, have a positive relationship with employment status. In other words, female respondents who have positive attitudes about having children in the family are more likely to be employed than unemployed.

For the probit regression of male respondents, same dummy factors are used for traditional respondents and child lovers. In other words, negative attitudes for working females and positive attitudes of having children in the family. There is a negative relationship between the employment status of male respondents and negative attitudes about working females. Male respondents with negative attitudes about working females are more likely to be unemployed than employed. There is a negative relationship between the employment status and attitudes of having children. Male respondents with positive attitudes about having children are more likely to be unemployed than employed. These two observations are the opposite of the expectations

and are statistically not significant. Male respondents with positive attitudes about having children are expected to enter the labor force more because they are obliged to work more to earn for the family as breadwinners.

Very interesting relationship is observed from the female respondents. The more traditional they are, the more unemployed respondents there are than employed ones. Even though it was not statistically supported, it was interesting that there is a negative relationship between the employment status and female respondents' attitudes about other female wage earners. In contrary, having different attitudes about children did not statistically affect the employment status of both Korean men and women. Attitudes about children was statistically not effective due to the fact that respondents could have negative opinions about children in the family and could still be employed. In other words, having different attitudes about children in the family does not statistically affect respondents' employment status in Korea. These outcomes have partially proven that social norm and attitudes matter to individuals' labor force participation in Korea and they also vary individuals' wages, especially female wage earners'.

6.3 Policy Implications

In 2014, some strategies to reform Korea's labor market were addressed by the International Monetary Force. Lack of labor force participation of women was addressed to be a big problem in the labor market in Korea. In order to challenge the labor market for potential growth strategies were suggested by scholars of IMF. Firstly, more investment is needed for public childcare and childcare benefits because childcare is expensive and has such a high demand of childcare institutions from families. This will not only help working mothers to improve work-life balance, but also will encourage mothers to enter the labor market and less

worry about childcare. In chapter 4, it was discussed that childcare is a very important factor in females' decision on their careers. There is a huge demand for childcare facilities and they are not able to accommodate everyone. Due to this, it would be effective to start with more investment in childcare facilities. Second strategy that was suggested by IMF is facilitating more part-time work opportunities. This strategy is expected to help women to balance their time if they have household responsibilities. In the regression model, it revealed that women who are traditional and have children are more likely to be unemployed. It would be hard to change traditional individuals into progressive, but providing more opportunities and options could help women to participate in the labor market even after they are married. Lastly, making the tax treatment of second earners in households more neutral compared with that of single earners was suggested. This strategy can help individuals with spouses or individuals who have family to financially support. Also, in combination with better childcare, this can help mothers and married women to re-enter the labor market.

Even though the model in this research failed to address the significant problems with social norm and attitudes, there is a historical discrimination of women in the Korean economy. Korean women the labor market after the independence mostly in the industrial fields to support their families. Many women worked for their own family too if they had their own shops. In contrast, men would work for more sophisticated fields. There has been a huge gender inequality in terms of occupations because male-dominated jobs were the high paying jobs. After the rapid economic development and modernization, the dynamics has changed. Women started to enter male-dominated fields and started to earn more than what average women used to earn. The gender pay gap in Korea has narrowed due to the change in dynamics of occupations of women. There are less occupational fields that discriminate women and prefer

men to women. It was expected in this study that the social norms and gender stereotypes of women influence women's career choices. Yet, it revealed to not to affect the wage of women. This means that it is still the socio-economic factors that fundamentally affect the wages of Korean women. Conversely, it was distinguished by scholars that today's gender pay gap has evidently been caused by wage discrimination. Wage discrimination is occurs because women tend to invest more on household responsibilities, and due to this choose their careers that are flexible and less time consuming. Korean women need more assistance with balancing their work-home responsibilities. Consequently, policy that makes the government to invest more on childcare facilities would undeniably help women to balance their time between two different tasks.

Maternity leave as of 2016 is 90 days, of which 60 days are fully paid and the other 30 days are paid at a certain percentage of the monthly income. New Zealand has the lowest gender pay gap among the OECD countries, and it has a parental leave of 126 days (18 weeks) for a child that is born, expected to be born, or for a child adoption. New Zealand also has a parental tax credit up to $220 a week offered for families with a newborn baby who does not receive a paid parental leave or income benefits. This policy strongly helps not only women but also the entire family financially. Korean maternity leave could be improved by extending the period, however the issue is that many women decide to leave their jobs during this period. Women are expected to be come housewives and expected to devote their full time to take care of their children. Due to this, longer maternity leave for men (fathers) could be implemented to provide more opportunities for women at work. In fact, fathers are entitled to up to 5 days' of paternity leave. Both parents may need equal obligations about their newborn child and should receive the same period of maternity leave. During the maternity leave, women may feel disconnected from work

that they may decide to leave their jobs instead of going back. Thus, this is another female-friendly policy that could help women to continue their career after getting children.

