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Grandparental Childcare and Mother's Labor Force Participation – Evidence from Russia

Almaty, 2019

This publication was prepared as part of the Open Economy Fellowship project, implemented with financial support from the Soros Foundation-Kazakhstan. The content of this publication reflects the opinion of the author and does not necessarily coincide with the point of view of the Soros Foundation-Kazakhstan.

Abstract

The paper provides the background as to why it is crucial to study mother's labor force participation from the perspective of informal and formal childcare. It is clear that reliance of working mothers on grandparents, referred to as informal child care in this paper, and paid childcare services, referred to as formal in this paper, play a huge role in their family's well-being. Thus, it is important to establish the position of childcare in society and its impacts not only on the children but also their parents too.

In this paper, I used a Russian survey of the Generations and Gender Programme (GGP, www.ggp-i.org) and perform a panel data analysis using fixed-effect and instrumental variables estimates. It examines different specifications of family based on education of parents, child age, employment status and type of settlements. Considering these parameters, we identified the impact of formal and informal childcare on the labor supply of mothers of young children.

I found that that household whose parents provide childcare is likely to earn more monthly total income. However, regression estimates suggest that when grandparents take care of grandchildren, young mothers are almost 4.4 percentage points less likely to work full-time. This number increases to 16% for the mothers who have children age 0-3. As mothers are not willing to trust their children to other informal institutions to even if they have a hidden preference for an external type of childcare. I also found a mother, getting regular help from professional childcare providers, affect labor force participation of mothers positively, particularly, 15 percentage points higher probability to participate in the labor market.

Keywords: childcare, mother's labor force participation, panel data, fixed effect, instrumental variable

Introduction

Grandparental care is one of the fastest growing social phenomena. However, this concept did not begin recently. Historically, parents always sought the help of their relatives and most especially their parents to take care of their children as a viable alternative for childcare (Danielsbecka et al., 2011). Geurts et al. (2015) in their book detail several instances that have called for grandparental care over a span of 10 decades. Their study suggests that in some cultures, grandparents even lay a major role in intrahousehold decision making especially when it comes to the welfare of the children. In other cultures, orphaned children automatically fall into the care of their grandparents. However, Kim (2018) argues that due to changes in family structures, social conditions and globalization, more children are falling into the care of their grandparents.

In the recent literature, there were many researches done on grandparental childcare and its economics and social impacts. Many empirical works found that there is a positive correlation between grandparental child care with parents having another additional child (Kaptijan et al., 2010 and Thomas and Liefbrooer, 2013) and childbearing (Aassve, Meroni, and Pronzato, 2012). It is also believed that apart from practical assistance (infant-holding, calming and feeding), emotional support to parents give a desire to have another child (Waynforth, 2011). However, grand parental child care does not affect fertility. As Tanskanen and Rotkirch (2014) indicate that grandparental investment only increases fertility intentions of the woman, not actual behavior to have another child. In the child care literature, parents taken assistance from grandparents for a first child are more likely to have a second child (Taskanen et al.,2014). Moreover, Hoppmann and Klumb (2010) detected that grandparental child care facilitates combining work and family life, additionally, participate in labor market (Wheelock and Jones 2002).

The above analysis provides the background as to why it is crucial to study grandparental care. It is clear that grandparents play a huge role in their grandchildren's well-being from time to time and for that reason, it is important to establish the position of grandparental care in society and its impacts

not only on the children, but their parents too. Within the smaller existing literature that determine effect of grandparental childcare on mother labor force participation, the paper builds most directly on combination of Garcia-Moran and Kuehn (2014), Posadas & Vidal-Fernandez (2013) and Arpino et. al. (2014). Each approached grandparental childcare from different perspectives and provide to some extent empirical proof that relationship between grandparental childcare and mother labor force participation is statistically significant.

Specificity of this paper from the above listed works is that it is targeted to combine the relationship between household income as a one determinant factors for having grandparental childcare. Moreover, it also examines different specifications of family based on education of parents, child age, employment status and type of settlements. Considering these parameters, we identified the impact of grandparental childcare on mother labor participation.

Grandparental childcare is predominantly widespread in the countries categorized by strong family ties (Dalla Zuanna 2001). Around 30 % families in Italy and Spain prefer grandparents as a means of childcare, while it is 15 % in Germany and Austria and only 2 % in countries like Denmark and Sweden. Although we are looking at Russian case, one might expect grandparental childcare to affect women's work decisions wherever childcare is either not free or not universally available. In fact, the Russian case is particularly interesting because Russia has comparatively low female labor market participation rates among the other European countries (World Bank, 2018).

