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### **Children and Female Employment in Mongolia**

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## **Abstract**

Although a large body of literature has argued that motherhood has a profound and long-lasting negative effect on the employment and earnings of women, there is little evidence focusing on the post-communist region. This paper exploits the latest round of the EBRD-World Bank Life in Transition Survey (LiTS) and of the Mongolian National Statistics Office Household Socio-Economic Survey (HSES) to examine the correlation between the presence of children of different age categories in a family and female employment in Mongolia in 2016. We examine the availability of childcare, social norms and attitudes towards women, as well as household decision-making as potential explanations. We find that small children decrease the probability of female employment relative to women with no small children. In particular, women with two children aged one to six years are 21.5 percentage points less likely to be employed. Our results also suggest that cultural biases against women may be – at least partially – responsible for the low female employment levels which we uncovered. These results are unlikely to be driven by omitted variable bias.

**JEL-Classification:** J16, J13, J20

**Keywords:** children, female employment, Mongolia, women



## **1. Introduction**

A large body of literature has confirmed that gender inequality in employment has strong negative effects on GDP growth. Multiple studies show that gender-related barriers to employment impose a significant tax on female labor, and that closing this gender gap could increase GDP by an average of 35% (Klasen and Lamanna 2009; Elborgh-Woytek et al. 2013; Ostry et al. 2018). A widely accepted hypothesis relates gender-based discrimination in the labor market to the presence of children in the household (Hersch 2006; Neumark and McLennan 1995). But how does motherhood affect female wages and employment? One strand of the scholarship argues that the relationship is negative. For instance, research from industrialized countries shows that following childbirth, the (long-run) gender gap in income and wages increases significantly and is driven by hours worked, participation and wage rates (Angelov et al. 2016; Kleven et al. 2019; Bertrand et al. 2010). Yet, another strand of the literature concludes that fertility does not affect female employment. Various studies (using a broad sample of developing and (a few) transition countries) find no relationship between having children and female labor force participation (Aguero and Marks 2008; Aaronson et al. 2017; Heath 2017).

It is unclear, however, if the conclusions from this literature may be directly applicable to countries in the post-communist region<sup>1</sup>. The shock of socialism rapidly increased female labor force participation in Eastern Europe and Central Asia, an effect which persists – to varying degrees in different countries – until today. Communist countries promoted an ideology of gender equality, also reflected by legal changes, universal schooling, and policies to promote the compatibility of employment with having small children. Increased labor demand due to wide-spread inefficiencies also encouraged more women to join the labor force (Klasen 2019). Nevertheless, given the lower quality of legal institutions in many transition countries, the negative effect of motherhood on female employment and earnings may be even stronger compared to that in rich countries.

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<sup>1</sup> Aaronson et al. (2017) include the largest number of transition countries, but even in this study the countries and years covered are not comprehensive. For instance, Mongolia is only covered for the year 2000. Other transition countries include: Albania (2008), Armenia (2000, 2001, 2005, 2010, 2011), Azerbaijan (2006), Moldova (2005), Belarus (1999, 2009), Hungary (1990, 2001, 2011), Kazakhstan (1995, 1999), Kyrgyz Republic (1999, 2009 and 2012), Poland (2002), Romania (1992, 2002 and 2011), Tajikistan (2012), Ukraine 2007, and Uzbekistan (1996).

The case of Mongolia not only poses a major gap in literature, but is also particularly interesting and relevant for the following five reasons. First, Mongolia has been undergoing rapid economic growth driven by a dramatic expansion of mining activities and the exploitation of natural resources supported by public spending (Locatelli 2019). Second, Mongolia has relatively low labor force participation rates as well as historically strong informal and animal husbandry sectors, and few high-productivity jobs compared to other transition economies. Unemployment rates are also relatively low (Shatz et al. 2015). Third, despite the well-documented progress with regards to gender-related issues, such as in the spheres of health and education, significant gender inequality in the labor market persists. In fact, women ought to be experiencing a favorable gender gap if returns to education were equal for men and women, given that on average women are better educated (Pastore 2010; World Bank 2013). Moreover, compared to similar economies in the region, a larger share of women in Mongolia carries out unpaid work and very few women are self-employed (World Bank 2013). Fourth, the mechanisms behind the persisting disparities and gender asymmetries in Mongolia have not been sufficiently studied. As a result, little empirical evidence exists on the nexus between the labor market and cultural norms that affect gender roles, household decision-making and attitudes towards women. Fifth, in the absence of data and quantitative analyses, the design of effective policies addressing the aforementioned issues is challenging. Considering that the only existing studies on this topic draw from survey data collected in 2002–2009, the analysis of more recent data presents a unique opportunity to inform academics and policymakers alike (Dandarchuluun and Choi 2019; Pastore 2010; World Bank 2013).

Using the latest round of the Life in Transition Survey (LiTS), a nationally representative household, attitudes and values survey administered jointly by the EBRD and the World Bank, we investigate the relationship between female employment, the number of children in a household, household decision-making, and attitudes towards women in Mongolia in 2016. We also replicate the analyses using the first round of the LiTS, conducted in 2006. For further robustness, we replicate our employment analysis using the 2016 wave of the Household Socio-Economic Survey (HSES) collected by the Mongolian National Statistics Office. The HSES covers significantly more households (16,500 compared to 1,500 in the LiTS) and is representative on a lower administrative level, but does not include any data on social norms.



The analyses based on the 2016 LiTS and HSES data show that while the presence of older children (aged 6–17) has no effect on female employment, having young children (aged 0–1 and 1–6) decreases female employment significantly. The presence of household members who are elderly or with disabilities is not correlated with women's employment, which suggests that it is caring after small children that depresses female employment.

Of course, an important question is whether women's income and wage levels also followed a similar trend. Unfortunately, this is a question that we cannot fully answer, since information on employment income in the LiTS is only available for 802 out of 3,000 respondents (of which 1,303 respondents indicated that they worked for income in the past 12 months), which limits the relevant sample considerably. In addition, respondents are asked to report net income (per pay period), which likely introduces significant measurement error in the responses.

We then delve into some of the reasons behind why women with small children may work less. Recent data show that only 33.8% of children under age 7 attend daycare (either public or private), suggesting that the availability, take-up and/or quality of daycare in Mongolia may be an issue. Likewise, women with small children (1–6) have less bargaining power regarding their social life compared to women without small children. At the same time, attitudes towards women are not always welcoming. For example, men hold less liberal views when it comes to the role of women as business executives.

An important caveat is that the LiTS is *not* an individual panel. As a result, we are unable to account for fixed unobservable characteristics at the individual level (such as ability, ambition or charisma), or time-varying characteristics (such as attitudes towards work) that may drive both the decision to have children and to enter and stay in the labor market (Clarke 2018). The literature has developed a variety of instruments to deal with these issues, but, unfortunately, we are unable to adopt them due to the lack of data in the LiTS.<sup>2</sup> This means that all effects identified in this paper should be interpreted as correlations only.

Another caveat of the LiTS data is that it does not allow the direct identification of the household head, since the primary and secondary respondents were randomly selected adults of the opposite gender. Therefore, the LiTS regressions provide information on the relationship

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<sup>2</sup> These IVs include infertility shocks (Aguero and Marks 2008), miscarriages (Hotz et al. 2005), IVF treatment outcomes (Lundborg et al. 2014), preferences for mixed-sex sibling composition, and twin births (Angrist and Evans 1998, Bisbee et al. 2018, Cruces and Galiani 2007).

between the presence of children in a household and the employment probabilities of female household members, including non-mothers. To approximate the likelihood of the respondents being the parents of the children in the survey, we run the regressions on a limited sample in which we exclude any underage household members who are not children of the household head.

To minimize the confounding effects of unobservables and reverse causality, we adopt two strategies. To account for the fact that employment patterns (for both women and men) may be driven by regional factors, such as industrial concentration or geographic suitability for agriculture, we include dummies at the levels of sub-national regions. In addition, we control for a battery of individual-level characteristics that are likely correlated with unobserved characteristics, such as the respondent's education, their father's education, health, household income, household size, age, urban residence and marital status (the latter variable is only available in 2016). However, some of the control variables are endogenous, and there is the possibility of selection due to missing observations. What is more, it is unlikely that controlling for observables will completely eliminate the problem of omitted variable bias.

Therefore, we adopt a second strategy. We apply the insight of Oster (2019) to understand what the impact of unobservables has to be in order to explain away the results in the LiTS data. We find that unobservables would have to be between 1.3 and 16.4 times more important than observables (and their impact on the dependent variable would have to be in the opposite direction) to explain away the negative coefficient of presence of small children on female employment in 2016. This is unlikely, suggesting that even in the light of remaining omitted variable bias, the results still stand.

The paper contributes to a growing and important literature linking motherhood and female labor outcomes around the world (in developed countries: in addition to the references above, see also Addabbo et al. 2015, Kuziemko et al. 2018, Gallen 2018 and Correll et al. 2007; in transition countries, see Ganguli et al. 2014 and Nizalova et al. 2016). It also complements research showing that excluding women from the labor force affects negatively economic performance (see, for instance, Lagarde and Ostry (2018) for an overview). We discuss in more detail the implications of this paper for the broader debate on gender equality and economic growth in the conclusion, where we also elaborate on how the research findings may be applicable beyond the Mongolian context.

## **2. Conceptual framework and previous literature**

Traditionally, economics has explained the gender division of labor using Becker's (1991) model of the family, which – at the risk of oversimplifying – is briefly summarized here. Becker's argument is that due to family gains from specialization, men engage in paid employment while women – who stay at home – specialize in household production and childrearing. Women may re-enter the labor force part-time if domestic work permits this, something which is more likely to be the case earlier or later in a marriage, when child rearing demands less of their time. Women have an inherent comparative advantage in household skills, since they are biologically more suited to caring for very young children. Becker further argues that this 'advantage' of women is compounded by the fact that there are increasing returns to human capital – women get better and better at household production as time goes by, while men get better at paid work. In addition, parents will prefer to socialize their children into prevailing gender roles, thus perpetuating societal gender stereotypes. Interestingly, recent work has found that Becker's insights are more applicable to developed rather than to developing countries, due to occupational change shifts that come with development. As economies develop, women transition from agricultural work to self-employment and urban wage work, and the latter two are less compatible with raising children (Aaronson et al. 2017).

An important problem with the Becker model is that it treats the family as a unitary actor. Iversen and Rosenbluth (2006) point out two additional shortcomings. First, it fails to account for the wide variation in female labor force participation in economies at roughly equal levels of development. And second, it cannot explain why there is so much variance in housework among the sexes after accounting for differences in hours worked and wages. Iversen and Rosenbluth (2006) present an alternative framework which instead argues that marriage is an incomplete contract that may be terminated. In this setting, bargaining between the spouses determines the extent to which women specialize in household and reproductive labor as opposed to paid employment. There are various factors that affect women's outside options and bargaining power, such as: the (potential or actual) labor market earnings of each spouse; probability of divorce; whether the labor system emphasizes specific or general skills<sup>3</sup>; and the provision, quality and cost of childcare.

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<sup>3</sup> Labor systems which emphasize general versus specific skills are better suited for women, who may be reluctant to invest in specific skills because of anticipated career breaks due to childrearing (Iversen and Rosenbluth 2006).

Given that women tend to bear the lion's share of housework and childrearing (Elson 1999), the number and age of children in the household will have an important role to play when it comes to women's employment and bargaining power. Gender norms against working mothers will diminish women's bargaining power and keep them at home. Childcare facilities which are expensive and/or of low-quality and the lack of job flexibility or part-time working arrangements will have a similar effect. Since young children require significantly more care than older children, these factors will make women with small children more likely to exit the labor force or to work part-time. In addition, pregnant women or young mothers may be forced out of the labor market due to discrimination (e.g., Altonji & Blank 1999). A related question is whether it is in fact profitable for firms to get rid of young mothers as they are less productive. The literature on this issue is divided, with Krapf et al. (2017) finding no effect of motherhood on productivity, with an opposite conclusion reached by Gallen (2018). Kuziemko et al. (2018) provide an altogether different explanation for why women may be less likely to work following motherhood. When making human capital decisions, modern women underestimate the employment costs of motherhood, and once they have children adopt more conservative views of working mothers, reporting that parenthood is harder than they expected.

A growing literature has shown that women's labor force participation decreases sharply when they become mothers. In the US, Bertrand et al. (2010) show that female MBA graduates with children work 24% fewer weekly hours compared to their male counterparts, while women without children work only 3.3% hours less, despite MBA mothers being positively selected in terms of their pre-children earnings. The timing of these changes is no coincidence: the careers of MBA mothers slow down within a few years of the first birth. Interestingly, new MBA mothers with higher-earning spouses reduce their labor supply considerably more relative to those with lower-earning spouses, which is in line with the bargaining model discussed above.

In Denmark, Kleven et al. (2019) use within-family variation to find that while the careers of women and men evolve in parallel until the birth of the first child, they diverge sharply immediately after childbirth, and do not converge again. The long-run child penalty in earnings in Denmark over the period 1980–2013 was 20%, and is due to differences in labor force participation, hours of work and the wage rate, in roughly equal proportions. Strikingly, inequality due to children seems to account for the majority of overall gender inequality. In

particular, the authors find that after having children, women (but not men) choose jobs that favor family amenities versus pecuniary rewards. Just after the birth of the first child, women start falling behind in the occupational ladder, and are less likely to become managers. Women with children also prefer to work for places that are more family-friendly (e.g., those in the public sector or those which have women with young children in the management). Importantly, child penalties are transmitted through generations: female labor supply is strongly related to the labor history of the maternal – but not paternal – grandparents.<sup>4</sup>

What is the relationship between children and female employment in the transition region? The evidence on the topic is sparse. Ganguli et al. (2014) define the motherhood gap as the difference in employment rates between women without children and women with three or more children, and estimate it for a number of developing and transition countries using the Integrated Public Use Microseries Dataset (IPUMS) of the University of Minnesota which is based on country censuses. Unfortunately, most of the data covers the late 1990s and early 2000s; the latest year in the data set is for South Africa (2007), while for Mongolia the only available data is for 2000. The authors find that the motherhood gap is widest in Chile, Costa Rica and Argentina, and is lowest in Ghana, Kenya and Rwanda, where women with children work *more* than men with children (there are no calculations for Mongolia). Hungary and Belarus are the best and worst transition countries in this ranking. In cross-country regressions, there is no significant relationship between the motherhood gap and GDP, urbanization, labor market rigidity, or women's overall labor force participation.

Nizalova et al. (2016) examine the motherhood wage penalty in Ukraine using the Ukrainian Longitudinal Monitoring Survey from 1997 to 2007. Surprisingly, the authors show that it is around 19%, which is comparable to or even lower than that in continental Europe and Ireland (where it ranges from 20% to 33%). Approximately half of the wage penalty is due to discrimination against mothers. While Ukraine has a long maternity leave, good network of mainly subsidized childcare centers, and significant involvement of grandparents in childrearing, it also displays a poor legal environment and strong norms against working mothers. Attitudes towards women and the legal situation are a problematic issue in Mongolia too, where despite having equal rights enshrined in the constitution, the country's legislation

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<sup>4</sup> What is even more interesting is that the majority of the Danish public believes that women with children living at home should not work full-time, views that are very similar to those held by UK and US respondents.

does not mandate equal treatment of women in workplaces with respect to hiring practices or remuneration, and existing anti-discriminatory laws are often not upheld (Schmillen and Weimann-Sandig 2018).

As Nizalova et al. (2016) point out, there are only a handful of studies focusing on the motherhood wage penalty and employment gap in the post-communist region, and to our knowledge, no study focuses specifically on the motherhood employment gap in Mongolia. However, using a school-to-work transition survey from 2006, Pastore (2010) finds that in Mongolia, the gender wage gap increases with age, and becomes large and statistically significant for women of child-bearing age. Dandarchuluun and Choi (2019) also find evidence for a negative effect of universal child benefits on the labor force participation of women.

### **3. Background: Mongolia, women and labor**

Mongolia's geography and social organization are highly unique: the country is the most sparsely populated one in the world, with little arable land and a great area covered by steppes. Many Mongolians (around 30%) are nomadic or semi-nomadic, and their main occupation is breeding livestock. 60% of the population lives in cities, with 40% residing in Ulaanbataar (the capital), and 20% in the three other biggest cities. Many nomads have chosen to migrate to the cities, settling in informal tent-dwelling ger districts on the city outskirts. For instance, in Ulaanbatar 60% of the population lives in ger districts, where poverty and unemployment are rampant (Nikolova et al. 2012).

At the same time, Mongolia's history and economic development are tightly intertwined with the rest of the world. Just like much of Eastern Europe and Central Asia, Mongolia was under communist rule for more than half a century, which ended in 1992. The country's economy is highly dependent on natural resources. In 2016, mining accounted for one fifth of Mongolia's GDP and government revenues and for 90% of export earnings.<sup>5</sup> Starting in 2003, Mongolia's growth rate ranged between 7%–11%, however, by 2016, growth was down to 2.4%, and in 2017 it was 1.2%.<sup>6</sup> The same year, Mongolia was also forced to undertake its sixth IMF rescue package due to a fall in commodity prices and investor expectations.

As early as the thirteenth century, highly influential Mongolian women controlled a large portion of material and human resources. Women acted as political advisors to men, participated and supported policies in nomadic assemblies, and engaged in diplomacy, often on their own. Several widows replaced their husbands as rulers (Broadbridge 2018, p. 2–3). Today, gender discrimination in Mongolia is in many aspects – at least on paper – not apparent (OECD 2019). For example, in 2018, 54.7% of males were enrolled in university, while the corresponding figure for females was 76.7% (the figures for East Asia were 50.5% for women and 43.0% for men), which has produced a 'reverse gender gap' in education (World Bank 2020). Nevertheless, the education premium does not translate into higher earnings and according to Pastore (2010), returns to education in Mongolia are lower by 12% for women

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<sup>5</sup> See <https://eiti.org/news/mongolia-where-to-from-here>.

<sup>6</sup> World Bank, <https://data.worldbank.org/indicator/NY.GDP.MKTP.KD.ZG?locations=MN>.

compared to men. This is reiterated by the World Bank (2013, p.19), which reports that men earn 1.2 times higher wages compared to women, and that the gap “is due to the fact that the market values men and women’s work differently rather than due to differences in observed characteristics”. If women’s work were to be valued equally based on observable characteristics, “women would earn more than men because they have better characteristics than wage working men” (World Bank 2013, p.19).

According to the UNDP Gender Inequality Index (2019), which takes into account factors such as maternal mortality, adolescent birth rates, share of seats in parliament held by women, level of education, and labor force participation, Mongolia scored 0.322 in 2018 (full equality corresponding to a value of 0) and therefore ranked significantly lower than comparable post-Soviet economies, such as Kazakhstan (0.203), Russia (0.255) or Uzbekistan (0.303), as well as the East Asian region (0.310) as a whole. Until 2008, women were prohibited from an extensive range of employment opportunities (e.g., driving vehicles with more than 25 passengers, working as machinists, or butchering cattle) (World Bank 2013). Like in the rest of the world, men dominate political and business positions. In Mongolia’s current parliament, only 13 out of 76 MPs are women.<sup>7</sup> In the private sector, women comprise only 30% of middle-level managers and 15% of managers in high-level positions.<sup>8</sup> Mongolian women spend roughly twice as much as men on household chores and childcare, even when they work outside the house (World Bank 2013). This situation represents a ‘double burden’ or ‘second shift’ for working women (Hochschild 1990).

While the unemployment rate does not exhibit any specific gender patterns and has in fact been marginally lower for women (4.8%) compared to men (5.8%) (data as of 2018), women’s overall participation in the labor force is between 50% and 55%, and men’s labor force participation is about 10 percentage points higher (World Bank, 2020; Schmitten and Weimann-Sandig 2018)<sup>9</sup>. The gap in labor force participation has also been steadily increasing following

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<sup>7</sup> See <http://archive.ipu.org/wmn-e/ClaSSif.htm> (data as of January 2019).

