Time Use Patterns and Women Entrepreneurs

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Time Use Patterns and Women Entrepreneurs

By Tami Gurley-Calvez, Amelia Biehl, and Katherine Harper*

The twentieth century saw a dramatic increase in the number of women in the labor force as well as a steady increase in the number of self-employed women during the past three decades. This increase in labor force participation represents a striking change in the allocation of women's time between work and home activities. Despite the growing literature examining self-employed women, little is known about how self-employed women divide their time between work and other life activities.

The flexibility afforded by self-employment is often regarded as a way to better balance work and home activities. Indeed, the existing econometric studies indicate that women choose self-employment primarily because of family or lifestyle factors (Theresa Devine, 1994; Richard K. Caputa and Arthur Dolinsky, 1998; Richard J. Boden,1999; Greg Hundley, 2000). Yet studies outside the economics literature seem to indicate that self-employed women do not necessarily experience more family satisfaction (Holly E. Buttner and Dorothy P. Moore, 1997; Saroj Parasuraman and Claire A. Simmers, 2001; Richard DeMartino, Robert Barbato, and Paul H. Jacques, 2006). A source of the difference might be that the econometric studies use older data or focus on an older cohort that views gender roles differently. We use recently available American Time Use Survey (ATUS) data for 2003 to 2006 to compare the daily activities of self-employed women with those of self-employed men and wage and salary workers of both genders. Specifically, we examine whether differences exist in time-use patterns between genders and

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across employment sectors, and whether these different are consistent with the hypothesis that women select self-employment for family and lifestyle reasons.

I. Description of Data

The ATUS is the U.S.'s first comprehensive, federal government-sponsored time use survey, administered by the Bureau of Labor Statistics. The data provide researchers with detailed information on how Americans allocate their hours amongst activities such as working, eating, providing childcare and sleeping. The data include about 13,000 respondents per year and are drawn from the larger Current Population Survey (CPS) sample.

Time spent providing childcare is classified into two categories: primary childcare and secondary childcare. Childcare qualifies as primary care if providing childcare is the respondent's main activity. Secondary childcare is defined as care for any household children under age 13 while doing another primary activity (such as cooking dinner or working at home). These secondary childcare estimates are derived by summing the durations of activities during which respondents reported having a child in their care while doing other activities.

To collect time-use data, one individual, age 15 or older, is randomly chosen from each household in the sample to respond to detailed questions on his or her use of time during the previous day. This designated person, or respondent, is interviewed only once and reports his or her activities for a 24-hour period. Respondents are asked to identify their primary activity if they report doing more than one activity at a time, and data is not collected on secondary activities except for secondary childcare. We chose to limit our sample to individuals 25 years old and older in order to focus primarily on working-age adults.

Respondents are pre-assigned a day of the week about which to report. They are divided approximately equally between weekdays and weekend days. Because most respondents

maintain similar schedules for weekdays, approximately 10 percent are assigned to each weekday. Of the remaining total respondents, approximately 25 percent are assigned to Saturday and 25 percent to Sunday. We opt to include all 7 days in our analysis to increase sample sizes and because it is unclear what would constitute "regular" work hours or days, especially for the self-employed.

II. Research Methodology

We use a combination of descriptive statistics and multivariate analysis to examine two main issues: 1) Do differences exist in time-use patterns across gender and employment sectors? and 2) Are these differences consistent with women selecting self-employment for family or lifestyle decisions? We examine time spent working, in primary and secondary childcare activities, and in off-the-job activities such as volunteering and socializing.

We apply ATUS sample weights and estimate a linear regression model as follows:

$$Time_i = \beta_o + \beta_1 Female_i + \beta_2 Ed_i + \beta_3 Ind_i + \beta_4 D_i + \beta_5 T_t + e_i \tag{1}$$

where the dependent variable (*Time*) is the percent of time spent in a given activity (work, primary childcare, or secondary childcare). *Female* indicates whether the respondent is a woman. We also control for education (*Ed*) and industry (*Ind*) using a series of dummy variables. Demographic characteristics, such as marital status, age, and number of children are included in *D* and *T* is a series of time dummy variables. All control variables represent lagged values, as they are taken from the CPS file collected 2 to 5 months prior to the ATUS. In addition to controlling for gender, we estimate specifications separately for men and women respondents.

