

# Where are all the self-employed women? Push and pull factors influencing female labor market decisions

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**Abstract** Previous research focuses on factors that influence self-employment participation, in part because entrepreneurship has been associated with economic growth. This literature has tended to focus only on men or the comparison of women to men, while ignoring substantial heterogeneity in employment decisions among women. By investigating the impact of individual, household, and local economic and cultural characteristics on the labor market outcomes of different groups of women, we get a more comprehensive picture of their self-employment decision. Recognizing self-employment as one of multiple labor market choices, we use multinomial

logit and two confidential, geocoded micro-level datasets to study women's career choices in urban areas. We find that the effects of various push and pull factors differ between married and unmarried women. In particular, more progressive gender attitudes pull married women into self-employment, while household burdens associated with children push them into self-employment. For unmarried women, the local business climate and individual characteristics have the strongest influence. In both cases, the motivations for women are quite different than men.

**Keywords** Female labor force participation · Self-employment · Gender · Culture

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## 1 Introduction

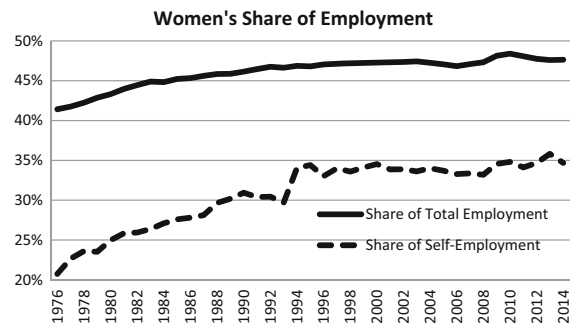
Entrepreneurship has long been associated with innovation and economic growth (Shrestha et al. 2007; Fölster 2000; Robbins et al. 2000; Stephens et al. 2013). As a result, there is a vast literature on entrepreneurship and the decision to enter self-employment (Hamilton 2000; Fairlie and Meyer 1996; Borjas and Bronars 1989; Blau 1987; to name a few). However, few studies have focused on the motivations of women to become self-employed. Additionally, true entrepreneurship may be difficult to measure because of its many dynamic facets. While

self-employment is one aspect of entrepreneurship, it may not capture other facets such as innovation and the size of the enterprise (Glaeser et al. 2010). Consequently, various studies have focused on incorporated businesses (Carr 1996), full-time self-employment (Doms et al. 2010; Clain 2000), or professional self-employment (Budig 2006). However, such narrow views of entrepreneurship may miss important entrepreneurial activities that stem from diverse forms of self-employment which are often undertaken by women (Budig 2006). Thus, we examine self-employment, and the employment decisions of women, precisely because of this heterogeneity.

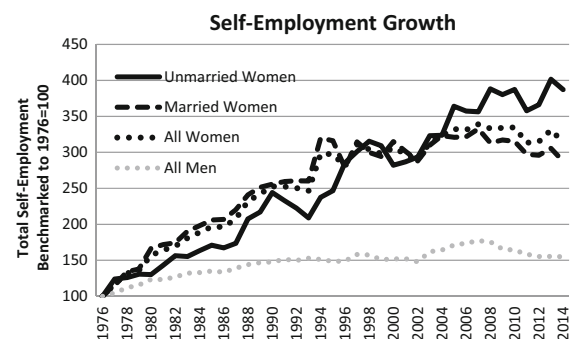
Over time, women's share of self-employment and their self-employment numbers have been steadily increasing (shown in Figs. 1 and 2). Between 1975 and 1995, women's total self-employment numbers more than doubled, increasing from 1.5 million to over 3.4 million (US BLS CPS). Although self-employed men still outnumber self-employed women, women gained ground and even surpassed men in terms of their self-employment growth rates. Women's self-employment rates grew by over 75 % between 1975 and 1995, narrowing the gender gap in self-employment over this time. However, since 1995, both men's and women's overall self-employment growth rates have been fairly stagnant (Fig. 2). It is not until we break out women by marital status that we see that unmarried women's self-employment growth path has diverged from that of married women (and men) and has not been stagnant over this period but has continued to grow (Fig. 2).

To understand what might be going on with these trends in self-employment, we need to understand women's decisions to become self-employed. The literature on the self-employment decisions of women is relatively underdeveloped, and there is limited quantitative analysis that considers the true choice set for women in deciding whether to become self-employed or that adequately accounts for the heterogeneity of the women making these choices. Thus, we will explore these motivations in this analysis. Figure 1 suggests that there are differences in the drivers of self-employment between unmarried and married women that will be important to address.

Self-employment is an alternative to not working as well as wage and salary employment, but the latter is the choice generally modeled. The latter choice set may be appropriate for unmarried women who,



**Fig. 1** Female employment shares. *Source* IPUMS US Bureau of Labor Statistics (BLS) Current Population Survey (CPS)



**Fig. 2** Growth in self-employment. *Source* IPUMS US BLS CPS data benchmarked to 1976

because of not having a spouse, are likely to have to work to support themselves. However, married women may be able to choose not to work if they have a spouse who works. Thus, they may choose self-employment as an alternative to not working—or they may choose between not working, being self-employed, or wage and salaried employment. Restricting the choice set to a binary one—and not accounting for all the possible choices is thus especially likely to impact our ability to understand the self-employment decisions of married women. This is important since married women are self-employed at higher rates than unmarried women (8 % as opposed to 4 % for unmarried women in 2014<sup>1</sup>); however, the self-employment by unmarried women is growing at a higher rate.

Much of the previous labor (and self-employment) literature has focused on married women and family

<sup>1</sup> Calculated using IPUMS CPS data on non-agricultural self-employment and non-agricultural employment.

burdens largely because the dramatic increase in the female labor supply (and women's self-employment) since the 1970s has been attributed to changes in the employment decisions of married women and mothers (Juhn and Potter 2006). In the labor literature, marriage is viewed as an exchange of household labor where women have historically been allocated a larger share. Married women began to be drawn into the workforce by part-time jobs and employment opportunities such as self-employment that better allowed them to accommodate both work and household burdens.

The period of stagnant self-employment growth rates in the US has coincided with declining US marriage and fertility rates and an increase in men's share of household labor. However, declining marriage rates also mean there are a growing number of unmarried women in the workforce. The employment decisions of this growing number of unmarried women have been largely ignored in the literature and are likely not driven by family burdens. Additionally, in the last 10 years, the only growth in self-employment has come from unmarried women (IPUMS CPS data).

Previous studies have simply compared women to men. Some studies have found that women have lower returns to owning a business. However, these results may be misleading as there is evidence that women enter self-employment for very different reasons (than men) and may have different measurements of success—especially married women who may be looking for a way to balance family burdens. However, given the recent self-employment trends, we believe that the motivations for being self-employed may vary—especially between married and unmarried women.

Thus, we focus on analyzing the heterogeneity in women's self-employment decision and the impact of various individual, household, and local economic and cultural forces. We hypothesize that at least some of the heterogeneity in women's self-employment decisions can be accounted for by separately analyzing the self-employment decisions of married and unmarried women and that by doing so we can show how and why the self-employment decisions of married women are driven by different factors than unmarried women. Based on the previous literature, we hypothesize that family burdens will push married women into self-employment but that unmarried women may respond more to economic forces.

This paper contributes to the literature by combining the literature on regional factors that affect employment decisions with the literature on individual and household factors that affect employment to provide a comprehensive and rigorous quantitative analysis of individual and household attributes as well as contextual factors associated with married and unmarried women's decisions to enter into self-employment. We utilize confidential geocoded data from both the National Longitudinal Survey of Youth 1979 (NLSY79) and the General Social Survey (GSS) to study married and unmarried women's career choices in US metropolitan areas, focusing on the decision to become self-employed, in the context of their location. The NLSY79 captures the employment decisions of women and various individual and household characteristics that influence the decision to become self-employed. We model the self-employment decision as multi-faceted allowing women to choose between wage and salaried employment, self-employment, and not working. The GSS is used to measure local social and gender-role attitudes—an important factor heretofore unexplored in quantitative analysis of female self-employment. We combine these gender attitude measures and other measures of the local business environment with individual data from the NLSY79 to create the most comprehensive, to our knowledge, set of factors influencing female labor market decisions. We then analyze the effect of various factors that 'push' married and unmarried women into self-employment (due to their lack of alternative opportunities) or 'pull' them into self-employment (due to the opportunities self-employment provides).

We find evidence of heterogeneity in women's self-employment that depends on their marital status, as well as a number of other dimensions including their ability and the surrounding business and cultural environment. Pooling all women (married and unmarried) together masks the impact of some of these factors and suggests that certain factors, such as age, do not impact self-employment participation when, in fact, they do. Pooling all women together also suggests that some factors, such as gender-role attitudes, affect all women the same when, in fact, they do not. The reality is that married and unmarried women appear to be motivated by different factors. Married women (but not unmarried women) seem to be pulled into self-employment in regions with more progressive gender-

role attitudes and pushed into self-employment when they have young children. Unmarried women (but not married women) seem to be pulled into self-employment when a higher share of the workforce is self-employed and by favorable individual attributes such as higher ability (measured by AFQT score).

In what follows, we review the previous research in this area in more detail. We then present our model, our data, and our results and provide a discussion. We also identify potential areas for further study.

## 2 Self-employment participation

The literature on self-employment participation generally focuses on the factors that either pull or push workers into self-employment (i.e., Amit and Muller 1995). The factors that encourage general labor market participation may also pull workers into self-employment (e.g., high levels of education and experience). Workers with higher levels of human capital have better resources and are better able to access resources that are beneficial to self-employment (i.e., the resource view of self-employment). On the other hand, the factors that discourage general labor market participation may also push workers into self-employment (e.g., low levels of education and experience or discrimination). This disadvantaged worker theory of self-employment suggests that some workers resort to self-employment when unable to find wage and salaried employment because of their unattractive mix of human capital or may use self-employment as a step toward wage and salary employment. This has also been called the class mobility hypothesis of self-employment whereby disadvantaged workers or workers in undesirable jobs use self-employment as a means to improve their economic situation (Acs 2006). Thus, the most ambitious and most disadvantaged workers may both turn to self-employment.

Workers turn to self-employment not only to improve their economic situation but also because of the substantial non-pecuniary benefits of self-employment (Hamilton 2000). They may even choose to forgo higher earnings in a wage and salary job for these non-monetary benefits which include a flexible schedule, a lower or no commute, and other advantages of being your own boss.

