The Uphill Battle for Iranian Women in the Labour Market

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Submitted to the
Institute of Graduate Studies and Research
in partial fulfillment of the requirements for the degree of

Doctor of Philosophy
in
Economics

Eastern Mediterranean University
January 2022
Gazimağusa, North Cyprus

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ABSTRACT

The gender gap in the labour market is one of the main challenges facing women in Iran and other Middle East countries. Over the past decades, the remarkable increase in female education, university education in particular, and the rapid decrease in the fertility rate in Iran have been expected to boost gender equality in the labour market. However, women have limited access to the labour force, and once in the labour force, they are not likely to find high-paid, quality employment.

Thus, this study tackles the two important challenges of finding equal economic rights for Iranian women. The aim is to investigate the determinants of female labour force participation (FLFP) and measure gender equality in the labour market outcomes by finding the factors behind the wage gap.

Therefore, this study used the household expenditure and income survey (HEIS) for two years, 2008 and 2018, to investigate the reason behind low female labour force participation and the gender wage gap in Iran by applying Logistic regression and FFL decomposition.

The empirical findings suggest gender norms and attitudes to working women and gendered division of the work associated with family care as the driving forces of stagnation in FLFP in Iran.

It also confirms the incidence of discrimination in the Iranian labour market. The results show that the overall wage structure effects (the unexplained part of the gap) are positive and largest at the top of the wage distribution. Thus, the Iranian labour market presents cases of the glass ceiling effect.

Keywords: female labour force participation, Iran, gender norms, gender wage gap, glass ceiling effect, care work, occupational gender segregation.

ÖZ

İşgücü piyasasındaki cinsiyet farkı, İran ve diğer Orta Doğu ülkelerinde kadınların karşılaştığı temel zorluklardan biridir. Geçtiğimiz on yıllar boyunca, İran'da kadın eğitimindeki, özellikle üniversite eğitimindeki dikkate değer artışın ve doğurganlık oranındaki hızlı düşüşün, işgücü piyasasında cinsiyet eşitliğini artırması bekleniyordu. Bununla birlikte, kadınların işgücüne erişimleri sınırlıdır ve işgücüne bir kez girdikten sonra yüksek ücretli, kaliteli bir iş bulmaları pek olası değildir.

Bu nedenle, bu çalışma İranlı kadınlar için eşit ekonomik haklar bulmanın iki önemli sorununu ele almaktadır. Amaç, kadınların işgücüne katılımının (FLFP) belirleyicilerini araştırmak ve ücret farkının arkasında yatan nedenleri bularak işgücü piyasası sonuçlarında cinsiyet eşitliğini ölçmektir.

Bu nedenle, bu çalışmada Lojistik regresyon ve FFL ayrıştırması uygulayarak İran'daki düşük kadın işgücü katılımının ve cinsiyete dayalı ücret farkının arkasındaki nedeni araştırmak için 2008 ve 2018 olmak üzere iki yıl boyunca hane harcama ve gelir anketi (HEIS) kullanılmıştır.

Ampirik bulgular, İran'da FLFP'deki durgunluğun itici güçleri olarak çalışan kadınlara ve aile bakımıyla ilgili cinsiyete dayalı işbölümüne yönelik toplumsal cinsiyet normları ve tutumlarını ortaya koymaktadır.

Aynı zamanda İran işgücü piyasasında ayrımcılık vakalarını da doğrulamaktadır. Sonuçlar, genel ücret yapısı etkilerinin (boşluğun açıklanamayan kısmı) pozitif olduğunu ve ücret dağılımının en üstün etkilerinden olduğunu göstermektedir. Bu nedenle, İran işgücü piyasası cam tavan etkisi vakalarını sunmaktadır.

Anahtar Kelimeler: kadınların işgücüne katılımı, İran, toplumsal cinsiyet normları, cinsiyete dayalı ücret farkı, cam tavan etkisi, bakım işi, mesleki cinsiyet ayrımı.

DEDICATION

To My Family

ACKNOWLEDGMENT

In an exceptional way, I would like to thank my wonderful and caring supervisor Prof. Dr. Fatma Guven-Lisaniler, and my co-supervisor, Prof. Dr. Cem Payaslioglu, for their untiring efforts and guidance, and great support in preparing this doctoral dissertation. Their invaluable supervision and advice exposed me to the frontiers of theoretical and applied labour market research. I must equally thank Prof. Dr. Glenn Jenkins, Prof. Dr. Salih Katircioglu, and Asst. Prof. Dr. Ike Nwaka for the professional guidance and support both morally and academically.

I am grateful and owe quite a lot to my parents for the love and words of wisdom thus far, including my wonderful and caring siblings and encouraging husband, Asst. Prof. Dr. Ayhan Tecel for the support all through the program.

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INTRODUCTION

1.1 Introduction

Achieving equal opportunity in the labour market is a large step for Iranian women towards economic freedom and self-determination. Even though women have a significant role in national production, Iranian women are struggling every day to find their equal place in Iran's discriminatory labour market. Despite being rooted in tradition and Islam, Iranian women have experienced significant improvement in education and a sharp decline in fertility rates and family size. Yet, they face many challenges entering the labor market and having labor market outcomes equal to men.

The economic participation and opportunity gap in Iran is 37.5 percent, which is placed this country at the low end of the spectrum (Global Gender Gap report, 2021). While men's participation in the labour market is almost comparable with the rest of the world, female participation is significantly lower than even in the Middle East and North Africa (MENA) region. Unemployment for women is 19.8 percent that is twice as high as for men (2018), and out of every three educated women, one is currently unemployed.

Combined with the low presents in the labour market, large income differences also limit women's economic opportunities. Despite the improvement in all productivity endowments, Iranian women earn 19 percent less than men. Many women have precarious employment and work in the informal economy with low wages, no job protection, and unsuitable conditions (ILO, 2018).

In Iran, labour market discrimination is rooted in political ideology, patriarchal society, traditional attitudes towards women, the ideal role of women as mother and wife, which was promoted after the Islamic Revolution in1979, and discriminatory laws.

Improvement in Iranian women's awareness of their social, economic, and political rights in the last two decades and a significant change in society's attitude towards women might smoother women's path to finding their equal place in the labour market. Yet, the uphill battle for Iranian women significantly remains in Iran's labour market.

1.2 Motivation

Gender inequality is a key issue in the Iranian labour market. The sociocultural perspective is one of the approaches that have been offered to explain the gender inequality in the labour market, particularly in the Muslim Middle Eastern countries (Youssef 1974, Clark et al. 1991). They argued that besides neoclassical determinants of participation and employment, patriarchal cultural norms and attitudes towards working women weaken their attachment to the labour market and affect their income and type of employment.

Over the past decades, like many other developing countries in the Middle East and North Africa (MENA), Iran went through various social and cultural transformations (Koolaee, 2014). Yet, Iranian women's labour market attachment is weakening rather than gaining strength, and their labour market outcome is worsening.

Changing attitudes towards working women and women's position in the family and society after the Islamic revolution started moderately after Iran- Iraq war. After 2008, plenty of women's movements increase the awareness of many Iranians about

discrimination in marriage, divorce, custody, inheritance law, and economic and political rights.

A sharp decrease in fertility rate[1], reduction in average household size[2], increase in the average age of marriage[3] and divorce[4], a remarkable increase in female education[5], freedom in choosing their spouse, the possibility for women to file for divorce – all this increased participation of women in the political arena (Azadarmaki Bahar, 2006: 594)[6] and their opportunity to enter into employment in educational fields (Khaz Ali, 2010)[7].

Shreds of evidence indicate a transformation in Iranian attitudes to women's participation in politics, the labour force, and higher education. World Values Survey (WVS- 2005-2009 and 2017-2020) is a data set with the minimum sample size of 1200 individuals for most of countries. Samples must be representative of all people in the age 18 and older residing within private households in each country, regardless of their nationality, citizenship or language. Their data suggest that, although a large share of respondents think that men make better political leaders and business executives than women, there is a significant decrease in respondents' percentage agree with these statements. In 2005, 78 percent of the respondents agreed that men make better

[1] Fertility rates drop from 6.3 to 2.1 from 1976 to 2018. (United Nations - World Population Prospects, 2019).
[2] In 2017 in Iranian urban areas the average household size was 3.33 people per family. 29.4 percent of the families consist of 4 people. Families with more than 10 or more people made up only 0.1 percent of total the households.
[3] Average age of first marriage was increase from 18 to 23.4 from 1976 to 2014 (Statistical Centre of Iran, 20160). You can read more on recent trends of marriage in Iran in Aghajanian, 2018.
[4] The divorce rate increase from one in eight marriages to one in three marriages from 2008 to 2017. The rates are larger in big cities. In 2017 while two divorces were registered for every thousand people, in Tehran, it was three (Iran's National Organisation for Civil Registration, 2018).
[5] Female literacy rate was 24.4% in 1976, it increase to 77.7% in 2008 and it reached to 80.8% in 2016 (WB, 2020).
[6] Number of women in the parliament increase from 4 percent to 5.9 percent from 2007 to 2020 (World Economic Forum, 2006 and 2020).
[7] The rate of female students entering universities has increased rapidly; and since 2001 women constitute the majority of students entering higher education in Iran. According to the Ministry of Science, Research and Technology of the Islamic Republic of Iran (MSRT), in 2008 51 percent of those who successfully passed the competitive national college entrance examination and were admitted to public universities in Iran were women; (MSRT, 2008).

political leaders than women. This ratio dropped to 59 percent in 2017. The share of respondents agreeing that men make better business executives than women declined from 78.1 percent in 2005 to 49.5 percent in 2017. In addition, the share of respondents who agree to prioritize men when jobs are scarce decreased from 83 percent to 69.6 percent (WVS, 2005-2009; 2017-2020). Although a large and rather persistent share of respondents agree that men are better than women in politics and business, and men should have priority when jobs are scarce, there is a considerable shift in the attitudes. Disaggregation of the share of respondents by sex shows that for all three statements, women's share is lower than men by around 10 percent. And the share of women respondents below age 29 is much lower than the older female respondents who agree with the above statements. In addition, disaggregation of the share of respondents by sex and level of education provides evidence that the stigma associated with being a working woman decreases as education levels increase for both sexes. At the same time, the share of respondents who agree that university education is more important for boys than girls decreased by almost 10 percent (from 55.4 percent to 46 percent). The decrease in the share of female respondents who agree is twice that of male respondents (from 61 percent to 36 percent).

Therefore, these social and cultural improvements can be interpreted to the higher levels of women's labor market participation and gender equality in the labour market outcome in Iran. These shreds of evidence are the motivations that led to this study.

1.3 Research Objectives

The main objective of this study is to explore the challenges that Iranian women face in the labour market and sources of gender differences in the labour market outcome. Therefore the main question of this study is as follow:

1. What are the challenges Iranian women facing in accessing productive resources?

This study used two crucial challenges that prohibit the utilization of female labours and gender equality in the labour market. The female labour force participation rate indicates women's access to economic resources and women's economic capacity. To promote gender equality in the labour market and women's empowerment and independence, it is important to underhand the driving force of FLFP. Thus, the study addresses the following questions:

2. What main factors drive the FLFP: gender norms and attitudes or basic labour supply factors?

The predominant classical economic model that analyses the female labour force participation decision, Becker's time allocation model (Becker, 1965), explains how rational individuals (man or woman) allocate their time between leisure and working outside the household to maximize their satisfaction. The model also describes how they allocate their 'leisure time' within the household (for example doing house chores, caring for their children). The model stresses the impact of age, female education, husband's income, other household income, marital status, and the number of children (Mincer, 1962, Heckman, 1974, 1980; Hausman, 1981; Schultz, 1990) on FLFP. According to the model, the difference between the education level of women and men is associated with their labour market productivity; and their different tastes for market and home production shape their participation decision. Women's lower level of education constrains their labour market return; besides, they tend to have a stronger preference for home production than men.

Thus, they decide not to join the labour force or even devote some hours when the family income (husband's wage income or other household income) is not enough to cover the household expenditures. An increase in female education increases their

qualifications for the labour market, and thus labour market returns lead to a rise in FLFP.

An increase in the husband's income or other household income tends to lower the participation of women in the labour market since they prefer home production more than market production. Marriage and the presence of children increase the demand for home production. Spending more time on home production limits the time devoted to market production, thus reducing female labour force participation.

In this model, characteristics of a woman such as age, marital status, number of children, household income other than wage income, and policies that influence the relative returns to market and home production (such as labour taxation or childcare provision) are the determinants influencing the participation decision. However, the model has one deficiency: it leaves out gender norms and attitudes as factors affecting (limiting) woman's individual participation decisions.

The literature on the effect of gender and social transformation on FLFP stresses that, besides the basic labour supply factors, gender norms and attitudes to women in the society are important factors shaping women's labour force participation decision (Moghadam, 2003; Spierings et al., 2010).

Although access to labour market is a women's economic rights issue, it is also crucial to know women's well-being in the labour market. The indicator in this study that examined gender equality in the labour market outcomes is the gender wage gap; therefore, the following research questions are addressed:

3. What are the associated determinants of female wage?
4. What are the sources of the gender wage gap in Iran?
5. Does the glass ceiling or sticky floor effect exist in Iran's labour market?

Economic theories have provided various explanations related to possible sources of the wage gap. From the classical human capital theory, wage earnings reflect workers' inherent productivities. If the labour market is not discriminatory, any observed wage differences between male and female workers are usually attributed to observed productivity differences. Thus, the gender wage gap in such a scenario reflects differences in workers' attributes such as education, relevance field of study, and experience due to the division of labour in the household.