Policies that could be done through government intervention are discussed. Though it is hard to change people's characteristics and perceptions of others using government intervention. Yet, media is a strong influence in the Korean society. Portraying more liberal aspects about the world and women in the world may help people to rethink their prejudice.

7. Conclusion and Future reference

This work have examined South Korea's gender earnings gap, which is 36 percent using the data from 2012. There appears to be significant that socio-economic factors affect the earnings difference between men and women because the coefficient became smaller in absolute value. This means social norms explained some of the wage gap. It is also the case that social norm failed to fully explain the gender pay gap because the coefficient remained non-zero. However, it is evident that Korean men and women have different attitudes about working women and children in the family. Especially women with traditional characteristics were more likely to be unemployed. Having different attitudes about children in the family is not significantly affective in this study due to the obscurity of the answers of the questionnaire. Answers contained ranges from 1-5, 1 for strongly agree and 5 for strongly disagree. Majority of respondents answers were neutral. With a better data with richer objectives, this would be very interesting to look into in order to examine factors that could entirely explain the gender pay gap in South Korea.

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9. Appendix

```
. sum age if gender==2
```

Variable	Obs	Mean	Std. Dev.	Min	Max
age	568	43.75	13.44599	18	65

Figure 1. Summary of age of Women in Korea in the data

```
. tab yrsedu if gender==2
```

Years of schooling completed	Freq.	Percent	Cum.
0	15	2.64	2.64
2	4	0.70	3.35
3	3	0.53	3.87
4	2	0.35	4.23
5	3	0.53	4.75
6	56	9.86	14.61
8	2	0.35	14.96
9	46	8.10	23.06
10	3	0.53	23.59
11	2	0.35	23.94
12	206	36.27	60.21
13	19	3.35	63.56
14	76	13.38	76.94
15	11	1.94	78.87
16	105	18.49	97.36
17	2	0.35	97.71
18	12	2.11	99.82
20	1	0.18	100.00
Total	568	100.00	

Figure 2. Tabulated form of years of education of female recipients in Korea

```
. tab yrsedu if gender==1
```

Years of schooling completed	Freq.	Percent	Cum.
0	3	0.64	0.64
4	1	0.21	0.86
6	19	4.08	4.94
7	1	0.21	5.15
8	3	0.64	5.79
9	44	9.44	15.24
10	5	1.07	16.31
11	6	1.29	17.60
12	134	28.76	46.35
13	15	3.22	49.57
14	75	16.09	65.67
15	15	3.22	68.88
16	129	27.68	96.57
17	1	0.21	96.78
18	11	2.36	99.14
20	1	0.21	99.36
22	3	0.64	100.00
Total	466	100.00	

Figure 3. Tabulated form of years of education of male recipients in Korea

```
. tab employstatus maritalstatus if gender==2
```

1 if employed, 0 unemployed, generated with WRKHRS	Marital status of worker = 1 if married, 0 =otherwise		
	0	1	Total
0	96	166	262
1	96	210	306
Total	192	376	568

Figure 4. Tabulated form of employment status and marital status of women in Korea

```
. sum wages if gender==2
```

Variable	Obs	Mean	Std. Dev.	Min	Max
wages	306	49098.59	108185.7	0	1785714

Figure 5. Summary of wages of Female wage earners in Korea

```
. tab employstatus profworker if gender==2
```

1 if employed, 0 unemployed , generated with WRKHRS	1 if professional worker; 0 otherwise		Total
0	92	159	251
1	176	108	284
Total	268	267	535

Figure 6. Tabulated form of employment status and occupational fields of Korean women

```
. tab firmsize if gender==2
```

Size of firm = 1 if more than 1000 employees; 0 therwise	Freq.	Percent	Cum.
0	495	87.15	87.15
1	73	12.85	100.00
Total	568	100.00	

Figure 7. Summary of firm size among female recipients in Korea

```
. tab unionstatus if gender==2
```