Much of the self-employment literature has focused on the impact of these various push and pull factors on men's self-employment participation and outcomes. Some recent work has expanded the analysis to the self-employment participation and outcomes of women. However, this line of research has either focused on married women or treated married and unmarried women as homogenous (by pooling them together). These studies have stressed the importance of family burdens, which likely affect the self-employment decisions of married women more than unmarried women. Married women may also be more likely to turn to self-employment for the non-pecuniary benefits like a flexible schedule if they are also trying to accommodate family and other household responsibilities.

### 2.1 Gendered traits and self-employment participation

Like men, women may be pulled or pushed into self-employment. However, there are substantial differences along gender lines. Various (often unobserved) gendered traits have been shown to affect self-employment participation. For example, differences in risk aversion between men and women may account for some portion of the gender gap in self-employment participation (Sapienza et al. 2009; Cramer et al. 2002; Levine and Rubinstein 2013; Fossen 2012), since women tend to be more risk averse and the rewards of self-employment are more variable and less certain (i.e., more risky) than salary employment. However, the previous literature also finds that risk aversion differs not only across gender lines but also by marital status, with married women exhibiting more risk aversion than unmarried women (Yao and Hanna 2005).

Other factors may simply affect self-employment decisions of men and women differently. While some studies have shown education and experience increase self-employment participation for both men and women (Robinson and Sexton 1994; Carr 1996), others find mixed results. For example, both Taniguchi (2002) and Renzulli et al. (2000) find education has no effect on self-employment rates for women. These mixed results may be due to the heterogeneity among women—simply pooling all women together, ignores that education and experience may have different impacts on married versus unmarried women.

## 2.2 Household characteristics and self-employment participation

Despite the mixed results of some studies, Carr (1996) concludes that family characteristics and not human capital characteristics are the strongest predictors of the self-employment participation of women, whereas human capital characteristics are the strongest predictors of self-employment for men. The most notable difference in the literature that analyzes the self-employment rates of women is the particular attention paid to the effect of family characteristics (i.e., marriage and children). However, Carr (1996) and other previous studies pool all women together and only add a control variable for marital status. These studies completely miss the possibility that human capital characteristics and other factors may impact married women differently than unmarried women.

Marriage may pull women into self-employment because of the higher level of resources that marriage affords women. A self-employed spouse (or previously self-employed spouse) provides women with additional resources in terms of human capital specific to self-employment (Bruce 1999; Parker 2008). On the other hand, marriage may push women into self-employment because of the increased burden on women's time. Self-employment provides more flexibility and the ability to allocate more time toward household responsibilities associated with marriage. Households may also use women's self-employment as a financial backup. A descriptive analysis by Cowling and Hayward (2000) shows that women tend to move from unemployment to self-employment in economic downturns to maintain total household income.

Studies have found that marriage encourages self-employment in general, but much more for women (Carr 1996; Boden 1999). In our sample of US urban women, married women are 1.9 times more likely to be self-employed as never married women and approximately 65.5 % of self-employed women are married while only 52.3 % of salaried women are married. Previous research has supported this and has found that lower marriage rates can account for the lower rates of entry into self-employment for minority women (Taniguchi 2002). Declining marriage rates overall in the USA (Wang and Parker 2014) may explain some of the trends in slowing self-employment growth rates for both men and women seen in

Fig. 2. However, given that the self-employment numbers of unmarried women have continued to grow, it is important to understand the employment decisions of these women; especially in light of the stagnant self-employment growth of both men and married women.

Children are assumed to push women into self-employment (perhaps as opposed to salaried employment) because of the higher burden placed on women's time as a caregiver. A recent paper by Noseleit (2014) uses instrumental variables to show that additional children increase the likelihood of self-employment for women and that self-employment does not increase the fertility of women. In our sample of US urban women, 24.4 % of self-employed women have at least one child under the age of 5 compared to 17.4 % of wage and salary-employed women. The presence of children has been found to have a positive and significant effect on the probability that women choose self-employment over wage and salary employment, but has no significant effect for men (Boden 1996, 1999; Wellington 2006). However, previous research finds that children only increase the probability of being self-employed for low-skilled workers (Burke et al. 2002) and that they are predominantly self-employed as childcare providers (Connelly 1992).

Although children may push women out of wage and salary employment and into self-employment, the true choice for these women may actually be between exiting the labor force altogether and self-employment. For example, in the vast literature that examines the impact of fertility on the employment choices of women, children have been found to reduce female employment participation by as much as 26 % (Cristia 2008). A significant portion of the increase in female labor supply since WWII is attributable to women's declining fertility (Goldin 1990). Self-employment may offer women with children the opportunity to remain in the labor force as they (more than men) assume the additional household responsibilities that accompany children. However, Wellington (2006) finds little support that women are increasingly turning to self-employment to balance family and career. Even if married women are choosing self-employment to balance family and career, unmarried women with children may not have the same luxury as married women of choosing self-employment because there is no other income support upon which they may rely.

Previous research has treated the increased burden of household responsibilities as raising the effective commuting cost for women (Rosenthal and Strange 2012; Black et al. 2014). Family characteristics and gender differences in the division of labor better explain the smaller commute times of women than other economic factors such as wages, hours, experience, and industry and occupation (Madden 1981). Black et al. (2014) find that labor force participation rates of married women are negatively correlated with metropolitan commute times. Self-employment can offer women the opportunity to significantly reduce both their commute time by working at home and their effective commute time through a flexible work schedule. The ability to have a flexible work schedule is more likely to be cited by women than men as a reason for self-employment; this is especially true for women with young children (Boden 1999). This flexible work schedule is one of the many non-pecuniary benefits of self-employment that Hamilton (2000) finds to be significant. This is consistent with Hundley's (2000) findings that women tended to choose self-employment to accommodate household responsibilities whereas men tended to choose self-employment expecting higher earnings. However, the true impact of these factors (and others) may be obscured by simply pooling all women (married and unmarried) together and treating them as somewhat homogenous. Unmarried women may value the non-pecuniary benefits of self-employment less than married women. We hypothesize that the expected pecuniary benefits significantly influence unmarried female self-employment decisions and the results of the existing literature regarding the relative importance of pecuniary and non-pecuniary benefits are largely driven by married women.

### 2.3 Heterogeneity in the self-employment decision

The various push and pull factors that affect self-employment rates for men and women indicate that people can enter into self-employment for very different reasons. This heterogeneity is evidenced in part by the increasing divergence in self-employment outcomes—in other words, self-employment seems to be growing in both the most and least rewarded occupations (Budig 2006). Carr (1996) also finds evidence that there is more heterogeneity among self-

employed women than men. The heterogeneity among the self-employed is especially evident in the number of hours worked by self-employed women in our sample. In our sample of urban women, 56.5 % of self-employed women work <35 h on average (33.5 % for salaried employment), but 26.6 % of self-employed women work over 45 h on average (only 17.8 % for salaried women; Appendix 1 Table B in ESM).

Most studies tend to pool all women (or men) together to estimate, for example, the impact of marriage, children, and other factors such as education. Some studies have attempted to account for potential heterogeneity by separating self-employed women into incorporated businesses and unincorporated businesses (as in Carr 1996) or by focusing solely on small-business owners (as in Loscocco and Robinson 1991; Renzulli et al. 2000). For men, the separation between self-employment in incorporated and unincorporated businesses seems to distinguish between the men who are pushed and those who are pulled into self-employment; however, the distinction does not seem to sufficiently separate women like it does for men (Carr 1996). To separate the women who are pushed into self-employment from those that are pulled, Wellington (2006) stratifies her sample of white, married women by education and finds that more educated women are more likely to be pushed into self-employment in response to family responsibilities such as children. However, Wellington does not include unmarried women in her sample. Budig (2006) separates self-employment into professional and non-professional self-employment. She finds self-employed professional women more closely follow a careerist model of self-employment (similar to men). For example, the presence of children encourages only non-professional self-employment, but marriage encourages both forms of self-employment (possibly because marriage may either push or pull a woman into self-employment). However, by pooling all men and women (married and unmarried) together and including only a limited number of controls and interaction terms, Budig (2006) may be masking many of the true motivations behind self-employment for married and unmarried women. Budig also ignores the role local economic and contextual factors may play in the decision to become self-employed. Additionally, the transition from non-employment to self-employment (as opposed to the transition from wage and salary employment to self-employment) is significantly

correlated with only non-professional occupations, but this choice may be more relevant to married women (not unmarried women).

To our knowledge, no previous paper attempts to account for some portion of this heterogeneity in the self-employment decisions of women by separating married and unmarried women in their analysis. Previous literature on the importance of household burdens on the employment decisions of women suggests that marriage may be a significant source of heterogeneity in women's decision to become self-employment. Given that self-employment rates by unmarried women are rising at the same time that self-employment rates for married women and men are stagnant or falling, exploring this heterogeneity and what causes women to become self-employed is increasingly important.

#### 2.4 The gender gap in self-employment outcomes

Expected self-employment outcomes have a significant impact on the decision to become self-employed. Both men and women are more likely to choose self-employment as their relative expected earnings increase (Lombard 2001). Men are more sensitive to changes in this earnings differential indicating that women may tend to incorporate more nonmonetary factors (such as flexibility in accommodating household responsibilities) into the decision to become self-employed (Georgellis and Wall 2005). However, married women may be driving this result. Lombard (2001) finds that the increase in the relative earnings potential of self-employment can explain most of the upward trend in women's self-employment rates—and since self-employment among unmarried women has been driving this increase recently, this supports our hypothesis that unmarried women are more motivated by pecuniary factors.

