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Self-employment and educational childcare time: Evidence from Latin America*

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Abstract

In this paper, we analyze the time employed and self-employed mothers devote to paid work and childcare activities, focusing on the activities aimed at increasing the human capital of children. To that end, we use time-use survey data for Mexico (2009), Peru (2010), Panama (2011), Ecuador (2012) and Colombia (2012). In our econometric results, we find that self-employed mothers in Mexico, Panama, Ecuador, and Colombia devote more time to educational child care, compared to employed mothers. Furthermore, the level of education of the mother also influences behavioral patterns between self-employed and employed mothers in childcare. To the extent that differences in the time mothers spend with their children influence the present and future outcomes of those children, our results are important for policy reasons.

Keywords: self-employment; educational child care, Latin America

JEL Codes: D13, J13, J22

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1. Introduction

In this paper, we analyze the time self-employed and employed mothers in five Latin-American countries devote to childcare activities, with a focus on those activities aimed at increasing the human capital of children (e.g., help with homework, reading to children), which has been called educational childcare. Our focus on educational childcare is motivated by prior research showing that the time devoted by parents (mainly mothers) to this activity contributes to the formation of the human capital of the children (Blau and Grossberg, 1990; Brooks-Gunn, Han and Waldfogel, 2002; Cooksey, Fondell, 1996; Datcher-Loury, 1988; Han, Waldfogel and Brooks-Gunn, 2001; Hsin and Felfe, 2014; Kalenkoski and Foster, 2008; Leibowitz, 1972, 1974, 1977; Marsiglio, 1991; Sayer, Gauthier and Furstenberg, 2004). We know that there are differences among mothers in the time they devote to educational childcare, in both developed (Guryan et al., 2008; Gimenez-Nadal and Molina, 2013) and developing countries (Campaña et al., 2016). However, no prior research has focused on how self-employment is related to educational childcare time, despite evidence showing that self-employed mothers exhibit differential behavior regarding childcare time, in comparison to their employed counterparts (Gimenez-Nadal, Molina and Ortega, 2012; Johansson-Sevä and Öun, 2015).

We focus on Latin American countries, where the female labor force, and in the Caribbean, has grown (e.g., from 33.7% in 1990 to 41.5% in 2014, CEPAL, 2014; World Bank, 2016), but women continue to devote more time to non-market work and provide most care for family members, relative to men (Newman 2002; Medeiros et al. 2007; Espen 2009; Canelas and Salazar 2014), which, in turn, constrains the amount of time women devote to market work (Fagan and Burchell 2002; Anxo and Boulin 2005; Messenger et al. 2007). Despite the fact that women have obligations in the labor market, they also have responsibilities at home, which generate additional pressure, the so-called "second shift" or "double-burden" (Hochschild and Machung, 1989; Schor 1991; Hochschild 1997).

Within this framework, one train of the economics literature has proposed that working women may choose to be self-employed (vs. employed) as a way to improve the balance of their work and family responsibilities. This is especially the case of working mothers with children, who may choose self-employment as a route to greater flexibility in their work schedules, and to be able to devote more time to the care of their children (Presser, 1989; Conelly, 1992; Loscocco, 1997; Caputo and Dolinsky, 1998; Boden 1999;

Hundley 2000; Lombard 2007; Arai 2008; Gimenez-Nadal et al., 2012; Johansson-Sevä and Öun, 2015). Following this argument, in this paper, we analyze how self-employed mothers in five Latin American countries distribute their time in childcare, compared to employed mothers, and we focus on childcare activities aimed at increasing the human capital of children.

Using data from time-use surveys for Mexico (2009), Peru (2010), Panama (2011), Ecuador (2012) and Colombia (2012), we analyze differences in the time devoted to childcare activities between employed and self-employed mothers. We consider two types of childcare: basic (e.g., bathing children, dressing children, breastfeeding children, and making sure they receive medical attention) and educational (e.g., reading stories to children, playing with children, taking them to the park, attending meetings and events at the school, and helping with homework). We also analyze paid work time, in order to see whether increased time in childcare is obtained from less time in paid work. We estimate a seemingly unrelated regressions (SUR) model for the time devoted to basic childcare, educational childcare and paid work, finding that self-employed mothers in Mexico, Panama, Ecuador, and Colombia devote more time to educational child care, compared with employed mothers.

Our results are consistent with prior studies carried out in developed countries (DeMartino and Barbato, 2003; Lombard 2007; Gimenez-Nadal et al 2012), with self-employed women being able to devote comparatively more time to childcare (Conelly 1992; Edwards and Field-Hendrey, 1996; Caputo and Dolinsky, 1998; Boden 1999). All in all, self-employed women appear to devote more time to childcare activities aimed at increasing the human capital of children. This is important from the perspective of public policy, as more time devoted to childcare by self-employed mothers may reflect poorer access to childcare services in comparison to their employed counter parts. However, there could be other reasons underlying such differences. For instance, it could be that such differences are due to mothers' preferences, in the sense that self-employed mothers are more concerned with devoting more time to their children in order to improve their human capital, and thus improve their present (at school) and future (labor market) outcomes. It could also be that self-employed mothers try to maximize the time they spend with their children as a way to transmit their entrepreneurial spirit to their children (Marcén, 2014). While the first explanation could be tackled via public policies, the other two options are difficult to address.

The rest of the paper is organised as follows. Section 2 describes the data. Section 3 describes the empirical strategy and the variables analysed. Section 4 presents our results and interpretations, and Section 5 concludes.

2. Data

We use time use surveys from Mexico (2009), Peru (2010), Panama (2011), Ecuador (2012) and Colombia (2012). These surveys include information on the time use of individuals, and have become the typical instrument used to analyse the time-allocation decisions of individuals (Aguiar and Hurst, 2007; Bianchi, 2000; Folbre et al. 2005; Gershuny, 2000; Gimenez-Nadal and Sevilla, 2012; Gimenez-Nadal and Molina 2015). These are the first pure time-use surveys in these five countries, since data on time use for these countries was previously available only through other sources, such as integrated household surveys. The targeted population are all members of households, aged 12 and above, for Mexico, Peru, and Ecuador, aged 15 and above for Panama, and aged 10 and above for Colombia. The first four surveys take as reference period the previous week, while for Colombia the reference period is the previous day. The five surveys use a list of pre-coded activities, and individuals record the amount of time devoted to these different activities.¹ An important limitation of these surveys is that they do not have information on simultaneous or “secondary” activities (activities done at the same time as the primary or main activity), which have been found to increase the amount of household production (Kalenkoski and Foster 2015), given that there may be differences between individuals in the ability for multitasking (Floro and Pichetpongsa 2010). Thus, the consideration of secondary activities could change the conclusions obtained in this research (Esquivel et al. 2008; Esquivel 2010).

Our sample is restricted to non-student, non-retiree mothers of children under 18, who define themselves as employed or self-employed, and with complete information on the

¹ The methodologies for the time use surveys used in this paper have been defined by the relevant institutes of statistics in each country: INEGI (National Institute of statistics and geography) in Mexico, INEI (National Institute of Statistics and Informatics) in Peru,; INEC (General Comptroller of the Republic of Panama, National Institute of statistics and censuses) in Panama; INEC (National Institute of statistics and censuses) in Ecuador and DANE (National Administrative Department of statistics) in Colombia. Lists of activities based on the following classifications are used in the data collection: Mexico (CMAUT, Mexican classification of time use activities); Peru (ICATUS, classification international activities of use of time); Panama (The time use survey from Panama is not based on an international classification of activities; part of the questionnaire was largely based on labor market surveys and the census of population and housing.); Ecuador and Colombia (CAUTAL, classification of activities of the use of time for Latin America and the Caribbean). The surveys from Mexico, Peru, Ecuador, and Colombia are designed to be nationally representative, considering rural and urban areas, while the survey from Panama considers only national urban areas.

socio-demographic characteristics we consider important in future analyses.² Our final sample is comprised of 3,063 mothers in Mexico, 1,035 mothers in Peru, 631 mothers in Panama, 3,065 mothers in Ecuador, and 8,273 mothers in Colombia. In terms of self-employment, the proportions are 32% in Mexico, 60% in Peru, 19% in Panama, 52% in Ecuador, and 42% in Colombia (See appendix B, table B1).

For the analysis of the time devoted by both self-employed and employed mothers to childcare as a primary activity, we divide childcare into two categories: basic and educational (see Appendix Table A1 for a description of the activities included in each category of child care). While basic childcare is related to the basic functioning of children, such as feeding, bathing, and providing medical care, educational childcare includes activities aimed at increasing the human capital of children. In this sense, we follow a similar definition of basic and educational childcare as in Gimenez-Nadal and Molina (2013) and Campaña, Gimenez-Nadal, and Molina (2016). All the time devoted to childcare activities is measured in hours per week for Mexico, Peru, Panama, and Ecuador, and in hours per day for Colombia.

Table 1 shows the time devoted in the five countries to basic and educational childcare, and we check whether the statistical variation is significant between the self-employed and the employed mothers. We show the time devoted by employed and self-employed mothers to basic and educational childcare, the difference between the two groups of mothers, and the p-value of the difference based on a t-type test. A p-value lower than 0.01 indicates that the difference between employed and self-employed mothers is statistically significant at the 99% level. We observe that self-employed mothers devote, in comparison to employed mothers, 0.83 and 0.06 more hours to basic childcare in Peru (hours per week) and Colombia (hours per day) respectively, and 0.51 more hours to educational childcare in Mexico (hours per week). These differences are statistically significant at standard levels.

3. Empirical Strategy and Variables

For the time devoted to basic child care, educational child care and paid work, we estimate linear regressions.³ We also consider that the time individuals spend in one of

²The Time Use Survey of Peru does not provide information on whether or not individuals are retired, but we know that the legal age of retirement is 65 years (Superintendency of Banking and Insurance of Peru), and thus we assume that individuals younger than 65 are not retired.

³Frazis and Stewart (2012) argue that linear models are preferred in the analysis of time allocation decisions. Foster and Kalenkoski (2013) compare the use of linear and Tobit models in the analysis of the time devoted to childcare

the three activities (e.g., basic childcare) cannot be also devoted to any of the other two activities, in the sense that more time in one activity implies less time in the others. We cannot use the time devoted by the individual to the different activities as explanatory variables, given that this would give rise to endogeneity problems, and so we estimate a Seemingly Unrelated Regression (SUR) on the time devoted to basic childcare, educational childcare, and paid work. We also consider the time devoted to paid work by the mothers since employment affects the opportunity cost of time and leaves less time available for other activities, including childcare.⁴

We estimate the following equations.

$$BC_{ik} = \alpha_{bc} + \beta_{bc}Self - employed_{ik} + \gamma_{bc}x_{ik} + \varepsilon_{bcik} \quad (1)$$

$$EC_{ik} = \alpha_{ec} + \beta_{ec}Self - employed_{ik} + \gamma_{ec}x_{ik} + \varepsilon_{ecik} \quad (2)$$

$$PW_{ik} = \alpha_{pw} + \beta_{pw}Self - employed_{ik} + \gamma_{pw}x_{ik} + \varepsilon_{pwik} \quad (3)$$

Where BC_{ik} , EC_{ik} , PW_{ik} , represent the hours that mother “ i ” in country “ k ” ($k=1,2,3,4,5$) devotes to basic childcare, educational childcare and paid work, respectively. $Self - employee_{ik}$ takes value “1” if mother “ i ” in country “ k ” is self-employed, and “0” otherwise, x_{ik} is a vector of socio-demographic characteristics, and ε_{bcik} , ε_{ecik} and ε_{pwik} are the random variables representing unmeasured factors. The x_{ik} (vector) includes age, age squared, secondary education (high school degree) and university education (more than high school degree), with primary education being the reference category, the presence of a partner (married/cohabiting), non-labour income of the family, the (log) hourly predicted wage rate, the (log) hourly predicted wage rate squared, the number of household members, the number of children in the household in three age-range categories (aged 0 to 4 years, aged 5 to 12 years, aged 13 to 17 years), whether the respondent is indigenous or not, is living in a rural area or not, the sector composition in which the mothers work (reference primary sector) and the region of

activities, finding that the qualitative conclusions are similar for the two estimation methods. Thus, we rely on linear models, given that their estimated coefficients are easier to interpret than alternative models such as the Tobit.

