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Title

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Permalink

<https://escholarship.org/uc/item/0b18s177>

Journal

Social Work Research, 44(1)

ISSN

1070-5309

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Publication Date

2020-03-07

DOI

10.1093/swr/svz029

Peer reviewed

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Citation: Wu, C. F., Chang, Y.-L., Rhodes, E., Jung, W. & Musaad, S. (2020). Work-hour trajectories and associated socioeconomic characteristics among single mothers. *Social Work Research*, 44(1), 47-57. <http://doi: 10.1093/swr/svz029>

WORK-HOUR TRAJECTORIES AMONG SINGLE-MOTHER FAMILIES

Abstract

Despite the fact that social work research has paid substantial attention to employment patterns among low-income single mothers after the welfare reform, little is known about their work hour trajectories over time. This study uses Group-Based Trajectory Modeling to analyze the work-hour trajectories among low-income single mothers in the United States (N=870). Only approximately two fifths (41.91%) of participants in the sample had stable employment. About 18% did not work throughout the study period. Yet several groups experienced changes in working patterns over time: increasing hours (20.66%), decreasing then increasing hours (11.31%), and decreasing hours (8.35%). This study uses a generalized linear mixed model to determine the factors associated with change in work hours over time. Significant factors include marital status, high school completion, race, citizenship, homeownership, child care arrangement, income support program participation, work disability, age of youngest child, the age of the mother, state unemployment rate and state minimum wage. These findings have important policy implications for targeting supports to diverse needs of low-income single mother families in order to promote employment stability and economic improvement.

Keywords: employment, work-hour trajectories, poverty, single-mother families, group-based trajectory modeling

Introduction

While the labor force participation of single mothers has increased since the passage of welfare reform legislation in 1996, researchers have raised concerns about the characteristics of this employment and documented the negative effects of employment disadvantages on their children (Kalil & Ziol-Guest, 2005; Dunifon, Kalil, & Bajracharya, 2005; Gennetian, Lopoo, & London, 2008; Jackson, Brooks-Gunn, Huang, & Glassman, 2000). Women in two parent households have more stable, better-paid employment than single mothers (Mattingly, Smith, & Bean, 2011; Wu & Eamon, 2011). Irregular work patterns and employment instability can have negative impacts on child development and well-being (Hepburn, 2018; Kalil & Ziol-Guest, 2005; Lleras, 2008). Research generally measures single mothers' employment as a static change from full-time to part-time or unemployment (Damaske, Bratter, & Frech, 2017), which gives a partial view of their experience (Hancioglu & Hartmann, 2014; Lu, Wang, & Han, 2017; Wu, 2011). This paper uses longitudinal trajectory analysis to characterize change in low-income single mothers' employment patterns over time and generalized linear mixed modeling to determine the factors that are associated with change in work hours over time.

Single parent households have higher poverty rates than two parent households. Census figures show 9.587 million single mother households with children under 18 across all races in the United States in 2017. Among these, 3.301 million, 34%, were living below the federal poverty line (FPL). A recent study found that 44% of single mothers are employed full-time (Pepin, Sayer, & Casper, 2018). Among employed single mothers, 78.9% work full-time and 21.1% work part-time. Lower income single parents work fewer hours than higher income parents generally (Opre, 2017). Single parents earning less than 100% of the FPL work an average of 33 hours per week while single parents at 200% or more of the FPL work an average

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of 41 (Boeckmann, Misra, & Budig, 2015). Part-time employment doubles single mothers' risk of poverty compared to full-time employment (Damaske et al., 2017) and unemployment carries even higher risk (e.g., Eamon & Wu, 2011). Short-term and low-paying jobs carry material hardship for single mothers' families as well (Eamon & Wu, 2011).

Much of the prior research on the employment of single mothers has focused on point-in-time or short-term measurement of working patterns (Damaske et al., 2017). Some studies have measured longitudinal employment patterns (Achdut & Stier, 2016; Fox, Han, Ruhm, & Waldfogel, 2013; Hauan & Andersson, 2012), or used trajectory analysis to measure employment patterns of low-income single mothers over time (Wu, Cancian, & Meyer, 2008). Some previous studies using government data sets such as the Bureau of Labor Status or the U.S. Census Bureau have measured transitions in employment such as full time to part time (Fagan & Norman, 2012). Very limited research has responded to Wu's (2011) call for research on the trajectories of low-income families since welfare reform. Measuring transitions does not capture changes in employment over time and the factors that influence these transitions (Lu et al., 2017). Trajectory analysis provides a picture of the impact of changing labor markets on welfare recipients' work patterns (Achdut & Stier, 2016).

Using the 5 years of nationally representative 2008 Survey of Income and Program Participation (SIPP) panel data, this study aims to (1) examine patterns of employment and work hours of low-income single-mothers over time; (2) determine the work-hour trajectories of low-income single mothers and examine earnings and poverty status by work-hour trajectories; and (3) identify factors associated with the change in work hours over time of low-income single mothers. The study provides insights into possible social services or policy supports for low-income single mothers to achieve economic success.

Literature Review

Employment Patterns

Researchers typically summarize employment patterns as either employment status or number of hours worked in a certain time period. Research on the employment of single mothers, which has focused on those enrolled in or recently dis-enrolled in programs such as Medicaid, Temporary Assistance for Needy Families (TANF), and food stamps has not examined long-term patterns (Acs & Loprest, 2004; Ahn, 2012; Cancian, Haveman, Meyer, & Wolfe, 2002; Danziger, Heflin, Corcoran, Oltmans, & Wang, 2002). Another set of research has addressed employment and earnings trajectories over time, but with two significant limitations: they are based on limited samples (for example in only one U.S. state) and use categories that simplify the range of employment trajectories (Achdut & Stier, 2016; Wu et al., 2008; Wu, 2011).