Despite the substantial increase in women's self-employment rates, women are still less likely than men to enter self-employment as evidenced by relatively low entry rates and a relatively high exit rates compared to men (Fairlie 2006). This may be due in part to the poor self-employment outcomes of women compared to men that have been noted. For example, in 1990, self-employed women earned on average 73 % as much as wage and salary women, whereas self-employed men earned 107 % as much as wage

and salary-employed men. Thus, the gender wage gap may actually be widened and not narrowed by self-employment. Even when controlling for various personal characteristics, the gender wage gap is significantly larger in self-employment than in salaried employment (Moore 1983). Previous research shows that women-owned businesses are outperformed by men-owned businesses (Loscocco and Robinson 1991; Rosa et al. 1996; Renzulli et al. 2000; Fairlie and Robb 2009; Rosenthal and Strange 2012), and their analyses have tried to explain this difference. They find many of the same factors that encourage women to enter self-employment also decrease their potential earnings from self-employment such as family characteristics (Loscocco and Robinson 1991; Hundley 2000). However, family characteristics are not likely to be the largest influence on the self-employment decisions of unmarried women, and none of these studies separately consider the self-employment outcomes of married and unmarried women. Other factors that decrease women's outcomes of self-employment include the generally lower economic outcomes associated with female-dominated fields (Loscocco and Robinson 1991), lower start-up capital levels and less business experience (Fairlie and Robb 2009), and networks dominated by kin (Renzulli et al. 2000). Additionally, Rosenthal and Strange (2012) find there is a spatial mismatch with women-owned businesses being located farther from industry centers thus missing out on agglomeration benefits. All of these poor outcomes surely have an effect on women's desire to enter self-employment.

Despite barriers to self-employment, unmarried women are becoming self-employed at higher rates. We hypothesize that the economic barriers are likely to be more important to unmarried women, while married women are likely to worry more about family matters.

#### 2.5 Spatial differences in self-employment participation

It is important to simultaneously study the individual (and household) characteristics that influence the self-employment decision within the context of the local business environment and regional cultural attitudes. Overall entrepreneurship and self-employment rates

vary across space. The local business climate and culture of a region may either push or pull workers into self-employment. A thriving local economy may pull workers into self-employment, whereas a struggling economy or poor business climate may push workers into self-employment. Glaeser et al. (2010) and Doms et al. (2010) examine why entrepreneurship varies across space. Doms et al. (2010) finds that the level of education in an area is an important factor in determining local full-time self-employment participation.

Previous research provides evidence that the culture of an area can have a significant impact on entrepreneurship and innovation (Saxenian 1994; Florida and Gates 2001). Cultural attitudes that specifically affect fertility and labor market participation can be passed down through generations (Blau et al. 2013; Fernandez and Fogli 2009). Recent research by Borck (2014) finds that broader cultural attitudes such as the perception of external childcare quality affect both the provision of childcare and female labor supply. More progressive attitudes toward women and about the effect on a child from having a working mother may similarly indicate beliefs about the quality of external childcare. Thus, we may expect progressive attitudes to increase female labor supply either through self-employment or wage and salary employment; especially among married women.

Discriminatory cultural attitudes may push women into self-employment as traditional gender-role attitudes have lowered women's ability to join the labor force (Crompton et al. 2005). Women and minorities may turn to self-employment to limit or even avoid discrimination in formal wage and salary employment. By entering into self-employment, women may be trying to narrow the gender wage gap and/or the motherhood wage gap that is well-known to exist in wage and salary employment (Blau and Kahn 1997; Waldfogel 1997). On the other hand, discrimination may make it harder to start or run a small business. Fossen (2012) surmises consumer discrimination against self-employed women may best explain women's lower entry rates into self-employment. However, discrimination may not impact all women the same. Gender-role attitudes may affect married mothers more than unmarried women as there are strong opinions about whether a married mother should work at all and little to no assumptions about unmarried women's role in society.

### 3 Model and methodology

Our study builds on the previous literature by considering the factors that motivate women to be self-employed. However, unlike previous studies, we recognize that the workforce choice sets for women may vary. For some women, the workforce choice may only be between salary work and self-employment; in other words, what type of work. For others, the choice may only be between self-employment and not working, with these women choosing to be self-employed as an alternative to not working.<sup>2</sup> Some women may consider all three choices simultaneously. Thus, our model allows for these differences with a choice set that includes not working, self-employment, or work in a wage and salary job.<sup>3</sup> This contrasts with the previous literature in which most researchers have focused on the choice of self-employment as a binary one—either the choice between working or not working (see Killingsworth and Heckman 1986 for a review) or between salaried work and self-employment (such as Fairlie and Meyer 1996; Lombard 2001; Boden 1996, 1999; Georgellis and Wall 2005). A few papers have modeled the decision using a nested choice structure that assumes the first choice is between working and not working and then between salaried and self-employment (Budig 2006). While such nested approaches may be appropriate for women choosing between salaried work and self-employment, it imposes an inappropriate structure on the decision for women choosing self-employment as an alternative to exiting the labor market. This may be especially important for married

<sup>2</sup> Similarly, Booth and van Ours (2013) and Gianelli (1996) separate the employment choices facing women into full-time, part-time, and non-employment. They find that some women prefer part-time employment and are not simply using it as a step to full-time employment. Thus, the availability of part-time employment increases the labor force participation of women who would otherwise choose non-employment.

<sup>3</sup> Our definition of not working is similar to the definition of non-employment in the above-referenced studies and includes persons not in the labor force as well as unemployment. The overwhelming majority of “not working” respondents are out of the labor force. In the pooled female sample, for example, 1.5 % of the estimation sample is unemployed, while approximately 18 % is out of the labor force. We also estimated versions of our models where the choice set is expanded to differentiate between respondents that are out of the labor force and unemployed. Our primary results remain unchanged. The results of this exercise are available from the authors upon request.



women; thus, these approaches also ignore the heterogeneity in the choice sets of women especially as these choice sets may vary by marital status.

We model the employment choice for each woman as the one that maximizes her utility subject to her budget constraint. We assume that if she chose any other outcome, her utility would be lower. We also recognize that the utility functions for women may vary based on a number of important factors—individual and household factors such as education, marital status, presence of children, and race; economic factors such as the potential earnings from wage and salary employment versus self-employment; and regional factors such as social attitudes.

As discussed in Sect. 2, the literature on female self-employment highlights the role of marriage and family burdens. However, much of the previous analysis has focused on married women (Black et al. 2014) or pooled all women together. As the age of first marriage has risen and divorce has become more common, the number of unmarried women in the workforce has increased. Since marital status and household burdens have been shown to be more important in affecting the employment choices of women than for men, it is likely that marriage may affect the relative importance of other individual, economic, and regional factors in the employment decisions for women. Given the evidence indicating that the utility functions of married and unmarried women may differ significantly, any estimation that pools all women together will mask the true motivations for their employment decisions. Thus our estimation approach explores this potential heterogeneity by allowing the utility functions for married and unmarried women to vary and separating our dataset accordingly.

We test the validity of splitting our sample by marital status in two ways. First, we use the pooled sample to estimate variants of our primary specifications (described in more detail below) that include an interaction between marriage and several factors that the literature suggests may differentially influence married and unmarried women. The results indicate differential effects for key predictors of self-employment, such as young children, ability as measured by AFQT, and local gender-role attitudes.<sup>4</sup> Limiting the

<sup>4</sup> We also estimated versions with individual fixed effects on the pooled data with interaction terms. We employed Pffor's (2014) femlogit implementation of a solution to avoid the

set of interactions to those factors that we expect to have differential effects a priori constrains the effect of all other factors, which also may have different impacts on married versus unmarried women. We also test the validity of pooling with seemingly unrelated estimation. This approach combines the separate parameter and variance matrix estimates into one parameter vector and one simultaneous variance matrix, allowing us to test the equality of all coefficients. The null of married and unmarried equality is strongly rejected (at the 99.9 % level) for all specifications of the model. We take these results as strong evidence that splitting the sample by marital status addresses an important source of heterogeneity in female labor force decisions.

We use multinomial logit estimation to consider each woman's employment choice.<sup>5,6</sup> The multinomial logit approach is appropriate in this case because the order of the choices is not important—just the number of choices. Additionally, the variables which affect the choices are the same across all alternatives (Wooldridge 2010).<sup>7</sup> This approach takes advantage of our rich dataset (described below) that includes detailed information about the women as well as their local area.

Footnote 4 continued

incidental parameters problem (explained further in footnote 12). Although this approach prevents identifying important interactions with time-invariant individual characteristics and consumes substantial degrees of freedom, the marriage interactions remain statistically significant and further indicate that separate examination of married and unmarried women is warranted.

<sup>5</sup> For more information on the multinomial logit approach, see Wooldridge (2010).

<sup>6</sup> We also explored looking at the self-employment decision through an entry specification (the choice to enter self-employment from either salary employment or not working). Because of the small sample sizes associated with this specification, married and unmarried women must be pooled together (though we include interaction variables between marriage and some other variables). Though the results of this specification are largely similar to our preferred methodology, this specification cannot eliminate concerns about masking the heterogeneity in the employment decisions between married and unmarried women.

<sup>7</sup> Unlike the conditional logit approach, multinomial logit does not account for differences between the actual choices, just the factors that are important to the choice. As long as the choice set is fully specified then we do not need to make the Independence of Irrelevant Alternatives (IIA) assumption as in conditional logit (Wooldridge 2010).

While we assume that the observed employment outcome of a woman is based on her choosing the outcome that maximizes her utility, we are unable to observe her utility level. The multinomial logit estimation allows us to use the observed employment choice and the other observable factors to estimate the probability of her choice relative to a base case outcome. In our estimation, we assume the base case is the alternative “not working.” Estimation of this model using multinomial logit then provides us with the coefficients relative to the base option of not working. Since we use panel data in this estimation, the coefficients are consistent estimators of the true coefficients; however, there is serial correlation between the observations over time which affects the standard errors (Wooldridge 2010). We attempt to control for this by using both time dummies and clustering the standard errors for each individual, when possible.<sup>8</sup>

Compared to simple binary logit estimation, the coefficients from multinomial logit estimation are more difficult to interpret (Wooldridge 2010). With the simple binary logit, the sign (positive or negative) of the coefficients tells us the relative direction of the impact of each factor on an outcome and the direction of this impact is the same regardless of the chosen base outcome. However, with more than one outcome, the sign of the coefficients is sensitive to which option is used as the base outcome. Now, the sign of the coefficients only explains how the various individual and contextual factors affect the probability relative to that base outcome—not how those factors affect the overall probability of choosing the utility maximizing outcome. In fact, if a different base outcome were chosen, the sign of the coefficient or the statistical significance of a given factor could change. This is especially important since the choice sets may vary for each woman, thus it is difficult to define what is the “base” outcome.

<sup>8</sup> Clustering the standard errors at the individual level produces non-symmetric or highly singular variance matrices when the number of observations within a cluster becomes too small or there are too few observations within some cells. Although this is not a problem for most of our specifications, it presents an issue with the unmarried sample and some of the extension samples. In general the cause is too few observations in some of the industry cells. Table notes include information on the standard errors.