Equals 1 if respondent is in a union; 0 otherwise.	Freq.	Percent	Cum.
0	509	89.61	89.61
1	59	10.39	100.00
Total	568	100.00	

Figure 8. Tabulated form of union status of female recipients in Korea

```
. tab totalchildren maritalstatus if gender==2
```

HHTODD+HHC HILDR	Marital status of worker = 1 if married, 0 =otherwise 0	1	Total
0	176	192	368
1	8	77	85
2	8	84	92
3	0	21	21
5	0	2	2
Total	192	376	568

Figure 9. Tabulated form of number of total children and marital status of female recipients in Korea

```
. tab traditionalprogressive if gender==2
```

cv5 + V6 + V7 + V8 + V9	Freq.	Percent	Cum.
5	3	0.53	0.53
6	7	1.23	1.76
7	10	1.76	3.52
8	10	1.76	5.28
9	36	6.34	11.62
10	46	8.10	19.72
11	54	9.51	29.23
12	72	12.68	41.90
13	72	12.68	54.58
14	63	11.09	65.67
15	50	8.80	74.47
16	48	8.45	82.92
17	34	5.99	88.91
18	26	4.58	93.49
19	18	3.17	96.65
20	9	1.58	98.24
21	8	1.41	99.65
22	1	0.18	99.82
25	1	0.18	100.00
Total	568	100.00	

Figure 10. Summary of attitudes of female recipients about working women in Korea

```
. tab traditionalprogressive if gender==1
```

cv5 + V6 + V7 + V8 + V9	Freq.	Percent	Cum.
5	6	1.29	1.29
6	3	0.64	1.93
7	6	1.29	3.22
8	8	1.72	4.94
9	26	5.58	10.52
10	52	11.16	21.67
11	30	6.44	28.11
12	55	11.80	39.91
13	54	11.59	51.50
14	60	12.88	64.38
15	48	10.30	74.68
16	39	8.37	83.05
17	26	5.58	88.63
18	22	4.72	93.35
19	12	2.58	95.92
20	6	1.29	97.21
21	6	1.29	98.50
22	3	0.64	99.14
23	2	0.43	99.57
24	1	0.21	99.79
25	1	0.21	100.00
Total	466	100.00	

Figure 11. Summary of attitudes of male recipients about working women in Korea

```
. tab likedislikechild if gender==2
```

V22+cv23+cv24+cv25	Freq.	Percent	Cum.
4	11	1.94	1.94
5	5	0.88	2.82
6	10	1.76	4.58
7	20	3.52	8.10
8	23	4.05	12.15
9	32	5.63	17.78
10	49	8.63	26.41
11	65	11.44	37.85
12	81	14.26	52.11
13	91	16.02	68.13
14	86	15.14	83.27
15	48	8.45	91.73
16	31	5.46	97.18
17	12	2.11	99.30
18	2	0.35	99.65
19	1	0.18	99.82
20	1	0.18	100.00
Total	568	100.00	

Figure 12. Summary of attitudes of female recipients about having children in Korea

```
. tab likedislikechild if gender==1
```

V22+cv23+cv24+cv25	Freq.	Percent	Cum.
4	7	1.50	1.50
5	8	1.72	3.22
6	14	3.00	6.22
7	27	5.79	12.02
8	32	6.87	18.88
9	29	6.22	25.11
10	49	10.52	35.62
11	62	13.30	48.93
12	67	14.38	63.30
13	60	12.88	76.18
14	54	11.59	87.77
15	29	6.22	93.99
16	23	4.94	98.93
17	2	0.43	99.36
18	1	0.21	99.57
20	2	0.43	100.00
Total	466	100.00	

Figure 13. Summary of attitudes of male recipients about having children in Korea

```
. reg Lwages gender age yrsedu totalchildren firmsize urbanrural profworker unionstatus
```

Source	SS	df	MS		
Model	83.3514697	8	10.4189337	Number of obs	= 556
Residual	281.701534	547	.514993664	F(8, 547)	= 20.23
				Prob > F	= 0.0000
Total	365.053004	555	.65775316	R-squared	= 0.2283
				Adj R-squared	= 0.2170
				Root MSE	= .71763