This study will then make recommendations to the relevant state and non-state actors on the best way to facilitate grandparent care through raising awareness on the position of grandparents in child upbringing. As the main actor in children protection as well as the making and enacting of legislation on retirement this study goes out to establish that grandparental care should be grounded in law to ensure that it is a more formal avenue of child protection. Additionally, the findings of this study will point out the need for the government to enact cash transfer and social security programs for those grandparents that are fully taking care of their children and are retired.

Literature Review

There is extensive literature about economic impacts of mother labor force participation and childcare which was firstly derived from household related issues. Initially, Samuelson (1956) began the household economics research, who was first found that individuals within a household behaves as a single entity pooling resources. He explains family as a unitary model where all members of family have the same preferences on income, capital, labor, etc. Furthermore, Becker (1981) introduces the fundamental model of household where head acts as the altruistic dictator and decides on the behalf of the whole members. Several empirical studies were made to test this model whether all the members of the family had same preferences. Eventually, there were reasonings against it (Lundberg et al, 1997; McElroy, 1990; Karter and Katz, 1997). Individuals within a family have different sets of goals. Goals of the individuals are varied in the childcare and labor issues as well.

In contemporary literature, there are plenty of empirical works finding the effects of an individual's decisions regarding childcare and fertility. Also, bunch of research having done on childcare polices and its relations to fertility and woman labor force participation. These research works advanced by the introduction of household policies like parental leave, childcare subsidy and child allowance.

Luci-Greulich Olivier The´venon (2013) developed an empirical model and found that providing child care services had a favorable impact on fertility. It is also predicted that countries where the involvement of a father in child care is least, the fertility rate is lowest, and woman is disagreed on having another child (Deopke at al., 2016). D'Albis et al. (2017) assumes that probability of having second child is highly dependent on whether couples are able to acquire child care services for the first child. The opportunity cost of having child care influences female wage, unless they use child care services. It suggests that once the woman has decided to actively participate in the labor market, it is crucial for them to combine family life and work (Luci-Greulich Olivier The´venon 2013). Back (2015) is agreed on this statement and claims that subsidized child care leads the mother moving from part-time to full-time work. Also, Schoonbroodt in her work specifies the child care process by dividing into during and outside typical work hour (TWH). Particularly, opportunity costs of during and outside TWH are leisure or housework and forgone earnings. Gobbi (2016) stated that

policy stimulating parental leave for father does not consider future household income. As household income is strongly dependent on the father's earnings, taking parental leave deteriorates the father's career goals. Therefore, policies have to focused more on ongoing support on mothers by facilitating childcare.

From the point of policies, Luci-Greulich Olivier Thevenon (2013) combines in their study impact of policies (parental leave, child care policies and money transfer), and found that continuum of support increases probability to make a child. However, child care policies focused on the age under three have greater impact on fertility compared with paid parental leave (the time given to care for newborns) and childbirth grant (amount of money paid to the mother after confirmation of birth from the hospital). Bick (2015) in his recent research analyzed different models of child care, including subsidized, non-subsidized and informal (raising by grandparents) models. Each were tested by empirical approach and detected that increasing subsidized child care has a trivial impact on maternal labor force participation. Particularly, subsidy for child care in the West Germany does not achieve its main goal of increasing the fertility rate, due to limited access to the subsidy. Additionally, Deopke at al. (2016) suggests that child care subsidy policy has to be oriented towards those members of the family who are opposed to having another child. Particularly, a policy specified to reduce child care burden for the mother is proven to be much more successful than a policy targeted at the father. Kalwij(2010) found no relationship between child care subsidy and timing of births, while subsidy does have a positive impact on the second and higher order child and completed family size.

To my knowledge, I found three papers directly related to the study of impacts of grandparental childcare to mother labor force participation. According to Posadas & Vidal-Fernandez (2013) empirical study, they used the US National Longitudinal Survey of Youth 1979 (NLSY79) to identify a causal relationship between mother's labor force participation and grandparental childcare. They related Ordinary Least Squares (OLS), women's Fixed Effects (FE) and Instrumental Variables (IV) estimates. Particularly, instrumental variables were whether grandparents are alive to predict the availability of providing childcare and found that the minorities such as black, Hispanic and single and never married are more likely to participate in the labor market, if they have one of the parents to take

care of a child. Additionally, Arpino et. al. (2014) also used IV approach to avoid endogeneity problems and contrasted with other related empirical works. Using Italian data, they proved that less educated mothers resided in the north and center of Italy and having young children is more encouraged by grandparents helping with childcare. Consequently, these assistances provide for the mother's opportunity work and increases the mother's labor force participation (Arpino, Pronzato, & Tavares, 2014).

