

The Childcare Burden

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Abstract

The cost and availability of childcare have become an increasing burden for families in recent decades. This study examines how the burden of childcare effects mother particularly. We find that, while women on average have lower childcare costs, women in the labor force have \$510.3 higher childcare costs. Women with children are associated with 23.8% decrease in labor force participation, compared to 9.7% decrease for women generally. These findings women with children face a choice that divides them into two groups, the first forgoing labor force participation to mitigate childcare costs and the second accepting increased childcare costs to participate in the labor force.

1 Introduction

Childcare has significant implications for social and individual economic outcomes. In recent years, the availability and costs of childcare has become a major burden for parents across the country. This research proposal seeks to evaluate how the burden of childcare impacts labor force participation and childcare costs along gender lines.

This study addresses the following related research questions:

1. What are the key variables which effect childcare costs? How does gender effect childcare costs?
2. How does having children affect labor force participation for women?

2 Liturature Review

Childcare makes up a large portion of many families income. Grundy (2024) finds that the cost of childcare can range from 8% to 19% of median family income, while the number of childcare employees dropped by nearly 14% from 2020 to 2021. High costs combined with decreasing availability of services indicates a need for a more robust provisioning system of childcare services.

Mothers experience lower wages and labor force participation rates. Women experience earning declines associated with childbirth at higher rates than men, but public childcare provisioning programs have been shown to decrease the disparity (Karademir, Laliberté, and Staubli 2024).

Lucy and Ferguson (2024) find that mothers with children under six have significantly lower labor force participation rates than other parents. Cultural norms associated with child rearing may bear some responsibility for this disparity. “Taking care of the home and family” remains the leading reason why mothers do not participate in the labor force (Fry 2024).

Bassok, Fitzpatrick, and Loeb (2012) find that publicly funded or run childcare services are associated with increased availability and lower costs. Materson et al. (n.d.) finds that expansion of early childhood education services reduces the “time poverty” rates for mothers. Public provisioning of childcare may reduce childcare burden on families, helping reduce the inequalities exacerbated by the uneven distribution of the cost of childcare.

2.1 Methodology

Our study utilizes data from the 2016 U.S. Census Bureau’s American Community Survey.

We perform regressions between childcare costs for various subsections of the population to examine how different factors effect childcare costs. We then examine two phases of regression of the same model on labor force participation. The first phase will regress labor force participation on various metrics for the entire sample, while the second only will examine individuals with children in the sample. By examining the divergence between the coefficients in the first and second model, we can elucidate how having children changes the effect of various metrics (such as gender, childcare cost, and race) on labor force participation.

3 Sample Analysis

3.1 Demographics

The sample consists of about 1.8 million individuals. 49% of the sample is male and 76% of the sample is white. Approximately 18% of the sample is Gen Z, 32% are millennials, 38% are Gen X, and 12% are baby boomers. More than half the sample has completed some level of college, with 43% completely at least high school. 77% of the sample participates in the labor force, while 73% is employed. The average age of the sample is 43.

3.2 Children & Childcare Costs

Table 1: Childcare Characteristics

Variable	Mean	Std Dev	Min	Max
Childcare Cost	372.95	1906.18	0	23804
Childcare Cost (with children)	1210.85	3283.66	0	23804
Number of Children	.75	1.13	0	16
Number of Children (0-12)	.53	.95	0	12