Averages, categories, and hours of employment in a given period do not fully capture variation and volatility in employment patterns. An OECD (2016) study defines four patterns of work hours for single parents in the United States: 1-29 hours per week (14.4%), 30-39 hours (18.2%), 40-44 hours (40.2%), and more than 45 hours (0.4%). A research brief from the U.S. Department of Health and Human Services Office of the Assistant Secretary of Planning and Evaluation that followed a group of single mothers over a 5-year period found they had lower employment rates and earnings than the general population and that many went through periods of underemployment or unemployment (Hauan & Andersson, 2012).

Employment/Work-Hour Trajectories

Three studies of the general population of U.S. workers or single and partnered mothers have identified trajectory groups based on low or high labor participation and increasing or

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decreasing participation over time. Using the National Longitudinal Survey of Youth data, Killewald and Zhou (2015) find four trajectory categories in the working patterns of a general population of American mothers over 18 years: steady unemployment, consistent full-time employment, long term part-time employment, and return to employment. Serra et al. (2017) uses latent class growth analysis to measure the work trajectories (in days worked per year) using a cohort sample (Serra, Lopez Gomez, Sanchez-Niubo, Delclos, & Benavides, 2017). It identified four groups of workers—high labor force participation, decreased participation, increased participation, and low overall participation. Lu, Wang, and Han (2017) uses SIPP data to measure employment trajectories for women after childbirth. They found four major groups: full time, part-time throughout the period, withdrawal from the formal workforce, and transition to part-time.

Other studies use longitudinal administrative data and tend to find a wider range of trajectory groups. A study using German Socio-economic panel data also uses sequence analysis to compare employment patterns between England and Germany (Zagel, 2014). Cluster analysis found eight clusters of employment patterns among single mothers: full timers, employment-oriented, leavers (i.e. withdrawal from the formal labor market), part-timers, part-time returners, gradual returners, casually employed, and never employed. Achdut and Stier (2016) identified six categories among single mothers who have received cash assistance in Israel based on months of employment and whether it increased or decreased over the prior year.

In conclusion, trajectory groups illuminate changes in employment patterns over time, and the factors related to these patterns. Few studies measure employment trajectories over time for single mothers in the United States. Studies identify 4-8 employment groups, typically including consistently full time or part time, and those moving between employment statuses.

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Those that use trajectory analysis typically find 4-5 groups.

Factors Associated with Employment and Work Hours

A wide body of research identifies varying factors that may lead mothers to reduce their work hours. A study of mothers' employment patterns found that age of children and of mothers predicted mothers' likelihood of working part time, with younger children (0-3 years vs. 16-18 years) and younger mothers (20-30 years vs. 31-40) predicting part time work (Hancioglu & Hartmann, 2014). Contra economists' prediction that earning potential would correlate evenly with likelihood of reducing work hours (Hancioglu & Hartmann, 2014). Lu et al. (2017) found that impoverished and high-income women were more likely to reduce work hours than those at middle family income levels.

The state and local context may also impact mothers' employment patterns. Most studies find little or no initial impact of the state minimum wage on employment in a discrete amount of time, yet a study using panel data from three states found that the state minimum wage decreases job growth over a period of several years (Meer & West, 2016). Further, employed individuals in states with a lower unemployment rate tend to work fewer hours than in states with a higher unemployment rate. Likewise, Hauan and Andersson (2012) found that low earners benefit when local economic conditions improve.

Household financial resources and obligations also impact mothers' employment decisions. A study using hazard analysis found that unemployed home owners were more likely to obtain paid employment than renters and the homeless (Van Vuuren, 2017). Among those who receive public assistance, limitations on benefits can improve employment attachment but impacts are mixed (Achdut & Stier, 2016). A study of TANF recipients in New Jersey over a 5-

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year period found only 10% maintained stable employment over the entire period (Wood, Moore, & Rangarajan, 2008). Similarly, Wu et al.'s (2008) study examining the employment status of TANF participants 3 and 6 years after removal from the rolls showed higher employment and earnings success at year 3; participants did not maintain that success in the long-term. Another study using SIPP data found that as more single mothers joined the workforce following welfare reform, unemployment insurance (UI) became the most common form of assistance for low-education, unemployed single mothers (Shaefer & Wu, 2011). Work disability may also result in lower work hours if the worker's functional limitations are not a good match for the job (Choe & Baldwin, 2017).

Child care arrangements also affect how many hours mothers work. A study comparing the United States and other countries found that publicly provided childcare increases maternal employment (Boeckmann et al., 2015). In the United States, this impact is stronger on the mothers of school aged children since there are few publicly supported childcare options. A panel study in Australia found that flexible "mixed" child care packages, which the Australian government provides to low-income families, increase employment hours, especially for single mothers (Brady & Perales, 2016). Such packages include credits that can be used to pay relatives to give informal care in addition to regulated formal care. However, a U.S.-based study shows that access to care by a relative is associated with a reduced likelihood of dropping out of the workforce, but an increase in reduced hours, suggesting relative care is a limited substitute for more formal child care (Lu et al., 2017).

Methods

Data and Sample

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This study used Wave 1 (2008) through Wave 15 (2013) of SIPP, a longitudinal, nationally representative survey of U.S. households. SIPP was conducted every 4 months from August 2008 to December 2013. Researchers administered a core questionnaire at each interview. The core questionnaire contains information on labor force, income, assets, family composition, and program participation. SIPP allowed for a deep exploration of employment patterns and work hours because it provides detailed monthly information on employment, work hours, earnings, family income, government program participation, and sample characteristics.

SIPP takes a two-stage sampling approach to selecting households that represent different demographic and socioeconomic status in the United States: (1) selection of counties and independent cities that comprise the list of primary sampling units (PSUs) and (2) selection of address units within each PSUs. All households in sampled addresses are interviewed every 4 months (see detailed information in the SIPP 2008 Users' Guide: <https://www.census.gov/programs-surveys/sipp/guidance/users-guide.html>). All of our analysis applied sampling weights that adjust for SIPP sampling designs to represent the population. For this study the sample included single mothers who were 18-64 years old, had at least one biological child under the age of 18 living in the household, and had a family income below 200% of the FPL at baseline. Using these criteria, we identified 2,763 low-income single mothers. Because this research aims to identify work-hour trajectories by using all monthly data points, we further restricted our analysis to respondents who had completed interviews in all 15 waves and had complete data (including SIPP imputed data) on the variables used in the study. This resulted in a sample of 870 single mothers. We ran a statistical test that showed that the study sample and those who otherwise qualified but had missing data did not significantly differ for most of the observed characteristics.