III. Results

On average, means from the ATUS indicate that self-employed women spent the least amount of time on work activities, 6.2 hours per day. Wage and salary employed women and

self-employed men worked an average of 7.3 and 7.6 hours per day, respectively. Wage and salary men spent the most time working, 8.2 hours per day. Over the course of a week, self-employed women worked about 14 fewer hours than wage and salary employed men.

Table 1: Mean Number of Hours Spent on Secondary Childcare

	Wage and Salary			Self-Employed		
	Female	**Male**	**Difference**	**Female**	**Male**	**Difference**
All	4.6	3.7	0.9***	5.7	3.6	2.1***
Industry						
Financial activities	4.4	3.8	0.6**	5.5	3.6	1.9**
Professional and business services	4.6	4.1	0.5	5.8	4.0	1.8***
Educational and health services	4.9	3.8	1.1***	6.3	3.4	2.9***
Leisure and hospitality	4.2	3.1	1.1***	6.3	2.8	3.5***
Education						
High School	4.5	3.5	1.0***	5.6	4.0	1.6***
Some College	4.6	3.9	0.7***	5.4	3.9	1.5***
Bachelors Degree	4.6	3.9	0.7***	6.5	3.3	3.2***
Masters or Ph.D.	4.5	3.8	0.7***	4.5	3.1	1.4**
Income						
Less than $20,000	4.6	3.7	0.9***	6.6	4.3	2.3**
$20,000 to $40,000	4.6	3.7	0.9***	6.3	3.3	3.0***
$40,000 to $60,000	4.9	3.8	1.1***	5.9	4.4	1.5**
$60,000 to $80,000	4.9	4.1	0.8***	6.0	3.9	2.1***
$80,000 to $100,000	4.6	3.6	1.0***	5.7	4.0	1.7***
$100,000 to $150,000	3.8	3.2	0.6**	5.7	2.9	2.8***
$150,000 or more	4.3	3.3	1.0***	4.9	2.9	2.0***

Entries represent mean hours per day from the ATUS-CPS, years 2003-2006.
Statistics restricted to respondents with children.
*significant at the 10% level, **significant at the 5% level, *** significant at the 1% level

Limiting our analysis to respondents with children, we find that time spent in primary and secondary childcare was greatest for self-employed women. Self-employed women spent an average of 14 hours per week in primary childcare, whereas wage and salary employed women spent 11.9 hours and men spent between 9.8 and 11.2 hours per week on primary childcare. Summary statistics for secondary childcare are presented in Table 1 and tell an even more striking story. Self-employed women spent about one hour per day more on secondary childcare than wage and salary employed women, translating into a difference of 7.7 hours per week. Secondary childcare time for men was about two-thirds of the amount for self-employed women.

We find some evidence that opportunities for childcare, particularly secondary childcare, might be greater in industries that are more closely related to household production activities traditionally completed by women. Self-employed women in both the education and health services and the leisure and hospitality industries spent the most time on secondary childcare. Self-employed women, with the exception of those Masters or Ph.D. educated, spend more time in secondary childcare than wage and salary women and men, regardless of the sub-category.

Table 2: Regression Results for Time Spent on Work and Work Related Activities

	Wage and Salary			Self-Employed		
	All	**Female**	**Male**	**All**	**Female**	**Male**
Age	0.003***	0.004***	0.003**	0.008***	0.009**	0.007***
	(3.93)	(3.97)	(1.97)	(3.95)	(2.57)	(2.76)
Age Squared	-0.000***	-0.000***	-0.000**	-0.000***	-0.000***	-0.000***
	(4.36)	(4.56)	(2.24)	(5.04)	(3.10)	(3.79)
Female	-0.035***			-0.065***		
	(15.00)			(8.22)		
Married	0.000	-0.009***	0.010**	0.003	-0.032**	0.023**
	(0.16)	(3.15)	(2.43)	(0.31)	(2.32)	(2.12)
Number of Children	-0.004***	-0.009***	-0.001	-0.009**	-0.015**	-0.006
	(3.62)	(6.03)	(0.85)	(2.35)	(2.20)	(1.28)
White	0.002	-0.003	0.007	0.033	0.033	0.035
	(0.45)	(0.47)	(1.02)	(1.56)	(0.89)	(1.48)
African American	0.001	-0.001	0.001	0.024	0.087*	-0.006
	(0.21)	(0.18)	(0.13)	(0.90)	(1.87)	(0.22)