Lwages	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
gender	-.3620504	.0640487	-5.65	0.000	-.4878619	-.2362388
age	.0046556	.0032148	1.45	0.148	-.0016591	.0109704
yrsedu	.036857	.012669	2.91	0.004	.0119711	.0617429
totalchildren	.0118604	.0346671	0.34	0.732	-.0562366	.0799573
firmsize	.337492	.0750266	4.50	0.000	.1901165	.4848675
urbanrural	.1081919	.0816927	1.32	0.186	-.052278	.2686618
profworker	.3443718	.0721236	4.77	0.000	.2026987	.486045
unionstatus	-.036421	.0750999	-0.48	0.628	-.1839406	.1110986
_cons	10.31241	.2821231	36.55	0.000	9.758228	10.86658

Figure 14. Regression model with socio-economic factors

```
. reg Lwages gender age yrsedu totalchildren maritalstatus firmsize profworker ur
> banrural if gender==2
note: gender omitted because of collinearity
```

Source	SS	df	MS		
Model	28.4263514	7	4.06090734	Number of obs	= 248
Residual	120.862824	240	.503595098	F(7, 240)	= 8.06
				Prob > F	= 0.0000
Total	149.289175	247	.604409615	R-squared	= 0.1904
				Adj R-squared	= 0.1668
				Root MSE	= .70964

Lwages	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
gender	0	(omitted)				
age	.0078251	.0055754	1.40	0.162	-.0031578	.018808
yrsedu	.0565779	.0179259	3.16	0.002	.0212656	.0918901
totalchildren	-.0395921	.0555201	-0.71	0.476	-.1489609	.0697768
maritalstatus	-.0767069	.1080053	-0.71	0.478	-.2894663	.1360525
firmsize	.3876266	.1335539	2.90	0.004	.1245391	.6507142
profworker	.3322701	.1123226	2.96	0.003	.1110061	.553534
urbanrural	.1079347	.1145782	0.94	0.347	-.1177726	.333642
_cons	9.284045	.3964954	23.42	0.000	8.50299	10.0651

Figure 15. Regression model with socio-economic factors for female respondents

```
. reg Lwages gender age yrsedu totalchildren maritalstatus firmsize profworker ur
> banrural if gender==1
note: gender omitted because of collinearity
```

Source	SS	df	MS	Number of obs =	308
				F(7, 300) =	8.65
Model	31.3202872	7	4.47432674	Prob > F =	0.0000
Residual	155.090913	300	.516969711	R-squared =	0.1680
				Adj R-squared =	0.1486
Total	186.4112	307	.607202607	Root MSE =	.71901

Lwages	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
gender	0	(omitted)				
age	-.0031071	.0050445	-0.62	0.538	-.0130342	.0068201
yrsedu	.0154073	.0184203	0.84	0.404	-.0208422	.0516567
totalchildren	.0106248	.0542364	0.20	0.845	-.0961072	.1173568
maritalstatus	.2710527	.1184469	2.29	0.023	.0379607	.5041447
firmsize	.3199986	.0916957	3.49	0.001	.1395504	.5004467
profworker	.3338137	.0953524	3.50	0.001	.1461694	.5214581
urbanrural	.0943035	.1150485	0.82	0.413	-.1321007	.3207078
_cons	10.40305	.3543627	29.36	0.000	9.705699	11.1004

Figure 16. Regression model with socio-economic factors for male respondents

```
. reg Lwages gender age yrsedu totalchildren maritalstatus firmsize profworker ur
> banrural traditionalprogressive likedislikechild
```

Source	SS	df	MS	Number of obs =	556
				F(10, 545) =	16.35
Model	84.2253386	10	8.42253386	Prob > F =	0.0000
Residual	280.827665	545	.51528012	R-squared =	0.2307
				Adj R-squared =	0.2166
Total	365.053004	555	.65775316	Root MSE =	.71783

Lwages	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
gender	-.3644438	.0645204	-5.65	0.000	-.491183	-.2377046
age	.003339	.0037164	0.90	0.369	-.0039612	.0106392
yrsedu	.0340301	.0128827	2.64	0.008	.0087243	.0593359
totalchildren	-.0052637	.0389207	-0.14	0.892	-.0817166	.0711893
maritalstatus	.0829325	.0794306	1.04	0.297	-.0730951	.2389601
firmsize	.340201	.0752163	4.52	0.000	.1924517	.4879503
profworker	.3434905	.0720666	4.77	0.000	.2019283	.4850528
urbanrural	.1124773	.0819325	1.37	0.170	-.0484649	.2734194
traditionalp~e	.0088526	.0093206	0.95	0.343	-.0094561	.0271613
likedislikec~d	.0011051	.0109004	0.10	0.919	-.0203069	.0225171
_cons	10.2241	.3468572	29.48	0.000	9.542757	10.90544

