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WOMEN IN THE TUNISIAN LABOR MARKET

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Abstract

This paper aims at analyzing the characteristics of female employment and unemployment in Tunisia and at identifying the main incentives and constraints to female labor participation and employment status. Since the 2000's, female participation stagnated at around 25 percent in Tunisia, which is higher than the average in the MENA countries, but it is at the half the world rate. Several socio-cultural factors associated with economic determinants are causing changes in the participation of women in the labor market. Marital status is considered as a constraint for labor force participation decision and employment status for woman. Woman education attainment influences both her participation decision and type of employment choice. The services sectors provide the majority of female jobs, especially in the public sector which is considered as a "family friendly" sector. Women are poorly represented in positions of responsibility and leadership and the rate of self-employment among Tunisian women is low. The female unemployment rate is above that of men.

JEL Classifications: J1

Keywords: Women; female employment; education; Tunisia

ملخص

تهدف هذه الورقة إلى تحليل خصـــائص عمالة الإناث والبطالة في تونس وتحديد الحوافز والعوائق الرئيسـية أمام مشـــاركة المرأة في العمل وحالة العمالة. ومنذ عام 2000، كانت مشاركة الإناث في الركود حوالي 25 في المائة في تونس، وهي نسبة أعلى من المتوسط في بلدان منطقة الشـرق الأوسـط وشـمال أفريقيا، ولكنها تبلغ نصـف المعدل العالمي. وتؤدي عوامل اجتماعية وثقافية عديدة مرتبطة بالمحددات الاقتصـادية إلى إحداث تغييرات في مشـاركة المرأة في سـوق العمل. وتعتبر الحالة الزوجية عائقا أمام قرار المشـاركة في القوة العاملة وحالة العمل للمرأة. يؤثر التحصـيل التعليمي للمرأة على قرار مشـاركتها ونوع خيار التوظيف. وتوفر قطاعات الخدمات غالبية الوظائف النسـائية، وخاصـــة في القطاع العام الذي يعتبر قطاعا "مواتيا للأسـرة". فالمرأة ممثلة تمثيلا ضـــعيفا في مناصـب المسؤولية والقيادة، كما أن معدل العمالة الذاتية بين النساء التونسيات منخفض. ومعدل بطالة الإناث أعلى من معدل الرجال.

1. Introduction

In Tunisia, the constitution and the labor code guarantee non-discrimination between men and women in employment and equal opportunity. However, women continue to face socio-cultural barriers, constraints related to the economic situation, and inequalities in opportunities but also in job quality. Tunisia is an interesting case to study female employment because it experienced a significant increase in the female participation rate until 2000 and then that rate stagnated at a relatively low level. The Code of Personal Status shepherded by President Habib Bourguiba, coupled with efforts made over many decades toward the education of women, women's empowerment, fertility decline, higher standards of living and the development of the public sector contributed to increase women's economic participation in the 1970's and 1980's. Since the 2000's, female participation stagnated at around 25 percent, a low rate if compared to the participation rate of women worldwide, which is around 53 percent (compared to 78 percent for men) according to the ILO (2007). Thislow female participation rate indicates a high rate of withdrawal from the labor force and a low return on investment in women's education. Low participation rates have additional consequences for individual women and their families, including reducing the financial autonomy and social status of women, lowering family incomes and welfare and increasing poverty. On the other hand, the working population forecasts for 2025-2035 show a slowdown in the growth of labor supply, which could constrain future economic growth (National Institute of Statistics). In this respect, it is important to reflect about appropriate policies to raise female labor-force participation in order to avoid future human resources shortages in two decades. Using data from the Tunisian Labor Market Panel Survey 2014 (TLMPS2014) and from the annual employment survey (INS), this paper aims at:

- Analyzing the characteristics of female employment and unemployment in Tunisia and their evolution as well as that of female participation over time. In doing so, we will conduct detailed analyses of both women's labor demand and supply and we will examine associations between educational level, marital status, age and other women's characteristics with participation.

- Measuring progress toward the goal of gender equality in the labor market by comparing between women and men in terms of labor force participation, jobs characteristics, occupational class, occupational sectors, jobs quality, and unemployment.

- Using an explanatory model to understand women's decision to participate in the labor market and to identify the main incentives and constraints to female labor participation. The explanatory factors we will examine include socio-cultural factors (educational level, marital status, home responsibilities and children, location of jobs and mobility constraints…) and economic factors (economic conjecture, shrinking of public sector, unemployment…).

2. Women's Labor Force Participation: A Descriptive Analysis

The persistent increase of the working age population (15 and over)[1] and the active population over time for women and men, but also the continuous improvement in the level of education and the increase in the number of higher education graduates among the youth population generated substantial labor supply pressures on the Tunisian labor market. The labor force in Tunisia was made up of 3.9 million people in 2013 with a participation rate of 70 percent for men and 25.5 percent for women.[2]Tunisia experienced a significant increase in the female participation rate until 2000 and then that rate stagnated at a relatively low level thereafter. As shown in Table 1, women's participation rate increased from 5.6 percent in 1966 to 18.9 percent in 1975, resulting from women's emancipation, education, openness to the world of work and

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[1]Although its growth rate has declined over the last decade as indicated in Assaad et. al. (2017).

[2]The participation rate represents the percentage of the working age population that is actually engaged in the labor market (employed or seeking employment) and it measures the available productive potential.

new living standards. As seen in the Table 1, the gap between men and women in terms of participation has narrowed over time. Since the 2000's, female participation stagnated at around 25 percent[3], a low rate if compared to the participation rate of women worldwide, which is around 53 percent according to the ILO (2007) (see Figure 1). This implies low return on investments in education and a potential waste of human resources. This low participation rate also presumably affects the financial autonomy and social status of women, lowers the income and welfare of the family and increases poverty.

When compared to the rest of the world, Figure 1 shows that the female participation rate in Tunisia is higher than the average in the MENA countries (Algeria (16 percent), Jordan (15 percent)) but it is at half the world average. The participation rate has remained relatively flat over the studied period for countries and regions shown in the figure.

Despite efforts made over many decades toward the emancipation of women since the adoption of the Code of Personal Status in 1956, to the education of women in Tunisia and their prevalence in higher education, the female participation rate remains low. The enrollment rate (12-18 years) was of 82.3percentforgirls and 75.4percent for boys in 2011. In 2013, women made up 67percent of higher education graduates (according to data from the ministry of higher education). Figure 2 presents the structure of the Tunisian working age population in terms of work status and by gender using the market definition of work[4]. Most of Tunisian women aged 15–64 (76 percent) remain out of the labor force in 2014.

The impact of a conservative and patriarchal society can still be felt; household chores are still widely seen as the responsibility of women and married women have difficulty balancing work and family. Familial and domestic responsibilities of women are factors influencing women's participation as we shall see in the following paragraphs. But there are also economic constraints that result in women facing poor job opportunities. In sum, several socio-cultural factors and related economic factors interact to determine the participation of women in the labor market.

In what follows and in order to get a better understanding of the evolution of female labor force participation (FLFP) we will examine the role of factors such as age, marital status, education and location in determining the FLFP using micro data.

Figure 3 presents the participation rate by gender and by location and shows that the low participation of women is more pronounced in the rural areas. 20percent compared to 24percentin urban areas. Fewer opportunities are available in the rural areas, especially ones that are suitable for educated women, which often leads women to withdraw from the labor force.[5] Transport quality and the unavailability of accommodation make the mobility of women from rural to urban areas difficult, in addition to cultural attitudes about what constitutes appropriate work for women.

Figure 4 shows that the female participation rate has a very heterogeneous behavior according to age group. It is low before the age of 20but then rises with age as women begin leaving education and entering into economic activity. The rate peaks for the 25-29 age group. After that, the participation rate decreases continuously with age. At the age of childbearing, activity rates begin to drop significantly as women leave work to care for family.

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[3]Working age female population and female active population increased at almost similar rates.

[4]Market definitions: As indicated in Assaad et al. (2017), the employed: are employed one hour or more in the reference week in activities with the purpose of producing a product or a service to exchange in the market
Unemployed: unemployed in the reference week but who desire to work, available to start work in the next 14 days, and have actively searched for employment in the past three months (reference).

[5]A deeper understanding of female unemployment rates by education level and place of residence could also be achieved if instead of the urban/rural areas breakdown, we adopt the littoral/non-littoral areas analysis.

As explained in Assaad et al. (2017), "the age at marriage has been rising steadily in Tunisia for both men and women. The median age at marriage for those 15-59 in 2014 was 30 for men and 25 for women" and it is even higher for educated women.

Figure 5 shows that the labor force participation- education nexus is stronger for women than for men. As female education rises, their participation in the labor market increases. Being educated leads women to be more likely to be in the work force compared to those who are illiterate. Women with university degrees are more than twice as active in the labor market compared to those with secondary education.

Educated women are more likely to obtain work in the government and in the formal sector than their less educated counterparts. Otherwise, educated women want to work even when they marry; they have invested great deal in education in terms of both money and time and are not willing to sacrifice the opportunity to work and the associated earnings. The opportunity cost in becoming inactive is much greater for the highly educated.

Figure 6 illustrates that marriage is a constraint for women to participate in the labor force. Labor force participation is higher for never married women; participation rate are19 percent for ever-married women and about 30 percent for never-married women. Ever-married women participate less than never married and this is true for all age groups. For example, women aged 30-34years, who are married, participate in the labor force at half of the rate of women at the same age, who are not married. Besides, it's interesting to note that education tends to increase participation for both ever-married and never-married women at almost all age groups. (See Table A1)

From Figure 6, we can see larger shares of employed and unemployed for never-married women. But the share of women out of labor is larger for married women. Inactivity increases after marriage and this is related to the increase in household responsibilities.