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Measures

Employment and Work-Hour Measures. We used a dichotomous variable to measure the monthly employment status (1 = employed; 0 = unemployed) and a continuous variable to measure the number of work hours per week in the reference month. Each sample has a maximum of 60 monthly data points to identify patterns in individual employment and work hours. Using information on each participant's 60 monthly work hours, work-hour trajectories were estimated by Group-Based Trajectory Modeling (GBTM).

Independent Variables. Covariates included mothers' age; mothers' marital status (divorce or widow, never married [reference]); mothers' education (high school degree and more, no high school [reference]); mothers' race/ethnicity (White [reference], Black, Hispanic, and other); whether mother has a work disability (= 1 if condition applies); whether mother is a U.S. citizen (= 1 if condition applies); number of children less than 18 years old in the home; age of youngest child; receipt of child care subsidy (=1 if conditions apply); child care arrangement (none [reference], formal, informal, irregular, none); other adults in the household (=1 if condition applies); homeownership (=1 if mother is a homeowner); residence in region of country (Northeast [reference], Midwest, West, South); residence in metropolitan areas (=1 if condition applies); receipt of any public benefits (=1 if condition applies); receipt of UI benefits (=1 if condition applies); state unemployment rates; and state minimum wages. All of the covariates were time-varying except for race/ethnicity and child care arrangement.

Data Analysis

To address the first research aim, we used descriptive statistics of employment and work-hour patterns over the study period. To address the second research aim, we then performed

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GBTM to identify work-hour trajectories. The major strength of using GBTM is that it allows the identification of distinct employment paths in the complex SIPP panel data. Maximum likelihood estimates were used to detect the shape of trajectories and calculate the proportion of the sample for each trajectory group. Fit statistics such as Bayesian Information Criterion (BIC) allowed us to determine the optimal number of groups (Nagin, 2005; Nagin & Odgers, 2010). Furthermore, we conducted bi-variate analysis to examine earnings and poverty status by work-hour trajectories. To address the third research aim, we used the generalized linear mixed model to identify the factors that are associated with repeated measurements of work hours of low-income single mothers in the sample. Due to the non-normal distribution of the work hours data, assuming a negative binomial distribution of the outcome provided the best model fit, as evidenced by using the ratio of the chi-square to its degrees of freedom (Hooper, Coughlan, Mullen, 2008; Schabenberger, 2005) and studentized residuals. Random intercepts and person weights at each time point were included. The model was adjusted for time as a fixed effect, as well as all independent variables including time-varying values to account for their changes over time.

Results

Sample Characteristics

Table 1 presents the weighted sample characteristics at the Wave 1 baseline. The mothers had a mean age of 36.6 years and were predominately U.S. citizens (90.4%), had a high school diploma (79.7%), and resided in a metropolitan area (79.6%). The sample was 44.1% White, 31.1% Black, 20% Hispanic, and 4.8% other race. A relatively small proportion (17.7%) had a disability that limited their ability to work. More than four-fifths of the sample (83.7%) received means-tested benefits, and a very small percentage (3.5%) received UI benefits. The single

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mothers had an average of two children and the mean age of the youngest child was 7.11. About 21% of the mothers had other adults living in their households. Approximately 7% received a child care subsidy. Nearly 30% used formal day care or child care centers, nursery school, or preschools; about 21.2% used relative care or family day care; about 11.7% had no regular child care arrangement. Nearly two-fifths (38.9%) lived in the Southern United States and 25.1% in the Midwest; 21.3% in the West; and 14.7% in the Northeast. Approximately one third (32.5%) of the sample owned a house. The average unemployment rate average in the states where the participants resided was 5.8% and the average minimum wage was \$6.87.

Pattern of Employment and Trajectories of Work Hours

All employment-related indicators show a relatively stable but slightly downward trend from mid-2008 to mid-2013. The monthly employment rate among single mothers slightly decreased over the 5-year period, from 65% in Wave 1 to 62% in Wave 15. Similarly, participants showed a slight decline in the average monthly work hours per week from 25.2 hours in the first month to 23.4 hours in the last month.

Using monthly employment status and GBTM, we identified five distinct work-hour trajectory groups. This was determined based on consideration of the values of BIC, the significance of the polynomial change terms, the estimated population size of each trajectory group (>8%), the average posterior probability for each group (>70%; following Nagin, 2005), and the comparison with findings from prior research on employment trajectories.

Figure 1 shows the predicted trajectories of five work-hour groups among participants during the study period. The trajectory for each group is portrayed by the predicted average weekly work hours from mid-2008 to mid-2013. The flat trajectory running across the bottom of Figure 1 represents the stable nonemployment group, 17.77%, which had an average weekly

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work hours near zero every month. The second group, 11.31%, is the decreasing and then increasing work hours group. This group worked 10 hours weekly in mid-2008, which decreased to near zero during the first two post-recession years and then increased back to approximately 10 work hours in mid-2013. The third group, 20.66%, is the increasing work hours group. Its average weekly work hour increased from 20 hours to approximately 30 hours over the study period. The fourth group, approximately 8.35%, the decreasing work hours group, began in Month 1 with an average of 30 work hours per week and then decreased to near zero hours at the end of study period. Finally, the flat trajectory running across the top of Figure 1 represents the stable full-time employment group, 41.91%; average weekly work hours for this group was approximately 40 hours throughout the study period.