Furthermore, according to Garcia-Moran and Kuehn (2014), couples choose to live close to their parents to hold a regular full and part-time job and get help for caring for their children. However, in this case working mothers sacrifices their wages by working comparatively in a less paid jobs, as they are unable to be mobile and are limited to working close to their parents. The authors applied German Socio-Economic Panel (SOEP), an extensive annual household survey, to determine the impact of proximity to grandparents and relative-provided childcare on female labor force participation.

The study is aimed to test the below stated hypothesis using the two waves of the Generations and Gender Survey (GGS). The survey is a panel and was carried out in 2004 and 2007 as part of the Generation and Gender Programme (GGP, www.ggp-i.org) in 19 countries. This paper is first to determine the impact of grandparental childcare on mother labor force participation by using panel analysis techniques. Previous works related to this topic only used single year data.

Hypothesis Statements

1. Income of grandparents affects to provision of grandparental childcare.
2. Grandparental childcare has a positive impact on woman labor participation.

Data

The GGS is a set of comparative surveys on childcare, partnerships, household organizations, activities and income. This survey consists of several questions regarding relations between generations and partners, as well as information on the specifications of the respondent's family of origin. It is targeted to expand our understanding of the relationship between parents and children and between partners in everyday life.

The survey has also extensive information about one of the family members, including his socio-demographic characteristics and employment patterns. At the same time the GSS contains information on the old generation including their demographic characteristics. It is therefore possible to model the availability of grandparent's childcare as a function of the labor force participation decision of the mother. The selection of the countries analyzed is particularly important since there are significant differences in the effects of economy and culture according to the type of countries considered. This analysis contains Russia GGS survey. We focus on Russia since it has a relatively similar past as Kazakhstan. Thus, we exclude from the analysis developed countries as they have exhibited peculiar economic and political development.

After excluding unnecessary observations, particularly respondents with no child, the working sample covered a total of 10230 respondents As the information about childcare is key to the analysis, it only considered respondents who were 22-50 aged female respondents. The sample is therefore reduced from 10,230 to 2,516. .

We control for a large number of variables, measured when the mother at least has a child or supposed to have in two wave periods. We consider the mother's characteristics such as level of education, age, employment status, net amount of income received, net of all household members, whether respondent has co-resident parents, and type of settlement.

Table 1 provides a descriptive statistic for our sample. Individuals are on average between 38 and 39 years old. Approximately 75% of women between 22 and 50 have children and 13% are mothers of small children (age 0-3) and also 13% have children aged 3-6. Around 73% of women and mothers have a regular fulltime and part time job. Around 39-40% of women and mothers live in the rural area and urban type community and the others live in an urban areas (town and oblast center). Approximately 21% of mothers live in the same house or household with parents or in-laws. Only 21% of mothers of children use nursery care, sitters or other types of paid child care. Around 12% their children cared for by grandparents on a regular basis. Average monthly salaries of women and mothers are around 120 euros. 66% of mothers and women are positive to grandparental childcare. Only 16% of both mothers and women had disagreement with parents within the last 12 months.

Table 1 also describes the statistics about mothers whose children are taken care from grandparents. 14% of those families live together with parents. Also, those families are more prone to use paid childcare services which is 46%. The household income the families having grandparental childcare is relative higher than average mothers.

	Women (22-50)	Mothers (22-50)	Grandparental childcare: yes
Age	38.1 (8.2)	38.8 (7.7)	30.8(5.4)
Married, Living together	0.59	0.65	0.69
Children	0.75	1	1
Children 0-3	0.11	0.13	0.38
Children 3-6	0.11	0.13	0.31
Number of Children	1.84(1.2)	2.18(1)	2.56(0.74)
Primary Education	0.16	0.01	0
Tertiary Education	0.57	0.57	0.59
Urban area	0.61	0.6	0.62
Parents or in laws same house	0.25	0.16	0.14
Mother is working	0.73	0.73	0.68
Children non-relative care	0.18	0.21	0.46
Grandparental childcare	0.1	0.12	1
Income (Euros)	120(171)	118(178)	120(123)
Household income (Euros)	878(2021)	883(1015)	996(966)
Attitude in grandparental childcare	0.66	0.66	0.59

Having bad relations with parents	0.16	0.16	0.2
Observations	2516	2131	264

Table 1. Means(Std) – GGS pooled sample.