When asking women about the main reason for being out of labor force, 73 percent of them mention the household work.[6]

3. Characteristics of Women's Employment

Table 2 presents the evolution of employment by gender. Women account for around 25 percent of employment in 2013, 26.5 percent in2005.Women have suffered the most job losses in the revolution; losing 53.7 percent of the 137 thousand jobs lost in 2011 (Table 2, INS). The crisis in the textile sector started since 2009 and the decrease in the agriculture activity, two of the largest employment sectors for women, are among the reasons for these losses. In addition to these quantitative aspects, we need an analysis of some qualitative aspects of women's employment and its characteristics to better assess working conditions. What are the principal sectors for female employment? What is their distribution by job status? We should mention that women strongly prefer public sector employment, partly as a result of unfavorable labor legislation in the private sector. In particular, maternity leave in the Tunisian private sector is less generous than in the public sector and both of them are lower than the ILO standard of 12 weeks paid leave. Women have certain requirements relating to the nature of work and its location (ILO survey ONEQ 2014). According to this ILO survey a high percentage of women, unlike men, aspire to a good relationship between work and family life than to professional success and maximum earnings.

Table 3 presents the distribution of employment by economic activity and by gender from the TLMPS 2014. As is shown in this table, services provide the majority of female jobs (about 50 percent). About 30 percent of employed women are in education, health and social services and public administration. 16.5 percent of employed women are in education (against only 5percent

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[6]More details on the determinants of women labor force participation will be discussed in the last section using a multivariate and econometric analysis.

of employed men). Improvement in the education level of women allowed them access to the public sector.

Non-manufacturing industries remained closed to women; activities such as mining, and construction require physical effort and are therefore reserved for men. Women are more concentrated in manufacturing activities (26 percent) than men (13 percent), as shown in Table 3. They are confined to certain sectors such as textiles, 70 percent of the employment in that sector being female. This is a sector with a great deal of sub-contracting, which employs a lot of unskilled labor at low labor costs. But employment in the textile sector is steadily declining in Tunisia. Being very open to external trade and vulnerable to international competition, this sector suffered the brunt of the economic crisis among European trading partners and increased competition from Asia.

Considering the distribution of women by occupational status, we can see from Table 4 that about 55 percent of employed women are in the category "blue collar" workers, followed by the "white collar" category with 29 percent, and then the "manager's professionals" category with a relatively low presence of women (16 percent). Women are poorly represented in positions of responsibility and leadership. They are more concentrated at the bottom of the hierarchy and in low-skilled jobs.

Figure 7 illustrates the distribution of employment by sector and by gender. The different economic sectors and the formality status of the job are considered; seven alternatives are considered. Formality for private sector employees is defined as having either a legal work contractor social insurance connected to the job. From this graph, we can see and confirm the fact that women have a preference for employment in the public sector (government and public enterprise); 30 percent of employed women are in the public sector. Besides, when asking women about their choice between private and public sector (for same wage and similar job), 69 percent of them prefer the public sector (TLMPS 2014). Employed women are over-represented within public wage work and formal private wage work. The proportion of female waged employees has steadily increased over time from 25.4 percent (in 1984) to 79.5 percent in 2011 (INS). Economic development leads to a growing proportion of wage and salaried women workers and to a shrinking proportion of unpaid female family workers. Women have a preference for good jobs (formal jobs or public/government jobs). If they can't get such jobs many women leave the labor force entirely rather than settle for informal jobs.

Figure 7 shows also a greater proportion of males in own-account work, more than the double of the proportion of women. The rate of self-employment among Tunisian women, and, thus, their entrepreneurship potential, is low. Men have a greater tendency than women to be the owner of a business with employees. But from the same graph we can see a much higher proportion of females than males in unpaid family work (considered as one of the vulnerable employment categories: unpaid, without social protection).

Comparing type of employment by marital status, Figure 8 shows that public sector is the most frequent employment type for married women. Indeed, 33percent of employed and married women are employed in the public sector compared to only 24 percent of employed unmarried women. The public sector is considered a "family friendly" sector, where workdays are shorter, jobs are more secure and maternity benefits are more generous. However, a decline in recruitment in the public sector resulted in a lack of job opportunities especially for educated women. On the other hand, the share of women employed in the formal private sector is also important (28 percent), if compared to that of men (21percent). As discussed above, women are strongly concentrated in the manufacturing sector, especially in textiles and garments. This is particularly pronounced among employed never married women, 38 percent of whom are concentrated in the formal private wage sector, compared to 21 percent for employed married women. Work in the private sector offers tougher working conditions in terms of working time,

tolerance for absences and paid holidays. There is also a preference from private enterprises for single women over married women. Furthermore, married women are more involved than never-married women in unpaid family work. As shown in Figure 7, women are also present to the same extent as men in the informal sector (14 percent). Working in the informal sectors attracts women seeking to earn some income while maintaining the household and childcare responsibilities.

Table 5 shows the kind of contracts and the stability of jobs by gender. We can see from this table that women are more involved in temporary jobs and definite duration contracts than men. Temporary and part-time jobs offer more flexibility for women and tend to attract females seeking to earn some income while maintaining the household and childcare responsibilities. But these results could indicate more vulnerability for women.

4. Women's Unemployment

Women's unemployment rate has increased substantially, from 18.8percent in 2009 to 23 percent in 2013, with an uptick of 27.4 percent in 2011, the year of revolution (Table 6). Despite their low activity rate, women are more exposed to unemployment than their male counterparts. The women's unemployment rate is above that of men. Women are more affected by unemployment and, increasingly so, since the revolution. The economic recession has worsened the employment situation, in general and especially for women, since the unemployment rate of women remains high as compared to the situation before the revolution.

Educated women, particularly women with higher education levels, are by far the most affected by unemployment, and more so than educated men. The unemployment rate for women is almost double that of men and this is especially true for graduates. Women with higher education are the most affected by unemployment (Table 7). The female unemployment rate can reach 50 percent in the southern and western regions.

As shown in Figure 9, unemployment is concentrated among educated women with unemployment rising with education until the short-cycle university level. Women with secondary education or above are more concerned by unemployment. This is more pronounced in rural areas. About 75 percent of university (short cycle) educated women were unemployed in rural area. While this percentage decreased to 45 percent in urban areas. Lack of opportunities in the rural area but also the low social capital of rural women and their limited networks limit their likelihood to be hired. As education levels, have risen, there has not been sufficient job creation in the Tunisian economy to absorb these newly educated women. Tunisian productive system offers mostly low-skilled and low–paid jobs, especially in the rural areas. The overall result is that some educated women will remain unemployed while waiting for a good job corresponding to their education level and close to their home. In fact, the Tunisian business model is based on cheap labor, low skills and low productivity.

Figure 10 shows the female unemployment rate by age; the unemployment rate of women in the 20-29 age range is the highest (at about 40 percent). Unemployment affects particularly young new entrants to the labor market. Youth are the principal victims of unemployment. Young women with a university degree have the highest unemployment rate among any age/education demographic group.

Table 8 indicates a more prolonged duration of unemployment among women (representing around 40 percent of the stock of the 704.9 thousand unemployed in 2011); about 23 percent of women are unemployed or are looking for work for more than 2 years.

This illustrates a situation of high tension and low job creation for women that push them sometimes to give up looking for a job after a long-failed search. Yet women are the ones who benefit the most from the use of programs intended to improve employability and help the professional integration through actions and training courses (65 percent of the beneficiaries of

the various programs in 2013). But these programs have diverted their objectives of professional insertion to manage the social aspect and proved inefficient (Mouelhi 2015).

5. The Determinants of Women's Participation and Employment Status: An Econometric Analysis

The primary aims of the following econometric analysis are twofold. First, we investigate the determinants of female participation in the Tunisian labor market in an attempt to highlight the barriers that slow down participation. We use a probit regression with a dichotomous dependent variable of labor force participation. We study the effect of gender on participation using a pooled sample of male and females, introducing a female dummy variable. Then, we consider separate models for females and males. The explanatory variables included are the level of education, age, marital status, and location, parental level of education, mother's work and household wealth. We control for care work by including a binary variable taking on the value of 1 if the individual is spending time caring for children, the sick or the elderly, 0 otherwise. Second, we use a multinomial logit model that classify the individual choice behavior into four categories: working in the public sector, working for wages in the private sector, self-employment (including employers and unpaid family workers) and not working. We assume that the log-odds of each response follow the linear model:

$$\frac{\log(P_{ij})}{\log(P_{iJ})} = \alpha_j + X_i' \beta_j \quad j = 1...J-1$$

(1)

α_j is a constant. β_j is a vector of attributes coefficients specific for each type of employment status. In each of the two independent applications, we aim to relate the individual choice to the same set of observed factors. We test if the factors affecting female labor force participation perform well in the context of a multinomial choice model concerning their decision for her employment or not and discriminating between working in a public and a private sector.

5.1. Related literature

The model of female labor market participation includes a number of factors such as education, marriage, age, fertility and occupational characteristics of labor supply explain women's labor supply. Assaad et al. (2012) mentioned a nonlinear relationship between age and the probability of individual labor participation. This process generates an inverted U-shaped figure for labor force participation. Therefore, the age-participation profiles are hump-shaped.

