Intergenerational Transmission and the Impact of Mothers-in-Law in the Turkish Labor Market: The Case of Izmir

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Abstract: *This paper examines the presence of intergenerational transmission in the Turkish labor market with respect to the association between labor market activity of women and work experience of their mothers-in-law. By utilizing a representative unique household labor force survey from İzmir, this study provides statistically significant results for the association above even after taking into account many socioeconomic factors such as parental education and the household characteristics. Our major findings show that the presence of a working mother-in-law increases the probability of women's labor force participation rate by 11 percentage points. Our results are robust when we use different dependent variables such as employment rate and being a regular employee in non-agricultural sector. The labor market experience of women's own mothers turns out to affect rather indirectly through human capital investment for their daughters. The impact of working mothers-in-law on women's labor market activity is not homogeneous across all educational categories. This association is particularly significant among women with lower educational attainment (at most 8 years of schooling).*

1. Introduction

Over the last few decades, Turkey has been successful in catching up with the income level of more advanced countries. This successful convergence of the Turkish economy became especially visible after the major crisis in 2001. In 1990, Turkey's GDP per capita was almost 25 percent of OECD's average, and remained stable for the rest of the decade before falling to 23 percent during the major crisis in 2001. The figure, however, increased to 29 percent on the eve of the global financial crisis, and it kept rising to 38 percent in 2017. A similar trend was observed in Turkey's catching up with the average GDP per capita level in the European Union.[1]

Apart from the macroeconomic imbalances associated with this catching up performance, the low female activity in the labor market has always been an essential problem of the Turkish economy, in contrast to its generally effective economic performance. Figure 1 shows the association between GDP per capita and female labor force participation (FLFP) for a group of selected countries, among which Turkey is an outlier. The labor force participation gap has been persistent at around 10 to 20 percentage points between Turkey and the other countries within the same range of GDP per capita. The labor force participation of women in

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Turkey is closer to that in MENA (Middle East and North Africa) countries rather than other country categories with a similar range of GDP per capita levels.

Figure 1. Female Labor Force Participation Rate and GDP Per capita 2017
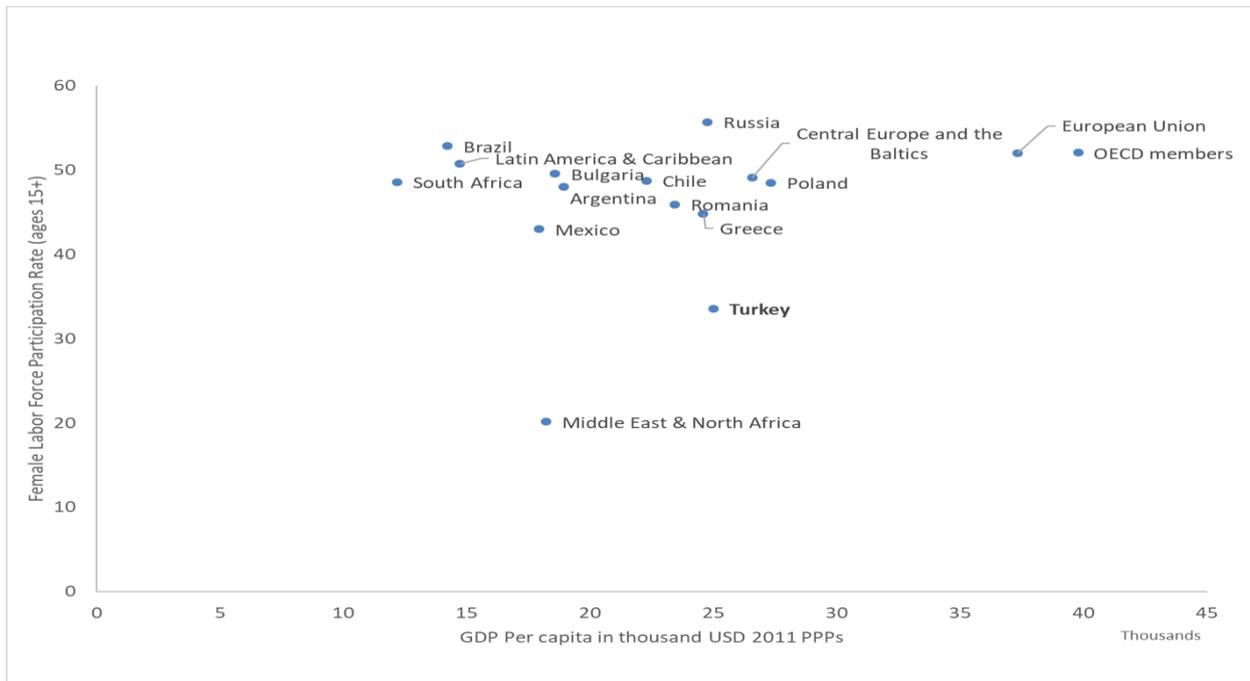
Source: World Development Indicators

Low rates both for labor force participation and employment limit full employment of domestic labor power. Economies can enhance their potential when more women are able to join the labor markets. Meanwhile, higher activity women in the labor markets also contributes to the reduction of poverty by increasing the overall income in households (Verick, 2014). Moreover, low female activity in labor market limits the socio-economic empowerment of women, as working outside the home enables them to enhance their bargaining position both in the private and public spheres, and is associated with substantial benefits both for women and for their children (Agarwal, 1997; World Bank 2001; Cindoğlu & Toktaş, 2002). Higher female activity in the labor market, however, does not always automatically translate into better socio-economic wellbeing for women. On the one hand, the rate of unemployment has been higher for women than men at the global level. On the other hand, even if they find a job, most of the women, especially in developing countries, are entrapped in employment categories such as contributing family workers or regular/casual employees in the informal sector. These categories increase the likelihood of living in poverty for women by limiting their access to basic employment and social protection rights. (ILO, 2018).