Figure 17. Regression model with social norm and attitudes factors as dummy variables

```
. reg Lwages gender age yrsedu totalchildren maritalstatus firmsize profworker ur
> banrural traditionalprogressive likedislikechild if gender==2
note: gender omitted because of collinearity
```

Source	SS	df	MS	Number of obs =	248
				F(9, 238) =	6.46
Model	29.3177304	9	3.2575256	Prob > F =	0.0000
Residual	119.971445	238	.5040817	R-squared =	0.1964
				Adj R-squared =	0.1660
Total	149.289175	247	.604409615	Root MSE =	.70999

Lwages	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
gender	0	(omitted)				
age	.0066712	.0056773	1.18	0.241	-.0045131	.0178554
yrsedu	.0585558	.0179968	3.25	0.001	.0231025	.094009
totalchildren	-.0465694	.0558494	-0.83	0.405	-.1565918	.0634529
maritalstatus	-.079247	.1082248	-0.73	0.465	-.2924479	.133954
firmsize	.3810033	.1337323	2.85	0.005	.1175532	.6444534
profworker	.344899	.1127922	3.06	0.002	.1227005	.5670976
urbanrural	.0988259	.1164071	0.85	0.397	-.1304939	.3281458
traditionalp~e	-.0174771	.0144829	-1.21	0.229	-.0460081	.0110538
likedislikec~d	-.0109263	.01625	-0.67	0.502	-.0429385	.0210859
_cons	9.68522	.5084126	19.05	0.000	8.683657	10.68678

Figure 18. Regression model for female respondents with social norm and attitude variables as dummy variables

```
. reg Lwages gender age yrsedu totalchildren maritalstatus firmsize profworker ur
> banrural traditionalprogressive likedislikechild if gender==1
note: gender omitted because of collinearity
```

Source	SS	df	MS	Number of obs =	308
				F(9, 298) =	7.36
Model	33.9084574	9	3.76760638	Prob > F =	0.0000
Residual	152.502743	298	.511754171	R-squared =	0.1819
				Adj R-squared =	0.1572
Total	186.4112	307	.607202607	Root MSE =	.71537

Lwages	Coef.	Std. Err.	t	P>|t|	[95% Conf.	Interval]
gender	0	(omitted)				
age	-.0019431	.0050892	-0.38	0.703	-.0119583	.0080722
yrsedu	.0109568	.0184602	0.59	0.553	-.0253721	.0472856
totalchildren	.0126686	.0539706	0.23	0.815	-.0935432	.1188803
maritalstatus	.2850698	.1180217	2.42	0.016	.0528083	.5173313
firmsize	.335235	.0914979	3.66	0.000	.1551712	.5152989
profworker	.3424574	.0949696	3.61	0.000	.1555614	.5293534
urbanrural	.1259896	.1156547	1.09	0.277	-.1016139	.3535931
traditionalp~e	.0266972	.0121103	2.20	0.028	.0028647	.0505297
likedislikec~d	.008893	.0147019	0.60	0.546	-.0200397	.0378257
_cons	9.913987	.4408652	22.49	0.000	9.046384	10.78159

Figure 19. Regression model for male respondents with social norm and attitude variables as dummy variables

```
. probit employstatus gender age yrsedu maritalstatus profworker urbanrural total
> children dummytraditional dummychildlover if gender==2

note: gender omitted because of collinearity
Iteration 0:   log likelihood = -369.81534
Iteration 1:   log likelihood =  -340.9699
Iteration 2:   log likelihood = -340.89546
Iteration 3:   log likelihood = -340.89546

Probit regression                                 Number of obs   =        535
                                                  LR chi2(8)      =      57.84
                                                  Prob > chi2     =     0.0000
Log likelihood = -340.89546                       Pseudo R2       =     0.0782
```

employstatus	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
gender	0	(omitted)				
age	.018281	.0063702	2.87	0.004	.0057956	.0307665
yrsedu	.09021	.0218758	4.12	0.000	.0473342	.1330858
maritalstatus	-.1717452	.1459921	-1.18	0.239	-.4578845	.1143941
profworker	-.7741117	.134604	-5.75	0.000	-1.037931	-.5102928
urbanrural	-.2512512	.1534175	-1.64	0.101	-.551944	.0494416
totalchildren	.09598	.0720777	1.33	0.183	-.0452896	.2372496
dummytraditi~l	-.1898729	.1252856	-1.52	0.130	-.4354282	.0556823
dummychildlo~r	.0288361	.1220621	0.24	0.813	-.2104012	.2680734
_cons	-1.009382	.4384336	-2.30	0.021	-1.868696	-.1500681