Huitfeldt and Kabbani (2005) emphasized that the higher educational stage expands the probability of locating a job. Variations in the distribution of the population by levels of educational achievement are pertinent in explaining the growth in labor participation. Sackey (2005) stresses that the education issue is more obvious for females than males. Then, female labor market participation increases with the level of education. The chances of working are affected by marital status. Duncan al.(1993) and Assaad et al. (2012) mention that married females are less likely to work, since being married is negatively associated with women's participation. Besides, when females participate in the labor force, they work fewer hours than males. Furthermore, Ali Khan and Khan (2009) indicate that Married women chance to work is affected by other factors like the number of children and the spouse's employment position. Dayıoğlu et al. (2012) highlight that female labor force participation is affected by fertility behavior of women, as children induce the opportunity cost of market work. Nasser (2012) reports a negative relationship between fertility and women's participation rates. So, family size is negatively connected to female labor force participation. In fine, urbanization level positively affects female labor force participation.

5.2. Empirical results

The labor force participation is a dichotomous variable, which takes 1 when the individual aged between 15 and 64 years engages in the labor force (employed or unemployed) and takes 0 if not. Maximum likelihood estimation procedure is used.[7]Results reveal the importance of higher education, age, gender and marriage as key factors of labor market participation. Location appears to be less important. Besides, Tunisian women are less likely to participate in the labor force compared to their male counterparts.

Figure 11 shows an inverse U-Shaped curve between age and labor participation.[8]The age-participation forms of men and women are hump-shaped: Participation is low at young ages, expands at years between 25 and 35 and weaken after that. The peak for women's participation occurred in the 25-30 age group with a rate around 30 percent. Results in Table A2 (in annex) stress that the pattern of female labor force participation by marital status is different from that of men. Being either married increases male participation, while it has a significant negative impact on female participation.

Figure 12 shows that estimate proportions of ever-married women were 20 percent, for never married women we observe higher rates around 28percent. Hendy (2015) highlighted the "Marriage effect" as a dominant reason for the weak level of female market participation in Arab nations. This difference can be explained by cultural factors that establish women as primary responsibility for care work and other household chores.

For men, the above rates are quite different at 82 percent for ever married males and 57 percent for never married males. This difference indicates the father's financial liability as head of the household.

In the same vein, if we focus on working women only, we see from Figure 13 that marriage affects female labor force participation similarly, accordingly on whether they are private or public employees, and with higher rates of participation for never married women.

For instance, the estimated share of either married employed women working in the public sector is around 34 percent in Government and 28 percent in public enterprise while it is around 21 percent in the private sector. Figure 14 illustrates the estimated participation ratios at various schooling levels. The probability of joining the labor market is higher for males who have below secondary education, while this probability weakens for men who have secondary and university education.

Thus, a below secondary school diploma is what matters for men's labor market participation. Female labor force participation in Tunisia, as displayed in Figure 14, shows a strong dependence on educational achievement: Participation ratios increase strongly with education: Completing secondary and university education levels has a strong positive effect on the decision of a woman to enter into the labor market. The predicted probability of employment grows for women according to their level of education ending with an extreme jump for those with a university or higher diploma. Furthermore, Figure 15 illustrates that education tends to increase female participation for married and unmarried women. While the participation rates of women below secondary school diploma are less than 20 percent for both married and unmarried women, those of women with university degrees are higher than 50 percent.

Table A2 (in the appendix) displays parental education effects on labor force participation. Father's education did not alter the probability of participation. Otherwise, there is a positive effect on female participation if the mother was working when the individual was 15. These results support the findings of Assaad et al. (2012) and Nazier et al.(2016) who analyzed the

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[7]To avoid sampling bias, we use Taylor linearized variance estimation to have consistent estimation of covariances. This is done using the svy command in STATA.

[8] As expected, predicted probabilities and observed proportions of women LFP are very close. See Appendix 3 for a more detailed comparison.

determinants of female labor supply in Jordan and Egypt. They attribute this positive impact to the cultural standards of the family and the level of agreement on women's work. Spending time caring for children, the sick or the elderly reduces the probability of female labor force participation. Hence, scarcity of affordable childcare facilities, reliance on informal settlements for childcare, reduce the possibility of women's participation. Results also establish that the wealth of the household is not significantly correlated with women's participation. We analyze the effect of household wealth on the labor force participation of Tunisian women by educational attainment. Figure 16 emphasizes a decrease in the predicted probability of women's participation with increasing family wealth. Thus, a growth in the household wealth may impact women participation in the labor market controlling for education.

Table A3 & A4 present Maximum likelihood estimates of Multinomial Employment Decision Model for males and females. Respondent's age, education and marital statues are the primary factors that explain the pattern of employment decisions. Table A3 emphasizes that being an ever-married woman reduces the probability of working in the public and private sectors in comparison with a never married woman. Furthermore, women's employment pattern is strongly affected by educational attainment. The probability of working in the public sector increases when woman's education moves from the secondary to the university level, suggesting that working in a public sector is supposed to be an opportunity for women since the public sector allows women to reconcile work and family.[9] These results are presented in Figure 17, which shows how the probability of public sector employment increases for women as they become more educated. In contrast, women that are more educated are less likely to work in the private sector.

Table A3 illustrates that the area of residence (urban/rural) is significant in the multinomial choice decision determining the type of employment than in affecting the participation decision of women. Living in a rural area reduces the probability of government and private sector employment for women. However, the probability of being self-employed or unpaid family labor increases for rural woman. To summarize, our results show that factors affecting female labor force participation and employment status decision could be the same but may not play the same role for her decision.

6. Conclusion

Using data from the Tunisian Labor Market Panel Survey of 2014 and from the quarterly employment and population survey (INS), this paper aims at analyzing the characteristics of female employment (and unemployment) in Tunisia, at using an explanatory model to understand the participation choice decision of women in the labor market and at identifying the main incentives and constraints to female labor participation and employment status.

The results of the descriptive analysis suggest that women's participation rate in Tunisia is around 25percent, which is higher than the average in the MENA countries, but it is at the half the world rate. The low participation of women is more pronounced in the rural area (20percent) than in the urban area (24 percent). Fewer opportunities are available in the rural area, especially suitable for women and corresponding to their education level which is increasing rapidly. This often leads women to withdraw from the labor force. Several socio-cultural factors associated with economic determinants are causing changes in the participation of women in the labor market: As the female education rises, their participation in the labor market increases. Women with university degrees are more than twice as active in the labor market compared to those with secondary education. Education tends to increase participation for married and unmarried women. This is not as well established for men.

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[9]These results corroborate the previous statistical analysis.

The inactivity phenomenon is more pronounced for women over 30 years of age. At the age of childbearing activity participation rate begins to drop significantly, women leave work to care for family. Participation rate decline from 30 percent for never married women to 19 percent for married women. Thus, labor for work declines after marriage household commitments increase.

The services sectors provide the majority of female jobs. About 30 percent of employed women are in education, health, social services and public administration. The public sector is regarded as "family friendly". Women are poorly represented in positions of responsibility and leadership. They are more concerned by temporary jobs and definite duration contract than men. The rate of self-employment among Tunisian women is low. The entrepreneurship potential of Tunisian women is lower than that of men. Women are also present in the same extent as men in the informal sector (14 percent of women). Working in the informal sectors attracts females seeking to earn some income while maintaining the household and childcare responsibilities.

The female unemployment rate is above that of men. Educated women, particularly women with high education levels, are by far more affected by unemployment than educated men. Tunisian productive system is tight and offer low-skilled and low–paid jobs.

The multivariate analysis conducted to identify the key factors that influence female labor market participation and type of employment, support generally the results of the statistical analysis. Results confirm that labor force participation and employment status are affected by the level of education, particularly university degrees, age, gender and marriage. Three main conclusions are worth noting. First, marital status is considered as a constraint for labor force participation decision and employment status for woman. Second, woman education attainment influences both her participation decision and type of employment choice. Besides, high-educated women are on more likely to be employed in the public sector. Third, the area of residence (urban/rural) is a significant factor in the multinomial decision choice, determining type of employment, than in affecting the participation decision of woman.

To limit the wasting of the resources, to increase the autonomy of women, to limit poverty and in preparation to a labor shortage expected in the future, the Tunisian policy makers have to take several measures in order to enhance the LFP of women as:

Offering more flexible opportunity and possibility for women especially in the private sector: part-time work, longer maternity leaves…

- Developing the access and the quality of the services of day nursery of the early childhood.
- Developing entrepreneurial culture among women and facilitating their access to finance to promote private initiative.

This could encourage women to participate to the labor force by creating better work-life balance.

