Across State Lines: Mobility, Women's Employment, and State-Level Childcare and Gender Empowerment

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ABSTRACT:

In the United States, moving across state lines can knock women out of the labor market. Married women who move to another state often become "trailing spouses," relocating for their husbands' career opportunities and reducing their own attachment to the labor force. Here, we ask whether moving to a state with higher rates of gender empowerment and lower childcare costs mitigates some of the negative effects of interstate moves. We use hierarchical binomial logistic regression models, combining data from the 2011-2015 American Community Survey, state-level childcare costs, and an index of state characteristics that measures women's share of managerial and professional occupations and state legislatures, female hourly wages, and women's educational attainment to assess women's employment following an interstate move. We find moving to a state that ranks higher on gender empowerment is associated with higher employment rates among women. In addition, mothers of young children are more likely to remain employed if they move to a state with lower childcare costs. Although interstate mobility reduces the likelihood of employment among all women, moving to a state with less expensive childcare and greater economic and political opportunities for women mitigates some of the employment damage of mobility.

INTRODUCTION

Mobility can have serious negative consequences for women's careers. A robust literature on the labor market outcomes of trailing spouses, or spouses who move to accommodate their partners' career, shows: (1) women are more likely to move for their husbands' careers than vice versa; and (2) women who move to enhance their husbands' careers face a career penalty – i.e. are less likely to be employed, and are more likely to occupy lower quality jobs (Cooke, Boyle, and Couch 2009; Geist and McManus 2012). Of course, the shift towards more gender egalitarianism means more men are moving for women's careers than in the past (Harvey and Wiese 1998; Schonfeld 1994; Bernard 2014). However, even when husbands are the trailing spouses, men have better career outcomes than women who trail their husbands (Boyle et al. 2001). Simply, mobility is a greater career killer for wives than husbands.

Yet, absent from these couple-level discussions of mobility and marriage is a deeper understanding of how geographical context exacerbates or mitigates the detrimental impact of a move on married women's careers. Married women, especially those with children, may be better equipped to enter the labor market following a move to a state where childcare costs are lower and where women's employment is more institutionally supported. Such benefits may be restricted to highly educated women who are more desirable to employers and are better able to maximize institutional resources to maintain employment. Or, women across all educational gradients could benefit from moving to a state with better labor market and childcare support systems. These benefits may also extend to mobile unmarried women, further highlighting the need to focus on the geographical context for all mobile women, not just trailing spouses. Existing scholarship focuses on country-to-country differences on mobile women's employment (Boyle et al. 2001); here, we extend this approach to understand mobility across U.S. states. By contextualizing the geographical contexts in

which women move, this research identifies how states' institutional environments impact women's employment, paying careful attention to marital status, parental status, and human capital characteristics. We argue that moving to states with more institutionalized gender empowerment and lower childcare costs may better position women to maintain employment.

To address these questions, we link data for a large sample of women who were employed in the past year with state-level measures of gender empowerment (here, measured through women's access to economic and political opportunity) and childcare costs. We estimate how moving to a state with greater gender empowerment and lower childcare costs impacts women's likelihood of being employment following their move. Because interstate mobility is limited to a small percentage of the employed population in a given year (two percent), we require a large sample to generate robust model estimates. We use the largest household survey in the United States – the American Community Survey – which is the premier source of annual geographic data in the United States and allows us to have sufficiently large samples of mobile women to estimate the effects of marital status, parental status, and human capital characteristics with precision. Our application of cross-sectional data does not allow us to disentangle causality about mobility – i.e. whether women are moving for their own or another's career or for different reasons. However, we limit our analyses to women who have been employed in the past 12 months and moved in the past 12 months. This allows us to evaluate mobility along with employment changes that occurred during the same time period among women who were recently employed. By estimating the association with states' gender empowerment and childcare costs, we can determine whether moving to a state with stronger institutional resources and lower childcare costs increases women's odds of employment. Further, by paying careful attention to women's marital and parental statuses and human capital resources, we can assess whether married women, more

educated women, and mothers (and more educated mothers) benefit more from interstate moves to gender empowered states and states with lower childcare costs.

Drawing upon Census Bureau data, we show mobility to be associated with a 30 percent reduction in the odds of women being employed in their year of moving. Married women were 47 percent less likely to work than single women, and mothers of young children were 43 percent less likely to work than non-mothers, following an interstate move. However, married women who moved to states with higher gender empowerment rankings were more likely to be employed following a move than married women who moved to lower-ranked states. Mothers of young children were more likely to work and to be employed full time in states that ranked higher in gender empowerment and had lower childcare costs. Women with greater human capital remained more likely to be employed following a move than women with less human capital. Highly educated mothers were less sensitive to the costs of childcare, with no significant relationship between childcare cost and full-time employment. However, they were more likely to work full time in gender empowered states. Overall, we show that moving to states that offer greater gender empowerment and lower childcare costs is associated with higher female employment and more full-time employment among mothers, partly mitigating the negative labor market effects of interstate migration.

INDIVIDUAL DETERMINANTS OF GEOGRAPHIC MOBILITY

Trailing Spouses: Marriage and Mobility

A range of studies assess how migration impacts married women's employment. Married women are more likely to be a "tied migrant" or "trailing spouse" in interstate moves that are driven by men (Amcoff and Niedomysl 2015). Faced with institutionalized gender inequality in the labor market and normative pressures to put their husbands' careers first,

married women move for their spouses because men's economic returns are often higher (Boyle, Feng, and Gayle 2009; Blackburn 2010). Men are also more likely to be employed in occupations that are geographically clustered within specific states (Benson 2013). In this regard, wives often weaken their labor market positions to maximize men's earnings by moving for husbands' career opportunities. Thus, it is no surprise that the bulk of the literature finds female "trailing spouses" have worse labor markets than those who are less mobile (Halfacree and Boyle 1999; Bielby and Bielby 1992; Cooke and Bailey 1996; Boyle et al. 2001).

Existing literature examines labor market outcomes for trailing spouses relocating to different countries. International migration involves substantial cultural readjustment for families, particularly for spouses of primary migrants, who often find themselves unable to secure work in their field of employment, or struggle to adapt their preexisting skills to a new sociocultural context (Hanson and Pratt 1995; Gordon and Molho 1985; Boyle et al. 2001). A smaller literature considers the impact of internal, intra-national migration on husbands' and wives' economic outcomes. This body of work typically places less emphasis on the differing cultural contexts between migrants' places of origin and their new work destinations, assuming that most developed countries are reasonably culturally homogenous. As such, it assumes that internal migrants' employment outcomes are driven more by individuals' demographic qualities than by the broader cultural contexts in which they live (for example, see: Blackburn 2010; Ternes 2014; Kazakis and Faggian 2017; Enchautegui 1997; Flippen 2014; Perales 2017). In the United States, however, most internal migration occurs between states with divergent political, social, and economic characteristics.