To address this issue, we calculate marginal effects for each individual, regional, and economic factor on the probability of choosing each employment outcome. These marginal effects measure the impact of each factor on the overall probability of observing that employment choice (regardless of the base outcome). Additionally, by calculating marginal effects we can capture the full value of an interacted variable—since the effect of that factor is now captured in multiple variables in our model. For example, the coefficient estimates indicate that children under 5 reduce the probability of choosing both self and salaried employment relative to not working. However, the marginal effects estimates reveal that children under 5 actually increase the probability of self-employment, but not as much as they increase the probability of not working (hence the negative coefficient estimate). Marginal effects also have the advantage of being directly interpretable as a probability change, whereas coefficient estimates only provide insight into the direction of change relative to the base outcome.

To calculate marginal effects for each observation in our dataset, we calculate the change in the probability for each outcome given a change in each of the individual, regional, and economic factors by taking the derivative of the probability formula with respect to each factor. So, for each of the three possible employment choices,  $j = [1, 2, 3]$ , where 1, 2, and 3 are not working, self-employment, and wage and salary employment, we calculate the following.

$$\partial [P(y = j|x)] / \partial x$$

This provides us with the change in the probability of choosing each employment outcome for each of the individual, regional, and economic factors ( $x$ ) for each observation in our dataset.<sup>9</sup> Marginal effects are a combination of all the estimated coefficients as well as the values of the individual, regional, and economic factors. We then take the average of the marginal effects for each of the individual, regional, and economic factors, providing an estimate of how these factors, on average, affect women’s employment decisions. Those average marginal effects are then reported in our results tables.

<sup>9</sup> Marginal effects for indicator variables are calculated using discrete differences rather than derivatives.

## 4 Data

We focus on the labor market decisions of women in US urban areas (or metropolitan areas) from 1994 to 2008 using the 2013 definitions of metropolitan areas produced by the US census. Figures 3 and 4 depict the regional variation in female self-employment shares across US metropolitan areas in 1990 and 2000, respectively.

Our main data on women and their workforce choices come from the NSLY79. The NLSY79 panel dataset is a survey over time (every 2 years during this time period) of 12,686 men and women aged 14–22 in 1979. It provides information on a variety of individual economic, family, and general demographic characteristics. By gaining access to the confidential geocoded data, we are able to place each woman within a particular county within a particular metro area—thereby allowing us to measure the effect of regional economic factors not collected in the NLSY. We limit the sample to persons living in counties within metropolitan areas for which we also have gender-role attitude metrics (discussed in more detail below), leaving just under 6000 respondents with the same male and female distribution as the full panel.

From the NLSY data, we gain information from every other year from 1994 to 2008 about each woman's employment status—self-employed, salary employment, or not employed. We also capture information on age, education, experience, marital status, number of children and their ages, whether or not the woman is covered by a health or hospital plan from a spouse or partner, whether or not she has health-related limitations (not associated with pregnancy), citizenship, total household net worth, and industry and occupation. For married individuals, we also know whether her spouse works. In two survey years, certain data are not collected about household net worth; thus, we impute the value using nearby (in time) observations for the same survey respondent. Following Budig (2006) and others, we also control for ability using the Armed Forces Qualification Test (AFQT) score percentile in our models as ability has been shown to be a key factor in employment outcomes and omitting a measure of ability could lead to biased results.

The NLSY79 collects a rich set of information on respondents including cognitive and non-cognitive personality traits associated with entrepreneurship that

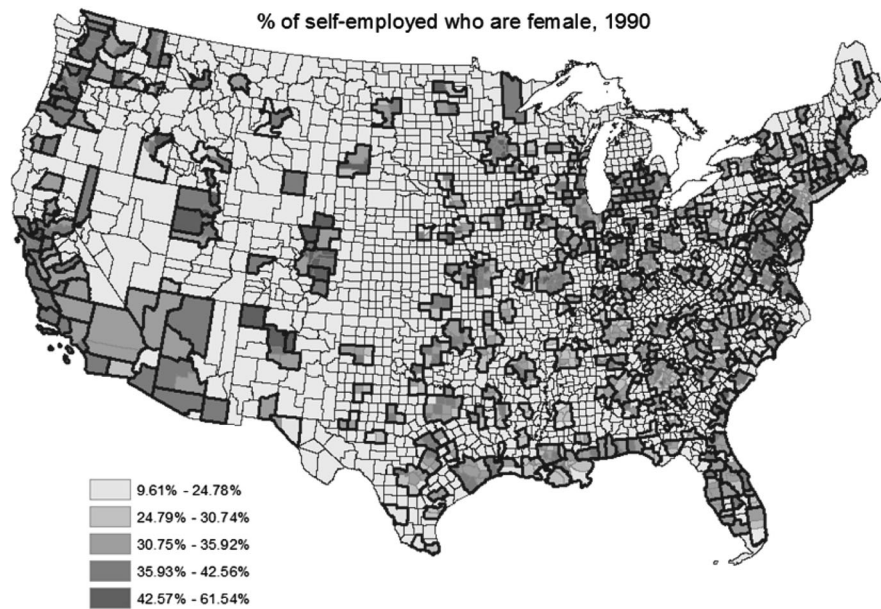
we employ in various specifications. Specifically, we follow Levine and Rubinstein (2013) and control for pre-labor market traits. We create an Illicit Activity Index that measures the degree to which respondents engaged in aggressive, illicit, or risky activities as a teenager, which can provide a measure of risk aversion (shown to vary across gender lines and marital status). We use respondents' Rotter locus of control score as a measure of the extent to which individuals believe they have control over their own lives as opposed to the extent to which external factors control what happens to them. We measure self-esteem with respondents' first reported Rosenberg self-esteem score.

We use an approach common in the literature (Fairlie and Meyer 1996; Lombard 2001) to predict the earnings differential between self-employment and salary employment. Using the NLSY79 sample, we estimate the expected wage for self-employment and salaried employment separately based on an individual's characteristics.<sup>10</sup> We then calculate the difference in expected wages between salaried employment and self-employment and include that in our workforce decision model.

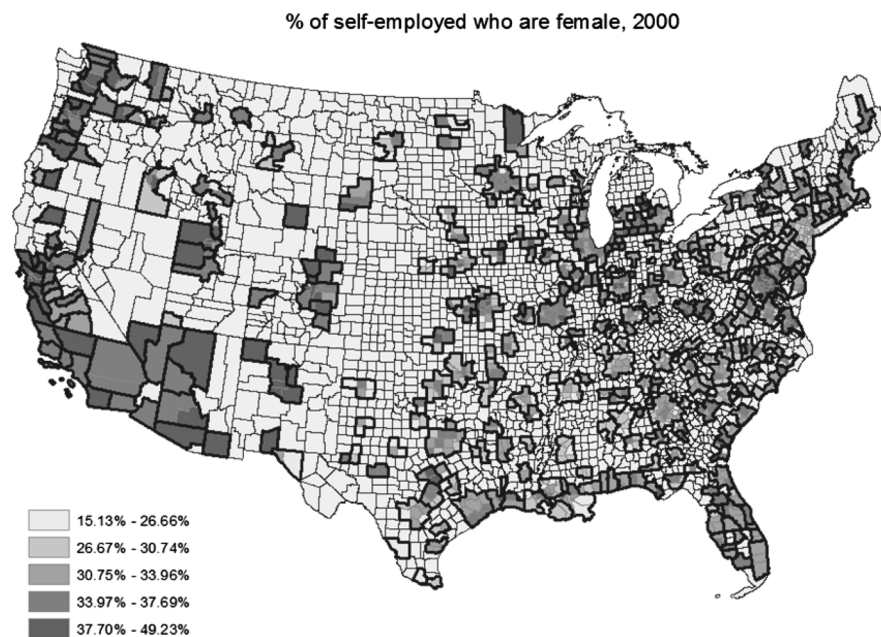
Building on literature that suggests that gender-role attitudes and culture may affect women's self-employment choice (Borck 2014; Crompton et al. 2005; Saxenian 1994; Florida and Gates 2001), we also control for social attitudes about gender roles. We hypothesize that traditional gender-role attitudes will discourage women, especially married women with children, from participating in the workforce either through adherence to the cultural norms or through the impact of gender discrimination. Married women still desiring to participate in employment may turn to self-employment over non-employment as a more culturally acceptable form of employment. At the same time, discrimination may make it more difficult for women to be successfully self-employed and may push them into salaried employment.

To control for social attitudes about gender roles, we rely on confidential, geocoded data from the

<sup>10</sup> Expected wages are predicted using estimates from Heckman selection-corrected, expanded wage equations that include age, experience, experience squared, education, sex, race, marital status, ability, MSA of residence, industry, and time dummies. The selection equation includes age, experience, experience squared, education, marital status, number of children, children under five, citizenship, and health limitations.