Similar to most findings from developing countries (Klasen, 2018), various studies conducted with Turkish data show that education and skills, as well as fertility and marriage decisions turn out to be the most important correlates of women's labor market activity in Turkey (Tansel, 2001; Dayıoğlu & Kırdar, 2010; İlkkaracan, 2012). Another branch of a more recent literature on the determinants of women's labor market activity emphasizes socio-cultural factors, such as religiosity or conservatism. Gündüz-Hosgör and Smits (2008) show that those women, having more traditional gender role attitudes, and being suppressed more by their families are more likely to be excluded from the labor market. Göksel (2013) finds a negative association between women's labor market activity and the husband's conservatism. Güner and Uysal (2014), in their study on labor market activity of migrant women in Turkey, find a significant association between women's current labor market behavior and the female employment rates of the migrants' home city in 1970. Atasoy (2017) shows that women growing up in families that are more traditional are less likely to

participate in the labor market and to be employed. Dildar (2017) also shows a significant negative impact of both religiosity and patriarchal norms on women's labor force participation, after controlling for endogeneity.

This paper contributes to this new branch of literature on the socio-cultural determinants of women's labor market activity by investigating the impact of the labor market behavior of mothers-in-law on their daughters-in-law's labor market outcomes in Turkey. The seminal paper by Fernandez, Fogli and Olivetti (2004) shows that the growing number of sons raised by working mothers tends to increase the probability that their wives will work in the US. Having a working mother throughout their entire upbringing makes these men better candidates for being partners of working women either by changing these men's attitudes towards working women or by enhancing their productivity in household chores. In the similar vein, several other studies conducted in order to investigate the same association between women's labor market activity and past work experiences of their mothers-in-law. (Kawaguchi & Miyazaki, 2009; Bütikhofer, 2013; Farré & Vella, 2013; Johnston et al., 2013; Morill & Morill, 2013; Campos-Vasquez & Velez-Grajales, 2014; Papapetreou & Tsalaporta, 2018; Lie & Liu, 2019; McGinn et al., 2019).

To our knowledge, this is the first study that focuses on the direct association between women's labor market activity and work experience of their mothers-in-law in Turkey. The intergenerational effect on women's labor market activity is analyzed by utilizing a unique household labor force survey from Turkey that is representative of İzmir, third largest city of Turkey. Our major findings show that the presence of a working mother-in-law raises the probability of women's labor force participation by 11 percentage points. Our results are robust when we use different dependent variables such as employment rate and being a regular employee in non-agricultural sector. The positive impact of mothers-in-law on women's labor market activity retains its statistical significance, even after controlling for various socio-economic background factors. We also consider the effect of women's own mothers' work experience on their daughter's labor market outcome in order to deal with it as a potential confounding factor given the possibility of a "network" effect between the mother and the mother-in-law (Fernandez et al., 2004). While the impact of mother-in-law keeps its positive impact, the effect of one's own mothers' work experience seems to work through their daughter's educational attainment rather than directly through labor market activity. Lastly, the effect of mothers-in-law on women's labor market activity is particularly significant in the subsample of lower educated women. This evidence is especially important given that higher educated women are more likely to enter the labor market in the presence of socio-cultural constraints, because of higher opportunity costs of being unemployed.

This paper continues with a section on the main features of Turkish labor market. The third section contains a selective review of recent empirical work. The fourth section presents the data set and lays out the basics of the empirical model. The fifth section, in which the empirical results are discussed, is followed by the concluding section.

2. Some Key Features of The Turkish Labor Market

Table 1 shows that, in Turkey, 56 percent of men and 64 percent of women (25-64 years old) have at most 8 or fewer years of schooling whereas in OECD countries the numbers are only 21.7 percent for men and 20.6 percent for women. Although the average years of schooling for both men and women in 2018 are still significantly below the OECD countries' average, both labor force participation (LFP) rate and employment rates for Turkish men are similar to their OECD country counterparts at all educational levels. Although one essential difference between Turkey and the OECD members turns out to be the educational gap, this gap is not fully reflected in men's labor market activity.

The labor market activity of men in Turkey at all educational categories is generally similar to that in OECD countries, and therefore, the low labor market activity in Turkey should be evaluated as a problem particularly for women rather than for the whole population. Women's labor market activity in Turkey strongly differs from that of OECD countries across all educational categories. Although higher education is a necessary condition for increasing labor market activity of women in Turkey, it cannot provide an answer

to the problem on its own. The gap between Turkey and OECD in LFP and employment rates at the highest educational level is 12.5 percent and 18.5 percent, respectively.

The employment rates of Turkey as shown in Table 1 seem to overestimate the actual values of women's labor market activity in the case that unpaid family workers are not explicitly taken into account. In 2018, almost 24 percent of women employed in Turkey were in the category of unpaid family workers, however this rate is quite high in comparison to similar countries such as Mexico (6.7 percent), Greece (5.5 percent), Poland (3.4 percent), Brazil (3.2 percent) and Chile (1.7 percent).

Table 1. Labor Force Participation and Employment Rates according to Sex and Educational Attainment in 2018 (OECD average and Turkey ages 25-64)

		Education Level							
		Low (8yrs)		Medium (12yrs)		High (12+ yrs)		Total	
		M	W	M	W	M	W	M	W
Share in Total Population	OECD	21.7	20.6	45.0	39.5	33.8	40.2		
	Turkey	56.1	63.9	22.2	16.5	21.8	19.7		
LFP Rate	OECD	75.8	54.1	87.6	73.7	93.1	85.0	87.6	74.5
	Turkey	83.0	33.3	88.2	42.0	90.5	72.5	85.8	42.5
Employment Rate	OECD	68.9	48.4	83.2	68.7	86.9	81.3	83.2	70.1
	Turkey	75.5	29.9	82.1	34.8	83.7	62.8	78.8	37.2

Source: OECD.Stat

Although there has been a significant rise in LFP rate for women over the last two decades, the current level is still well below the OECD average. It will take around 20 years for Turkey to attain the average level of OECD countries if Turkey's FLFP continues to rise at the post-2000 annual average rate. Table 2 shows the changes in LFP and employment rates for women since 2000 according to educational attainment along with the shares of educational attainment levels in total population. The share of women with tertiary education has significantly increased from 6.7 percent to almost 20 percent in 2018. On the one hand, having more women with tertiary education has significantly contributed to the rise in overall LFP and employment rates, and therefore, more women in universities can enhance labor market activity in the future as well. On the other hand, the LFP rate for higher educated women remained stable throughout the same period whereas the employment rate even decreased for the same category. This observation also points out the importance of demand conditions, especially for higher educated women in Turkey, where the unemployment rate reached its highest level in 2018.