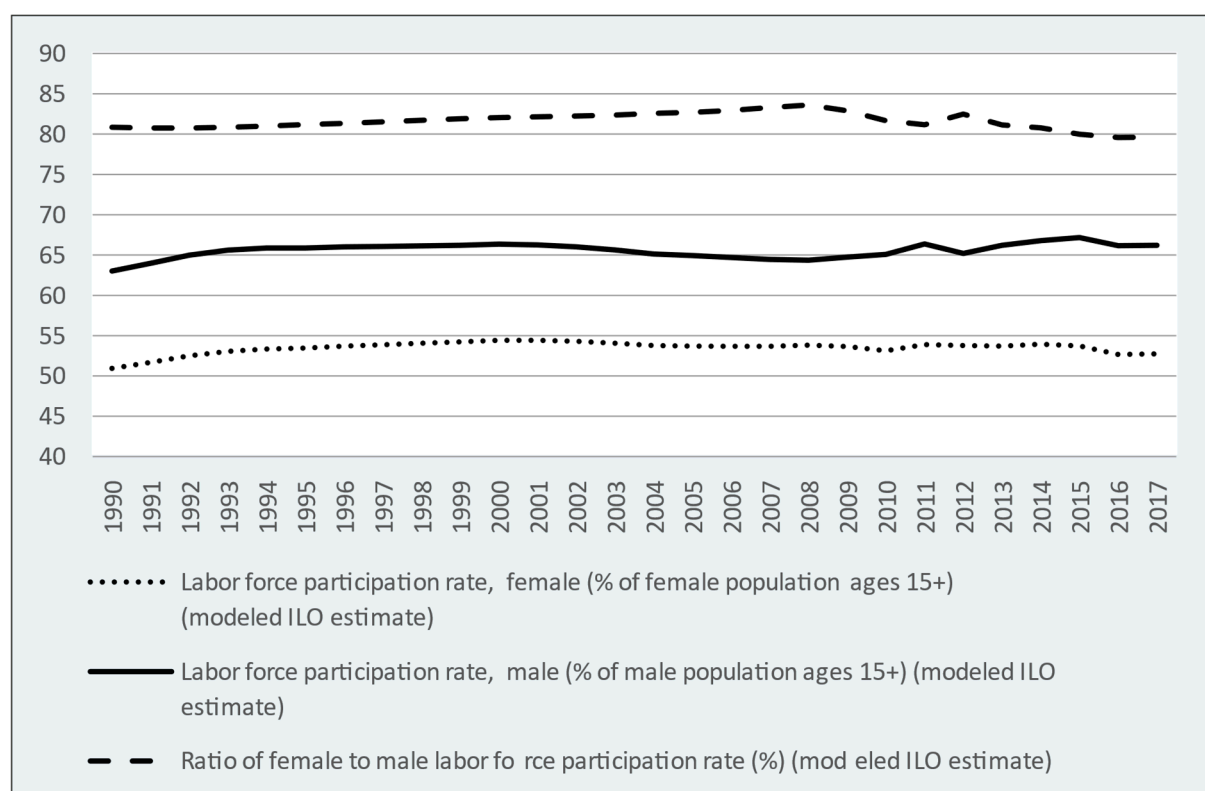
<sup>8</sup> See <http://www.mn.undp.org/content/mongolia/en/home/presscenter/articles/2016/10/31/beyond-the-glass-ceiling-expanding-female-leadership-in-mongolian-politics-and-businesses.html> (Oct 31, 2016).

<sup>9</sup> The figures for comparable countries of the former Soviet Union and East Asia show different patterns during the 2010–2019 period. Compared to Mongolia, labor force participation rates were on average higher for both women (60%) and men (75%), and the gender gap was relatively stable. Unemployment rates had more variation across countries – for example, in Kazakhstan male unemployment was at 4.0–4.9% and female unemployment was noticeably higher at 5.2–6.6%, yet the East Asian averages were lower for women at 3.4–3.8% compared to 4.1–4.5% for men (World Bank 2020).



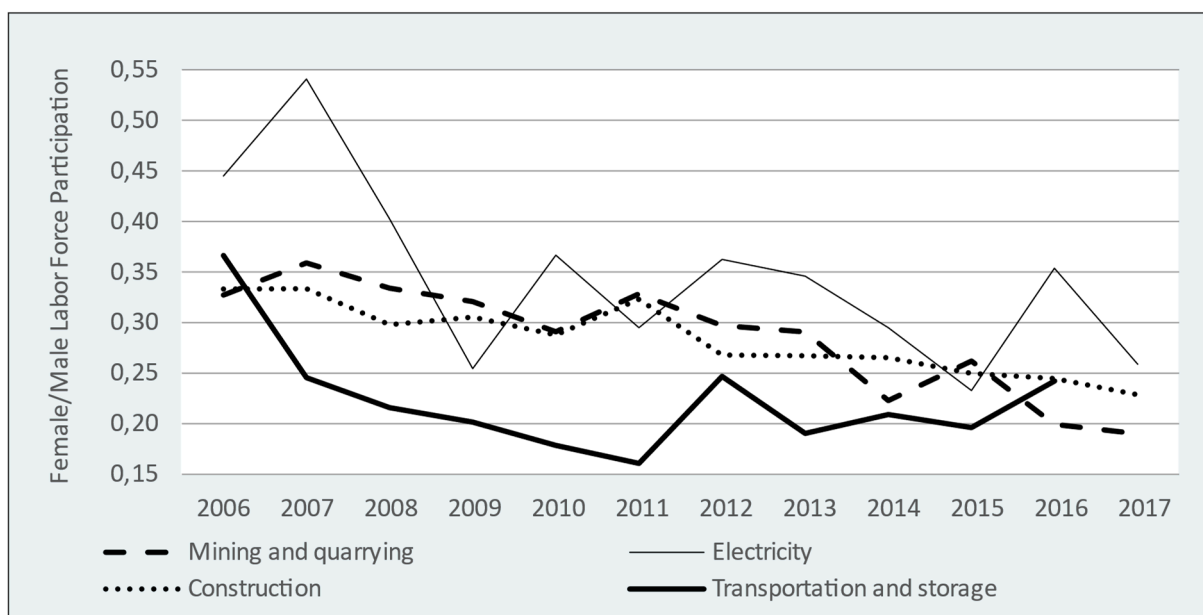
the dissolution of the Soviet Union and reached levels more than twice as high in 2015 compared to 1996. This phenomenon was further exacerbated by the aftermath of the 2008 financial crisis (Figure 1). According to Schmitten and Weimann-Sandig (2018), the gender gap in labor force participation is due to childcare and household duties, which 30% of women report as the main cause of inactivity, compared to 6.4% of men.

**Figure 1: Employment by gender, Mongolia, 1990–2017**



Source: World Bank Open Data. Note: Labor force participation rate is the proportion of the population ages 15 and older that is economically active: all people who supply labor for the production of goods and services during a specified period.

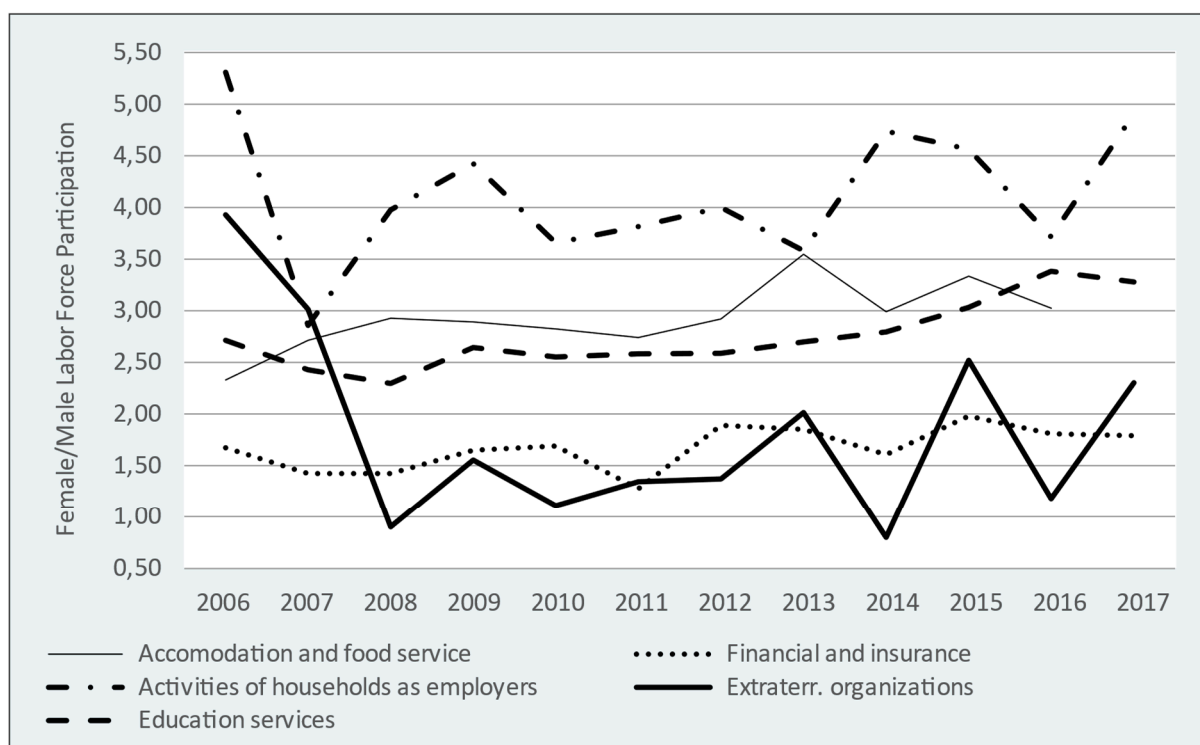
Even so, these figures mask considerable differences across sectors. For example, in mining and quarrying, a traditionally male sector, the ratio of female to male employment was only 33% in 2006, and it further declined to 19% in 2017. Similar trends can be observed for the sectors “Electricity, gas, steam and air conditioning supply”, “Construction” and “Transportation and storage” (Figure 2).

**Figure 2: Trend in gender equality in employment – male dominated sectors, 2006–2017**

Source: Mongolian Statistical Information Service and authors' calculations.

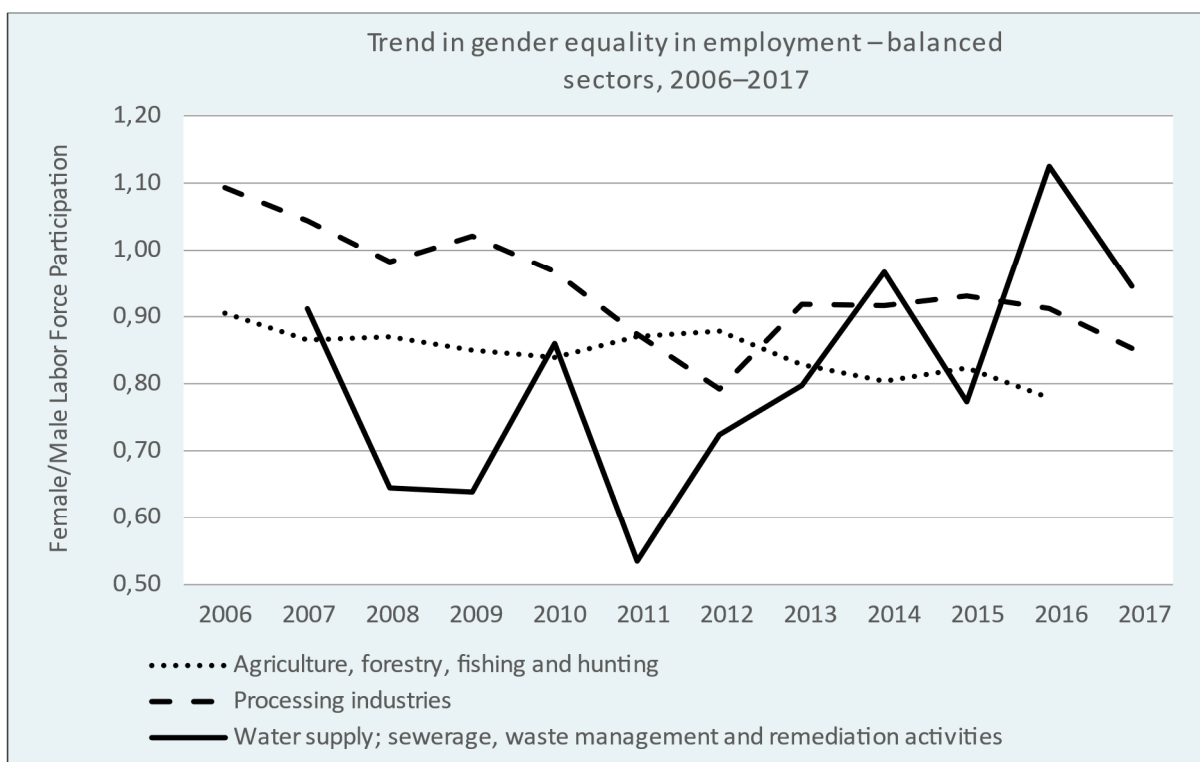
In contrast, women are overrepresented in sectors such as “Accommodation and food service activities”, “Financial and insurance activities”, “Education services”, “Activities of households as employers”, and “Activities of extraterritorial organizations and bodies” (Figure 3). In 2017, for instance, the number of women working in the education sector was nearly three times higher than the number of men. Sectors where the share of female workers, as compared to that of male workers, is relatively balanced, include, for example, “Agriculture, forestry, fishing and hunting” (but note the downward trend in gender equality in employment), “Processing industries” and “Water supply; sewerage, waste management and remediation activities” (see Figure 4).

**Figure 3: Trend in gender equality in employment – female dominated sectors, 2006–2017**



Source: Mongolian Statistical Information Service and authors' calculations.

**Figure 4: Trend in gender equality in employment – balanced sectors, 2006–2017**



Source: Mongolian Statistical Information Service and authors' calculations.

## **4. Children and female employment in Mongolia: econometric analysis**

### **4.1 Data**

To understand the drivers of female employment, we analyze data from the third round of the EBRD-World Bank Life in Transition Survey which was conducted in Mongolia in fall 2016. The Life in Transition Survey (LiTS) is a nationally representative survey which covers 29 post-communist countries along with Cyprus, Germany, Greece, Italy and Turkey.<sup>10</sup> Prior to 2016, the survey was also conducted in 2006 and 2010. In the first and second wave, respondents (aged 18 and above) were drawn randomly, using a two-stage sampling method with primary and secondary sampling units. The primary sampling units are electoral districts, polling station territories, census enumeration districts or geo-administrative divisions, while the secondary sampling units are households. The 2016 sample was constructed by (1) repeating all of the 2010 primary sampling units and randomly sampling within them; and (2) adding 25 extra primary sampling units so that the data are nationally representative. There are 1,000 households (50 primary sampling units) in the first and second wave, and 1,500 households (75 primary sampling units) in the third wave. In all waves, PSUs include 20 households. Demographic and geographic characteristics, such as age, gender and urbanity, were used to compute weights in order to ensure the representativeness of the sample to the population.

The head of the household or another knowledgeable household member answered the Household Roster and questions about housing and expenses. All other modules<sup>11</sup> were answered by a randomly drawn adult (over 18 years of age) from the household with no substitutions possible, using a minimum of three repeat visits if an interview could not be conducted. In addition, a secondary respondent was drawn randomly from the household, such that at least two adults of the opposite gender would answer modules on assets and employment.<sup>12</sup> This allows us to exploit the gendered impact of children on employment and

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<sup>10</sup> These are Albania, Armenia, Azerbaijan, Belarus, Bosnia and Herzegovina, Bulgaria, Croatia, Czech Republic, Estonia, Georgia, Hungary, Kazakhstan, Kyrgyz Republic, Latvia, Lithuania, FYR Macedonia, Moldova, Mongolia, Poland, Romania, Russia, Serbia, Slovak Republic, Slovenia, Ukraine, Uzbekistan, Kosovo and Montenegro.

<sup>11</sup> In 2016, these modules were Other Dwellings and Assets, Attitudes and Values, Employment, Unemployment, Entrepreneurial Activity, Governance and Miscellaneous Questions. A secondary respondent of the opposite sex also answered Other Dwellings and Assets, Attitudes and Values and Employment.

<sup>12</sup> Note that the secondary respondent did not answer the questions on gender attitudes and intra-household bargaining, which limits our sample in these analyses.

increases the sample with which we can work to over 1,700 respondents. Any discrepancy between the full sample size and the sample size used in the regressions is due to incomplete answers, refusals to answer, and omissions in the process of data collection.

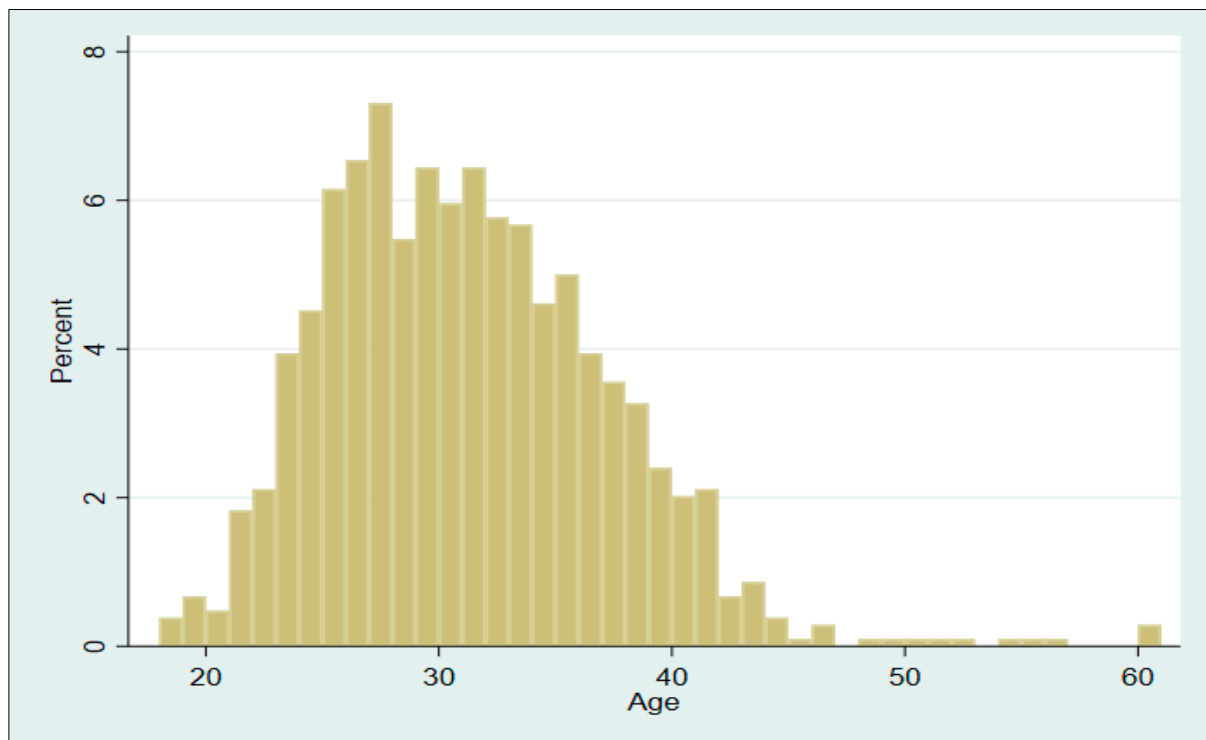
In addition to the LiTS data, we also employ the latest wave of the Household Socio-Economic Survey (HSES) collected by the Mongolian National Statistics Office (also conducted in 2016). The survey covers 16,500 households across 1,836 PSUs using two-stage simple random sampling. It is representative at the stratum level, i.e. for Ulanbaatar, aimag centers, and rural areas. From the HSES sample, we extract data on 14,454 women and 12,797 men heading the household, or being the spouse of the household head. Unlike the LiTS data, the HSES does not include question on attitudes and values, but its relatively larger sample size allows for statistically representative analyses of employment barriers at the subnational level. Other than studying the presence and number of children of the household head or spouse, the HSES also allows us to account for number of household members in need of care (e.g., disabled and elderly), and for the number of children not in pre-school or school.

A summary of the respondents' profiles, disaggregated by gender and the level of urbanity, is displayed in Table 1 for both the LiTS 2016 and HSES 2016 data. Figures 6 and 7 also provide an insight into the distribution of children aged (0–1) by the age of their mothers and fathers.