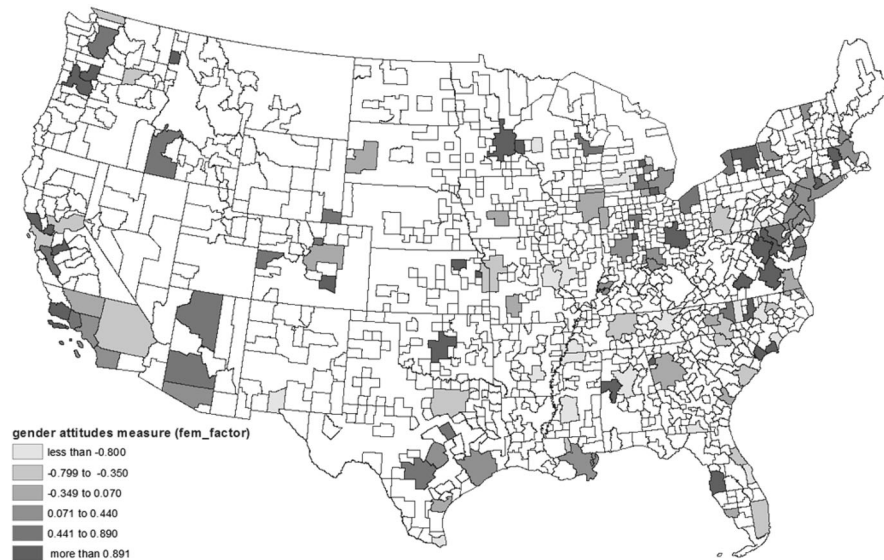
**Fig. 3** 1990 MSA female self-employment shares. *Source* US Census data



**Fig. 4** 2000 MSA female self-employment shares. *Source* US Census data

General Social Survey (GSS). The GSS is a national sociological survey of randomly selected adults conducted on a regular basis which includes questions

about cultural and social attitudes. The geocoded results allow us to observe responses at the county level. We then combine the county-level data for each



**Fig. 5** Gender attitudes (fem\_factor). *Source* General Social Survey. Higher values indicate more progressive gender-role attitudes

metropolitan statistical area (MSA) to estimate average values of responses to key gender questions by MSA. We focus on four questions which are consistently asked during our study period to capture the social attitudes toward women. These questions ask respondents about how suited women are for politics, whether children will be hurt by working mothers, about the relationship between children and working mothers, and about whether families are better off if women stay home and men work. To get a composite measure of gender-related attitudes, we then use factor analysis, rotate the data, and predict the first factor. We focus on the rotated first factor, “fem\_factor,” as our measure of composite gender attitudes in each MSA where a higher value indicates more progressive or less traditional gender-role attitudes. (Additional information is available in Table A in the Appendix). This factor allows us to capture regional gender attitude-related effects on women’s employment decision.<sup>11</sup> Figure 5 depicts the variation in gender attitudes across US metropolitan areas.

<sup>11</sup> In order to limit the influences of outliers in an MSA biasing our gender attitude measure, we aggregate the data from our sample period to generate a single “fem\_factor” observation for each MSA. Even if there are changes in attitudes over time within an MSA, the relative gender attitudes between cities are likely to remain relatively constant. In other words, while a city like Dallas, Texas, may become more progressive about gender roles during our time period, it is likely to remain more

We also conducted further analyses to test the robustness of our gender-role attitude metric; Appendix 2, Tables D–F in ESM, contains the results. In order to address concerns that women self-sort into MSAs with gender-role attitudes that mirror their own, we use responses to similar NLSY79 questions about respondents’ own gender-role attitudes (Appendix Table D). To tease out the differential effect of social attitudes from political attitudes, we also include a composite measure of MSA political attitudes created from the GSS data (Appendix Table E). We also interact our gender-role attitude measure with an indicator for young children to test whether our results are driven only by mothers (Appendix Table F). Our gender-role attitude results remain unchanged in all cases. Thus, we believe our measure isolates the effect of local gender-role attitudes and is not a proxy for own gender-role attitudes or MSA political attitudes.

Self-employment rates may also vary in a region due to local economic conditions in addition to cultural attitudes. MSAs with high levels of entrepreneurship may attract more female entrepreneurs. Thus, we include data from the Bureau of Economic Analysis on self-employment rates in the

Footnote 11 continued

conservative than a city like Los Angeles. We also estimated models with the time-varying fem\_factor variable. The results were similar and omitted for brevity.

MSA to capture areas that simply have higher rates of self-employment. Similarly, the MSA level of female labor force participation may influence women's employment decision. We control for the percentage of total MSA employed persons that are female. We lag the MSA measures of self-employment and female labor force participation in order to minimize endogeneity concerns. The prevalence of certain industries or a certain industrial mix that tends to be more innovative and encourage self-employment may also increase self-employment rates in an area. Certain female-dominated industries may be more likely to encourage women's self-employment participation. Thus, we incorporate measures of the annual share of employment in two-digit Standard Industry Classification (SIC) codes in each MSA using data from the Bureau of Economic Analysis. Together, these measures help to control for the factors that might make women more or less likely to consider starting a business. We also estimate a specification including regional fixed effects to control for any other regionally varying fixed effects.<sup>12</sup>

<sup>12</sup> We do not report results for specifications using individual or MSA fixed effects because there are several significant drawbacks to this approach within our context. Notably, our variables of interest include both time-varying and time-invariant characteristics. Ability, pre-labor market characteristics, health limitations, and a number of other important time-invariant factors that our results suggest differentially influence married and unmarried women do not change over time. Effects associated with the smoothed gender-role attitude metric could not be separately identified with MSA fixed effects and would be identified only from women who change MSAs with an individual fixed effect. Employing the time-varying *fem\_factor* does not substantially improve our statistical power as the vast majority of variation in gender-role attitudes is between MSAs, rather than within MSAs over time. Fixed effects estimation within a multinomial logit framework also creates the well-known incidental parameters problem when implemented by including individual or MSA indicator variables. Instead, multinomial fixed effects estimation requires the Chamberlain (1980) solution. Recently, Pffor (2014) operationalized the Chamberlain solution for multinomial logit with the Stata command *femlogit*. Unfortunately, the command has not been extended to allow for the estimation of marginal effects. Thus, another drawback of individual fixed effects is that we can only obtain coefficient estimates relevant to the base outcome. With these issues in mind, we estimated fixed effects versions of our primary models with the time-varying *fem\_factor* using *femlogit*. While we were unable to directly compare the marginal effects estimates due to the computational limitations described, comparing the coefficient estimates revealed no significant differences in our primary findings.

Finally, as Black et al. (2014) and Rosenthal and Strange (2012) found that employment decisions are affected by the potential burden from commuting, we include the average county commuting time for the county of residence of each NLSY79 respondent using data from the 2000 Census. This measures the mean travel time to work in minutes at the county level for all workers 16 years and over who did not work at home.

Our final dataset merges the GSS data and other local economic data with the NLSY79 data and allows us to measure the impact of local economic conditions and contextual effects on an individual's workforce decision. Appendix Table B provides summary statistics for key variables by employment choice across our panels of married and unmarried women. Appendix Table C in ESM provides summary statistics comparing men and women.

The summary statistics provide further evidence that pooling all women together may mask the heterogeneity in women and the true impact of some variables such as education and gender-role attitudes. Self-employed, married women are more educated on average than their wage and salary-employed counterparts, while the opposite is true for unmarried women. Married women have much higher ability than unmarried women, though the ability gap narrows for the self-employed samples where ability is highest on average (and even higher than their male peers). Table B reveals that self-employed women tend to live in MSAs with more progressive gender-role attitudes, and this is especially true for married, self-employed women. This further motivates our analysis.

## 5 Results

The standard empirical approach to investigating the factors affecting women's self-employment misses two important aspects of the decision. First, estimates using pooled samples of all women average potentially different effects for married and unmarried women. Studies that restrict samples to married women address this issue, but ignore an important and growing segment of unmarried working women. Second, our descriptive statistics suggest a more nuanced self-employment decision than assumed in standard approaches which consider it to be a choice between two outcomes. For some women, the decision may be

between salary work and self-employment. However, self-employment may also provide the opportunity to participate in economic activity when other factors preclude them from formal salary employment, in other words a decision between not working and self-employment. To demonstrate this, we consider three sets of binary choices in Appendix 3, Tables G in ESM through I, pooling all women together. As compared to our approach of modeling unmarried and married women separately and their employment decisions as a choice between three options: not working, self-employment, and salaried employment; it is clear that the full employment decision is not captured by these models. Thus, we focus on the results from the multinomial logistic regressions with the expanded choice set. In each case, the models include other controls (noted in the tables) whose results are consistent with the previous literature.

Table 1 presents the estimated average marginal effects from multinomial logistic regressions of individual and locational characteristics on the choice between not working, self-employment, and salaried employment.<sup>13</sup> As described in Sect. 3, while multinomial logistic regression provides estimates of the coefficients related to a base category of not working, these results are difficult to interpret. Thus, we report the average marginal effects because they represent the change in the overall probability of choosing each employment outcome associated with a change in each individual and locational factor. This allows us to compare how these factors differ in their influence on the employment outcomes of different-sized samples.

In Table 1, all women are pooled together, ignoring any heterogeneity between married and unmarried women. Panel A show how the various characteristics affect the probability that women choose not to work. Panel B reports the marginal effects on the probability that women choose self-employment. Panel C contains the marginal effects of individual and locational characteristics on the probability of working as a wage and salary employee. Each panel includes results from three models, providing evidence that the results are robust to different model specifications.

<sup>13</sup> We use the phrases “not working” and “not employed” synonymously in what follows. However, technically, we are referring to women who are “not employed” by the definitions used in Table 1—those women who did not work at least 10 h per week for at least ten weeks in the year.

The pooled results suggest that gender-role attitudes (*fem\_factor*) are important to the self-employment and the salaried employment decisions, but have opposite effects. When pooling married and unmarried women together, it appears that, on average, women are less likely to choose salaried employment but more likely to choose self-employment in MSAs with more progressive gender-role attitudes. These results suggest that the “pull” factors may be more important to the decision to be self-employed. For example, in more progressive areas, women may have an easier time getting financing and attracting customers. Interestingly, experience encourages general labor market participation, but decreases the probability of choosing self-employment. This may be due to there being more opportunities, all else equal, in the traditional labor market for those with experience. Other relationships are as expected. Having young children or health limitations decreases the probability that women engage in salaried employment and increases the probability women choose either self-employment or not to work. The effects are stronger for the not working decision. This makes sense as women with young children and women with health limitations face barriers to labor market participation. These results also suggest weaker barriers to entry into self-employment than salaried employment as self-employment may provide more flexibility for those with family constraints, consistent with a “push” motivation for self-employment or with Carr’s (1996) work that shows that family characteristics dominate women’s employment decisions. It also appears that these women are most likely choosing between non-employment and self-employment rather than between self-employment and salaried employment.