⁴ Table B2 shows the difference between self-employed and employed mothers in the time devoted to paid work. In the case of the five countries, self-employed mothers devote less time to paid work compared to employed mothers, with these differences being statistically significant at the standard levels. Furthermore, travel to/from work may make a difference in the time devoted to market work, since the self-employed can be working at home and, therefore, we do not include commuting time in market work, as in Gimenez-Nadal et al (2012). See Appendix Table A1 for a description of the activities included in each category of childcare and paid work

residence of the mothers. (See Table B1 in the Appendix for summary statistics of the variables in the five countries).

We allow for correlations in the unobserved determinants of the activities by allowing the error terms to be jointly normally distributed, with no restrictions on the correlation. This specification accounts for the time constraint that may require individuals to spend more time on one activity and, therefore, less time on another. We additionally assume that the error components are independent across individuals:

$$\begin{pmatrix} \varepsilon_{bcik} \\ \varepsilon_{ecik} \\ \varepsilon_{pwik} \end{pmatrix} \sim N \begin{pmatrix} 0 \\ 0 \\ 0 \end{pmatrix} \begin{pmatrix} \sigma_{bcik}^2 & \rho_{bcik ecik} \sigma_{bcik} \sigma_{ecik} & \rho_{bcik pwik} \sigma_{bcik} \sigma_{pwik} \\ \rho_{ecik bcik} \sigma_{ecik} \sigma_{bcik} & \sigma_{ecik}^2 & \rho_{ecik pwik} \sigma_{ecik} \sigma_{pwik} \\ \rho_{pwik bcik} \sigma_{pwik} \sigma_{bcik} & \rho_{pwik ecik} \sigma_{pwik} \sigma_{ecik} & \sigma_{pwik}^2 \end{pmatrix}$$

Age and age squared are considered to account for the allocation of time over the life-cycle (Apps and Rees, 2005; Kalenkoski et al., 2005; Aguiar and Hurst 2007). The time spent in childcare by individuals depends on the age composition of the children (Guryan et al., 2008; Gimenez-Nadal and Molina, 2013; Campaña, et al., 2016), and while more time in basic childcare is expected in the first years, more time in educational childcare is expected when the children are older, and thus we also control for the age composition (number of children aged 0 to 4 years, aged 5 to 12 years, aged 13 to 17 years) of children in the household. Silver (2000) shows that, while children are young, parents need to spend more time in activities such as bathing, dressing, and taking them to the doctor, while Miller and Mulvey (2000) indicate that, as children grow up, parents devote more time to activities like reading and teaching.

Education is also an important factor to consider, because women with a higher level of education may have greater opportunity costs associated with working time (Becker, 1965), which may lead higher-educated working mothers to devote more time to paid work and less time to childcare activities, despite prior evidence showing that highly-educated mothers devote more time to child-care activities in both developed (Kalenkoski et al, 2005; Guryan et al. 2008; Gimenez-Nadal and Sevilla, 2012; Gimenez-Nadal and Molina, 2013) and developing countries (Campaña et al., 2016).⁵ Regarding the presence of partners, Demo and Acock (1993) show that single mothers, relative to married

⁵Table B3 (Appendix B) shows that, when mothers level of studies increases, the differences in the time devoted to educational childcare between self-employed mothers and employed mothers increases in Mexico, Ecuador, and Colombia, with these differences being statistically significant at standard levels.

mothers, do more housework, and unmarried women have higher labor-participation rates than married women (Mateo Díaz and Rodríguez-Chamussy 2016).

Non-labour income (family) may also affect the time working mothers devote to different activities, as it may affect the time devoted to paid work by working mothers, and the amount of outsourced household services that are contracted, including childcare. For example, Kalenkoski et al (2005) show that, when household income increases, mothers reduce their time devoted to active childcare.⁶ With respect to wages, we include the predicted (log) hourly wage rate to control for income and substitution effects, and we also include the squared term to allow for non-linear effects. (We cannot include Panama here because this particular time-use survey does not provide information about wages.)⁷ Following Gimenez-Nadal et al (2012), we consider the effects of family structure. The number of family members could influence the dedication of more or less time to different activities. Hallman et al. (2005) indicate that the presence of other female relatives in the household increases maternal labor supply.

Racial origin, living in a rural or urban area and region of residence may also influence the time devoted to different activities (Campaña et al 2016). To measure racial differences, we consider whether the working mother is indigenous, or not.⁸ (We do not have racial origin information for Panama.) Regarding geographical differences, living in a rural area involves limited access to education, and other services such as healthcare (Canelas and Salazar, 2014), which could influence the time devoted to the activities of childcare.⁹ For Panama, only urban areas are considered, so this variable is not included in the regressions for Panama. For the region of residence of women, in Mexico we consider four regions (Centre, West-Centre, North, and South-South-East), in Peru, four

⁶We obtain the non-labour income of the family for Mexico, Ecuador, and Colombia through the survey questions related to income earned from subsidies provided by government, rent of properties, financial investments, foreign remittances, and so forth. In the cases of Peru and Panama, we cannot consider the non-labour incomes of the family because those time-use surveys do not provide that information.

⁷To calculate the hourly predicted wages, we use the Heckman technique (1979) and we include all women who have answered all the sections of the Time Use survey in Mexico, Peru, Ecuador, and Colombia and are of legal working-age. Furthermore, we add '1' to the value predicted in order to have values for all the women, including those women where the original ratio is equal to '0' or negative. This procedure is also performed by Gimenez-Nadal and Molina (2013) in their study for Spain and the UK, and Campaña et al (2016) in their study for Mexico, Peru, Colombia, and Ecuador. Results of estimated regressions are shown in Table B4 of Appendix B. Results excluding hourly wages are consistent regarding the association between self-employment and time devoted to educational childcare. Results are available upon request.

⁸For Mexico and Peru, the time-use surveys provide information on whether the respondent speaks an indigenous language. We assign value '0' to the indigenous variable if the working mother does not speak an indigenous language, and value '1' otherwise. In the cases of Ecuador and Colombia, respondents are asked to identify themselves according to their indigenous origin, so that we assign '0' to the indigenous variable if the working mother does not identify herself as indigenous, and value '1' if she is identified as such.

⁹It is important to note that for Mexico, Peru, and Ecuador, time-use surveys were conducted in both urban and rural areas; for Colombia the time use survey asks respondents if they live in a municipality or not, so the rural variable in Colombia refers to not living in a municipality.

regions (Rest of the Coast, Sierra, Selva, and Lima), in Panama, three regions (San Miguelito and Panama districts, West-East, and rest of the district of Panama and the rest of the country) in Ecuador, three regions (Sierra, Costa, and Amazon) and in Colombia, six regions (Atlantic, Central, Eastern, Pacific, Bogota, and San Andres). The reference category for Mexico is the Centre region, for Peru, the Selva region, for Panama, the rest of the country, for Ecuador, the Amazon region, and for Colombia, the Bogota region.

It is also important to consider sectoral composition because the self-employed and the employed are concentrated in different sectors (Mondragon-Velez and Peña 2010). Following Kenessey (1987), we consider four major sectors covering the following activities. Primary Sector (agriculture, forestry and fishing, mining), Secondary sector (construction, manufacturing), Tertiary sector (transportation, electric, gas and sanitary services; wholesale trade; retail trade) and Quaternary sector (finance, insurance, and real estate; services and public administration). Information for sectoral composition is only available for Peru, Ecuador, and Colombia. In the cases of Mexico and Panama, their time use surveys do not provide this information.

Table B1 (Appendix B) shows the summary statistics of the socio-demographic variables included in our regressions. For age, self-employed mothers, on average, in the five countries are 1.71 years older than employed mothers. For the level of studies in the five countries, the prevailing level for the self-employed mothers is primary education, with 75%, 59%, 46%, 73% and 51% for Mexico, Peru, Panama, Ecuador, and Colombia, respectively, while for employed mothers, primary studies predominate for Mexico (57%), Peru (42%) and Ecuador (44%) and university studies for Panama (51%) and Colombia (46%). Concerning non-labor income (in Mexico, Ecuador, and Colombia) self-employed mothers obtain higher incomes than do employed mothers. Predicted wages (in Mexico, Peru, Ecuador, and Colombia) are higher for employed mothers than for self-employed mothers. The number of household members in the five countries for self-employed and employed mothers is around four, one of which would be a child between 5 and 12 years old, and around 72% of working mothers are married/cohabiting. As for sectoral composition (Peru, Ecuador, and Colombia) self-employed mothers are concentrated in the tertiary sector (transportation, electric, gas and sanitary services; wholesale trade; retail trade) in Peru and Ecuador (50% and 38% respectively), and in the quaternary sector (finance, insurance, and real estate; services and public administration) in Colombia (44%). Employed mothers are concentrated in the quaternary sector in Peru, Ecuador, and Colombia (53%, 53% and 59% respectively).

4. Results

Table 2 shows the results of estimating the SUR model for Equations (1), (2) and (3) for Mexico, Peru, Panama, Ecuador, and Colombia, respectively.¹⁰ For the time devoted to basic childcare (Column 1, Table 2), self-employed mothers devote more time to basic childcare compared with their employed counterparts in Mexico, Peru and Colombia, with these differences being 0.36 and 0.80 hours per week in Mexico and Peru and 0.11 hours per day in Colombia. With respect to educational childcare (Column 2, Table 2), self-employed mothers devote more time to educational childcare compared with their employed counterparts in Mexico, Panama, Ecuador and Colombia, with these differences being 0.80, 1.51 and 1.07 hours per week in Mexico, Panama, and Ecuador, respectively, and 0.10 hours per day in Colombia.¹¹ Thus, in four of the five countries, self-employed mothers devote comparatively more time to educational childcare activities than employed mothers.

Based on the importance of the level of education of the mother in determining the time devoted to childcare (Guryan et al., 2008; Gimenez-Nadal and Molina, 2013; Campaña, et al., 2016), Table 3 show the results of estimating the SUR model for Equations (1), (2), and (3) (with education interactions) for Mexico, Peru, Panama, Ecuador, and Colombia, respectively, with the education interactions as follows: Secondary education*self-employed and University education*self-employed (reference category: Primary education). The reason to consider the educational dimension is that education may change the opportunity costs of working, the preferences for childcare time, and the productivity of childcare activities, among others, and thus we explore whether there exist any differential effects according to the level of education of the mother.

For the time devoted to basic childcare, we observe that in Peru and Colombia self-employed mothers devote more time to basic childcare compared with employed mothers, with no differences according to the educational level of the mother. We find no statistically-significant difference for Mexico, which contrasts with previous results when we exclude educational interactions because of its low statistical significance in Table 2,

¹⁰Given that we are using generated regressors in our models (i.e., predicted wages), we follow Pagan (1984), Murphy and Topel (1985), Gimenez Nadal and Molina (2013, 2015) and Campaña et al. (2016) and bootstrap the standard errors of such regressions. In doing so, we have carried out 1,000 replications, where in each replication a random sample with replacement is drawn from the total number of observations.