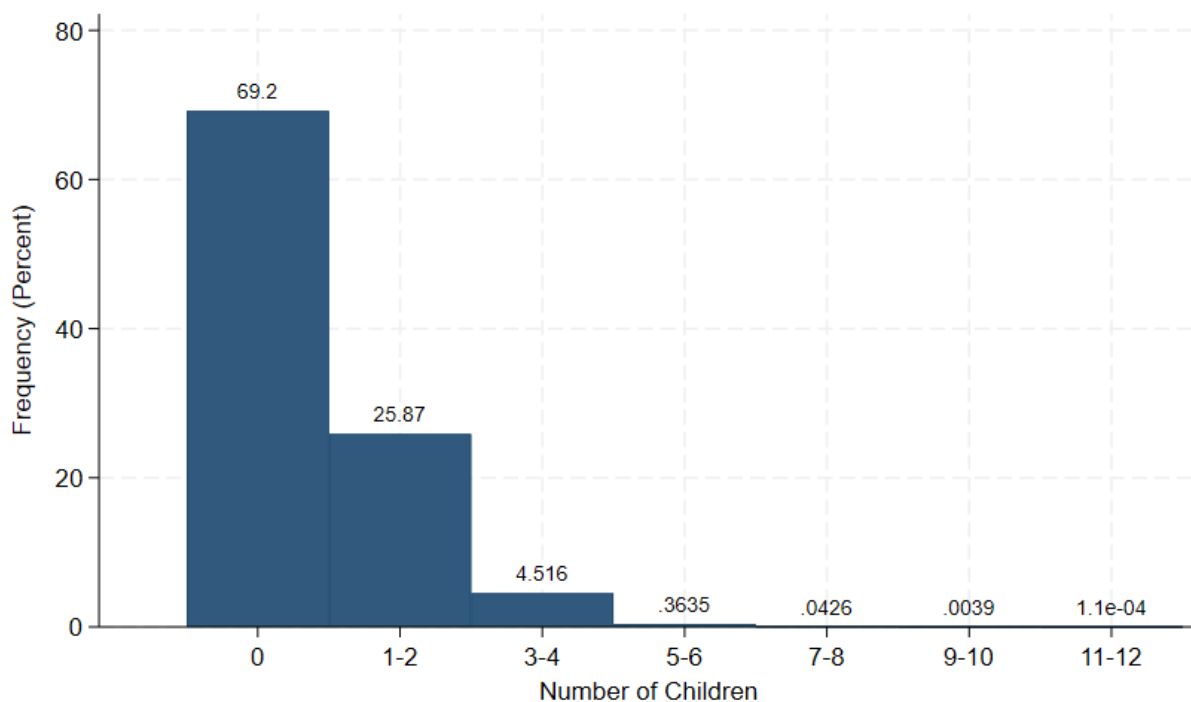


Figure 1: Distribution of the number of children between 0 and 12

The average individual in the sample has just under 1 child between 0 and 12. Over half the sample has no children within this range, while slightly over 25% has between one and two children in this range (Figure 1).

The average monthly cost of childcare is \$373, but the standard deviation is 1906.184, indicating a high variability of childcare costs between individuals in the sample. For people with at least 1 child between 0 and 12, the average yearly cost of childcare was 1210.85 dollars. Of parents, 84% have no childcare costs at all. Those with no childcare costs are more likely to be in poverty compared to those with childcare costs. Similarly, parents are less likely to be in poverty than non-parents.

For mothers, high childcare costs are associated with greater participation in the labor force (Figure 2). One hypothesis explaining this result is that people are less likely to have children if they do not have a job, and prioritize keeping stable jobs if they do have children.