Table 2. Changes in Labor Force Participation and the Employment Rates according to Sex and Educational Attainment in Turkey

Education Level		Years		
		2000	2010	2018
Share in Total Population	Low (8yrs)	81.0	73.9	63.8
	Medium (12 yrs)	12.3	14.9	16.5
	High (12 +yrs)	6.7	11.2	19.7
LFP Rate	Low (8yrs)	22.8	26.5	33.3
	Medium (12 yrs)	33.0	36.0	42.0
	High (12 +yrs)	71.7	72.6	72.5
	TOTAL	*27.4*	*33.1*	*42.5*
Employment Rate	Low (8yrs)	22.0	24.1	29.9
	Medium (12 yrs)	30.0	28.6	34.8
	High (12 +yrs)	68.6	64.4	62.8
	TOTAL	*26.1*	*29.3*	*37.2*

Source: OECD.Stat

Another important feature emerging from Table 2 is the steady rise in LFP and employment rates among lower educated women. The LFP rate has increased by 46 percent and the employment rate by 36 percent since 2000 for the least educated, who are still the most populous section of women in Turkey. This observation is potentially an outcome of the added worker effect, where the women are expected to enter the labor force because of an unemployment shock to the primary male earner. Değirmenci and İlkkaracan (2013), however, show that the added worker effect in Turkey is much more significant for higher educated women rather than the women with the lowest educational attainment, using data covering both pre-, and post-crisis years.

3. Literature Review

How individuals think and act about gender division of labor both within and outside the household is strongly affected by their upbringing in specific socio-economic settings where their parent's educational background and their labor market involvement play an important role. Variation in mothers' educational background and their labor market behavior account for most of the changes in children's gender role attitudes and their labor market outcomes. Given that the primary objective of this paper is to investigate the association between mothers' labor market behavior and that of their daughters-in-law, the literature review focuses mainly on recent studies in this area.

In their seminal paper Fernandez et al. (2004) show the existence of a strong relationship between woman's job market experience and that of her mother-in-law, based on the US data. Accordingly, the growing number of men raised in a different family model tends to increase the number of working women who will marry these sons. Fernandez et al. (2004) bring out two different mechanisms that can be effective channels for intergenerational transmission. Having a working mother as an example can either change the sons' preferences for working wives, or make them suitable partners for working women by increasing their cooperation and productivity in household work. Their results are significant even after controlling for both men's and women's socio-economic characteristics that may be associated with wives' labor market behavior.

McGinn et al. (2019) discuss how maternal employment can affect their sons' behavior, regarding the division of labor within the household, by caring more for family members in such a way that might produce suitable partners for working women in the next generation, along the lines of the work by Fernandez et al. (2004). McGinn et al. (2019) further show that working mothers can be effective both by shaping the attitudes of their children, and by becoming role models themselves. Farré and Vella (2013) emphasize the strong association between mother's work behavior-related aspect of her gender role attitude, and the working behavior of her daughter-in-law through its impact on the gender role attitude of his son, even after controlling for many background household characteristics.

Kawaguchi and Miyazaki (2009) investigate the same relationship and especially the role of preference formation in the intergenerational transmission mechanism by using Japanese data. Despite the lack of statistically significant evidence for the association between women's labor supply behavior and the job market experience of the mother-in-law, they have statistically robust results for the relationship between having a working mother and the non-traditional gender roles held by the sons. In a study with Swiss data, Bütikhofer (2013) finds similar results to those of Fernandez et al. (2004), in which the probability of having a working wife is significantly associated with the mother-in-law's labor supply behavior. Bütikhofer also shows that the above association is effective through the preference formation channel.

Using data from England, Johnston et al. (2013) present evidence of a statistically significant relationship between women's probability of working, and their mother-in-laws' non-traditional gender attitudes. Based on these results, Johnston et al. (2013) argue for the importance of what the mothers say (i.e. their attitude) rather than what they do (i.e. their job market status), on the employment probability of their son's spouses. This effect is much stronger for those sons with more traditional mothers. Campos-Vasquez and Velez-Grajales (2014) present empirical evidence for the close association between the probability of wife's labor supply behavior, and that of her mother-in-law in their work on Mexico. They also

find that this impact is observed largely within the lower educated category. Papapetreou and Tsalaporta (2018) also find empirical evidence from Greek data that highlights the greater importance of this intergenerational impact for low-income households than high-income households. Lie and Liu (2019) is one of the few studies in which the positive correlation between working married women and mothers-in-law's work behavior is explained by their explicit involvement in more egalitarian division of labor in the household, rather than by their changing preferences.

Same research, including some of the above mentioned also examines the association between working behavior of the married women and that of their own mothers. Fernandez et al. (2004) find no significant association between the labor market behavior of married women and their own daughters. Morill and Morill (2013) present statistical association between the work behavior of married women and that of both their mothers-in-law and their own mothers, where the impact of the former is found to be higher in magnitude. They consider these results as complimentary to the results of Fernandez et al. (2004) and others by offering an alternative mechanism for intergenerational mechanism in which women whose attitudes are shaped by their own mothers' working behavior, are more likely to marry those men whose attitudes are influenced by their mothers. There are other studies in which both the work experience of mother-in-law and that of own mother are significantly related to the working behavior of married women in the same sample (Del Boca et al., 2000; Papapetreou & Tsalaporta, 2018).