¹¹ Complete results of the SUR estimates for each country are in Tables C1 to C5 in the Appendix.

where the coefficient is statistically-significant at the 90% level, but this statistical significance disappears when we estimate an augmented model.

For the time devoted to educational childcare (Column 2, Table 3), we observe that self-employed mothers devote more time to educational childcare compared with employed mothers in Mexico, Panama, Ecuador, and Colombia, and educational differences emerge in Mexico, Ecuador and Colombia.¹² In Mexico, self-employed mothers with secondary education are the group of mothers who devote the most time to educational childcare (1.948 more hours per week) in comparison to employed mothers, while self-employed mothers with primary and university education devote 0.508 more hours per week to educational childcare in comparison to employed mothers. In the case of Ecuador and Colombia, self-employed mothers with university education are the group who devote the most time to educational childcare (1.93 more hours per week and 0.18 more hours per day, respectively) in comparison to employed mothers, while self-employed mothers with primary and secondary education in Ecuador and Colombia devote 0.708 more hours per week and 0.07 more hours per day, respectively to educational childcare, in comparison to employed mothers. These results show that, in Mexico (secondary education), Ecuador (university education) and Colombia (university education), the differences between self-employed mothers and employed mothers in the time devoted to educational childcare increases with the level of education.¹³

5. Conclusions

In this paper, we analyse how self-employed and employed mothers spend their time in basic and educational childcare, in five Latin American countries, using time use surveys from Mexico, Peru, Panama, Ecuador, and Colombia. Our results indicate that self-employed mothers from Mexico, Panama, Ecuador, and Colombia devote more time to educational childcare, compared with employed mothers. A key factor is education, as the differences between self-employed mothers and employed mothers in the time devoted to educational childcare increases with an increased level of education in Mexico, Ecuador, and Colombia.

¹²For the cases of Peru and Panama, employed mothers with university studies relative to employed mothers with primary education, devote 1.90 and 1.56 more hours per week, respectively, to educational childcare, and is statistically significant in the two countries.

¹³Complete results of the SUR estimates (education interactions) for each country are in Tables C6 to C10 in the Appendix

Our results support the hypothesis that self-employment helps mothers to balance their work and household responsibilities, providing greater control over their allocation of time. Self-employment in Latin American countries may allow working women to spend more time in childcare activities aimed at increasing the human capital of their children. Considering the relationship between self-employment and the educational childcare time of women, an alternative view is that micro-entrepreneurship and self-employment may be seen as a survival strategy in these countries, especially in times of crisis and unemployment, for those who have no other form of income generation (Heller 2010), and thus those particular women may prioritize their household responsibilities as they “work to survive”. The majority of self-employed women in the analyzed countries have lower levels of studies compared to their employed counterparts, which often makes it difficult for them to access the salaried sector (Mondragon-Velez and Peña 2010). A third channel implies that self-employed mothers try to maximize the time they spend with their children in an attempt to transmit their entrepreneurial behavior, focusing their educational childcare time on activities related to their current economic activity. With the current data, we do not know which channel is at the root of the positive relationship between self-employment and educational childcare, and more research on this topic is needed.

The fact that self-employed mothers devote comparatively more time to educational childcare than do employee mothers has implications, especially when there are limitations in the provision of childcare services, as the human capital of children is a fundamental factor for present and future outcomes of those children. At the same time, access to financing and specific training in entrepreneurship are key aspects in fostering an entrepreneurial spirit in the population (Cheston and Kuhn, 2002; Heller 2010). Thus, public policies aimed at financing and training in entrepreneurship may serve as a motivation, as it will affect the human capital of future generations.

Finally, the fact that self-employed mothers devote comparatively more time to educational childcare time raises the question as to whether the children of these self-employed mothers really do have increased human capital, reflected in better outcomes at school and/or in the labor market, in comparison to children of employed mothers. If we find differences, it could mean that the access to childcare services is equally distributed among mothers, and self-employment fosters differences among children. If we do not find differences, it could mean that the access to child care services is not equally distributed among mothers and favours employed mothers, and self-employment is a tool

to fill in the gap. Analysis of children's outcomes based on the self-employment/employment status of their mothers is needed in order to answer these questions, and more research on this topic is needed.

Finally, one limitation of our analysis is that our data is a cross-section of individuals, and does not allow us to identify differences in the time devoted to market work, non-market work, and the two types of child care, net of (permanent) individual heterogeneity in preferences and characteristics. At present, there are no panels of time-use surveys currently available, and we leave this issue, also, for future research.

References

- Aguiar, M., and Hurst, E. (2007). Measuring trends in leisure: The allocation of time over five decades. *The Quarterly Journal of Economics*, 122(3), 969–1006.
- Allen, T., Herst, D., Bruck, C. and Sutton, M. (2000) Consequences associated with work-to-family conflict: a review and agenda for future research, *Journal of Occupational Health Psychology*, 5, 278–308.
- Anxo, D., and Boulin, J. Y. (2005). Working Time Options over the Life Course: Changing Social Security Structure. European Foundation for the Improvement of Living and Working Conditions, Dublin, Ireland.
- Apps, P., and Rees, R. (2005). Gender, time use, and public policy over the life cycle. *Oxford Review of Economic Policy*, 21(3), 439-461.
- Arai, B. (2008) Self-employment as a response to the double day for women and men in Canada. *Canadian Review of Sociology*, 37, 125–42.
- Becker, G. S. (1965). A Theory of the Allocation of Time. *The Economic Journal*, 493-517.
- Bianchi, S. M. (2000). Maternal employment and time with children: Dramatic change or surprising continuity? *Demography*, 37 (4), 401–414.
- Blau FD, Grossberg AJ (1990) Maternal labor supply and children's cognitive development. *Review of Economics and Statistics*, 74, 474–481
- Boden, R. J. (1999) Flexible working hours, family responsibilities, and female self employment. *American Journal of Economics and Sociology*, 58, 71–83.
- Brooks-Gunn J, Han WJ, andWaldfogel J (2002) Maternal employment and child outcomes in the first three years of life. *Child Development*, 73, 1052–1072
- Byron, K. (2005) A meta-analytic review of work-family conflict and its antecedents, *Journal of Vocational Behavior*, 67, 169–98.

- Campaña, J. C., Gimenez-Nadal, J. I., and Molina, J. A. (2016). Increasing the Human Capital of Children in Latin American Countries: The Role of Parents' Time in Child care. *The Journal of Development Studies*, 53, 805-825.
- Canelas, C., and Salazar, S. (2014). Gender and ethnic inequalities in LAC countries. *IZA Journal of Work and Development*, 3, 18.
- Caputo, R. K. and Dolinsky, A. (1998) Women's choice to pursue self-employment: the role of financial and human capital of household members. *Journal of Small Business Management*, 36, 8–17.
- Cheston, S y L. Kuhn (2002), "Empoderamiento de la mujer a través de la microfinanzas", UNIFEM.
- CEPAL. (2014).
http://repositorio.cepal.org/bitstream/11362/37626/5/anexo_estadistico2014_es.zip(accessed September 2016).
- Connelly, R. (1992) Self-employment and providing child care, *Demography*, 29, 17–29.
- Cooksey EC and Fondell MM (1996) Spending time with his kids: effects of family structure on fathers' and children's lives. *Journal of Marriage and Family*, 58, 693–707
- Datcher-Loury L (1988) Effects of mother's home time on children's schooling. *Review of Economics and Statistics*, 70, 367–373
- DeMartino, R. and Barbato, R. (2003) Differences between women and men MBA entrepreneurs: exploring family flexibility and wealth creation as career motivators. *Journal of Business Venturing*, 18, 815–32.
- Demo, D. H., and Acock, A. C. (1993). Family diversity and the division of domestic labor: How much have things really changed? *Family Relations*, 42, 323-331.
- Dvorkin, M., and Shell, H. (2015). A Cross-Country Comparison of Labor Force Participation. *Economic Synopses*, 17.
- Edwards, L. N. and Field-Hendrey, E. (1996) Home-based workers: data from the 1990 census of population. *Monthly Labour Review*, 119, 26–34.
- Esquivel, V. (2010). Lessons from the Buenos Aires Time-Use Survey: A Methodological Assessment. In *Unpaid Work and the Economy* (pp. 181-214). Palgrave Macmillan UK.
- Esquivel, V., Budlender, D., Folbre, N., and Hirway, I. (2008). Explorations: Time-use surveys in the south. *Feminist Economics*, 14(3), 107-152.

- Esplen, E. (2009). *Gender and Care: Overview Report*. Brighton: Institute of Development Studies.
- Fagan, C., and Burchell, B. (2002). *Gender, Jobs and Working Conditions in the European Union*. Dublin, European Foundation for the Improvement of Living and Working Conditions.
- Floro, M. S., and Pichetpongsa, A. (2010). Gender, work intensity, and well-being of Thai home-based workers. *Feminist Economics*, 16(3), 5-44.
- Folbre, N., Yoon, J., Finnoff, K., and Fuligni, A. S. (2005). By what measure? Family time devoted to children in the United States. *Demography*, 42(2), 373–390.
- Foster, G. and Kalenkoski, C. (2013) Tobit or OLS? An empirical evaluation under different diary window lengths. *Applied Economics*, 45, 2994–3010.
- Frazis, H., and Stewart, J. (2012). How to think about time-use data: what inferences can we make about long-and short-run time use from time diaries? *Annals of Economics and Statistics*, 105-106, 231-245.
- Gershuny, J. (2000) *Changing Times: Work and Leisure in Post-industrial Society*. Oxford: Oxford University Press.
- Gimenez-Nadal, J. I., and Molina, J. A. (2013). Parents' education as a determinant of educational child care time. *Journal of Population Economics*, 26(2), 719–749.
- Gimenez-Nadal, J.I, and J. A. Molina (2015). Health status and the allocation of time: cross-country evidence in Europe. *Economic Modelling*, 46(2), 188-203.
- Gimenez-Nadal, J. I., and Sevilla, A. (2012) Trends in time allocation: a cross-country analysis. *European Economic Review*, 56, 1338–59
- Gimenez-Nadal, J. I., Molina, J. A., and Ortega, R. (2012). Self-employed mothers and the work-family conflict. *Applied Economics*, 44(17), 2133-2147.
- Grzywacz, J. and Bass, B. (2003) Work, family, and mental health: testing different models of work-family fit. *Journal of Marriage and Family*, 65, 248–61.
- Guryan, J., Hurst, E., and Kearney, M. (2008). Parental education and parental time with children. *The Journal of Economic Perspectives*, 22(3), 23.
- Hallman, K., Quisumbing, A. R., Ruel, M., and de la Briere, B. (2005). Mothers' work and child care: findings from the urban slums of Guatemala City. *Economic development and cultural change*, 53(4), 855-885.
- Han WJ, Waldfogel J, Brooks-Gunn J (2001) The effects of early maternal employment on later cognitive and behavioral outcomes. *Journal of Marriage and Family*, 63, 336–354

- Heckman, J. J. (1979). Sample selection bias as a specification error. *Econometrica*, 47(1), 153–161.
- Heller, L. (2010). *Mujeres emprendedoras en América Latina y el Caribe: realidades, obstáculos y desafíos*. CEPAL.
- Hochschild, A. R. (1997) *The Time Bind: When Work Becomes Home and Home Becomes Work*, Metropolitan Books, New York.
- Hochschild, A. R. and Machung, A. (1989) *The Second Shift: Working Parents and the Revolution at Home*, Viking, New York.
- Hsin, A., and Felfe, C. (2014). When does time matter? Maternal employment, children's time with parents, and child development. *Demography*, 51(5), 1867–1894.
- Hundley, G. (2000) Male/female earnings differences in self-employment: the effects of marriage, children, and the household division of labor. *Industrial and Labor Relations Review*, 54, 95–114.
- Johansson Sevä, I., and Öun, I. (2015). Self-employment as a strategy for dealing with the competing demands of work and family? The importance of family/lifestyle motives. *Gender, Work and Organization*, 22(3), 256-272.
- Kalenkoski, C. M., and Foster, G. (2008). The quality of time spent with children in Australian households. *Review of Economics of the Household*, 6(3), 243–266.
- Kalenkoski, C. M., and Foster, G. (2015). Measuring the relative productivity of multitasking to sole-tasking in household production: experimental evidence. *Applied Economics*, 47(18), 1847-1862.
- Kalenkoski, C. M., Ribar, D. C., and Stratton, L. S. (2005). Parental child care in single-parent, cohabiting, and married-couple families: Time-diary evidence from the United Kingdom. *American Economic Review*, 95(2), 194–198.
- Kenessey, Z. (1987). The primary, secondary, tertiary and quaternary sectors of the economy. *Review of Income and Wealth*, 33(4), 359-385
- Kossek, E. and Ozeki, C. (1999) Work-family conflict, policies, and the job-life satisfaction relationship: a review and directions for organizational behavior human resources research. *Journal of Applied Psychology*, 83, 139–49.