Beyond the supply-side explanation of neoclassical approach, the other explanation comes from institutional and labor market segmentation theories (Anker, 1997). It assumes that institutions (unions and large enterprises) determine employment conditions, promotion, and workers' payments. Institutional theories also assume that labour markets are segmented; therefore, it is difficult for workers to move between segments. Occupational segregation has two patterns: horizontal segregation, which means segregation across occupations and economic sectors, or vertical segregation within the hierarchy of occupations (Biblarz et al., 1996). This phenomenon is linked to the gender wage gap, which may cause a reduction in female labour force participation (Blau, Ferber, & Winkler, 2006). Although both theories have a valuable contribution to understanding the gender wage gap, they are less helpful in understanding the source of the gender wage gap.

While disparate studies have been conducted to understand the gender wage gap (Anker, 1997; Nwaka et al., 2016; Guven-Lisaniler et al., 2018), issues arising from such studies rest on economic discrimination in the labour market.

Economic discrimination is defined as a situation where "equal productivity is not rewarded with equal pay" (Aigner & Cain 1977, p. 177). The model of labour market discrimination initiated by Becker (1971) explains how employers, co-workers,

and customers' taste causes wage differential between women and men. Employers' discrimination implies that women only will be hired when their wage discount can compensate for the disadvantage of employing women. Discriminatory male co-workers demand a wage premium to work with women, and discriminatory customer depresses women's wage by being unwilling to buy goods and services produced by women. Becker's model emphasized that discrimination occurs in the less competitive economy, which is not persistent in the long run.

Phelps (1972) developed the model of statistical discrimination to explain the persistence of discrimination in the long run and competitive market. The model assumes imperfect information and uncertainty between men and women due to gaps in productivity, experience, and training, including promotion. Thus, discrimination negatively affects women's human capital investment and labour market participation through a feedback effect (Weiss and Gronau, 1981). Statistical discrimination accompanied by feedback effect may be a significant source of persistent wage differences.

Bertrand, Chugh, and Mullainathan (2005) introduced implicit discrimination to give further insight into the persistence of discrimination. The model argued that discriminatory stereotypes and attitudes might be unconscious and hard to eliminate (Fiske, 1998). As social and cultural perception towards women becomes less discriminatory, the gender gap may likely become smaller.

Models of labour market discrimination (statistical discrimination and taste discrimination) are consistent with horizontal and vertical occupational gender segregation, leading to a gender wage gap (Woolly, 1993). Bergman's (1974) crowding out model explains the relationship between occupational gender segregation and the wage gap. Indeed, the wage of equally productive men and women

segregated by occupation will be determined by the demand and supply of labour in each sector. A high gender segmented labour market would affect women's wages negatively due to discrimination.

Although neoclassical/ human capital theory and labour market segmentation theories are useful to explain the gender gap in the labour market, they seem not helpful in understanding occupational gender segregation and the gender wage gap. While they argue that the gender gap results from differences in education and experience, they fail to explain why women come to the labour market with less human capital endowments than men.

In contrast with neoclassical/ human capital theory, Marxist outgrowth labor market segmentation theory recognizes and encompasses social instead of the individual. Discrimination in neoclassical theories arises from socio-psychological behavioural characters, while the Marxist approach considers discriminatory behaviour roots in the economic interests of dominant groups. Therefore individual tastes and preferences can be explained by economic analysis.

Feminists argue that the class terms in Marxist theory ignore the sexes' different experiences in the labour market. Feminist or gender theories emphases the role of non-labour market variables such as patriarchal society and cultural values and attitudes towards women.

Feminist's theories argue that the gender differences in human capital and experience mentioned by neoclassical theories result from patriarchal ordering society, division of responsibilities in the family, and restrictions on women's freedom. Therefore feminine and masculine stereotypes play a role in determining the male and female-dominated occupations, which is the source of female-male wage differences.

To the best of the authors' knowledge, despite the vast literature focus on Iran's labour market issues with a gender perspective, there is no study about factors affecting the women's attachment to the labor market that can capture the recent change in social and cultural norms. Therefore this study employed logistic regression by using Household Income and Expenditure Survey (HIES) data for 2008-2018.

In addition, there are few empirical studies on the gender wage gap in Iran. This study updates the Iranian labour market literature by taking the effect of occupation and working sector into consideration and taking advantage of advanced decomposition methods the Recentered Influence Functions (RIF) regression and decomposition models due to Firpo et al. (2009) by using HIES data for 2018.

This study is organized as follows: Chapter two reviews Iran's labour market indicators. Chapter three presents the determinants of FLFP in Iran, while chapter four present the determinants of wage and the issue of the gender wage gap in Iran. Finally, Chapter five presents the conclusions and policy recommendations.

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Chapter 2

THE IRANIAN LABOUR MARKET

2.1 Labour Market Indicators

This chapter provides an overview of key labour market indicators during the last decade. It addresses the value and movement of the indicators used in previous labour market studies and identifies gender gaps in Iran's labour market. It ultimately aims to enhance knowledge to understand the women's challenges in the labour market in Iran. Statistics for this section of the study are adopted from the Statistic Centre of Iran, and the data reported reflect the country's entire population.

Iran's population is 83.33 million, and population growth slowed to 1.34 percent due to a low birth rate of 1.7 for each woman at the age of fertility (ILO, 2018). Its population is mostly urban, and the working-age (15-65) population is consists of 70 percent of the total population.

Figures 1 and 2 show the distribution of the working-age population by gender and main economic status. The gender differences are significant, and the inactive women population is more than twice men's.

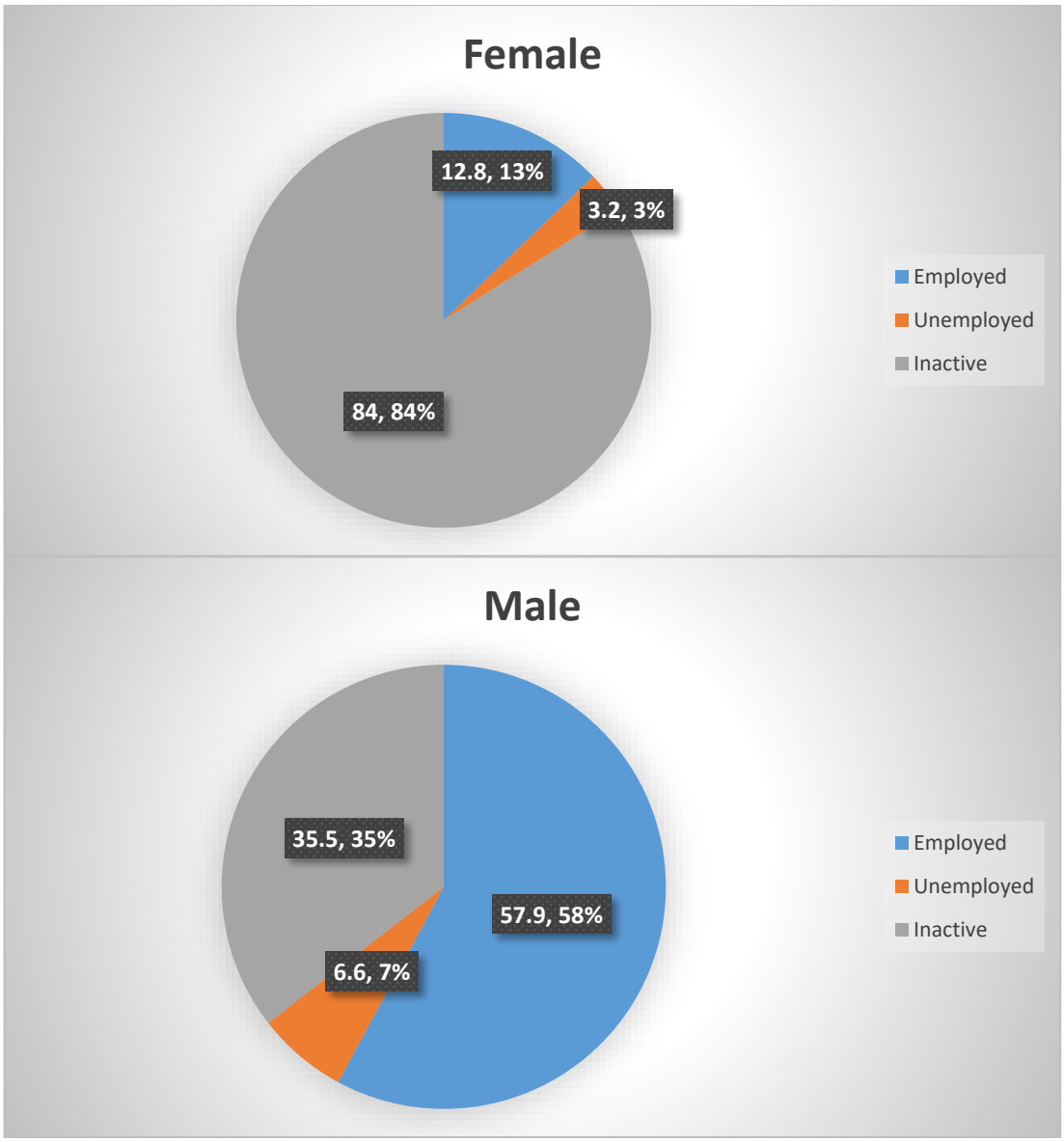

Figure 1: Distribution of male and female working-age populations by main economic status

Table 1 shows the main economic status of the working-age population by gender and regions in detail. Both genders are equally represented in the working-age population; however, the share of females in the labour force and employment is significantly less than males. Being a homemaker is the main reason Iranian women are in inactive populations.

Table 1: Distribution of entire population by gender and region (%)-2018

	Female	Male	Rural	Urban
Working age population	49.85	50.14	24.52	75.47
Labour force participation	16.1	64.5	42.6	39.8
Employed	13	58.1	39.2	34.4
Unemployed	3.2	6.6	3.5	5.3
Inactive	84	35.3	57.6	60.3
Student	16.5	17.5	16.6	17.2
Homemaker	62.2	0.2	30.4	31.3
Other income	3	12.5	5.9	8.4
Others	2.4	5.3	4.7	3.5

Source: Statistic center of Iran

The male labour force participation is 64.5, while the female participation rate is much lower than men's at 16 percent. Figure 3 shows the historical view of LFP by gender. The wide gender disparity in labour force participation rates can be observed. The trend of FLFP in the last decade did not change significantly and remains stagnant.

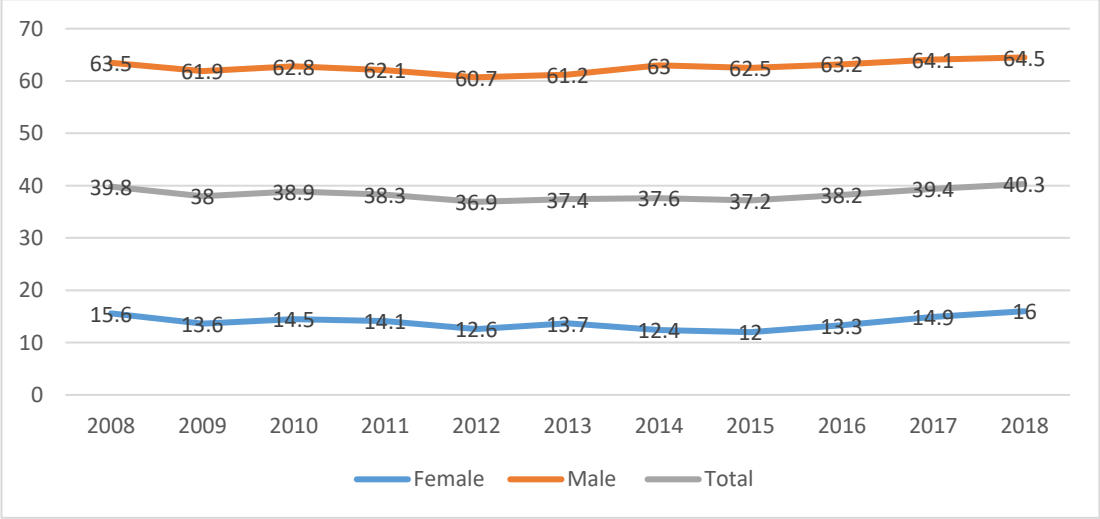

Figure 2. Labour force participation rates by gender (2008-2018)

Looking at FLFP by education level, women with university degrees seem to participate more in the labour force. Therefore education is an important factor that affects the FLFP.

Table 2: Distribution of women in the labour force by education level (%)- 2018

Education level	Female
Literate without certificate	1
Primary	3.19
Junior High school	1.7
High school	2.94
University level	7.17
Total	16

Source: Statistic Center of Iran, HEIS 2017

LFP for women is presented in figure 4. It shows FLFP has a shift towards the middle ages. The highest participating group was 30-40, and Iranian women's labour participation began to decrease after the age of 40.