Annual Earnings and Poverty Status by Work-Hour Trajectory

Figure 2 shows the average annual earnings by work-hour trajectory. The trends in annual earnings generally reflect the trajectories in work hours among single mother families over the study period. As expected, the annual earnings were nearly zero over time for families following the stable nonemployment trajectory. The annual earnings decreased from \$4,413 in Year 1 to \$584 in Year 3, and then increased to \$5,213 in Year 5 for families following the decreasing and then increasing work-hours trajectory. The annual earnings decreased from \$13,116 in Year 1 to \$7,531 in Year 3, and then to only \$411 in Year 5 for families following the decreasing work-hours trajectory. In contrast, the annual earnings gradually increased from \$8,825 in Year 1 to \$15,365 in Year 5 for families following the increasing work-hours trajectory. Families with stable full-time employment experienced a slight increase in the annual earnings on average, from \$22,667 in Year 1 to \$24,431 in Year 5.

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Figure 3 presents the proportions of the level of poverty by work-hour trajectory. For the stable nonemployment group, approximately 95% of single mother families lived in deep poverty (less than 50% of the poverty line) in Year 1. The deep poverty rate remained above 84% over Wave 3 and Wave 5. For the decreasing and then increasing work hours group, the deep poverty rate increased from 78% in Year 1 to 86% in Year 3, and then decreased to 62% in Year 5. The proportion of families living on 51-100% of the FPL increased by more than two times (from 11% to 24%) over the study period. For the increasing work hours group, the deep poverty rate substantially decreased from 53% in Year 1 to 28% in Year 5. In contrast, the proportions of families living above 100% of the FPL substantially increased from 17% in Year 1 to 42% in Year 5. The deep poverty rate of single mother families in the decreasing work hours group more than doubled, from 35% to 71%). Lastly, single mother families with stable full-time employment showed a lower level of poverty. The proportion of families living above 200% of the poverty line increased from 12% in Year 1 to 30% in Year 5.

Regression Results of Factors Associated With Work Hours

Table 2 presents the results of the weighted generalized linear mixed model of factors associated with change in work hours over time. Work hours significantly decreased over time, albeit by a small amount (coefficient = -0.003, $p < .001$). Variables that were associated with a decrease in work hours over time included age (-0.01, $p < .001$), U.S. citizenship (-0.35, $p < .001$), disability (-3.04, $p < .001$), number of children (-0.1, $p < .001$), public assistance (-0.67, $p < .001$), unemployment insurance (-1.42, $p < .001$), metropolitan area (-0.04, $p < .1$), employment rate (-0.06, $p < .001$), and minimum wage (-0.02, $p < .01$). Variables that were associated with an increase in work hours over time included divorced/widowed vs. never

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married (0.29, $p < .001$), high school diploma (0.57, $p < .001$), race/ethnicity (Black = 0.21, $p < .001$; Hispanic = 0.15, $p < .001$; other = 0.16, $p < .1$) compared to White, age of the youngest child (0.07, $p < .001$), child care subsidy (0.07, $p < .1$), presence of another adult in the household (0.40, $p < .001$), having a childcare arrangement (Informal = 1.34, $p < .001$; Formal = 1.47, $p < .001$; Irregular = 1.49, $p < .001$), and homeownership (0.22, $p < .001$).

Discussion and Conclusion

Understanding the work-hour trajectories of single mothers over time can inform social workers and policy makers as to when to introduce supports to stabilize the employment and income of this vulnerable population. Our results suggest this is necessary: Only approximately two fifths (41.91%) of participants in the sample had stable employment. About 18% did not work throughout the study period. Substantial portions experienced changes in working patterns over time, with increasing hours (20.66%), decreasing then increasing hours (11.31%), and decreasing hours (8.35%). Much of the decreasing employment happened during the Great Recession and its aftermath, 2008-2013.

Establishing the importance of work-hour trajectories from a public policy point of view, poverty rates increased as work hours decreased. Women with stable non-employment or decreasing hours were more likely to experience deep poverty (below 50% FPL). Those with stable fulltime employment were less likely to be below the FPL, and saw slight increases in income over time. Overall poverty rates also declined over the study period, with 17% of the sample living above the FPL in Year 1 compared to 42% in Year 5.

Factors associated with work hours of low-income single mothers may aid in the targeting of programs. These include child care arrangements, work disability, education level,

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and state economic circumstances including unemployment rate. Consistent with previous research that access to child care increases employment (Boeckmann et al., 2015; Brady, 2016), the correlation between informal and formal care arrangements and increasing work hours is particularly strong. Further supporting this recommendation, Glynn (2012) shows that lower income mothers are particularly likely to leave the workforce due to the high costs of child care. These findings suggest that policies to increase access to both informal and formal childcare may increase the employment of low-income single mothers. Potential policies include universal preschool, child care subsidies, and expansion of high-quality child care centers with extended operating hours to accommodate the schedules of working mothers.

The fact that work disability is negatively associated with all of the trajectory categories suggests another potential way to target supports, which Choe and Baldwin (2017) further supports by showing that work disabilities are not a significant barrier to employment if functional limitations are well matched to available jobs. These findings support making job counselors available to low-income single mothers with disabilities. Findings also suggest supports for older mothers, such as career counseling to find appropriate jobs, as age negatively correlates with stable fulltime employment as well as decreasing then increasing hours, and increasing hours, although these findings contrast with other studies finding that younger women are more likely to give up employment (Hancioglu & Hartmann, 2014; Lu et al., 2017). More in line with past research (Hancioglu & Hartmann, 2014; Lu et al., 2017), results related to the age of youngest child and mothers' education level, both of which correlate with stable fulltime employment, suggest targeting women with younger children and those without a high school diploma. Policies to promote the human capital of these young mothers include vocational training, GED programs, and subsidies for higher education (e.g. Pell Grants) to increase their

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employment options. Secondary schools and universities can also support young working mothers by providing child care, student housing, and flexible class schedules.