The state context into which married women move impacts their labor market opportunities in meaningful ways. We focus here on two state dimensions shown to structure women's employment: women's economic and political empowerment, and childcare costs.

Our economic and political empowerment measure is derived from a robust statistical analysis of multiple state-level measures. States align in their tendency to provide women with better economic (i.e., higher paying jobs and access to professional positions) and political (i.e., more women in state legislatures and policies to mitigate gender discrimination and legislate paid parental leave) empowerment *or* lower childcare costs. Most states either rank highly on gender empowerment or offer lower childcare costs, but not both. States that rank highly in gender empowerment also tend to have more expensive childcare costs (see Figures 1 and 2). This suggests that women will move to a state that either supports women's employment through greater gender empowerment or has lower childcare costs.

We hypothesize that moving to a state with stronger gender empowerment, where political and economic power is more equally shared among men and women, should allow more women, regardless of marital status, to enter the labor market after a move. Causality is likely bi-directional, with more gender-equal states attracting women to move to gain access to their better labor markets, but also pulling those who move for other reasons (i.e. trailing spouses) into employment given the more favorable conditions. If gender empowerment pulls women into employment, regardless of resources or marital or parenthood status, then we would find a universal benefit to employment from moving to gender empowered states. Stepping into more developed gender empowered labor markets, mobile women should benefit from better employment prospects. Childcare costs, on the other hand, should be more strongly correlated with employment among married women with children. Married mothers' employment is more sensitive to the costs of childcare than single mothers' employment because married mothers can usually rely on another source of income (Kimmel 1998). Therefore, married mothers should be less likely to work in states with more expensive childcare. However, most married women in our sample do not have preschool-

aged children, and therefore the effect of childcare might be minimal, which is discussed in more detail in the subsequent section. Thus, we hypothesize:

Hypothesis 1a: Married women will be less likely to remain employed following an interstate move.

Hypothesis 1b: Married women who move to states with higher gender empowerment rankings and lower childcare costs will be more likely to be employed than married women who move to states with fewer resources.

The Motherhood Penalty: Migration, Mothers, and Employment

Heterosexual unions reinforce traditional gender role divisions between spouses. These patterns become further amplified upon the transition into motherhood, with mothers reducing, but fathers increasing, their employment time (Yavorsky, Dush, and Schoppe-Sullivan 2015; Landivar 2017). Internal migration may further reduce mothers' labor market attachment, with mothers less likely to re-enter employment following an interstate move. In addition to disrupted labor force participation, mothers who move may be disrupting attachment to an employer and existing caregiving networks. To the extent that flexible work promotes mothers' employment and advancement opportunities (Lyness et al. 2012; Landivar 2014) and flexibility is frequently dependent on management discretion and job tenure (Epstein et al. 1999; Blair-Loy 2003), changing employers may result in less flexible work arrangements, which could diminish mothers' likelihood of retaining employment. Yet, moving to a state with more empowering employment incentives may mitigate some of the detrimental effects of migration. We expect mothers who move to states with lower childcare costs to be more likely to move into full-time employment compared with those moving to states where childcare is expensive. Higher childcare costs are associated with lower employment rates among mothers (Kimmel 1998), especially mothers who may be priced out

of the labor market due to low pay and high caregiving costs. Most low-income families who qualify for childcare subsidies do not receive them, partly because programs lack funding to cover all eligible families (Rachidi 2017). Therefore, even though childcare subsidies have been shown to be effective in encouraging employment among low-income workers, since many of these workers do not receive the benefits to which they are entitled, they may still not be able to afford to pay for childcare. More highly educated mothers who face higher opportunity costs for labor force exit and earn enough to cover the costs of care may be less likely to exit the labor force, even if the costs of childcare are high (Damaske, 2011). Therefore, we expect the relationship to be weaker amongst mothers with a college education who are better equipped to maintain employment post internal migration than those who are less educated. We further explore human capital arguments in more detail in the subsequent section, but we expect college education to have a distinct impact for mothers.

Among interstate migrants, motherhood may introduce a selection effect whereby mothers have already reduced employment to care for children rather than as a consequence of migration. To redress some of this selectivity bias, we restrict our sample to those who were employed in the year prior to a move and focus on differences for mothers with a young child in the home. Mothers often return to the labor market when children reach school age, and employment rates of mothers of school-age children are no different to those of non-mothers, suggesting that the age of the youngest child in the home is a powerful predictor of maternal employment patterns (Boushey 2008; Fox et al. 2013; Landivar 2017). We expect that mothers of young children will be less likely to be employed following a move, but states that rank more highly on gender empowerment measures and offer lower-cost childcare will be more likely to retain mothers in the labor market than will lower-ranked and more childcare-expensive states.

Hypothesis 2a: Mothers will be less likely to remain employed following an interstate move.

Hypothesis 2b: Mothers of young children who move to states with higher gender empowerment rankings and lower childcare costs will be more likely to be employed and more likely to work full-time than mothers who move to states with fewer female-friendly employment resources and higher childcare costs.

Rational Choice and Human Capital Arguments

The previous sections underscore that motherhood and marriage place important restrictions on women's employment following a move. Yet, rational choice perspectives highlight that human capital also structures employment outcomes post-migration. Internal migration can be driven by a host of reasons – family reunification or care for sick relatives, for example – but most internal migration is driven by employment opportunities (Halfacree and Boyle 1993; Cooke et al. 2009; Flippen 2014; Perales 2017). This suggests that internal migrants are moving to maximize their skills within the most lucrative labor markets, weighing their resources against their opportunities to maximize returns (Mincer 1978). These economic cost-benefit theories suggest that migrants with high levels of education and expansive labor market experience should have more success in maximizing employment rewards. If labor markets are attracting women from other states, then we would expect to see higher employment amongst highly educated mobile women. This follows a rational choice logic whereby women with higher levels of human capital move to states with the strongest labor markets to maximize returns to their labor. We test these arguments for women who move across state lines to determine whether those with the highest levels of education, income, and family resources are best equipped to maintain employment post-migration. Highly educated women may be particularly likely to migrate interstate, entering the most

lucrative labor markets to maximize their earnings. This is particularly likely to be true amongst young, single, college-educated women (Enchautegui 1997; Ternes 2014; Kazakis and Faggian 2017). Once women marry, however, women come to make decisions for their families often at the expense of their own careers. Marriage and parenthood may weaken women's attachment to the labor market even among those women with more human capital and access to family resources including husbands' higher income and informal sources of childcare. We test these arguments directly, but also contextualize the labor markets into which they migrate by estimating variation in gender empowerment and childcare costs.