**Table 1: Profile of the respondents, LiTS 2016 and HSES 2016**

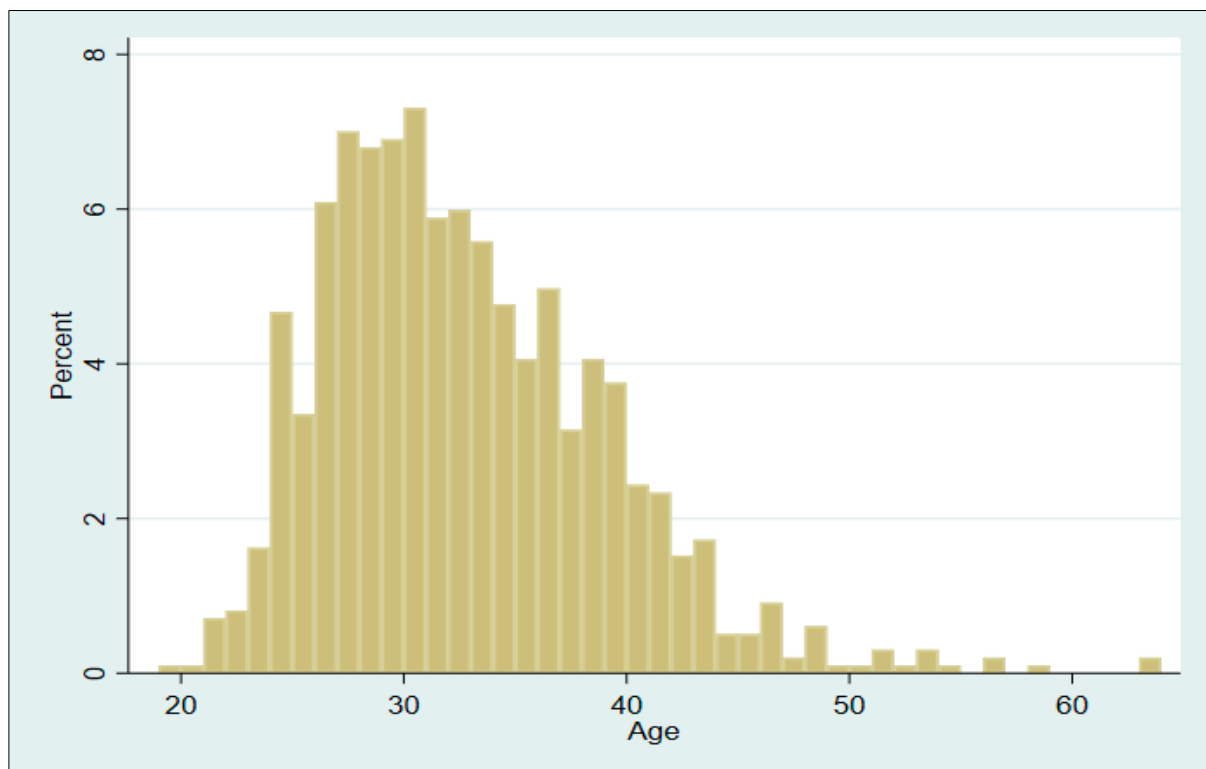
Indicator	LiTS 2016				HSES 2016			
	Urban		Rural		Urban		Rural	
	Female Sample	Male Sample	Female Sample	Male Sample	Female Sample	Male Sample	Female Sample	Male Sample
Employed (%)	70,6%	78,8%	74,5%	84,9%	54,2%	71,5%	66,6%	77,7%
Involuntary unemployed (%)					1,7%	2,0%	1,4%	1,4%
Age (Years)	42,7	42,1	43,5	42,4	44,4	43,9	44,0	43,3
Separated, divorced or widowed (%)	19,2%	7,4%	14,5%	4,1%	22,1%	7,6%	17,6%	8,4%
Secondary education completed (%)	53,2%	57,2%	65,8%	71,9%	59,6%	67,2%	63,7%	67,4%
Tertiary education completed (%)	27,1%	22,6%	9,4%	3,8%	34,5%	27,7%	18,9%	11,4%
Respondent's father completed secondary education (%)	43,7%	46,3%	35,3%	38,1%				
Respondent's father completed tertiary education (%)	6,9%	4,8%	1,6%	1,8%				
Ill (%)					9,1%	5,9%	8,0%	4,5%
Disabled (%)					4,5%	7,1%	4,6%	7,5%

**Figure 6: Distribution of children aged (0–1) by age of their mothers**



Source: Authors' calculations based on the Household Socio-Economic Survey (2016)

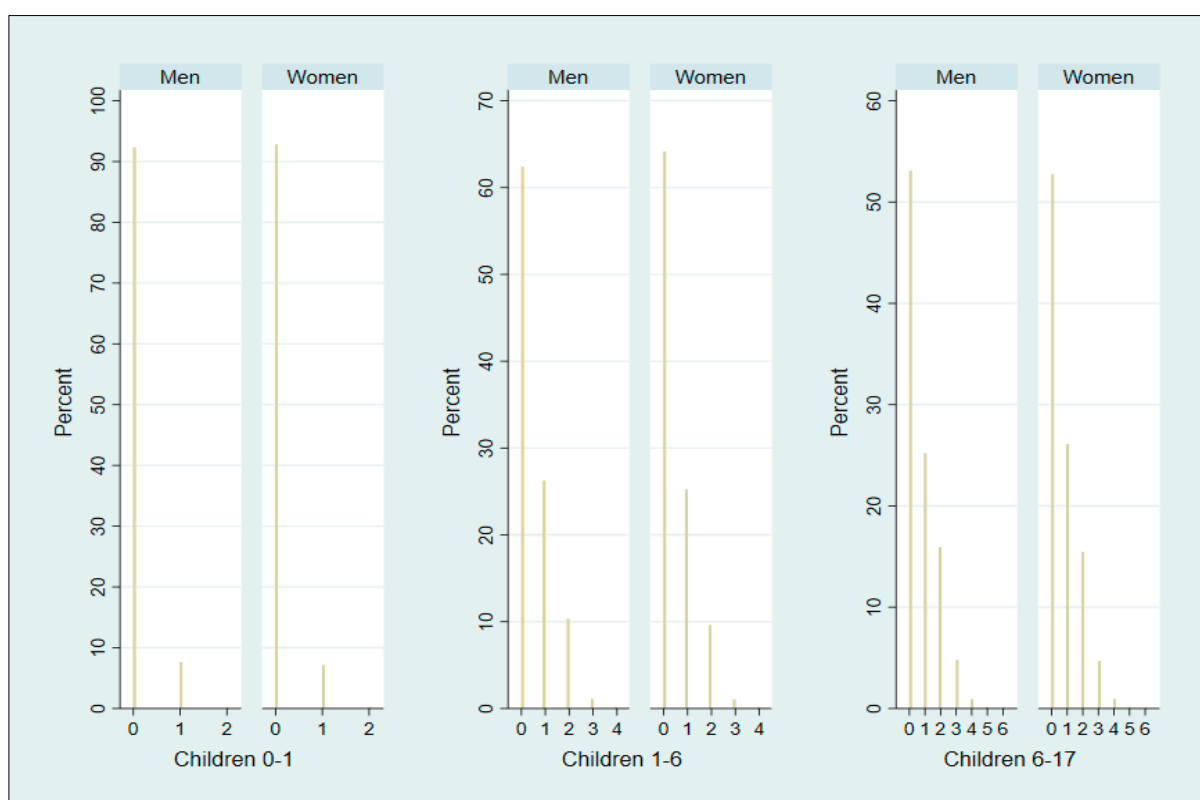
**Figure 7: Distribution of children aged (0–1) by age of their fathers**



Source: Authors' calculations based on the Household Socio-Economic Survey (2016)

To study the drivers of female employment in Mongolia, we limit the analysis to potentially economically active respondents who are 65 years of age or younger (our results are robust to a range of alternative cut-offs (e.g., 45 years), and are available upon request). We also separate infants (up to one year of age) from the analysis to gauge the effect of toddlers and pre-school children separately. We create two samples: one which contains only female respondents and one which contains only male respondents. The main reason is that, from a conceptual point of view, we expect that the impact of various independent variables (children, education, age, parental background, for example) to be different in the female-only and male-only samples. The dependent variable – which is standard in the literature – takes a value of 1 if the respondent was employed in the past 12 months, and 0 otherwise. This variable includes formal and informal employment in all sectors, including agriculture.

**Figure 8: Number of children (by age category) of female and male household heads**



Source: Authors' calculations based on the Household Socio-Economic Survey (2016)

**Figure 9: Number of children (by age category) of female and male primary respondents**

Age Category	Number of Children	Women	Men	Total
Ages 0–1	No Children	807	646	1453
	1 Child	25	22	47
Total		832	668	1500
Ages 1–6	No Children	580	462	1042
	1 Child	179	136	315
	2 Children	63	65	128
	3 Children	8	4	12
	4 Children	2	1	3
Total		832	668	1500
Ages 6–17	No Children	524	443	967
	1 Child	181	125	306
	2 Children	90	70	160
	3 Children	30	23	53
	4 Children	6	7	13
	5 Children	1	0	1
Total		832	668	1500

Source: Authors' calculations based on the Life in Transition Survey (2016)

The first independent variable counts the number of children in the household that are aged between 0 and 1. We also control for the number of children in the household that are aged between 1 and 6, as well as those aged 6–17.<sup>13</sup> Figure 8 and Figure 9 display the distribution of the number of children for each age category (i.e. 0–1; 1–6; 6–17) of female and male household heads from the HSES data as a histogram, and of female and male primary respondents from the LiTS data in table form.

We also include a variable which counts the number of household members that are either elderly or disabled.<sup>14</sup> To capture the fact that employment increases up to a certain age and then declines, we also control for the respondent's age and age squared. Additional controls include household income, household size, a dummy variable for whether the respondent is separated, divorced or widowed (1 – yes, 0 – no), a dummy variable for whether the respondent lives in an urban or rural location (1 – urban, 0 rural), and in the case of the HSES data, dummy variables

<sup>13</sup> Alternative definitions of these categories do not change the results.

<sup>14</sup> Unfortunately, the wording of the survey question in the LiTS data prevents us from analyzing these categories separately. Household members of 75 years of age or older are classified as elderly. The type or degree of disability is not further specified.



for whether the respondent is ill or disabled (1 – yes, 0 – no),<sup>15</sup>. We expect urban residence to have a positive effect on employment, but the effect of marital status could be ambiguous. On the one hand, married female respondents may be less likely to work as they are expected to stay at home, due to cultural reasons or discrimination in the workplace. On the other hand, married male respondents may be more likely to work as they may be viewed as family breadwinners.

More educated respondents and respondents coming from more educated families are more likely to be employed, so we include dummies for whether the respondent completed secondary and tertiary education (with the omitted category being primary education or below), along with dummies for whether the respondent's *father* completed secondary and tertiary education (with the omitted category being primary education or below).

Finally, to account for the fact that employment patterns (for both women and men) may be driven by regional factors, such as industrial concentration or geographic suitability for agriculture, we also include dummies at the levels of sub-national regions and provinces (these are not shown in the tables to conserve space). In the LiTS survey, Mongolia is divided in five regions: Central, East, West, Khangai and Ulaanbataar. In the HSES survey, Mongolia is divided in 22 provinces (i.e. *aimags*) and 333 counties (i.e. *soums*). We also cluster the robust standard errors at the levels of sub-national regions in the LiTS data and at the province level in the HSES data, and include weights so that the data are nationally representative.<sup>16</sup>

## 4.2 Drivers of employment of men and women in 2016

### Regression equation

The regression equation on which the analysis is based is the following:

$$Employment_{ir} = \beta_0 + \beta_1 Children_{ir} + \beta_2 X_{ir} + v_r + \varepsilon_{ir},$$

where for each respondent  $i$  (male or female) in region  $r$ , *Employment* is a binary dependent variable measuring whether the respondent was employed in the past 12 months. The primary coefficient of interest is  $\beta_1$ , associated with the variable *Children*. As described above, this is a

<sup>15</sup> Since information on health is only available for the primary respondent and the regressions include data from both the primary and secondary respondent, we are unable to control for health.

<sup>16</sup> While we cannot cluster the errors at the level of PSUs as they only contain 20 households in the LiTS survey, in alternative specifications we cluster the errors at the level of PSUs in the HSES survey and the results remain unchanged.

vector of different variables capturing the number of children of different ages in the household.  $X_{ir}$  is a vector of control variables, as described in the previous sub-section, while  $v_r$  is a fixed effect at the level of sub-national regions, and  $\varepsilon_{ir}$  is the error term.

## Results

Results from Ordinary Least Squares (OLS)<sup>17</sup> regressions studying the factors influencing employment in Mongolia for the year 2016 are presented in Table 2 (LiTS) and Table 3 (HSES). We run separate regressions for female and male-only samples, and report two specifications each – one where we treat the number of children as a categorical variable and the other where we treat it as continuous. The first two columns focus on the sample of female respondents only, while the last two columns – on the male-only sample. Columns 1 and 3 in Tables 2 and 3 treat the number of children as continuous, while in Columns 2 and 4, we include dummy variables for the presence of each child of the three age categories. Our results show that the number of children aged 0–1 affects the employment of women negatively, but the effect for men is ambiguous (remember that the dependent variable in the regressions takes values of either 0 or 1). Women with one child between the ages of 0 and 1 are 35.5 percentage points, and women with two children between the ages of 1 and 6 are 16.1 percentage points less likely to be employed compared to women with no small children (column 2, Table 2). Furthermore, the HSES data suggests that the effect of having a second child aged 1–6 on female unemployment of having is nearly double. This effect further by 5.7 percentage points with each additional child. On average, 68–78% of women with at least one child under 7 are employed (using LiTS/HSES data), so the effects uncovered in the regressions are very strong. Having older children (aged 6–17) has no effect on female employment, which suggests that the care responsibilities for younger children may be to blame. Interestingly, we find that the aforementioned effects are stronger in the LiTS sample compared to the HSES sample. It is difficult to say why this is the case, though one possibility may be that the share of female employing in the LiTS data may be overreported (Table 1).

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<sup>17</sup> Using logit or probit specifications does not change the results. We also ran regressions with age limits set to 55 for women and 60 years for men which reduced the sample size (from 794 to 705 for women, and from 786 to 762 for men), but did not affect the results otherwise.

**Table 2: Determinants of employment, women and men, LiTS 2016**

	Female Sample		Male Sample	
Children 0–1	–0.371***		–0.063	
	(0.051)		(0.058)	
Children 1–6	–0.061		0.002	
	(0.033)		(0.004)	
Children 6–17	0.011		0.020	
	(0.024)		(0.013)	
Number of Children (0–1): 1		–0.355***		–0.051
		(0.061)		(0.053)
Number of Children (1–6): 1		–0.015		–0.005
		(0.052)		(0.013)
Number of Children (1–6): 2		–0.215**		–0.018
		(0.049)		(0.020)
Number of Children (1–6): 3		0.069		0.044***
		(0.145)		(0.008)
Number of Children (1–6): 4		–0.243		0.025
		(0.308)		(0.021)
Number of Children (6–17): 1		0.030		0.077*
		(0.050)		(0.031)
Number of Children (6–17): 2		–0.041		0.004
		(0.066)		(0.044)
Number of Children (6–17): 3		0.041		0.047
		(0.060)		(0.040)
Number of Children (6–17): 4		0.267		0.200**
		(0.192)		(0.056)
Number of Children (6–17): 5		0.420***		
		(0.081)		
Number of disabled or elderly household members	–0.049	–0.048	–0.009	–0.012
	(0.027)	(0.037)	(0.016)	(0.019)
Age	0.064***	0.065***	0.029**	0.029**
	(0.013)	(0.014)	(0.008)	(0.008)
Age squared	–0.001***	–0.001***	–0.000***	–0.000***
	(0.000)	(0.000)	(0.000)	(0.000)
Household income	0.000***	0.000**	0.000**	0.000**
	(0.000)	(0.000)	(0.000)	(0.000)
Separated, divorced or widowed	0.022	0.023	–0.039	–0.042
	(0.046)	(0.043)	(0.026)	(0.026)
Urban household	0.013	0.019	–0.047*	–0.046*
	(0.037)	(0.039)	(0.018)	(0.019)
Secondary education completed	0.006	–0.004	–0.049	–0.054
	(0.049)	(0.045)	(0.037)	(0.038)

**Table 2 (continued)**

	<b>Female Sample</b>		<b>Male Sample</b>	
Tertiary education completed	-0.011	-0.017	-0.020	-0.022
	(0.045)	(0.042)	(0.029)	(0.032)
Respondent's father completed secondary education	0.039	0.038	-0.013	-0.015*
	(0.032)	(0.032)	(0.008)	(0.007)
Respondent's father completed tertiary education	-0.083	-0.060	-0.104**	-0.102**
	(0.054)	(0.051)	(0.037)	(0.036)
Number of household members	-0.023	-0.021	-0.012	-0.013
	(0.012)	(0.011)	(0.009)	(0.010)
Constant	-0.216	-0.253	0.558**	0.546**
	(0.311)	(0.315)	(0.144)	(0.152)
Number of observations	794	794	786	786
R2	0.158	0.171	0.110	0.118

Note: \*\*\* p<0.01, \*\* p<0.05, \* p<0.1. Source: Authors' calculations based on the Life in Transition Survey (2016). Robust standard errors clustered by region are in parentheses.

**Table 3: Determinants of employment, women and men, HSES 2016**

	<b>Female Sample</b>		<b>Male Sample</b>	
Children 0–1	-0.186***		0.028***	
	(0.045)		(0.007)	
Children 1–6	-0.058***		0.013*	
	(0.015)		(0.007)	
Children 6–17	0.007**		0.005	
	(0.003)		(0.004)	
Number of Children (0–1): 1		-0.188***		0.030***
		(0.047)		(0.007)
Number of Children (0–1): 2		-0.334***		-0.021
		(0.076)		(0.061)
Number of Children (1–6): 1		-0.049***		0.020**
		(0.014)		(0.009)
Number of Children (1–6): 2		-0.117***		0.023*
		(0.030)		(0.012)
Number of Children (1–6): 3		-0.174***		0.041
		(0.061)		(0.039)
Number of Children (1–6): 4		-0.209		0.166***
		(0.254)		(0.024)
Number of Children (6–17): 1		0.006		-0.001
		(0.009)		(0.007)

Table 3 (continued)

	Female Sample		Male Sample	
Number of Children (6–17): 2		0.005		0.016
		(0.010)		(0.013)
Number of Children (6–17): 3		0.007		0.010
		(0.014)		(0.018)
Number of Children (6–17): 4		0.078		0.009
		(0.062)		(0.023)
Number of Children (6–17): 5		0.148		–0.051
		(0.113)		(0.078)
Number of Children (6–17): 6		0.162		0.005
		(0.200)		(0.225)
Number of disabled or elderly household members	–0.007	–0.007	–0.002	–0.002
	(0.013)	(0.014)	(0.012)	(0.012)
Age	0.085***	0.086***	0.059***	0.059***
	(0.003)	(0.003)	(0.004)	(0.004)
Age squared	–0.001***	–0.001***	–0.001***	–0.001***
	(0.000)	(0.000)	(0.000)	(0.000)
Household income	0.000***	0.000***	0.000***	0.000***
	(0.000)	(0.000)	(0.000)	(0.000)
Separated, divorced or widowed	0.005	0.005	–0.048**	–0.048**
	(0.015)	(0.015)	(0.021)	(0.021)
Urban household	–0.125***	–0.125***	–0.052***	–0.052***
	(0.020)	(0.020)	(0.017)	(0.017)
Secondary education completed	–0.038**	–0.038**	–0.049***	–0.050***
	(0.015)	(0.016)	(0.016)	(0.016)
Tertiary education completed	0.032	0.031	–0.039***	–0.040***
	(0.019)	(0.020)	(0.013)	(0.013)
Ill	–0.039**	–0.039**	–0.014	–0.015
	(0.018)	(0.017)	(0.022)	(0.022)
Disabled	–0.318***	–0.318***	–0.422***	–0.422***
	(0.032)	(0.032)	(0.053)	(0.053)
Number of household members	–0.025***	–0.025***	–0.018***	–0.018***
	(0.002)	(0.003)	(0.006)	(0.006)
Constant	–0.562***	–0.575***	–0.082	–0.083
	(0.054)	(0.055)	(0.058)	(0.059)
Number of observations	13,205	13,205	11,857	11,857
R2	0.239	0.240	0.257	0.258

Note: \*\*\* p<0.01, \*\* p<0.05, \* p<0.1. Source: Authors' calculations based on the Household Socio-Economic Survey (2016). Robust standard errors clustered by region are in parentheses.

The results also show that women in households that have *either* elderly or disabled members are as likely to be employed as women in households without elderly or disabled members. This suggests that it is caring after small children – and *not* general caring responsibilities – that depresses female employment. In addition, men and women of poor health or with disabilities are much less likely to be employed. Interestingly, we do not find clear evidence that the respondent's own or parental education influences employment.<sup>18</sup> Similarly, while urbanity exhibits a negative correlation Table 3 (HSES), this is not the case in Table 2 (LiTS).