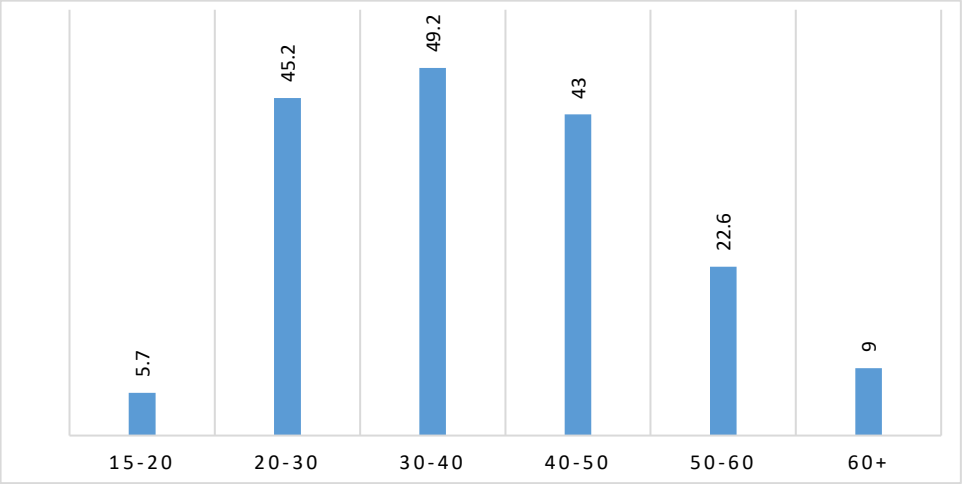

Figure 3. FLFP rate by age groups – 2018

2.2 Female Employment

The total formal employment was 35.6 percent in 2018, with the employment of 58.1 percent for the male compared to female employment of 13 percent. The trend in the male employment rate was upward for most of the years between 2008 and 2018, while for women, it showed the opposite direction.

Formal employment in three main sectors is as follows: agriculture (17.7 percent), industry (32 percent) and, service sector (50.3 percent). Both male and female

employment is heavily reliant on the services sector. Although the service sector accounts for more than 59.9 percent of total employment in the urban area, the major sector in the rural area is the agriculture sector (49.1 percent).

The number of family workers between 2008 and 2018 has a downward trend (10.36 percent and 5.37 percent, respectively). Although the share of male family workers gently reduces, the percentage of female family workers increased during the last decade.

As seen in table 3, the unemployment rate of women was almost twice as high as men in 2018. The youth unemployment rate of women was 13.2 percent higher than men in 2008, and this difference raised to 17.4 percent in 2018.

Table 3: Employment and unemployment (%) by gender, sector, and region (2008-2018)

	Female		**Male**		**Urban**		**Rural**		**Total**	
	2008	2018	2008	2018	2008	2018	2008	2018	2008	2018
Employment										
Agriculture	24.4	19.7	17.4	17.2	5.1	6.1	23	24.3	18.5	17.7
Industry	31.1	26.9	33.6	33.2	34.9	34	29.6	26.6	33.2	32
Service	44.5	53.4	49	49.6	60	59.9	47.4	49.1	48.2	50.3
Unemployment	13.7	18.9	11.3	10.4	13.7	13.5	9.8	7.9	12.5	12
Youth Unemployment (15-29)										
	34	38.6	20.8	21.2	25.7	28.2	18.4	16.8	23.5	25.1

Source: Statistic center of Iran

Table 4 describes the type of employment for men and women in 2008 and 2018. Although the number of self-employed women and women in the public sector did not change significantly, the number of women in the private sector increased by 12.4 percent. Percent of women were working as unpaid family worker are notable in both years. Despite a drastic decline, yet 18.6 percent of women work as unpaid family workers. Rural women, particularly those who work in the agriculture sector, make up the largest share of unpaid family workers; therefore, a 4.7 percent reduce the number

of women in the agriculture sector might be the reason for a reduced number of women as family workers.

Table 4: Employment status by gender (%), (2008-2018)

Types of Employment	Female		Male	
	2008	2018	2008	2018
Employer	0.9	1.4	6.4	4.4
Self-employed	23.4	23.7	34.4	38.7
Salaried in public sector	22.3	23.3	17.6	14.4
Salaried in private sector	20.6	33	36.34	40
Unpaid family worker	32.7	18.6	5.4	2.5
Total	100	100	100	100

Source: Statistic center of Iran

2.2.1 Occupational Gender Segregation

The distribution of women across occupational categories changed between 2008 and 2018 is presented in table 4. More than two-thirds of employed women were in three occupational categories in both years but with differing proportions: (1) professionals; (2) crafts and related trade workers; and (3) agricultural workers. However, the occupational distribution of employed men shows a more balanced distribution among occupational categories. The change in women's distribution from 2008 to 2018 is associated with the decline in agricultural employment and the increase in the supply of educated women. In 2008 skilled agricultural workers constituted a large share of women's employment (27.9 percent). A noticeable rise in female education levels resulted in the increase in the proportion of women in the category of professionals, which became the largest category in which women worked in 2018 (25.2 percent).

Table 5: Major occupations by gender (%), (2008- 2018)

9 Broad Occupational Categories	**Total**		**Male**		**Female**	
	2008	**2018**	**2008**	**2018**	**2008**	**2018**
1. Legislators, Senior Officials, and Managers	2.8	3	3	2.9	2	3.1
2.Professional	7.9	10.1	5.4	6.7	18.7	25.2
3. Technicians and Associate Professionals	4.6	5.7	4.7	5.2	4.3	7.6
4. Clerical and Administrative Workers	4.8	3.8	4.4	3.3	6.3	5.8
5. Service Workers and Shop and Market Sales Workers	12.7	15.9	13.9	16.6	7.5	12.5
6. Skilled Workers in Agriculture, Forestry, and Fisheries Sector	18.9	13.8	16.9	13.2	27.9	16.3
7. Crafts and Related Trades Workers	19.7	19.5	18.5	19.3	25.2	20.7
8. Machine Operators, Assemblers and Drivers	11.3	12.4	13.7	14.8	0.6	1.4
9. Labourers	14.9	13.7	16.6	15.1	7.3	7.2
Total	100	100	100	100	100	100

Source: Statistics Center of Iran, Labor Force Survey, 2008-2018

2.2.2 Wage Structure

A brief overview of the wage structure and the raw (unadjusted) gender wage gap among the Iranian salaried worker and self-employed is presented in Table 6. The table shows the distribution of males and females, hourly wages, and human capital attributes by sector. The most striking feature of the table is the high female years of schooling compared to males. In the public and private sectors, employed women are more educated than men. In the public sector, women have 1.9 years, and in the private sector, 1.74 years more schooling than men. In the self-employed sector, men's years of schooling are higher, but the differential is negligible; less than a year (0.62 years).

The second striking feature is the representation of men and women in the public sector. Almost one-third of the employed women are in the public sector, while only 11 percent of the employed men are in the public sector. Since women's education is higher or almost equal to men's, it seems the source of a possible gender wage gap could be due to the gender gap in potential experience. In all sectors, men have higher experience than women. The largest experience gap is in the private sector, then public and self-employed sectors.

Table 6: The wage structure in gender wage gap

	Female			**Male**		
	Public	**Private**	**Self-employed**	**Public**	**Private**	**Self-employed**
Share (%)	27.63	36.77	37.82	11.01	49.05	47.14
Schooling (years)	15.3	9.68	6.31	13.4	7.94	6.93
Potential Experience	19.12	21.09	30.98	21.84	24.5	32.96
Hourly wage(IRR)	132622.1	47147.16	214305.7	166582	72426.39	457367.5

Source: Authors' Computation from the HIES, 2018 Micro Data set

In short, on the one hand, while women's predominance in years of schooling in public and private sectors suggests higher productivity, on the other hand, lower labour market experience of women in all sectors suggests lower productivity compared to men. However, the findings support the human capital theory when the hourly wage differentials are examined regarding years of schooling and labour market experience. The unadjusted gender wage gap decrease as the experience gender differential becomes smaller and years of schooling gender differential become larger (Figure 5).

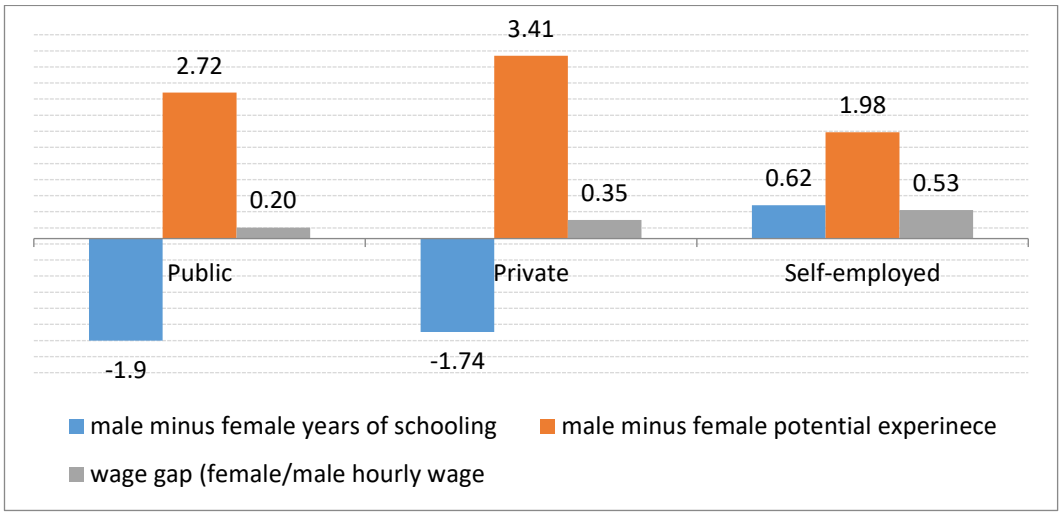

Figure 4: Wage, labour market experience, and years of schooling gender differentials.

Table 7 indicates the descriptive statistics of unadjusted gender wage differential by experience and educational attainment of men and women in different sectors. The gap decreases as the education level increases. The same correlation can be seen in all; bottom, middle, and top wage levels and even reverse gender wage gaps exist in the bottom, and middle wages as education levels increase.

Table 7: Gender wage differences across the wage distribution, by educational levels (2018)

	Total	**10th**	**50th**	**90th**
		Percentile	Percentile	Percentile
Total	0.48	0.11	0.001	0.01
Primary	0.61	0.14	-0.006	0.19
Junior & High	0.47	0.12	-0.015	0.18
Diploma	0.48	0.02	0.014	0.03
University & above	0.43	-0.15	0.009	0.16

Source: Authors' computation from the HIES, 2018 micro data set.

Thus, the wage gap between men and women with the same education can be attributed to women's lower labour market experience. Still, there should be other sources of gender wage gap than productivity attributes. For instance, the wage gap at the top indicates a possible glass ceiling, and the large wage gap at the bottom shows the existence of a sticky floor. Moreover, occupational and sectoral gender segmentation could be the other sources of the gender wage gap (García-Mainar et al., 2015). The institutional approach argues that the prominent feature of a segmented labour market is the wage gap among groups due to the difficulty of workers passing from one segment to another (Anker, 1997). Cohen argues that while wage is essentially unaffected with the number of men in an occupation, on the contrary, women are usually affected negatively (Cohen, 2004). Table 7 provides female to male employee ratios and wage gap across 9 main broad occupational categories and suggests female or male-dominated occupations[8].

Professional, associate professional and clerical occupational categories are female-dominated; others are heavily male-dominated or mixed occupations. This implies that in female-dominated occupations, women's representation is far above its

[8] Female to male ratio in total employment is 11.2. We assume that any occupation that have female/male ratio above 21.1; almost twice of their total ratio it is a female dominated occupation. The occupations where the ratio below total employment ratio (11.2) is male dominated and if the ratio is between 11.2 and 21.1 they are mix occupations.

total employment representation. In male-dominated occupations, women are below their total representation, while in mixed occupations, their representation is almost equal to their total representation. The gender wage gap provides mixed evidence that the segmentation of the labour market as “female” and “male” occupations implies relatively low wage rates in "female" occupations because a significant number of female workers are "overcrowded" into a limited number of "female" occupations” (Anker, 1997, p. 322). Women seem to be overcrowded in three occupations (Table 7 column 2). In the two female-dominated occupations, professionals and clerical workers, gender wage differentials are among the highest, as the theory suggests. However, the wage differential is among the lowest in the third female-dominated occupation like the associate professional.

Furthermore, the largest gender wage gap is in male-dominated occupations; elementary and machine operators and assemblers’ workers, which can be explained by several institutional factors emanating from unions and regulations from larger employments (Anker, 1997, pp. 321-322). It could also emanate from traditions and Islamic laws, especially in the Iranian case, which dictates and determines employment outcomes and wages. Despite the mixed results, analysis of the descriptive statistics suggests the consideration of occupational gender segregation as a determinant of the gender wage gap.

Table 8: Female and male dominated occupations (%)-2018

9 Broad Occupational Categories	**Female/Male Employee**	**Domination**	**Female/ Male Wage**	**Gender Wage Gap**
Legislators, Senior Officials, Managers	11.4	Mix	0.85	0.16
Professionals	59.6	Female	0.61	0.39
Technicians and Assoc. professionals	26.3	Female	0.71	0.29

Clerical and Administrative Workers	23.9	Female	0.60	0.40
Service and Sales Workers	12.4	Mix	0.59	0.42
Skilled Agricultural Workers	4.3	Male	0.73	0.27
Crafts and Related Trades Workers	8.9	Male	0.64	0.36
Machine Operators, Assemblers	1.9	Male	0.53	0.47
Elementary workers	4.2	Male	0.47	0.53
Total	**11.2**	**-**	**0.52**	**0.48**
Self -employed				
Agricultural	5.1	Male	0.44	0.56
Non-agricultural	11.89	Mix	0.41	0.59

Source: Authors' computation from the HIES, 2018 Micro Data set

2.2.3 Informal Employment

One-third of the employed people in Iran are in the informal sector, and it generates one-fifth of economic output (Urban Economics Association, 2016). The expansion of the informal sector due to recession and economic sanctions accelerates employment growth in this sector. Ministry of labour in Iran reports the existence of 6.5 million jobs in the informal (shadow) economy (Financial Tribune, 2016).

Low and unstable income, insecure working conditions, and no access to basic job protection and right such as a pension, health care, or contract are the common characteristic of working in the informal sector. According to ILO's report in 2018, the informal economy consists of the half to three-quarters of all non-agricultural employment in developing countries, and Iran is at the middle of this range.