4. Data and the Empirical Model

4.1. Data

The data used in this research is based on a unique Household Labor Force Survey that is representative of İzmir, third largest city of Turkey[2]. Apart from the conventional questions used in TurkStat Household Labor Force Surveys, there were additional questions about the educational attainment and the work experience of both parents. The sample includes 9,756 persons, of whom 6,995 are between the ages of 15 and 65. Because the analysis is carried out with respect to the labor supply behavior of married women only, all men and non-married women are excluded from the sample. Given that most of the women employed in rural areas are unpaid family workers as discussed in section 2, they are also omitted from the sample. Our final sample consists only of married women between the ages of 25 and 49 living in urban areas (1429 women). By limiting the age category to 50, most of the women benefitting from early retirement laws are also excluded from the sample.[3]

Table 3. Main Demographic Features of 25-49 Urban Married Women (2010)

	25-49 urban married women		
	SAMPLE	**İZMİR**	**TURKEY**
Educ1 (not finished a school)	10.15	10.11	13.05
Educ2 (5 years)	48.19	45.07	52.95
Educ3 (8 years)	10.15	8.48	7.87
Educ4 (12 years)	19.17	21.55	15.91
Educ5 (more than 12 years)	12.25	14.79	10.22
Labor Force Participation	32.90	34.12	24.80
Employment Rate	25.90	28.41	21.54
Regular/casual employee	79,34	77.77	72.89
Unpaid family worker	8.80	11.04	14.60
Share of urban population	90.77	90.12	71.79
High-educated Spouse	51.15	49.42	48.51
Spouse registered in SS	63.74	64.13	63.40
Child (0-4)	25.26	26.44	30.84
Child (5-11)	41.92	40.49	46.27

Source: Authors' own calculations based on micro data from TurkStat Household Labor Force Survey 2010 for columns 2 and 3.

Table 3 displays some of the major demographical characteristics of the sample used in this study along with the same characteristics from İzmir and Turkey. The values for İzmir on the second column are calculated by using the micro data from TurkStat Household Labor Force Survey 2010 (at NUTS2 level) in order to find out whether our sample is representative of İzmir. The data in our sample are also collected by the same institution (TurkStat) employing the same conventional methodology as in all other Household Labor Force Surveys conducted by TurkStat. Moreover, there is a close resemblance between our sample values and the values from Household Labor Force Survey 2010 for İzmir as is shown in Table 3.

According to Table 3, the shares of women who have tertiary and post-secondary degrees in our sample are 12.25 percent and 19.17 percent, respectively. These shares are slightly higher compared to İzmir level data from TurkStat Household Labor Force Survey 2010. Consequently, both labor force participation and employment rates are also slightly different between our sample and İzmir data from Household Labor Force Survey 2010. This gap can be due to random factors associated with different data collection periods of the two surveys by TurkStat. Table 3 also shows the similarities regarding characteristics related to spouses and children.[4]

The third column in Table 3 also exhibits the demographic characteristics of married women in the same age group for Turkey. This comparison is particularly important in order to discuss whether our main findings for İzmir can also be generalized to Turkey. In that context, women in İzmir have higher educational attainment than the same group of women in Turkey. This difference is especially striking with respect to women who finished at least 12 years of schooling. The share of women in this category in our sample is 31.42 percent (36.34 percent in Column 2) whereas the share of women in the same category for Turkey is only 26.13 percent.

This educational gap is also reflected in gaps associated with labor force participation and employment rates between İzmir and the rest of Turkey. The labor force participation rate in our sample is 32.90 percent whereas the rate for the whole country is only 24.80 percent. Similarly, the employment rate for the same group of women in our sample is greater than that for the whole country, 25.90 percent against 21.54 percent in Turkey. The same gap regarding labor force participation and employment rates is also related to lower share of women in İzmir who have at least one child in their household. 25.26 percent of women in the sample have at least one child under 5 years of age and 41.96 percent of them have at least one older child between 5 and 11 years of age. These values are relatively higher in Turkey. 30.84 percent of women in the sample have at least one child under 5 years of age, and 46.27 percent of them have at least one older child between 5 and 11 years of age. The implications of these differences between İzmir and Turkey for married women in urban areas between the ages of 25 and 49 in the context of generalization of the main results are discussed in the concluding section.

Table 4 presents the descriptive statistics for the sample used in this paper. Only 10 percent of the sample are women with a mother-in-law who has worked in a non-agricultural job. Women with an ever-worked mother-in-law are more educated, where the share of women with a tertiary degree is 23 percent. The share of women in the same category is only 11 percent for those without an ever-worked mother-in-law. Another major difference between those with and without ever-worked mother-in-law is observed in terms of the educational attainment of their own parents and parents-in-law. The share of parents who have at least a post-secondary degree is much higher for women with an ever-worked mother-in-law. These observations indicate the possibility of assortative mating according to the socioeconomic status of parents as is discussed in the literature (Morill & Morill, 2013) and justifies the use of these variables as control variables in the regression analysis.