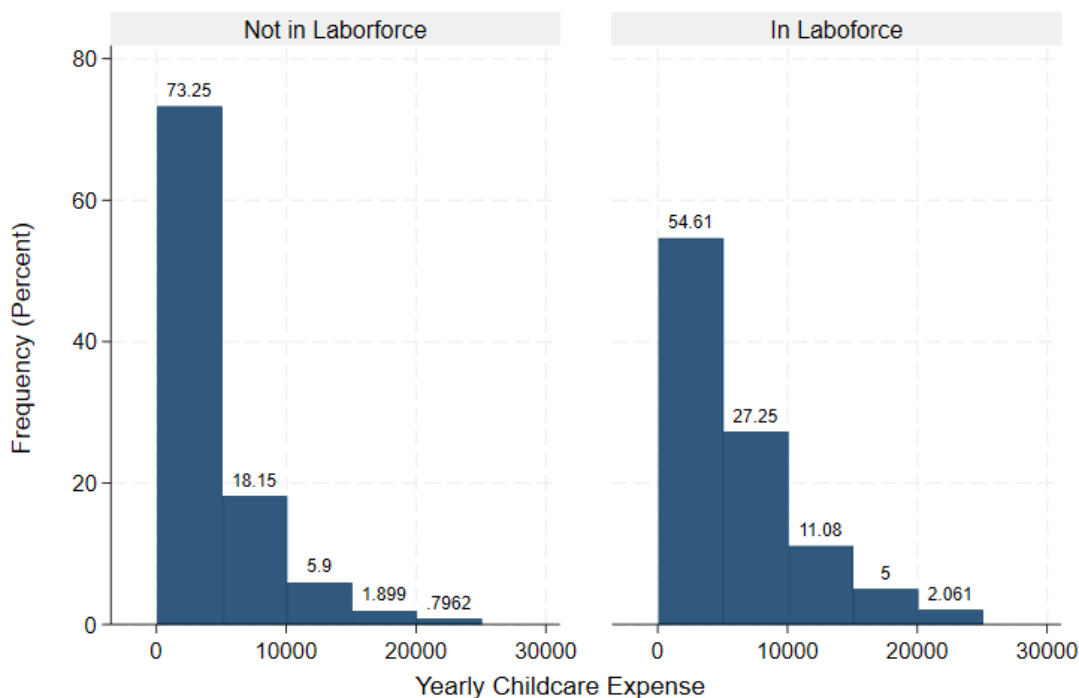


Figure 2: Yearly childcare expenses for Mothers

3.3 Laborforce Participation & Children

Women in the labor force are less likely to be unemployed, but women experience a lower rate of labor force participation (28% not in the labor force compared to 17% of men). As number of children goes past 3, individuals employment rate falls significantly.

As shown in Figure 3 black mothers have a much higher labor force participation rate (77.2%) then non-black mothers (69.5%), despite black people generally have lower participation rates (74.4%) then non-black people (77.7). The reversal of the trend may indicate that being a mother induces a higher need for wage income for black mothers when compared to mothers of other races.

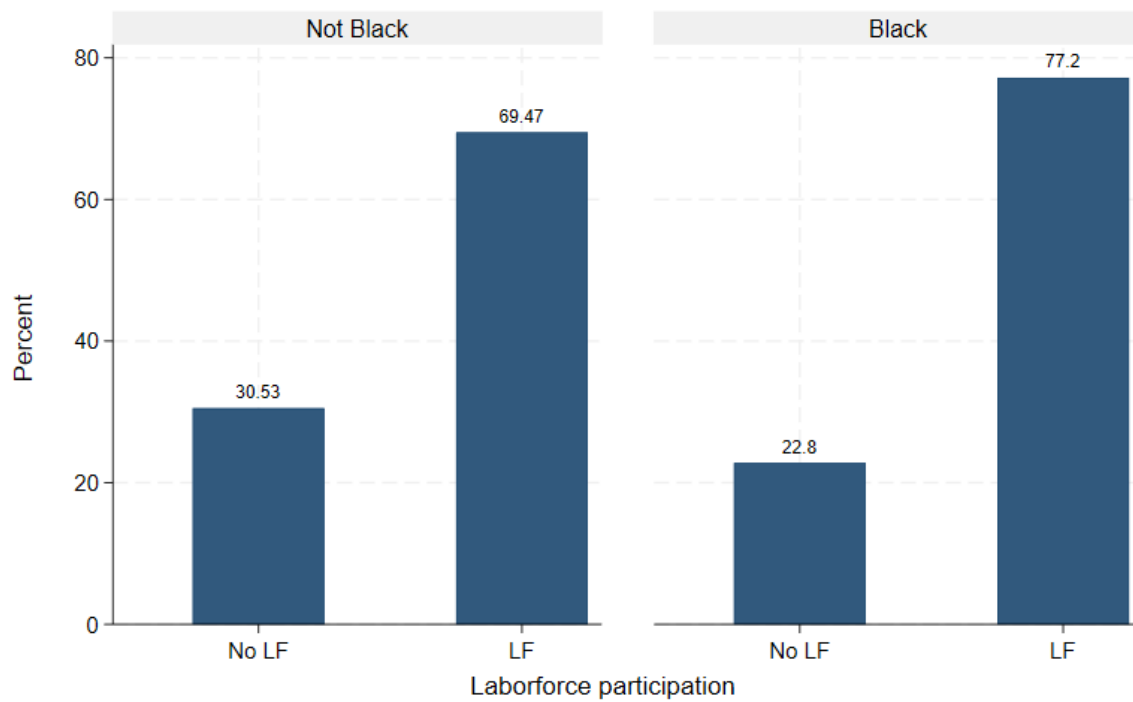


Figure 3

Women with children are less likely to participate in the labor force. Having one or two children is associated with relatively higher labor force participation, but three or more children results in a lower rate of labor force participation. Parents have a higher rate of labor force participation than non-parents, but this does not hold true when looking only at mothers.