- Leibowitz, A. (1972). Women's allocation of time to market and nonmarket activities: Differences by education (PhD thesis). Columbia University, New York.
- Leibowitz, A. (1974). Home investments in children. *Journal of Political Economy*, 82(2, Part 2), S111–131.
- Leibowitz, A. (1977). Parental inputs and children's achievement. *Journal of Human Resources*, 12(2), 243–251.
- Lombard, K. (2007) Female self-employment and demand for flexible, nonstandard work schedules. *Economic Inquiry*, 39, 214–37.
- Loscocco, K. (1997) Work–family linkages among selfemployed women and men. *Journal of Vocational Behavior*, 50, 204–26.
- Marcén, M. (2014). The role of culture on self-employment. *Economic Modelling*, 44, S20-S32.
- Marsiglio, W. (1991). Paternal engagement activities with minor children. *Journal of Marriage and the Family*, 53(4), 973–986.
- Mateo Díaz, M, and Rodriguez-Chamussy, L. (2013). Child care and women's labor participation: evidence for Latin America and the Caribbean. Inter-American Development Bank.
- Mateo Díaz, M., and Rodriguez-Chamussy, L. (2016). *Cashing in on Education: Women, Child care, and Prosperity in Latin America and the Caribbean*. World Bank Publications.
- Medeiros, M., Osório, R. G., and Costa, J. (2007). Gender inequalities in allocating time to paid and unpaid work: evidence from Bolivia. Levy Economics Institute Working Paper No. 495
- Mesmer-Margnus, J. R. and Viswesvaran, C. (2005a) Convergence between measures of work-tofamily and family-to-work conflict: a meta-analytic examination. *Journal of Vocational Behavior*, 67, 215–32.
- Mesmer-Margnus, J. R. and Viswesvaran, C. (2005b) How family-friendly work environments affect work/family conflict: a meta-analytic examination. *Journal of Labour Research*, 27, 555–74.

- Messenger, J. C., Lee, S., and McCann, D. (2007). *Working time around the world: Trends in working hours, laws, and policies in a global comparative perspective*. Routledge.
- Miller, P., and Mulvey, C. (2000). Women's time allocation to child care: Determinants and consequences. *Australian Economic Papers*, 39(1), 1–24.
- Mondragón-Vélez, C., and Peña, X. (2010). Business Ownership and Self-Employment in Developing Economies: The Colombian Case. In *International differences in entrepreneurship* (pp. 89-127). University of Chicago Press.
- Murphy, K. M., and Topel, R. H. (1985). Estimation and inference in two-step econometric models. *Journal of Business and Economic Statistics*, 3(4), 370–379.
- Newman, C. (2002). Gender, time use, and change: the impact of the cut flower industry in Ecuador. *The World Bank Economic Review*, 16, 375-395.
- Netemeyer, R. G., Boles, J. S. and McMurrian, R. (1996) Development and validation of work-family conflict and family-work conflict scales. *Journal of Applied Psychology*, 81, 400–10.
- Presser, H. B. (1989) Can we make time for children? The economy, work schedules, and child care. *Demography*, 26, 523–43.
- Pagan, A. (1984). Econometric issues in the analysis of regressions with generated regressors. *International Economic Review*, 25(1), 221–247.
- Sayer, L. C., Gauthier, A. H., and Furstenberg, F. F. (2004). Educational differences in parents' time with children: Cross-national variations. *Journal of Marriage and Family*, 66(5), 1152–1169.
- Silver, C. (2000). Being there: The time dual-earner couples spend with their children. *Canadian Social Trends*, 57(11–008), 26– 30. Retrieved from http://www.ghcisocialscience.com/uploads/1/3/5/9/13590293/being_there.pdf
- Schor, J. (1991) *The Overbooked American: The Unexpected Decline of Leisure*, Basic Books, New York.
- World Bank. (2016). <http://data.worldbank.org/indicator> (accessed August 2016).

Table 1 Difference between self-employed and employed mothers in the time devoted to basic and educational childcare.

	(1)	(2)
	Basic childcare	Educational childcare
Panel A: Mexico		
Self – employed	3.68	3.72
Employed	3.81	3.21
Difference	-0.13	0.51
(p-value difference)	(0.6170)	(0.0013)
Panel B: Peru		
Self – employed	3.18	3.39
Employed	2.35	3.59
Difference	0.83	-0.20
(p-value difference)	(0.0106)	(0.4325)
Panel C: Panama		
Self – employed	2.42	6.36
Employed	2.35	5.56
Difference	0.07	0.80
(p-value difference)	(0.8494)	(0.1653)
Panel D: Ecuador		
Self – employed	3.06	5.06
Employed	3.21	5.07
Difference	-0.15	-0.003
(p-value difference)	(0.3854)	(0.9868)
Panel E: Colombia		
Self – employed	0.36	0.43
Employed	0.30	0.41
Difference	0.06	0.02
(p-value difference)	(0.0000)	(0.2633)

Note: Data sources are time-use surveys from Mexico (2009), Peru (2010), Panama (2011), Ecuador (2012) and Colombia (2012). The sample is restricted to include self-employed and employed mothers of children under 18, who are not students or retirees. This table presents means of time spent by self-employed and employed mothers to basic and educational childcare (See Appendix C for a description of all the activities included in the two categories). Time devoted to the activities is measured in hours per week (Mexico, Peru, Panama and Ecuador) and hours per day (Colombia). Difference employed-self-employed mothers indicates the differences between the two groups in the time devoted to basic and educational childcare. P-value difference indicates whether the difference is statistically different from zero.

Table 2: SUR estimates of the time devoted by employed and self-employed mothers to basic childcare, educational childcare and paid work.

	(1)	(2)	(3)
	Basic childcare	Educational childcare	Paid work
<hr/>			
Panel A: Mexico (hours per week)			
Self – employed (N=3,063)	0.360* (0.215)	0.800*** (0.148)	-6.896*** (0.770)
<hr/>			
Panel B: Peru (hours per week)			
Self – employed (N=1,035)	0.798*** (0.270)	0.262 (0.261)	-8.631*** (1.213)
<hr/>			
Panel C: Panama (hours per week)			
Self – employed (N=631)	0.452 (0.296)	1.514*** (0.572)	-10.90*** (1.484)
<hr/>			
Panel D: Ecuador (hours per week)			
Self – employed (N=3,065)	0.252 (0.161)	1.072*** (0.213)	-4.857*** (0.609)
<hr/>			
Panel E: Colombia (hours per day)			
Self – employed (N=8,273)	0.109*** (0.0132)	0.103*** (0.0178)	-1.290*** (0.0880)

Note: Bootstrapped standard errors in parentheses. Data sources are time use surveys from Mexico (2009), Peru (2010), Panama (2011), Ecuador (2012) and Colombia (2012). The sample is restricted to include self-employed and employed mothers of children under 18, who are not students or retirees. See Appendix C for a description of all the activities included in paid work, basic and educational childcare. Time devoted to the activities is measured in hours per week (Mexico, Peru, Panama and Ecuador) and hours per day (Colombia). We include in Colombia dummy variables to control for the day of the week (Ref.: Sunday). *p = 0.90; **p = 0.95; ***p=0.99.

Table 3 Difference between self-employed and employed mothers in the time devoted to basic childcare, educational childcare and paid work (education level)

	(1)	(2)	(3)
	Basic childcare	Educational childcare	Paid work
Panel A: Mexico (N=3,063) (hours per week)			
Self-employed	0.265 (0.244)	0.508*** (0.165)	-6.872*** (0.960)
Secondary education	-0.249 (0.337)	0.279 (0.269)	-2.586** (1.092)
University education	0.597 (0.465)	0.221 (0.310)	-6.984*** (1.509)
Secondary education*self-employed	0.814 (0.586)	1.440*** (0.473)	0.281 (2.102)
University education*self-employed	-0.238 (0.680)	0.472 (0.503)	-0.489 (2.005)
Panel B: Peru (N=1,035) (hours per week)			
Self-employed	0.942*** (0.357)	0.509 (0.337)	-8.839*** (1.579)
Secondary education	0.470 (0.577)	1.063* (0.579)	3.089 (2.736)
University education	0.798 (0.823)	1.897*** (0.729)	-1.356 (3.561)
Secondary education*self-employed	-0.419 (0.564)	-0.714 (0.595)	0.119 (2.749)
University education*self-employed	-0.154 (0.657)	-0.269 (0.650)	0.805 (3.066)
Panel C: Panama (N=631) (hours per week)			
Self-employed	0.205 (0.473)	1.625* (0.875)	-15.58*** (2.229)
Secondary education	-0.304 (0.376)	0.338 (0.634)	-1.611 (1.386)
University education	0.217 (0.369)	1.562** (0.641)	-2.481** (1.238)
Secondary education*self-employed	1.108 (0.783)	0.410 (1.210)	9.827*** (3.382)
University education*self-employed	-0.558 (0.662)	-0.986 (1.574)	4.633 (4.005)
Panel D: Ecuador (N=3,065) (hours per week)			
Self-employed	0.148 (0.192)	0.708*** (0.235)	-5.931*** (0.792)
Secondary education	-0.349 (0.334)	0.010 (0.433)	-0.357 (1.224)
University education	-0.179 (0.454)	0.587 (0.574)	-0.665 (1.702)
Secondary education*self-employed	0.171 (0.372)	0.768 (0.512)	1.477 (1.506)
University education*self-employed	0.425 (0.414)	1.225* (0.627)	4.771*** (1.640)
Panel E: Colombia (N=8,273) (hours per day)			
Self-employed	0.106*** (0.0180)	0.0669*** (0.0242)	-1.312*** (0.148)
Secondary education	0.00905 (0.0244)	-0.0190 (0.0348)	-0.000593 (0.175)
University education	0.0244 (0.0289)	0.00181 (0.0403)	-0.672*** (0.212)
Secondary education*self-employed	-0.0290 (0.0267)	0.0101 (0.0387)	-0.132 (0.204)
University education*self-employed	0.0430 (0.0329)	0.113** (0.0448)	0.231 (0.217)

Note: Bootstrapped standard errors in parentheses. Data sources are time use surveys from Mexico (2009), Peru (2010), Panama (2011), Ecuador (2012) and Colombia (2012). The sample is restricted to include self-employed and employed mothers of children under 18, who are not students or retirees. Primary education (reference category) is equivalent to less than high school degree, secondary education is equivalent to high school degree, and university education is equivalent to more than a high school degree. See Appendix C for a description of all the activities included in paid work, non-market work, and basic and educational childcare. Time devoted to the activities is measured in hours per week (Mexico, Peru, Panama and Ecuador) and hours per day (Colombia). We include in Colombia dummy variables to control for the day of the week (Ref.: Sunday). *p = 0.90; **p = 0.95; ***p=0.99.

