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The Self-Employment of Men and Women: What are their Motivations?

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Abstract Do men and women carry different motivations for entering self-employment? Earlier researchers have suggested that, as primary care givers for children and families, women face a more stringent time constraint relative to men. Thus, where men see self-employment as a chance for greater financial opportunity, women see a chance to take work that allows more time at home. This paper investigates this hypothesis using unique data that allow analysis of individual self-employment as a function of traditional economic and demographic variables as well as variables that partially capture individuals' opinions and perceptions of pecuniary and nonpecuniary aspects of entrepreneurism. Results suggest that men who choose self-employment are influenced principally by pecuniary concerns, while women are influenced principally by family concerns and by the opinions of their family, friends, and peers.

Keywords Self-employment · Women · Entrepreneur

Introduction

When considering whether to become self-employed, individuals evaluate their ability levels and labor market preferences as well as the greater entrepreneurial environment around them. They wonder whether lending institutions will be helpful and whether family and friends will be supportive, financially or otherwise. Issues like these can influence how potential entrepreneurs perceive the returns to self-employment and consequently the empirical likelihood that they will attempt it. If men and women

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resolve these issues in different ways, they may seek out self-employment, or move away from it, for decidedly different reasons. But are men and women so different in this regard? Using data that allow consideration of factors typically unaddressable in the empirical study of entrepreneurial behavior, this paper investigates the extent to which men and women have different self-employment motivations.

Understanding motivations for self-employment matters because of the role entrepreneurial ventures play in creating jobs and careers, for the entrepreneurs themselves and for the people they employ. As Bednarzik (2000) documents, firms with 20 or fewer employees, which account for nearly 90 % of all U.S. business establishments, create about half of the net new jobs, most of these in the services industry. Furthermore, gross job flow rates tend to decline as these small businesses mature, indicating that such firms essentially create fairly stable rather than overly transient jobs. Meanwhile, over the last 20 years, female self-employment rates have risen faster than male rates, suggesting that entrepreneurial ventures headed by women in particular have the potential to contribute to significant new job creation going forward.[1] Despite this fact, only a small literature exists examining what, if anything, distinguishes men and women in entrepreneurial labor markets. The predominant hypothesis in the early literature, as exemplified by Aronson (1991), Presser (1992), and Connelly (1992), proposes that because women, more than men, face time constraints associated with child care, they more likely seek out employment that offers flexibility of hours, work place, or both. Women may find more of these job attributes in self-employment than in more traditional wage employment, and so they may enter self-employment pointedly seeking such attributes. Boden (1999) and Arai (2000) empirically demonstrated the connection between female self-employment and the desire for more flexibility for child care but also showed that male self-employment decisions have little to do with family-related reasons.

Another line of research applies household production concepts to cast the self-employment decision for women as a function of market opportunities and the availability of goods and non-market time necessary to produce household commodities, such as child care. In a study of married women, Lombard (2001) found that the self-employed were most influenced by the greater relative earnings available in self-employment, followed by the demand for flexibility and a non-standard workweek. The probability of self-employment also increased if the husband's employment provided health insurance, as this would obviate the need for the wife's market work to produce this household commodity. Georgellis and Wall (2005) showed that women's self-employment is a closer substitute for part-time work or non-participation than for full-time work. More recently, Gimenez-Nadal et al. (2012), using time-use data, showed that self-employed mothers devote less time to market work and more to household production and leisure. They observe a difference in the timing of market work, child care, and housework, as well as a complementarity between market work and the timing of childcare with the spouse. This line of research shows both male and female self-employment decisions being influenced by the relative difference in earnings potential. However, for women, the influence of greater

[1] As Aronson (1991) shows, from 1965 to 1986 the aggregate male self-employment rate hovered around 9 to 10 % with no demonstrable trend up or down over that period. However, by 2010, the female rate had risen to over 9.4 % while the male rate had risen only to 11.7 % (Social Security Administration 2012).

relative income to acquire goods is closely related to the ability to use non-market time flexibly to produce commodities the household demands. The influence of household production is less of an influence for men.

With these conceptual foundations in mind, we revisit the issue of male and female self-employment motivations using data on a large sample of men and women capturing a variety of pecuniary and non-pecuniary factors that potentially influence the self-employment choice, including measures of the extent to which a person's local entrepreneurial market encourages or discourages self-employment.