Hypothesis 3a: Women with higher levels of human capital will be more likely to remain employed following an interstate move.

Hypothesis 3b: Highly educated women with higher earnings will be more likely to be employed in gender empowered states and states with lower childcare costs than women who move to other states.

Human capital and family resources intersect with maternal employment, yielding employment patterns that vary dramatically between women with different levels of education. Landivar (2017) shows that more highly educated women in higher status occupations are more likely to remain employed after having children and are significantly more likely than other mothers to continue working when they have preschool-aged children. While some highly educated career-women do leave their careers to care for their children (Stone 2007), many are also more likely to use workplace resources (e.g., flexible hours, paid leave) to maintain employment (Damaske 2011). When comparing highly educated women to those with lower levels of educational attainment, the highly educated are much more likely to have access to paid parental leave to maintain attachment to work after having children, and to be able to scale back their work hours by a few hours per week rather than opt out

(Landivar 2017). Collectively, these results suggest that more educated mothers may be better equipped to maximize institutional resources post-migration than those with less education. As a consequence, the employment benefits of moving to a state with more affordable childcare and more political and economic support for women may be restricted to college-educated mothers who have stronger labor force attachment. On the other hand, lower-cost childcare may encourage employment among low-wage workers who would be less likely to be priced out of care. Our models test these hypotheses.

Hypothesis 3c: Mothers with higher levels of educational attainment, earnings, and family income will have a higher likelihood of employment, especially in full-time work, following a move to gender empowered states and states with more affordable childcare.

Hypothesis 3d: All mothers will have a higher likelihood of employment, especially in full-time work, following a move to states with higher gender empowerment rankings and more affordable childcare.

Data

Data for these analyses come from the 2011-2015 American Community Survey Public Use Microdata Sample (ACS) provided by the Integrated Public Use Microdata Series (IPUMS) (Ruggles et al. 2015). We use the ACS because it is an ideal source to measure cross-state moves. As a decennial census product and the largest household survey in the United States, the ACS provides the highest quality geographic data among nationally representative surveys. Furthermore, because interstate mobility is uncommon for an individual in any given year – about 2.2 percent of women who have been employed in the past 12 months are mobile in a given year – we require a large sample size to observe enough individuals making a recent interstate move. Although we use cross-sectional data, we limit

our sample to women who have been employed at some point in the past 12 months regardless of their current employment status. Thus, we can determine whether mobile women became unemployed or left the labor force in the same year they moved.

Our primary analyses are based on mobile women who have been employed in the past 12 months for whom the total weighted sample size is 1,718,575 (73,736 unweighted). We use the sample weights provided by the Census Bureau in our analyses. While initial models included all women ages 18 to 64 to obtain an estimate of the prevalence of interstate mobility, final models limit the sample to mobile women and mobile mothers between the ages of 18 and 64. We used hierarchical binomial logistic regression models to assess how state resources and childcare costs are associated with women's labor force participation. Our observations are nested within states, and hierarchical models account for this type of data nesting, as they do not require the assumption of independence between observations.

Our dependent variable is a binary measure of labor force participation (1 = in labor force; 0 = not in labor force). We control for age and age squared, race and ethnicity (White, not Hispanic; Black; Asian; other races; Hispanic), marital status (1 = married), presence and age of children coded by the age of the youngest child (0 = no children; 1= preschool or preschool and older children; 2= school-age children only), educational attainment (1 = bachelor's degree or higher), usual hours worked, weeks worked in the past 12 months (50-52 weeks, 48-49 weeks, 27-39 weeks, 14-26 weeks, and 13 weeks or less), the natural log of earnings, and the natural log of family income (respondent income subtracted). Because of differences in the cost of living across states, earnings and family income were adjusted using regional price parities from the Bureau of Economic Analysis. Regional price parities measure the differences in price levels across states and are expressed as a percentage of the overall national price level (Bureau of Economic Analysis 2018). Adjusting for regional differences in cost of living addresses the potential issue of an individual migrating from one

state to another that may provide higher earnings at the cost of residing in a more expensive state. In additional models, we evaluated a more detailed measure of labor force participation. Because part-time employment is more common among mothers than other groups of women, we conducted additional analyses on mothers of preschoolers who have been employed in the past year (N = 11,069 unweighted/262,533 weighted). We used multinomial logistic regression to evaluate the association between state characteristics and full-time employment, part-time employment, unemployment, and labor force exit (reference group).

State-Level Measures

Our primary independent variables are two state-level measures that classify states into two groups: those with more politically and economically empowered women and those with higher childcare costs. Using factor analysis, we apply four measures to form an aggregated index of political and economic empowerment: (1) the percentage of the states' employment that is made up of managerial/professional positions; (2) the percentage of women in state legislatures; (3) the average female hourly wage; and (4) the percentage of women with college or higher degrees. Higher values indicate a higher percentage of women hold more economic and political power (alpha = 0.846). Female hourly wages were recoded into percentages by using the maximum value as the denominator. This rescaled measure allowed a measurement of variation from the sampled maximum and ensured all the measures are estimated in equivalent magnitude. Childcare costs are obtained from Child Care Aware of America (2015) and represent the average full-time cost of center-based care for infants. Costs were logged and adjusted with regional price parities to account for differences in cost of living across states. Figures 1 and 2 show states' distributions across these two measures. States ranking highest on the political and economic empowerment

index were primarily concentrated in the Northeast and West Coast. These states also tended to have higher childcare costs.

Results

Interstate mobility is uncommon in any given year. About 2.2 percent of employed women migrated to another state during a 12-month period. However, those who did move tended to be younger, single, childless, and more highly educated (Table 1). About 3 percent of women with a college degree were mobile in the past year compared with 1.7 percent of women with lower levels of educational attainment (Figure 3). While women with preschool-aged kids were slightly less likely to move than those without children (2.3 percent compared with 2.5 percent), across the educational spectrum, those who had school-aged children were significantly less likely to move than those with younger children and those without children. This may be because as children enter school, parents and children tend to build stronger ties to a community, making parents more hesitant to move. Parents may also be more established in their careers by the time they have older children.