Appendix A. Classification of activities

Table A1.

	(1)	(2)	(3)	(4)	(5)
	Mexico	Peru	Panama	Ecuador	Colombia*
Basic childcare	Feeding a minor under 6 years, bathing/grooming/dressing a minor under 6 years, bed a minor under 6 years, carrying/ bringing /accompany a minor under 15 to receive medical attention.	Breastfeed newborn, feeding a baby or child, bathing/dressing/ changing diaper a baby or child, therapy practice for a baby/child /adolescent.	Child feeding, bathing children, practices special exercise or therapy for children.	Child feeding, bathing children, practices special exercise or therapy for children.	Feed or assist in feeding for minor household members, bathing/dressing minor household members, give medicines/therapies or provide/ treatment for diseases to minor household members.
Educational childcare	Picking up or dropping of a educative center a minor under 15 years, help with homework a minor under 15 years, attend activities/ meetings/festivals in school from a member of household under 15 years.	Play/read stories to a baby or child, help with homework for a child or teenager, attend activities at an educational center that assists a child or adolescent who is a member of the household, carry household members to educational centre, pick up household members at educational centre.	Play/talk or read stories to a child, help with homework for a child or teenager, attend activities at an educational center that assists a child or adolescent who is a member of the household, carry and/or pick up household members to a educational centre.	Play/talk/read stories to children, attending meetings/ festivals/other activities in school, help with homework, carry or pick up a household member to an educational center.	Play/read stories/carry to the park for household members under five years of age, carry or bring to an educative center a household member, help with homework to minor household members.
Paid work	Regular work in all jobs without commuting time.	Regular work in all jobs without commuting time.	Regular work in all jobs without commuting time.	Regular work in all jobs without commuting time.	Regular work in all jobs without commuting time.

Source: Time Use Survey of Mexico 2009, Peru 2010, Panama 2011, Ecuador 2012 and Colombia 2012.

Note: *For Colombia, the variables considered for childcare come from two types of questions, direct questions and indirect. Indirect questions ask for the time spent by respondents to help other household members. These questions give the option of indicating to whom this aid is provided, so that aid to household members under 18 years is considered in the category of childcare, and aid to household members who are 18 years of age or older is considered in the category of non-market work. Direct questions are: Play/read stories/carry to the park to household members under five years of age, carry or bring to an educative center a household member. Indirect questions are: feed or assist in feeding household members, bathing/dressing household members, give medicines/therapies provide/treatment for diseases to household members, help with homework for household members

APPENDIX B

Table B1.

Demographic characteristics of the samples

Variables	(1)		(2)		(3)		(4)		(5)		(6)		(7)		(8)		(9)		(10)	
	Mexico				Peru				Panama				Ecuador				Colombia			
	Self-employed		Employed		Self-employed		Employed		Self-employed		Employed		Self-employed		Employed		Self-employed		Employed	
Age	38.82	(8.29)	37.30	(8.09)	39.20	(8.28)	38.68	(8.26)	38.81	(8.02)	37.34	(7.31)	39.78	(9.26)	36.44	(8.58)	38.46	(8.69)	36.76	(8.29)
Primary education	0.75	(0.43)	0.57	(0.49)	0.59	(0.49)	0.42	(0.49)	0.46	(0.50)	0.18	(0.39)	0.73	(0.44)	0.44	(0.50)	0.51	(0.50)	0.25	(0.43)
Secondary education	0.14	(0.35)	0.16	(0.37)	0.28	(0.45)	0.21	(0.41)	0.33	(0.47)	0.30	(0.46)	0.18	(0.38)	0.23	(0.42)	0.30	(0.46)	0.29	(0.45)
University education	0.10	(0.31)	0.26	(0.44)	0.13	(0.33)	0.36	(0.48)	0.21	(0.41)	0.51	(0.50)	0.09	(0.28)	0.33	(0.47)	0.19	(0.39)	0.46	(0.50)
Married/Cohabiting	0.82	(0.38)	0.76	(0.42)	0.78	(0.41)	0.76	(0.43)	0.68	(0.47)	0.74	(0.44)	0.65	(0.48)	0.63	(0.48)	0.69	(0.46)	0.71	(0.46)
Non labour income family	27.00	(129.4)	23.87	(90.8)	-	-	-	-	-	-	-	-	51.54	(142.5)	40.90	(117.7)	67.87	(224.3)	66.55	(214.0)
Log hourly predicted wage	0.70	(0.49)	0.86	(0.46)	0.78	(0.22)	0.87	(0.24)	-	-	-	-	0.78	(0.37)	0.97	(0.39)	0.71	(0.71)	1.04	(0.58)
N. household members	4.52	(1.50)	4.24	(1.40)	4.54	(1.66)	4.44	(1.45)	4.26	(1.68)	4.00	(1.25)	4.66	(1.85)	4.26	(1.65)	4.10	(1.42)	3.81	(1.29)
N. younger child 0- 4	0.32	(0.60)	0.36	(0.59)	0.37	(0.57)	0.34	(0.55)	0.30	(0.54)	0.37	(0.56)	0.36	(0.61)	0.39	(0.60)	0.30	(0.53)	0.32	(0.52)
N. younger child 5- 12	0.97	(0.89)	0.88	(0.85)	0.94	(0.88)	0.93	(0.85)	0.88	(0.91)	0.86	(0.79)	1.06	(0.99)	1.00	(0.90)	0.81	(0.82)	0.75	(0.74)
N. younger child 13- 17	0.74	(0.76)	0.66	(0.75)	0.74	(0.71)	0.70	(0.75)	0.64	(0.65)	0.56	(0.69)	0.76	(0.78)	0.61	(0.76)	0.65	(0.71)	0.52	(0.66)
Indigenous	0.10	(0.31)	0.04	(0.20)	0.21	(0.41)	0.19	(0.39)	-	-	-	-	0.16	(0.37)	0.07	(0.25)	0.05	(0.22)	0.03	(0.16)
Rural Area	0.23	(0.42)	0.15	(0.36)	0.29	(0.45)	0.22	(0.41)	-	-	-	-	0.51	(0.50)	0.38	(0.48)	0.15	(0.36)	0.07	(0.26)
Sector 1	-	-	-	-	0.15	(0.35)	0.23	(0.42)	-	-	-	-	0.30	(0.46)	0.22	(0.41)	0.04	(0.20)	0.05	(0.21)
Sector 2	-	-	-	-	0.10	(0.30)	0.11	(0.31)	-	-	-	-	0.09	(0.29)	0.11	(0.32)	0.14	(0.35)	0.13	(0.34)
Sector 3	-	-	-	-	0.50	(0.50)	0.12	(0.33)	-	-	-	-	0.38	(0.49)	0.14	(0.35)	0.38	(0.48)	0.23	(0.42)
Sector 4	-	-	-	-	0.25	(0.43)	0.53	(0.50)	-	-	-	-	0.23	(0.42)	0.53	(0.50)	0.44	(0.50)	0.59	(0.49)
Region 1	0.26	(0.44)	0.28	(0.45)	0.27	(0.45)	0.36	(0.48)	0.33	(0.47)	0.51	(0.50)	0.56	(0.50)	0.53	(0.50)	0.23	(0.42)	0.15	(0.36)
Region 2	0.29	(0.45)	0.29	(0.45)	0.33	(0.47)	0.21	(0.41)	0.21	(0.41)	0.18	(0.38)	0.25	(0.44)	0.29	(0.45)	0.19	(0.39)	0.20	(0.40)
Region 3	0.17	(0.38)	0.25	(0.44)	0.24	(0.43)	0.20	(0.40)	0.45	(0.50)	0.31	(0.46)	0.19	(0.39)	0.18	(0.38)	0.18	(0.38)	0.18	(0.38)
Region 4	0.28	(0.45)	0.18	(0.38)	0.16	(0.37)	0.22	(0.42)	-	-	-	-	-	-	-	-	0.19	(0.39)	0.14	(0.34)
Region 5	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.20	(0.40)	0.29	(0.46)
Region 6	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	-	0.01	(0.12)	0.04	(0.19)
Observations	986		2077		621		414		121		510		1596		1469		3496		4777	
% of observations	0.32		0.68		0.60		0.40		0.19		0.81		0.52		0.48		0.42		0.58	
Total observations	3063				1035				631				3065				8273			

Note: Data sources are time use surveys from Mexico (2009), Peru (2010), Panama (2011), Ecuador (2012) and Colombia (2012). The sample is restricted to include self-employed and employed mothers of children under 18, who are not students or retirees. Primary education is equivalent to less than high school degree, Secondary education is equivalent to high school degree and university education is equivalent to more than a high school degree. Non-labour incomes are in US dollars for Mexico, Ecuador and Colombia. Rural area is considered in Mexico, Peru, and Ecuador while for Colombia it is not considered to be a municipality. Standard deviation in parentheses.

Table B2.
Difference between self-employed and employed mothers in the time devoted to paid work

	Paid work				
	Panel A: Mexico	Panel B: Peru	Panel C: Panama	Panel D: Ecuador	Panel E: Colombia
Self – employed	32.84	31.26	29.95	38.22	4.93
Employed	39.96	37.99	40.99	41.17	6.07
Difference	-7.13	-6.73	-11.04	-2.95	-1.14
(p-value difference)	(0.0000)	(0.0000)	(0.0000)	(0.0000)	(0.0000)

Note: Data sources are time-use surveys from Mexico (2009), Peru (2010), Panama (2011), Ecuador (2012) and Colombia (2012). The sample is restricted to include self-employed and employed mothers of children under 18, who are not students or retirees. This table presents means of time spent by self-employed and employed mothers to paid work (See Appendix C for a description of all the activities included in paid work). Time devoted to the activities is measured in hours per week (Mexico, Peru, Panama and Ecuador) and hours per day (Colombia). Difference employed-self-employed mothers indicates the differences between the two groups in the time devoted to paid work, non-market work, and basic and educational childcare. P-value difference indicates whether the difference is statistically different from zero. Travel to/from work may make a difference in the time devoted to market work between employed and self-employed mothers, since the self-employed can be working at home and, therefore, we do not include commuting time in market work, as in Gimenez-Nadal et al (2012).