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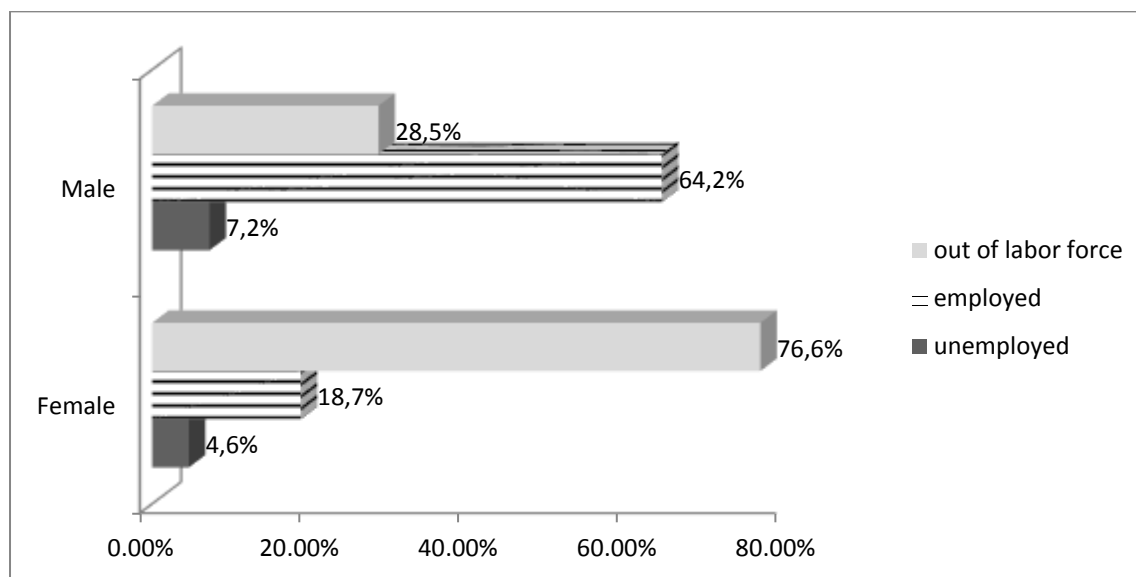
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Figure 1: Female Labor Force Participation rate (percentage) (aged 15+) by Developing Region
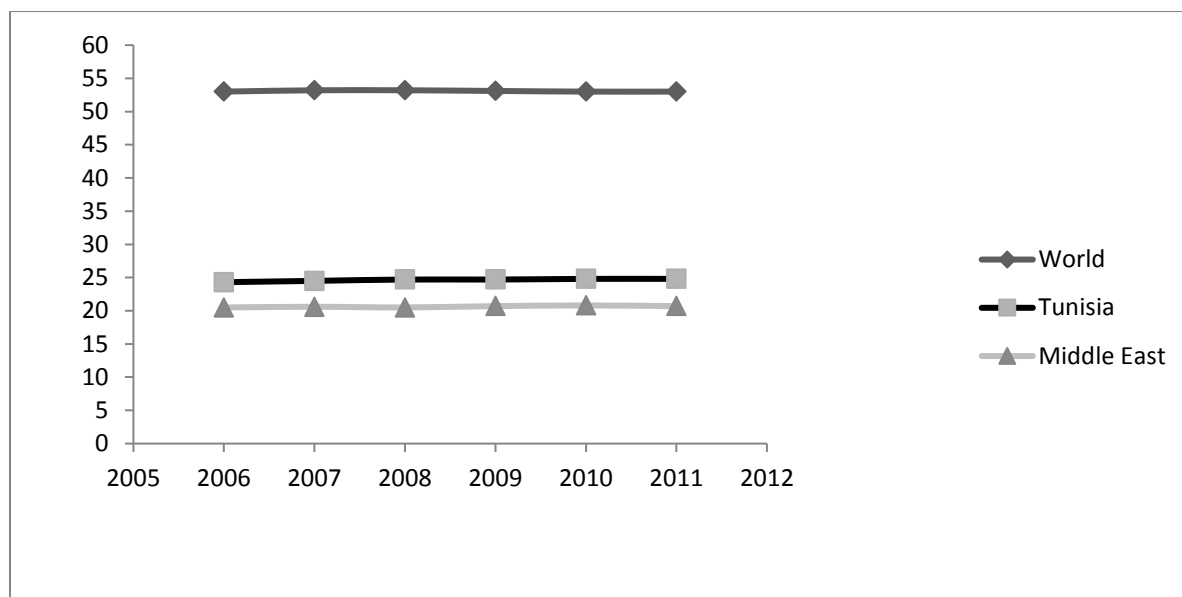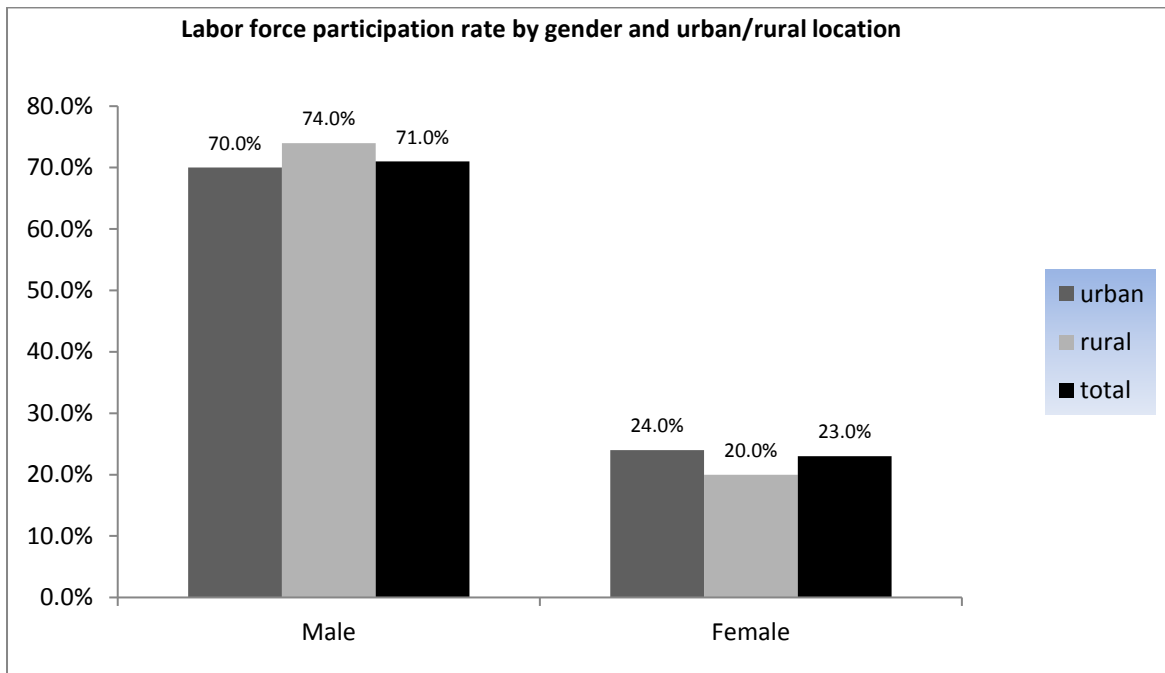

Source: World Bank. World Development Indicators
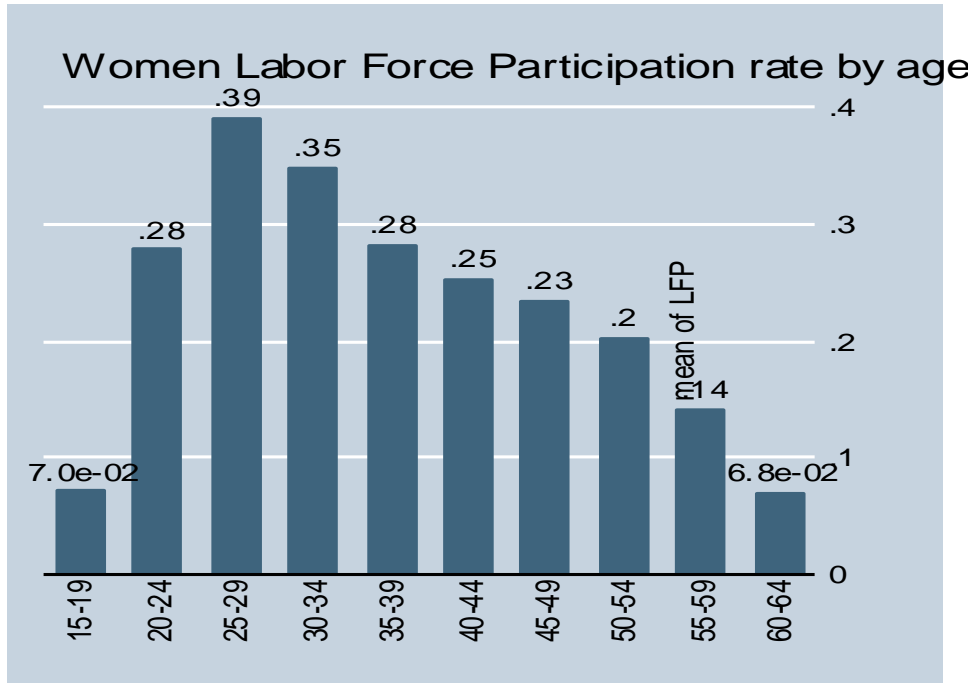
Figure 2: Work Status by Gender

Source: Authors' calculations using TLMPS 2014.

Figure 3: Labor Force Participation Rates for Working Age Population (15-64) By Gender and Location

Source: Authors' calculations using TLMPS 2014

Figure 4: Women Labor Force Participation rates by Age (ages 15-64)

Source: Authors' calculations using TLMPS 2014

Figure 5: Labor Force Participation Rates by Education and by Gender
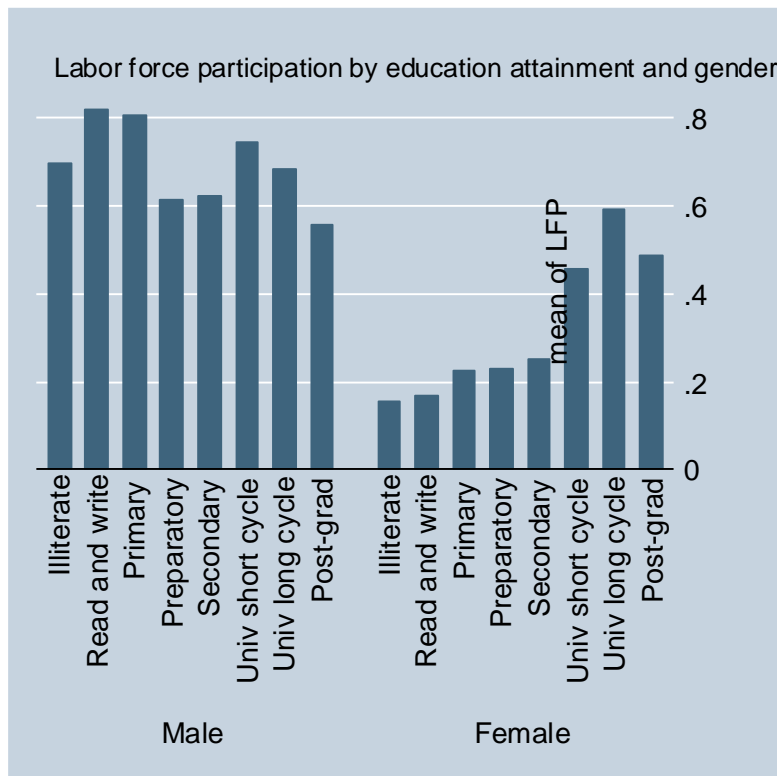
Source: Authors' calculations using TLMPS 2014