Table 4. Descriptive Sample Statistics

	Total Sample		With Worked Mother-in-law		Without Worked Mother-in-law	
	Mean	SD	Mean	SD	Mean	SD
Age	37.39	6.95	36.87	6.74	37.45	6.98
Educ1 (not finished a school)	0.10	0.30	0.06	0.23	0.11	0.31
Educ2 (5 years)	0.48	0.50	0.42	0.50	0.49	0.50
Educ3 (8 years)	0.10	0.30	0.08	0.27	0.10	0.31
Educ4 (12 years)	0.19	0.39	0.21	0.41	0.19	0.39
Educ5 (more than 12 years)	0.12	0.33	0.23	0.43	0.11	0.31
Child (0-4)	0.25	0.43	0.29	0.46	0.25	0.43
Child (5-11)	0.42	0.49	0.38	0.49	0.42	0.49
Higher educated mother	0.04	0.20	0.17	0.37	0.03	0.16
Higher educated father	0.09	0.29	0.21	0.41	0.08	0.27
Higher educated father-in-law	0.14	0.34	0.31	0.46	0.12	0.32
Higher educated mother-in-law	0.07	0.25	0.29	0.46	0.04	0.20
Higher educated husbands	0.51	0.50	0.53	0.50	0.51	0.50
Husband with secure job	0.64	0.48	0.69	0.46	0.63	0.48
Home-ownership	0.56	0.50	0.50	0.50	0.56	0.50
Worked mother	0.11	0.31	0.45	0.50	0.07	0.25
Worked mother-in-law	0.10	0.30				
Labor Force Participation	0.33	0.47	0.49	0.50	0.31	0.46
Employment Rate	0.26	0.44	0.43	0.50	0.24	0.43
Paid Employment	0.21	0.41	0.36	0.48	0.19	0.40
N	1429	1429	145	145	1284	1284

4.2. Empirical Model

In this section, we describe our model used for estimating the association between the labor market activity of women and work experience of their mothers-in-law.

$$D^{W}_i = X_i B + D^{ML}_i \vartheta + \varepsilon_i$$

D^{W}_i is the dependent variable that captures the labor market status in the baseline probit regression model. It takes 1 if the wife participates in the labor market during the reference period (employed or unemployed) and 0 if not. In the second model, the dependent variable is equal to 1 if the wife is employed and 0 if not. In the last one, the dependent variable takes the value of 1 if the wife is employed as a regular employee in non-agricultural sector, and 0 if not. The dummy variable D^{ML}_i is equal to 1 if the husband's mother has ever worked in a non-agricultural position and 0 otherwise. X is a vector of control variables that are important in order to avoid the possibility that the expected association between married women's labor market activity and work experience of their mothers-in-law can be influenced by relevant socioeconomic background factors. Control variables consist of wife's age, wife's education (four dummy variables for different levels of educational attainment), presence of young children (ages between 0-4 and 5-11), educational attainment of wife's parents, husband's education, husband's economic status, educational attainment of husband's parents, and the ownership of the house. In order to control for the possibility that the married women's labor market activity can also be affected by their own mother's work experience, another dummy variable about women's own mother is included. It takes the value 1 if the married women's own mother has ever worked in a non-agricultural position, and 0 if not.

5. Results

The first estimation investigates the association between work experience of the mother-in-law and the labor market participation of the wife. Table 5 shows the baseline results in column 1 and then the other results including different sets of control variables are presented in columns 2 to 6. The results indicate that the labor force participation of married women is significantly related to the work experience of their mothers-in-law. Having a mother-in-law who has ever worked raises the probability that her daughter-in-law participates in the labor market by 17 percentage points for a woman with average characteristics in the baseline estimation. The most significant control factors turn out to be the level of educational attainment and the presence of young children at home.

The only stable and significant level of educational attainment seems to be the tertiary education. The probability of labor force participation for a married woman with tertiary education rises by 45-49 percentage points compared with those who did not finish the first stage of primary school. The presence of young children has also stable and significant association with women's labor force participation in all specifications. Having a child below 5 years of age and below 12 years age will lower the probability of labor force participation by 20 and 11 percentage points, respectively. After taking into account the impact of all control variables associated with both parental and household background, the presence of a mother-in-law who has worked still raises the probability of labor force participation for women by 11.3 percentage points compared to someone with the mean characteristics of the sample, but whose mothers-in-law have no labor market experience.

Table 5. Labor Force Participation Rate

	1	2	3	4	5	6
Mother-in-law worked	0.17***	0.167***	0.125***	0.126***	0.116***	0.113***
	(0.039)	(0.040)	(0.042)	(0.042)	(0.045)	(0.045)
Age		0.092***	0.081***	0.083***	0.089***	0.093***
		(0.022)	(0.022)	(0.023)	(0.025)	(0.025)
Age squared		-0.001***	-0.001***	-0.001***	-0.001***	-0.001***
		(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Finished 5 years of school			0.037	0.005	0.018	0.021
			(0.046)	(0.046)	(0.049)	(0.050)
8 years			0.069	0.036	0.029	0.032
			(0.058)	(0.058)	(0.063)	(0.065)
12 years			0.103**	0.080	0.093*	0.108*
			(0.051)	(0.052)	(0.056)	(0.059)
More than 12 years			0.471***	0.450***	0.476***	0.489***
			(0.057)	(0.057)	(0.065)	(0.069)
Child 0-4				-0.180***	-0.202***	-0.203***
				(0.035)	(0.038)	(0.038)
Child 5-11				-0.116***	-0.115***	-0.114***
				(0.029)	(0.030)	(0.031)
Parental Background	N	N	N	N	Y	Y
Household Background	N	N	N	N	N	Y
N	1429	1429	1429	1429	1429	1429
Pseudo-R²	0.010	0.022	0.093	0.113	0.128	0.130

Note: Our results show the marginal effects. Standard errors are shown in brackets. The significance of the coefficients is shown as ***, **, * for $p<0.01$, $p < 0.05$, and $p < 0.10$, respectively. Parental background controls consist of educational attainment of both women's own parents and her parents-in-law. Household background controls are educational attainment of the husband, husband's economic status and house ownership.

In our next estimations, we introduce two other dependent variables to check the robustness of our results. The first one captures the probability of employment (Table 6). The choice of this dependent variable is important in terms of comparing our results to other studies in the literature using the probability of employment rather than the labor force (Fernandez, Fogli & Olivetti, 2004). The other dependent variable (Table 7) is the probability of employment exclusively as a regular employee rather than an employer, own account worker, or unpaid family worker. Tables 6 and 7 show that having a mother-in-law who has worked raises the probability of women's employment by 12.6 percentage points, and the probability of being a regular employee in non-agricultural sector by 10.3 percentage points. These associations are statistically significant, even after taking into account relevant socio-economic characteristics of both of women and their husbands including the work experience of women's own mother. Similar to the results in Table 5, the only stable level of educational attainment seems to be tertiary education that has an impact on the probability of employment, and being a regular employee, 43.6 and 35.5 percentage points, respectively. Having young children is also negatively associated with the labor supply behavior of women in both estimations.