ILO's report (2018) on women and men in the informal economy indicates that women are more likely to be in informal employment than men in developing, low or middle-income countries. The gender gap in the share of informal employment is wider when women are low educated and residing in rural areas (ILO, 2018).

The analysis of the Iranian labour market indicators provides partial evidence of the challenges Iranian women face to access productive resources and equal labour

market outcomes. The next chapter investigates the factors affecting Iranian women's participation in the labour market.

Chapter 3

WHAT EXPLAINS STAGNATING FEMALE LABOUR FORCE PARTICIPATION LEVEL IN IRAN? GENDER NORMS AND ATTITUDES OR BASIC LABOUR SUPPLY FACTORS

3.1 Introduction

The female labour force participation rate indicates women's access to economic resources and women's economic capacity. To promote gender equality in the labour market and women's empowerment and independence, it is important to underhand the driving force of FLFP.

Over the past decades, rapid decline in fertility rates and strong expansion in female education in Iran have been expected to boost female labour force participation (FLFP), as the classical economic approach suggests. However, FLFP levels and trends in this country are seen to behave rather more diversely. Klasen (2019) in his study on female labour force participation levels and trends in developing countries (1990-2015) finds that while the FLFP rates are rising strongly in Latin America, they are decreasing in South Asia, only modestly improving in the Middle East and stagnating in many other regions. Furthermore, Christiansen et al.'s study (2016: 5) – on driving forces of female employment in advanced and emerging European countries – report that, despite the remarkable increase in FLFP in Europe over the past decades, there are significant cross-country variations in the level of FLFP. It also draws

attention to the remaining substantial gender gaps in participation and the fact that there has been a significant slowdown in the closing rate of gender participation gaps.

Both abovementioned studies question the roots of uneven FLFP levels and trends among countries and regions. Their other common feature is that in their analysis of uneven FLFP levels, they go beyond looking at differences in demographic characteristics of women (marital status, age, number of children, residential area, etc.), household income, and female education. They also focus on differences in gender norms and attitudes among countries as factors that limit women's labour market involvement.

Although the gender norms and attitudes towards Iranian women in society and politics benefited from minor changes in the personal status law since the 1990s, women have achieved more visible success in the social and political sphere during the last ten years. In the previous decade government gradually eased social and political controls. The moral police were reined in major urban centers, and women felt freer to wear more provocative and colourful outfits. For the first time in Iran, the president appointed three women as governors of smaller governorates. In the 2009 elections, 42 women registered to run for the presidency, and the Guardian Council indicated that women were not banned from running for the top political job. In the economic sphere, women entrepreneurs continued to head companies and start-ups. Because of growing pressure from both reformers and conservatives, women's rights became one of the four top issues in Iran.

Therefore, this chapter empirically investigates the effect on FLFP of basic labour supply factors along with household conditions and gender norms and attitudes for two specific years: 2008 and 2018. The aim is to shed light on the causes of Iran's

stagnating FLFP level by using the country's Household Expenditure and Income Survey data.

Studying female participation determinants in Iran is important because it concerns the plight of Iranian women who suffer the most under its current economic and political conditions. They are affected far worse than men from the consequences of political disputes such as economic sanctions (Taheri & Güven-Lisaniler, 2018) and economic fluctuations due to their disadvantageous position in society.

Whereas the study's framework would apply to many developing countries in the Middle East and North Africa, it focuses on Iran's labor market. Women in these countries are trying to overcome political and social limitations. At the same time, different historical trajectories, cultural practices, and social fabrics are often unique to a country.

3.2 Literature Review

Previous studies have emphasized the supply-side explanation of FLFP in the MENA region. In examining the validity of the determinants of the time allocation model over time in MENA, extensive literature explains the low level of FLFP by controlling for educational level, marital status, age, and rural/urban differences (Assaad,2014; Hendy, 2015; Nazier and Racha, 2016). Their findings have emphasized that less educated, married women living in rural areas have limited participation in the labour market. Another essential common factor that is wildly discussed in the studies related to MENA countries is the conservative gender norms in the region. Although some studies examined that Islamic culture is attributed to low FLFP in MENA (Clark et al., 1991; Inglehart et al., 2003; Hayo and Caris, 2013), the significant differences in the rate of female participation observed across the Islamic world, from Yemen to Malaysia, show their discussion's failure. Traditional norms and

patriarchal culture seem to have more impact than Islam in lowering FLFP (Miles, 2002; Spierings et al., 2010; Chamlou et al., 2011; Diwan and Vartanova, 2017). They argue that most of the variation in FLFP can be explained by a set of norms that emphasize the importance of the family and the domestic sphere in women's lives.

The earlier empirical studies on the Iranian labour market are limited and widely focused on macro-level determinants of FLFP, particularly female unemployment (Salehi-Esfahani and Shajari, 2010; Bahramitash & Esfahani, 2011). They do shed light on the effect of fertility and female education levels on FLFP and employment. More recent empirical studies on female force participation determinants that rely on microdata provide evidence that supports Becker's time allocation model. They suggest female education, age, marriage, the presence, number, and age of children as the main determinants of Iranian women participation decision (Azimi, 2015; Majbouri, 2015, 2016, 2019; Mirzaie, 2015; Salehi-Esfahani & Shajari, 2010). However, these later studies also go beyond the time allocation model and draw attention to the gender division of labour within the household. They argue that gender division of labour in the household increases the labour supply cost of women compared to men (Goldin, 2006; Majbouri, 2015). As a result of this, women tend not to participate in the labour force unless the labour market return is higher than the care cost (Gündüz-Hoşgör, & Smits, 2008; Moghadam, 2005). Additionally, they argue that the existence of household members sharing home production also positively affects women's participation in the labour force (Spierings, Smits, and Verloo, 2010).

Other than those mentioned above, there are also studies providing demand-side explanations. They mention place of residence (Salehi-Esfahani & Shajari, 2010; Majbouri, 2015) and the Iranian economy's dependence on oil exports as female labour demand constraints that suppress FLFP rates. They argue that the oil-dependent

economy of Iran is a factor that constrains women's employment: it reduces female labour demand by crowding out female intensive trades or sectors, leading to lower female participation as a result. These studies also argue that oil dependency decreases women's bargaining position by influencing family income and further restricts women's labour market involvement (Klasen, 2019; Majbouri, 2017; Moghadam, 2005). The other demand constraint that they suggest is the added worker effect. During economic crises, a decrease in the household income due to men's job losses and increasing living costs increases women's involvement in the labour force (Hoodfar, 1997; Mirzaie, 2015).

Occupational gender segregation is another demand-side explanation suggested by these studies. They argue that high occupational segregation by gender affects FLFP negatively by influencing women's education choices, status, and income. Occupational gender segregation divides occupations as female and male occupations in conjunction with the gender wage gap, diminishes women's labour market prospects, and further enhances the crowding-out effect (Majbouri, 2015; Mirzaie, 2015).

3.3 Women in the Labour Market in Contemporary Iran

In the 1960s and 1970s, i.e., before the Islamic Revolution, Iran entered into the global economy and new local industries. This situation is accompanied by Pahlavi's "White Revolution" (introducing a significant change in the Family Protection Law and providing welfare and educational services for women and modernising Iran). As a result of these changes, there was an expansion of employment opportunities for women. At this time, Iran was entering into the global economy, and there was an emergence in the country of new local industries that accompanied Pahlavi's "White Revolution." The modernisation of Iran brought with it a significant

change in the Family Protection Law that provided welfare and educational services for women. Although the formal sector was male-dominated, the "White Revolution" opened new women's employment doors. More educated women were finding employment opportunities in the education and health sectors. Less-educated women benefited from job opportunities in traditional craftwork as rug and handicraft makers in rural areas or as sellers in urban areas. The majority of rural women continued as unpaid family workers in family farms or rug-making businesses. By the mid-1970s, the FLFP rate had reached 12 percent from 9.5 percent in 1956 (Moghadam, 2003).

Since the Islamic Revolution in 1979, the role of women in public places and the pattern of their economic activities have constituted an issue of major concern to politicians. Division of labour and the relationship between men and women continue to be legally determined by the Iranian Civil Code based on Sharia Law that puts women in an unfavorable dependent position. Men have privileges in the labour market, and economic activities are men's prerogative. In other words, by law, men have authority over women in both the public and private spheres of life because they are heads of the household and the sole breadwinners for the family.

Although there were not that many employment opportunities available for women even before the revolution, the Islamization policies that emphasised the traditional gender role of women as wives and mothers and compelled them to wear the veil in the public workplace forced a large group of elite and middle-class women into leaving their jobs (Moghadam, 1985). Also, lower-income women lost their jobs because of the deceleration of economic growth.

Although Islamization policies harm women's labour market involvement, sex segregation in schools because of Islamization of the education system increases access to education for women. Sex-segregated schools also increased the number of

women in the public sphere as teachers and students by creating an acceptable environment for the conservative culture (Bahramitash & Esfahani, 2009).

3.3.1 Education Reform, Family Planning, and FLFP

Following the revolution, education for women was strongly advocated by Iran's leaders; therefore, the adult female literacy rate increased from 56.2 percent in 1990 to 80.8 percent in 2018. The increase in rural areas, from 1.2 percent to 72.8 percent, is even more striking. This was not the only improvement in female education. In 1990, women made up 30 percent of university graduates, and this ratio increased to almost 50 percent in 2018 (SCI, 2018)

However, despite the improvement in literacy skills or qualifications like a high school or university diploma, women's progress in gaining access to the labour market has been slow. The FLFP rate increased from 10.1 percent in 1990 to just 16 percent in 2018.

Higher Education has helped women liberate themselves from family and society restrictions and increased their bargaining power in marriage and the marriage market (Shavarini, 2005).

Nevertheless, it has not served women well in the labour market. From 2008 to 2018, the rate of female employment has remained far below that of men. During this decade, the employment rate of women has improved by 5.8 percent, whereas the male employment rate has increased by 15.1 percentage points. On the other hand, finding a job is still much easier for men than for women. Female unemployment rates are always twice as high as male unemployment rates. The high female unemployment rate also reflects an increasing number of women seeking jobs in the labour market (Moghadam, 2003; Pampel & Tanaka, 1986).

In Iran, economic growth and employment have had a puzzling relationship over the years. Despite the steady growth in real non-oil GDP between 2008 and 2018, net employment has remained almost stagnant. In other words, the relatively high non-oil growth could not provide jobs in the labour market. In the meantime, two important factors have had an impact on Iran's economic growth and labour market outcomes. First, in 2011 the subsidy reform in the domestic petroleum sector reduced the significant inefficiencies and the misallocation of resources in the economy. This allowed greater sales of petroleum abroad at a time of record-high oil prices. This stimulated GDP growth. Second, the imposition of severe sanctions in mid-2012 caused high inflation and a sharp decline in economic activities and FDI inflow. The subsequent contraction in businesses further constrained job creation. The employment of women seemed to suffer more from the severe sanctions. While the financial sector, which is primarily male-dominated, expanded after the imposition of sanctions, the service sector, where women mostly work, shrank.

FLFP in Iran is very sensitive to economic structural changes due to high and persistent sectoral and occupational gender segregation in employment. The findings of previous studies on female unemployment show that economic structure and occupational gender segregation are the main factors blocking women's access to the labour market (Kian, 1995, 2014; Dougherty, 2014; Groh et al., 2014; Krafft & Assaad, 2015; Klasen, 2019). Along with occupational segregation, other social factors restrict the jobs deemed appropriate for women. Reservation working conditions (acceptable working environment) and refusing to work in jobs they consider beneath them (reservation prestige affect) impact women's distribution among occupational categories (Bergmann, 1971).

These social norms are evolving in Iran, but their slow adjustment has restrained the speed at which the FLFP has been able to increase. A fact reflected in the distribution of women in occupational categories is that lack of enough high-skilled job opportunities in the labour market led to better-educated women taking up lower-skilled jobs, thus pushing less educated women out of the job market. The concentration of women in a limited number of occupations negatively affected women's income and status and resulted in most of them joining the ranks of the unemployed due to the crowding-out effect and the discouraged worker effect (Bergmann, 1971; Anker, 1997; Majbouri, 2015).

3.4 Data and Methodology

3.4.1 Data

The Household Expenditure and Income Surveys (HEIS) have been conducted annually by the Statistical Center of Iran since 1963 in rural areas and since 1968 in urban areas. The surveys include information concerning demographics, assets, expenditure, and income. These surveys are nationally representative samples, with a new sample is drawn from the population each year. The present study uses the cross-section data set for two specific years: 2008 and 2018, and it is not a panel data set that traces individual households and individuals over time. The survey data were obtained electronically from the official website of the Statistical Center of Iran.

The 2008 and 2018 survey reports provide data for 22,666 and 39,894 households, respectively. Although HEIS includes data for all ages, we constructed a separate data set for ages 15 to 60 years (the latter is the full-benefit retirement age in Iran's social insurance system run by its Social Security Organization). The summary statistics of the dependent and independent variables used in the econometric model are provided in Table 9. The descriptive statistics show that while the Iranian female

labour force expanded by 1 percent, the number of those who dropped out of the labour market declined by 1 percent, too. There are also differences in observed characteristics across time.