Interstate mobility is generally detrimental to women's employment. Following a move, women were less likely to be employed or work full-time (Table 1). Mobile women were 9 percentage points less likely to work full-time (57.8 percent compared with 66.5 percent) and were more than twice as likely to become unemployed (8.2 percent compared with 3.5 percent) and leave the labor force (12.2 percent compared with 5.6 percent) relative to women who did not move in the past year. As might be expected to account for time spent out of the labor force while relocating, mobile women were less likely to have worked the full year.

Marriage and Parenthood: Employment of Wives and Mothers following Migration

Turning to our model results, we show that after controlling for demographic characteristics (age, age squared, race and ethnicity), migrant married women were significantly less likely to be employed (Table 2, model 1). Mobile married women were 53 percent less likely to be employed than single women, confirming Hypothesis 1a. Controlling for parental status and human capital characteristics reduced the effect to 47 percent. To determine whether state context affects married women's employment likelihood, we interacted state resources with marital status (Table 2, model 4). We show that moving to a state with a higher gender empowerment ranking increased the likelihood that married women would be employed by about one percent for every point increase on the gender empowerment index. Yet, moving to a state with lower childcare costs had no significant effect, resulting in partial support for Hypothesis 1b. Perhaps because most married women in our sample do not have preschool-aged children, childcare costs may have less bearing on their employment. However, we do find that gender empowered states are more likely to boost employment among married women following a move compared with less gender empowered states.

Mothers who had been employed 12 months prior to their date of survey were less likely to keep working after an interstate move. Mothers of preschoolers were 54 percent less likely to be employed, and mothers of school-aged children were 42 percent less likely to be employed (Table 2, model 2). After controlling for human capital characteristics, mothers of preschoolers and school-aged children remained less likely to be employed (43 percent and 21 percent less likely to work, respectively), confirming Hypothesis 2a that mothers would experience a drop in employment following an interstate move. However, a move to a state with higher gender empowerment rankings and more affordable childcare improved these mothers' odds of employment, as predicted in Hypothesis 2b (Table 2, model 5). Mothers

were two percent more likely to be employed per one-point increase on the gender empowerment index. Higher childcare costs were associated with lower employment rates. For every 10 percent increase in the cost of care, mothers were about two percent less likely to be employed.

Because mothers, in particular, are more likely to work part time than other women, we carried out additional analyses examining the association between state characteristics and mothers' labor force status differentiating between full-time and part-time employment, unemployment, and non-employment. We found that mothers were more likely to work full-time in states that ranked more highly on gender empowerment, with a three percent increase in employment per point increase in gender empowerment (Table 3, model 2). Mothers were about one percent less likely to work part time per point increase in the gender empowerment index. Higher childcare costs were associated with lower rates of full-time employment (3 percent less per 10 percent increase in cost) and higher rates of part-time employment (5 percent increase per 10 percent increase in cost).

The Role of Human Capital on Post-Migration Employment for Women, Wives and Mothers

Turning to human capital characteristics, we see that women with higher earnings were more likely to be employed following a move (Table 2, model 3). More highly educated women were significantly more likely to be employed, though the individual effect of education disappeared with the addition of earnings (not shown), confirming our prediction in Hypothesis 3a that women with more human capital would be employed. Women with access to more family income were less likely to stay in the labor force, possibly indicating their status as a trailing spouse. However, state gender empowerment ranking helped mitigate some of the negative effects of interstate moves (Table 2, model 6). Moving to a state with a higher gender empowerment ranking was associated with a one percent increase in the

likelihood of employment per point increase on the index, partly confirming Hypothesis 3b. Childcare costs were not associated with employment among highly educated women.

Human capital differentials extend to the employment likelihood of mothers. More highly educated mothers gained an even greater advantage than other women when moving to states that ranked more highly on gender empowerment. Highly educated mothers were three percent more likely to work full time in gender empowered states per point increase on the index (Table 3, model 3). Highly educated mothers were also nine percent more likely to be unemployed. Because highly educated women have better employment opportunities, it is likely that they would seek work upon relocation if the move was not generated by their own career move. More highly educated mothers' employment was less affected by the cost of childcare than with less educated mothers. Full-time employment rates were unaffected by moving to states with more expensive childcare. However, highly educated mothers were more likely to work part-time in states with expensive childcare and were less likely to be unemployed.

Married women and mothers are less likely to work than other women. To ensure we were not solely picking up the negative association between marital and parental status and employment in our models, we carried out supplemental analyses with all women ages 18-64 and non-mobile women ages 18-64. Mobility was associated with a 30 percent reduction in the odds of employment following a move (see Figure 4). While non-mobile married women and mothers were less likely to be employed than other women, the association between marital and parental status and employment was weaker than among mobile women. Mobile married women were 47 percent less likely to be employed whereas non-mobile married women were 31 percent less likely to be employed compared with single women. Similarly, mobile mothers of preschoolers were 43 percent less likely to be employed compared with 27 percent of non-mobile mothers of preschoolers when compared to non-mothers. Marriage and

motherhood amplified the effect of mobility, resulting in more significant employment curtailment than among women who did not experience a move.

Conclusion

This research contributes to our understanding of how regional context matters in enhancing women's employment opportunities. While interstate mobility significantly curtails women's employment, not all moves have equal outcomes. Moving to states with more female-supportive infrastructure mitigates some of the negative employment effects of interstate mobility. Focusing on a large sample of women who have experienced an interstate move in the past 12 months, we show that women have higher employment rates in states that rank more highly across various measures of gender empowerment and offer lower childcare costs. While it would be desirable to know why the women in our dataset migrated between states as well as the relative timing of their move and employment change, the respondents surveyed were not asked why they moved, and no other panel datasets are large enough to assess the effects of interstate mobility with precision. We limit our sample to those who were employed within the 12 months prior to an interstate move to redress some of these concerns around causality.