Tables 2 and 3 report analogous estimates (average marginal effects) to Table 1 for married and unmarried women, respectively. Examining the marginal effects on the employment decision for married and unmarried women separately reveals that pooling masks the heterogeneity in the factors influencing the workforce decision. Gender-role attitudes only significantly affect married women’s self-employment decisions, but not those of unmarried women. In Table 2, we see that, consistent with the pooled sample, married women are more likely to be self-employed and less likely to be employed in wage and salaried positions in places with more progressive social attitudes. It appears that married women are

**Table 1** Marginal effects of individual, family, and locational characteristics on the employment decisions of all women

	Panel A: not working			Panel B: self-employment			Panel C: salary employment		
	(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)
Highest grade comp.	-0.0020* (0.0011)	-0.0017 (0.0011)	-0.0017 (0.0012)	0.0005 (0.0016)	0.0010 (0.0016)	0.0010 (0.0017)	0.0015 (0.0019)	0.0007 (0.0019)	0.0012 (0.0020)
Age	0.0009 (0.0010)	0.0007 (0.0010)	0.0010 (0.0010)	0.0014 (0.0015)	0.0017 (0.0014)	0.0015 (0.0015)	-0.0024 (0.0017)	-0.0024 (0.0016)	-0.0025 (0.0018)
Experience	-0.0099*** (0.0004)	-0.0098*** (0.0004)	-0.0098*** (0.0004)	-0.0027*** (0.0006)	-0.0026*** (0.0006)	-0.0027*** (0.0007)	0.0126*** (0.0008)	0.0124*** (0.0008)	0.0124*** (0.0008)
Married	-0.0098* (0.0055)	-0.0095* (0.0054)	-0.0123** (0.0056)	0.0080 (0.0074)	0.0073 (0.0073)	0.0070 (0.0076)	0.0018 (0.0084)	0.0022 (0.0084)	0.0053 (0.0086)
Children under 5	0.0553*** (0.0065)	0.0555*** (0.0065)	0.0554*** (0.0066)	0.0226*** (0.0078)	0.0216*** (0.0075)	0.0216*** (0.0076)	-0.0779*** (0.0093)	-0.0771*** (0.0091)	-0.0769*** (0.0093)
fem_factor	-0.0008 (0.0040)	-0.0007 (0.0040)	-0.0023 (0.0035)	0.0114** (0.0053)	0.0099* (0.0057)	0.0126** (0.0051)	-0.0106* (0.0063)	-0.0093 (0.0065)	-0.0103* (0.0058)
AFQT percentile	-0.0000 (0.0001)	-0.0000 (0.0001)	0.0000 (0.0001)	0.0002 (0.0002)	0.0003* (0.0002)	0.0003* (0.0002)	-0.0002 (0.0002)	-0.0003 (0.0002)	-0.0003* (0.0002)
Expected wage dif.	0.0057 (0.0103)	-0.0004 (0.0098)	-0.0034 (0.0095)	-0.0268 (0.0171)	-0.0361** (0.0169)	-0.0374** (0.0166)	0.0211 (0.0187)	0.0365** (0.0181)	0.0408** (0.0179)
Health limitations	0.1334*** (0.0108)	0.1335*** (0.0110)	0.1321*** (0.0112)	0.0233** (0.0091)	0.0244*** (0.0090)	0.0231** (0.0093)	-0.1568*** (0.0130)	-0.1579*** (0.0131)	-0.1552*** (0.0133)
MSA female emp.	-0.0013 (0.0020)	-0.0041* (0.0022)	-0.0017 (0.0018)	-0.0043 (0.0028)	-0.0029 (0.0030)	-0.0031 (0.0025)	0.0057* (0.0032)	0.0070** (0.0035)	0.0048 (0.0029)
MSA self emp.	0.2996** (0.1185)	0.1476 (0.1330)	0.0659 (0.1016)	0.2023 (0.1629)	0.1161 (0.1767)	0.2482* (0.1379)	-0.5019*** (0.1888)	-0.2636 (0.2088)	-0.3141* (0.1622)
Illicit activity index			0.0371* (0.0195)			-0.0424 (0.0335)			0.0052 (0.0362)
Rosenberg score			-0.0000 (0.0006)			0.0001 (0.0008)			-0.0000 (0.0010)
MSA industry shares	Y	N	N	Y	N	N	Y	N	N
Regional FEs	N	Y	N	N	Y	N	N	Y	N
N	16,547	16,906	16,303	16,547	16,906	16,303	16,547	16,906	16,303

Table presents results from three separate multinomial logistic regressions. Panels A, B, and C contain the estimated marginal effects on the probability of choosing not to work, self-employment, and salaried employment, respectively. Marginal effects for experience calculated from experience and experience squared. Additional controls include race, net worth, citizenship, insurance from spouse or partner, average commute time in county of residence, industry, and time fixed effects. Specification (3) also includes respondents Roter Locus of Control score. Standard errors clustered at the individual level are in parentheses

\* significant at the 0.10 level; \*\* significant at the 0.05 level; \*\*\* significant at the 0.01 level



**Table 2** Marginal effects of individual, family, and locational characteristics on the employment decisions of married women

	Panel A: not working			Panel B: self-employment			Panel C: salary employment		
	(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)
Highest grade comp.	-0.0038** (0.0015)	-0.0035** (0.0014)	-0.0033** (0.0015)	0.0022 (0.0022)	0.0025 (0.0022)	0.0019 (0.0023)	0.0016 (0.0026)	0.0010 (0.0025)	0.0014 (0.0026)
Age	0.0032** (0.0013)	0.0032** (0.0013)	0.0032** (0.0014)	0.0014 (0.0021)	0.0017 (0.0021)	0.0015 (0.0022)	-0.0046* (0.0024)	-0.0048** (0.0024)	-0.0047* (0.0025)
Experience	-0.0099*** (0.0006)	-0.0098*** (0.0006)	-0.0098*** (0.0006)	-0.0040*** (0.0009)	-0.0039*** (0.0009)	-0.0042*** (0.0009)	0.0139*** (0.0011)	0.0137*** (0.0011)	0.0139*** (0.0011)
Children under 5	0.0641*** (0.0086)	0.0657*** (0.0087)	0.0637*** (0.0087)	0.0327*** (0.0108)	0.0320*** (0.0103)	0.0322*** (0.0107)	-0.0969*** (0.0125)	-0.0977*** (0.0123)	-0.0959*** (0.0125)
fem_factor	-0.0026 (0.0051)	-0.0002 (0.0053)	-0.0010 (0.0047)	0.0198** (0.0078)	0.0195** (0.0084)	0.0221*** (0.0074)	-0.0172* (0.0089)	-0.0193** (0.0093)	-0.0211*** (0.0082)
AFQT percentile	0.0002 (0.0001)	0.0002 (0.0001)	0.0002 (0.0002)	0.0001 (0.0002)	0.0001 (0.0002)	0.0001 (0.0002)	-0.0002 (0.0003)	-0.0003 (0.0002)	-0.0004 (0.0003)
Expected wage dif.	-0.0015 (0.0130)	-0.0071 (0.0121)	-0.0079 (0.0114)	-0.0326 (0.0217)	-0.0325 (0.0208)	-0.0376* (0.0202)	0.0341 (0.0237)	0.0395* (0.0222)	0.0455** (0.0218)
Health limitations	0.1045*** (0.0156)	0.1017*** (0.0158)	0.0993*** (0.0158)	0.0140 (0.0139)	0.0160 (0.0137)	0.0127 (0.0140)	-0.1185*** (0.0191)	-0.1176*** (0.0191)	-0.1120*** (0.0193)
MSA female emp.	0.0016 (0.0027)	0.0008 (0.0028)	0.0007 (0.0023)	-0.0066 (0.0040)	-0.0042 (0.0046)	-0.0059 (0.0039)	0.0049 (0.0046)	0.0033 (0.0050)	0.0052 (0.0043)
MSA self emp.	0.3377** (0.1605)	0.1660 (0.1811)	0.1531 (0.1349)	0.0282 (0.2295)	-0.0865 (0.2602)	0.0621 (0.1995)	-0.3659 (0.2641)	-0.0794 (0.2998)	-0.2152 (0.2277)
Illicit activity index			0.0197 (0.0293)			-0.0467 (0.0533)			0.0270 (0.0564)
Rosenberg score			-0.0001 (0.0008)			-0.0010 (0.0012)			0.0012 (0.0014)
MSA industry shares	Y	N	N	Y	N	N	Y	N	N
Regional FEs	N	Y	N	N	Y	N	N	Y	N
N	8858	9063	8767	8858	9063	8767	8858	9063	8767

Table presents results from three separate multinomial logistic regressions of the choice between not working, self-employment, and salaried employment using the sample of married women. Panels A, B, and C contain the estimated marginal effects on the probability of choosing not to work, self-employment, and salaried employment, respectively. Marginal effects for experience calculated from experience and experience squared. Additional controls include race, net worth, citizenship, insurance from spouse or partner, a dummy variable for working spouse, average commute time in county of residence, industry, and time fixed effects. Specification (3) also includes respondents Rotter Locus of Control score. Standard errors clustered at the individual level are in parentheses

\* significant at the 0.10 level; \*\* significant at the 0.05 level; \*\*\* significant at the 0.01 level

**Table 3** Marginal effects of individual, family, and locational characteristics on the employment decisions of unmarried women