Figure 6: Women's Labor Market Status by Marital Status
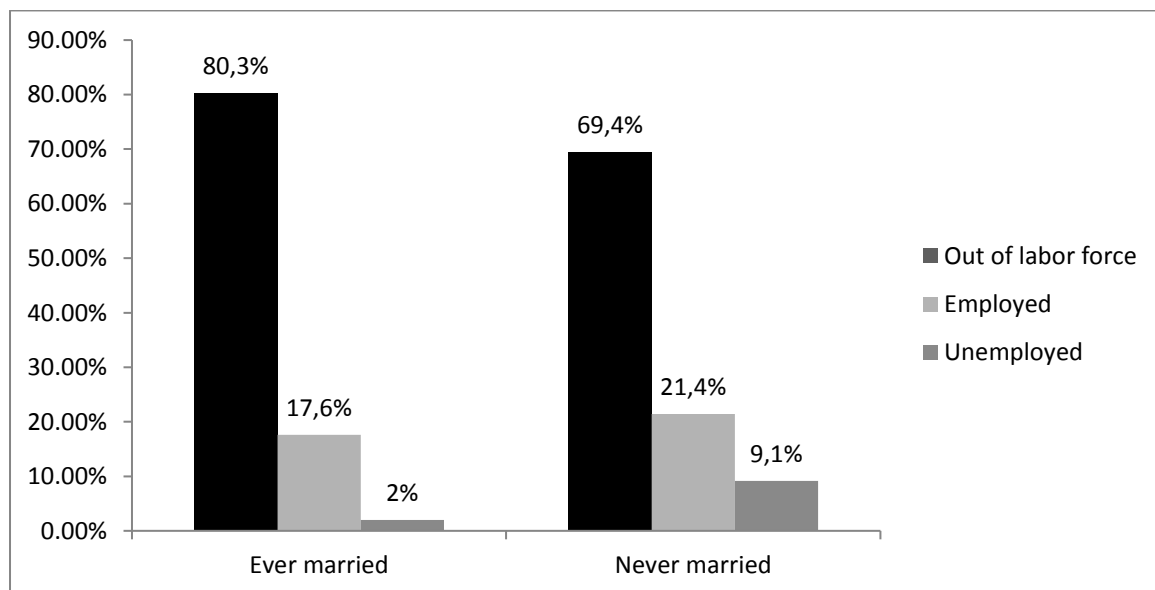
Source: Authors' calculations using TLMPS 2014

Figure 7.: Employment Structure by Gender, Market Definition (percentage)
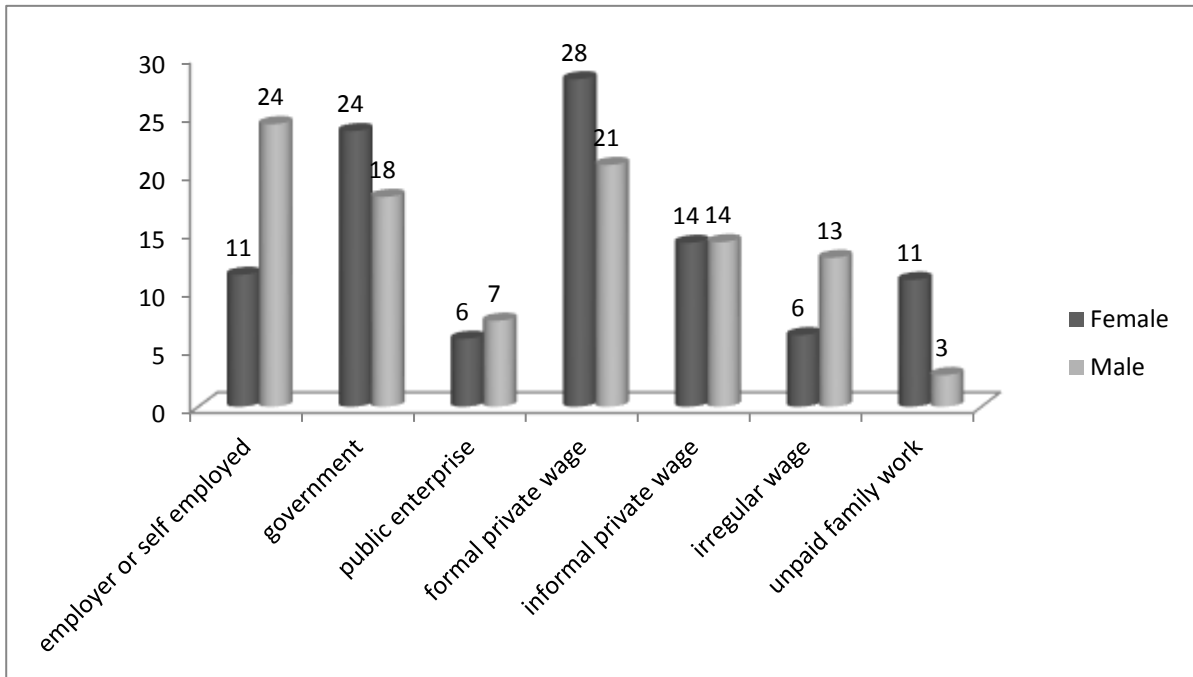
Source: Authors' calculations using TLMPS 2014

Figure 8: Employment Structure by Marital Status, Employed Females (percentage)
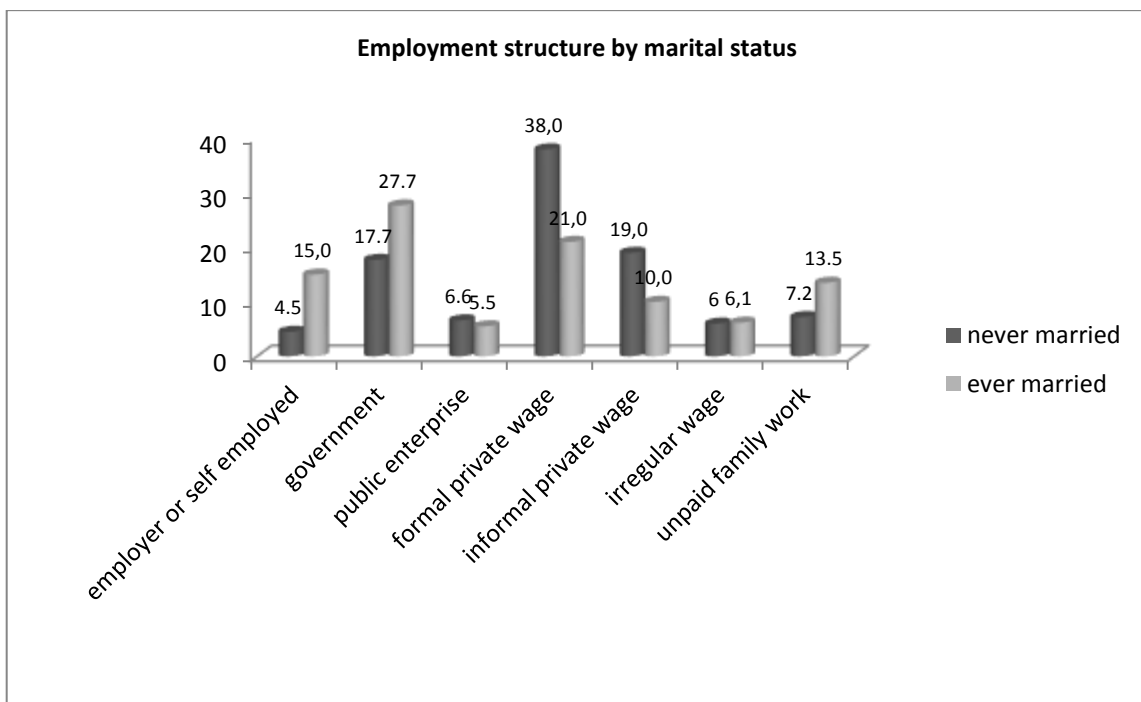
Source: Authors' calculations using TLMPS 2014

Figure 9: Female Unemployment rates by Education Attainment and Rural/Urban Area (ages 15-64)
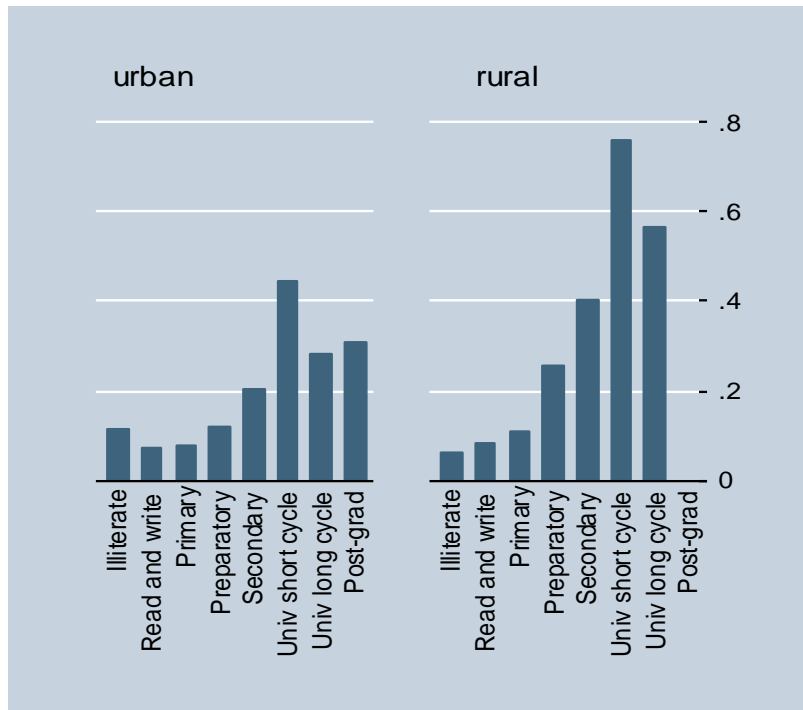
Source: Authors' calculations using TLMPS 2014.