As shown in Figure 4, high childcare costs are associated with lower labor force participation rates for those with low-income levels (87.41%) when compared to those with medium (96%) and high (99%) income levels. Women with medium income and below participate in the labor force at a lower rate than their male counterparts when childcare costs are high.

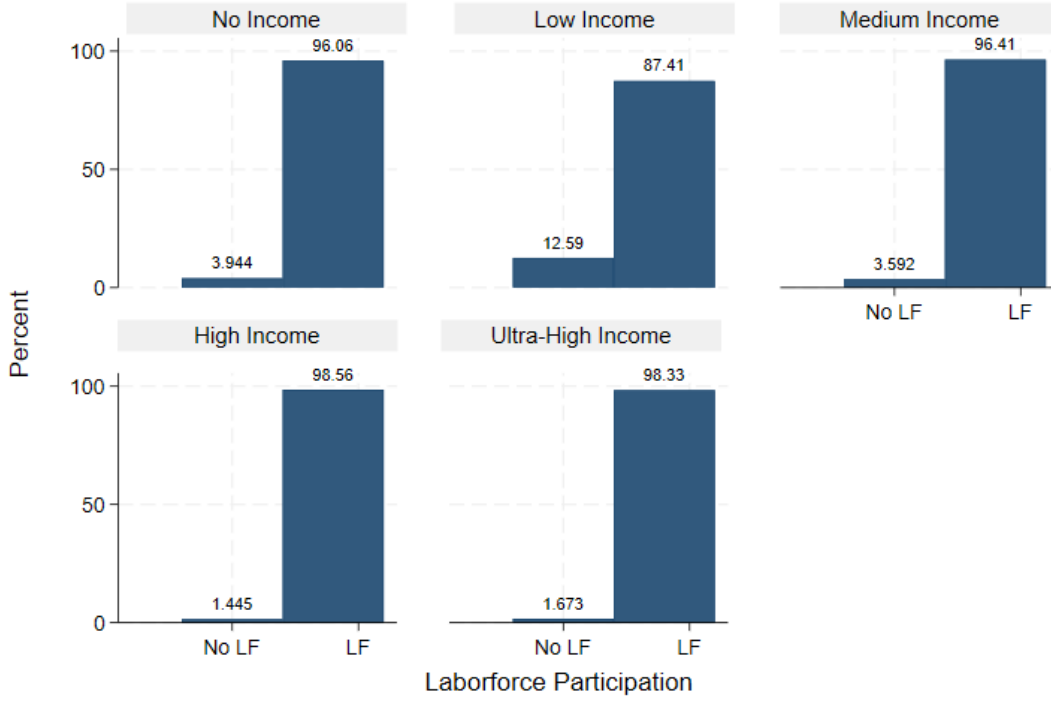


Figure 4: Labor force participation by income bracket for high childcare costs

4 Main Results

4.1 Model Specification

Our primary models use ordinary least squared regressions to evaluate the relationships between Childcare costs, laborforce participation, gender, and number of children.

Model 1:

$$ChildcareCosts = \beta_0 + \beta_1 Female + \beta_2 Laborforce + \beta_3 Female \times Laborforce + \gamma X + \varepsilon$$

Where:

- *Female* is a dummy variable for being female or not.
- *Laborforce* is a dummy variable for participation in the laborforce.
- *Female* \times *Laborforce* is an interaction term between laborforce participation and being female.
- *X* is a set of control variables (age, living in metropolitan area, home ownership, income, college, race).

Model 2:

$$Labor\ force = \beta_0 + \beta_1 Female + \beta_2 College + \beta_3 FemaleXCollege + \gamma X + \varepsilon$$

Where:

- *Female* is an interaction term between being a parent and being female.
- *College* is a dummy variable for participation in the laborforce.
- *FemaleXCollege* is an interaction term between having a college degree and being female.
- *X* is a set of control variables (childcare cost, age, living in metropolitan area, home ownership, income, college, race).