Tables 2 and 3 also show that men in households with small children are more likely to work compared to those in households without small children. In particular, the positive correlation with male employment grows as the number of children aged 1–6 increases. Once again, the number of older children (aged 6–17) has no effect on male employment. Similar to the women-only analyses, we find ambiguous yet negative correlation of urbanity and own or parental education with male employment. In additional regressions we modified the existing specifications in Table 2 and Table 3 to include further controls, such as decision-making and attitudes indices (along with their interaction terms with the number of children) to account for intra-household bargaining and gender-based discrimination (Tables A2 and A16), as well as spousal income (rather than household income) to account for the fact that household income is also influenced by the respondent's labor market activity (Table A3). We also include the number of children not attending a pre-school or school as an additional control variable (Tables A11 and A12). Moreover, we run regressions separately for urban and rural households (Tables A4–A7), and change the dependent variable (using the HSES data) to account for involuntary unemployment (Table A8). We find that these modifications do not alter our results. In addition, using interaction terms with decision-making and attitudes indices, we find that the effect of children on female employment does not necessarily depend on the effect of social norms. However, we would like to highlight that the effect of small children (aged 1–6) on female employment in rural households is much weaker, suggesting that the effects we uncover are driven by urban women. Moreover, drawing from the regression results on involuntary unemployment, there is some evidence supporting the notion that women with small children who are unemployed are not actively seeking employment (possibly due to cultural reasons).

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<sup>18</sup> The respondent's secondary and tertiary education is negatively correlated with employment for both men and women in Table 3, but we do not find such a relationship in Table 2.

To account for the dichotomous nature of the dependent variables in the above analyses, we also replicate all specifications using logistic regressions (Tables A9 and A10). We find that the logit approach confirms the OLS results.

As displayed in Table 1, the share of female employment reported in the LiTS data is relatively higher compared to the HSES data (by 16.4% for the urban subsample). This may be due to the smaller sample size of the LiTS data. However, we are able to replicate the results from the LiTS using the HSES data, which suggests that even if employment were to be overreported in the LiTS, such bias would not affect the impact of motherhood on employment.

Are the results in Table 2 and 3 (which use data from 2016) applicable to earlier years? Unfortunately, the 2010 round of the survey only recorded the number of children aged 5 and above, which means that we cannot replicate the analysis for 2010. Moreover, the questions on decision making and attitudes towards women (analyzed in the online appendix) were only included in the 2016 wave so we cannot look at long-term trends in those outcomes. However, the 2006 round of the LiTS contains information on the number of children in different age categories, which enables a comparison.

We find that women with children aged 0–1 were less likely to work, but do not find any negative effect for other age groups – in fact, for some age groups, women and men are more likely to be employed (Table 4). There are several explanations for these findings, although the survey does not provide us with the data to distinguish among them. The effects could be driven by the smaller sample – particularly when it comes to women, and thus should be treated as suggestive only. Given that 2016 captures the trough of Mongolia’s mining boom, while 2006 its peak, it could be that high labor demand prompted employers to hire across genders and not to discriminate against employees (and in particular women) with small children.<sup>19</sup> An alternative explanation is that higher wages (associated with the boom) made it more attractive for women with small children to work rather than stay at home. Similarly, cultural norms against working mothers may have been less salient during this period of economic expansion.

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<sup>19</sup> Despite diversification efforts, women are underrepresented in the mining sector, especially because of Mongolian labor regulations that precluded women from working in certain positions in the mining sector until 2008. However, the mining boom (marked by the tripling of this sector’s contribution to national GDP in the early 2000s) led to a shortage of workers in other sectors in which women filled positions that were left vacant as men took up more lucrative jobs in mining. See also Khan (2013).

**Table 4: Determinants of employment, women and men, LiTS 2006**

	Female Sample		Male Sample	
Children 0–1	–0.159*		0.049	
	(0.058)		(0.069)	
Children 1–6	0.024		0.037	
	(0.037)		(0.031)	
Children 6–17	0.009		0.052	
	(0.046)		(0.036)	
Number of Children (0–1): 1		–0.184**		0.043
		(0.032)		(0.071)
Number of Children (1–6): 1		0.067		0.012
		(0.034)		(0.031)
Number of Children (1–6): 2		–0.061		0.091
		(0.211)		(0.068)
Number of Children (1–6): 3		0.409*		0.426***
		(0.146)		(0.039)
Number of Children (6–17): 1		0.114**		0.088*
		(0.030)		(0.028)
Number of Children (6–17): 2		0.171		0.070
		(0.074)		(0.105)
Number of Children (6–17): 3		–0.014		0.150
		(0.147)		(0.092)
Number of Children (6–17): 4		–0.337		0.342*
		(0.256)		(0.136)
Age	0.006	0.005	0.060***	0.062***
	(0.010)	(0.008)	(0.005)	(0.005)
Age squared	–0.000	–0.000*	–0.001***	–0.001***
	(0.000)	(0.000)	(0.000)	(0.000)
Household income	0.008	0.002	0.026	0.027
	(0.029)	(0.031)	(0.018)	(0.018)
Urban household	0.004	–0.039	–0.039	–0.037
	(0.100)	(0.070)	(0.056)	(0.057)
Health	0.058**	0.051***	0.072**	0.069**
	(0.016)	(0.007)	(0.018)	(0.016)
Secondary education completed	–0.033	–0.055	0.113**	0.120**
	(0.120)	(0.112)	(0.029)	(0.030)
Tertiary education completed	0.179	0.179	0.169*	0.170*
	(0.112)	(0.101)	(0.060)	(0.063)
Respondent's father completed secondary education	0.034	0.063	0.051**	0.050**
	(0.091)	(0.085)	(0.015)	(0.014)



**Table 4 (continued)**

	Female Sample		Male Sample	
Respondent's father completed tertiary education	0.051	0.077	0.053	0.054
	(0.067)	(0.067)	(0.026)	(0.028)
Number of household members	0.012	0.015	-0.042	-0.047*
	(0.011)	(0.010)	(0.019)	(0.017)
Constant	0.360	0.374	-0.661***	-0.671***
	(0.224)	(0.236)	(0.072)	(0.071)
Number of observations	215	215	665	665
R2	0.275	0.312	0.152	0.159

Note: \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$ . Source: Authors' calculations based on the Life in Transition Survey (2006). Robust standard errors clustered by region are in parentheses.

Given the differences in data availability across waves of the LiTS and the HSES data, we also run a set of (limited) regressions with identical predictors to check whether the effect is due to the selection of control variables. Since our results do not change (Tables A17–A19), we can conclude that the observed effect is robust and not driven by variable choice.

### The role of childcare

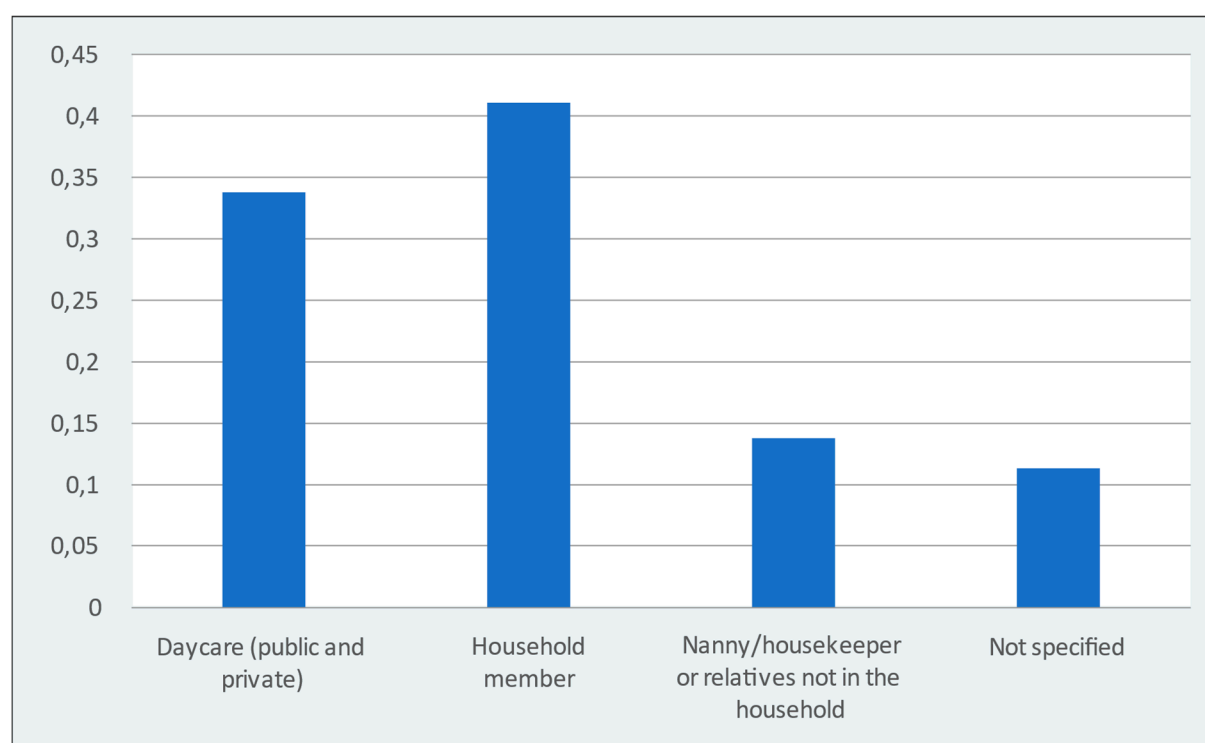
If childcare is largely unavailable, expensive or of low quality (or all three), women with small children will be more likely to stay at home. The 2016 LiTS provides information on who looks after pre-school children (ages 0–6), which we summarize in Figure 5 below. The figure shows that only 33.8% of children under 7 attend day care (either public or private), and that in the majority of cases (41%) children are being cared for by a household member (unfortunately, the data do not provide information on which household member exactly).<sup>20</sup>

To further understand how childcare affects women's employment, we examine aggregate statistics on the quality of and enrolment in pre-primary education, as unfortunately less detailed data are not available. Mongolian legislation mandates maternity leave for pregnant employees, out of which 120 days are paid by the government at 70% of the mother's salary over the preceding 12 months. There are no provisions for paternity leave and the legislation does not

<sup>20</sup> In Tables A11 and A12, we include controls for the number of children who are not in pre-school (aged 1–6 in LiTS, and aged 1–6 and 6–17 in HSES), but do not find a negative effect of these variables on female employment. However, the lack of effect could be due to the endogeneity of pre-school availability and quality, as discussed below.

provide flexible working hours.<sup>21</sup> However, mothers are guaranteed an equivalent position following their return from maternity leave and women may retire at an earlier age (55) compared to men (60). While child allowances are provided to parents, given that public childcare facilities are provided free of charge, payments for private childcare are not tax-deductible (World Bank 2016).

**Figure 5: Care distribution for children under 7, LiTS 2016**



Source: Authors' calculations based on the Life in Transition Survey (2016).

In this regard, Mongolia's public expenditure on pre-primary education in recent years has been exceptional: in 2013, 1.3% of GDP was spent on pre-primary education, which represented 24% of the total public education budget. As a comparison, in the same year, no OECD country spent more than Mongolia on pre-primary education. OECD pre-primary spending was highest

<sup>21</sup> See [https://www.ilo.org/dyn/travail/travmain.sectionReport1?p\\_lang=en&p\\_countries=MN&p\\_sc\\_id=2000&p\\_year=2011&p\\_structure=3&p\\_sc\\_id=2290#:~:text=Women%20are%20entitled%20to%20120%20days%20of%20pre%20natal%20and%20postnatal%20leave.&text=Remarks%3A%20Postnatal%20leave%20may%20also,pregnancy%20to%20infants%20that%20live](https://www.ilo.org/dyn/travail/travmain.sectionReport1?p_lang=en&p_countries=MN&p_sc_id=2000&p_year=2011&p_structure=3&p_sc_id=2290#:~:text=Women%20are%20entitled%20to%20120%20days%20of%20pre%20natal%20and%20postnatal%20leave.&text=Remarks%3A%20Postnatal%20leave%20may%20also,pregnancy%20to%20infants%20that%20live). There are also provisions for parental leave for parents of children under 3, but it is unclear if the leave is paid or unpaid.

at just under 1.0% of GDP in Iceland and New Zealand.<sup>22</sup> Of course, higher spending does not automatically translate into higher quality of the service or increased access, a point on which we elaborate below.

Aggregate data record a marked increase in pre-primary enrolment: from 24% in 1999 to 68% in 2013. However, wide inequalities remain, and this may explain the relatively low enrolment figure which we uncover in the LiTS. In 2010 the attendance rate ranged from less than 25% of young children from the poorest quintile to more than 80% of those from the richest quintile. In 2013, nearly 43% of young children living in either rural areas or the Western province were still not attending, but it is unclear if this is due to demand or supply issues. The government has attempted to deal with this issue by introducing kindergartens targeted at rural areas and nomadic communities. For example, ger kindergartens enrol 3 to 5-year-old children for 6 to 7 hours a day, but only for about 14 weeks a year (during the warm months) (UNESCO 2016, p. 57–59).

The ‘baby boom’ experienced by Mongolia since around 2006 has put additional strain on childcare facilities. While in 2005 the country’s fertility rate was 2.177 children per woman, by 2015 it increased to 2.918 children, a rise of over 30% (World Bank 2020). The fertility increase was likely driven by the higher incomes which accompanied the mining boom and by the introduction of the Child Money Program (which provides benefits to families with children) in 2005. This trend needs to be considered in the broader historical fertility change in Mongolia. Up until the 1950s, fertility rates were at a relatively stable rate of 5 children per woman. However, owing to pro-natalist policies<sup>23</sup>, fast socio-economic development and an improvement of living conditions, Mongolia’s fertility rates rose to some of the highest levels in Asia with an average of more than 7 children per woman in the period between 1960 and 1975. As a result, the population doubled since 1962 in 25 years to pass the two million mark by 1987. In the subsequent years, fertility rates began to decline as a result of the industrialization of Mongolia’s economy, the expansion of the state-run agricultural sector, and social changes that were reflected in higher levels of education and rates of labor force participation of women. The negative fertility trend was further accelerated by the economic instability following the dissolution of the Soviet Union (Spoorenberg 2015; World Bank 2020).

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<sup>22</sup> See [https://www.oecd.org/els/soc/PF3\\_1\\_Public\\_spending\\_on\\_childcare\\_and\\_early\\_education.pdf](https://www.oecd.org/els/soc/PF3_1_Public_spending_on_childcare_and_early_education.pdf).

<sup>23</sup> The policies included legal restrictions on the use of contraceptives, limitations on access to medical abortions, and government subsidies for parents.

Investment into early childhood education and childcare facilities was not prioritized by the Mongolian government. However, even after the reversal of fertility rates around 2005, the number of kindergartens and teachers has not risen in line with the rise in the number of children, and the problem has been particularly acute in urban areas, which also undergo mechanical growth due to in-migration. As a response, the government increased spending on pre-primary education, but this has had little effect. In Ulaanbataar, spots for government funded kindergartens (covering children between the ages of 2 to 5) are so much in demand that they are given away in a lottery. Government kindergartens are overcrowded, and teachers are overburdened.<sup>24</sup> As a result, high-income parents prefer to enrol their children in private nurseries, which however are few in number (in 2007/2008 (latest available date), out of 768 kindergartens, 87% were public) (UNESCO 2011). Still, almost 30% of all children in kindergarten age are not able to attend a suitable preschool (Schmillen and Weimann-Sandig 2018).

### **Robustness – quantifying the effect of unobservables**

Given the cross-sectional nature of the analyzed data, omitted variable bias and reverse causality may be an issue. To deal with this, we adopt the method developed by Oster (2019) to estimate by how much higher unobservables have to be in order to explain away the effects in columns 2 and 4 in Table 2. While including controls may fully capture omitted variable bias, in many cases observable controls may be an imperfect proxy for unobservable characteristics. For instance, in the current context, such unobservable characteristics may be differences in ability or networks between men and women, which may explain differences in employment.

A common approach in these situations is to explore the sensitivity of treatment effects to the inclusion of observed controls. If a coefficient is stable after inclusion of the observed controls, this is taken as a sign that omitted variable bias is limited. The idea behind this approach is that the bias arising from the observed (imperfect) controls is informative about the bias arising from the observed and unobserved controls (see, e.g. Altonji et al. 2005).

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<sup>24</sup> The average number of children per kindergarten increased from 126 to 180, and per kindergarten teacher from 27 to 33 between 1996 and 2015 (Schmillen and Weimann-Sandig 2018). See also <https://www.ndtv.com/world-news/need-a-kindergarten-spot-in-mongolia-play-the-lottery-1756462>.

As Oster (2019) explains, even under the most optimistic assumptions, however, coefficient movements alone are not a sufficient statistic to calculate bias. For instance, assume that there is a dependent variable that is explained solely by two unobserved characteristics (orthogonal to each other), one with lower variance, and one with higher variance. The coefficient would appear much more stable if the researcher observes only the lower-variance confounder, but this is not because the bias is smaller, but simply because less of the dependent variable is explained by the controls. Therefore, Oster's core insight is to recognize that coefficient stability on its own is at best uninformative and at worst very misleading. It must be combined with information about R-squared movements to develop an argument.

The key, then is to provide appropriate assumptions for the R-squared from a hypothetical regression of the outcome on treatment and both observed and unobserved controls (denoted as  $R_{\max}$ ), which then can be used to back out the level of bias. Oster suggests a standard based on the performance of this estimator in randomized data.

Following the discussion in Oster (2019), we adopt three cut-offs for  $R_{\max}$ :  $1.3R_c$  (which is the number recommended by Oster based on the experimental literature), as well as the more conservative  $2R_c$  and 1, where  $R_c$  is the R-squared from the regressions with full sets of controls (which are presented in Table 2). The calculations are shown in Table A1 in the online appendix, and the negative sign means that the correlation of unobservables with the dependent variable would have to be in a direction *opposite* to that of observables. Column 1 of Table A1 shows that to explain away the negative correlation between having two small children (aged 1–6) and female employment in the LiTS 2016 data, the impact of unobservables would have to be between 1.3 and 16.4 times higher, which is unlikely. Results are less robust regarding the positive correlation between small children and male employment in 2016. In this specification, the impact of unobservables would have to be at best 0.7 times higher (again in the opposite direction), in order to explain away the results, which is much more likely.

### 4.3 Attitudes towards women in Mongolia

An additional explanation for the low employment of women in households with small children may have to do with unconscious (or conscious) biases against women with young children. To understand whether a bias against women exists, in this section we turn to exploring the

determinants of gender attitudes in Mongolia. The LiTS asks respondents to agree or disagree on a number of statements related to the role of women in society, which are:

- (1) *Women are as competent as men to be business executives*
- (2) *Men make better political leaders than women do*
- (3) *A woman should do most of the household chores even if the husband is not working*
- (4) *It is important that my daughter achieves university education*
- (5) *It is important that my son achieves university education*
- (6) *Co-habiting partners should be married*
- (7) *It is better for everyone involved if the man earns the money and the woman takes care of the home and children.*
- (8) *Equal rights for women are important*

To harmonize answers across questions, we use a 0–1 scale (consisting of four increments of 0.25), where 0 is assigned to the answer holding the most illiberal values (i.e., most unfavorable towards women), while 1 is the most liberal value (i.e. the most favorable towards women). We thus derive eight dependent variables (coded on a 0–1 scale) which follow the questions above. For the index, we summed the weighted average of each decision-making indicator, excluding question (5) since it does not directly address attitudes towards women. Since we are interested in societal perceptions of women, the sample consists of respondents of both genders and all ages. The independent variables parallel those in the earlier tables, and we now include a dummy variable for gender (1 female; 0 male).

Table 7 presents the results from the analysis. Respondents with small children (aged 0–1) are more likely to agree that university education is important for their children of both genders (although marginally less so for daughters), and less likely to agree that women are as qualified to be politicians. However, the magnitudes of the effects are not particularly large.<sup>25</sup> The attitudes

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<sup>25</sup> We measured the difference in attitudes towards female and male education by creating a new variable that assumed the value 0 if the respondent valued male but not female education, 0 if the respondent did not value the education of children (male or female), and 1 if the respondent valued both female and male, or only female

of respondents with older children are less liberal. Respondents with pre-school children (1–6) are less likely to agree that women can be as good politicians as men, and are more likely to believe that marriage is important for co-habiting partners, but once again the magnitude of the effects is fairly small. Nonetheless, respondents with children aged 1–6 are also more likely to *disagree* that men should work while women stay at home. Respondents with older children (6–17)<sup>26</sup> show the least liberal views and are less likely to believe that women make good business executives and politicians, that university education is important for girls (and boys), and are more supportive of traditional gender roles, including marriage for co-habiting partners.