Table B3.
Difference between self-employed and employed mothers in the time devoted to basic and educational childcare, considering education levels

	(1)	(2)	(3)	(4)	(5)	(6)
	Basic childcare	Educational childcare	Basic childcare	Educational childcare	Basic childcare	Educational childcare
	Primary education		Secondary education		University education	
Panel A: Mexico						
Self - employed	3.38	3.11	4.40	5.94	4.81	5.05
Employed	3.55	2.69	3.36	3.65	4.64	4.07
Difference	-0.17	0.43	1.04	2.29	0.17	0.98
(p-value difference)	(0.5728)	(0.0162)	(0.1001)	(0.0000)	(0.8379)	(0.0386)
Panel B: Peru						
Self - employed	3.15	2.88	3.25	3.79	3.16	4.93
Employed	2.40	2.64	2.14	3.61	2.41	4.69
Difference	0.75	0.24	1.10	0.18	0.75	0.24
(p-value difference)	(0.1221)	(0.4515)	(0.1109)	(0.7516)	(0.2331)	(0.7054)
Panel C: Panama						
Self - employed	2.35	5.90	2.88	6.47	1.82	7.21
Employed	1.86	4.50	2.10	4.89	2.67	6.35
Difference	0.49	1.40	0.78	1.59	-0.85	0.86
(p-value difference)	(0.3984)	(0.1426)	(0.2207)	(0.0852)	(0.2624)	(0.4888)
Panel D: Ecuador						
Self - employed	2.90	4.45	3.41	6.43	3.74	7.42
Employed	3.15	4.51	3.54	5.35	3.07	5.62
Difference	-0.24	-0.06	-0.14	1.08	0.67	1.81
(p-value difference)	(0.2791)	(0.8264)	(0.7206)	(0.0277)	(0.1409)	(0.0016)
Panel E: Colombia						
Self - employed	0.30	0.33	0.38	0.46	0.48	0.63
Employed	0.19	0.29	0.33	0.43	0.34	0.46
Difference	0.11	0.05	0.05	0.04	0.14	0.16
(p-value difference)	(0.0000)	(0.0633)	(0.0443)	(0.2403)	(0.0000)	(0.0000)

Note: Data sources are time use surveys from Mexico (2009), Peru (2010), Panama (2011), Ecuador (2012) and Colombia (2012). The sample is restricted to include self-employed and employed mothers of children under 18, who are not students or retirees. Difference employed-self-employed mothers indicate the differences between the two groups in the time devoted to basic and educational childcare. P-value difference indicates whether the difference is statistically different from zero. Primary education is equivalent to less than high school degree, Secondary education is equivalent to high school degree, and university education is equivalent to more than a high school degree. Time devoted to the activities is measured in hours per week (Mexico, Peru, Panama and Ecuador) and hours per day (Colombia). See Appendix C for a description of all the activities included in basic child care, and educational childcare.

Table B4
Heckman's Model for Predicted Wages in Mexico, Peru, Ecuador, and Colombia

	(1)	(2)	(3)	(4)	(5)	(6)	(7)	(8)
	Mexico		Peru		Ecuador		Colombia	
	Hourlywage	Participation	Hourlywage	Participation	Hourlywage	Participation	Hourlywage	Participation
Years of education	0.225*** (0.00745)	0.0626*** (0.00297)	0.106*** (0.00855)	0.0550*** (0.00494)	0.213*** (0.00861)	0.0494*** (0.00326)	0.350*** (0.00823)	0.0916*** (0.00210)
Potential experience	0.0527*** (0.00584)	0.0733*** (0.00253)	0.0604*** (0.00957)	0.0786*** (0.00509)	0.0455*** (0.00605)	0.0628*** (0.00302)	0.0622*** (0.00592)	0.0911*** (0.00178)
Potential experience squared	-0.0521*** (0.00976)	-0.135*** (0.00480)	-0.0899*** (0.0160)	-0.126*** (0.00986)	-0.0332*** (0.00865)	-0.110*** (0.00540)	-0.0323*** (0.0112)	-0.172*** (0.00407)
Indigenous	0.0699 (0.0728)	0.0942** (0.0417)	0.0611 (0.0705)	0.163*** (0.0479)	0.118* (0.0602)	0.164*** (0.0322)	0.323*** (0.0719)	0.321*** (0.0336)
Rural Area	-0.212*** (0.0418)	-0.347*** (0.0250)	0.0553 (0.0743)	-0.262*** (0.0589)	-0.236*** (0.0398)	-0.110*** (0.0282)	-0.0124 (0.0370)	-0.307*** (0.0191)
Region 1	0.0489 (0.0399)	0.0326 (0.0255)	-0.00855 (0.0665)	0.218*** (0.0526)	-0.0502 (0.0645)	0.202*** (0.0383)	-0.453*** (0.0492)	-0.348*** (0.0209)
Region 2	0.120*** (0.0451)	-0.0602** (0.0267)	-0.138* (0.0818)	0.170*** (0.0513)	-0.275*** (0.0680)	-0.150*** (0.0367)	-0.333*** (0.0466)	-0.411*** (0.0234)
Region 3	0.0116 (0.0523)	-0.0479* (0.0266)	-0.0258 (0.0993)	0.106** (0.0459)	-	-	-0.333*** (0.0478)	-0.240*** (0.0233)
Region 4	-	-	-	-	-	-	-0.409*** (0.0434)	-0.190*** (0.0238)
Region 5	-	-	-	-	-	-	0.0942 (0.0791)	-0.116*** (0.0387)
Head of family	-	0.454*** (0.0316)	-	0.617*** (0.0692)	-	0.746*** (0.0412)	-	0.439*** (0.0204)
In partner	-	-0.400*** (0.0248)	-	-0.262*** (0.0533)	-	-0.297*** (0.0331)	-	-0.331*** (0.0171)
Unemployed	-	-7.402*** (0.0809)	-	-7.531*** (0.146)	-	-7.287*** (0.0920)	-	-8.104*** (0.0611)
Children under 18	-	-0.0715*** (0.00976)	-	-0.0479*** (0.0158)	-	-0.0511*** (0.0106)	-	-0.0832*** (0.00573)
N. household members	-	0.0195*** (0.00559)	-	-0.00149 (0.0102)	-	-0.00629 (0.00742)	-	-0.00273 (0.00375)
Constant	-1.599*** (0.169)	-1.248*** (0.0627)	-0.366 (0.263)	-1.222*** (0.0848)	-1.011*** (0.188)	-1.235*** (0.0752)	-2.970*** (0.181)	-1.234*** (0.0400)
Mills Ratio		0.371*** (0.0722)		0.420*** (0.153)		0.170*** (0.0588)		0.549*** (0.0882)
Observations	7331	19882	2357	4996	5.608	14.619	21892	46257

Notes: Bootstrapped standard error in parentheses. Data sources are time use surveys from Mexico (2009), Peru (2010), Panama (2011), Ecuador (2012) and Colombia (2012). * Significant at the 90% level ** Significant at the 95% level *** Significant at the 99% level. Sample consists of women aged 14-65 from Time-Use Surveys of México and Peru. In Ecuador, sample consists of women aged 15-65 from Time-Use Surveys of Ecuador, and in Colombia sample consists of women aged 15-55 from Time-Use Survey of Colombia. * Rural area is considered in Mexico, Peru and Ecuador while for Colombia it is not considered to be a municipality. Predicted hourly wages are in us dollar in the four countries.

APPENDIX C

Table C1: SUR estimates of the time devoted by employed and self-employed mothers to basic childcare, educational childcare and paid work in Mexico

	(1)	(2)	(3)
	Basic childcare	Educational childcare	Paid work
Self-employed	0.360* (0.215)	0.800*** (0.148)	-6.896*** (0.770)
Age	-0.307*** (0.0764)	-0.0118 (0.0486)	-0.283 (0.252)
Age squared	0.260*** (0.0870)	-0.0381 (0.0575)	0.311 (0.307)
Secondary education	-0.00629 (0.310)	0.718*** (0.251)	-2.507** (1.091)
University education	0.568 (0.434)	0.341 (0.305)	-7.072*** (1.501)
Married/Cohabiting	-0.123 (0.213)	0.0910 (0.160)	-4.570*** (0.805)
Non-labour income (family)	-0.000808 (0.000518)	0.000366 (0.000523)	-0.00722** (0.00293)
Log hourly predicted wage rate	0.482* (0.279)	0.930*** (0.200)	2.480** (1.047)
Log hourly predicted wage rate sq	-0.175 (0.283)	0.390* (0.206)	2.060* (1.101)
N. household members	0.179** (0.0777)	-0.189*** (0.0512)	-0.252 (0.296)
N. younger child 0-4	6.306*** (0.288)	0.375** (0.147)	-0.797 (0.736)
N. younger child 5-12	-0.113 (0.138)	1.988*** (0.100)	-1.231*** (0.456)
N. younger child 13-17	-0.576*** (0.139)	-0.257** (0.112)	0.461 (0.560)
Indigenous	0.618 (0.419)	-0.411 (0.289)	-0.407 (1.492)
Rural area	0.143 (0.265)	-0.364** (0.173)	-2.120** (0.933)
Sector 2	-	-	-
Sector 3	-	-	-
Sector 4	-	-	-
Region 1	-0.268 (0.239)	-0.974*** (0.187)	-1.020 (0.828)
Region 2	-0.0874 (0.260)	-1.018*** (0.193)	-0.275 (0.792)
Region 3	-0.179 (0.257)	-0.453** (0.212)	0.999 (0.953)
Constant	8.716*** (1.680)	2.535** (0.991)	50.51*** (4.913)
R-squared	0.434	0.244	0.074
Observations	3,063	3,063	3,063

Note: Bootstrapped standard errors in parentheses. The sample is restricted to include self-employed and employed mothers of children under 18, who are not students or retirees. Non-labour income is in US dollars. *Rural area is considered for Mexico, Peru and Ecuador while for Colombia it is not considered to be a municipality. *p = 0.90; **p = 0.95; ***p = 0.99

Table C2: SUR estimates of the time devoted by employed and self-employed mothers to basic childcare, educational childcare and paid work in Peru

	(1)	(2)	(3)
	Basic childcare	Educational Childcare	Paid work
Self-employed	0.798*** (0.270)	0.262 (0.261)	-8.631*** (1.213)
Age	-0.111 (0.145)	0.204* (0.107)	0.945* (0.568)
Age squared	0.0488 (0.169)	-0.323*** (0.125)	-0.947 (0.716)
Secondary education	0.195 (0.478)	0.593 (0.400)	3.185 (2.082)
University education	0.702 (0.722)	1.730*** (0.591)	-0.940 (3.073)
Married/Cohabiting	-0.202 (0.289)	-0.0878 (0.277)	-1.555 (1.332)
Non-labour income (family)	- -	- -	- -
Log hourly predicted wage rate	3.380 (4.769)	0.734 (4.033)	28.11 (21.11)
Log hourly predicted wage rate sq	-2.354 (3.329)	-0.558 (2.875)	-19.87 (14.78)
N. household members	0.166 (0.107)	-0.0872 (0.0909)	-0.397 (0.436)
N. younger child 0-4	5.099*** (0.362)	1.472*** (0.295)	-4.325*** (1.050)
N. younger child 5-12	-0.131 (0.228)	0.819*** (0.151)	-0.572 (0.745)
N. younger child 13-17	-0.324 (0.242)	-0.577*** (0.185)	-0.364 (0.898)
Indigenous	0.0736 (0.346)	-0.326 (0.325)	4.186*** (1.348)
Rural area	0.495 (0.375)	0.108 (0.287)	-6.135*** (1.277)
Sector 2	-0.211 (0.556)	0.901* (0.464)	-3.062 (2.060)
Sector 3	-0.124 (0.499)	0.681** (0.339)	3.112* (1.641)
Sector 4	-0.228 (0.448)	0.752** (0.349)	-0.660 (1.626)
Region 1	0.475 (0.367)	0.658** (0.319)	-3.135** (1.530)
Region 2	0.128 (0.408)	-0.106 (0.332)	-3.236** (1.632)
Region 3	0.335 (0.380)	0.854** (0.397)	0.426 (1.832)
Constant	2.351 (3.606)	-1.569 (2.676)	15.43 (12.31)
R-squared	0.427	0.210	0.139
Observations	1,035	1,035	1,035