Our findings also show that decreasing work hours is associated with a higher state unemployment rate and participation in social safety net programs (e.g., public assistance and unemployment insurance). These results are in line with previous studies showing that local economic circumstances effect employment (Damaske et al., 2017; Hauan & Andersson, 2012; Kwon & Meyer, 2011) and suggest the need for supports in areas with high unemployment rates or during economic bad times. Particularly during and after an economic recession, many low-income single mothers experienced reduced work hours or unemployment. Struggling single mothers may rely on these programs to stabilize their income, yet work requirements and time limits of benefits curtail this help (Hacker, 2004; Marwell, 2004). Since many low-income single mothers experience employment instability over time, lifting time limits on TANF for low-income families with children, extending unemployment insurance benefits, and providing job re-training and job search services would be beneficial, especially for those living in areas with high unemployment rates.

Overall, this study suggests that a significant proportion of low-income single mothers experience decreasing or instable work hours over time. Public supports and services are needed to supports low-income single mother families to stabilize their income in periods of underemployment or unemployment. These mothers may benefit from individual-tailored case management to meet their diverse needs and connect them job training, child care, education, and safety net programs.

This study has a number of limitations. First, to serve our focus on trajectories in work hours only respondents who completed interviews were in this sample. This means that sample

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attribution and the formation of split-off households may bias results (Borjas & Hilton, 1996). Second, the covariates that were measured at the first wave could have changed over time, although a sensitivity test measuring alternative timing of covariates in the regression analysis showed the results are robust. Moreover, other factors not among our controls (e.g., job characteristics) may be associated with work-hour trajectories. Third, employment status, work hours, and program participation were self-reported, which might introduce bias.

This study nonetheless contributes to the understanding of the heterogeneous work-hour trajectories experienced by low-income single mothers during and after the Great Recession by analyzing a sample drawn from nationally representative panel data. Results from this study have implications for social work practitioners and policymakers who play important roles in designing services and programs that can alleviate poverty or even move out of poverty for a vulnerable group and their children.

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References

- Achdut, N., & Stier, H. (2016). Long-term employment and earnings patterns of welfare recipients: The role of the local labor market. *Social Service Review, 90*(4), 647–682.
<https://doi.org/10.1086/689203>
- Acs, G., & Loprest, P. (2004). *Leaving welfare: Employment and well-being of families that left welfare in the post-entitlement era*. Upjohn Press. W.E. Upjohn Institute.
<https://doi.org/10.17848/9781417550012>
- Ahn, H. (2012). Child care subsidy, child care costs, and employment of low-income single mothers. *Children and Youth Services Review, 34*(2), 379–387.
<https://doi.org/10.1016/j.chilyouth.2011.11.010>
- Boeckmann, I., Misra, J., & Budig, M. J. (2015). Cultural and institutional factors shaping mothers' employment and working hours in postindustrial countries. *Social Forces, 93*(4), 1301–1333. <https://doi.org/10.1093/sf/sou119>
- Borjas, G. J., & Hilton, L. (1996). Immigration and the welfare state: Immigrant participation in means-tested entitlement programs. *Quarterly Journal of Economics, 111* (2), 575-604.
- Brady, M. (2016). Gluing, catching and connecting: How informal childcare strengthens single mothers' employment trajectories. *Work, Employment and Society, 30*(5), 821–837.
<https://doi.org/10.1177/0950017016630259>
- Brady, M., & Perales, F. (2016). Hours of paid work among single and partnered mothers in Australia. *Journal of Family Issues, 37*(3), 321–343.
<https://doi.org/10.1177/0192513X14531416>
- Cancian, M., Haveman, R. H., Meyer, D. R., & Wolfe, B. (2002). Before and after TANF: The economic well-being of women leaving welfare. *Social Service Review, 76*(4), 603–641.

WORK-HOUR TRAJECTORIES AMONG SINGLE-MOTHER FAMILIES

<https://doi.org/10.1086/342997>

Choe, C., & Baldwin, M. L. (2017). Duration of disability, job mismatch and employment outcomes. *Applied Economics*, *49*(10), 1001–1015.

<https://doi.org/10.1080/00036846.2016.1210767>

Damaske, S., Bratter, J. L., & Frech, A. (2017). Single mother families and employment, race, and poverty in changing economic times. *Social Science Research*, *62*, 120–133.

<https://doi.org/10.1016/j.ssresearch.2016.08.008>

Danziger, S., Heflin, C. M., Corcoran, M. E., Oltmans, E., & Wang, H. C. (2002). Does it pay to move from welfare to work?. *Journal of Policy Analysis and Management: The Journal of the Association for Public Policy Analysis and Management*, *21*(4), 671-692.

<https://doi.org/10.1002/pam.10080>

Dunifon, R., Kalil, A., & Bajracharya, A. (2005). Maternal Working conditions and child well-being in welfare-leaving families. *Developmental Psychology*, *41*(6), 851–859.

<https://doi.org/10.1037/0012-1649.41.6.851>

Eamon, M. K., & Wu, C. (2011). Effects of unemployment and underemployment on material hardship in single-mother families. *Children and Youth Services Review*, *33*(2), 233–241.

Retrieved from <https://ideas.repec.org/a/eee/cysrev/v33y2011i2p233-241.html>

Eslami, E., Filion, K., & Strayer, M. (2011). *Nutrition assistance program report series characteristics of supplemental nutrition assistance program households: Fiscal year 2010*.