To what extent are attitudes towards women driven by the respondent's gender? Women, compared to men, are more likely to agree that women are as able as men to serve as business executives, but there are no gender differences when it comes to other attitudes, suggesting that women may have internalized traditional gender attitudes.

Interestingly, household income is not robustly correlated with more women-friendly attitudes. Urban residence is associated with more liberal attitudes towards women, although the results are not significant across all specifications. Own education and parents' education are not robustly associated with more gender friendly attitudes. Results using ordered logistic regressions confirm these findings, with the notable exception of a negative association between being a woman and holding that university education is important for daughters (Table A15).

What these results suggest is that cultural biases against women, which seem to be stronger for women with small children, may be – at least partially – responsible for the low female employment levels which we uncovered in Section 4. As we argued, the availability of childcare is one reason why women with small children are less likely to work. But the findings in this section suggest that simply improving childcare may not be enough to encourage women to work, and that a broader and more long-term response aimed at shifting negative attitudes towards women may be required.

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education. Out of 1477 respondents, only 4 value the education of only boys and 76 did not value the education of any child, so this analysis is not very informative. The results show that the number of children aged (0–1) is positive and significant at 95%, with a coefficient of 0.038, and that the number of children aged (1–6) is positive and significant at 95%, with a coefficient of 0.014. The small magnitudes of these coefficients indicate that respondents with young children are marginally more likely to support the education of girls, or of boys and girls, compared to respondents without children, and those with older children.

<sup>26</sup> Using interaction terms between the age of the respondent and the presence of older children (6–17), we find that the negative effect of older children persists (although to a lesser degree) and is thus not due to the age of parents (see Table A20).

**Table 5: Determinants of attitudes towards women, LiTS 2016**

(0 Illiberal, 1 Liberal)	Business Executives	Politicians	Chores done by women	University Education – Daughter	University Education – Son	Marriage	Men Bread- winners – Women Housewives	Equal Rights for Women
Number of children 0–1	0,000	–0,066**	0,027	0,057**	0,060**	0,051	0,025	0,018
	(0,030)	(0,021)	(0,092)	(0,019)	(0,020)	(0,051)	(0,108)	(0,027)
Number of children 1–6	0,004	–0,030***	–0,018	0,011	0,007	–0,029**	0,015*	–0,018
	(0,004)	(0,005)	(0,011)	(0,006)	(0,009)	(0,006)	(0,007)	(0,009)
Number of children 6–17	–0,008*	–0,013**	0,001	–0,005*	–0,004*	–0,010*	–0,019**	–0,006
	(0,004)	(0,005)	(0,011)	(0,002)	(0,002)	(0,004)	(0,006)	(0,005)
Gender (Female 1, Male 0)	0,018*	0,048	–0,003	–0,015	–0,009	–0,026	0,012	0,005
	(0,007)	(0,023)	(0,013)	(0,011)	(0,014)	(0,019)	(0,009)	(0,012)
Age	–0,001	–0,003	–0,003	0,003	0,002	0,002	0,001	0,003
	(0,002)	(0,002)	(0,002)	(0,002)	(0,002)	(0,002)	(0,003)	(0,002)
Age squared	0,000	0,000	0,000	–0,000	–0,000	–0,000*	–0,000	–0,000
	(0,000)	(0,000)	(0,000)	(0,000)	(0,000)	(0,000)	(0,000)	(0,000)
Household Income	–0,000*	–0,000	0,000*	–0,000**	–0,000	–0,000*	0,000	0,000
	(0,000)	(0,000)	(0,000)	(0,000)	(0,000)	(0,000)	(0,000)	(0,000)
Separated, Divorced or Widowed	0,021**	0,011	–0,015	0,018	0,036**	0,015	0,007	0,008
	(0,006)	(0,034)	(0,020)	(0,011)	(0,010)	(0,011)	(0,016)	(0,012)
Urban Household	0,020	0,036**	0,048**	0,019	0,016	0,024	0,117**	0,007
	(0,013)	(0,011)	(0,016)	(0,040)	(0,034)	(0,012)	(0,033)	(0,019)
Secondary Education	0,014	0,027	–0,027**	–0,012	–0,001	0,003	0,030	0,005
	(0,012)	(0,014)	(0,007)	(0,015)	(0,015)	(0,035)	(0,024)	(0,011)
Tertiary Education	0,013	0,043	0,024	–0,027	–0,029	0,032	0,129**	0,008
	(0,015)	(0,023)	(0,017)	(0,013)	(0,021)	(0,018)	(0,031)	(0,007)
Respondent's Father Completed Secondary Education	–0,012	–0,004	0,018	–0,028	–0,024	0,009	0,025	–0,030***
	(0,016)	(0,013)	(0,020)	(0,021)	(0,025)	(0,012)	(0,013)	(0,003)
Respondent's Father Completed Tertiary Education	0,057**	–0,062*	0,079**	0,016	0,019	–0,067***	0,049	–0,017
	(0,016)	(0,026)	(0,023)	(0,038)	(0,040)	(0,006)	(0,038)	(0,024)
Health	0,053*	–0,005	0,055	0,075	0,077	0,050	0,055	0,034
	(0,023)	(0,058)	(0,027)	(0,076)	(0,072)	(0,062)	(0,056)	(0,027)



Table 5 (continued)

(0 Illiberal, 1 Liberal)	Business Executives	Politicians	Chores done by women	University Education – Daughter	University Education – Son	Marriage	Men Bread- winners – Women Housewives	Equal Rights for Women
Constant	0,786***	0,304**	0,485***	0,828***	0,829***	0,157**	0,229*	0,785***
	(0,057)	(0,085)	(0,080)	(0,071)	(0,078)	(0,048)	(0,083)	(0,055)
Number of observations	1.454	1.443	1.450	1.444	1.442	1.443	1.451	1.456
R2	0,024	0,036	0,076	0,044	0,048	0,050	0,090	0,055

Note: \*\*\* p<0.01, \*\* p<0.05, \* p<0.1. Source: Authors' calculations based on the Life in Transition Survey (2016). Robust standard errors clustered by region are in parentheses.

#### 4.4 Household decision making

The LiTS provides information on the extent to which respondents (of either gender) participate in decision making in the household. We are thus able to study how small children affect women's bargaining power in the household. The dependent variables make use of the following question in the survey: "Who makes the decisions about the following issues in your household?", with options for:

- (1) *Managing day-to-day spending and paying bills*
- (2) *Making large household purchases (e.g. cars, major appliances)*
- (3) *The way the children are raised*
- (4) *Social life and leisure activities*
- (5) *Savings, investment and borrowing*
- (6) *Looking after the children.*

The decision-making variables were defined as follows. First, we identified the gender of the respondent and their partner. Then, we derived information from the survey on who in the household makes the decisions regarding a topic (i.e., mostly the respondent; shared equally between the respondent and their partner; mostly the respondent's partner). Last, we cross-checked the gender and decision-making information against each other, to assign the variables a value of 0 if a decision is mostly made by a man, 0.5 if it is shared equally between a woman

and a man, and 1 if it is mostly made by a woman. For the index, we summed the weighted average of each decision-making indicator. Therefore, higher values imply more decision-making powers in the female domain.

Once again, we split the sample into only female respondents and only male respondents, and limit the analysis to potentially economically active respondents who are aged 65 or younger. The specifications parallel those of Table 2 and Table 3. For robustness, we replicate the analysis using ordered logistic regressions (Tables A13 and A14), and find that the results do not change.

Results with the female-only sample are presented in Table 5. Overall, there is little evidence that having young children affects women's decision making within the household, at least compared to women without children or with older children. Women with children aged 1–6 are marginally more influential when it comes to large household purchases and less likely to be involved in decisions regarding social life and activities, but the effects are very small. We find some evidence suggesting that urban women have less bargaining power with regards to the way children are raised and who is looking after them. To the contrary, being tertiary educated, or having a father with tertiary education seems to positively affect women in intra-household decision-making, including day-to-day spending, large household purchases, as well as social life and leisure activities. Unsurprisingly, the effect of being separated, divorced or widowed is strong and positive across all indicators.

**Table 6: Decision making within the household, female-only sample, LiTS 2016**

(0 Male Domain, 1 Female Domain)	Day-to-Day Spending	Large Household Purchases	Children	Social Life and Activities	Savings, Investment and Borrowing	Looking after Children
Number of children 0–1	0,033	0,015	–0,066	0,026	–0,015	0,008
	(0,036)	(0,044)	(0,050)	(0,038)	(0,045)	(0,044)
Number of children 1–6	0,030	0,039*	0,010	–0,023**	0,010	0,013
	(0,019)	(0,017)	(0,018)	(0,007)	(0,010)	(0,012)
Number of children 6–17	0,010	0,003	0,013	0,015	0,004	0,023
	(0,012)	(0,019)	(0,017)	(0,016)	(0,017)	(0,021)
Age	0,010	0,005	0,003	0,006	0,010	0,006
	(0,010)	(0,009)	(0,008)	(0,010)	(0,010)	(0,012)
Age squared	–0,000	–0,000	–0,000	–0,000	–0,000	–0,000
	(0,000)	(0,000)	(0,000)	(0,000)	(0,000)	(0,000)

Table 6 (continued)

(0 Male Domain, 1 Female Domain)	Day-to-Day Spending	Large Household Purchases	Children	Social Life and Activities	Savings, Investment and Borrowing	Looking after Children
Household Income	0,000*	−0,000	−0,000	−0,000*	−0,000	−0,000
	(0,000)	(0,000)	(0,000)	(0,000)	(0,000)	(0,000)
Separated, Divorced or Widowed	0,187**	0,267***	0,331***	0,292***	0,274***	0,252***
	(0,047)	(0,054)	(0,051)	(0,048)	(0,051)	(0,043)
Urban Household	−0,005	0,060	−0,073**	0,003	0,086	−0,086*
	(0,048)	(0,043)	(0,020)	(0,011)	(0,050)	(0,039)
Secondary Education	−0,015	−0,043	0,010	−0,017	−0,033	0,003
	(0,038)	(0,037)	(0,027)	(0,022)	(0,035)	(0,028)
Tertiary Education	0,062**	0,017	0,031	0,035	0,005	0,035
	(0,018)	(0,080)	(0,050)	(0,022)	(0,040)	(0,040)
Respondent's Father Completed Secondary Education	−0,013	0,018	0,004	−0,003	0,007	0,004
	(0,014)	(0,018)	(0,014)	(0,023)	(0,016)	(0,030)
Respondent's Father Completed Tertiary Education	0,072	0,109***	0,001	0,063***	0,044	−0,064
	(0,038)	(0,018)	(0,045)	(0,006)	(0,034)	(0,061)
Health	0,053	−0,070	−0,032	0,089**	0,066	−0,054
	(0,123)	(0,116)	(0,044)	(0,024)	(0,087)	(0,081)
Constant	0,263*	0,281*	0,436**	0,353*	0,116	0,389
	(0,115)	(0,131)	(0,150)	(0,163)	(0,168)	(0,198)
Number of observations	687	656	674	670	675	686
R2	0,072	0,187	0,178	0,184	0,188	0,148

Note: \*\*\*  $p < 0.01$ , \*\*  $p < 0.05$ , \*  $p < 0.1$ . Source: Authors' calculations based on the Life in Transition Survey (2016). Robust standard errors clustered by region are in parentheses.

How does the presence of small children in the household affect the decision making power of male respondents? We present these results in Table 6. Men with very small children (0–1) indicate that decision-making regarding their social life and activities is more in the female domain, compared to men without children. Those with children aged 1–6 are also more likely to consult their female partner on savings, investments and borrowing, but the latter effect is relatively small, and having small children has no effect on other decisions. Older children decrease men's decision-making power when it comes to day-to-day spending, how children are raised, and looking after children.

**Table 7: Decision making within the household, male-only sample, LiTS 2016**

(0 Male Domain, 1 Female Domain)	Day-to-Day Spending	Large Household Purchases	Children	Social Life and Activities	Savings, Invest- ment and Borrowing	Looking after Children
Number of children 0–1	0,130	–0,051	0,071	0,120**	0,052	0,051
	(0,094)	(0,085)	(0,050)	(0,032)	(0,058)	(0,043)
Number of children 1–6	0,024	0,003	–0,005	0,027	0,021**	–0,017
	(0,027)	(0,018)	(0,011)	(0,014)	(0,007)	(0,010)
Number of children 6–17	0,029**	0,011	0,024**	0,021	0,004	0,030**
	(0,007)	(0,011)	(0,008)	(0,014)	(0,010)	(0,008)
Age	–0,005	–0,021	–0,014	0,011	–0,010	–0,019
	(0,004)	(0,013)	(0,014)	(0,020)	(0,013)	(0,014)
Age squared	0,000	0,000	0,000	–0,000	0,000	0,000
	(0,000)	(0,000)	(0,000)	(0,000)	(0,000)	(0,000)
Household Income	0,000	0,000***	0,000***	–0,000***	0,000***	0,000***
	(0,000)	(0,000)	(0,000)	(0,000)	(0,000)	(0,000)
Separated, Divorced or Widowed	–0,333***	–0,111	–0,255***	–0,246***	–0,143**	–0,324***
	(0,028)	(0,054)	(0,019)	(0,020)	(0,044)	(0,045)
Urban Household	–0,051	0,117***	–0,050	–0,002	0,041*	–0,015
	(0,079)	(0,021)	(0,032)	(0,026)	(0,016)	(0,027)
Secondary Education	0,043	0,038	0,067**	0,035	0,029**	0,041
	(0,031)	(0,025)	(0,016)	(0,035)	(0,009)	(0,028)
Tertiary Education	–0,036	0,003	–0,002	0,017	–0,026	–0,032
	(0,075)	(0,040)	(0,049)	(0,037)	(0,032)	(0,016)
Respondent's Father Completed Secondary Education	–0,056	–0,024	–0,015	–0,010	0,003	–0,073***
	(0,041)	(0,024)	(0,016)	(0,023)	(0,014)	(0,008)
Respondent's Father Completed Tertiary Education	–0,088	–0,066**	–0,022	–0,007	–0,014	–0,053**
	(0,064)	(0,017)	(0,026)	(0,040)	(0,010)	(0,017)
Health	0,011	0,058	0,130**	0,032	0,049	0,053
	(0,054)	(0,102)	(0,041)	(0,090)	(0,059)	(0,045)
Constant	0,561***	0,735*	0,657*	0,161	0,574	1,014**
	(0,063)	(0,274)	(0,265)	(0,358)	(0,271)	(0,245)
Number of observations	543	542	527	548	545	531
R2	0,072	0,070	0,098	0,125	0,059	0,146

Note: \*\*\* p<0.01, \*\* p<0.05, \* p<0.1. Source: Authors' calculations based on the Life in Transition Survey (2016). Robust standard errors clustered by region are in parentheses.

## **5. Conclusions and policy implications**

Using new micro-level data, the study explores the drivers of female employment in Mongolia. The results show that the presence of small children in the household is negatively correlated with women's work patterns in 2016. The presence of older children (aged 6–17) has no correlation with women's employment and the effect survives even after controlling for the number of elderly or disabled household members (and a range of other controls), which suggests that it is caring after small children that is the culprit.

In contrast, the paper finds that the presence of smaller or older children was not negatively correlated with female employment in 2006. There are several explanations for these findings, although the survey does not provide the data to distinguish among them. These findings could be due to sample selection or to the fact that Mongolia's mining boom was at its height, increasing labor demand <sup>27</sup>.

As discussed earlier, gender inequality in employment has strong negative effects on GDP growth. In particular, Ostry et al. (2018) provide a model to estimate the gains to GDP from reducing gender inequality around the world. They show that, for the bottom half of the countries in their sample in terms of gender inequality, closing the gender gap could increase GDP by an average of 35%. Four fifths of these gains come from adding workers to the labor force, and one fifth of the gains is due to the gender diversity effect on productivity.

To that end, gender-related barriers to employment are estimated to be equivalent to a 4% tax on female labor in the average country in Europe and Central Asia, but rising to the equivalent of a 53% tax rate on female labor in the average country in the Middle East and North Africa. For South Asia and East Asia and the Pacific, gender inequality is equivalent to effective tax rates on female labor of 32% and 11% respectively (Ostry et al. 2018). These figures are staggering and highlight the extreme inefficiency of shutting women out of the labor market.

In the current context, the presented results imply that increasing women's employment is essential for ensuring the growth and resilience of the Mongolian economy. However, it is crucial to note that providing women with employment opportunities alone will contribute to their empowerment only marginally, and instead comprehensive policies addressing educational, socio-cultural, and legal aspects are needed to achieve more gender equality. Otherwise, women's

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<sup>27</sup> See also footnote 19.

increased employment will come at the cost of women's leisure time as they will have to shoulder unpaid childcare and household duties in addition to their newly gained salaried work (Gassmann et al. 2015; Polansky and Laldjebaev forthcoming). This is also reiterated by Schmillen and Weimann-Sandig (2018) who identify "traditional" gender roles and attitudes towards women; lacking childcare facilities; and persisting inequalities in the legal system as the main issues inhibiting women's empowerment in Mongolia's labor market.

Therefore, providing high-quality daycare facilities for pre-school children – and encouraging their uptake – should feature high on the policy agenda. Similarly, policies which encourage women to combine childcare with work, such as shared parental leave (following the Scandinavian example) or flexible working policies, may be particularly useful. Education is an important tool for promoting gender diversity, employment and business ownership. Many of Mongolia's opportunities are likely to arise in STEM (science, technology, engineering and mathematics) areas, particularly in the capital, which is home to a burgeoning tech industry.<sup>28</sup> Women are still under-represented in these subjects in secondary and tertiary education, so tapping into the unexplored female potential is essential (Nikolova 2017). Equal access to specialized education will also ensure that women are able to utilize their skills across a variety of sectors.

In addition, cultural biases against women's role in society and the economy must be changed. Attitudes are unlikely to be changed overnight, as cultural formation is a long-term process. Companies, entrepreneurial associations, civil society and governments have a responsibility for doing so via awareness-raising, training programs, networking and promoting female role models. Lastly, the legal system ought to be reformed as to mandate equal remuneration for work of equal value as well as non-discrimination based on gender in hiring.

A final note is that this paper is about Mongolia and the results speak to the idiosyncratic experience of a particular country. At the same time, many of the important factors at work in Mongolia – natural resources, economic crises, and the legacy of communism – are also applicable to other countries. As a result, the hope is that this work will inform a wider body of research on how children change female labor patterns.

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<sup>28</sup> See, for instance, <https://www.newsdeeply.com/womensadvancement/articles/2018/05/01/mongolias-reverse-gender-gap-does-not-apply-to-the-tech-industry>.

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## A. Appendix

**Table A1: How important unobservables have to be relative to observables in order to explain away coefficients in Table 2**

Rmax	Table 2: LiTS 2016, Employment women, delta for coefficient on two children 1–6 = 0	Table 2: LiTS 2016, Employment men, delta for coefficient on two children 1–6 = 0
1.3Rc	–16.45	–0.73
2Rc	–5.89	–0.22
1	–1.30	–0.03

Note: Authors' calculations based on Oster (2019) and columns 2 and 4 of Table 2.