Table 9: Micro-level descriptive statistic of women in-sample data (%) by variable (2008-2018)

Variables	2008	2018	Δ(%)
Total Observation (Number)	42955	43481	526
Labour Force	18.94	20.02	1.08
Out of LF	81.06	79.98	-1.08
Age			
15-20	23.37	13.06	-10.31
21-30	30.08	27.08	-3
31-40	20.36	25.37	5.01
41-50	15.43	19.56	4.13
51-60	10.76	14.93	4.17
Education			
Literate without diploma	3.02	5.26	2.24
Primary school	38.64	30.71	-7.93
Junior high school	46.01	23.47	-22.54
12 years Diploma	1.21	23.02	21.81
University level	11.12	17.54	6.42
Marital status			
Married	62.19	68.09	5.9
Single/Divorce/Widow(er)	50.28	31.91	-18.37
Area of residence			
Urban	49.72	51.46	1.74
Rural	50.28	48.54	-1.74
Number of children =<6			
no child	76.17	75.88	-0.29
1-2 children	22.18	23.67	1.49
more than 2	1.66	0.46	-1.2
Number of children =>18 Female			
no child	82.55	87.00	4.45
1-2 children	15.56	12.41	-3.15
more than 2	1.88	0.56	-1.32
Number of children =>18 Male			
no child	78.56	80.50	1.94
1-2 children	18.01	18.26	0.25
more than 2	3.40	1.23	-2.17
Number of members above 60			
No member	97.60	99.05	1.45
1 member	2.26	0.86	-1.4
2 members	0.14	0.09	-0.05
Husband's Education			

1-12 years of schooling	87.85	86.80	-1.05
University level	12.15	13.20	1.05
Family Structure			
Nuclear	80.13	78.02	-2.11
Extended	19.87	21.98	2.11
Average Husband's income	9.758	2.0288	-7.7292

3.4.2 Analytic Strategy

In the study of FLFP where the variables are explained with binary or categorical values, the linear probability model is suggested, and it is easy to interpret. However, the Linear probability model (LMP) is suffering from some issues: (i) Can predict probability which is negative or larger than one (ii) A unit change in a regressor can induce an increase or decrease in probability larger than 1 (iii) a change in one unit in one regressor has a constant effect (iv) the true relationship between a binary outcome and a continuous explanatory variable is inherently nonlinear. This means that the functional form of the LPM is generally not correctly specified, which can lead to biased estimates of some parameters of interest. The insufficiency of the linear probability model suggests that nonlinear specification may be more appropriate. Therefore, the logit or probit models are mostly used in the empirical analysis to identify factors affecting female labour force participation decisions. Both methods will yield similar (not identical) inferences. The logit model is more popular in labour market studies because coefficients can be interpreted easier. Therefore, the logit model conducted the empirical analysis, which identifies factors affecting female labour force participation decisions. Generally, the logistic regression model calculates the probability of one of two categories in the data set. For the logit model, P_i is determined based on the logit distribution:

$$p_{i=F(X_i',a)}=\frac{\exp(X_i',a)}{1+\exp(X_i',a)} \quad (1)$$

where P_i denotes the probability that individual *i* participates in the labour force and X_i' is a vector of individual characteristics containing the following variables: (1) Demographic and human capital characteristics, such as age, education, and area of residence; (2) Gender division of care work (unpaid work) measured by marriage, number of children below age six, and the number of elderly in the household; (3) Gender norms and attitudes measured by husband's education level and family type; and (4) Household income and number of adult children in the household used to measure household conditions. The model parameters are estimated through the method of maximum likelihood.

3.4.3 Variables

The predicted variable, female labour force participation (FLFP), is a dummy variable equal to 1 if the individual is in the labour force and 0 otherwise. In line with the theoretical model, independent variables are categorized into four groups:

Demographic variables

The age of the respondent is used to measure the impact of life cycle changes on FLFP. It is transformed into five categorical variables. Previous studies portray an inverted U-Shaped relationship between age and participation (Nwaka et al. 2016; Guven-Lisaniler et al. 2018). The *region* measures urban-rural differences in FLFP. This is included as a dummy variable, which is equal to 1 when the individual resides in an urban area and 0 when an individual resides in a rural area, to reflect job opportunities and differences between regions.

Education is used to control the labour market qualifications. This variable is transformed into categorical variables showing women's level of education (diploma): 1 = at least completed primary school; 2 = at least completed junior high school; 3 =

at least completed 12-year of schooling (high school diploma), and 4 = at least completed some university degree course.

Gender division of cares task

Marital status, the number of children below age 6 (school age), and the *number of household members above 60* measure the impact of care tasks on FLFP. Because the number of divorced or widowed persons was less than 100 in the observation, this variable is transformed into a dummy variable: 1 = Married, and 0 = single/ divorced/widow(er).

The effect of marital status on FLFP shows the impact of the gender division of care tasks in the household on FLFP level. It also might capture the change in social attitudes towards working women and the hierarchy of power between the couple.

Gender norms and attitudes

HEIS data in Iran is limited in finding a variable that can capture social norms and attitudes. According to the results of the World Values Survey in Iran (2017-2020), the disaggregation of respondents by sex and level of education with those survey equations measuring the perception of the society towards working women such as "men make better business executives than women", "being a house wife just as fulfilling", "pre-school child suffers from working mother" and believe in "gender equality in job" indicates that the stigma associated with being a working woman decreases as men's education increasing.

The extant literature also suggests using *husband's education* to measure gender norms and attitudes to working women and the level of traditionalism. It's argued that in countries with stronger social stigma associated with being a working woman, the relationship between the husband's education level and FLFP is negative, particularly

among the more educated groups (Spierings et al., 2010). The partner's education level is measured in two categories: 1-12 years of schooling = 0, university-level = 1.

The second variable to estimate the effect of gender norms and attitudes is the family structure (*extended or nuclear family*). We expected that traditional households were more often extended. Women living in extended families may have less motivation to enter the labour market due to the internalised traditional family roles. It may be that the husband or other family members have a strong voice in participation decisions (Spierings et al., 2010). The partner's education level is measured in two categories: 1-12 years of schooling = 0, university-level = 1. Family structure is a dummy variable equal to 0 when the family members are more than the couple and their children (extended) and 1 when it is a nuclear family.

Household condition

In line with the neoclassical theory of labour supply, *household condition* (husband's income + non-labour income) is added to the model as a variable to measure the impact of household financial condition on female labour force participation (Klasen, 2019). As a proxy for the potential household member who can be available in the labour force and generate income, *numbers of adult female and male members (above age 18)* are also included in this model (Majbouri, 2015).

3.5 Empirical Findings

The estimation result generated by equation (1) is reported in Table 10. The findings show that the coefficients of age categories are significant across both periods but with a relatively smaller coefficient size for 2018. Age tends to increase the chance of a woman's participation in the labour market; this increase is steady until age 51-60. It may represent the sharp decline in fertility and an increase in the number of divorced women. Women belonging to the 15 to 20-year age group are less likely to

participate in the labour market, reflecting the shifts in attitudes toward girls' university education. WVS data show that 44 percent of the respondents in 2005 and 52 percent in 2017 disagreed that the university education is more important for a boy than a girl. Middle-aged women post-revolutionary baby boomers (early 1980s) are more likely to participate in the labour market.

The average age at which women give birth in Iran ranges between 28 and 30 in urban areas, and between 23 and 28 in rural areas. Thus, by the time women get to their mid-thirties and mid-forties, their children are of school age. This allows such women the flexibility of time towards market production. Furthermore, families need more resources to invest in the education of children. Here, the age indicator does not depict the inverted-U relationship for both years; 2008 and 2018.

Table 10: Logistic models of women's LFP

VARIABLES	**2008**	**2018**
Dependent variable: FLFP	**Coefficients**	**Coefficients**
Demographic and human capital variables		
Age (base: 15-20)		
21-30	1.095***	0.543*
	(0.206)	(0.318)
31-40	1.765***	0.962***
	(0.204)	(0.318)
41-50	2.310***	1.412***
	(0.207)	(0.318)
51-60	2.714***	1.710***
	(0.211)	(0.321)
Education(base: literate without diploma)		
Primary school	0.888***	0.566***
	(0.296)	(0.0854)
junior high school	0.668**	-0.0248
	(0.298)	(0.101)
12 years diploma	3.315***	0.155
	(0.367)	(0.106)
university	3.399***	1.725***
	(0.306)	(0.116)
Area of residence (base: Rural)		
Urban	-1.844***	-1.618***

	(0.0471)	(0.0567)
Gender role Variables		
Marital status (base: single/widow/divorce)		
Married	-0.497***	0.730***
	(0.108)	(0.101)
Number of children =<6	-0.218***	-0.174***
	(0.0280)	(0.0443)
Number of household member >60	-0.721***	-0.385
	(0.177)	(0.297)
Social and cultural values Variables		
Partner's education (base: 1-12 years of schooling)		
University degree	0.0077	0.378***
	(0.0654)	(0.0794)
Family Type (base: Extended family)		
Nuclear family	0.364***	0.639***
	(0.0591)	(0.0653)
Household financial status Variable		
Husband's income+ Non-labour income	-0.00618*	0.188***
	(0.00324)	(0.00339)
Number of female children >18	-0.333***	0.0863
	(0.0443)	(0.0696)
Number of male children >18	-0.424***	-0.0830
	(0.0383)	(0.0637)
Constant	-2.067***	-3.414***
	(0.379)	(0.347)
Observations	18,594	22,478

Standards errors in parentheses
*** p<0.01, ** p<0.05, * p<0.1

In line with FLFP literature in MENA countries and Iran, women's university education continued to play a significant role in determining FLFP in 2018. Although the coefficient of university education implies that education is a strong determinant of FLFP, our findings and coefficient size show that the importance of this factor diminished in comparison with 2008. A woman with university degree all else being equal, is predicted as having a 79 per cent chance of being participate in the labour market (Probability = 1 / (1 + exp(-x)) = 1 /(1 + exp(- 1.332)) in 2008. However, this probability decreased up to 15 percent in 2018. The reduction in the positive effect of education on FLFP is large. It almost completely cancels the effect of a modest

reduction in the social stigma associated with being a working woman, as WVS data suggests.

Residence in urban areas appeared to have reduced a female's probability of participation in 2008 and 2018. If a woman has a university education and lives in an urban area, these two effects almost cancelled each other out in 2018. In contrast, residence in rural areas increases women's involvement in the labour force, which is likely the result of having greater access to extended families for childcare. Also, the women may have a lower level of reservation prestige for taking jobs in rural areas because many businesses employing women tend to be family or acquaintance-based. Transportation costs are often modest in rural areas.

Many educated urban women choose to remain at home. High child care costs and transportation costs increase the reservation wage of urban women. In some areas, the labour market environment is not very palatable due to sexual harassment and the availability of few high-paid jobs.

The findings of previous studies of Iran suggest a strong negative relationship between marital status and women's labour market involvement. Although in 2008 results marriage appears to be in the same line with the literature, the effect of marriage is significantly positive in 2018. This may be due to a decrease in the social stigma associated with being a working married woman or changing household conditions (changes in the family income). Being married women, all else being equal, is predicted as reducing a 7 per cent chance of participating in the labour market (Probability= 1 /(1 + exp(- -2.564)) in 2008. However, this probability increased women's involvement in the labour force in 2018 by 6 percent.

There is an inverse relationship between FLFP and the number of children younger than 6 in 2008 and 2018, though the coefficient is smaller in 2018. A larger

number of elderly household members served to decrease the women's labour market involvement in 2008, but by 2018 this effect was insignificant but still negative in sign. Overall, an increase in the number of children below age 6 and the number of elderly push up household care costs and restrict women's labour market involvement. In our case, although the increasing care cost of children restricts women's participation in the labour force, this restrictive effect is weaker in 2018 than in 2008.

The husband's education level is included in the model to capture gender norms and attitudes toward women. The WVS data offers evidence that supports the finding that gender norms and attitudes to women are changing, which in turn helps to explain the puzzling effect of marriage and the care costs. The estimates show that women with more educated husbands are more likely to participate in the labour force in both years, but only the 2018 estimate is significant. Thus, according to the finding, having a working wife is not a problem that reflects negatively on the ability of an educated man to be able to provide for the family.

Disaggregated WVS data by education level and sex also suggest a negative relationship between the husband's education level and the social stigma of having a wife who is a working woman. As the education level of men increases, the share of respondents who agree with the statement that "When jobs are scarce, men should have the priority" decreases in both survey years, 2005 and 2017. The share of better-educated men who agree with the above statement was the lowest ever on both 2005 and 2017 surveys. Analysis of married respondents also reveals that as the education level increases, the proportion of respondents who agree with the above statement decreases.

Women's labour market attachment is closely related to household conditions, especially in developing countries. Improvement in the husband's income (or other

household income) or increase in the number of income earners in the household tends to decrease women's labour market involvement. The findings of the present study support this relationship. And the relationship is even stronger in 2018.

The number of additional potential income earners, the number of male and female children above age 18 in the household, is not significant in 2018. This may be a result of increased years of schooling for young children and high youth unemployment. Hence, there is no increase in the number of income earners in the household. Our findings are in the opposite direction with Majbouri's (2015) results. His studies indicate that the presence of an adult female in the household increases the likelihood of women working by about three percent. In contrast, the presence of adult males has a negative impact on FLFP.

To summarise, empirical findings for two years, 2008 and 2018, suggest that gender norms and attitudes to working women and gendered division of the work associated with family care are the driving forces of stagnation in FLFP in Iran. Although the shift in gender norms and attitudes toward a more gender-equal society in Iran did not increase the FLFP rate, these cultural changes affect the sign and size of the FLFP's determinants.

Chapter 4

GENDER WAGE GAP IN IRAN

4.1 Introduction

Even though an increase in FLFP expands women's access to economic resources, women are still disadvantaged in the labour market. The gender wage gap remains one of the significant labour market challenges facing Iran and other developed and developing countries. The suggested reasons behind the stark differences in the gender pay gap include differences in human capital specifications (education, age, experience, working hour and job status), gender differences in labour market involvement, employment type, employment status, occupational distribution, distribution within occupations, and sectoral distribution.