Model

$$grandcare = \beta_1 livingwithpartner + \beta_2 paidcare + \beta_3 incomehoushold + \beta_4 coresgrandparents + \beta_5 education + \beta_6 child0\text{–}3 + \beta_7 child3\text{–}6 + \varepsilon$$

The first model to be estimated has the grandparental childcare provision as the dependent variable and involves seven explanatory variables in order to capture statistical significances. These independent variables have been thought to be key to the incentive to provide childcare and their separate impacts on grandparents have long been dominant themes in everyday life. Livingwithpartner is a dummy variable where 1 is married living with partner, 0 living without partner. For paidcare, we use dummy variable that takes the value of 1 if the household uses paid childcare services. Also, education is whether the individual has tertiary education. Child0-3 and child3-6 is a variable taken as if the family has a child aged 0-3 and 3-6. We take log of total household income to interpret it by percent change.

$$MLFP = \beta_1 education + \beta_2\ grandcare + \beta_3 child0-3 + \beta_4 child3-6 + \beta_5 paidcare + \beta_6 incomemother + \beta_7 coresgrandparents + \beta_8 childagesqared + \varepsilon$$

For the second model, mother labor force participation was used as our response variables. Mother labor force participation summarizes whether or not a mother works; thus, working part-time is also assumed as full-time work. Mother labor force participation also allows comparisons to existing research, as it has been used as the dependent variable in other comparable studies (Lynch et al. 2004).

As the key independent variable, grandparental childcare, we used grandparental childcare as a dummy variable. Data for childcare are taken from the survey question if the respondent get regular help with childcare from relatives or friends or other people for whom caring for children is not a job.

The question tells us from whom exactly the mother is taken assistance in childcare. We also assume the help from partner's parents as grandparental childcare. Another explanatory variable is income of respondents which is converted into a natural logarithm and square of age of the child. We also included dummy variables in our model such as having a child aged 0-3, 0-6, education level, living in the same house with parents, and paid childcare service.

The empirical analysis of the effect of grandparental childcare on mother labor force participation is complex due to endogeneity issues. Despite the richness of information concerning work and family, it is not possible to exclude entirely the possibility that there are unobserved preferences related both to childcare and labor market decisions. In these circumstances, if standard OLS regressions were to be used, they would produce biased results. Consequently, we perform a panel data analysis using fixed-effect model to avoid endogeneity problems. We pay particular attention to the methods (panel data), data quality (comparability, source reliability especially for income and work) and appropriate selection of country (economically developing nations), as these are suggested to be the main weaknesses in prior literature (Bick , 2015).

Results and Discussion

Table 2 presents the results for Fixed-effect regression. Mothers paying for childcare providers have a 9.1 percentage higher probability to use also grandparents as childcare providers. This finding clearly shows that grandparental childcare not only substitute for but also complement formal childcare. Additionally, we find that households whose parents provide childcare are likely to earn more monthly total income. This result can be interpreted in a different way, as Garcia-Moran and Kuehn (2014) claimed that couples who live close to their parents or in-laws have opportunity to work full-time and part time, but it reduces hourly wages. As they point out mothers limited to work in one geographical location and cannot be mobile to encourage higher wages.

Other control variables show the expected signs. Particularly, women having a child aged 0-3 and 3-6 are more likely to use grandparental childcare to increase the likelihood of grandparental childcare for approximately 17-23%. Additionally, mothers divorced and not living with partners are more willing to use grandparental childcare.

Income of household (in log)	0,02**	(0,017)
Paid childcare services	0,091***	(0,029)
Living together with parents	0,033	(0,039)
Children 3-6	0,177***	(0,036)
Children 0-3	0,225***	(0,045)
Married, living together	0,082**	(0,040)
Education	-0,072**	(0,029)

Table 2. Effect of household income on grandparents' childcare. Fixed effect regression outcomes.

Table 3 indicates results obtained by running the second model into regression. The findings show how explanatory variables impact mother labor force participation. Next, we compare FE controlling for selection effects to assess if our results are driven by low-educated individual and rural settlements.

In line with findings in the literature discussed before, we find a mother getting regular help from professional childcare providers to affect labor force participation of mothers positively. Women using a day care center, a nursery or pre-school, an after-school care-center, a self-organized childcare group, a babysitter, or from some other institutional or paid arrangement have a 15 percentage points higher probability to have participate in the labor market. (see Table 3). We find this positive effect to be particularly strong for women with university education and living in urban areas(see Table 1A and Table 2A of the Appendix A). Additionally, it is estimated that mothers paying for childcare for child aged 0-3 have a 45% probability to work (see Table 1A and Table 2A of the Appendix A). Regarding participation, we find universal estimation for mothers having child 0-3 years old, regardless of education level and settlement types. Those mothers have a about 35 percentage points lower

probability to hold a regular part-or fulltime job (see Table A.1 and A.2 of the Appendix A). In the literature, it is stated regarding this results that a mother having the child's aged less than 3 is less likely to work, since the childcare is highly subsidized by the government (Luci-Greulich Olivier Thevenon, 2013).