**Table A2: OLS Determinants of Employment: Women and Men under 65 in LiTS 2016 – Decision-making/Attitudes Indices Controls**

	Female Sample		Male Sample	
Children 0–1	–0.418***		–0.040	
	(0.052)		(0.066)	
Children 1–6	–0.067		–0.008	
	(0.046)		(0.005)	
Children 6–17	0.001		0.001	
	(0.026)		(0.019)	
Number of Children (0–1): 1		–0.404***		–0.031
		(0.044)		(0.064)
Number of Children (1–6): 1		–0.026		–0.018
		(0.051)		(0.016)
Number of Children (1–6): 2		–0.254**		–0.034
		(0.076)		(0.020)
Number of Children (1–6): 3		0.043		0.041
		(0.155)		(0.025)
Number of Children (1–6): 4		0.007		0.001
		(0.046)		(0.051)
Number of Children (6–17): 1		0.021		0.034
		(0.046)		(0.027)
Number of Children (6–17): 2		–0.054		–0.016
		(0.086)		(0.056)
Number of Children (6–17): 3		–0.023		–0.025
		(0.049)		(0.052)
Number of Children (6–17): 4		0.399*		0.150
		(0.184)		(0.072)
Number of Children (6–17): 5		0.453*		
		(0.193)		

**Table A2 (continued)**

	<b>Female Sample</b>		<b>Male Sample</b>	
Number of disabled or elderly household members	−0.055*	−0.066	0.015	0.009
	(0.024)	(0.036)	(0.017)	(0.019)
Age	0.076***	0.078***	0.034**	0.034**
	(0.009)	(0.010)	(0.011)	(0.012)
Age squared	−0.001***	−0.001***	−0.001**	−0.001**
	(0.000)	(0.000)	(0.000)	(0.000)
Household income	0.000***	0.000***	0.000***	0.000***
	(0.000)	(0.000)	(0.000)	(0.000)
Separated, divorced or widowed	0.059**	0.062**	0.075***	0.072**
	(0.019)	(0.021)	(0.016)	(0.019)
Urban household	−0.035	−0.028	−0.084***	−0.081***
	(0.042)	(0.043)	(0.007)	(0.007)
Secondary education completed	0.012	−0.002	−0.068	−0.075
	(0.054)	(0.052)	(0.036)	(0.037)
Tertiary education completed	0.013	0.006	0.004	0.001
	(0.060)	(0.056)	(0.035)	(0.036)
Respondent's father completed secondary education	0.054	0.055	0.010	0.008
	(0.045)	(0.046)	(0.005)	(0.005)
Respondent's father completed tertiary education	−0.066	−0.035	−0.049	−0.048
	(0.061)	(0.057)	(0.050)	(0.051)
Number of household members	−0.013	−0.011	0.005	0.006
	(0.023)	(0.023)	(0.013)	(0.014)
Decisionmaking Index (0 Male Domain, 1 Female Domain)	−0.124	−0.142	0.067	0.067
	(0.110)	(0.116)	(0.051)	(0.057)
Attitudes Index (0 Illiberal, 1 Liberal)	0.086	0.090	0.125	0.134
	(0.210)	(0.209)	(0.130)	(0.127)
Constant	−0.394	−0.426	0.314	0.308
	(0.352)	(0.355)	(0.193)	(0.201)
Number of observations	661	661	657	657
R2	0.174	0.196	0.124	0.129

Note: \*\*\* p<0.01, \*\* p<0.05, \* p<0.1. Source: Authors' calculations based on the Life in Transition Survey (2016). Robust standard errors clustered by region are in parentheses.

**Table A3: OLS Determinants of Employment: Women and Men under 65 in HSES 2016 – Spousal Income**

	Female Sample		Male Sample	
Children 0–1	–0.209***		0.000***	
	(0.048)		(0.009)	
Children 1–6	–0.065*		0.006	
	(0.016)		(0.007)	
Children 6–17	–0.001**		–0.001	
	(0.004)		(0.005)	
Number of Children (0–1): 1		–0.209***		0.002***
		(0.048)		(0.008)
Number of Children (0–1): 2		–0.436***		–0.091
		(0.096)		(0.068)
Number of Children (1–6): 1		–0.057		0.016
		(0.017)		(0.009)
Number of Children (1–6): 2		–0.130**		0.010
		(0.031)		(0.012)
Number of Children (1–6): 3		–0.206		0.008
		(0.062)		(0.036)
Number of Children (1–6): 4		–0.208		0.148*
		(0.250)		(0.030)
Number of Children (6–17): 1		0.001		–0.000
		(0.008)		(0.007)
Number of Children (6–17): 2		–0.010		0.007
		(0.010)		(0.012)
Number of Children (6–17): 3		–0.014		–0.007
		(0.013)		(0.018)
Number of Children (6–17): 4		0.031		–0.027
		(0.061)		(0.021)
Number of Children (6–17): 5		0.099		–0.075
		(0.110)		(0.082)
Number of Children (6–17): 6		0.132		–0.016
		(0.248)		(0.265)
Number of disabled or elderly household members	–0.041***	–0.041***	–0.025**	–0.026**
	(0.010)	(0.010)	(0.011)	(0.011)
Age	0.094***	0.094***	0.068***	0.067***
	(0.004)	(0.004)	(0.004)	(0.004)
Age squared	–0.001***	–0.001***	–0.001***	–0.001***
	(0.000)	(0.000)	(0.000)	(0.000)
Spousal income	–0.000***	–0.000***	–0.000***	–0.000***
	(0.000)	(0.000)	(0.000)	(0.000)

**Table A3 (continued)**

	Female Sample		Male Sample	
Separated, divorced or widowed	−0.040***	−0.040***	−0.083***	−0.081***
	(0.010)	(0.010)	(0.023)	(0.023)
Urban household	−0.100***	−0.100***	−0.033*	−0.034*
	(0.021)	(0.021)	(0.018)	(0.018)
Secondary education completed	−0.019	−0.019	−0.026	−0.027*
	(0.015)	(0.016)	(0.015)	(0.015)
Tertiary education completed	0.135***	0.134***	0.047***	0.045***
	(0.019)	(0.019)	(0.014)	(0.014)
Ill	−0.044***	−0.044***	−0.019	−0.019
	(0.011)	(0.011)	(0.020)	(0.020)
Disabled	−0.308***	−0.308***	−0.419***	−0.418***
	(0.031)	(0.030)	(0.054)	(0.053)
Number of household members	−0.016***	−0.016***	−0.013**	−0.013**
	(0.002)	(0.002)	(0.006)	(0.006)
Constant	−0.717***	−0.728***	−0.216***	−0.210***
	(0.063)	(0.066)	(0.065)	(0.070)
Number of observations	13,205	13,205	11,857	11,857
R2	0.224	0.225	0.245	0.245

Note: \*\*\* p<0.01, \*\* p<0.05, \* p<0.1. Source: Authors' calculations based on the Household Socio-Economic Survey (2016). Robust standard errors clustered by region are in parentheses.

**Table A4: OLS Determinants of Employment: Women and Men under 65 in LiTS 2016 – Urban Sample**

	Female Sample		Male Sample	
Children 0–1	−0.417***		−0.045	
	(0.039)		(0.058)	
Children 1–6	−0.075*		0.007	
	(0.033)		(0.010)	
Children 6–17	0.013		0.021*	
	(0.022)		(0.010)	
Number of Children (0–1): 1		−0.408***		−0.029
		(0.059)		(0.052)
Number of Children (1–6): 1		−0.054		0.003
		(0.031)		(0.012)
Number of Children (1–6): 2		−0.182*		−0.021
		(0.078)		(0.018)
Number of Children (1–6): 3		0.035		0.056**
		(0.025)		(0.018)

Table A4 (continued)

	Female Sample		Male Sample	
Number of Children (1–6): 4		–0.430		0.046*
		(0.324)		(0.017)
Number of Children (6–17): 1		0.030		0.101***
		(0.045)		(0.014)
Number of Children (6–17): 2		–0.046		0.005
		(0.070)		(0.038)
Number of Children (6–17): 3		0.088		0.035
		(0.083)		(0.040)
Number of Children (6–17): 4		0.389*		0.218**
		(0.146)		(0.077)
Number of Children (6–17): 5		0.343**		
		(0.122)		
Number of disabled or elderly household members	–0.054	–0.059	0.009	0.008
	(0.027)	(0.035)	(0.031)	(0.036)
Age	0.062***	0.062***	0.029**	0.030**
	(0.012)	(0.012)	(0.008)	(0.008)
Age squared	–0.001***	–0.001***	–0.000***	–0.000***
	(0.000)	(0.000)	(0.000)	(0.000)
Household income	0.000**	0.000**	0.000***	0.000***
	(0.000)	(0.000)	(0.000)	(0.000)
Separated, divorced or widowed	0.065**	0.064*	–0.009	–0.010
	(0.023)	(0.024)	(0.055)	(0.060)
Secondary education completed	–0.001	–0.015	–0.075**	–0.079**
	(0.062)	(0.064)	(0.025)	(0.025)
Tertiary education completed	–0.027	–0.042	–0.032	–0.031
	(0.064)	(0.062)	(0.030)	(0.031)
Respondent's father completed secondary education	0.038	0.041	–0.012	–0.018
	(0.034)	(0.031)	(0.011)	(0.010)
Respondent's father completed tertiary education	–0.071	–0.057	–0.142*	–0.142*
	(0.046)	(0.042)	(0.061)	(0.062)
Number of household members	–0.026	–0.025	–0.016**	–0.015*
	(0.014)	(0.013)	(0.005)	(0.006)
Constant	–0.133	–0.127	0.543**	0.527**
	(0.299)	(0.273)	(0.142)	(0.146)
Number of observations	552	552	545	545
R2	0.161	0.171	0.107	0.119

Note: \*\*\* p<0.01, \*\* p<0.05, \* p<0.1. Source: Authors' calculations based on the Life in Transition Survey (2016). Robust standard errors clustered by region are in parentheses.

**Table A5: OLS Determinants of Employment: Women and Men under 65 in HSES 2016 – Urban Sample**

	Female Sample		Male Sample	
Children 0–1	–0.246***		0.035**	
	(0.024)		(0.013)	
Children 1–6	–0.070***		0.022***	
	(0.015)		(0.004)	
Children 6–17	0.008**		0.006	
	(0.003)		(0.005)	
Number of Children (0–1): 1		–0.251***		0.037***
		(0.027)		(0.012)
Number of Children (0–1): 2		–0.393***		–0.055
		(0.025)		(0.051)
Number of Children (1–6): 1		–0.064***		0.034***
		(0.009)		(0.004)
Number of Children (1–6): 2		–0.142***		0.037***
		(0.031)		(0.008)
Number of Children (1–6): 3		–0.219***		0.087***
		(0.053)		(0.026)
Number of Children (1–6): 4		–0.086		0.218***
		(0.301)		(0.014)
Number of Children (6–17): 1		0.011		–0.006
		(0.011)		(0.008)
Number of Children (6–17): 2		–0.000		0.022
		(0.007)		(0.013)
Number of Children (6–17): 3		–0.010		–0.003
		(0.015)		(0.014)
Number of Children (6–17): 4		0.209***		0.002
		(0.054)		(0.036)
Number of Children (6–17): 5		0.428**		0.079**
		(0.204)		(0.034)
Number of Children (6–17): 6		0.148		0.013
		(0.250)		(0.270)
Number of disabled or elderly household members	0.003	0.003	–0.004	–0.003
	(0.011)	(0.011)	(0.018)	(0.018)
Age	0.092***	0.093***	0.062***	0.063***
	(0.003)	(0.003)	(0.003)	(0.004)
Age squared	–0.001***	–0.001***	–0.001***	–0.001***
	(0.000)	(0.000)	(0.000)	(0.000)
Household income	0.000***	0.000***	0.000***	0.000***
	(0.000)	(0.000)	(0.000)	(0.000)



Table A5 (continued)

	Female Sample		Male Sample	
Separated, divorced or widowed	0.027***	0.027***	-0.039	-0.038
	(0.009)	(0.009)	(0.029)	(0.029)
Secondary education completed	-0.005	-0.007	-0.017	-0.018
	(0.027)	(0.028)	(0.023)	(0.023)
Tertiary education completed	0.073**	0.071*	-0.015	-0.017
	(0.033)	(0.035)	(0.019)	(0.018)
Ill	-0.018*	-0.018*	0.000	-0.001
	(0.010)	(0.009)	(0.015)	(0.015)
Disabled	-0.370***	-0.368***	-0.465***	-0.465***
	(0.020)	(0.019)	(0.050)	(0.051)
Number of household members	-0.028***	-0.029***	-0.023***	-0.023***
	(0.002)	(0.002)	(0.004)	(0.004)
Constant	-0.796***	-0.805***	-0.132**	-0.137**
	(0.079)	(0.082)	(0.061)	(0.061)
Number of observations	7,340	7,340	6,222	6,222
R2	0.249	0.252	0.304	0.305

Note: \*\*\* p<0.01, \*\* p<0.05, \* p<0.1. Source: Authors' calculations based on the Household Socio-Economic Survey (2016). Robust standard errors clustered by region are in parentheses.

Table A6: OLS Determinants of Employment: Women and Men under 65 in LiTS 2016 – Rural Sample

	Female Sample		Male Sample	
Children 0–1	-0.312		-0.166	
	(0.155)		(0.241)	
Children 1–6	-0.018		-0.005	
	(0.087)		(0.023)	
Children 6–17	0.008		0.023	
	(0.051)		(0.038)	
Number of Children (0–1): 1		-0.313		-0.146
		(0.146)		(0.225)
Number of Children (1–6): 1		0.098		-0.029
		(0.091)		(0.025)
Number of Children (1–6): 2		-0.269		-0.006
		(0.189)		(0.073)
Number of Children (1–6): 3		0.124		0.012
		(0.311)		(0.066)
Number of Children (1–6): 4		0.105		-0.007
		(0.203)		(0.098)

**Table A6 (continued)**

	<b>Female Sample</b>		<b>Male Sample</b>	
Number of Children (6–17): 1		0.035		0.008
		(0.107)		(0.055)
Number of Children (6–17): 2		–0.046		–0.004
		(0.132)		(0.083)
Number of Children (6–17): 3		–0.062		0.091
		(0.238)		(0.102)
Number of Children (6–17): 4		0.158		0.195
		(0.398)		(0.133)
Number of disabled or elderly household members	–0.129	–0.169*	–0.039	–0.036
	(0.055)	(0.055)	(0.037)	(0.037)
Age	0.070*	0.071*	0.030	0.031
	(0.027)	(0.029)	(0.014)	(0.015)
Age squared	–0.001*	–0.001*	–0.000*	–0.000*
	(0.000)	(0.000)	(0.000)	(0.000)
Household income	0.000	0.000	0.000*	0.000*
	(0.000)	(0.000)	(0.000)	(0.000)
Separated, divorced or widowed	–0.174	–0.156	–0.139	–0.145
	(0.133)	(0.134)	(0.066)	(0.065)
Secondary education completed	–0.006	–0.024	–0.010	–0.011
	(0.095)	(0.107)	(0.055)	(0.056)
Tertiary education completed	0.023	0.035	–0.043	–0.044
	(0.050)	(0.063)	(0.180)	(0.179)
Respondent's father completed secondary education	0.027	0.015	–0.023	–0.017
	(0.053)	(0.067)	(0.010)	(0.012)
Respondent's father completed tertiary education	0.158*	0.132	0.122	0.125
	(0.055)	(0.089)	(0.096)	(0.095)
Number of household members	–0.026	–0.020	–0.007	–0.005
	(0.058)	(0.062)	(0.026)	(0.028)
Constant	–0.366	–0.427	0.377	0.347
	(0.475)	(0.480)	(0.348)	(0.366)
Number of observations	242	242	241	241
R2	0.188	0.233	0.159	0.165

Note: \*\*\* p<0.01, \*\* p<0.05, \* p<0.1. Source: Authors' calculations based on Life in Transition Survey (2016). Robust standard errors clustered by region are in parentheses.

**Table A7: OLS Determinants of Employment: Women and Men under 65 in HSES 2016 – Rural Sample**

	Female Sample		Male Sample	
Children 0–1	–0.058**		0.014	
	(0.022)		(0.014)	
Children 1–6	–0.039***		–0.005	
	(0.011)		(0.007)	
Children 6–17	0.007		–0.006	
	(0.009)		(0.008)	
Number of Children (0–1): 1		–0.060**		0.015
		(0.025)		(0.016)
Number of Children (0–1): 2		–0.032		0.093***
		(0.249)		(0.031)
Number of Children (1–6): 1		–0.018		–0.011
		(0.019)		(0.012)
Number of Children (1–6): 2		–0.084***		–0.004
		(0.028)		(0.014)
Number of Children (1–6): 3		–0.099		–0.040
		(0.059)		(0.035)
Number of Children (1–6): 4		–0.356		0.076***
		(0.333)		(0.024)
Number of Children (6–17): 1		0.004		–0.015
		(0.016)		(0.013)
Number of Children (6–17): 2		0.023		–0.016
		(0.026)		(0.021)
Number of Children (6–17): 3		0.035		–0.008
		(0.026)		(0.035)
Number of Children (6–17): 4		–0.037		–0.018
		(0.054)		(0.033)
Number of Children (6–17): 5		0.016		–0.120
		(0.077)		(0.105)
Number of Children (6–17): 6		0.165***		0.039
		(0.043)		(0.042)
Number of disabled or elderly household members	–0.033	–0.033	–0.002	–0.001
	(0.021)	(0.021)	(0.016)	(0.016)
Age	0.071***	0.071***	0.051***	0.051***
	(0.005)	(0.005)	(0.005)	(0.005)
Age squared	–0.001***	–0.001***	–0.001***	–0.001***
	(0.000)	(0.000)	(0.000)	(0.000)
Household income	0.000**	0.000**	0.000*	0.000*
	(0.000)	(0.000)	(0.000)	(0.000)

**Table A7 (continued)**

	Female Sample		Male Sample	
Separated, divorced or widowed	−0.069***	−0.068***	−0.058*	−0.059*
	(0.019)	(0.019)	(0.032)	(0.032)
Secondary education completed	−0.021	−0.020	−0.055***	−0.055***
	(0.018)	(0.018)	(0.013)	(0.013)
Tertiary education completed	0.039	0.038	−0.037	−0.037
	(0.028)	(0.029)	(0.023)	(0.023)
Ill	−0.086***	−0.086***	−0.035	−0.036
	(0.019)	(0.019)	(0.041)	(0.042)
Disabled	−0.199***	−0.197***	−0.342***	−0.343***
	(0.052)	(0.051)	(0.033)	(0.033)
Number of household members	−0.018***	−0.018***	−0.000	−0.001
	(0.006)	(0.006)	(0.007)	(0.007)
Constant	−0.512***	−0.516***	0.048	0.037
	(0.092)	(0.082)	(0.104)	(0.106)
Number of observations	5,865	5,865	5,635	5,635
R2	0.169	0.170	0.177	0.177

Note: \*\*\* p<0.01, \*\* p<0.05, \* p<0.1. Source: Authors' calculations based on the Household Socio-Economic Survey (2016). Robust standard errors clustered by region are in parentheses.

**Table A8: OLS Determinants of Involuntary Unemployment: Women and Men under 65 in HSES 2016**

	Female Sample		Male Sample	
Children 0–1	−0.022***		−0.006*	
	(0.003)		(0.004)	
Children 1–6	−0.005*		−0.008***	
	(0.002)		(0.002)	
Children 6–17	−0.002		−0.003*	
	(0.002)		(0.001)	
Number of Children (0–1): 1		−0.022***		−0.005
		(0.003)		(0.004)
Number of Children (0–1): 2		−0.026***		−0.034***
		(0.003)		(0.006)
Number of Children (1–6): 1		−0.005		−0.011**
		(0.003)		(0.004)
Number of Children (1–6): 2		−0.011**		−0.015***
		(0.004)		(0.005)
Number of Children (1–6): 3		−0.010		−0.036***
		(0.013)		(0.006)
Number of Children (1–6): 4		−0.031***		−0.034***
		(0.005)		(0.006)

Table A8 (continued)

	Female Sample		Male Sample	
Number of Children (6–17): 1		0.002		0.003*
		(0.001)		(0.002)
Number of Children (6–17): 2		–0.008**		–0.007
		(0.003)		(0.004)
Number of Children (6–17): 3		0.005		–0.020***
		(0.006)		(0.004)
Number of Children (6–17): 4		–0.021*		0.042
		(0.010)		(0.026)
Number of Children (6–17): 5		–0.006		–0.036***
		(0.039)		(0.008)
Number of Children (6–17): 6		–0.038**		–0.043***
		(0.016)		(0.008)
Number of disabled or elderly household members	0.003	0.003	0.008	0.008
	(0.003)	(0.003)	(0.006)	(0.006)
Age	0.000	0.000	0.002*	0.002
	(0.001)	(0.001)	(0.001)	(0.001)
Age squared	–0.000*	–0.000	–0.000**	–0.000**
	(0.000)	(0.000)	(0.000)	(0.000)
Household income	–0.000***	–0.000***	–0.000***	–0.000***
	(0.000)	(0.000)	(0.000)	(0.000)
Separated, divorced or widowed	0.009***	0.009***	0.001	0.001
	(0.002)	(0.002)	(0.003)	(0.003)
Urban household	0.011*	0.011*	0.013***	0.013***
	(0.006)	(0.006)	(0.003)	(0.003)
Secondary education completed	0.005	0.005*	–0.001	–0.001
	(0.003)	(0.003)	(0.007)	(0.007)
Tertiary education completed	0.003	0.003	0.006	0.005
	(0.003)	(0.003)	(0.006)	(0.006)
Ill	–0.001	–0.001	–0.006**	–0.006***
	(0.003)	(0.003)	(0.002)	(0.002)
Disabled	–0.017***	–0.017***	–0.020***	–0.019***
	(0.004)	(0.004)	(0.005)	(0.005)
Number of household members	0.002**	0.002**	0.003***	0.003***
	(0.001)	(0.001)	(0.001)	(0.001)
Constant	0.013	0.016	–0.022	–0.018
	(0.016)	(0.017)	(0.025)	(0.025)
Number of observations	13,205	13,205	11,857	11,857
R2	0.021	0.023	0.015	0.019

Note: \*\*\* p<0.01, \*\* p<0.05, \* p<0.1. Source: Authors' calculations based on the Household Socio-Economic Survey (2016). Robust standard errors clustered by region are in parentheses.