Studies also suggest that social, cultural, and institutional norms, including traditions, are inhibiting factors against gender equality in employment outcomes (Blau and Kahn, 2017; Jayachandran, 2015; Randall, 2013). As observed in the other MENA countries, institutional and cultural norms have been posited to affect women and men's economic opportunities and life choices in Iran. Differences in men's and women's occupational representation may be shaped by institutional, cultural, or religious values (Blau, Ferber, & Winkler, 2006). For instance, a possible concentration of women in low-paid occupations compared to men may further raise the gender wage gap due to the high labour supply (O'Neill, 1984; Woolly, 1993; Del Río and Alonso-Villar 2010). However, many studies on the gender wage gap with a

neoclassical approach have not considered these dimensions a potential cause of gender inequality in the labour market.

Iran has its specific institutional, social, and cultural characteristics, explicitly shaped by ethical, moral codes and leaning towards religious traditions. It has become apparent that further insights on the causes of the gender wage gap in Iran and, by extension, the MENA countries will significantly contribute to the existing literature.

The imposition of Islamic laws in Iran, which is associated with patriarchy – just as observed in other Islamic countries in the MENA region has been pointed as the main factor which influences the gender gaps in the labour market and the position of women in society (Spivak, 1999; Moallem, 2005).

Therefore, this study empirically investigates the determinants of women's wage and the source of the gender wage gap in Iran using HIES 2018 and employed quantile regression and RIF equation.

Using quantile regression and decomposition helps us also to detect the existence of glass ceiling and sticky floor effect in Iran's labour market for women. The glass ceiling represents a phenomenon that the prospect of women progressing in the labour market is limited up to a point. However, the sticky floor represents obstacles to women's progression in the labour market (Barón & Cobb &Clark, 2010; Carrillo, Néstor, & Robano, 2014). The glass ceiling, therefore, exists if the magnitude of the gender wage gap is largest at the top of the wage distribution while the sticky floor represents a larger gender wage gap at the bottom of the distribution (Albracht et al., 2003).

Although the education level and position of women who face the glass ceiling effects differ from those who experience the sticky floor, women in both situations have low mobility and find themselves unable to better their situation. Due to the

unequal division of unpaid work, most women in the labour market are also expected to do the household work in addition to their wage labour. Therefore, a barrier to career advancement for women and unequal labour market outcomes, in any form, has a significant effect on their psychological well-being. Besides, it may also affect their decision to work and push them to withdraw from the labour market (feedback effect).

4.2 Literature Review

The empirical studies on wage gap and discrimination began using regression methods and the Oaxaca –Blinder decomposition. The method decomposes male-female wage differences into an explained and unexplained part. The part of the gap that is defined by productivity differences (mainly human capital differences) and the part that the productivity differences are unable to explain is mostly considered discrimination. However, the discrimination part may include other effects such as unmeasured productivity differences, culture, institutions, and the impact of industry or occupation. Discrimination can be overstated or understated if men's unmeasured productivity is high, average unmeasured characteristic of women are better than men or other explanatory such as education, experience and occupation variables are affected by discriminations directly or through feedback effect.

To overcome the issue, the literature tried to use a more homogenous sample with qualification control or experimental research to control for a detailed characterization of the sample.

Even though the decomposition method may be limited in some ways, it remains one of the key statistical approaches used to study the gender wage gap and discrimination in the labour market. But at the same time, this limitation allows us to compare the findings of this research to those of other studies.

Over time, wage gap studies have extended to quantile regression models. This model, other than measuring the wage gap, has also relied on unraveling policy-relevant issues such as the glass ceiling and sticky floor hypothesis across countries (Rica et al. 2008; Youm and Yamaguchi 2016; Aktaş and Uysal 2016; Duraisamy and Duraisamy, 2016; Collischon, 2019; Jung & Cho, 2019; Magnusson and Nermo 2017). From the foregoing, most of the studies on wage gap analysis have been conducted for the European, Latin American, and East Asian countries. Most studies found the prevalence of glass ceiling and very few cases had sticky floor effect (Rica et al., 2008; Youm & Yamaguchi, 2016; Duraisamy & Duraisamy, 2016; Collischon, 2019; Jung & Cho, 2019).

Middle East countries have received much less attention in that matter. Using joint models of educational choice and wage determination, the studies found a sizable wage gap due to discrimination with a declining trend over time in Egypt and Morocco (El-Hamidi and Said, 2005; Kandil, 2009; Biltagy, 2014). Neuman and Oaxaca (2005) and Miki and Yuval (2011) investigate the gender wage differential in Israel. The findings indicate that the gender wage gap is even higher than the ethnic wage gap. Israeli women adopted the strategy of reducing the human capital gap to eliminate the wage gap.

In Pakistan, Yasin et al. (2010) analyzed the determinant of the gender wage gap and gender employment position. The results confirm that there is no difference between the productivity of men and women, and some socio-economic and cultural constraints hinder the equal position of women in the labour market. Without using empirical explanation, Dah, Abosedra, and Dahbourah (2010) observed a significant gender wage gap in Lebanon. Alfarhan (2015), using the Oaxaca and Ransom (1994) technique and the data from 2002 and 2006 household expenditure and income survey,

found that gender differentials entirely explain gender pay gaps in Jordan. Akhmejonov (2012)'s study explains almost entire wage gap by discrimination in Turkey. Another study for Turkey conducted by Aktaş and Uysal (2016) found no sticky floor effect in Turkey but established a meaningful wage gap at the median and high end of the wage distribution. Thus, the result of most research on the gender wage gap indicates the significant contribution of discrimination due to social and cultural norms and occupation segregation in the labour markets of MENA countries.

4.3 Econometric framework

4.3.1 Data

This study utilizes microdata from household expenditure and income survey (HEIS) conducted by the statistic center of Iran in 2018. HEIS, which is gathered annually, is a relatively large cross-sectional data set that provides various information related to individual and demographic characteristics, disaggregated household income and expenditure, including household ownership of assets. The data is a national representative where data is drawn from the population across the country. To align with the research objective of the study, a sample of individuals of 15 to 60 years was selected, which captures the official working age in Iran (legal retirement age in Iran). Additionally, the study captured workers employed in the public and private sector or self-employed. The final sample of the study contained 32,051 observations, 29,011 males and 3,040 females.

4.3.2 Variables

To capture only wage earners, the sample of this study was restricted to individuals where their respective wages were reported. The definition of wage as used in this paper are the hourly wages earned, which is calculated as [(monthly wage + bonus per month) ÷ monthly working hours]. Since the monthly work hours for the

self-employees is missing from the dataset, the study adopted the standard working hours in Iran (10 hours a day as an average working hour - 6 working days). Thus, the log of hourly wage is used as the dependent variable. Other variables and summary statistics hypothesized as determinants of wages are presented in Table 11.

Descriptive statistics indicate the human capital attributes, socioeconomics characteristics, occupations, and work sector differences between men and women. Potential experience is slightly larger for men than women, whereas university education level is higher for women than men. Gender differences by sector are observable. Representation of women in paid employment is larger than men while it is the opposite for self-employment.

Table 11: Descriptive statistics of variables used

Variable	Female		Male		Pooled	
	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.
Human Capital Variables						
primary school	0.215	0.411	0.330	0.470	0.319	0.466
junior high school	0.088	0.283	0.233	0.423	0.220	0.414
diploma	0.153	0.360	0.188	0.391	0.185	0.388
university level	0.396	0.489	0.133	0.340	0.158	0.365
experience	24.083	14.086	27.825	14.018	27.470	14.067
Demographic Variables						
married	0.646	0.478	0.867	0.339	0.846	0.361
single	0.207	0.405	0.123	0.329	0.131	0.338
divorce	0.047	0.211	0.006	0.079	0.010	0.100
widow	0.101	0.301	0.003	0.056	0.012	0.111
Occupation Variables						
elementary	0.171	0.377	0.455	0.498	0.427	0.495
assemblers	0.018	0.132	0.106	0.307	0.097	0.296
trade	0.126	0.332	0.159	0.366	0.156	0.362

Variable	Female		Male		pooled	
	Mean	Std. Dev.	Mean	Std. Dev.	Mean	Std. Dev.
agriculture	0.007	0.084	0.019	0.136	0.018	0.131
services	0.076	0.265	0.069	0.253	0.069	0.254
clerical	0.095	0.294	0.045	0.207	0.050	0.218
technicians	0.085	0.278	0.036	0.187	0.041	0.198
professional	0.380	0.486	0.072	0.258	0.103	0.304
manager	0.041	0.198	0.040	0.197	0.040	0.197
paid worker	0.622	0.485	0.529	0.499	0.537	0.499
self-employed	0.378	0.485	0.471	0.499	0.463	0.499
Dependent Variable						
Ln hourly wage	11.205	1.212	11.664	1.311	11.621	1.309

Human Capital Variables:

Consistent with other developing countries' studies (Nwaka et al., 2016; Guven-Lisaniler et al., 2018; Pham and Reilly, 2017), this study uses the individual's latest level of education and potential experience to capture the human capital variables. The study uses 4 categorical educational variables such as:

1. Primary (Base category) – if the employee completed primary education,
2. Junior High School – if the employee completed junior high school,
3. Diploma – if the employee completed high school,
4. University degrees – if the employee completed tertiary education,

Using the levels of education instead of the years of schooling allows us to control for any potential measurement error from the survey (Pham and Reilly 2017).

Another important measure of human capital after education is the workers' level of experience. However, since questions related to on-the-job experience is not available in HEIS, we use the potential experience measure [age –years of schooling – 6]; where 6 as used is the enrollment age for an elementary school in Iran. Most labour market studies have relied on this measure (Hara, 2018).

Demographic Characteristics:

This study uses the worker's marital status and places of residence to capture demographic characteristics**.** Studies of the impact of marital status on earnings have found a relatively lower gender wage gap amongst single workers than the married counterparts. According to Korenman and Neumark (1991), since single men are less productive than married ones, the gender gap is relatively less amongst the single worker. Additionally, due to possible gender differences in household specialization (Becker, 1991), married female workers may earn lower wages due to the associated limited participation in the labour market over producing home goods such as childcare

(Nwaka et al., 2016). The study thus includes 4 categorical variables of marital status such as:

1=Married (base category) - if an employee is currently staying married;

2= Single - if an employee is never married

3= Divorced – if an employee is divorced.

4=Widow(er) – if an employee's husband/wife is dead at the survey time.

Urban-rurality of the Iranian labour market is also considered by including a dummy variable showing workers' places of residence. Thus urban=1; Rural=0

Labour market segmentation variables

The nine occupational groups represent the occupational and employment characteristics and whether the worker is paid worker or self-employed. Occupational categories as used here are based on a one-digit level (ISCO classification) as presented in Table 2. Sectoral employment opportunities such as whether the employee is paid worker or self-employed affect employment choices and earnings (Guven-Lisaniler et al., 2018. Nwaka et al., 2016). Self-employment might be attractive to women due to some factors such as greater flexibility and escaping from the glass ceiling effect (Wellington, 2006) or as a possible route out of poverty for low-income women (Lofstrom, 2013). Studies showed that self-employed women earn less compare with paid workers women with the same qualification (Budig, 2006; Nwaka et al 2016; Bashford-Fernández and Rodríguez-Álvarez 2019). The attributes of the more regulated paid employments imply that the gender wage gap is relatively higher in self-employment than others. In the survey, our characterization of employments is captured by individuals' current employment sectors. We have provided an employment dummy such that being in self-employment=1 versus paid-employment=0.

4.3.3 Empirical model

In this study, to compare the different decomposition methods and understand the differences between the results of each method, we first adopt the Oaxaca and blinder (1973) (OB) decomposition model. OB decomposition allows us to decompose the total wage differences between male and female into two parts: explained part, which show the wage differences due to human capital attributes such as education and potential experience, and the unexplained part that cannot be explained by human capital attributes which are interpreted as the discrimination effects.

To do so, each wage is a function of education level, potential experience, and other characteristics such as place of residence, marital status, occupations, and sectors. Wage function for males and females presented as below:

$$lnW_f = \sum \beta_{fi}.X_{fi} + \varepsilon_{fi} \quad (2)$$

$$lnW_m = \sum \beta_{mi}.X_{mi} + \varepsilon_{mi} \quad (3)$$

where $W_f$and W_m are a log of the hourly wage for female and male and $X_{fi}$and X_{mi} are the human capital attributes and demographic and occupational. Employment characteristics for females and males, respectively.

The estimation of wage equations provides the mean value of hourly wage as a function of the mean value of the estimated coefficients due to human capital, demographic and occupational//employment attributes:

$$\overline{lnW_f} = \sum \beta_{fi}.X_{fi} + \varepsilon_{fi} = \bar{\beta}_{fi}.\bar{X}_{fi} \quad (4)$$

$$\overline{lnW_m} = \sum \beta_{mi}.X_{mi} + \varepsilon_{mi} = \bar{\beta}_{mi}.\bar{X}_{mi} \quad (5)$$

The next step involves estimating the wage differences as follows:

$$\overline{lnW_f} - \overline{lnW_m} = \bar{\beta}_{mi}.\bar{X}_{mi} - \beta_{fi}.X_{fi} \quad (6)$$

To decompose the wage gap into two components, we add and subtract $\bar{\beta}_{mi}.\bar{X}_{fi}$ from equation (6).

$$\overline{lnW_f} - \overline{lnW_m} = \bar{\beta}_{mi}.\bar{X}_{mi} + \bar{\beta}_{mi}.\bar{X}_{fi} - \bar{\beta}_{mi}.\bar{X}_{fi} - \bar{\beta}_{fi}.\bar{X}_{fi} \quad (7a)$$

$$\overline{lnW_f} - \overline{lnW_m} = \bar{\beta}_{mi}(\bar{X}_{mi} - \bar{X}_{fi}) + (\bar{\beta}_{mi} - \bar{\beta}_{fi})\bar{X}_{fi} \quad (7b)$$

Therefore the explained part $\bar{\beta}_{mi}(\bar{X}_{mi} - \bar{X}_{fi})$ shows the proportion of differences due to differences in human capital and socio-economic characteristics of males and females and unexplained part $(\bar{\beta}_{mi} - \bar{\beta}_{fi})\bar{X}_{fi}$ measures the wage differences mainly associated with discrimination.