Retrieved from <http://www.fns.usda.gov/fns/research.htm>

Fagan, C., & Norman, H. (2012). Trends and social divisions in maternal employment patterns following maternity leave in the UK. *International Journal of Sociology and Social Policy*, *32*(9/10), 544–560. <https://doi.org/10.1108/01443331211257643>

WORK-HOUR TRAJECTORIES AMONG SINGLE-MOTHER FAMILIES

- Fox, L., Han, W.-J., Ruhm, C., & Waldfogel, J. (2013). Time for children: Trends in the employment patterns of parents, 1967–2009. *Demography*, *50*(1), 25–49.
<https://doi.org/10.1007/s13524-012-0138-4>
- Gennetian, L. A., Lopoo, L. M., & London, A. S. (2008). Maternal work hours and adolescents' school outcomes among low-income families in four urban counties. *Demography*, *45*(1), 31–53. Retrieved from <http://www.ncbi.nlm.nih.gov/pubmed/18390290>
- Glynn, S. J. (2012). Child care: Families need more help to care for their children. Washington, DC: Center for American Progress.
- Hacker, J. S. (2004). Privatizing risk without privatizing the welfare state: The hidden politics of social policy retrenchment in the United States. *American Political Science Review*, *98*(2), 243–260. <https://doi.org/10.2307/4145310>
- Hancioglu, M., & Hartmann, B. (2014). What makes single mothers expand or reduce employment? *Journal of Family and Economic Issues*, *35*(1), 27–39.
<https://doi.org/10.1007/s10834-013-9355-2>
- Hauan, S., & Andersson, F. (2012). *Work histories and employment outcomes of single mothers*. Retrieved from <http://aspe.hhs.gov/hsp/12/WorkHistories/index.shtml>
- Hepburn, P. (2018). Parental work schedules and child-care arrangements in low-income families. *Journal of Marriage and Family*, *80*(5), 1187–1209.
<https://doi.org/10.1111/jomf.12505>
- Hooper D, Coughlan J, & Mullen M. (2008). Structural equation modelling: guidelines for determining model fit. *Electron J Bus Res Methods*, *6*(1), 53-60.
<http://arrow.dit.ie/cgi/viewcontent.cgi?article=1001&context=buschmanart>.
- Jackson, A. P., Brooks-Gunn, J., Huang, C. C., & Glassman, M. (2000). Single mothers in low-

WORK-HOUR TRAJECTORIES AMONG SINGLE-MOTHER FAMILIES

- wage jobs: Financial strain, parenting, and preschoolers' outcomes. *Child Development*, 71(5), 1409–1423. <https://doi.org/10.1111/1467-8624.00236>
- Kalil, A., & Ryan, R. M. (2010). Mothers' economic conditions and sources of support in fragile families. *The Future of Children*, 20(2), 39–61. <https://doi.org/10.1353/foc.2010.0009>
- Kalil, A., & Ziol-Guest, K. M. (2005). Single mothers' employment dynamics and adolescent well-being. *Child Development*, 76(1), 196–211. <https://doi.org/10.1111/j.1467-8624.2005.00839.x>
- Killewald, A., & Zhou, X. (2015). Mothers' long-term employment patterns. *Upjohn Working Papers and Journal Articles*. Retrieved from <https://ideas.repec.org/p/upj/weupjo/15-247.html>
- Kwon, H. C., & Meyer, D. R. (2011). How do economic downturns affect welfare leavers? A comparison of two cohorts. *Children and Youth Services Review*, 33(5), 588–597. <https://doi.org/10.1016/J.CHILDYOUTH.2010.10.009>
- Lleras, C. (2008). Employment, work conditions, and the home environment in single-mother families. *Journal of Family Issues*, 29(10), 1268–1297. <https://doi.org/10.1177/0192513X08318842>
- Lu, Y., Wang, J. S.-H., & Han, W.-J. (2017). Women's short-term employment trajectories following birth: Patterns, determinants, and variations by race/ethnicity and nativity. *Demography*, 54(1), 93–118. <https://doi.org/10.1007/s13524-016-0541-3>
- Marwell, N. P. (2004). Privatizing the welfare state: Nonprofit community-based organizations as political actors. *American Sociological Review*, 69(2), 265–291. <https://doi.org/10.1177/000312240406900206>
- Mattingly, M., Smith, K., & Bean, J. (2011). Unemployment in the Great Recession: Single

WORK-HOUR TRAJECTORIES AMONG SINGLE-MOTHER FAMILIES

parents and men hit hard. *The Carsey School of Public Policy at the Scholars' Repository*.

Retrieved from <https://scholars.unh.edu/carsey/144>

Meer, J., & West, J. (2016). Effects of the minimum wage on employment dynamics: Library resources. *Journal of Human Resources*, 51(2), 500–522.

Moffitt, R. A. (2013). The Great Recession and the social safety net. *The ANNALS of the American Academy of Political and Social Science*, 650(1), 143–166.

<https://doi.org/10.1177/0002716213499532>

Nagin, D. S. (2005). *Group-based modeling of development*. Cambridge, MA: Harvard University Press. <https://doi.org/10.4159/9780674041318>

Nagin, D. S., & Odgers, C. L. (2010). Group-based trajectory modeling in clinical research. *Annual review of clinical psychology*, 6, 109-138.

Opre. (2017). *Snapshot Parent Work Schedules in Households with Young Children*. Retrieved from https://www.acf.hhs.gov/sites/default/files/opre/parent_work_schedules_in_households_with_young_children_toopre_083117.pdf

Pepin, J. R., Sayer, L. C., & Casper, L. M. (2018). Marital status and mothers' time use: Childcare, housework, leisure, and sleep. *Demography*, 55(1), 107–133.
<https://doi.org/10.1007/s13524-018-0647-x>

Schabenberger, O. (2005). Introducing the GLIMMIX procedure for generalized linear mixed models. In: Proceedings of the Thirtieth Annual SAS Users International Conference. Cary, NC; 2005:196-30.

<http://citeseerx.ist.psu.edu/viewdoc/download?doi=10.1.1.463.6093&rep=rep1&type=pdf>.