4.2 Primary Regression Results

Model I results are present in Table 2:

Table 2: Model I Results

Variable	No Controls	Full Model
Female	25.30*** (11.13)	-131.58*** (-10.75)
Labor force	372.6*** (126.93)	175.0*** (10.62)
Female in Labor force	62.54*** (14.63)	510.3*** (34.37)
Controls	No	Yes
Only Parents	No	Yes
Observations	1791894	551914
R-squared	0.0081	0.0622
BIC	3.21e+07	1.05e+07

Note: Standard errors in parentheses. ** p<0.05, *** p<0.01

Model I indicates that mothers are associated with \$132 lower yearly childcare costs. Mothers in the labor force are associated with \$510 increase in yearly childcare costs, which is about 50% of the average cost of childcare for parents. Being in the labor force alone is only associated with \$175 increase in childcare costs. This indicates that the monetary cost of childcare is particularly significant for mothers in the labor force. One explanation of this phenomenon is that mothers who are not in the labor force are able to avoid needing childcare and its associated costs. The relatively low r-squared in model I indicates that the variables used are only explaining a small

part of childcare costs causes. A model using data that could isolate the details of the childcare being used may illustrate more robust relationships.

Model II's results are presented in Table 3:

Table 3: Model II Results

Variable	No Controls	Full Model	With Children
Female	-0.132*** (-152.66)	-0.097*** (-97.88)	-0.238*** (-157.07)
College Degree	0.117*** (153.72)	0.091*** (115.66)	0.060*** (51.23)
Female with College Degree	0.0362*** (30.59)	0.044*** (37.25)	0.064*** (32.95)
Controls	No	Yes	Yes
Only Parents	No	No	Yes
Observations	1791894	1791894	551914
R-squared	0.043	0.075	0.1083
BIC	1884598	1826205	506278.9

Note: Standard errors in parentheses. ** $p < 0.05$, *** $p < 0.01$

Model II finds that women have almost 10% lower labor force participation, and women with children have a 24% decreased labor force participation rate. When examining women with a college degree, these effects become positive. This indicates that having children is a major part of the decline mothers labor force participation and a college degree mitigates the effect of children on labor force participation. This finding explains the lower childcare costs found in model I, because women are more likely to forgo working to take care of children, leading to lower childcare costs at the expense of participating in the labor force; women who participate in the labor force have a significant positive relationship with childcare costs.

5 Limitations of Analysis

1. **Heterogeneity:** We explored the heterogeneous effects of labor force participation on motherhood for different levels of income and childcare costs. We found in our data analysis that for high childcare costs, high incomes mothers will participate at a higher rate, and low-income mothers are less likely to participate.
2. **Variable limitation:** We did not have access to data on the type of childcare being used, so we cannot examine what childcare expenses are spent on or the availability of childcare.

Future studies with access to this data could illuminate how the availability and type of childcare used effects these relationships.

3. **Predictability of Model II:** Since model 2 is measuring the probability of a binary variable being true (labor force participation), we conducted a two tests to ensure the accuracy of the model. We found that that model correctly classified outcomes 79.45% of the time. In addition, the pseudo- R^2 was higher than the original regressions R^2 (0.136). Both of these findings indicate the model has relatively strong predictive power for the likelihood of participating in the labor force.

6 Conclusion

Our findings illustrate a dual-burden faced by women who have children; they choose between mitigating childcare costs by forgoing labor force participation or enter the labor force at the cost of high childcare costs. We find a pronounced difference in the childcare cost relationship for women who participate in the labor force when compared to women and labor force participants alone. We find that isolating our analysis to women with children more than doubles the negative correlation between women and labor force participation. This effect disappears when looking at women with a college degree, with labor force participation increasing for women with children.

These findings illustrate the existence of two groups of mothers. One group has lower childcare costs but do not participate in the labor force, while the other incurs greater childcare costs but participates in the labor force. Moving forward, policy related to childcare should consider the disproportionate burdens faced by mothers and examine the effect of potential policy on both childcare costs and labor force participation. Further research could explore how the cost, availability, and type of childcare services available to families effect these trends, illuminating how policy could reduce the childcare burden for mothers most effectively. Other research could examine how the dual-burden of childcare effects wider trends related to gender disparities.

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