Figure 10: Female Unemployment rate by Age (ages 15-64)
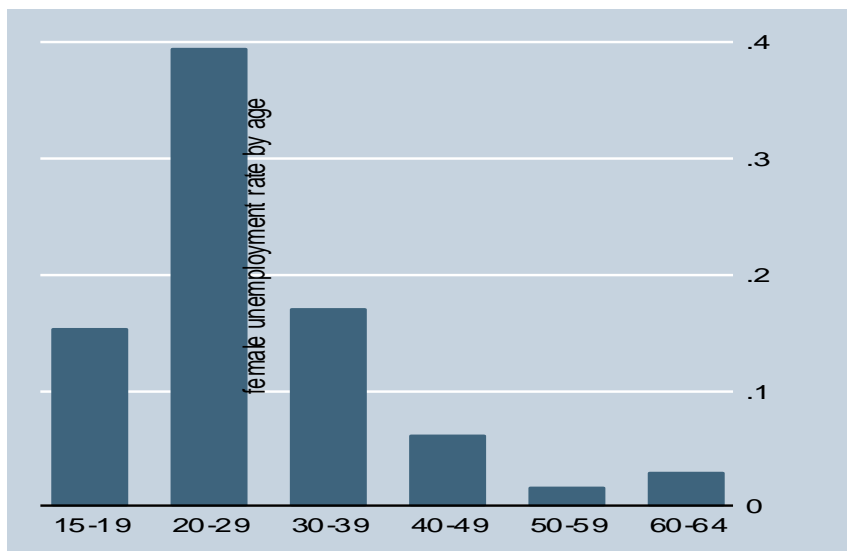
Source: Constructed by the author using TLMPS 2014.

Figure 11: Predicted Probability of Participation by Age and Gender
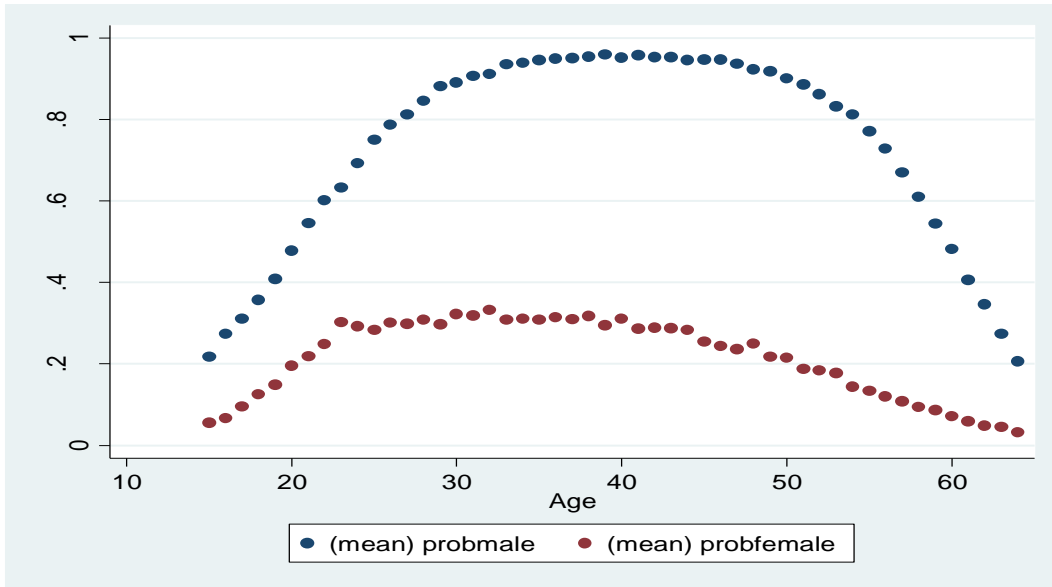
Source: Simulations based on Probit model results using data from TLMPS 2014.

Figure 12: Predicted Probability of participation by Gender and Marital Status
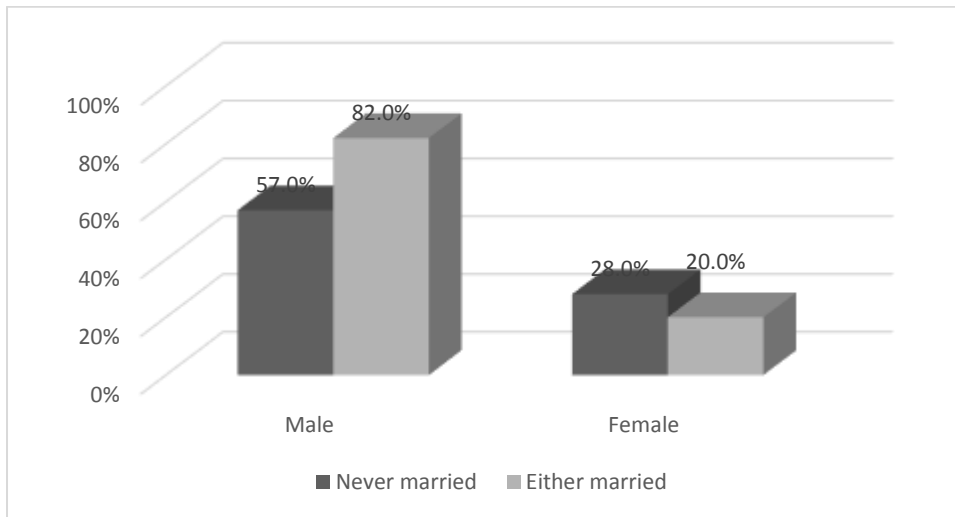
Source: Simulations based on Probit model results using data from TLMPS 2014

Figure 13: Female Predicted Probability of participation by Sector and Marital Status
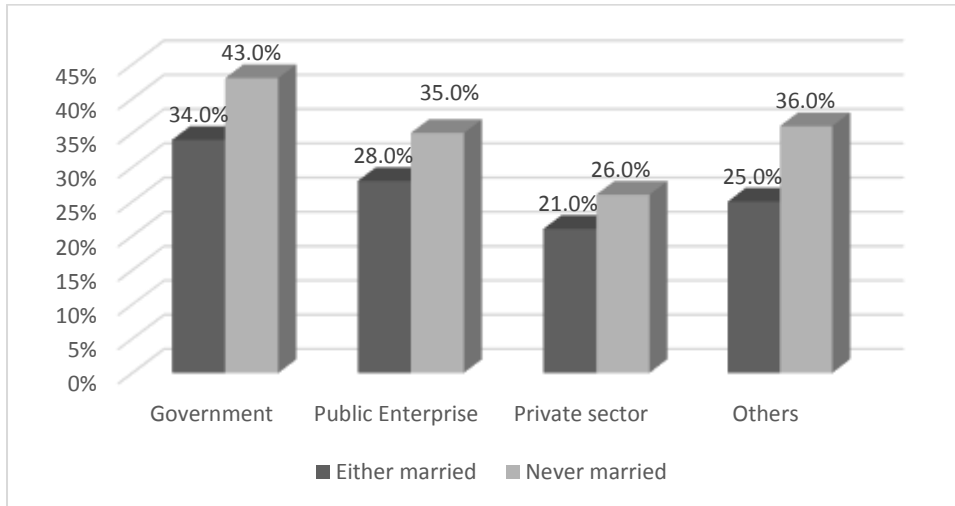
Source: Simulations based on Probit model results using data from TLMPS 2014

Figure 14: Predicted Probability of Participation by Gender and Educational Attainment
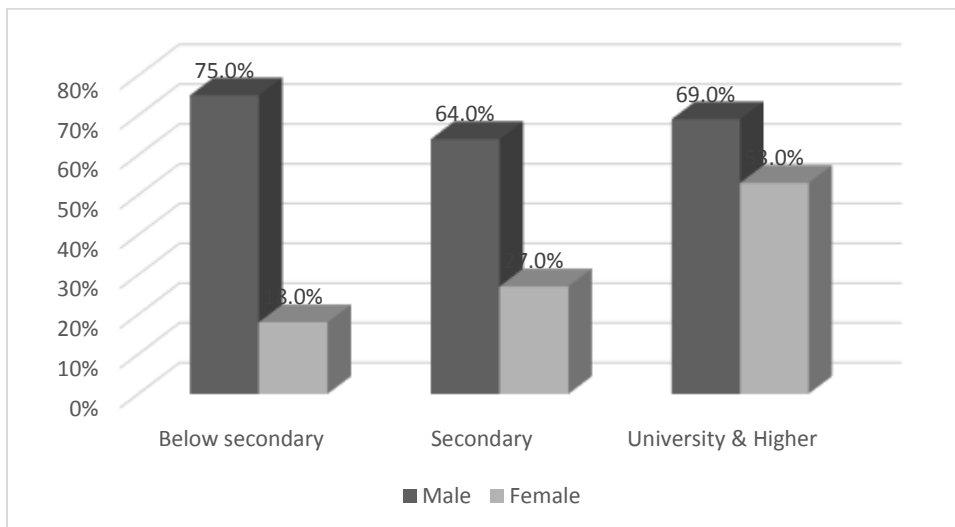
Source: Simulations based on Probit model results using data from TLMPS 2014