States align in their tendency to offer more expansive opportunities to women through more favorable economic and political resources (e.g., parental leave legislation, equal pay protections, higher earnings) or provide lower-cost childcare. Here we show that both tracks are effective at increasing women's employment, but gender empowerment is more broadly effective at increasing employment among all women. States ranking higher across gender empowerment metrics were more likely to retain married women, mothers, and more highly educated women in the labor force, and employed mothers in these states were more likely to work full-time. Childcare costs were only directly tied to employment among mothers of

preschoolers. Prior research shows that employment during preschool years is more variable, with mothers of school-aged children having employment patterns that are more similar to childless women (Landivar 2017). We show that states that offer lower-cost childcare are more likely to retain mothers in the labor force during this critical period of labor force attachment. Lower childcare costs were also associated with higher full time and lower part time employment among mothers. More highly educated mothers, typically working in more desirable jobs with higher compensation, were less sensitive to the costs of childcare with no significant reduction in full time employment compared with being out of the labor force. However, they were more likely to work part-time when childcare costs were higher, indicating that childcare costs still affect their employment decisions post-migration. Highly educated mothers making this tradeoff may be more highly concentrated in flexible jobs that are more likely to allow part time work in exchange for reductions in pay, a result consistent with previous research (Damaske, 2011).

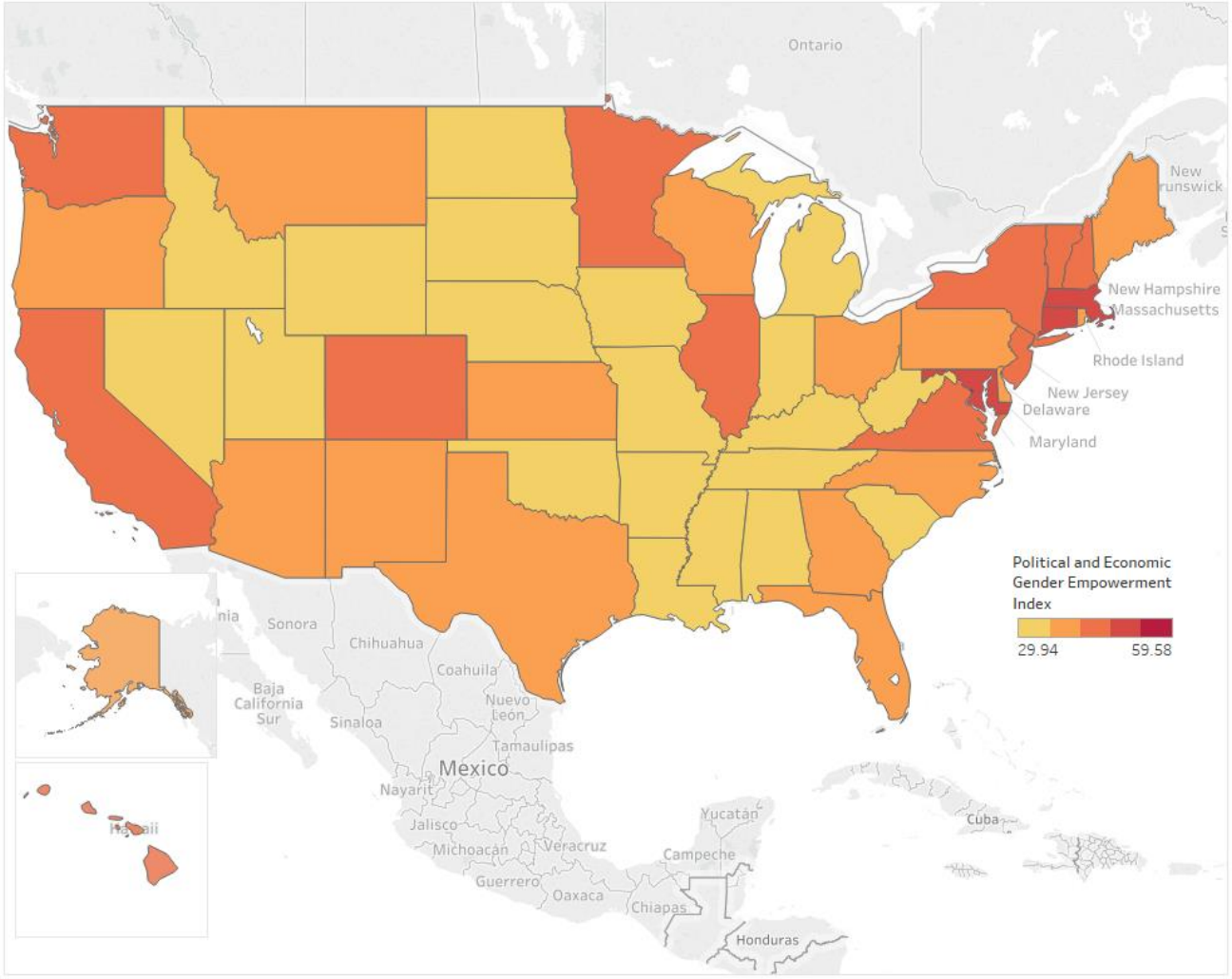
Trailing spouses and mothers have more precarious attachment to the labor force. Interstate mobility makes women even more vulnerable to labor force exits. We show that mobile women were significantly less likely to be employed in the year following a move than women who did not move. Among married women and mothers, employment reductions were even steeper. Yet, we show that state context matters. Where women migrate can significantly increase or decrease the odds that they maintain labor force attachment after their move. Women moving to more gender empowered states and states with lower childcare costs were more likely to remain employed than women moving to less gender empowered states or those with more expensive childcare. This finding is important as it illustrates that state conditions structure trailing spouses' and mothers' employment decisions above and beyond their individual resources, shifting the focus on their capacity to work beyond the couple-level dyad to include a more nuanced understanding of geographical context.

This research is not without limitations, which ought to provide direction for future research. We estimate the state-level context of gender empowerment and childcare costs, but more refined measures of local labor markets would be equally useful. Our restriction is a practical one: sample sizes of more geographically refined datasets are not large enough to estimate mobility, motherhood, marriage and human capital for lower geographical units. But, future research could focus on maternal employment without the mobility dimension, estimating city and state-level differences. Further, we cannot speak to causality. We find gender empowerment and childcare costs mitigate some of the detrimental career consequences of mobility for women, but we cannot determine for whose career the woman moves. As women gain more human capital and employment experience, more women are likely driving inter-state moves. Future research might apply longitudinal data to estimate whether moving into a state with more resources leads to continuous employment. Again, sample sizes and representativeness across states are issues for most existing longitudinal datasets, but our results indicate more concentration on these issues, particularly focusing on who drives career moves, is necessary.

Despite these limitations, our results are clear: interstate mobility has negative consequences for women's employment, but states' levels of gender empowerment and childcare costs have important ameliorating effects. State governments interested in more equal gender representation in their labor markets would benefit from offsetting childcare costs and increasing high-quality employment opportunities for women to better integrate mobile women into their labor markets.