**Table A9: Logit Determinants of Employment: Women and Men under 65 in LiTS 2016**

	Female Sample		Male Sample	
Children 0–1	–1.714***		–0.588	
	(0.227)		(0.449)	
Children 1–6	–0.359*		0.179**	
	(0.189)		(0.079)	
Children 6–17	0.156		0.317***	
	(0.148)		(0.122)	
Number of Children (0–1): 1		–1.652***		–0.428
		(0.302)		(0.420)
Number of Children (1–6): 1		–0.016		0.110
		(0.416)		(0.197)
Number of Children (1–6): 2		–1.197***		0.116
		(0.300)		(0.189)
Number of Children (1–6): 3		0.643		
		(1.344)		
Number of Children (1–6): 4		–1.356		
		(1.368)		
Number of Children (6–17): 1		0.267		0.758**
		(0.351)		(0.371)
Number of Children (6–17): 2		–0.114		0.309
		(0.435)		(0.490)
Number of Children (6–17): 3		0.588		0.697*
		(0.495)		(0.391)
Number of Children (6–17): 4		2.040		
		(1.673)		
Number of disabled or elderly household members	–0.300*	–0.269	–0.105	–0.162
	(0.167)	(0.241)	(0.214)	(0.282)
Age	0.346***	0.351***	0.140*	0.152*
	(0.093)	(0.100)	(0.073)	(0.087)
Age squared	–0.005***	–0.005***	–0.003***	–0.003***
	(0.001)	(0.001)	(0.001)	(0.001)
Household income	0.000*	0.000	0.000***	0.000***
	(0.000)	(0.000)	(0.000)	(0.000)
Separated, divorced or widowed	0.263	0.297	0.161***	0.097**
	(0.388)	(0.367)	(0.025)	(0.042)
Urban household	0.038	0.078	–0.608**	–0.590*
	(0.251)	(0.244)	(0.300)	(0.320)
Secondary education completed	0.132	0.068	–0.495	–0.519
	(0.391)	(0.355)	(0.433)	(0.445)
Tertiary education completed	–0.081	–0.136	–0.831**	–0.839*
	(0.250)	(0.217)	(0.405)	(0.432)

**Table A9 (continued)**

	Female Sample		Male Sample	
Respondent's father completed secondary education	0.306	0.319	-0.121	-0.166
	(0.255)	(0.256)	(0.154)	(0.138)
Respondent's father completed tertiary education	-0.685***	-0.506***	-1.049***	-1.040***
	(0.193)	(0.183)	(0.264)	(0.277)
Number of household members	-0.199**	-0.187*	-0.234**	-0.236**
	(0.099)	(0.098)	(0.098)	(0.100)
Constant	-3.713*	-3.839*	0.957	0.788
	(2.193)	(2.203)	(1.022)	(1.198)
Number of observations	794	793	786	768
R2				

Note: \*\*\* p<0.01, \*\* p<0.05, \* p<0.1. Source: Authors' calculations based on the Life in Transition Survey (2016). Robust standard errors clustered by region are in parentheses.

**Table A10: Logit Determinants of Employment: Women and Men under 65 in HSES 2016**

	Female Sample		Male Sample	
Children 0–1	-0.917***		0.297***	
	(0.192)		(0.079)	
Children 1–6	-0.308***		0.178***	
	(0.070)		(0.068)	
Children 6–17	0.040**		0.099**	
	(0.018)		(0.040)	
Number of Children (0–1): 1		-0.928***		0.316***
		(0.197)		(0.078)
Number of Children (0–1): 2		-1.626***		-0.019
		(0.453)		(0.313)
Number of Children (1–6): 1		-0.289***		0.263***
		(0.073)		(0.085)
Number of Children (1–6): 2		-0.628***		0.330***
		(0.131)		(0.113)
Number of Children (1–6): 3		-0.878***		0.474
		(0.280)		(0.383)
Number of Children (1–6): 4		-1.049		
		(1.075)		
Number of Children (6–17): 1		0.024		0.030
		(0.038)		(0.056)
Number of Children (6–17): 2		0.027		0.283**
		(0.069)		(0.121)

Table A10 (continued)

	Female Sample		Male Sample	
Number of Children (6–17): 3		0.036		0.259
		(0.090)		(0.159)
Number of Children (6–17): 4		0.436		0.219
		(0.361)		(0.198)
Number of Children (6–17): 5		0.990		–0.329
		(0.727)		(0.596)
Number of Children (6–17): 6		0.793		0.027
		(1.243)		(1.418)
Number of disabled or elderly household members	–0.007	–0.007	0.035	0.033
	(0.075)	(0.076)	(0.089)	(0.089)
Age	0.456***	0.461***	0.335***	0.334***
	(0.026)	(0.028)	(0.024)	(0.024)
Age squared	–0.006***	–0.006***	–0.004***	–0.004***
	(0.000)	(0.000)	(0.000)	(0.000)
Household income	0.000***	0.000***	0.000***	0.000***
	(0.000)	(0.000)	(0.000)	(0.000)
Separated, divorced or widowed	0.044	0.043	–0.286**	–0.278**
	(0.087)	(0.087)	(0.123)	(0.118)
Urban household	–0.731***	–0.730***	–0.443***	–0.449***
	(0.122)	(0.122)	(0.152)	(0.153)
Secondary education completed	–0.215**	–0.216**	–0.507***	–0.511***
	(0.091)	(0.093)	(0.149)	(0.149)
Tertiary education completed	0.139	0.137	–0.386***	–0.389***
	(0.127)	(0.130)	(0.136)	(0.137)
Ill	–0.189	–0.189	–0.061	–0.064
	(0.123)	(0.121)	(0.165)	(0.165)
Disabled	–1.639***	–1.642***	–2.240***	–2.239***
	(0.213)	(0.213)	(0.304)	(0.303)
Number of household members	–0.144***	–0.145***	–0.161***	–0.159***
	(0.013)	(0.014)	(0.051)	(0.050)
Constant	–5.476***	–5.560***	–2.601***	–2.599***
	(0.376)	(0.406)	(0.320)	(0.316)
Number of observations	13,205	13,205	11,857	11,852
R2				

Note: \*\*\* p<0.01, \*\* p<0.05, \* p<0.1. Source: Authors' calculations based on the Household Socio-Economic Survey (2016). Robust standard errors clustered by region are in parentheses.



**Table A11: OLS Determinants of Employment: Women and Men under 65 in LiTS 2016 – (Pre)-School Controls**

	Female Sample		Male Sample	
Children 0–1	–0.373***		–0.068	
	(0.052)		(0.055)	
Children 1–6	–0.056		0.023	
	(0.037)		(0.012)	
Children 6–17	0.010		0.017	
	(0.025)		(0.014)	
Number of Children (0–1): 1		–0.356***		–0.056
		(0.061)		(0.051)
Number of Children (1–6): 1		–0.012		0.011
		(0.057)		(0.012)
Number of Children (1–6): 2		–0.208**		0.024
		(0.070)		(0.041)
Number of Children (1–6): 3		0.075		0.086**
		(0.143)		(0.027)
Number of Children (1–6): 4		–0.223		0.157
		(0.380)		(0.116)
Number of Children (6–17): 1		0.029		0.072
		(0.052)		(0.034)
Number of Children (6–17): 2		–0.042		–0.002
		(0.069)		(0.050)
Number of Children (6–17): 3		0.040		0.044
		(0.061)		(0.040)
Number of Children (6–17): 4		0.265		0.189**
		(0.195)		(0.058)
Number of Children (6–17): 5		0.424***		
		(0.066)		
Number of Children (1–6) Not Attending (Pre-)School	–0.012	–0.007	–0.043*	–0.042
	(0.016)	(0.026)	(0.020)	(0.028)
Number of disabled or elderly household members	–0.050	–0.049	–0.009	–0.011
	(0.027)	(0.036)	(0.015)	(0.017)
Age	0.064***	0.064***	0.028**	0.029**
	(0.013)	(0.014)	(0.008)	(0.009)
Age squared	–0.001***	–0.001***	–0.000***	–0.000**
	(0.000)	(0.000)	(0.000)	(0.000)
Household income	0.000***	0.000***	0.000**	0.000**
	(0.000)	(0.000)	(0.000)	(0.000)
Separated, divorced or widowed	0.022	0.023	–0.037	–0.041
	(0.045)	(0.043)	(0.033)	(0.033)
Urban household	0.013	0.019	–0.048**	–0.048*
	(0.039)	(0.040)	(0.017)	(0.019)

**Table A11 (continued)**

	Female Sample		Male Sample	
Secondary education completed	0.006	−0.004	−0.046	−0.051
	(0.048)	(0.045)	(0.036)	(0.036)
Tertiary education completed	−0.011	−0.017	−0.019	−0.021
	(0.044)	(0.041)	(0.027)	(0.030)
Respondent's father completed secondary education	0.039	0.038	−0.016	−0.018*
	(0.032)	(0.033)	(0.009)	(0.007)
Respondent's father completed tertiary education	−0.082	−0.059	−0.103*	−0.102*
	(0.054)	(0.051)	(0.038)	(0.037)
Number of household members	−0.022	−0.021	−0.009	−0.010
	(0.013)	(0.012)	(0.009)	(0.009)
Constant	−0.210	−0.249	0.554**	0.541**
	(0.309)	(0.309)	(0.150)	(0.157)
Number of observations	794	794	786	786
R2	0.158	0.171	0.113	0.121

Note: \*\*\* p<0.01, \*\* p<0.05, \* p<0.1. Source: Authors' calculations based on the Life in Transition Survey (2016). Robust standard errors clustered by region are in parentheses.

**Table A12: OLS Determinants of Employment: Women and Men under 65 in HSES 2016 – (Pre)-School Controls**

	Female Sample		Male Sample	
Children 0–1	−0.188***		0.028***	
	(0.043)		(0.007)	
Children 1–6	−0.061***		0.012	
	(0.012)		(0.007)	
Children 6–17	0.005		0.006	
	(0.003)		(0.005)	
Number of Children (0–1): 1		−0.190***		0.030***
		(0.045)		(0.007)
Number of Children (0–1): 2		−0.336***		−0.022
		(0.075)		(0.060)
Number of Children (1–6): 1		−0.052***		0.019*
		(0.011)		(0.009)
Number of Children (1–6): 2		−0.123***		0.021
		(0.025)		(0.012)
Number of Children (1–6): 3		−0.190***		0.037
		(0.048)		(0.039)
Number of Children (1–6): 4		−0.242		0.161***
		(0.258)		(0.027)
Number of Children (6–17): 1		0.005		−0.001
		(0.009)		(0.007)

Table A12 (continued)

	Female Sample		Male Sample	
Number of Children (6–17): 2		0.003		0.017
		(0.009)		(0.014)
Number of Children (6–17): 3		0.002		0.013
		(0.014)		(0.018)
Number of Children (6–17): 4		0.066		0.017
		(0.063)		(0.022)
Number of Children (6–17): 5		0.138		–0.043
		(0.116)		(0.078)
Number of Children (6–17): 6		0.135		0.017
		(0.216)		(0.225)
Number of Children (1–6) Not in (Pre-)School	0.054	0.055	0.018*	0.018*
	(0.054)	(0.054)	(0.009)	(0.009)
Number of Children (6–17) Not in (Pre-)School	0.036*	0.031*	–0.028	–0.027
	(0.018)	(0.016)	(0.022)	(0.022)
Number of disabled or elderly household members	–0.009	–0.009	–0.000	–0.000
	(0.013)	(0.014)	(0.013)	(0.013)
Age	0.085***	0.085***	0.059***	0.059***
	(0.004)	(0.004)	(0.004)	(0.004)
Age squared	–0.001***	–0.001***	–0.001***	–0.001***
	(0.000)	(0.000)	(0.000)	(0.000)
Household income	0.000***	0.000***	0.000***	0.000***
	(0.000)	(0.000)	(0.000)	(0.000)
Separated, divorced or widowed	0.004	0.005	–0.048**	–0.048**
	(0.015)	(0.015)	(0.021)	(0.021)
Urban household	–0.123***	–0.123***	–0.052***	–0.052***
	(0.020)	(0.020)	(0.017)	(0.017)
Secondary education completed	–0.033**	–0.034**	–0.050***	–0.050***
	(0.016)	(0.016)	(0.015)	(0.015)
Tertiary education completed	0.038*	0.037	–0.040***	–0.040***
	(0.021)	(0.022)	(0.013)	(0.013)
Ill	–0.039**	–0.039**	–0.014	–0.015
	(0.018)	(0.018)	(0.021)	(0.021)
Disabled	–0.316***	–0.316***	–0.424***	–0.423***
	(0.032)	(0.032)	(0.054)	(0.054)
Number of household members	–0.025***	–0.025***	–0.018***	–0.018***
	(0.003)	(0.003)	(0.006)	(0.006)
Constant	–0.561***	–0.573***	–0.079	–0.082
	(0.057)	(0.057)	(0.057)	(0.059)
Number of observations	13,205	13,205	11,857	11,857
R2	0.240	0.240	0.258	0.258

Note: \*\*\* p<0.01, \*\* p<0.05, \* p<0.1. Source: Authors' calculations based on the Household Socio-Economic Survey (2016). Robust standard errors clustered by region are in parentheses.

**Table A13: OGLM Determinants of Decision-making: Women under 65 in LiTS 2016**

(0 Male Domain, 1 Female Domain)	Day-to-Day Spending	Large Household Purchases	Children	Social Life and Activities	Savings, Investment and Borrowing	Looking after Children
Number of children 0–1	0,152 (0,242)	0,122 (0,329)	–0,529 (0,449)	0,176 (0,354)	–0,149 (0,336)	0,083 (0,322)
Number of children 1–6	0,151 (0,125)	0,340*** (0,106)	0,044 (0,144)	–0,202*** (0,074)	0,101 (0,084)	0,057 (0,086)
Number of children 6–17	0,076 (0,070)	0,022 (0,155)	0,099 (0,147)	0,153 (0,154)	0,038 (0,148)	0,187 (0,152)
Age	0,041 (0,062)	0,031 (0,070)	0,014 (0,070)	0,035 (0,087)	0,070 (0,088)	0,013 (0,089)
Age squared	–0,000 (0,001)	0,000 (0,001)	–0,000 (0,001)	–0,000 (0,001)	–0,001 (0,001)	–0,000 (0,001)
Household Income	0,000* (0,000)	–0,000 (0,000)	–0,000 (0,000)	–0,000** (0,000)	–0,000 (0,000)	–0,000 (0,000)
Separated, Divorced or Widowed	1,260*** (0,400)	2,275*** (0,449)	2,665*** (0,450)	2,542*** (0,376)	2,372*** (0,440)	2,066*** (0,474)
Urban Household	–0,017 (0,251)	0,495 (0,372)	–0,601*** (0,177)	0,021 (0,092)	0,729 (0,452)	–0,679* (0,362)
Secondary Education	–0,041 (0,198)	–0,349 (0,287)	0,084 (0,219)	–0,170 (0,196)	–0,264 (0,298)	0,080 (0,198)
Tertiary Education	0,356*** (0,111)	0,160 (0,608)	0,308 (0,402)	0,357** (0,179)	0,080 (0,300)	0,333 (0,305)
Respondent's Father Completed Secondary Education	–0,089 (0,080)	0,102 (0,150)	0,003 (0,113)	–0,056 (0,214)	0,015 (0,134)	0,010 (0,201)
Respondent's Father Completed Tertiary Education	0,381 (0,287)	0,828*** (0,198)	0,002 (0,319)	0,520*** (0,057)	0,332 (0,299)	–0,468 (0,441)
Health	0,189 (0,723)	–0,593 (0,870)	–0,350 (0,378)	0,708*** (0,251)	0,580 (0,801)	–0,383 (0,643)
Number of observations	687	656	674	670	675	686
R2						

Note: \*\*\* p<0.01, \*\* p<0.05, \* p<0.1. Source: Authors' calculations based on the Life in Transition Survey (2016). Robust standard errors clustered by region are in parentheses.

**Table A14: OGLM Determinants of Decision-making: Men under 65 in LiTS 2016**

(0 Male Domain, 1 Female Domain)	Day-to-Day Spending	Large Household Purchases	Children	Social Life and Activities	Savings, Investment and Borrowing	Looking after Children
Number of children 0–1	0,654 (0,480)	–0,404 (0,695)	0,574** (0,292)	1,152** (0,489)	0,520 (0,620)	0,339 (0,267)
Number of children 1–6	0,080 (0,133)	0,051 (0,158)	–0,046 (0,078)	0,272* (0,148)	0,206** (0,087)	–0,150 (0,095)
Number of children 6–17	0,149*** (0,037)	0,098 (0,093)	0,187*** (0,049)	0,189** (0,082)	0,027 (0,093)	0,212*** (0,044)
Age	–0,022 (0,020)	–0,188* (0,112)	–0,119 (0,116)	0,118 (0,207)	–0,093 (0,134)	–0,150 (0,100)
Age squared	0,000 (0,000)	0,002* (0,001)	0,001 (0,001)	–0,001 (0,002)	0,001 (0,002)	0,001 (0,001)
Household Income	0,000 (0,000)	0,000*** (0,000)	0,000*** (0,000)	–0,000*** (0,000)	0,000*** (0,000)	0,000 (0,000)
Separated, Divorced or Widowed	–1,966*** (0,194)	–1,188*** (0,442)	–2,342*** (0,312)	–2,376*** (0,221)	–1,611*** (0,395)	–2,541*** (0,332)
Urban Household	–0,244 (0,411)	1,038*** (0,149)	–0,397* (0,230)	–0,035 (0,298)	0,417*** (0,149)	–0,118 (0,225)
Secondary Education	0,234* (0,142)	0,361* (0,194)	0,626*** (0,220)	0,333 (0,327)	0,348*** (0,056)	0,293 (0,230)
Tertiary Education	–0,122 (0,381)	0,066 (0,306)	0,025 (0,397)	0,186 (0,355)	–0,205 (0,248)	–0,291** (0,126)
Respondent's Father Completed Secondary Education	–0,285 (0,211)	–0,219 (0,183)	–0,176 (0,146)	–0,145 (0,194)	0,000 (0,145)	–0,595*** (0,107)
Respondent's Father Completed Tertiary Education	–0,453 (0,352)	–0,599*** (0,136)	–0,253 (0,252)	–0,059 (0,373)	–0,264*** (0,102)	–0,442*** (0,129)
Health	0,080 (0,285)	0,526 (0,823)	1,064*** (0,409)	0,288 (0,811)	0,535 (0,573)	0,187 (0,402)
Number of observations	543	542	527	548	545	531
R2						

Note: \*\*\* p<0.01, \*\* p<0.05, \* p<0.1. Source: Authors' calculations based on the Life in Transition Survey (2016). Robust standard errors clustered by region are in parentheses.