The OB decomposition presents the difference in average wage between males and females in each sector. The disadvantage of this approach is that by just focusing on the means of two wage distributions, it cannot capture the wage differences across the various wage distribution, leaving out policy-relevant issues. Thus, the most important development in the decomposition method is to expand the analysis to reflect the distributional changes in the wage gap beside the mean. Going beyond the mean does not present serious concern in the aggregate data but with a greater detailed decomposition of the different components as explained above. Until recently, there was no available comprehensive approach for computing a detailed decomposition other than the mean. Machado and Mata (2005) proposed the popular approach, which relies on quantile regressions for each possible quantile, combined with a simulation procedure. A better and closer comprehensive approach to the original OB decomposition is FFL decomposition proposed by Firpo, Fortin, and Lemieux (2009). This approach uses the re-centered influence function (RIF) instead of the usual left-hand side variable (log of hourly wage) to perform a quantile by quantile investigation of the differences between the distributions of female and male log wages.

The RIF is given by:

$$RIF(W_i, Q_\tau) = Q_\tau + \tau - I[W_i \leq Q_\tau]/F_W(Q_\tau) \quad (8)$$

where W_i is the hourly wage at the τth quantile Q_τ , F_w is the marginal density function of W, and I(.) is an indicator function.

To apply the FFL decomposition, the RIF quantile regression must be run by gender as follows:

$$RIF\left(lnW_{i,g}\right); Q_{\tau,g}\right) = \alpha_{\tau,ig} + \sum \beta_{\tau,ig} X_{i,g} + \mu_{\tau,ig} \quad (9)$$

where α is constant and the coefficient represents the marginal effects of the explanatory variables on the wage at each quantile(Qτ) and (g) represent the gender while μ is the error term.

For equation (6), this study applied Mincer's human capital wage function (Mincer, 1974), where X is a vector of human capital, demographic and occupational/employment, and other characteristics.

The last stage of FFL decomposition is performing OB decomposition. Therefore we can write the estimation of the gender wage gap as:

$$\Delta_\tau = E\left[RIF_\tau[lnW_m]\right] - E\left[RIF_\tau\left[lnW_f\right]\right] = \left(\bar{X}_m - \bar{X}_f\right)\hat{\beta}_{\tau,if} + \bar{X}_m\left(\hat{\beta}_{\tau,im} - \hat{\beta}_{\tau,if}\right) \quad (10)$$

The first part of the equation is the compositional effect, while the second part represents the wage structure effect (unexplained part).

We, therefore, present the results of the estimation in the following section.

4.4 Results

We present the main empirical results by first reporting the estimates from the wage equation. For brevity, discussions will rest on policy-relevant coefficients. Table 12 reports the estimated wage equations for males and females in each quantile according to equation 8. In line with previous studies, findings showed that all human capital variables – education level and years of experience, were positively associated with wages for both men and women across the wage distribution. However, the result indicates that the magnitude of the educational coefficients is much larger for the

females at the 10^{th} percentile than it is for men. Thus, women with a diploma and tertiary degrees earn much than those with primary certificates. Estimates of the demographic coefficients show that marriage is positively associated with wages for men, which is consistent with the male marriage premium. Traditional gender roles for men and women in the household in Iran impose the responsibility of the home and children on wives; therefore, husbands can devote greater attention to their jobs. However, marriage has a different effect on women's labour market outcomes.

Many studies suggested that women's household responsibilities may negatively affect their wage (Nwaka et al., 2016; Magnusson and Nermo, 2017). Our results show that marriage positively affects Iranian women's wages in low-end tail and mid-range, but it is not significant at the high-end tail. The statistic indicates that many women at low and middle quantile work in the public sector. The public sector's wage is regardless of gender and marital status, and it defines according to education level and employment status. Living in an urban area is positively associated with the hourly wage for both men and women.

Table 12: Quantile regression coefficients of selected variables

	Female			Male		
Variables	10%	50%	90%	10%	50%	90%
Base(Primary School)						
Junior high school	0.584***	0.477***	0.270	0.200***	0.203***	0.231***
	(0.192)	(0.0951)	(0.168)	(0.0351)	(0.0179)	(0.0267)
Diploma	1.038***	0.808***	0.641***	0.386***	0.407***	0.468***
	(0.179)	(0.0890)	(0.157)	(0.0403)	(0.0206)	(0.0307)
University level	1.453***	1.082***	0.822***	0.673***	0.687***	0.780***
	(0.193)	(0.0961)	(0.170)	(0.0526)	(0.0269)	(0.04)
Experience	0.0244***	0.0186***	0.0138***	0.00850***	0.00701***	0.0106***
	(0.00492)	(0.00244)	(0.00432)	(0.00135)	(0.00069)	(0.00102)
Base(Married)						
Single	-0.555***	-0.176***	-0.125	-0.514***	-0.326***	-0.312***
	(0.106)	(0.0528)	(0.0931)	(0.0376)	(0.0192)	(0.0286)
Divorce	-0.0922	-0.0804	-0.185	-0.398***	-0.223***	-0.166
	(0.188)	(0.0936)	(0.165)	(0.147)	(0.0752)	(0.112)
Widow	-0.162	-0.256***	-0.140	-0.679***	-0.269**	0.0607
	(0.185)	(0.0921)	(0.163)	(0.247)	(0.126)	(0.188)
Base(Rural)						
Urban	0.272***	0.0590	0.228***	0.0525**	0.0932***	0.126***
	(0.100)	(0.0498)	(0.0879)	(0.0261)	(0.0133)	(0.0198)
Base(Elementary)						
Assemblers	0.289	0.365**	0.271	0.485***	0.467***	0.401***
	(0.318)	(0.158)	(0.278)	(0.0415)	(0.0212)	(0.0316)
Trade	-0.199	-0.109	0.138	0.427***	0.327***	0.187***
	(0.159)	(0.0787)	(0.139)	(0.0354)	(0.0181)	(0.0269)
Agriculture	-0.698	-0.306	-0.138	0.0622	0.0278	0.140**
	(0.481)	(0.239)	(0.422)	(0.0899)	(0.0459)	(0.0683)

Variables	Female			Male		
	10%	50%	90%	10%	50%	90%
Services	-0.0286	-0.0119	0.304*	0.302***	0.295***	0.248***
	(0.182)	(0.0904)	(0.160)	(0.0502)	(0.0256)	(0.0381)
Clerical	0.479**	0.852***	0.642***	0.904***	0.737***	0.493***
	(0.192)	(0.0953)	(0.168)	(0.0631)	(0.0322)	(0.048)
Technicians	0.556***	0.818***	0.697***	0.495***	0.646***	0.553***
	(0.193)	(0.0959)	(0.169)	(0.0679)	(0.0347)	(0.0516)
Professionals	0.640***	1.022***	0.702***	0.927***	0.843***	0.581***
	(0.175)	(0.0870)	(0.154)	(0.0604)	(0.0308)	(0.0459)
Managers	0.985***	1.136***	0.708***	1.293***	0.669***	0.502***
	(0.244)	(0.121)	(0.214)	(0.0673)	(0.0344)	(0.0512)
Base(Self-employed)						
Paid worker	-0.349	-1.247***	-1.871***	-1.060***	-1.420***	-1.555***
	(0.249)	(0.124)	(0.219)	(0.0381)	(0.0195)	(0.029)
Constant	8.324***	10.43***	12.09***	10.32***	11.52***	12.40***
	(0.310)	(0.154)	(0.272)	(0.0607)	(0.031)	(0.0461)
Observations	1,867	1,867	1,867	16,848	16,848	16,848

Standard errors in parentheses
*** p<0.01, ** p<0.05, *p<0.1

Except for trade, agriculture, and services workers, other occupational categories had a significant positive impact on wages for women across the wage distribution. However, all occupational categories are significant, and their effects are positive on men's wages. The result found no significant effect of being a paid worker or self-employed in the lower tail of the distribution for women. For mid-range and higher tails of the wages, being self-employed has a positive effect on wages.

The above estimation only provides the disparate determinants of wages without exploring the possible imminent gender wage gap. It only presents an understanding of variables' effect on wage in Iran's labour market. To account for the gender wage gap, this study first applied Oaxaca and Blinder's (1973) decomposition to estimate the wage gap at the mean. We further applied the RIF regression to explore the gender wage gap at various quantiles of the wage distribution. This is called for given that mean regressions are sensitive to outliers, whereas quantile regressions allow gender pay gap estimates at particular quantiles of the conditional wage distribution (Firpo, Fortin & Lemieux, 2009).

4.4.1 Quantile Decomposition

Before discussing the results from the RIF Decomposition, the OB decomposition method is applied first to investigate wage inequality between men and women at the mean. The results are presented in Table 13. We decomposed the mean wage to explain the effect and wage structure effect by using OLS coefficients**.** The average wage is larger for men than women, which implies that men earn about 5.6% more than women. The OB decomposition results show the compositional (explained by individual characteristics) and wage structure effects (unexplained or discrimination effects). The results also show some pieces of evidence of compositional and structural effects on the average wage gap.

Table 13: Gender wage gap: Oaxaca-Blinder decomposition results

Variables	Using Male Coef	Using Female Coef.	Using Pooled
Male	10.93***	10.93***	10.93***
	(0.00753)	(0.00753)	(0.00752)
Female	10.87***	10.87***	10.87***
	(0.0263)	(0.0263)	(0.0262)
Unadjusted mean log wage gap :	0.0569**	0.0569**	0.0569**
$E[\ln(W_m)]-E[\ln(W_f)]$	(0.0274)	(0.0274)	(0.0273)
Composition effects			
Education	-0.241***	-0.318***	-0.249***
	(0.0117)	(0.0332)	(0.0123)
Marital status	0.0658***	0.0405***	0.0631***
	(0.00881)	(0.00939)	(0.00685)
Region	-0.0215***	-0.0454***	-0.0238***
	(0.00288)	(0.0106)	(0.00289)
Experience	0.0370***	0.0727***	0.0399***
	(0.00378)	(0.0112)	(0.00391)
Occupations	-0.247***	-0.287***	-0.262***
	(0.0125)	(0.0337)	(0.0126)
Sectors	0.121***	0.0976***	0.121***
	(0.00624)	(0.0124)	(0.00632)
Total explained by model	-0.285***	-0.440***	-0.311***
	-0.0182	-0.0355	-0.0177
Wage structure effects			
Education	-0.314***	-0.237***	-0.306***
	(0.0722)	(0.0507)	(0.0795)
Marital status	-0.0471**	-0.0218**	-0.0444**
	(0.0186)	(0.00909)	(0.0181)
Region	-0.0844**	-0.0605**	-0.0821**
	(0.0378)	(0.0271)	(0.0399)
Experience	-0.179***	-0.215***	-0.182***
	(0.0513)	(0.0615)	(0.0486)
Occupations	0.0449	0.0848**	0.0604
	(0.0631)	(0.0393)	(0.0705)
Sectors	0.00711**	0.0309**	0.00744
	(0.00358)	(0.0150)	(0.00598)
Total wage structure - Unexplained ln wage gap	0.342***	0.497***	0.368***
	(0.0243)	(0.0367)	(0.0239)
Constant	0.915***	0.915***	0.915***
	(0.105)	(0.105)	(0.0987)
Observations	18,715	18,715	18,715

Standard errors in parentheses
*** p<0.01, ** p<0.05, *p<0.1

Table 14 displays the result from RIF decomposition that shows which factors help best to explain the earning differentiation between men and women. Compared to the mean Oaxaca decomposition, the raw gender wage gap at quantiles is larger, especially at the top of the wage distribution. While men at the lowest and top distribution earn 42% and 70% more than women, respectively, the case is different at the median, where women earn more. The wage difference in favour of women increases by over 50 % quantiles. A wider wage gap at the top of the wage distribution is a clear indication of a glass ceiling effect in Iran, which implies that high skilled women face a barrier to entry to the top level of the labour market.

Education as an important variable affecting wage and participation has seen a reversal pattern in most Middle East countries and Iran over the last decade. Women had caught up with men in higher education, and education is less segregated than before. Consistent with the results of other studies in Middle East countries (Miki and Yuval, 2011; Alfarhan, 2015), improvement in women's education level that reflects a traditional measure of human capital reduces the wage gap across the wage distributions. Relatively, a better education level of women, especially in 10 and 50 percent quantile, causes the gender gap to shrink by 46% and 65%, respectively.

Just like education, occupational gender segregation in Iran is in favour of women and reduces the gender wage gap by 35.4% and 87.2% in 10 and 50 percentiles. Thus, the negative and large contribution of education and occupation segregation variables at lower quantile indicates that discrimination would be even more if women had the same characteristics as men. A large portion of the composition effect is reflected by education level and occupations. Similar studies (Redmond & McGuiness 2019) for Europe also indicate that education and occupation significantly explain the derived wage gap. This implies further that education plays a crucial role in reducing

the observed gender wage. But this effect is cancelled out by marital status, experience, and sectoral employment opportunities for the low end.