Figure 20. Probit regression for employment status for female respondents

```
. probit employstatus gender age yrsedu maritalstatus profworker urbanrural totalchildren dum
> mytraditional dummychildlover if gender==1

note: gender omitted because of collinearity
Iteration 0:   log likelihood = -271.05408
Iteration 1:   log likelihood = -212.48215
Iteration 2:   log likelihood =  -211.4974
Iteration 3:   log likelihood = -211.49428
Iteration 4:   log likelihood = -211.49428

Probit regression                                 Number of obs   =        444
                                                  LR chi2(8)      =     119.12
                                                  Prob > chi2     =     0.0000
Log likelihood = -211.49428                       Pseudo R2       =     0.2197
```

employstatus	Coef.	Std. Err.	z	P>|z|	[95% Conf.	Interval]
gender	0	(omitted)				
age	.0189907	.0071662	2.65	0.008	.0049451	.0330362
yrsedu	.0638888	.0282883	2.26	0.024	.0084448	.1193329
maritalstatus	.7693489	.1955301	3.93	0.000	.3861169	1.152581
profworker	-.4625251	.1653785	-2.80	0.005	-.786661	-.1383893
urbanrural	.4346684	.1826191	2.38	0.017	.0767415	.7925953
totalchildren	.3864731	.1183961	3.26	0.001	.154421	.6185252
dummytraditional	-.0983541	.1519547	-0.65	0.517	-.3961799	.1994717
dummychildlover	-.3295341	.1463253	-2.25	0.024	-.6163265	-.0427417
_cons	-1.475259	.5088911	-2.90	0.004	-2.472667	-.4778508