	Panel A: not working			Panel B: self-employment			Panel C: salary employment		
	(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)
Highest grade comp.	-0.0002 (0.0015)	0.0000 (0.0015)	-0.0004 (0.0015)	-0.0019* (0.0011)	-0.0012 (0.0011)	-0.0013 (0.0011709)	0.0021 (0.0018)	0.0012 (0.0018)	0.0017 (0.0018)
Age	-0.0013 (0.0012)	-0.0018 (0.0012)	-0.0011 (0.0013)	0.0020** (0.0010)	0.0021** (0.0010)	0.0019* (0.0010355)	-0.0007 (0.0015)	-0.0003 (0.0015)	-0.0009 (0.0016)
Experience	-0.0097*** (0.0005)	-0.0095*** (0.0005)	-0.0094*** (0.0005)	-0.0017*** (0.0005)	-0.0016*** (0.0005)	-0.0016*** (0.0004913)	0.0115*** (0.0007)	0.0111*** (0.0007)	0.0110*** (0.0007)
Children under 5	0.0361*** (0.0093)	0.0351*** (0.0092)	0.0356*** (0.0093)	0.0027 (0.0078)	0.0003 (0.0076)	-0.0009 (0.0075532)	-0.0389*** (0.0114)	-0.0354*** (0.0111)	-0.0347*** (0.0113)
fem_factor	0.0011 (0.0047)	-0.0029 (0.0047)	-0.0038 (0.0042)	0.0032 (0.0039)	0.0004 (0.0039)	0.0034 (0.0036329)	-0.0043 (0.0058)	0.0025 (0.0058)	0.0004 (0.0053)
AFQT percentile	-0.0004** (0.0002)	-0.0004** (0.0002)	-0.0003** (0.0002)	0.0005*** (0.0001)	0.0005*** (0.0001)	0.0005*** (0.0001188)	-0.0001 (0.0002)	-0.0001 (0.0002)	-0.0001 (0.0002)
Expected wage dif.	0.0226 (0.0139)	0.0190 (0.0130)	0.0105 (0.0127)	-0.0200* (0.0112)	-0.0401*** (0.0111)	-0.0417*** (0.0113597)	-0.0026 (0.0170)	0.0211 (0.0163)	0.0313* (0.0162)
Health limitations	0.1530*** (0.0123)	0.1571*** (0.0124)	0.1585*** (0.0128)	0.0334*** (0.0094)	0.0321*** (0.0093)	0.0327*** (0.0097293)	-0.1865*** (0.0143)	-0.1891*** (0.0144)	-0.1912*** (0.0149)
MSA female emp.	-0.0038 (0.0024)	-0.0095*** (0.0028)	-0.0048** (0.0023)	-0.0027 (0.0023)	-0.0012 (0.0023)	-0.0001 (0.0019527)	0.0066** (0.0032)	0.0107*** (0.0034)	0.0049* (0.0029)
MSA self emp.	0.3535** (0.1540)	0.1809 (0.1731)	0.0473 (0.1305)	0.323*** (0.1223)	0.3724*** (0.1331)	0.4378*** (0.1014927)	-0.6859*** (0.1880)	-0.5534*** (0.2097)	-0.4851*** (0.1587)
Illicit activity index			0.0593*** (0.0227)			-0.0357* (0.0212975)			-0.0236 (0.0295)
Rotter score			-0.0015 (0.0013)			0.0007 (0.0010266)			0.0008 (0.0015)
Rosenberg score			0.0005 (0.0007)			0.0013** (0.0006164)			-0.0018** (0.0009)
MSA industry shares	Y	N	N	Y	N	N	Y	N	N
Regional FEs	N	Y	N	N	Y	N	N	Y	N
N	7668	7822	7516	7668	7822	7516	7668	7822	7516

Table presents results from three separate multinomial logistic regressions of the choice between not working, self-employment, and salaried employment using the sample of unmarried women. Panels A, B, and C contain the estimated marginal effects on the probability of choosing not to work, self-employment, and salaried employment, respectively. Marginal effects for experience calculated from experience and experience squared. Additional controls include race, net worth, citizenship, insurance from partner or former spouse, average commute time in county of residence, industry, and time fixed effects. Standard errors are in parentheses  
 \* significant at the 0.10 level; \*\* significant at the 0.05 level; \*\*\* significant at the 0.01 level

more likely to be influenced by society's gender-role attitudes. Progressive attitudes toward women encourage self-employment especially over not working. The tables also reveal heterogeneity in the effects of other individual and locational characteristics.

The results also suggest that “push” factors increase the probability that married women will be self-employed as the strongest positive effect comes from having children under five. Although married women with young children are more likely not to work, our results suggest self-employment is an alternative to completely exiting the labor market. Previous research by Welington (2006) showed the impact of children on self-employment was strongest for educated women. Interestingly, more education makes married women less likely to work at all, and does not increase the probability of self-employment or salaried work.<sup>14</sup> This is likely due to more educated women being married to more educated and higher-earning men (assortative mating), decreasing the financial need to work. For married women, self-employment is not increased by having health limitations. Instead, these women are simply more likely not to work, suggesting that marriage can allow these women not to work. Again, these results are consistent with previous research showing that family characteristics matter in the employment decision of women. The lack of effect for differences in expected wages further supports this notion.

Comparing Table 3 with Tables 1 and 2 reveals that analysis of the pooled and married samples overlooks a number of important differences in the factors affecting unmarried women's employment choices. As shown in Table 3, expectations for greater earnings in self-employment than salary employment increase the probability unmarried women choose self-employment (unlike married women).<sup>15</sup> And, for unmarried women, ability

<sup>14</sup> Our findings provide additional clarification to the results from Taniguchi (2002) and Renzulli et al. (2000) who find that education does not affect women's self-employment rates after controlling for other factors. These authors compare self-employment to wage and salary employment, and find the education effect for married women appears relevant on the labor force participation margin only.

<sup>15</sup> Because the difference is the predicted salaried employment wage minus the predicted self-employment wage, we would expect that if that is positive, it would make salaried employment more attractive or self-employment less attractive relative to salaried employment.

and confidence seem to play a role in their employment decision. Those with higher AFQT scores (higher “ability”) and higher Rosenberg scores (self-confidence) are more likely to be self-employed. Thus, ability and personality traits play an important role for unmarried women pulling them into self-employment that is not apparent in the pooled and married samples. This is in stark contrast to previous research such as Carr's (1996) results that indicate family characteristics and not human capital are the strongest predictors of self-employment for women, suggesting that Carr's results were most likely driven by married women. It further highlights the importance of examining the heterogeneity in preferences among women along the marriage dimension.

For the unmarried women sample, social attitudes about gender appear to have no effect on the employment decision. However, unmarried women are more likely to be self-employed in cities with higher self-employment rates in general, providing some support for the “pull” hypothesis that unmarried women enter self-employment where there are more opportunities and where there is a stronger entrepreneurial culture. Unmarried women are more likely to choose salaried employment in cities with more working women—and living in those cities does not increase the probability of self-employment. If women have more opportunities in the salaried labor market, then they may be less likely to take the risks associated with starting their own business, especially if they do not have a second income (from a spouse) to fall back on. Without looking at unmarried women separately, these contextual factors would be lost as it appears that they do not matter for married women.

Unlike married women, having young children does not increase unmarried women's probability of being self-employed, but it does make it more likely they will stay out of the labor force altogether. Self-employment may simply be too risky for unmarried women with children. However, a number of characteristics do act as “push” factors for self-employment for unmarried women. For example, older unmarried women are more likely to be self-employed, which is consistent with findings by Curl et al. (2014) and Zissimopoulos and Karoly (2007) that unmarried older women are less likely to have pensions and may be pushed into self-employment.

## 5.1 Extensions

For comparison, in Table 4, we present the results for the men from the same NLSY79 sample. This allows

**Table 4** Marginal effects for men

	Panel A: not working			Panel B: self-employment			Panel C: salary employment		
	(All men)	(Married)	(Unmarried)	(All men)	(Married)	(Unmarried)	(All men)	(Married)	(Unmarried)
Highest grade comp.	-0.0038*** (0.0010)	-0.0018** (0.0008)	-0.0060*** (0.0017)	-0.0055** (0.0025)	-0.0082*** (0.0032)	-0.0020 (0.0019)	0.0093*** (0.0025)	0.0101*** (0.0032)	0.0079*** (0.0024)
Age	0.0008 (0.0008)	0.0005 (0.0007)	0.0008 (0.0013)	0.0004 (0.0021)	-0.0014 (0.0029)	0.0026 (0.0016)	-0.0012 (0.0022)	0.0009 (0.0030)	-0.0034* (0.0019)
Experience	-0.0070*** (0.0004)	-0.0039*** (0.0004)	-0.0106*** (0.0006)	0.0004 (0.0016)	0.0029 (0.0026)	-0.0015 (0.0011)	0.0066*** (0.0016)	0.0010 (0.0026)	0.0120*** (0.0012)
Married	-0.0337*** (0.0045)			-0.0277*** (0.0096)			0.0614*** (0.0102)		
Children under 5	0.0074 (0.0055)	0.0060 (0.0040)	0.0015 (0.0126)	0.0111 (0.0095)	0.0175 (0.0112)	-0.0231 (0.0143)	-0.0184* (0.0103)	-0.0235** (0.0116)	0.0216 (0.0180)
fem_factor	0.0056* (0.0033)	0.0045 (0.0030)	0.0052 (0.0053)	-0.0024 (0.0074)	0.0079 (0.0099)	-0.0158** (0.0063)	-0.0032 (0.0077)	-0.0124 (0.0099)	0.0106 (0.0077)
AFQT percentile	-0.0001 (0.0001)	-0.0001 (0.0001)	-0.0001 (0.0002)	0.0001 (0.0002)	0.0001 (0.0003)	0.0002 (0.0002)	-0.0000 (0.0002)	-0.0000 (0.0003)	-0.0001 (0.0002)
Expected wage dif.	-0.0007 (0.0077)	0.0006 (0.0071)	-0.0026 (0.0137)	-0.0300 (0.0192)	-0.0439* (0.0255)	-0.0182 (0.0172)	0.0307 (0.0203)	0.0433 (0.0264)	0.0208 (0.0208)
Health limitations	0.1295*** (0.0106)	0.1268*** (0.0158)	0.1503*** (0.0143)	0.0328** (0.0142)	0.0095 (0.0184)	0.0460*** (0.0146)	-0.1622*** (0.0161)	-0.1363*** (0.0224)	-0.1963*** (0.0187)
MSA female emp.	-0.0002 (0.0017)	0.0002 (0.0015)	-0.0008 (0.0028)	0.0003 (0.0039)	-0.0000 (0.0054)	-0.0027 (0.0036)	-0.0001 (0.0041)	-0.0002 (0.0055)	0.0035 (0.0043)
MSA self emp.	0.0471 (0.0890)	-0.0039 (0.0938)	0.0706 (0.1643)	0.3571 (0.2292)	0.6603** (0.3170)	-0.1374 (0.2086)	-0.4042* (0.2392)	-0.6563** (0.3217)	0.0668 (0.2493)
N	15,557	8328	7209	15,557	8328	7209	15,557	8328	7209

Table presents results from three separate multinomial logistic regressions using the sample of all men, married men, and unmarried men. Panels A, B, and C contain the estimated marginal effects on the probability of choosing not to work, self-employment, and salaried employment, respectively. Marginal effects for experience calculated from experience and experience squared. Additional controls include race, net worth, citizenship, insurance from spouse or partner, average commute time in county of residence, MSA industry shares, industry, and time fixed effects. The married regression also includes an additional control for whether or not the spouse works. Standard errors clustered are in parentheses

\* significant at the 0.10 level; \*\* significant at the 0.05 level; \*\*\* significant at the 0.01 level

**Table 5** Marginal effects of individual, family, and locational characteristics on the employment decisions of married mothers