Table 6. Employment Rate

	1	2	3	4	5	6
Mother-in-law worked	0.165***	0.163***	0.122***	0.121***	0.128***	0.126***
	(0.039)	(0.036)	(0.037)	(0.037)	(0.040)	(0.040)
Age		0.103***	0.093***	0.096***	0.101***	0.103***
		(0.021)	(0.021)	(0.022)	(0.023)	(0.023)
Age squared		-0.001***	-0.001***	-0.001***	-0.001***	-0.001***
		(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Finished 5 years of school			-0.002	-0.029	-0.017	-0.012
			(0.042)	(0.043)	(0.045)	(0.045)
8 years			0.022	-0.006	0.002	0.010
			(0.054)	(0.054)	(0.058)	(0.059)
12 years			0.057	0.036	0.052	0.065
			(0.047)	(0.047)	(0.051)	(0.054)
More than 12 years			0.406***	0.384***	0.421***	0.436***
			(0.051)	(0.051)	(0.058)	(0.061)
Child 0-4				-0.143***	-0.165***	-0.165***
				(0.033)	(0.035)	(0.035)
Child 5-11				-0.101***	-0.111***	-0.110***
				(0.027)	(0.028)	(0.028)
Parental Background	N	N	N	N	Y	Y
Household Background	N	N	N	N	N	Y
N	1429	1429	1429	1429	1429	1429
Pseudo-R^2	0.013	0.028	0.114	0.131	0.152	0.153

Note: Our results show the marginal effects. Standard errors are shown in brackets. The significance of the coefficients is shown as ***, **, * for p<0.01, p<0.05, and p<0.10, respectively. Parental background controls consist of educational attainment of both women's own parents and her parents-in-law. Household background controls are educational attainment of the husband, husband's economic status and house ownership.

Table 7. Regular Employee

	1	2	3	4	5	6
Mother-in-law worked	0.143***	0.140***	0.100***	0.098***	0.105***	0.103***
	(0.032)	(0.033)	(0.033)	(0.033)	(0.035)	(0.035)
Age		0.068***	0.056***	0.059***	0.065***	0.066***
		(0.019)	(0.019)	(0.019)	(0.020)	(0.021)
Age squared		-0.001***	-0.001***	-0.001***	-0.001***	-0.001***
		(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Finished 5 years of school			-0.027	-0.048	-0.031	-0.028
			(0.039)	(0.039)	(0.041)	(0.041)
8 years			0.030	0.008	0.015	0.020
			(0.048)	(0.048)	(0.052)	(0.053)
12 years			0.048	0.031	0.052	0.063
			(0.043)	(0.043)	(0.045)	(0.048)
More than 12 years			0.337***	0.318***	0.343***	0.355***
			(0.045)	(0.045)	(0.050)	(0.054)
Child 0-4				-0.107***	-0.118***	-0.119***
				(0.029)	(0.031)	(0.031)
Child 5-11				-0.080***	-0.089***	-0.089***
				(0.024)	(0.025)	(0.025)
Parental Background	N	N	N	N	Y	Y
Household Background	N	N	N	N	N	Y
N	1429	1429	1429	1429	1429	1429
Pseudo-R2	0.013	0.023	0.120	0.135	0.157	0.157

Note: Our results show the marginal effects. Standard errors are shown in brackets. The significance of the coefficients is shown as ***, **, * for $p<0.01$, $p<0.05$, and $p<0.1$, respectively. Parental background controls consist of educational attainment of both women's own parents and her parents-in-law. Household background controls are educational attainment of the husband, husband's economic status and house ownership.

Table 8. Own Mother and Mother-in-law

	LFP		Employment		Paid employment	
Mother-in-law worked	**0.113***	**0.116***	**0.126***	**0.141***	**0.103***	**0.121***
	(0.045)	(0.049)	(0.040)	(0.043)	(0.035)	(0.038)
Own mother worked		*0.010*		*0.042*		*0.052*
		(0.048)		(0.043)		(0.038)
Age	0.093***	0.093***	0.103***	0.103***	0.066***	0.066***
	(0.025)	(0.025)	(0.023)	(0.023)	(0.021)	(0.020)
Age squared	-0.001***	-0.001***	-0.001***	-0.001***	-0.001***	-0.001***
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Finished 5 years of school	0.021	0.022	-0.012	-0.011	-0.028	-0.026
	(0.050)	(0.050)	(0.045)	(0.045)	(0.041)	(0.041)
8 years	0.032	0.033	0.010	0.011	0.020	0.022
	(0.065)	(0.065)	(0.059)	(0.059)	(0.053)	(0.053)
12 years	0.108*	0.108*	0.065	0.067	0.063	0.065
	(0.059)	(0.059)	(0.054)	(0.054)	(0.048)	(0.048)
More than 12 years	0.489***	0.490***	0.436***	0.440***	0.355***	0.359***
	(0.069)	(0.069)	(0.061)	(0.061)	(0.054)	(0.054)
Child 0-4	-0.203***	-0.204***	-0.165***	-0.165***	-0.119***	-0.119***
	(0.038)	(0.038)	(0.035)	(0.035)	(0.031)	(0.031)
Child 5-11	0.114***	-0.114***	-0.110***	-0.111***	-0.089***	-0.090***
	(0.031)	(0.031)	(0.028)	(0.028)	(0.025)	(0.025)
Parental Background	Y	Y	Y	Y	Y	Y
Household Background	Y	Y	Y	Y	Y	Y
N	1429	1429	1429	1429	1429	1429
Pseudo-R2	0.130	0.130	0.153	0.154	0.157	0.159

Note: Our results show the marginal effects. Standard errors are shown in brackets. The significance of the coefficients is shown as ***, **, * for $p<0.01$, $p<0.05$, and $p<0.10$, respectively. Parental background controls consist of educational attainment of both women's own parents and her parents-in-law. Household background controls are educational attainment of the husband, husband's economic status and house ownership.