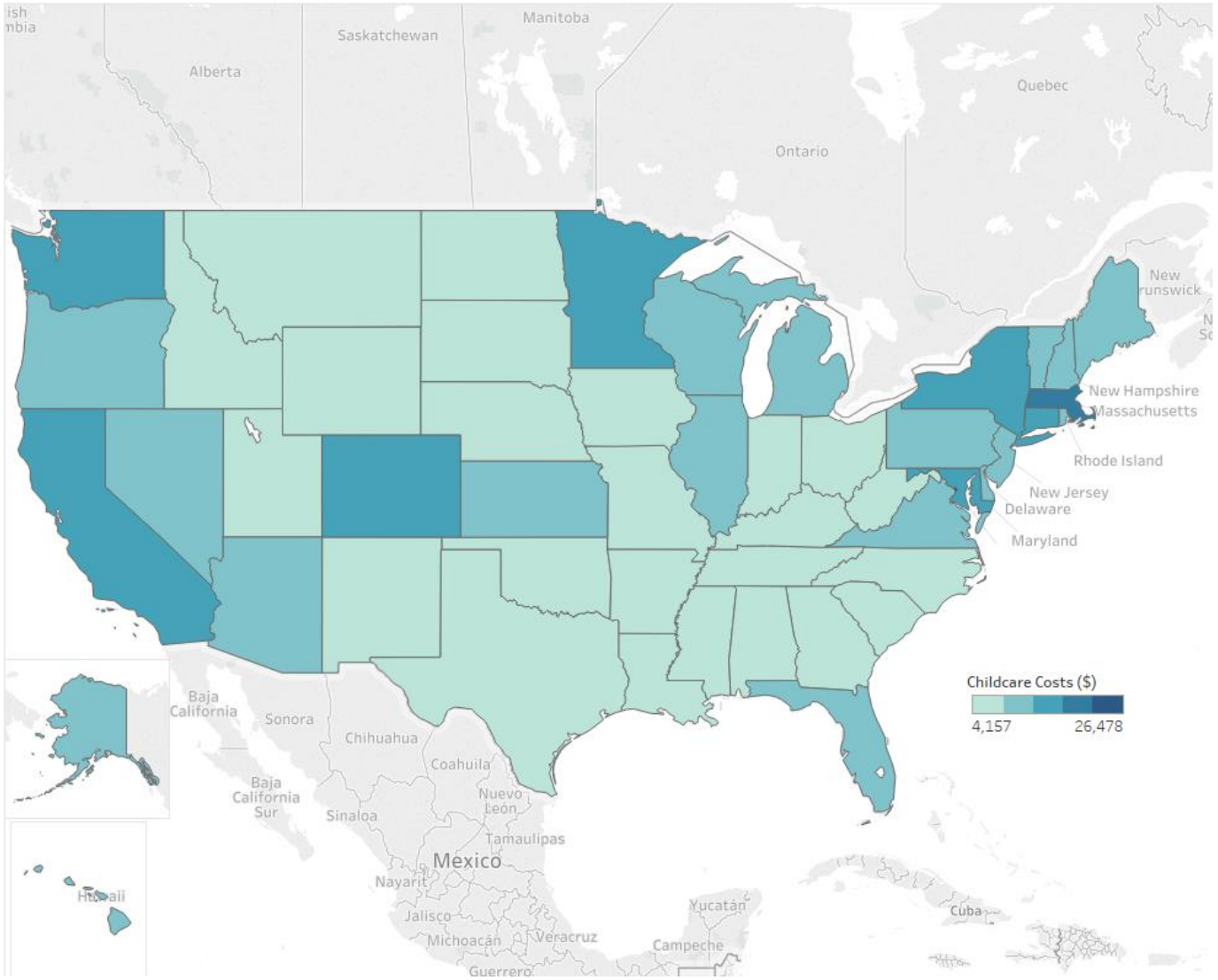
Figures

Figure 1: State Distribution on the Political and Economic Gender Empowerment Index



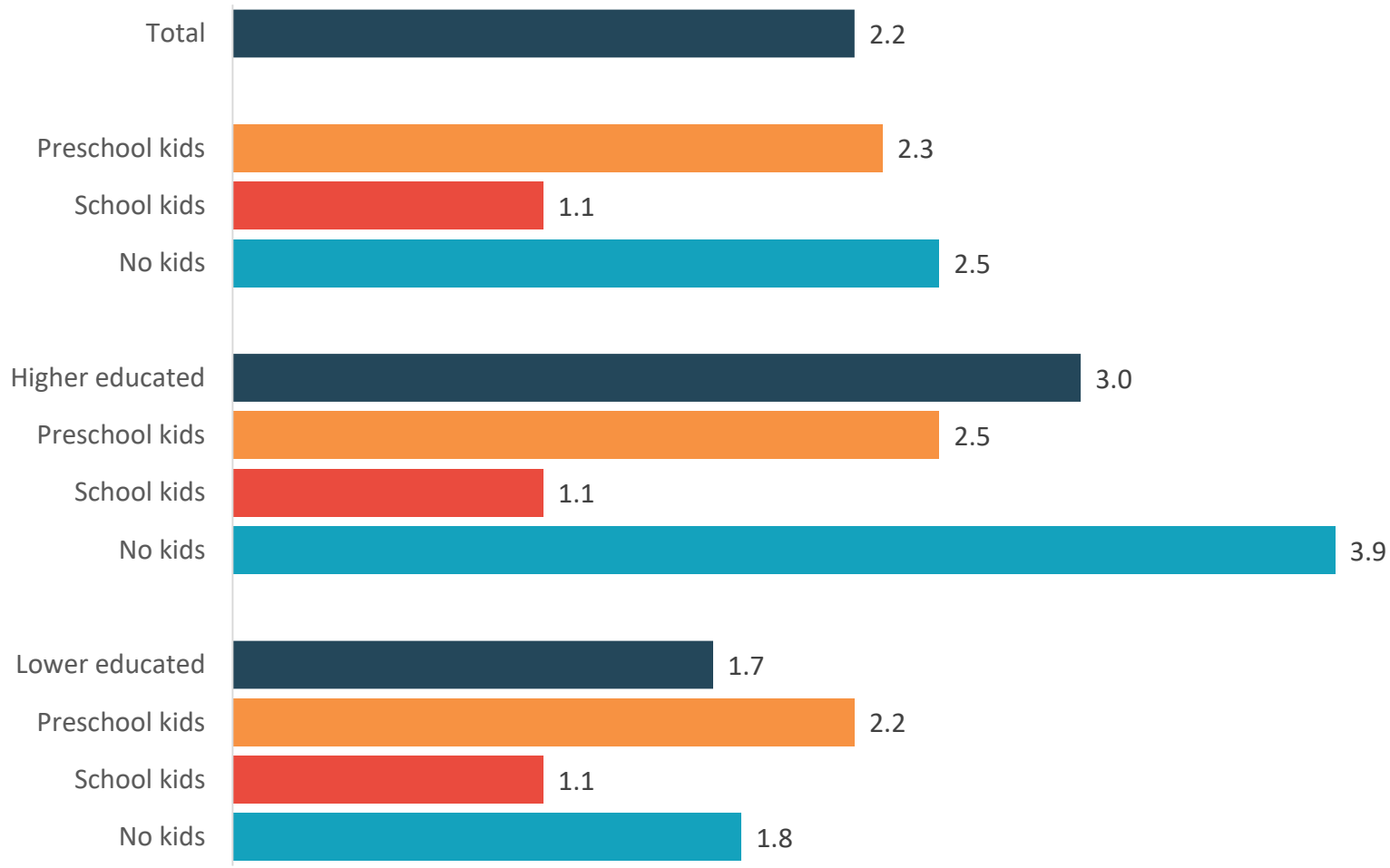
Sources: National Conference of State Legislatures; U.S. Census Bureau.