Entries are coefficients from a linear regression model. All regressions include education and industry controls. Education controls are a series of dummy variables for high school education, some college, bachelors degree, masters or doctoral degree, and professional degree.
t statistics in parentheses
* significant at 10%; ** significant at 5%; *** significant at 1%

The above patterns are consistent with the hypothesis that women choose self-employment to accommodate family or lifestyle priorities. Self-employed women spent less time working and more time caring for children. Regression results presented in Tables 2 and 3 confirm that these patterns remain after controlling for the factors in equation (1). Self-employed women worked an average of 6.5 percentage points (1.56 hours per day) less than self-employed

men. Given that the mean percent of time spent working for the self-employed is 27.5 percent (6.6 hours per day), this represents a reduction of 23.6 percent. Similarly, wage and salary employed women worked 0.84 hours per day less than their male counterparts.

The last two columns of Table 2 contain regressions estimated separately by gender. It is clear from these results that family factors affect men and women differently. Marriage decreases hours worked by 3.2 percentage points for self-employed women but increases time worked by 2.3 percentage points for men. An additional child reduces time spent working by about 1.5 percentage points for self-employed women, but does not have a statistically significant effect on hours worked for men. Interestingly, the effects of marital status and number of children are much smaller for wage and salary employed women. Finally, self-employed African American women work considerably more (8.7 percentage points) than those in the other race category.

Table 3: Regression Results for Time Spent on Secondary Childcare

		Wage and Salary		**Self-Employed**		
	All	**Female**	**Male**	**All**	**Female**	**Male**
Age	-0.005***	-0.008***	-0.001	-0.017***	-0.023***	-0.008
	(3.52)	(4.20)	(0.35)	(4.19)	(3.92)	(1.43)
Age Squared	0.00002	0.00005**	-0.00003	0.0001***	0.0002***	0.00006
	(0.93)	(2.08)	(1.42)	(3.17)	(2.85)	(0.90)
Female	0.035***			0.077***		
	(9.41)			(7.69)		
Married	0.027***	0.025***	0.028***	0.028**	0.021	0.034*
	(6.25)	(4.57)	(4.05)	(1.96)	(1.11)	(1.80)
Number of Children	0.026***	0.032***	0.020***	0.030***	0.051***	0.014**
	(12.98)	(10.17)	(8.04)	(5.65)	(7.49)	(2.06)
White	-0.016**	-0.005	-0.024**	-0.019	-0.053	0.004
	(2.23)	(0.48)	(2.50)	(1.00)	(1.59)	(0.17)
African American	-0.023***	-0.020	-0.023*	-0.019	-0.116**	0.036
	(2.60)	(1.61)	(1.85)	(0.61)	(2.52)	(0.92)

Entries are coefficients from a linear regression model. All regressions include education and industry controls. Education controls are a series of dummy variables for high school education, some college, bachelors degree, masters or doctoral degree, and professional degree.
t statistics in parentheses
* significant at 10%; ** significant at 5%; *** significant at 1%

Turning now to time spent on secondary childcare, self-employed women spent far more time (7.7 percentage points) on secondary care than their male counterparts (Table 3). Among self-employed women, African American women spent 11.6 percentage points less time on secondary childcare than those in the other race category. This result is consistent with our finding that African American women spent more time on work activities.

For wage and salary workers, time spent in secondary care increased by more than 25 percentage points if respondents were married, and by a similar amount for each additional child. Both white and African American males who are wage and salary employed spent less time in secondary childcare than those in the other race category. However, there is no evidence that white or African American women spent less time on secondary childcare.