Serra, L., Lopez Gomez, M. A., Sanchez-Niubo, A., Delclos, G. L., & Benavides, F. G. (2017). Application of latent growth modeling to identify different working life trajectories: The

WORK-HOUR TRAJECTORIES AMONG SINGLE-MOTHER FAMILIES

case of the Spanish WORKss cohort. *Scandinavian Journal of Work, Environment & Health*, 43(1), 42–49. <https://doi.org/10.5271/sjweh.3606>

Shaefer, H. L., & Wu, L. (2011). Unemployment insurance and low-educated, single, working mothers before and after welfare reform. *Social Service Review*, 85(2), 205–228. <https://doi.org/10.1086/660861>

Van Vuuren, A. (2017). Using a structural-form model to analyze the impact of home ownership on unemployment duration. *Journal of Applied Econometrics*, 32(4), 858–876. <https://doi.org/10.1002/jae.2551>

U.S. Census Bureau (2018). Historical poverty tables: People and families – 1959 to 2017 Table 4. Poverty Status of Families, by Type of Family, Presence of Related Children, Race, and Hispanic Origin. Retrieved from <https://www.census.gov/data/tables/time-series/demo/income-poverty/historical-poverty-people.html>

Wood, R. G., Moore, Q., & Rangarajan, A. (2008). *Two steps forward, one step back: The uneven economic progress of TANF recipients: Social service review*. Retrieved from [http://www.pacific-gateway.org/two steps forward, one step back the uneven economic progress of tanf recipients.pdf](http://www.pacific-gateway.org/two%20steps%20forward,%20one%20step%20back%20the%20uneven%20economic%20progress%20of%20tanf%20recipients.pdf)

Wu, C. (2011). Long-term employment and earnings among low-income families with children. *Children and Youth Services Review*, 33(1), 91–101. <https://doi.org/10.1016/j.childyouth.2010.08.017>

Wu, C., Cancian, M., & Meyer, D. R. (2008). Standing still or moving up? Evidence from Wisconsin on the long-term employment and earnings of TANF participants. *Social Work Research*, 32(2), 89–103. <https://doi.org/10.1093/swr/32.2.89>

Wu, C., & Eamon, M. K. (2011). Patterns and correlates of involuntary unemployment and

WORK-HOUR TRAJECTORIES AMONG SINGLE-MOTHER FAMILIES

underemployment in single-mother families. *Children and Youth Services Review*, 33(6), 820–828. <https://doi.org/10.1016/j.chilyouth.2010.12.003>

Zagel, H. (2014). Are all single mothers the same? Evidence from British and West German women's employment trajectories. *European Sociological Review*, 30(1), 49–63. <https://doi.org/10.1093/esr/jct021>

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Figure 1: Work-Hours Trajectory Groups

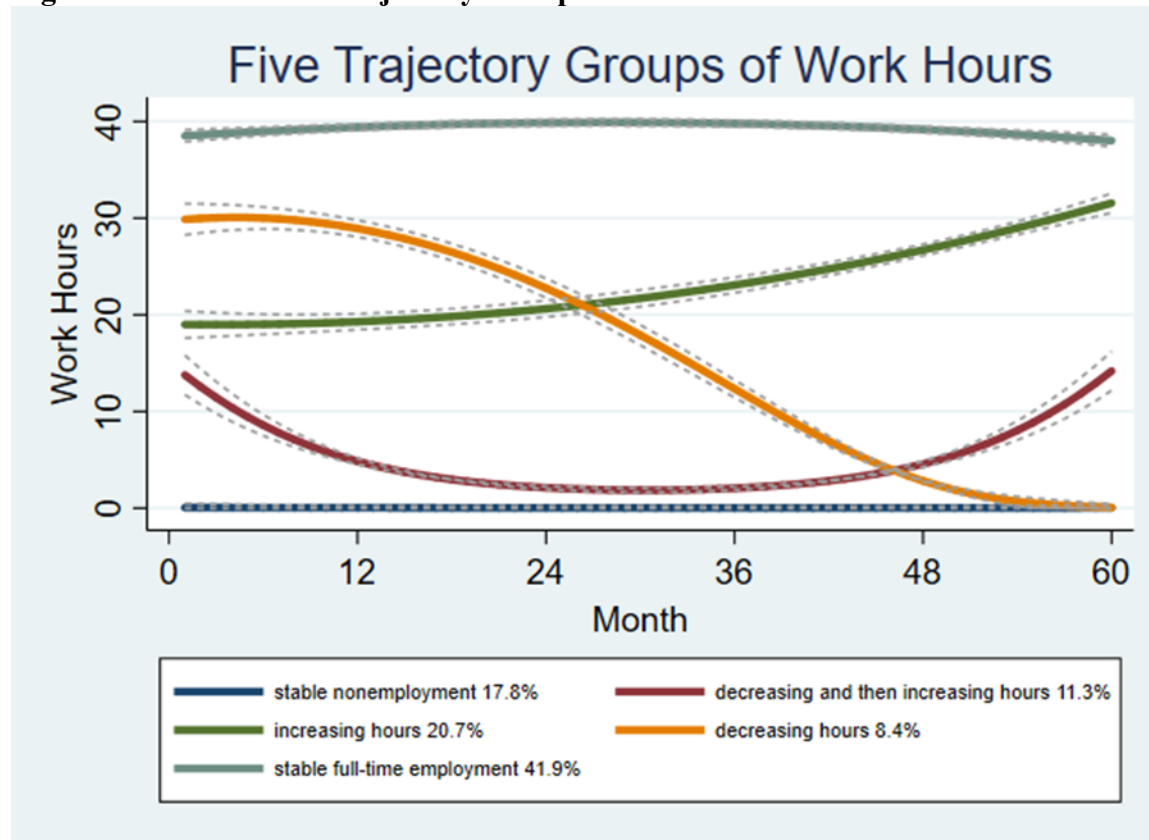
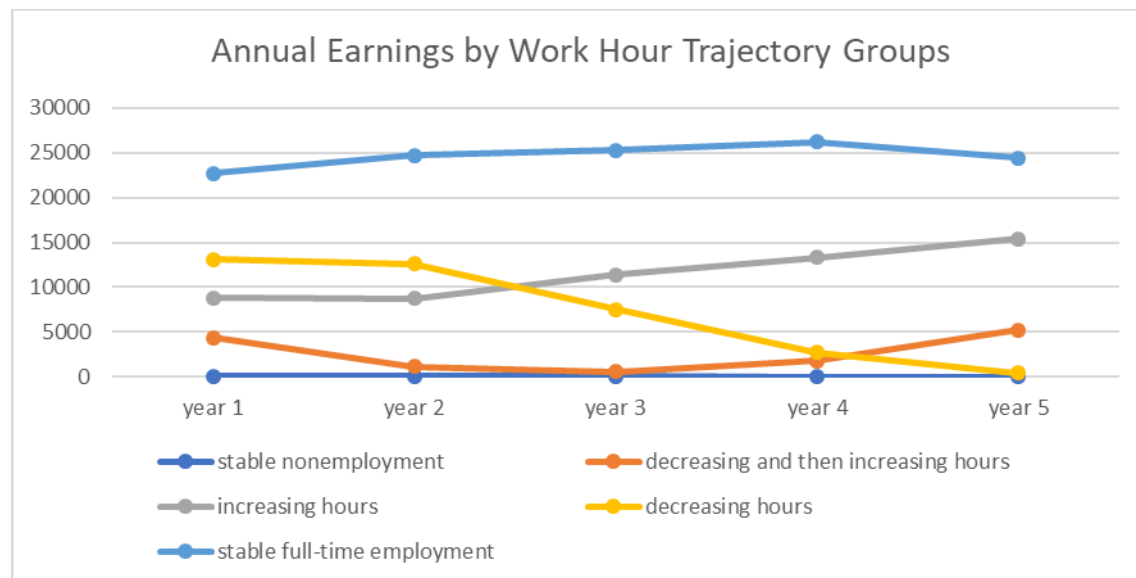
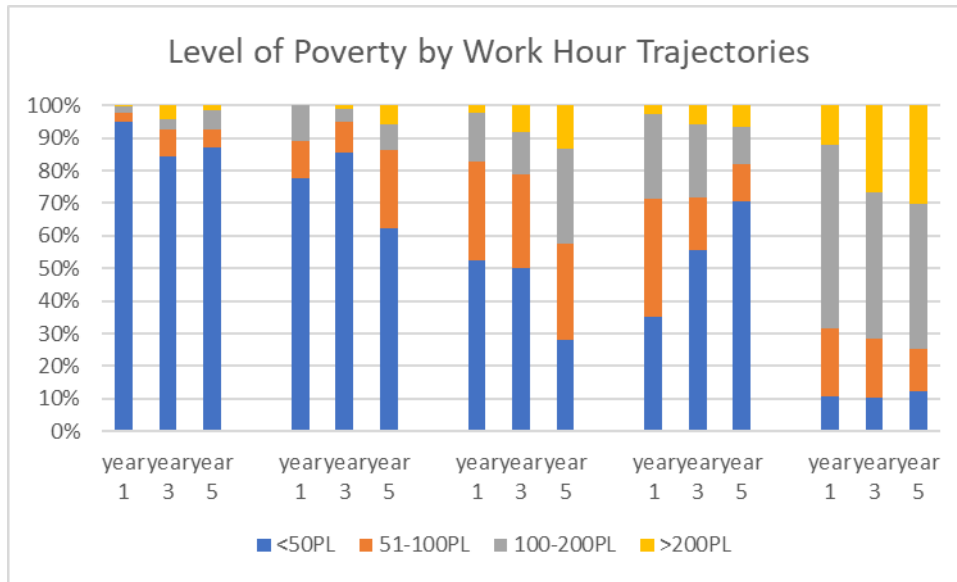