Figure 21. Probit regression for employment status for male respondents

STATA Do File

```
use "/Users/YoonheePark/Desktop/ISSP.dta"

drop if V4~=410

drop V1 V2 DOI C_ALPHAN

drop ES_V5 ES_V6 ES_V7 ES_V8 ES_V9 ES_V10 ES_V11 ES_V12 ES_V13 ES_V14
ES_V15 ES_V16 ES_V17 ES_V18 ES_V19 ES_V20 ES_V21 ES_V22 ES_V23 ES_V24
ES_V25 ES_V26 ES_V27

drop AR_DEGR AT_DEGR AU_DEGR BG_DEGR CA_DEGR CH_DEGR CL_DEGR
CN_DEGR CZ_DEGR DE_DEGR DK_DEGR ES_DEGR FI_DEGR FR_DEGR GB_DEGR
HR_DEGR IE_DEGR IL_DEGR IN_DEGR IS_DEGR JP_DEGR LT_DEGR LV_DEGR
MX_DEGR NO_DEGR PH_DEGR PL_DEGR RU_DEGR SE_DEGR SI_DEGR SK_DEGR
TR_DEGR TW_DEGR US_DEGR VE_DEGR ZA_DEGR

drop AR_RELIG AT_RELIG AU_RELIG BG_RELIG CA_RELIG CH_RELIG CL_RELIG
CN_RELIG CZ_RELIG DE_RELIG DK_RELIG ES_RELIG FI_RELIG FR_RELIG
GB_RELIG HR_RELIG IE_RELIG IL_RELIG IN_RELIG IS_RELIG JP_RELIG LT_RELIG
LV_RELIG MX_RELIG NO_RELIG PH_RELIG PL_RELIG RU_RELIG SE_RELIG
SI_RELIG SK_RELIG TR_RELIG TW_RELIG US_RELIG VE_RELIG ZA_RELIG

drop AR_PRTY AT_PRTY AU_PRTY BG_PRTY CA_PRTY CH_PRTY CL_PRTY
CN_PRTY CZ_PRTY DE_PRTY DK_PRTY ES_PRTY FI_PRTY FR_PRTY GB_PRTY
HR_PRTY IE_PRTY IL_PRTY IN_PRTY IS_PRTY JP_PRTY LT_PRTY LV_PRTY
MX_PRTY NO_PRTY PH_PRTY PL_PRTY RU_PRTY SE_PRTY SI_PRTY SK_PRTY
TR_PRTY TW_PRTY US_PRTY VE_PRTY ZA_PRTY

drop AR_ETHN AT_ETHN AU_ETHN BG_ETHN CA_ETHN CH_ETHN CL_ETHN
CN_ETHN CZ_ETHN DE_ETHN DK_ETHN ES_ETHN FI_ETHN FR_ETHN GB_ETHN
HR_ETHN IE_ETHN IL_ETHN IN_ETHN IS_ETHN JP_ETHN LT_ETHN LV_ETHN
MX_ETHN NO_ETHN PH_ETHN PL_ETHN RU_ETHN SE_ETHN SI_ETHN SK_ETHN
TR_ETHN TW_ETHN US_ETHN VE_ETHN ZA_ETHN

drop AR_RINC AT_RINC AU_RINC BG_RINC CA_RINC CH_RINC CL_RINC CN_RINC
CZ_RINC DE_RINC DK_RINC ES_RINC FI_RINC FR_RINC GB_RINC HR_RINC
IE_RINC IL_RINC IN_RINC IS_RINC JP_RINC LT_RINC LV_RINC MX_RINC NO_RINC
PH_RINC PL_RINC RU_RINC SE_RINC SI_RINC SK_RINC TR_RINC TW_RINC
US_RINC VE_RINC ZA_RINC

drop AR_INC AT_INC AU_INC BG_INC CA_INC CH_INC CL_INC CN_INC CZ_INC
DE_INC DK_INC ES_INC FI_INC FR_INC GB_INC HR_INC IE_INC IL_INC IN_INC
IS_INC JP_INC LT_INC LV_INC MX_INC NO_INC PH_INC PL_INC RU_INC SE_INC
SI_INC SK_INC TR_INC TW_INC US_INC VE_INC ZA_INC
```

```
drop AR_REG AT_REG AU_REG BG_REG CA_REG CH_REG CL_REG CN_REG
CZ_REG DE_REG DK_REG ES_REG FI_REG FR_REG GB_REG HR_REG IE_REG
IL_REG IN_REG IS_REG JP_REG LT_REG LV_REG MX_REG NO_REG PH_REG
PL_REG RU_REG SE_REG SI_REG SK_REG TR_REG TW_REG US_REG VE_REG
ZA_REG MODE SUBCASE

gen wages = KR_RINC/WRKHRS

gen Lwages=ln(wages)

gen age = AGE

gen maritalstatus = MARITAL

gen firmsize = NSUP

gen yrsedu = EDUCYRS

gen unionstatus = UNION

gen gender = SEX

label variable gender “2 if female; 1 if male”

label variable wages "Hourly wages derived by : Regular payment/regular hours worked"

label variable Lwages "Natural logarithm of hourly WAGES"

label variable age "Age of worker"

label variable maritalstatus "Marital status of worker = 1 if married, 0 =otherwise"

replace maritalstatus = 0 if maritalstatus ==9

replace maritalstatus = 0 if maritalstatus==8

replace maritalstatus = 0 if maritalstatus ==7

replace maritalstatus = 0 if maritalstatus ==6

replace maritalstatus = 0 if maritalstatus ==5

replace maritalstatus = 0 if maritalstatus ==4

replace maritalstatus = 0 if maritalstatus ==3

replace maritalstatus = 0 if maritalstatus ==2

replace unionstatus = 0 if unionstatus ==3

replace unionstatus = 0 if unionstatus ==7

replace unionstatus = 0 if unionstatus==8

replace unionstatus =0 if unionstatus ==9

replace unionstatus = 1 if unionstatus ==2
```

```
label variable unionstatus "Equals 1 if respondent is in a union; 0 otherwise."
label variable gender "Equals 2 if woman; 1 man"
label variable yrsedu "Years of schooling completed"
label variable firmsize "Size of firm = 1 if more than 1000 employees; 0 otherwise
drop if ISCO88==110
gen occupation =.
replace occupation = 1 if ISCO88<2000
replace occupation = 3 if ISCO88>2999
replace occupation = 4 if ISCO88>3999
replace occupation = 5 if ISCO88>4999
replace occupation = 6 if ISCO88>5999
replace occupation = 7 if ISCO88>6999
replace occupation = 8 if ISCO88>7999