Table 4: Hours Spent in Selected Off-the-Job Activities

	Wage and Salary			Self-Employed		
Percent of time spent…	**Female**	**Male**	**Difference**	**Female**	**Male**	**Difference**
on Primary Childcare (sample with children)	1.7	1.4	0.3***	2.0	1.6	0.4***
on Personal Care	9.1	8.7	0.4***	9.0	8.7	0.3***
on Household Activities	2.3	1.9	0.4***	2.8	1.9	0.9***
on Consumer Purchases	1.0	0.8	0.2***	1.0	0.7	0.3***
Eating and Drinking	1.1	1.2	-0.1***	1.2	1.3	-0.1***
Socializing, Relaxing and Leisure	3.6	4.0	-0.4***	3.5	3.8	-0.3***
on Sports, Exercise and Recreation	1.3	1.9	-0.6***	1.2	1.9	-0.7***

Entries represent mean hours per day from the ATUS-CPS, years 2003-2006.
*significant at the 10% level, **significant at the 5% level, *** significant at the 1% level

Men and women also differ in mean time spent on other off-the-job activities (Table 4). Women spent more time on primary childcare, personal care, household activities, and on consumer purchases. Specifically, self-employed women spent the most time on primary childcare, 2.1 more hours per week than wage and salary women and about 3 hours more per week than men in either sector. Differences in time spent on primary care remain after controlling for the factors in equation (1) but are not as large as the differences in secondary care presented above. Self-employed women spent considerably more time on household activities,

30 minutes per day, or 3.5 hours per week, more than wage and salary employed women and 6.3 hours per week more than men in either sector. Wage and salary employed women spent 12 more minutes per day (1.4 hours per week) on consumer purchases than their male counterparts, and self-employed women spent 18 more minutes per day (2.1 hours per week) on consumer purchases than self-employed men.

IV. Discussion

Our results indicate striking differences in time spent working, caring for children, and on household activities by gender and employment sector. Self-employed women spent the least amount of time working and the most time on childcare activities, even after controlling for education, industry and a variety of other demographic characteristics. Differences are greatest in time spent on secondary childcare and suggest that self-employed women value being near their children, even if they are not primarily engaged in childcare. Separate regressions by gender reveal different coefficient estimates for men and women on a variety of factors with the largest differences in the effects of marriage and number of children for the self-employed. Overall, the observed differences are consistent with the consensus among previous econometric studies that women are motivated to choose self-employment for family, not earnings reasons.

From a policy perspective, this indicates a couple of areas for targeting programs to support self-employment among women. First, programs that enhance work-life balance or facilitate secondary childcare opportunities could potentially be used to address the chronically lower rates of self-employment among women. Second, more research is needed to assess whether there are too few self-employed women because they do not view self-employment as a viable option for advancing career or earnings goals and whether these views are due to factors such as liquidity constraints or risk aversion.

References

Boden, Richard J., 1999. "Flexible Working Hours, Family Responsibilities, and Female Self-Employment: Gender Differences in Self-Employment Selection." *American Journal of Economics and Sociology* 58: 1, 71-83.

Buttner, E. Holly, and Dorothy P. Moore, 1997. "Women's Organizational Exodus to Entrepreneurship: Self-Reported Motivations and Correlates with Success." *Journal of Small Business Management* 35:1, 34-46.

Caputo, Richard K. and Arthur Dolinsky, 1998. "Women's Choice to Pursue Self-Employment: The Role of Financial and Human Capital of Household Members." *Journal of Small Business Management* 36:3, 8-17.

DeMartino, Richard, Robert Barbato, and Paul H. Jacques, 2006. "Exploring the Career/Achievement and Personal Life Orientation Difference between Entrepreneurs and Nonentrepreneurs: The Impact of Sex and Dependents." *Journal of Small Business Management* 44:3, 350-368.

Devine, Theresa J., 1994. "Changes in Wage-and-Salary Returns to Skill and the Recent Rise in Female Self-Employment." *American Economic Review* 84:2, 108-113.

Hundley, Greg, 2000. "Male/Female Earnings Differences in Self-Employment: The Effects of Marriage, Children, and the Household Division of Labor." *Industrial and Labor Relations Review* 54: 1, 95-114.

Parasuraman, Saroj and Claire A. Simmers, 2001. "Type of Employment, Work-Family Conflict and Well-Being: A Comparative Study."*Journal of Organizational Behavior* 22, 551-568.