Figure 15: Predicted Probability of Participation for Women by Marital Status and Educational Attainment
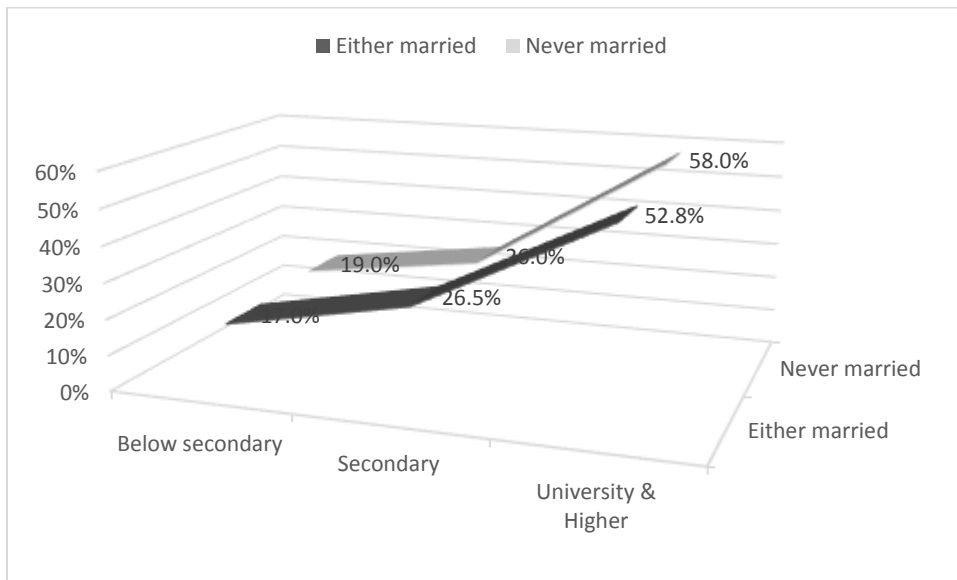
Source: Simulations based on Probit model results using data from TLMPS 2014

Figure 16: Female Predicted Probability of Participation by Quintile of Household Wealth and Level of Education
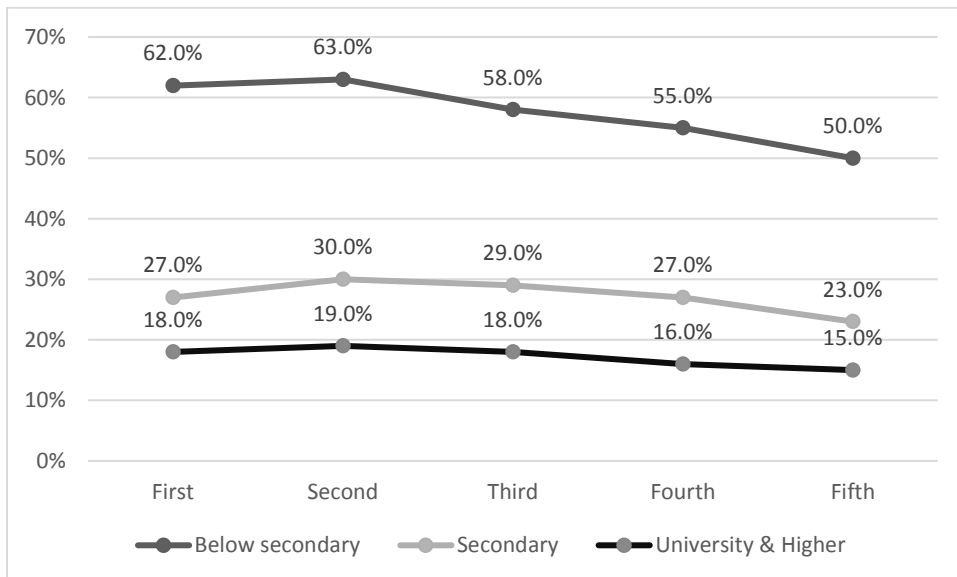
Source: Simulations based on Probit model results using data from TLMPS 2014

Figure 17: Predicted probability of Working in the Public Sector by Educational Attainment for Woman

Source: Simulations based on multinomial Logit model results using data from Tunisian Labor Market Panel Survey 2014.

Table 1: Evolution of Labor Force Participation rate(percentage) by gender

Year	1966	1975	2000	2006	2007	2008	2009	2010	2011	2012	2013
Male	85.5	81.1	72.6	67.2	67.6	67.9	67.2	69.4	70.1	70.3	70
Female	5.6	18.9	23.8	24.3	24.5	24.7	24.7	24.8	24.8	25.7	25.5

Source: INS

Table 2: Employment by Gender (in Thousands)

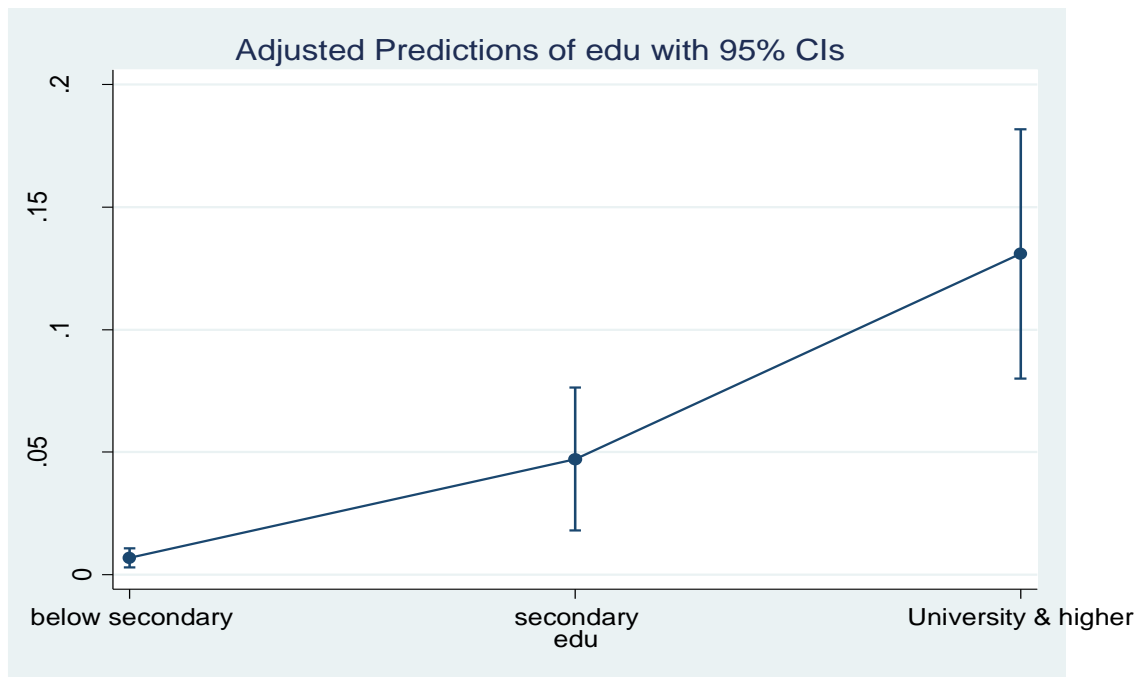|	2005	2006	2007	2008	2009	2010	2011	2012	2013
Male	2177.6	2218.6	2279.3	2336.8	2391.4	2457.8	2394.1	2434.4	2482.4
Female	750.9	786.3	805.8	818.6	807.5	819.6	745.7	796.7	832.9
All	2829.5	3004.9	3085.1	3155.4	3198.9	3277.4	3139.8	3231.1	3315.3

Source : INS

Table 3: Distribution of Employed by Economic Activity and by Gender (Column Percentages)

Economic activity	Male	Female	Total
	Male	Female	Total
Agriculture, Forestry and Fishing	19.9	19.7	18.4
Mining and quarrying	1.4	0.3	1.09
Manufacturing	12.9	25.9	16.1
Electricity, Gas, Steam and air conditioning	0.1	0.15	0.11
Water supply, sewage, waste management	0.13	0.00	0.10
Construction	22.1	0.99	16.8
Wholesale and retail trade	11.6	10.3	11.3
Transportation and storage	5.9	0.08	4.5
Accommodation and food services	5.3	1.06	4.3
Information and communication	0.78	1.12	0.8
Financial and insurance activities	0.67	1.09	0.77
Real estate activities	0.14	0.23	0.16
Professional and scientific and technical activities	0.06	0.3	0.12
administrative and support service activities	0.31	1.76	0.67
public administration	11.2	7.8	10.39
education	5.3	16.5	8.1
Human, Health and social work activities	1.6	5.2	2.5
Arts, entertainment and recreation	0.49	0.6	0.5
Other services activities	1.56	5.5	2.3
Activities of extraterritorial organizations and bodies	0.00	2.2	0.56
Total	100.00	100.00	100.00

Source: Authors calculations using TLMPS 2014

Table 4: Distribution of employed females by economic activity and occupational status (cell percentages)

Economic activity	Blue Col	Occupation Managers	White col	Total
Agriculture. Forestry and Fishing	19.79	0.00	0.18	19.97
Mining and quarrying	0.00	0.00	0.13	0.13
Manufacturing	22.78	0.19	2.91	25.88
Electricity. Gas. Steam and air conditioning	0.00	0.00	0.15	0.15
Construction	0.53	0.00	0.30	0.83
Wholesale and retail trade	2.29	0.36	7.82	10.47
Transportation and storage	0.08	0.00	0.00	0.08
Accommodation and food services	0.57	0.00	0.33	0.90
Information and communication	0.18	0.64	0.31	1.14
Financial and insurance activities	0.77	0.00	0.33	1.10
Real estate activities	0.23	0.00	0.00	0.23
Professional scientific and technical activities	0.00	0.00	0.31	0.31
Administrative and support service activities	0.59	0.15	1.04	1.78
Public administration	2.20	1.24	4.46	7.90
Education	1.67	12.68	2.16	16.51
Human. Health and social work activities	0.33	0.25	4.48	5.06
Arts. entertainment and recreation	0.00	0.62	0.00	0.62
other services activities	0.65	0.00	3.99	4.64
Activities of extraterritorial organizations and bodies	2.29	0.00	0.00	2.29
Total	54.97	16.13	28.90	100.00

Source: Authors calculations using TLMPS 2014

Table 5: Stability of Job by Gender (percentage)

STABILITY OF JOB	Female	Male
Permanent	85.7	90
Temporary (Short period)	14.3	10
KIND OF CONTRACT		
Indefinite duration	69.8	84.8
Definite duration	30.16	15.1

Source: Authors' calculations using TLMPS 2014.