**Table A15: OGLM Determinants of Attitudes towards Women: Women and Men under 65 in LiTS 2016**

(0 Illiberal, 1 Liberal)	Business Executives	Politicians	Chores done by women	University Education – Daughter	University Education – Son	Marriage	Men Breadwinners – Women	Equal Rights for Women
Number of children 0–1	0,011	–0,468***	0,148	0,753***	0,786***	0,184	0,139	0,299
	(0,282)	(0,120)	(0,538)	(0,181)	(0,200)	(0,332)	(0,633)	(0,338)
Number of children 1–6	0,064	–0,169***	–0,093	0,069	0,006	–0,180*	0,076**	–0,212*
	(0,089)	(0,053)	(0,083)	(0,082)	(0,115)	(0,093)	(0,031)	(0,114)
Number of children 6–17	–0,095***	–0,089***	–0,027	–0,067	–0,076	–0,076**	–0,107***	–0,083
	(0,031)	(0,025)	(0,062)	(0,062)	(0,063)	(0,035)	(0,038)	(0,063)
Gender (Female 1, Male 0)	0,243***	0,279**	–0,008	–0,180***	–0,083	–0,104	0,053	0,086
	(0,091)	(0,111)	(0,059)	(0,053)	(0,074)	(0,132)	(0,057)	(0,125)
Age	–0,009	–0,018	–0,017	0,033**	0,026*	0,008	0,004	0,024
	(0,019)	(0,015)	(0,018)	(0,016)	(0,014)	(0,014)	(0,013)	(0,025)
Age squared	0,000	0,000	0,000	–0,000***	–0,000***	–0,000	–0,000	–0,000
	(0,000)	(0,000)	(0,000)	(0,000)	(0,000)	(0,000)	(0,000)	(0,000)
Household Income	–0,000***	0,000	0,000	–0,000***	–0,000	–0,000	–0,000	0,000
	(0,000)	(0,000)	(0,000)	(0,000)	(0,000)	(0,000)	(0,000)	(0,000)
Separated, Divorced or Widowed	0,330***	–0,016	–0,068	0,196	0,438***	–0,013	0,088	0,142
	(0,051)	(0,214)	(0,095)	(0,146)	(0,081)	(0,136)	(0,098)	(0,130)
Urban Household	0,233	0,199**	0,326***	0,263	0,207	–0,042	0,572***	0,201
	(0,260)	(0,080)	(0,079)	(0,551)	(0,478)	(0,236)	(0,154)	(0,327)
Secondary Education	0,134	0,228**	–0,121**	0,060	0,165	0,030	0,153	0,063
	(0,112)	(0,104)	(0,057)	(0,138)	(0,159)	(0,250)	(0,124)	(0,141)
Tertiary Education	0,049	0,281**	0,219*	–0,065	–0,102	0,195	0,702***	0,054
	(0,155)	(0,129)	(0,122)	(0,211)	(0,279)	(0,135)	(0,172)	(0,106)
Respondent's Father Completed Secondary Education	–0,164	0,013	0,101	–0,294*	–0,261	0,137*	0,077	–0,365***
	(0,191)	(0,062)	(0,128)	(0,164)	(0,181)	(0,083)	(0,058)	(0,035)
Respondent's Father Completed Tertiary Education	0,819***	–0,592***	0,503***	0,477	0,462	–0,657***	0,325*	–0,103
	(0,195)	(0,229)	(0,132)	(0,383)	(0,367)	(0,138)	(0,166)	(0,311)
Health	0,814***	–0,255	0,437**	0,660	0,828	0,063	0,521	0,564
	(0,222)	(0,333)	(0,192)	(0,703)	(0,703)	(0,324)	(0,344)	(0,344)
Number of observations	1.454	1.443	1.450	1.444	1.442	1.443	1.451	1.456
R2								

Note: \*\*\* p<0.01, \*\* p<0.05, \* p<0.1. Source: Authors' calculations based on the Life in Transition Survey (2016). Robust standard errors clustered by region are in parentheses.

**Table A16: OLS Determinants of Employment: Women and Men under 65 in LiTS 2016 – Interaction Terms with Attitudes and Decision-making**

	Female Sample		Male Sample	
Decisionmaking Index (0 Male Domain, 1 Female Domain)	–0.148		–0.047	
	(0.199)		(0.136)	
Attitudes Index (0 Illiberal, 1 Liberal)		–0.020		–0.078
		(0.215)		(0.177)
Number of Children (0–1): 1	–0.656**	–0.459	–0.232	–0.355
	(0.232)	(0.577)	(0.147)	(0.250)
Number of Children (1–6): 1	–0.288*	0.161	–0.377	–0.145
	(0.129)	(0.120)	(0.189)	(0.156)
Number of Children (1–6): 2	–0.077	–0.820	–0.290	–0.120
	(0.357)	(0.413)	(0.226)	(0.089)
Number of Children (1–6): 3	–0.165	0.406	0.115*	–0.251*
	(0.468)	(0.275)	(0.049)	(0.104)
Number of Children (1–6): 4	–0.086	1.551***	–0.462**	–0.110
	(0.335)	(0.273)	(0.134)	(0.110)
Number of Children (6–17): 1	0.071	–0.250	0.044	0.007
	(0.127)	(0.179)	(0.108)	(0.138)
Number of Children (6–17): 2	0.268	–0.347*	0.280	–0.085
	(0.192)	(0.162)	(0.228)	(0.147)
Number of Children (6–17): 3	–0.022	0.231	0.113	0.594
	(0.116)	(0.601)	(0.139)	(0.529)
Number of Children (6–17): 4	1.028**	0.841	0.279	0.173
	(0.281)	(1.162)	(0.312)	(0.143)
Number of Children (6–17): 5	0.579	0.561**		
	(0.310)	(0.177)		
Number of Children (0–1): 1 & Decisionmaking Index	0.502		0.322	
	(0.458)		(0.198)	
Number of Children (1–6): 1 & Decisionmaking Index	0.476*		0.650	
	(0.177)		(0.318)	
Number of Children (1–6): 2 & Decisionmaking Index	–0.330		0.481	
	(0.615)		(0.400)	
Number of Children (1–6): 3 & Decisionmaking Index	0.355		–0.152	
	(0.574)		(0.091)	
Number of Children (1–6): 4 & Decisionmaking Index	0.169		0.844**	
	(0.551)		(0.222)	

Table A16 (continued)

	Female Sample		Male Sample	
Number of Children (6–17): 1 & Decisionmaking Index	–0.095		–0.027	
	(0.229)		(0.218)	
Number of Children (6–17): 2 & Decisionmaking Index	–0.570		–0.560	
	(0.315)		(0.379)	
Number of Children (6–17): 3 & Decisionmaking Index	0.046		–0.225	
	(0.185)		(0.192)	
Number of Children (6–17): 4 & Decisionmaking Index	–1.151		–0.264	
	(0.780)		(0.506)	
Number of Children (0–1): 1 & Attitudes Index		0.097		0.483
		(0.925)		(0.281)
Number of Children (1–6): 1 & Attitudes Index		–0.288		0.245
		(0.190)		(0.257)
Number of Children (1–6): 2 & Attitudes Index		1.015		0.170
		(0.579)		(0.119)
Number of Children (1–6): 3 & Attitudes Index		–0.525		0.496*
		(0.375)		(0.184)
Number of Children (1–6): 4 & Attitudes Index		–2.839***		0.232
		(0.523)		(0.210)
Number of Children (6–17): 1 & Attitudes Index		0.450		0.125
		(0.287)		(0.217)
Number of Children (6–17): 2 & Attitudes Index		0.511		0.184
		(0.247)		(0.213)
Number of Children (6–17): 3 & Attitudes Index		–0.374		–0.936
		(1.014)		(0.929)
Number of Children (6–17): 4 & Attitudes Index		–0.971		0.108
		(1.895)		(0.254)
Number of disabled or elderly household members	–0.070	–0.048	0.008	–0.016
	(0.042)	(0.043)	(0.015)	(0.027)
Age	0.080***	0.068**	0.038**	0.026*
	(0.010)	(0.017)	(0.011)	(0.010)
Age squared	–0.001***	–0.001***	–0.001**	–0.000**
	(0.000)	(0.000)	(0.000)	(0.000)



Table A16 (continued)

	Female Sample		Male Sample	
Household income	0.000***	0.000***	0.000***	0.000**
	(0.000)	(0.000)	(0.000)	(0.000)
Separated, divorced or widowed	0.067***	0.032	-0.075**	0.054
	(0.014)	(0.041)	(0.023)	(0.027)
Urban household	-0.024	0.010	-0.055***	-0.067**
	(0.041)	(0.049)	(0.012)	(0.017)
Secondary education completed	-0.002	0.004	-0.075	-0.058
	(0.050)	(0.055)	(0.040)	(0.033)
Tertiary education completed	0.010	-0.005	0.018	-0.030
	(0.053)	(0.046)	(0.046)	(0.024)
Respondent's father completed secondary education	0.038	0.058	0.005	-0.011
	(0.046)	(0.027)	(0.006)	(0.007)
Respondent's father completed tertiary education	-0.041	-0.072	-0.038	-0.105*
	(0.044)	(0.060)	(0.038)	(0.042)
Number of household members	-0.012	-0.021	0.005	-0.014
	(0.021)	(0.011)	(0.011)	(0.008)
Constant	-0.415	-0.218	0.292	0.644**
	(0.271)	(0.414)	(0.210)	(0.182)
Number of observations	682	766	678	756
R2	0.206	0.189	0.143	0.128

Note: \*\*\* p<0.01, \*\* p<0.05, \* p<0.1. Source: Authors' calculations based on the Life in Transition Survey (2016). Robust standard errors clustered by region are in parentheses.

Table A17: OLS Determinants of Employment: Women and Men under 65 in HSES 2016 – Limited Set of Predictors

	Female Sample		Male Sample	
Children 0–1	-0.181***		0.039***	
	(0.047)		(0.007)	
Children 1–6	-0.053***		0.019***	
	(0.017)		(0.007)	
Children 6–17	0.012***		0.012**	
	(0.003)		(0.005)	
Number of Children (0–1): 1		-0.183***		0.040***
		(0.049)		(0.007)
Number of Children (0–1): 2		-0.315***		0.018
		(0.077)		(0.061)
Number of Children (1–6): 1		-0.043**		0.029***
		(0.016)		(0.009)

**Table A17 (continued)**

	<b>Female Sample</b>		<b>Male Sample</b>	
Number of Children (1–6): 2		–0.110***		0.034***
		(0.032)		(0.011)
Number of Children (1–6): 3		–0.156**		0.061
		(0.066)		(0.038)
Number of Children (1–6): 4		–0.183		0.195***
		(0.257)		(0.026)
Number of Children (6–17): 1		0.008		0.012
		(0.008)		(0.008)
Number of Children (6–17): 2		0.014		0.038***
		(0.010)		(0.013)
Number of Children (6–17): 3		0.019		0.024
		(0.016)		(0.019)
Number of Children (6–17): 4		0.099		0.038
		(0.060)		(0.024)
Number of Children (6–17): 5		0.147		–0.064
		(0.115)		(0.091)
Number of Children (6–17): 6		0.192		0.073
		(0.195)		(0.230)
Age	0.081***	0.081***	0.056***	0.055***
	(0.004)	(0.004)	(0.004)	(0.004)
Age squared	–0.001***	–0.001***	–0.001***	–0.001***
	(0.000)	(0.000)	(0.000)	(0.000)
Household income	0.000***	0.000***	0.000***	0.000***
	(0.000)	(0.000)	(0.000)	(0.000)
Urbanity	–0.132***	–0.132***	–0.061***	–0.062***
	(0.020)	(0.020)	(0.017)	(0.017)
Secondary education completed	–0.023*	–0.023	–0.029	–0.029
	(0.013)	(0.013)	(0.020)	(0.020)
Tertiary education completed	0.056***	0.055***	–0.010	–0.011
	(0.018)	(0.019)	(0.016)	(0.016)
Number of household members	–0.026***	–0.026***	–0.022***	–0.022***
	(0.002)	(0.002)	(0.007)	(0.007)
Constant	–0.510***	–0.526***	–0.024	–0.012
	(0.054)	(0.056)	(0.062)	(0.060)
Number of observations	13,205	13,205	11,857	11,857
R2	0.221	0.221	0.187	0.187

Note: \*\*\* p<0.01, \*\* p<0.05, \* p<0.1. Source: Authors' calculations based on the Household Socio-Economic Survey (2016). Robust standard errors clustered by region are in parentheses.

**Table A18: OLS Determinants of Employment: Women and Men under 65 in LiTS 2006 – Limited Set of Predictors**

	Female Sample		Male Sample	
Children 0–1	–0.200**		0.051	
	(0.040)		(0.078)	
Children 1–6	0.025		0.021	
	(0.038)		(0.028)	
Children 6–17	–0.007		0.049	
	(0.041)		(0.035)	
Number of Children (0–1): 1		–0.232**		0.044
		(0.057)		(0.080)
Number of Children (1–6): 1		0.052		0.007
		(0.034)		(0.036)
Number of Children (1–6): 2		–0.050		0.070
		(0.206)		(0.044)
Number of Children (1–6): 3		0.409**		0.066
		(0.118)		(0.283)
Number of Children (6–17): 1		0.062		0.061
		(0.030)		(0.033)
Number of Children (6–17): 2		0.137		0.044
		(0.083)		(0.110)
Number of Children (6–17): 3		–0.102		0.128
		(0.138)		(0.099)
Number of Children (6–17): 4		–0.432		0.346*
		(0.262)		(0.143)
Age	0.017*	0.018*	0.058***	0.061***
	(0.007)	(0.006)	(0.001)	(0.002)
Age squared	–0.000**	–0.000**	–0.001***	–0.001***
	(0.000)	(0.000)	(0.000)	(0.000)
Household income	0.021	0.012	0.033	0.035
	(0.025)	(0.028)	(0.019)	(0.018)
Urbanity	0.010	–0.024	–0.035	–0.032
	(0.096)	(0.074)	(0.048)	(0.047)
Secondary education completed	–0.045	–0.069	0.121**	0.128**
	(0.125)	(0.109)	(0.026)	(0.030)
Tertiary education completed	0.148	0.156	0.213**	0.211**
	(0.109)	(0.094)	(0.053)	(0.059)
Number of household members	0.017	0.027	–0.042	–0.047*
	(0.018)	(0.017)	(0.020)	(0.017)
Constant	0.340*	0.336*	–0.360***	–0.416***
	(0.131)	(0.129)	(0.041)	(0.057)
Number of observations	226	226	687	687
R2	0.260	0.297	0.128	0.135

Note: \*\*\* p<0.01, \*\* p<0.05, \* p<0.1. Source: Authors' calculations based on the Life in Transition Survey (2006). Robust standard errors clustered by region are in parentheses.

**Table A19: OLS Determinants of Employment: Women and Men under 65 in LiTS 2016 – Limited Set of Predictors**

	Female Sample		Male Sample	
Children 0–1	–0.377***		–0.062	
	(0.054)		(0.058)	
Children 1–6	–0.063		0.003	
	(0.035)		(0.004)	
Children 6–17	0.006		0.021	
	(0.022)		(0.013)	
Number of Children (0–1): 1		–0.359***		–0.051
		(0.064)		(0.054)
Number of Children (1–6): 1		–0.013		–0.003
		(0.053)		(0.013)
Number of Children (1–6): 2		–0.221**		–0.017
		(0.049)		(0.022)
Number of Children (1–6): 3		0.071		0.047***
		(0.142)		(0.009)
Number of Children (1–6): 4		–0.233		0.034
		(0.308)		(0.023)
Number of Children (6–17): 1		0.030		0.078*
		(0.052)		(0.033)
Number of Children (6–17): 2		–0.055		0.006
		(0.057)		(0.045)
Number of Children (6–17): 3		0.043		0.048
		(0.059)		(0.039)
Number of Children (6–17): 4		0.199		0.196**
		(0.135)		(0.046)
Number of Children (6–17): 5		0.433***		
		(0.081)		
Age	0.063***	0.064**	0.029**	0.030**
	(0.013)	(0.014)	(0.008)	(0.008)
Age squared	–0.001***	–0.001***	–0.000***	–0.000***
	(0.000)	(0.000)	(0.000)	(0.000)
Household income	0.000***	0.000***	0.000**	0.000**
	(0.000)	(0.000)	(0.000)	(0.000)
Urbanity	0.005	0.013	–0.050*	–0.049*
	(0.035)	(0.036)	(0.019)	(0.020)
Secondary education completed	0.011	0.000	–0.051	–0.056
	(0.051)	(0.048)	(0.037)	(0.037)
Tertiary education completed	–0.015	–0.020	–0.030	–0.032
	(0.047)	(0.046)	(0.028)	(0.031)

Table A19 (continued)

	Female Sample		Male Sample	
Number of household members	−0.024	−0.022	−0.012	−0.012
	(0.011)	(0.011)	(0.009)	(0.010)
Constant	−0.168	−0.202	0.527**	0.513**
	(0.317)	(0.313)	(0.144)	(0.154)
Number of observations	794	794	786	786
R2	0.151	0.166	0.106	0.114

Note: \*\*\* p<0.01, \*\* p<0.05, \* p<0.1. Source: Authors' calculations based on the Life in Transition Survey (2016). Robust standard errors clustered by region are in parentheses.

Table A20: Determinants of attitudes towards women with interaction terms, LiTS 2016

(O Illiberal, 1 Liberal)	Business Executives	Politicians	Chores done by women	University Education – Daughter	University Education – Son	Marriage	Men Breadwinners – Women	Equal Rights for Women
Number of children 0–1	0.001	−0.066**	0.027	0.058**	0.062**	0.050	0.024	0.020
	(0.030)	(0.022)	(0.093)	(0.020)	(0.022)	(0.051)	(0.106)	(0.027)
Number of children 1–6	0.004	−0.029***	−0.018	0.011	0.008	−0.029***	0.015	−0.018
	(0.005)	(0.004)	(0.011)	(0.006)	(0.009)	(0.006)	(0.007)	(0.009)
Number of children 6–17	−0.032**	−0.017	0.020	−0.038	−0.055	0.020	−0.008	−0.063**
	(0.010)	(0.023)	(0.057)	(0.025)	(0.030)	(0.015)	(0.058)	(0.016)
Age	−0.002	−0.003	−0.002	0.002	0.001	0.003	0.001	0.001
	(0.002)	(0.002)	(0.002)	(0.003)	(0.003)	(0.002)	(0.004)	(0.002)
Age* Number of children 6–17	0.001	0.000	−0.001	0.001	0.001	−0.001*	−0.000	0.002**
	(0.000)	(0.001)	(0.001)	(0.001)	(0.001)	(0.000)	(0.001)	(0.000)
Age squared	0.000	0.000	0.000	−0.000	−0.000	−0.000*	−0.000	−0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
Gender	0.019*	0.048*	−0.004	−0.015	−0.008	−0.026	0.012	0.007
	(0.007)	(0.022)	(0.014)	(0.011)	(0.014)	(0.018)	(0.009)	(0.012)
Household	−0.000*	−0.000	0.000	−0.000*	0.000	−0.000*	0.000	0.000
	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)	(0.000)
PR Separated, Divorced or Widowed	0.021**	0.011	−0.015	0.017	0.035**	0.016	0.007	0.007
	(0.006)	(0.034)	(0.019)	(0.011)	(0.012)	(0.011)	(0.016)	(0.010)
Urban	0.019	0.036**	0.048*	0.018	0.014	0.025	0.118**	0.006
	(0.013)	(0.011)	(0.015)	(0.040)	(0.034)	(0.012)	(0.033)	(0.018)
Secondary	0.013	0.027	−0.026**	−0.013	−0.003	0.004	0.031	0.004
	(0.012)	(0.014)	(0.008)	(0.015)	(0.014)	(0.034)	(0.024)	(0.011)
Tertiary	0.012	0.043	0.025	−0.028*	−0.031	0.033	0.130**	0.005
	(0.015)	(0.024)	(0.017)	(0.013)	(0.021)	(0.017)	(0.029)	(0.009)

Table A20 (continued)

(O Illiberal, 1 Liberal)	Business Executives	Politicians	Chores done by women	University Education – Daughter	University Education – Son	Marriage	Men Breadwinners – Women	Equal Rights for Women
Respondent's								
Father								
Completed	–0.012	–0.004	0.018	–0.027	–0.023	0.008	0.025	–0.030***
Secondary								
Education								
	(0.016)	(0.012)	(0.021)	(0.021)	(0.025)	(0.013)	(0.014)	(0.004)
Respondent's								
Father								
Completed	0.056**	–0.062*	0.080**	0.015	0.017	–0.065***	0.049	<b>–0.019</b>
Tertiary								
Education								
	(0.016)	(0.027)	(0.024)	(0.039)	(0.040)	(0.007)	(0.037)	(0.023)
Health	0.054*	–0.005	0.054	0.077	0.080	0.048	0.054	0.038
	(0.023)	(0.057)	(0.027)	(0.077)	(0.073)	(0.061)	(0.056)	(0.029)
Constant	0.816***	0.306**	0.474***	0.884***	0.910***	0.049	0.226	0.818***
	(0.058)	(0.094)	(0.077)	(0.084)	(0.092)	(0.050)	(0.110)	(0.051)
Number of observations	1,454	1,443	1,450	1,444	1,442	1,443	1,451	1,456
R2	0.024	0.036	0.076	0.045	0.051	0.050	0.090	0.061

Note: \*\*\* p<0.01, \*\* p<0.05, \* p<0.1. Source: Authors' calculations based on the Life in Transition Survey (2016). Robust standard errors clustered by region are in parentheses.