Figure 2: State Distribution of Childcare Costs



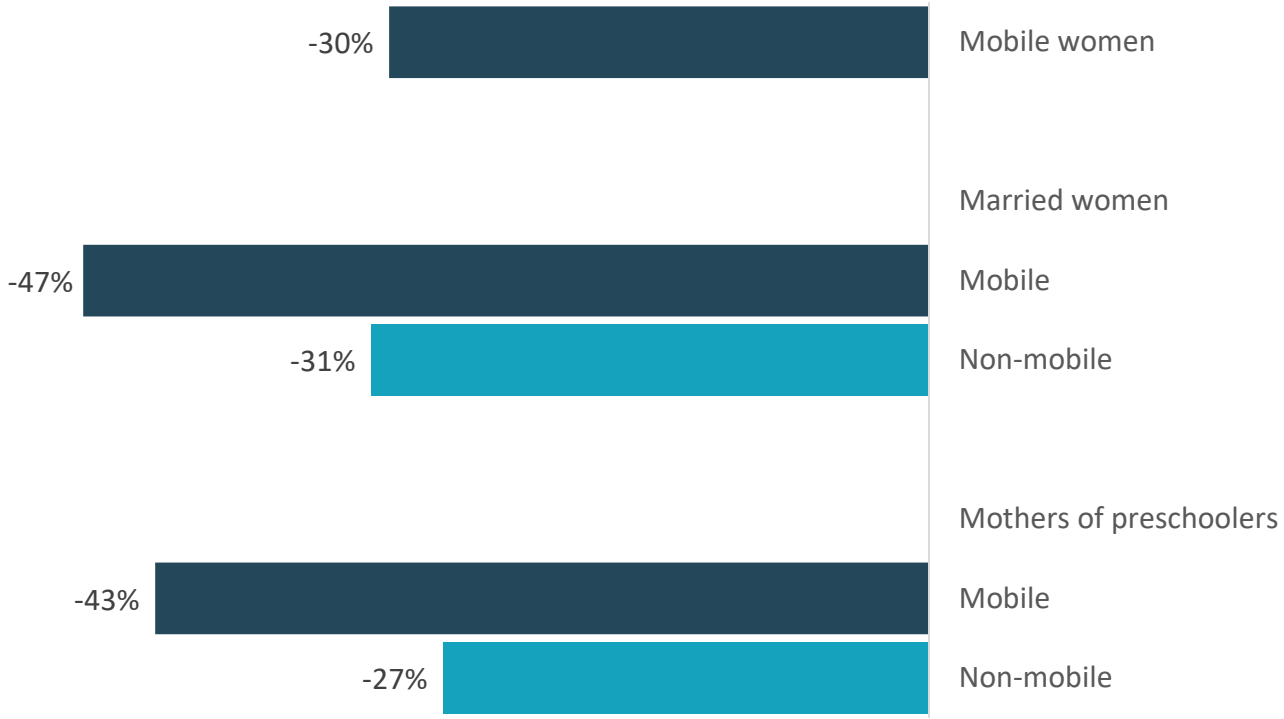
Source: Child Care Aware of America 2015

Figure 3: Percent of Women who are Mobile by Presence and Age of Children and Educational Attainment



Source: U.S. Census Bureau, 2011-2015 American Community Survey Public Use Microdata Sample provided by the Integrated Public Use Microdata Series (IPUMS).

Figure 4. The Association Between Marital and Parental Status and Employment Likelihood Among Mobile and Non-Mobile Women



Source: U.S. Census Bureau, 2011-2015 American Community Survey Public Use Microdata Sample provided by the Integrated Public Use Microdata Series (IPUMS).

Tables

Table 1. *Descriptive Statistics of Women Ages 18-64 Employed in the Past 12 Months by Mobility Status*

	All Women		Mobile Women	
Variable	Mean	Standard Error	Mean	Standard Error
Age	42.0	0.01	34.2	0.04
Race and ethnicity				
White, not Hispanic	68.9	0.01	72.4	0.01
Black	10.8	0.01	9.2	0.01
Asian	5.5	0.01	6.0	0.01
Other	6.4	0.01	6.1	0.01
Hispanic	12.6	0.01	9.5	0.01
Married	54.8	0.01	40.1	0.01
Presence and age of youngest child				
None	64.3	0.01	74.1	0.01
Preschool	14.2	0.01	15.0	0.01
School-age	21.5	0.01	10.8	0.01
Bachelor's degree or higher	35.9	0.01	50.1	0.01
Labor force status				
Full time (35+ hours)	66.5	0.01	57.8	0.01
Part time (<35 hours)	24.4	0.01	21.9	0.01
Unemployed	3.5	0.01	8.2	0.01
Not in labor force	5.6	0.01	12.2	0.01
Earnings in the past 12 months	37,341.0	22.82	31,885.0	149.72
Family earnings	59,433.0	36.08	54,198.0	258.75
Usual weekly work hours	36.2	0.01	36.4	0.05
Weeks worked				
50-52 weeks	73.7	0.01	52.3	0.01
48-49 weeks	2.2	0.01	2.8	0.01
40-47 weeks	6.6	0.01	10.3	0.01
27-39 weeks	6.4	0.01	12.5	0.01
14-26 weeks	4.9	0.01	10.5	0.01
13 weeks or less	6.3	0.01	11.5	0.01
Moved in the past 12 months	2.2	0.01	100.0	--