Education	0,063**	(0,027)
Children 0-3	-0,364***	(0,043)
Grandparental Childcare	-0,044*	(0,026)
Children 3-6	-0,092**	(0,034)
Paid childcare services	0,151***	(0,026)
Living together with parents	-0,079**	(0,035)
Age of child squared	-0,001***	(0,000)
Income of mother (in log)	0,076***	(0,066)

Table 3. Effect of grandparental childcare on mother labor force participation (MLFP)

FE estimates that when grandparents take care of grandchildren, young mothers are almost 4.4 percentage points less likely to participate in the labor force (see Table 3). For the most part, the remaining regression coefficients are 16 percentage for mothers having children aged 0-3 (see Table 2.A of the Appendix A). This does not fall in line with existing literature finding that a positive correlation between grandparental childcare and woman's labor force participation. Although we include this rich set of variables in our FE model together with survey year and background controls, we cannot dismiss the possibility that we might be omitting a relevant variable both related to maternal grandmother's death and mother labor force participation.

This surprising outcome might occur due to trust. As mothers not are willing to trust their children to other informal institutions even if they have a hidden preference for an external type of

childcare. Some studies suggest that at the significance of trust in the attribute of childcare in child care decisions (Hank and Kreyenfeld 2003; Borck and Wrohlich 2011; Shlay 2010), and El-Attar (2013) finds that lower trust decreases the probability of using an external type of childcare.

Running the regression separately for individuals with and without tertiary education shows that this is not the case. The higher the educational attainment, the greater the likelihood of participating in the labor force. Specifically, for the group of highly educated mothers with children 0-3 years old probability to work is about 18%. Also, living with parents in the same house does not indicate provision of childcare. On the contrary, it correlates negatively with childcare. This outcome can also be supported from the descriptive statistics (see Table 1), where a tiny amount of mothers having childcare from parents live together with them.

Conclusion

The study was targeted to combine the relationship between income of household as one determinant factors for having grandparental childcare. Moreover, it also examines different specifications of family based on education of parents, child age, employment status and type of settlements. Considering these parameters, we identified the impact of grandparental childcare on mother labor participation.

The study used Generations and Gender Survey (GGS) and perform a panel data analysis using fixed-effect model. We find that households whose parents provide childcare are likely to earn more monthly total income. However, regression estimates suggest that when grandparents take care of grandchildren, young mothers are almost 4.4 percentage points less likely to participate in the labor force. This number increases to 16% for the mothers who have children age 0-3.

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A Appendix

	With Tertiary Education		Without Tertiary Education	
Grandparental Childcare	-0,056**	0,027	0,025	0,077
Children 0-3	-0,352***	0,047	-0,348***	0,106
Children 3-6	-0,088**	0,038	-0,066	0,081
Paid childcare services	0,175***	0,028	-0,020	0,074
Living together with parents	-0,136***	0,039	0,132*	0,078
Age of child squared	-0,001***	0,000	0,000	0,000
Income of mother (in log)	0,086***	0,008	0,044***	0,014

Table A.1 Effect of grandparental childcare on MLFP. Estimation by education level.

	Children 0-3		Children 3-6		Children 0-6	
Education	0,184*	0,111)	0,017	0,087	0,066**	0,028)
Grandparental Childcare	-0,163**	0,082	0,052	0,068	-0,063**	0,026
Paid childcare services	0,439***	0,091	0,184**	0,067	0,104***	0,026
Living together with parents	-0,068	0,099	0,018	0,093	-0,074**	0,036
Age of child squared	0,004*	0,001	0,010***	0,002	0,000**	0,000

Income of mother (in log)	0,066**	0,020	0,116***	0,017	0,089***	0,007

Table 4B. Effect of grandparental childcare on MLFP. Estimation by age of children

	Urban Area		Rural Area	
Education	0,052*	0,034	0,086**	0,047
Grandparental Childcare	-0,028	0,032	-0,071*	0,042
Children 0-3	-0,424***	0,058	-0,285***	0,067
Children 3-6	-0,135**	0,047	-0,045	0,051
Paid childcare services	0,169***	0,033	0,133**	0,044
Living together with parents	-0,066	0,046	-0,087*	0,054
Age of child squared	-0,001**	0,000	-0,001**	0,000
Income of mother (in log)	0,079***	0,010	0,072***	0,009

Table 4C. Effect of grandparental childcare on MLFP. Estimation by settlement types.