Table 6: Unemployment Rate (percentages) by Gender

	2009	2010	2011	2012	2013	2015
Male	11.3	10.9	15	14.6	13.3	12.4
Female	**18.8**	**18.9**	**27.4**	**25.6**	**23**	**22.2**
Total	13.3	13	18.3	17.6	15.9	15.2

Source : INS

Table 7: Unemployment Rate (percentages) of Higher Education Graduates by Gender

	2009	2010	2011	2012	2013	2015
Male	14.6	15.8	23.7	15.8	20.9	19.9
Female	**34.9**	**32.9**	**43.8**	**40.2**	**43.5**	**38.4**
Total	23.4	23.3	33.6	26.9	31.6	28.6

Source : INS

Table 8: Unemployment duration by Gender in 2011 (percentages)

Duration	Male (%)	Female (%)
≤ 1an	68.3	50.8
1-2 ans	20.1	26.4
2-3ans	6.4	11.5
› 3ans	5.2	11.3

Source : INS 2011.

Annex

Table A1: Women's Labor Force Participation by age, Education and Marital Status

Age	Never married				Evermarried			
	Below secondary	Secondary	University	All	Below secondary	Secondary	University	All
15-19	0.1	0.003	-	0.07	0.05	-	-	-
20-24	0.4	0.23	0.23	0.29	0.1	0.12	0.5 3	0.14
25-29	0.36	0.67	0.71	0.55	0.18	0.18	0.58	0.25
30-34	0.45	0.47	0.73	0.54	0.15	0.18	0.55	0.24
35-39	0.35	0.8	0.81	0.47	0.14	0.35	0.87	0.23
40-44	0.3	0.67	0.56	0.37	0.17	0.33	0.68	0.22
45-49	0.29	-	-	0.3	0.17	0.41	1	0.23
50-54	0.13	0.78	-	0.23	0.16	0.42	0.53	0.2
55-59	0.13	-	-	0.13	0.1	0.1	0.13	0.14
60-64	0.26	-	-	-	0.07	0	0	0.06
Total	0.27	0.24	0.43	0.30	0.14	0.28	0.63	0.19

Table A2: Results of the Probit Model of Labor Market Participation (population aged between 15 and 64 years old)

Variables	Total	Male	Female
Age	0.25***	0.307***	0.175***
	(0.014)	(0.019)	(0.012)
Age Squared	-0.003***	-0.004***	-0.002***
	(0.001)	(0.0002)	(0.0002)
Ever-married	-0.065	0.665***	-0.432***
	(0.07)	(0.155)	(0.074)
Secondary Education	0.094	-0.271***	0.324***
	(0.07)	(0.09)	(0.086)
University & Higher	0.586***	-0.266***	1.02***
	(0.095)	(0.15)	(0.12)
Female	-1.54***		
	(0.052)		
Rural	0.015	0.138*	-0.06
	(0.045)	(0.08)	(0.08)
Father's Education: Secondary	0.043	-0.077	0.097
	(0.13)	(0.13)	(0.14)
Father's Education: University	0.0305	-0.063	0.0567
	(0.25)	(0.255)	(025)
Mother's Education: Secondary	-0.364***	-0.045	-0.666***
	(0.127)	(0.19)	(0.21)
Mother's Education: University	-0.678***	-0.617***	-0.671**
	(0.26)	(0.21)	(0.33)
Mother Working when 15	0.0901	-0.052	0.2*
	(0.11)	(0.11)	(0.09)
Caring children. sick. elderly	-0.265***	-0.331	-0.077
	(0.104)	(0.31)	(0.12)
Quintiles of Household Wealth			
2nd quintile	0.166**	0.381***	0.049
	(0.078)	(0.11)	(0.11)
3rd quintile	0.051	0.158	-0.018
	(0.09)	(0.12)	(0.11)
4th quintile	0.093	0.347***	-0.081
	(0.12)	(0.13)	(0.12)
5th quintile	-0.048	0.138	-0.104
	(0.135)	(0.15)	(0.122)
Number of Observations	7550	3434	4116

Notes: i. the reference for the educational level is below secondary. ii. urban is the reference for region. iii. The reference level for parental level of education is below secondary. Mother did not work when individual was 15. The reference individual belongs to the first quintile of household wealth and is not concerned with caring children, sick, or elderly.

Table A3: Results of the Multinomial Logit Model for Males

Variables	Employment in Public Sector	Employment in private sector	Self employed
Age	0.674***	0.478***	0.37***
	(0.057)	(0.033)	(0.042)
Age Squared	-0.0083***	-0.006***	-0.005***
	(0.0007)	(0.0005)	(0.0004)
Ever married	1.649***	1.61***	1.59***
	(0.281)	(0.28)	(0.30)
Secondary Education	0.95***	-0.662***	-0.915***
	(0.21)	(0.21)	(0.26)
University& Higher	0.89***	-0.703***	-1.65***
	(0.28)	(0.15)	(0.45)
Rural	0.171	0.204	0.681***
	(0.18)	(0.15)	(0.22)
Father's Education: Secondary	-0.61*	0.108	-0.246
	(0.33)	(0.31)	0.257
Father's Education: University	1.27**	-0.425	0.257
	(0.65)	(0.55)	(0.80)
Mother's Education: Secondary	-0.114	0.102	0.054
	(0.57)	(0.36)	(0.56)
Mother's Education: University	-0.79	-0.55	-19.16***
	(0.246)	(0.51)	(0.56)
Mother Working when 15	-0.418*	-0.128	-0.078
	(0.26)	(0.19)	(0.20)
Caring for children, sick, elderly	-0.143	-0.600***	-0.237
	(0.31)	(0.29)	(0.33)
Quintiles of Household Wealth			
2nd quintile	0.848**	0.841***	0.567***
	(0.29)	(0.21)	(0.22)
3rd quintile	0.357	0.442**	0.036
	(0.27)	(0.21)	(0.23)
4th quintile	0.822**	0.669***	0.753***
	(0.31)	(0.22)	(0.26)
5th quintile	0.496	0.538**	0.365
	(0.33)	(0.26)	(0.31)
Number of Observations	3283	3283	3283

Notes: i. the reference for the educational level is below secondary. ii. urban is the reference for region. iii. The reference level for parental level of education is the below secondary one. Mother did not work when individual was 15. The reference individual belongs to the first quintile of household wealth and is not concerned with caring children, sick or elderly.

Table A4: Results of the Multinomial Logit Model for Females

Variables	Employment in Public sector	Employment in Private sector	Self-Employed
Age	0.604***	0.4***	0.23***
	(0.09)	(0.05)	(0.048)
Age Squared	-0.007***	-0.006***	-0.0025***
	(0.001)	(0.0007)	(0.0005)
Ever married	-0.672**	-0.877***	-0.133
	(0.33)	(0.21)	(0.24)
Secondary Education	1.94***	-0.662***	-0.338
	(0.31)	(0.21)	(0.5)
University & Higher	3.06***	-0.703***	-0.314
	(0.35)	(0.29)	(0.6)
Rural	-0.805***	-0.748***	1.25***
	(0.36)	(0.21)	(0.21)
Father's Education: Secondary	0.819**	-0.275	0.192
	(0.36)	(0.34)	(0.48)
Father's Education: University	0.065	0.543	-20.7***
	(0.47)	(0.52)	(0.45)
Mother's Education: Secondary	0.421	-1.587**	-0.644
	(0.44)	(0.70)	(1.09)
Mother's Education: University	-21.3***	-0.056	-20.15***
	(0.80)	(0.65)	(0.56)
Mother Working when 15	-0.584	0.452*	1.18***
	(0.66)	(0.26)	(0.09)
Caring for children, sick, elderly	0.03	-0.436**	0.192
	(0.26)	(0.21)	(0.47)
Quintiles of Household Wealth			
2nd quintile	-0.078	0.48***	0.018
	(0.58)	(0.25)	(0.21)
3rd quintile	-0.43	0.337	-0.029
	(0.66)	(0.31)	(0.031)
4th quintile	-0.378	0.276	-0.102
	(0.67)	(0.33)	(0.27)
5th quintile	-0.103	0.121	-0.051
	(0.62)	(0.37)	(0.43)
Number of Observations	7550	3434	4116

Notes: i. The reference for the educational level is Below secondary. ii. urban is the reference for region. iii. The reference level for parental level of education is below secondary. Mother did not work when individual was 15. The reference individual belongs to the first quintile of household wealth and is not concerned with Caring children, sick, or elderly.