Figure 2: Annual Earnings by Work-Hour Trajectory Groups



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Figure 3: Level of Poverty by Work-Hour Trajectories



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Table 1. Descriptive Statistics

Sample Statistics (N=870)		
Variable	Proportion/Mean	SD
Age	36.57	9.63
Marital Status		
Never Married	0.49	0.5
Divorced/Widowed	0.51	0.5
High School	0.8	0.4
Race		
White	0.31	0.46
Black	0.2	0.4
Hispanic	0.20	0.40
Other	0.05	0.21
Citizen	0.90	0.29
Work Disability	0.18	0.38
Number of Kids	1.88	1.11
Age of Youngest Child	7.11	5.17
Child Care Subsidy	0.07	0.26
Other Adult in HH	0.21	0.41
Care Arrangement		
None	0.38	0.49
Informal	0.21	0.41
Formal	0.29	0.45
Irregular	0.12	0.32
Public Assistance Any	0.84	0.37
Unemployment Insurance	0.03	0.18
UI and Assistance	0.01	0.07
UI or Assistance	0.84	0.36
Homeownership	0.33	0.47
Metropolitan Area	0.80	0.40
Region		
South	0.39	0.49
Midwest	0.25	0.43
West	0.21	0.41
North East	0.15	0.35
Unemployment Rate	5.80	1.05
Minimum Wage	6.87	0.80

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Table 2. Generalized linear mixed model for the outcome of work hours over 60 months

Parameter	Coeff.	SE
Intercept	2.88***	0.12
Time	-0.003***	0.001
Age of Mother	-0.01***	0.001
Divorced/Widowed (Never married)	0.29***	0.02
High School Degree	0.57***	0.02
Race (White)		
Black	0.21***	0.02
Hispanic	0.15***	0.02
Other	0.16 ⁺	0.09
Citizen	-0.35***	0.03
Work Disability	-3.04***	0.03
Number of Kids	-0.10***	0.01
Age of Youngest Child	0.07***	0.002
Child Care Subsidy	0.07 ⁺	0.04
Other Adult in Household	0.40***	0.02
Child Care Arrangement (None)		
Informal	1.34***	0.02
Formal	1.47***	0.03
Irregular	1.49***	0.03
Public Assistance Any	-0.67***	0.03
Unemployment Insurance	-1.42***	0.04
Homeownership	0.22***	0.02
Metropolitan Area	-0.04 ⁺	0.02
Region (Non-South)		
Region South	0.02	0.02
Unemployment Rate	-0.06***	0.005
Minimum Wage	-0.02**	0.01

+ p < 0.10 *p < 0.05 **p < 0.01 ***p < 0.001