Note: Bootstrapped standard errors in parentheses. The sample is restricted to include self-employed and employed mothers of children under 18, who are not students or retirees. Non-labour income is in US dollars. *Rural area is considered for Mexico, Peru and Ecuador while for Colombia it is considered not to be a municipality. *p = 0.90; **p = 0.95; ***p = 0.99

Table C3: SUR estimates of the time devoted by employed and self-employed mothers to basic childcare, educational childcare and paid work in Panama

	(1)	(2)	(3)
	Basic childcare	Educational childcare	Paid work
Self-employed	0.452 (0.296)	1.514*** (0.572)	-10.90*** (1.484)
Age	-0.360** (0.154)	0.247 (0.218)	0.969* (0.552)
Age squared	0.356* (0.185)	-0.358 (0.279)	-1.522** (0.719)
Secondary education	-0.0397 (0.313)	0.398 (0.560)	1.196 (1.337)
University education	0.231 (0.303)	1.434** (0.591)	-0.717 (1.193)
Married/Cohabiting	0.0770 (0.278)	0.349 (0.528)	-2.466** (1.167)
Non-labour income (family)	-	-	-
Log hourly predicted wage rate	-	-	-
Log hourly predicted wage rate sq	-	-	-
N. household members	0.0658 (0.112)	-0.456** (0.228)	0.338 (0.535)
N. younger child 0-4	2.791*** (0.307)	1.135** (0.490)	-1.179 (1.188)
N. younger child 5-12	-0.290 (0.197)	2.309*** (0.380)	-1.148 (0.866)
N. younger child 13-17	-0.675*** (0.195)	-0.925** (0.463)	0.0505 (1.026)
Indigenous	-	-	-
Rural area	-	-	-
Sector 2	-	-	-
Sector 3	-	-	-
Sector 4	-	-	-
Region 1	-0.112 (0.243)	-0.462 (0.493)	1.507 (1.070)
Region 2	0.220 (0.376)	-1.432** (0.584)	0.634 (1.348)
Constant	9.846*** (3.133)	0.814 (4.129)	27.83*** (10.26)
R-squared	0.403	0.187	0.153
Observations	631	631	631

Note: Bootstrapped standard errors in parentheses. The sample is restricted to include self-employed and employed mothers of children under 18, who are not students or retirees. Non-labour income is in US dollars. *Rural area is considered for Mexico, Peru and Ecuador while for Colombia it is considered not to be a municipality. *p = 0.90; **p = 0.95; ***p = 0.99

Table C4: SUR estimates of the time devoted by employed and self-employed mothers to basic childcare, educational childcare and paid work in Ecuador

	(1) Basic childcare	(2) Educational childcare	(3) Paid work
Self-employed	0.252 (0.161)	1.072*** (0.213)	-4.857*** (0.609)
Age	-0.109* (0.0639)	-0.179** (0.0797)	0.551** (0.265)
Age squared	0.0525 (0.0730)	0.0824 (0.0933)	-0.570* (0.326)
Secondary education	-0.250 (0.275)	0.422 (0.371)	0.545 (1.133)
University education	-0.0276 (0.400)	1.028* (0.554)	1.016 (1.722)
Married/Cohabiting	-0.0508 (0.148)	0.0244 (0.200)	-0.770 (0.640)
Non-labour income (family)	-0.000464 (0.000308)	0.000509 (0.000671)	-0.00203 (0.00220)
Log hourly predicted wage rate	-0.0418 (0.546)	1.118* (0.571)	5.005** (2.065)
Log hourly predicted wage rate sq	0.213 (0.459)	-0.205 (0.520)	-3.717** (1.853)
N. household members	0.0588 (0.0460)	-0.119* (0.0717)	0.00257 (0.231)
N. younger child 0-4	3.872*** (0.173)	1.048*** (0.206)	-0.945* (0.574)
N. younger child 5-12	0.234** (0.100)	1.575*** (0.129)	-0.721* (0.375)
N. younger child 13-17	-0.449*** (0.110)	-0.526*** (0.151)	-0.878* (0.462)
Indigenous	0.201 (0.267)	-0.882*** (0.298)	2.540** (0.987)
Rural area	-0.0346 (0.168)	-0.297 (0.229)	0.0462 (0.715)
Sector 2	-0.158 (0.278)	0.635* (0.370)	1.906* (1.122)
Sector 3	-0.0142 (0.216)	0.289 (0.272)	7.190*** (0.962)
Sector 4	0.0209 (0.211)	0.520* (0.274)	1.336 (0.864)
Region 1	0.263 (0.200)	0.606** (0.241)	-1.876** (0.743)
Region 2	-0.170 (0.229)	0.428 (0.294)	-6.725*** (0.911)
Constant	4.599*** (1.300)	7.300*** (1.587)	30.80*** (5.001)
R-squared	0.369	0.199	0.070
Observations	3,065	3,065	3,065

Note: Bootstrapped standard errors in parentheses. The sample is restricted to include self-employed and employed mothers of children under 18, who are not students or retirees. Non-labour income is in US dollars. *Rural area is considered for Mexico, Peru and Ecuador while for Colombia it is not considered to be a municipality. *p = 0.90; **p = 0.95; ***p = 0.99

Table C5: SUR estimates of the time devoted by employed and self-employed mothers to basic childcare, educational childcare and paid work in Colombia (hours per day)

(Colombia)	(1)	(2)	(3)
	Basic childcare	Educational childcare	Paid work
Self-employed	0.109*** (0.0132)	0.103*** (0.0178)	-1.290*** (0.0880)
Age	-0.0215*** (0.00572)	-0.0113 (0.00762)	0.137*** (0.0370)
Age squared	0.0186*** (0.00666)	0.00137 (0.00898)	-0.182*** (0.0465)
Secondary education	-0.00208 (0.0210)	-0.00859 (0.0302)	-0.0495 (0.154)
University education	0.0375 (0.0281)	0.0428 (0.0379)	-0.600*** (0.201)
Married/Cohabiting	0.0172 (0.0116)	-0.00472 (0.0181)	-0.416*** (0.0993)
Non-labour income (family)	-1.66e-05 (2.00e-05)	5.11e-06 (3.41e-05)	-0.000186 (0.000170)
Log hourly predicted wage rate	0.0193 (0.0147)	0.0691*** (0.0209)	-0.151 (0.122)
Log hourly predicted wage rate sq	0.00817 (0.00807)	0.0245*** (0.00911)	-0.00607 (0.0417)
N. household members	0.0104* (0.00533)	0.0199** (0.00778)	0.00383 (0.0426)
N. younger child 0-4	0.607*** (0.0190)	0.430*** (0.0249)	-0.170 (0.104)
N. younger child 5-12	-0.00955 (0.00973)	0.0268* (0.0148)	-0.143** (0.0672)
N. younger child 13-17	-0.0504*** (0.00983)	-0.0956*** (0.0150)	0.0262 (0.0834)
Indigenous	-0.0180 (0.0261)	0.00929 (0.0409)	-0.567*** (0.201)
Rural area	0.00783 (0.0206)	-0.0346 (0.0288)	-0.883*** (0.159)
Sector 2	0.0379 (0.0323)	0.0262 (0.0447)	0.281 (0.238)
Sector 3	0.0696** (0.0299)	-0.00256 (0.0416)	0.731*** (0.229)
Sector 4	0.0557* (0.0298)	0.0342 (0.0411)	0.0385 (0.220)
Region 1	0.0100 (0.0184)	-0.0505* (0.0258)	-0.446*** (0.130)
Region 2	-0.0415** (0.0174)	-0.00813 (0.0250)	-0.0319 (0.123)
Region 3	0.0307 (0.0195)	0.0227 (0.0268)	0.233* (0.125)
Region 4	-0.0436** (0.0181)	0.0198 (0.0267)	-0.212 (0.145)
Region 5	-0.0949*** (0.0296)	-0.192*** (0.0367)	0.407* (0.217)
Constant	0.540*** (0.122)	0.559*** (0.161)	1.388* (0.742)
R-squared	0.364	0.161	0.191
Observations	8,273	8,273	8,273

Note: Bootstrapped standard errors in parentheses. The sample is restricted to include self-employed and employed mothers of children under 18, who are not students or retirees. Non-labour income is in US dollars. *Rural area is considered for Mexico, Peru and Ecuador while for Colombia it is not considered to be a municipality. We include in Colombia dummy variables to control for the day of the week (Ref.: Sunday). *p = 0.90; **p = 0.95; ***p = 0.99

Table C6: SUR estimates of the time devoted by employed and self-employed mothers to basic childcare, educational childcare and paid work in Mexico (education level)

	(1)	(2)	(3)
	Basic childcare	Educational childcare	Paid work
Self-employed	0.265 (0.244)	0.508*** (0.165)	-6.872*** (0.960)
Age	-0.306*** (0.0840)	-0.00843 (0.0453)	-0.284 (0.254)
Age squared	0.259*** (0.0960)	-0.0412 (0.0540)	0.311 (0.312)
Secondary education	-0.249 (0.337)	0.279 (0.269)	-2.586** (1.092)
University education	0.597 (0.465)	0.221 (0.310)	-6.984*** (1.509)
Secondary education*self-employed	0.814 (0.586)	1.440*** (0.473)	0.281 (2.102)
University education*self-employed	-0.238 (0.680)	0.472 (0.503)	-0.489 (2.005)
Married/Cohabiting	-0.128 (0.219)	0.0954 (0.160)	-4.578*** (0.779)
Non-labour income (family)	-0.000784 (0.000532)	0.000338 (0.000519)	-0.00718** (0.00282)
Log hourly predicted wage rate	0.474* (0.274)	0.917*** (0.202)	2.476** (1.067)
Log hourly predicted wage rate sq	-0.181 (0.270)	0.382* (0.210)	2.056* (1.087)
N. household members	0.179** (0.0801)	-0.189*** (0.0518)	-0.252 (0.299)
N. younger child 0-4	6.304*** (0.283)	0.375** (0.148)	-0.799 (0.720)
N. younger child 5-12	-0.119 (0.139)	1.981*** (0.102)	-1.235*** (0.451)
N. younger child 13-17	-0.576*** (0.141)	-0.257** (0.114)	0.460 (0.570)
Indigenous	0.622 (0.426)	-0.393 (0.270)	-0.410 (1.534)
Rural area	0.139 (0.262)	-0.357** (0.173)	-2.128** (0.933)
Sector 2	-	-	-
Sector 3	-	-	-
Sector 4	-	-	-
Region 1	-0.259 (0.250)	-0.972*** (0.188)	-1.011 (0.855)
Region 2	-0.0877 (0.270)	-1.023*** (0.197)	-0.273 (0.824)
Region 3	-0.174 (0.268)	-0.437** (0.213)	0.997 (0.905)
Constant	8.755*** (1.776)	2.577*** (0.946)	50.53*** (4.970)
R-squared	0.435	0.247	0.074
Observations	3,063	3,063	3,063

Note: Bootstrapped standard errors in parentheses. The sample is restricted to include self-employed and employed mothers of children under 18, who are not students or retirees. Non-labour income is in US dollars. *Rural area is considered for Mexico, Peru and Ecuador while for Colombia it is not considered to be a municipality. *p = 0.90; **p = 0.95; ***p = 0.99