In the next estimation (Table 8), we include the work experience of women's own mothers in order to examine the possibility that working mothers can set an example for their own daughters' future labor force participation, independently of the impact associated with the mother-in-law. Morill and Morill (2013) also suggest that although the actual intergenerational transmission mechanism takes place from mothers to their own daughters; it can still be detected statistically, as if it were the impact of mothers-in-law, because marital sorting by mother's employment can lead to marriages in which both partners have mothers who have worked. Having a mother-in-law who has ever worked raises the probability that her daughter-in-law participates in the labor market by 11-14 percentage points compared to a woman without a mother-in-law who has worked and neither the significance nor the magnitude of this association essentially changed after including the work experience of women's own mother.

When the work experience of women's own mother is used as the only representative of the intergenerational transmission mechanism in the estimation (Table 9), this variable turns out to be significant only if used as a single variable without controlling for either women's own characteristics or background factors. However, the same impact becomes statistically insignificant and much smaller once we introduce control variables such as women's own education. This result is also compatible with the findings of Johnston et al. (2014), and Lie and Liu (2019) showing that working mothers indirectly influence their daughter's labor supply behavior by providing them with higher levels of educational attainment.

Table 9. Labor Force Participation (Own Mother Only)

	1	2	3	4	5	6
Own Mother Worked	*0.145****	*0.138****	*0.050*	*0.042*	*0.031*	*0.029*
	(0.035)	(0.035)	(0.038)	(0.038)	(0.044)	(0.045)
Age		0.039**	0.042**	0.059***	0.089***	0.093***
		(0.019)	(0.020)	(0.021)	(0.025)	(0.025)
Age squared		-0.001**	-0.001**	-0.001***	-0.001***	-0.001***
		(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Finished 5 years of school			0.074*	0.040	0.019	0.023
			(0.045)	(0.046)	(0.049)	(0.050)
8 years			0.127**	0.085	0.025	0.030
			(0.055)	(0.056)	(0.063)	(0.064)
12 years			0.193***	0.156***	0.092	0.109*
			(0.049)	(0.050)	(0.056)	(0.059)
More than 12 years			0.598***	0.542***	0.470***	0.487***
			(0.054)	(0.055)	(0.065)	(0.069)
Child 0-4				-0.256***	-0.199***	-0.200***
				(0.034)	(0.038)	(0.038)
Child 5-11				-0.160***	-0.115***	-0.114***
				(0.028)	(0.030)	(0.030)
Parental Background	N	N	N	N	Y	Y
Household Background	N	N	N	N	N	Y
N	1429	1429	1429	1429	1429	1429
Pseudo-R2	0.007	0.026	0.123	0.159	0.124	0.126

Note: Our results show the marginal effects. Standard errors are shown in brackets. The significance of the coefficients is shown as ***, **, * for p<0.01, p < 0.05, and p < 0.10, respectively. Parental background controls consist of educational attainment of both women's own parents and her parents-in-law. Household background controls are educational attainment of the husband, husband's economic status and house ownership.

Lastly, we also examine the presence of the association above between a woman's and her mother-in-law's labor market activity across women with differential educational attainment. Lie and Liu (2019) show that the weak association for women with higher educational attainment can be accounted for by the higher opportunity cost of their exclusion from the labor market. This group of women tends to be more active in the labor market independently of their mother-in-law's labor market activity given the sufficiently high income they are expected to earn in the labor market. Moreover, Cindoğlu and Toktaş (2002) show that

women with higher educational attainment tend to have non-pecuniary benefits, such as higher prestige and bargaining power, both within the household and in the public sphere.

Table 10 shows that among lower educated women, having a working mother-in-law is significantly associated especially with the probability of women's employment and of being a regular employee, even though the magnitudes are not very different from the ones for the whole sample. Having a mother-in-law who has worked increases the likelihood of women's employment by around 12 percentage points as against other women with the average characteristics, but who do not have ever-worked mothers-in-law. Similar to the results for the whole sample, among lower educated women having young children is also negatively associated with women's labor market activity. Having a mother-in-law, who has worked increases the likelihood of women's labor market activity. The impact of having a working mother-in-law loses its statistical significance for women with higher educational attainment (Table 11). Another significant correlate for this group of women turns out to be the presence of young children as in all other groups. A college degree also has a very strong impact on the probability of women's labor market engagement. Accordingly, having tertiary education raises this probability by 38-44 percentage points against other women who have finished a post-secondary education.

Table 10. Lower Educated Women (Up to Lower Secondary)

	LFPR	Employment	Paid Employment
Mother-in-law worked	**0.076**	**0.125***	**0.122***
	(0.055)	(0.046)	(0.038)
Own mother worked	0.025	0.023	0.040
	(0.057)	(0.050)	(0.043)
Age	0.082***	0.094***	0.049**
	(0.027)	(0.025)	(0.021)
Age squared	-0.001***	-0.001***	-0.001**
	(0.000)	(0.000)	(0.000)
Finished 5 years of school	0.029	-0.004	-0.013
	(0.044)	(0.038)	(0.032)
8 years	0.039	0.016	0.028
	(0.057)	(0.049)	(0.041)
Child 0-4	-0.203***	-0.161***	-0.108***
	(0.045)	(0.042)	(0.035)
Child 5-11	-0.102***	-0.102***	-0.070***
	(0.033)	(0.029)	(0.025)
Parental Background	Y	Y	Y
Household Background	Y	Y	Y
N	879	878	878
Pseudo-R2	0.059	0.077	0.062

Note: Our results show the marginal effects. Standard errors are shown in brackets. The significance of the coefficients is shown as ***, **, * for p<0.01, p<0.05, and p<0.10, respectively. Parental background controls consist of educational attainment of both women's own parents and her parents-in-law. Household background controls are educational attainment of the husband, husband's economic status and house ownership.