	Panel A: not working			Panel B: self-employment			Panel C: salary employment		
	(1)	(2)	(3)	(1)	(2)	(3)	(1)	(2)	(3)
Highest grade comp.	-0.0029* (0.0017)	-0.0025 (0.0016)	-0.0025 (0.0017)	0.0023 (0.0025)	0.0026 (0.0025)	0.0017 (0.0025)	0.0006 (0.0029)	-9.91e-05 (0.0028)	0.0008 (0.0029)
Age	0.0024 (0.0015)	0.0025* (0.0015)	0.0026* (0.0015)	-5.46e-05 (0.0023)	0.0003 (0.0022)	-0.0002 (0.0024)	-0.0024 (0.0026)	-0.0028 (0.0026)	-0.0024 (0.0028)
Experience	-0.0105*** (0.0007)	-0.0105*** (0.0007)	-0.0105*** (0.0007)	-0.0040*** (0.0010)	-0.0038*** (0.0010)	-0.0040*** (0.0010)	0.0144*** (0.0012)	0.0143*** (0.0012)	0.0145*** (0.0012)
Children under 5	0.0597*** (0.0090)	0.0629*** (0.0091)	0.0610*** (0.0092)	0.0357*** (0.0114)	0.0353*** (0.0109)	0.0357*** (0.0111)	-0.0954*** (0.0131)	-0.0981*** (0.0129)	-0.0968*** (0.0131)
fem_factor	-0.0065 (0.0056)	-0.0041 (0.0058)	-0.0035 (0.0052)	0.0220*** (0.0082)	0.0199** (0.0088)	0.0248*** (0.0078)	-0.0155 (0.0095)	-0.0159 (0.0098)	-0.0213** (0.0088)
AFQT percentile	0.0002 (0.0002)	0.0002 (0.0002)	0.0003* (0.0002)	0.0002 (0.0002)	0.0002 (0.0002)	0.0003 (0.0002)	-0.0004 (0.0003)	-0.0004 (0.0003)	-0.0006** (0.0003)
Expected wage dif.	-0.0004 (0.0143)	-0.0079 (0.0129)	-0.0072 (0.0124)	-0.0459** (0.0218)	-0.0493** (0.0201)	-0.0492** (0.0201)	0.0463* (0.0250)	0.0571** (0.0226)	0.0564** (0.0226)
Health limitations	0.0981*** (0.0171)	0.0935*** (0.0171)	0.0905*** (0.0171)	0.0138 (0.0143)	0.0158 (0.0141)	0.0103 (0.0141)	-0.1120*** (0.0205)	-0.1090*** (0.0206)	-0.1010*** (0.0205)
MSA female emp.	0.0021 (0.0030)	0.0020 (0.0031)	0.0020 (0.0026)	-0.0085** (0.0043)	-0.0062 (0.0048)	-0.00778* (0.0041)	0.00645 (0.0050)	0.0042 (0.0054)	0.0058 (0.0046)
MSA industry shares	Y	N	N	Y	N	N	Y	N	N
Regional FEs	N	Y	N	N	Y	N	N	Y	N
Observations	7446	7623	7352	7446	7623	7352	7446	7623	7352

Table presents results from three separate multinomial logistic regressions of the choice between not working, self-employment, and salaried employment using the sample of married women with children. Panels A, B, and C contain the estimated marginal effects on the probability of choosing not to work, self-employment and salaried employment, respectively. Marginal effects for experience calculated from experience and experience squared. Additional controls include race, net worth, citizenship, insurance from spouse or partner, a dummy variable for working spouse, average commute time in county of residence, MSA self-employment, industry and time fixed effects. Specification (3) also includes respondents Illicit Activity Index, Rosenberg Self-Esteem score, and Rotter Locus of Control score. Standard errors clustered at the individual level are in parentheses

\* significant at the 0.10 level; \*\* significant at the 0.05 level; \*\*\* significant at the 0.01 level

us to compare the results for women to those for men—and also allows us to compare our results to those found previously for men. Not surprisingly, social attitudes toward women appear to have no effect on the employment decisions of men. At the same time, being married makes men more likely to work (overall), but in a choice between not working, salaried work, and self-employment, being married increases the probability of salaried employment and decreases the probability of self-employment. Like women, men with health limitations are more likely to be pushed into self-employment or out of the workforce altogether. But, consistent with Carr (1996), men's employment decisions are more about their abilities than family obligations, as having children under 5 had no effect on men's employment choices.

Our results indicate that the factors influencing unmarried women's choice of self-employment more closely resemble those that affect men's employment choices (though gender differences still persist), while family burdens and gender-role attitudes significantly influence married women. Thus, we further explore our findings about family burden and the social perception of women's responsibility to the family.

In Table 5, we restrict the sample to married women with children. Table 5 reveals that young children significantly influence labor market choices among the sample of married women with children. Young children increase the probability of not working and of self-employment, but decrease the probability of salary employment. These results are consistent with the family burden hypothesis as the burden of caring for young children is greater than it is for older children. Interestingly, expected wage differences begin to matter for married mothers once we separate married mothers with younger children from those with older children. The effect of societal attitudes about women's responsibilities to the family remains, with the increase in the probability of self-employment associated with more progressive gender-role attitudes nearly as large as the increase associated with young children. In results not shown, we interact the indicator for a working spouse with young children for this sample of women. A working spouse amplifies the effects of having young children, further decreasing the probability of choosing to work. Again, this is consistent with the family burden hypothesis as married mother's family burdens are even higher for mothers of young children whose spouse also works.

This also provides more evidence of the strong impact of family burdens and gender perceptions on married women's employment choices—impacts that are not seen in the unmarried sample.

## 6 Conclusion

As women's share of both overall employment and self-employment continues to rise, understanding the factors that affect women's employment decisions becomes increasingly important to our understanding of employment growth and our economy in general. As increases in entrepreneurship and self-employment have been linked to economic growth, it is especially important to understand what leads women to choose to be self-employed. Our paper brings together the literature on the effect of individual attributes on self-employment, the literature on gender differences in self-employment, and the literature on characteristics of local environments that foster self-employment.

To investigate these factors, these literatures primarily look at the differences between women and men or solely at married women, ignoring unmarried women or pooling them together with married women. There is evidence that the motivation for workforce participation and self-employment may vary on a number of important dimensions, including gender and marital status. Gender differences are often attributed to household burden, but our results suggest that pooling married and unmarried women together masks significant heterogeneity in their decisions and their true motivations for self-employment participation, especially regarding individual characteristics such as ability and household responsibilities. Our model specification that separately analyzes married and unmarried women allows us to answer questions left unanswered in the research regarding individual ability (for example the mixed results between Robinson and Sexton 1994; Carr 1996; Taniguchi 2002; Renzulli et al. 2000). It also allows us to refute or better characterize claims (such as in Carr 1996) that family burdens and not human capital characteristics are the strongest predictors of self-employment for women and show that these previous results were driven by married women. Our model also examines whether the cultural and business climates are important to women's workforce decisions. For example, more traditional social attitudes about women's roles

in the workforce may push women into self-employment (Crompton et al. 2005), especially married women. We also explore whether women in places with more entrepreneurs and more employed women are more likely to be self-employed as these may be places that support entrepreneurship and innovation, and there is evidence that entrepreneurship varies across space (Glaeser et al. 2010; Doms et al. 2010).

Using a multinomial logit model that considers married and unmarried women's employment choices between self-employment, salaried employment, and not working in US metropolitan areas from 1994 to 2008, we find there are some important differences between unmarried and married women in the push and pull factors associated with their self-employment decisions. Our results suggest that, overall, family commitments and social attitudes about gender roles appear to be the dominating factors for married women (and not for unmarried women). Children, particularly young children, push married women into self-employment. We also find that married women are more likely to be pulled into self-employment in cities with more progressive gender-role attitudes. However, our results suggest that unmarried women's workforce decisions are less affected by local gender-role attitudes and family burdens, but are instead influenced by the local business climate and individual attributes. Unmarried women are more likely to be pulled into self-employment in more entrepreneurial places. Unmarried women's self-employment choices are also more affected by their own characteristics such as their abilities and self-confidence, as well as their personal attitudes toward women.

Our separate analysis of the employment decisions for married and unmarried women also sheds some light on the declining growth rates in women's self-employment. For example, with decreasing fertility rates, we would expect fewer married women to be pushed into self-employment. As marriage rates decline, there are also more unmarried women in the workforce. While the numbers of unmarried women who are self-employed have been growing, unmarried women still have lower self-employment rates than married women. Thus, overall we would expect lower marriage rates to lower overall self-employment numbers.

Previous research has largely ignored unmarried women's motivations for entering self-employment. As women's education levels continue to increase (as

well as their confidence and average age of first marriage), we should expect to see the self-employment numbers of unmarried women to continue to grow as recent trends have already shown (Fig. 2). The recent self-employment trends of unmarried women seem promising as these women are likely being pulled into self-employment. If we are looking for the entrepreneurial aspect of self-employment, we would expect entrepreneurs to be more likely people who are pulled into self-employment and not pushed. This is arguably the most promising of our findings in terms of the future of self-employment in the USA

While our results have provided new insights into the self-employment decisions of women, our models are consistent with results from previous research that women, more precisely married women, are more likely to be pushed into self-employment by family burdens. As men take on more household burdens over time, we would expect fewer married women to be pushed into self-employment. Thus, the stagnant self-employment trends of married women attributable to decreasing family burdens are likely a positive outcome. Our research (along with previous research) still highlights the need for public policies that help families (and particularly women) accommodate household burdens such as affordable childcare and paid maternity and paternity leave and general family medical leave.

Understanding the factors that affect women's employment choices—especially to be self-employed—is also important for policymakers interested in local economic development as self-employment rates have been associated with higher levels of economic growth. However, in evaluating whether public policies that support self-employment are worth it, it will be important to understand self-employment outcomes (earnings, job creation, profits, etc.). As noted in Cowling and Taylor (2001), the ability of the self-employed to create additional jobs is a fundamental concern given the huge increases in public resources targeted at new venture creation. Additionally, gauging women's relative success from self-employment is tricky if not meaningless because the goal of self-employment may differ between men and women and among women (Boden 1999). If some women are choosing between not working and self-employment (rather than between salary employment and self-employment), then efforts to help them become self-employed will still create a job and

generate earnings for someone who would have otherwise been unemployed or out of the labor force altogether. This can contribute to wealth creation and economic growth. Further research is needed to more thoroughly analyze not just the choice of self-employment but also the self-employment outcomes of women.

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