Source: U.S. Census Bureau, 2011-2015 American Community Survey Public Use Microdata Sample

Table 2. *Mobile Women's Labor Force Participation by Marital Status, Parental Status, Human Capital, and State Characteristics: Hierarchical Binomial Logistic Regression Results*

Variable ***DV: labor force participation (ref: not in labor force)***	**Model 1 Marital Status**	**Model 2 Parental Status**	**Model 3 Human Capital and Family Resources**	**Model 4 Marital Status*State Characteristics**	**Model 5 Parental Status*State Characteristics**	**Model 6 Education*State Characteristics**
Intercept	2.03(0.03)***	2.02(0.03)***	3.48(0.03)***	3.51(0.03)***	3.50(0.03)***	3.50(0.03)***
Individual characteristics						
Age	0.22(0.01)***	0.27(0.01)***	0.16(0.01)***	0.16(0.01)***	0.16(0.01)***	0.16(0.01)***
Age squared	-0.01(0.01)***	-0.01(0.01)***	-0.01(0.01)***	-0.01(0.01)***	-0.01(0.01)***	-0.01(0.01)***
Race (ref: White, non-Hispanic)						
Black	0.36(0.01)***	0.46(0.01)***	0.42(0.01)***	0.42(0.01)***	0.42(0.01)***	0.43(0.01)***
Asian	0.11(0.01)***	0.09(0.01)***	0.11(0.01)***	0.11(0.01)***	0.11(0.01)***	0.11(0.01)***
Other	0.14(0.01)***	0.17(0.01)***	0.22(0.01)***	0.23(0.01)***	0.22(0.01)***	0.22(0.01)***
Hispanic	0.00(0.01)	0.06(0.01)***	0.12(0.01)***	0.12(0.01)***	0.12(0.01)***	0.13(0.01)***
Married	-0.75(0.01)***	-0.59(0.01)***	-0.64(0.01)***	-0.64(0.01)***	-0.64(0.01)***	-0.64(0.01)***
Presence of children (ref: no children)						
Preschool		-0.78(0.01)***	-0.56(0.01)***	-0.56(0.01)***	-0.56(0.01)***	-0.55(0.01)***
School-age		-0.54(0.01)***	-0.23(0.01)***	-0.23(0.01)***	-0.23(0.01)***	-0.23(0.01)***
Bachelor's degree or higher			0.00(0.01)	0.00(0.01)	0.00(0.01)	0.00(0.01)
Log of earnings			0.13(0.01)***	0.13(0.01)***	0.13(0.01)***	0.13(0.01)***
Log of family income			-0.02(0.01)***	-0.02(0.01)***	-0.02(0.01)***	-0.02(0.01)***
Usual hours worked (per 10 hour increase)			0.04(0.02)***	0.04(0.02)***	0.04(0.02)***	0.04(0.02)***
Weeks worked (ref: 50-52 weeks)						
48-49 weeks			-2.53(0.02)***	-2.53(0.02)***	-2.53(0.02)***	-2.53(0.02)***
40-47 weeks			-2.62(0.01)***	-2.62(0.01)***	-2.62(0.01)***	-2.62(0.01)***
27-39 weeks			-3.01(0.01)***	-3.01(0.01)***	-3.01(0.01)***	-3.01(0.01)***
14-26 weeks			-3.27(0.01)***	-3.27(0.01)***	-3.27(0.01)***	-3.27(0.01)***
13 weeks or less			-3.29(0.01)***	-3.29(0.01)***	-3.29(0.01)***	-3.29(0.01)***
State characteristics						
Political and economic empowerment				-0.01(0.01)	-0.01(0.01)	-0.02(0.01)
Empowerment*Married				0.01(0.01)***		
Empowerment*Preschool					0.02(0.01)***	
Empowerment*Bachelor's degree						0.01(0.01)***

Log of childcare costs				0.34(0.17)*	0.36(0.17)*	0.37(0.17)*
Childcare*Married				-0.02(0.04)		
Childcare*Preschool					-0.20(0.05)***	
Childcare*Bachelor's degree						0.03(0.04)
State random intercepts (N=51)	Included	Included	Included	Included	Included	Included
N	73,736	73,736	73,736	73,736	73,736	73,736
Likelihood ratio chi-square	1,815,665	1,825,021	1,888,096	1,888,341	1,886,841	1,885,024

Source: U.S. Census Bureau, 2011-2015 American Community Survey Public Use Microdata Sample.

Table 3. *Mobile Mothers of Preschoolers' Labor Force Participation by Educational Attainment and State Characteristics: Multinomial Logistic Regression Model Estimates*

Variable ***DV: labor force participation (ref: not in labor force)***	**Model 1** **State characteristics**	**Model 2** **State characteristics and interactions**
Intercept		
Full time	2.65(0.04)***	2.64(0.04)***
Part time	1.44(0.05)***	1.44(0.05)***
Unemployed	-0.07(0.05)	-0.09(0.05)
Individual characteristics	Included	Included
State characteristics		
Political and economic empowerment		
Labor force status		
Full time	0.03(0.01)***	0.03(0.01)***
Part time	-0.01(0.01)**	-0.01(0.01)***
Unemployed	0.02(0.01)***	0.02(0.01)***
Empowerment*Bachelor's degree		
Labor force status		
Full time		0.03(0.01)***
Part time		-0.01(0.01)
Unemployed		0.09(0.01)***
Log of childcare costs		
Labor force status		
Full time	-0.30(0.05)***	-0.29(0.05)***
Part time	0.50(0.06)***	0.53(0.06)***
Unemployed	-0.22(0.06)***	-0.32(0.06)***
Childcare*Bachelor's degree		
Labor force status		
Full time		-0.16(0.11)
Part time		0.34(0.12)**
Unemployed		-1.06(0.14)***
N	11,069	11,069
Likelihood ratio chi-square	262,477	262,629

Source: U.S. Census Bureau, 2011-2015 American Community Survey Public Use Microdata Sample. Standard errors are rounded to 0.01 if the estimated standard error would otherwise appear to be 0.

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