Table 11. Higher Educated Women (Post-secondary and Tertiary)

	LFPR	Employment	Paid Employment
Mother-in-law worked	**0.150**	**0.142**	**0.079**
	(0.089)	(0.086)	(0.081)
Own mother worked	-0.066	-0.080	-0.084
	(0.080)	(0.078)	(0.074)
Age	0.136***	0.146***	0.139***
	(0.051)	(0.051)	(0.049)
Age squared	-0.002***	-0.002***	-0.002***
	(0.001)	(0.001)	(0.001)
More than 12 years	0.412***	0.443***	0.379***
	(0.060)	(0.058)	(0.054)
Child 0-4	-0.210***	-0.185***	-0.164***
	(0.066)	(0.064)	(0.061)
Child 5-11	-0.124**	-0.108*	-0.121**
	(0.062)	(0.061)	(0.057)
Parental Background	Y	Y	Y
Household Background	Y	Y	Y
N	417	417	417
Pseudo-R2	0.159	0.124	0.126

Note: Our results show the marginal effects. Standard errors are shown in brackets. The significance of the coefficients is shown as ***, **, * for p<0.01, p<0.05, and p<0.10, respectively. Parental background controls consist of educational attainment of both women's own parents and her parents-in-law. Household background controls are educational attainment of the husband, husband's economic status and house ownership.

6. Conclusion

We find that women's and their mothers-in-law's labor market behavior are strongly associated and the strength of this intergenerational correlation is more visible among women with lower educational attainment. This correlation retains its significance even after controlling for background factors such as the educational attainment of both the parents and the parents-in-law, household-specific characteristics and husbands' socio-economic status. The econometric estimations show that the probability of labor market activity for women with a mother-in-law that has work experience increases by 11 percentage points. The magnitude of the intergenerational correlation is similar to the findings in other relevant contexts: 15% for Mexico (Campos-Vasquez & Velez-Grajales, 2014), 10% for Greece (Papapetreou & Tsalaporta, 2018), 8% for Switzerland (Bütikhofer, 2013), and 9% for China (Lie & Liu, 2019). We also show that there is strong association between work experience of mothers-in-law and the women's probability of being employed in general and being employed as a regular employee in non-rural sector. The same association is also much more significant than the independent impact of women's own mother on their daughter's labor market behavior. Mothers who have ever worked are indirectly associated with their daughter's labor market behavior through the enhancement of their daughters' educational attainment.

One plausible mechanism (Fernandez et al., 2004) for the aforementioned intergenerational correlation comes from the pivotal role of husbands, in regard to acquiring non-traditional gender role attitudes favorable to women working outside the home, and/or the development of skills suitable to housework because of being a son of a woman active in the labor market. Although the findings of this paper provide empirical evidence for the presence of the intergenerational transmission in the labor market, yet, the same results cannot precisely specify which mechanism(s) account for the aforementioned intergenerational transmission mechanism, due to the lack of explicit data on attitudes in our sample.

As discussed previously, the results of this paper are derived only from data in İzmir, a city where women on average are more educated, and, hence, more active in the labor market than in the rest of the country. Therefore using only data from İzmir can limit the possibility of generalizing the findings of this paper to the rest of the country. Our results, however, also show that the strong intergenerational association is found exclusively among lower educated households, which points to the importance of attitudes as a

plausible mechanism underlying the intergenerational transmission. Therefore, our findings regarding the intergenerational association from İzmir, primarily among lower educated women, can also have important implications for other urban parts of Turkey where relatively lower levels of educational attainment limit women's participation in the labor market. This finding is also compatible with the results of a recent work on the long-term correlates of female labor force participation in Turkey by Tunalı et al. (2019). Tunalı et al. (2019) emphasize the weakening role of culture among lower educated women in urban areas that is supposed to operate as a barrier to their participation in the labor market.

On the one hand, the recent rise in the female labor force activity among lower educated women will have positive implications in terms of enhancing growth potential of the economy and improving the bargaining position of women both within and outside the home. Women's labor market experience will support this process, and simultaneously the experience can transform their sons' attitude and/or household productivity as suggested by Fernandez et al. (2004). On the other hand, the same intergenerational transmission from mothers to sons should also be taken with a caveat, because this transmission generally results in a shift of control over women's decisions about their labor market behavior from her own family to her husband and/or his family (Dildar, 2015).

Disclosure Statements

1. The authors of this article confirm that their work complies with the principles of research and publication ethics.

2. No potential conflict of interest was reported by the authors.

3. This article was screened for potential plagiarism using a plagiarism screening program.

End Notes

1. Authors'own calculations based on GDP per capita (constant 2010 US$) data from World Development Indicators (WDI).

2. The data utilized in this paper comes from İzmir Labor Market Household Survey conducted in İzmir during the summer (July-August) of 2010 (Oğus-Binatlı et al., 2011). The questionnaire is jointly prepared by researchers from Turkish Statistical Institute (TurkStat) and İzmir University of Economics. The survey is an extended version of the standard questionnaire used by TurkStat for National Labor Force Surveys. The survey covers the whole city of İzmir and only private households are surveyed. All household members 15 years of age and over are included. The sampling frame is the National Address Database that is based on the 2007 Address Based Population Registry System. The sampling design is a two-stage stratified (urban and rural) cluster sampling. Results of the household Labor Force Survey have been weighted by the most recent population projections adjusted for nonresponse. The data are collected using Computer Assisted Personal Interviewing (CAPI). Overall response rate is 90.3%.

3. We have also run the same regression for various age groups such as 20-49 and 20-54. The main results do not change substantially and they are available from the authors upon request.

4. The data in our sample was collected in July and August of 2010 whereas the data for the National Survey were collected every month throughout the year.

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