Social and cultural norms and a traditional division of unpaid work inversely affect the women's labour market outcome due to marriage and motherhood wage penalties. Thus, as our results show, gender differences in terms of marital status increase the wage gap.

Besides, lower labour market experiences of women in all sectors suggest lower productivity than men, leading to a higher gap in potential experience and wages. This scenario succinctly corroborates with the classical human capital theory since any observed wage differences between male and female workers are usually attributed to observed productivity differences. Thus, the gender wage gap in such a scenario reflects differences in workers' attributes such as experience and division of labour in the household. Potential experience in Iran is not a significant cause of the gender pay gap.

Self-employed women experience a larger wage gap in Iran. The literature on self-employment choices (compared to paid employment) in developing countries indicates female disadvantage in self-employment returns (Guven-Lisaniler et al., 2018; Nwaka et al., 2016). The MENA countries and Iran are not exceptions to this since women in self-employment earn relatively less, increasing the observed gender wage gap.

The overall compositional effect is significant and negative, along with the wage distribution, except at the median. Thus, while the composition effect at the lower quantile explains -36% of the raw wage gap (- 0.424 / 0.154), it explains about 6% of the raw wage gap at the top of the wage distribution. Of the overall 102.9 %,

the gender gap in earnings is explained by differences in human capital and worker characteristics in the median.

The overall wage structure effect (unexplained part or possible discrimination) is positive and largest at the top of the wage distribution, which further amplifies glass ceiling cases in Iran. This also suggests a higher rate of labour market discrimination against women. This indicates that if women received the same returns to their characteristics as men, their wage would be higher. The differences in the constant terms indicate there is a premium for simply being male. Men receive a larger constant or base wage irrespective of the returns to the wage determining characteristics than do women at the top and bottom of the wage distribution. The negative components in the wage structure decomposition indicate that this is somewhat offset by the higher premium which females often receive for certain wage determining characteristics. For example, this is (perhaps surprisingly) the case for being married, although that effect for females dissipates as they move up the pay distribution.

Particularly, sources of such discrimination emanate from sectoral and occupational segmentation such that despite the relative higher educational endowments of women, they are discriminated against within employment. This further posits that the reward for working in self-employment (compared to paid employment) is relatively higher for men than women, which further increases the wage gap. Furthermore, the institutional approach argues that the prominent feature of a segmented labour market is the wage gap among groups due to demand-imposed restrictions inhibiting movement from one segment to another (Anker, 1997). In the MENA countries and the Iranian labour market, women seem to be overcrowded in professional, associate professional, and clerical occupations while men dominate elementary and machine operators and assemblers workers, which can be explained

by the important roles of "institutions, such as unions and large enterprises", or, in the Iranian case, Islamic law and traditions" …in determining who is hired, fired and promoted, and how much they are paid" (Anker, 1997, pp. 321-322).

From this result, we can validly claim females disadvantage the Iranian labour market, and barriers to their advancements exist, but the cause of differences in earning do not differ from developed countries. This may be associated with supply-side effects due to human capital differences and demand-side issues associated with institutional factors. For instance, Iranian employers across sectors may assume employment assignments due to gender roles, which may push women into relatively low-paying occupations, further exacerbating the gender wage gap. Furthermore, places of residence, self and paid employment sector, and occupation play an important role in the observed discriminatory effects. For instance, discrimination is higher in urban areas than in rural regions, and the prevalent discrimination varies among occupations and sectors. Thus, the labour market of Iran presents cases of the glass ceiling effect and indeed an uphill battle towards advancements in the labour market.

Table 14: Gender wage gap: quantile decomposition results (RIF regression)

Variables	**10th percentile**	**50th percentile**	**90th percentile**
Male	9.784***	10.75***	13.08***
	(0.0140)	(0.0124)	(0.00830)
Female	9.360***	11.23***	12.38***
	(0.0450)	(0.0275)	(0.0413)
Mean RIF gap:	0.424***	-0.485***	0.699***
E[RIFτ(ln(wm))]-E[RIFτ(ln(wf))]	(0.0471)	(0.0302)	(0.0421)
Composition effects			
Education	-0.195***	-0.318***	0.0279**
	(0.0207)	(0.0181)	(0.0120)
Marital status	0.109***	0.0479***	0.00935
	(0.0185)	(0.0140)	(0.0108)
Region	-0.0258***	-0.0139***	-0.000615
	(0.00574)	(0.00441)	(0.00342)
Experience	0.0304***	0.0344***	-0.0155***

	(0.00616)	(0.00517)	(0.00371)
Occupations	-0.150***	-0.423***	-0.0168
	(0.0239)	(0.0217)	(0.0144)
Sectors	0.0773***	0.174***	0.0350***
	(0.00571)	(0.0103)	(0.00300)
Total explained by model	-0.154***	-0.499***	0.0394**
	(0.0284)	(0.0291)	(0.0159)
Total composition effect as % of RIF gap	-36.32%	-1.02%	5.55%
Wage structure effects			
Education	-0.369**	-0.0523	0.147
	(0.146)	(0.0841)	(0.134)
Marital status	-0.198***	0.0282	0.0865**
	(0.0400)	(0.0248)	(0.0342)
Region	0.0734	0.0715	0.164**
	(0.0769)	(0.0443)	(0.0707)
Experience	-0.00723	-0.198***	0.0880
	(0.108)	(0.0627)	(0.0994)
Occupations	0.0153	0.194**	-0.255**
	(0.130)	(0.0753)	(0.120)
Sectors	0.00401	0.0328***	-0.0665***
	(0.00850)	(0.00614)	(0.0111)
Total wage structure	0.578***	0.0139	0.659***
	(0.0518)	(0.0332)	(0.0446)
Constant	1.060***	-0.0617	0.496**
	(0.217)	(0.125)	(0.200)
Observations	19,427	19,427	19,427

Standard errors in parentheses
*** p<0.01, ** p<0.05,*p<0.1

Chapter 5

CONCLUSIONS AND POLICY SUGGESTIONS

5.1 Summary of Findings

Due to many social and legal barriers, contribution of Iranian women in economic outcomes are restricted. Lack of access to the economic resources and being unequal in the labour market limits women's empowerment and economic independency. This study investigates two important challenges Iranian women face in the labour market, in particular; low labour force participation and gender pay gap. Within this framework, the first part of the study focuses on female labour force participation determinants. The second part explains the determinants of wages, the reasons behind the gender wage gap, and the existence of the glass ceiling and sticky floor phenomena in the Iranian labour market.

Studies on FLFP and wage gap rely on the Household Expenditure and Income Survey (HEIS) cross-section microdata and logit model of FLFP for two different years separated by a decade, 2008 and 2018. The study's formation and variables choice mainly rely on previous reduced-form cross-section national and international studies on FLFP determinants, particularly studies about developing the Middle East and North African countries.

The model of FLFP includes variables capturing the effect of women's demographic characteristics (age, education level, and residential area). Marital status, number of children below age 6, number of elderly household members, and husband's education level are included as variables to capture the effect of gender norms and

attitudes on working women and the effect of gender division of care work. Household income, including husband's wage income, and the number of male and female children in the household above age 18 are also included in the model as potential income earners to capture changes in household conditions.

Findings confirm that gender norms and attitudes towards women are the main factors driving FLFP in Iran. Despite all social and cultural changes over the last decade, it is hard to jump to the conclusion that Iran shifted towards a more gender-balanced society. Iran's gender regime is still patriarchal due to the Islamic ideology and Sharia's law, political system and government's development strategies. These factors played a significant role in stagnant at a very low-level FLFP.

Change in woman's role in the family, and therefore in society, shapes women's level and type of labour market involvement.

The second part of this study focuses on the female wage determinants and the possible reasons behind the gender wage gap. Estimation of wage equation indicates that human capital variables such as education level and years of experience are positively associated with women's wages in Iran. In addition, the negative association of marriage with wages for women in the last quantile is consistent with the female marriage and motherhood penalty.

Human capital or productivity-based insights of the gender pay assume that gender wage inequality is associated with women limited productive capacity. However, findings from this study implied that education plays a crucial role in reducing the observed gender wage gap. Furthermore, the negative explained part means that the overall gender wage gap would even be larger if education level, place of residence, and representation of both genders in the occupations are equal. It could also potentially mean that being women as productive as men will not lead to gender

equity in pay. Thus, women's lower productivity levels compared to men cannot explain women earning disadvantage but may be embedded into the value of women's work, employment constraints, and institutional and cultural laws that create barriers towards equal pay.

These factors may pose potential discrimination that limits women's economic opportunities in the labour market and create further barriers to their advancement across countries with similar cultural or religious values.

Mainly, sources of such discrimination emanate from institutional, cultural, or religious values such that despite the relative higher educational endowments of women, they are discriminated against within employments.

The findings indicate significant glass ceiling effects in Iran. There is a huge gender wage gap at the top of the wage distribution and clear evidence of discrimination in the Iranian labour market compared to the mean.

5.2 Policy Suggestions

Suggesting gender norms and attitudes to women as the causes of the stagnating FLFP level might look like entering a dead-end street or turning policy suggestions into a policy issue. However, it provides entry points to tackle the stagnating FLFP level and further transform gender norms and attitudes toward women.

Any significant change in gender norms and attitudes will take a long time, but until then, there may be substantial scope to make daily public spaces more women-friendly to ease practical constraints on their daily lives. Challenging gender division of public places and creating more women-friendly public spaces by improving transportation or market places that meet the concerns and needs of women, even the most conservative ones, is important. Exposure to women in public spaces can increase their access to labour market information.

Involving children and adolescences of both sexes in the process of breaking discriminatory social norms passed down across generations is another effective strategy. The positive results of the Equity Movement in Schools program in India, Ethiopia, and Kenya is a successful example of a norm-changing (Tautz, 2012).

The social norms and gender gap in LFP can narrow down by vocational training to encourage women to enter male-dominated industries. Providing women-friendly, affordable, and practically useful training programs relevant to the labour market demands has shown positive results in developing countries (Hicks et al., 2011).

Sharia's law shapes society's expectations for gender roles in Iran. Hence, removing legal barriers is essential to promoting equal opportunities, treatment, and protection for women in the labour market. Eliminating restrictions on women's ability to get employment opportunities without husbands' permission, providing maternity and paternity leave, and ensuring gender equality in social protection benefits must be considered.

Investment in the redistribution of unpaid work has significant long-term benefits for women's economic empowerment, families, and the economy. Although gender division in unpaid work mainly depends on social norms and happens at the household level, government policy and private sector actions can play important roles. Local authorities should support easing the burden of childcare and elderly care by providing care services, mainly for children below age 6 and for the elderly.

Women's enrollment in higher education had significant growth in recent years. Since the Iranian labour market cannot provide enough employment opportunities to the majority of these educated women, women's entrepreneurship can be considered one factor contributing to women's increasing participation.

Despite all improvements in the last decade, entrepreneurs in Iran, regardless of gender, face many challenges such as government domination and intervention, sanctions, restricted trade policy, and business laws. However, due to gender inequality, Sharia's law and social stereotypes, women tend to face more challenges. The entrepreneurial activity rate of women in Iran is 9.9 versus the corresponding rate of 16.2 for men (Sarfaraz, 2017). Specific policies such as streamlining the process of obtaining permits and reducing its costs, gaining better access to credit, reducing government controls over credit allocation, and reducing uncertainty as well as change in social stereotype, broad network, and family support would encourage and facilitate entrepreneurship among educated women.

Fortunately, since 2017, the program to support the development and sustainable employment in the rural area has been implemented in Iran, providing better access to credits and help many rural women to be entrepreneurs in agriculture and non-agriculture parts. This program helps to reduce female unemployment in rural areas compared to urban women (7.8 % vs. 21%- SCI, 2018).

Although there are no written regulations, laws, or norms in Iran promoting gender wage inequality, there is no law regulating equal pay for women, especially in the private sector.

Private or self-employment choices have risen in Iran due to the limited opportunities in the public sector; therefore, policies geared towards protecting women who are already employed in these sectors should be advanced.

Our results show that self-employed women face a larger wage gap than those who work as paid workers. Thus, the focus of some policies should be directed towards the provision and equal access to production facilities. Such facilities could be in the form of equal access to credit through financial institutions.

Given the existence of the glass ceiling and significant labour market discrimination, feedback effects of labour market discrimination can lower women's productivity and affect their decision to invest in their human capital attributes or remain continuously in the labour market.

There are still gender differences in choices of university majors. Occupational gender segregation and gender wage gap can be affected by gender differences in college or university majors (Black et al., 2004). Policies should encourage women to close the gap in different university majors, especially those that can give them a higher ability to compete with men in the labour market.

5.3 Limitations and Further Study Suggestions

The findings of many studies show that social and cultural norms, along with sharia's attitude towards the women's role in the family and society, affect the women's opportunity in the labour market and their decision to work. One limitation of this study is that the HIES data does not provide enough information regarding the individuals or households' religious and cultural beliefs. In addition, this study trace the change in social norms over a decade. Change in social norm and attitude usually takes longer time.

Spouse usually do not make their decision individually and they are trying to come to an agreement on how to divide the household responsibilities while living together.

In addition, a large number of women work in the informal sector. Official data usually tend to overlook the informal sector. Many home-based enterprises try to hide their job to avoid paying taxes. Thus, Intrahousehold decisions or spouses' joint decisions and informal employment are topics for further research in the future.

Due to economic hardships and severe sanctions, Iran's labour market cannot create enough jobs for the young population entering every year to the labour market. Although understanding the supply factors affection women's decision to work and their labour market outcome is important, more study is needed to provide demand-side explanations to the gender issue in Iran's labour market

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