replace occupation = 9 if ISCO88>8999
drop if ISCO88==9998
drop if ISCO88==9999
gen profworker = 0 if occupation ==9
replace profworker = 0 if occupation ==8
replace profworker = 0 if occupation ==7
replace profworker = 0 if occupation ==6
replace profworker = 0 if occupation ==5
replace profworker = 1 if occupation ==4
replace profworker = 1 if occupation ==3
replace profworker = 1 if occupation ==2
replace profworker = 1 if occupation ==1
label variable occupation "occupation by fields from 1 ~ 9"
label variable profworker "Equals 1 if respondent is a professional, managerial, or
administrative worker; 0 otherwise"
reg Lwages gender
gen totalchildren = HHTODD + HHCHILDR
gen urbanrural = 1 if URBRURAL == 1
replace urbanrural = 1 if URBRURAL == 2
```

```
replace urbanrural = 1 if URBRURAL == 3
replace urbanrural = 0 if URBRURAL == 4
replace urbanrural = 0 if URBRURAL == 5
replace urbanrural = 0 if URBRURAL == 7
replace urbanrural = . if URBRURAL == 9
drop if age>65
reg Lwages gender age maritalstatus yrsedu urbanrural unionstatus profworker firmsize
totalchildren
drop if V5==0
drop if V5==8
gen cv5 = 1 if V5 ==5
replace cv5=2 if V5==4
replace cv5=3 if V5==3
replace cv5=4 if V5==2
replace cv5=5 if V5==1
drop if V6==9
drop if V6==8
drop if V6==0
drop if V7==9
drop if V7==8
drop if V7==0
drop if V8==8
drop if V8==9
drop if V8==0
drop if V9==9
drop if V9==8
drop if V9==0
gen traditionalprogressive = cv5 + V6 + V7 + V8 + V9
gen cv23=1 if V23==5
replace cv23=2 if V23==4
replace cv23= 3 if V23==3
```

```
replace cv23=4 if V23==2
replace cv23= 5 if V23==1
drop if cv23==.
gen cv24=1 if V24==5
replace cv24=2 if V24==4
replace cv24=3 if V24==3
replace cv24=4 if V24==2
replace cv24=5 if V24==1
drop if cv24==.
gen cv25=1 if V25 == 5
replace cv25 = 2 if V25==4
replace cv25 = 3 if V25==3
replace cv25 = 4 if V25==2
replace cv25 = 5 if V25==1
drop if cv25==.
gen likedislikechild = V22+cv23+cv24+cv25
label variable profworker "1 if professional worker; 0 otherwise"
label variable totalchildren "HHTODD+HHCHILDR"
label variable urbanrural "1 if urban, 0 for rural"
label variable cv5 "converted V5"
label variable traditionalprogressive "cv5 + V6 + V7 + V8 + V9"
label variable cv23 "converted V23"
label variable cv24 "convertedV24"
label variable cv25 "converted V35"
label variable cv23 "likedislikechild : converted V23"
label variable cv24 "likedislikechild : convertedV24"
label variable cv25 "likedislikechild : converted V35"
label variable likedislikechild "V22+cv23+cv24+cv25"
gen employstatus=1 if WRKHRS>0
replace employstatus = 0 if WRKHRS==0
tab maritalstatus employstatus
```

```
tab maritalstatus employstatus if gender==2

tab maritalstatus employstatus if gender==1

tab unionstatus profworker if gender==2

drop if yrsedu==98

tab age if gender==2

tab age if gender==1

tab age employstatus if gender==2

tab gender

tab traditionalprogressive if gender==2

tab traditionalprogressive if gender==1

tab likedislikechild if gender==2

tab likedislikechild if gender==1

tab employstatus gender

label variable employstatus "1 if employed, 0 otherwise"

drop if yrsedu==98

gen dummytraditional = 1 if traditionalprogressive <15

gen dummychildlovers = 1 if likedislikechild <12

replace dummytraditional =0 if dummytraditional==.

replace dummychildlovers =0 if dummychildlovers ==.

reg Lwages gender age maritalstatus yrsedu urbanrural unionstatus profworker firmsize
totalchildren traditionalprogressive likedislikechild if gender==2

reg Lwages gender age maritalstatus yrsedu urbanrural unionstatus profworker firmsize
totalchildren traditionalprogressive likedislikechild if gender==1

probit employstatus gender age yrsedu maritalstatus profworker urbanrural totalchildren
dummystayout dummyagainst if gender==2

probit employstatus gender age yrsedu maritalstatus profworker urbanrural totalchildren
dummystayout dummyagainst if gender==1

label variable dummystayout "Traditional respondents (stayoutwomen<15)"

label variable dummyagainst "childlovers (againstchild<12)"

save “/Users/Yoonheepark/Desktop/ISSP-Final.dta”, replace
```