Table C7: SUR estimates of the time devoted by employed and self-employed mothers to basic childcare, educational childcare and paid work in Peru (education level)

	(1)	(2)	(3)
	Basic child care	Educational Child care	Paid work
Self-employed	0.942*** (0.357)	0.509 (0.337)	-8.839*** (1.579)
Age	-0.110 (0.144)	0.206** (0.103)	0.951* (0.569)
Age squared	0.0464 (0.168)	-0.327*** (0.120)	-0.953 (0.712)
Secondary education	0.470 (0.577)	1.063* (0.579)	3.089 (2.736)
University education	0.798 (0.823)	1.897*** (0.729)	-1.356 (3.561)
Secondary education*self-employed	-0.419 (0.564)	-0.714 (0.595)	0.119 (2.749)
University education*self-employed	-0.154 (0.657)	-0.269 (0.650)	0.805 (3.066)
Married/Cohabiting	-0.189 (0.297)	-0.0659 (0.280)	-1.567 (1.350)
Non-labour income (family)	- -	- -	- -
Log hourly predicted wage rate	3.290 (4.900)	0.586 (4.394)	27.64 (22.89)
Log hourly predicted wage rate sq	-2.295 (3.490)	-0.461 (3.137)	-19.53 (16.09)
N. household members	0.160 (0.0986)	-0.0979 (0.0906)	-0.398 (0.436)
N. younger child 0-4	5.103*** (0.353)	1.478*** (0.284)	-4.304*** (1.101)
N. younger child 5-12	-0.128 (0.221)	0.823*** (0.160)	-0.574 (0.771)
N. younger child 13-17	-0.324 (0.236)	-0.578*** (0.181)	-0.375 (0.935)
Indigenous	0.0786 (0.367)	-0.317 (0.323)	4.188*** (1.357)
Rural area	0.478 (0.367)	0.0778 (0.285)	-6.126*** (1.260)
Sector 2	-0.235 (0.545)	0.859** (0.433)	-3.047 (2.076)
Sector 3	-0.138 (0.477)	0.656** (0.331)	3.140* (1.658)
Sector 4	-0.251 (0.423)	0.712** (0.329)	-0.573 (1.596)
Region 1	0.483 (0.367)	0.672** (0.323)	-3.167** (1.473)
Region 2	0.119 (0.420)	-0.121 (0.334)	-3.233** (1.627)
Region 3	0.333 (0.382)	0.850** (0.408)	0.397 (1.787)
Constant	2.311 (3.643)	-1.637 (2.690)	15.57 (13.13)
R-squared	0.427	0.211	0.139
Observations	1,035	1,035	1,035

Note: Bootstrapped standard errors in parentheses. The sample is restricted to include self-employed and employed mothers of children under 18, who are not students or retirees. Non-labour income is in US dollars. *Rural area is considered for Mexico, Peru and Ecuador while for Colombia it is not considered to be a municipality. *p = 0.90; **p = 0.95; ***p = 0.99

Table C8: SUR estimates of the time devoted by employed and self-employed mothers to basic childcare, educational childcare and paid work in Panama (education level)

	(1) Basic childcare	(2) Educational childcare	(3) Paid work
Self-employed	0.205 (0.473)	1.625* (0.875)	-15.58*** (2.229)
Age	-0.370** (0.150)	0.242 (0.225)	0.905* (0.541)
Age squared	0.366** (0.179)	-0.354 (0.291)	-1.432** (0.708)
Secondary education	-0.304 (0.376)	0.338 (0.634)	-1.611 (1.386)
University education	0.217 (0.369)	1.562** (0.641)	-2.481** (1.238)
Secondary education*self-employed	1.108 (0.783)	0.410 (1.210)	9.827*** (3.382)
University education*self-employed	-0.558 (0.662)	-0.986 (1.574)	4.633 (4.005)
Married/Cohabiting	0.103 (0.283)	0.351 (0.522)	-2.158* (1.104)
Non-labour income (family)	-	-	-
Log hourly predicted wage rate	-	-	-
Log hourly predicted wage rate sq	-	-	-
N. household members	0.0676 (0.113)	-0.456** (0.225)	0.358 (0.522)
N. younger child 0-4	2.802*** (0.315)	1.125** (0.484)	-0.909 (1.182)
N. younger child 5-12	-0.270 (0.198)	2.322*** (0.377)	-1.033 (0.817)
N. younger child 13-17	-0.644*** (0.202)	-0.901** (0.451)	0.176 (0.977)
Indigenous	-	-	-
Rural area	-	-	-
Sector 2	-	-	-
Sector 3	-	-	-
Sector 4	-	-	-
regiones1	-0.118 (0.234)	-0.460 (0.485)	1.400 (1.051)
regiones2	0.177 (0.370)	-1.469** (0.570)	0.517 (1.307)
Constant	10.10*** (3.047)	0.897 (4.228)	30.19*** (10.13)
R-squared	0.408	0.188	0.170
Observations	631	631	631

Note: Bootstrapped standard errors in parentheses. The sample is restricted to include self-employed and employed mothers of children under 18, who are not students or retirees. Non-labour income is in US dollars. *Rural area is considered for Mexico, Peru and Ecuador while for Colombia it is not considered to be a municipality. *p = 0.90; **p = 0.95; ***p = 0.99

Table C9: SUR estimates of the time devoted by employed and self-employed mothers to basic childcare, educational childcare and paid work in Ecuador (education level)

	(1) Basic childcare	(2) Educational childcare	(3) Paid work
Self-employed	0.148 (0.192)	0.708*** (0.235)	-5.931*** (0.792)
Age	-0.110* (0.0624)	-0.180** (0.0735)	0.550** (0.262)
Age squared	0.0534 (0.0712)	0.0861 (0.0865)	-0.561* (0.325)
Secondary education	-0.349 (0.334)	0.00966 (0.433)	-0.357 (1.224)
University education	-0.179 (0.454)	0.587 (0.574)	-0.665 (1.702)
Secondary education*self-employed	0.171 (0.372)	0.768 (0.512)	1.477 (1.506)
University education*self-employed	0.425 (0.414)	1.225* (0.627)	4.771*** (1.640)
Married/Cohabiting	-0.0446 (0.152)	0.0449 (0.211)	-0.705 (0.623)
Non-labour income (family)	-0.000463 (0.000330)	0.000518 (0.000635)	-0.00202 (0.00211)
Log hourly predicted wage rate	-0.0426 (0.549)	1.123** (0.570)	4.983** (1.977)
Log hourly predicted wage rate sq	0.216 (0.454)	-0.219 (0.495)	-3.649** (1.785)
N. household members	0.0579 (0.0480)	-0.123* (0.0697)	-0.00705 (0.225)
N. younger child 0-4	3.873*** (0.181)	1.050*** (0.202)	-0.939 (0.585)
N. younger child 5-12	0.233** (0.101)	1.572*** (0.131)	-0.726* (0.383)
N. younger child 13-17	-0.450*** (0.105)	-0.528*** (0.142)	-0.891* (0.466)
Indigenous	0.225 (0.263)	-0.807*** (0.298)	2.801*** (0.922)
Rural area	-0.0269 (0.174)	-0.280 (0.221)	0.141 (0.700)
Sector 2	-0.157 (0.272)	0.638* (0.386)	1.913* (1.084)
Sector 3	-0.00787 (0.214)	0.313 (0.292)	7.252*** (0.966)
Sector 4	0.0537 (0.213)	0.623** (0.278)	1.690* (0.868)
Region 1	0.263 (0.197)	0.597** (0.248)	-1.870** (0.767)
Region 2	-0.161 (0.230)	0.444 (0.295)	-6.618*** (0.888)
Constant	4.638*** (1.287)	7.471*** (1.474)	31.14*** (4.960)
R-squared	0.370	0.201	0.073
Observations	3,065	3,065	3,065

Note: Bootstrapped standard errors in parentheses. The sample is restricted to include self-employed and employed mothers of children under 18, who are not students or retirees. Non-labour income is in US dollars. *Rural area is considered for Mexico, Peru and Ecuador while for Colombia it is not considered to be a municipality. *p = 0.90; **p = 0.95; ***p = 0.99

Table C10: SUR estimates of the time devoted by employed and self-employed mothers to basic childcare, educational childcare and paid work in Colombia, hours per day (education level).

	(1) Basic childcare	(2) Educational childcare	(3) Paid work
Self-employed	0.106*** (0.0180)	0.0669*** (0.0242)	-1.312*** (0.148)
Age	-0.0215*** (0.00622)	-0.0115 (0.00743)	0.137*** (0.0363)
Age squared	0.0186** (0.00724)	0.00181 (0.00865)	-0.182*** (0.0456)
Secondary education	0.00905 (0.0244)	-0.0190 (0.0348)	-0.000593 (0.175)
University education	0.0244 (0.0289)	0.00181 (0.0403)	-0.672*** (0.212)
Secondary education*self-employed	-0.0290 (0.0267)	0.0101 (0.0387)	-0.132 (0.204)
University education*self-employed	0.0430 (0.0329)	0.113** (0.0448)	0.231 (0.217)
Married/Cohabiting	0.0173 (0.0115)	-0.00377 (0.0180)	-0.415*** (0.0969)
Non-labour income (family)	-1.46e-05 (1.96e-05)	7.79e-06 (3.29e-05)	-0.000176 (0.000177)
Log hourly predicted wage rate	0.0204 (0.0144)	0.0694*** (0.0207)	-0.145 (0.117)
Log hourly predicted wage rate sq	0.00868 (0.00784)	0.0249*** (0.00940)	-0.00359 (0.0409)
N. household members	0.0104** (0.00502)	0.0198** (0.00788)	0.00367 (0.0424)
N. younger child 0-4	0.608*** (0.0196)	0.432*** (0.0260)	-0.166 (0.103)
N. younger child 5-12	-0.00952 (0.00988)	0.0269* (0.0149)	-0.142** (0.0696)
N. younger child 13-17	-0.0504*** (0.00969)	-0.0957*** (0.0151)	0.0264 (0.0820)
Indigenous	-0.0189 (0.0276)	0.00967 (0.0402)	-0.571*** (0.198)
Rural Area	0.00976 (0.0203)	-0.0299 (0.0275)	-0.873*** (0.158)
Sector 2	0.0383 (0.0323)	0.0316 (0.0443)	0.284 (0.231)
Sector 3	0.0709** (0.0309)	0.00474 (0.0417)	0.739*** (0.219)
Sector 4	0.0577* (0.0300)	0.0430 (0.0418)	0.0503 (0.214)
Region 1	0.0117 (0.0180)	-0.0480** (0.0244)	-0.438*** (0.130)
Region 2	-0.0408** (0.0169)	-0.00782 (0.0248)	-0.0287 (0.128)
Region 3	0.0312 (0.0195)	0.0224 (0.0259)	0.235* (0.130)
Region 4	-0.0424** (0.0179)	0.0219 (0.0263)	-0.206 (0.138)
Region 5	-0.0954*** (0.0292)	-0.194*** (0.0361)	0.405* (0.221)
Constant	0.536*** (0.131)	0.572*** (0.158)	1.374* (0.742)
R-squared	0.364	0.162	0.192
Observations	8,273	8,273	8,273

Note: Bootstrapped standard errors in parentheses. The sample is restricted to include self-employed and employed mothers of children under 18, who are not students or retirees. Non-labour income is in US dollars. *Rural area is considered for Mexico, Peru and Ecuador while for Colombia it is not considered to be a municipality. We include in Colombia dummy variables to control for the day of the week (Ref.: Sunday). *p = 0.90; **p = 0.95; ***p = 0.99