Conceptual Foundation

To frame the issue and motivate the empirical analysis more concretely, consider some of the microeconomics that underlie the self-employment decision and the connection to the potential use of non-market time for household production. The self-employment choice represents one possible outcome of an individual's time-allocation decision. Suppose a hypothetical individual may allocate available time T among wage work (H_w hours), self-employment (H_s hours), and non-market time (H_N hours). The person seeks to maximize a quasi-concave utility function $U=U[X_w(H_w), X_s(H_s), N(H_N); \delta]$, where X_w, X_s, and N represent returns to wage employment, self-employment, and non-market time, respectively, each a direct function of the associated mode of time allocation. In the utility function, δ represents a vector of exogenous factors that enhance the extent to which the returns to any of the three modes of time allocation influence utility. Elements of δ may include individual-specific qualities like industriousness, perseverance, ambition, and tastes for risk and uncertainty that frequently are unobservable. Non-pecuniary job attributes might include, among other things, job autonomy, a job's compatibility with family concerns, the degree to which an individual is capable of matching his or her skills with those desired in the labor market, and the degree of social encouragement of wage or self-employment. They may also include more tangible qualities like accumulated education, work or managerial experience, or the availability of investor start-up funds.

In principle, the individual seeks the levels of the three modes of time allocation that maximize utility, subject to two constraints. The income constraint takes the familiar form $I=V+H_wX_w+H_sX_s$, where I represents total income, V non-labor income, and X_w and X_s the returns to wage work and self-employment, as introduced above. The time constraint requires that $T=H_w+H_s+N$. In seeking the optimal combination of H_w, H_s, and N, one of three necessary conditions for utility maximization implies that $U_s/U_w=X_s/X_w$, where $U_s=\partial U/\partial H_s$ and $U_w=\partial U/\partial H_w$.[2]

This condition, of course, holds for an interior solution in which a convex indifference curve describing combinations of X_w and X_s reaches a tangency with the income constraint. In practice, however, the vast majority of workers (90 % or more) select

[2] In the interest of brevity, we do not discuss the necessary conditions for the existence of optimal quantities of wage-employment and non-market time. However, the fact that the individual's utility maximization could result in any of three time-allocation outcomes forms the basis of our empirical approach emphasizing multinomial logit estimation, as discussed in later sections. These outcomes include the possibility that the individual chooses zero wage- and self-employment and is observed as unemployed, perhaps attracted to available unemployment benefits.

wage-employment exclusively rather than either a combination of wage- and self-employment or exclusive self-employment. That is, with respect to combinations of wage work and self-employment, most achieve a corner equilibrium in this context such that $H_s^*=0$ and $H_w^*>0$, as at point R in Fig. 1.[3] If a corner solution represents the norm in this context, how do we explain the instance of self-employment, and how might gender differences become relevant? Answers emerge when one considers alterations of either the income or time constraint.

A person might select self-employment if he or she experienced an enhancement of the returns to self-employment, holding constant the returns to wage employment or non-market time. In the context of Fig. 1, this would create a rightward shift in the budget constraint, such as from AR to BR. The hypothetical individual depicted would move from indifference curve U to a higher indifference curve, such as U', and earn self-employment returns $X_s'>0$ associated with positive rather than zero self-employment.[4] In general, self-employment may offer enhanced pecuniary or non-pecuniary rewards relative to wage employment. However, assuming both men and women are utility maximizers, nothing inherent in the analysis suggests that women would necessarily react differently from men given the same enhancement of self-employment returns.

But researchers who have addressed the subject of female self-employment (e.g., Cromie 1987; Macpherson 1988; Aronson 1991; Connelly 1992) largely attribute self-employment by women not to the existence of differential opportunities to earn income as entrepreneurs but to the existence of a more stringent time constraint, related to women's social role in household production, particularly as primary care givers for children and families. As a means of illustrating how an individual might alter his or her allocation of wage-employment, self-employment, and non-market time, we summarize in Table 1 five possible combinations of changes in these three modes of time allocation under the assumption of a binding time constraint. Assuming a hypothetical increase in the returns to self-employment as outlined above, H_s increases in each case (consistent with Fig. 1), while H_w, H_N, or both change in a manner consistent with the time constraint.

Cases 2, 4, and 5 describe how greater self-employment returns may motivate a labor-force participation decision overall, as non-market time decreases in each case ($\Delta H_N<0$). However, variation exists within these cases. In Case 2, an already-employed individual reduces both wage-employment and non-market time ($\Delta H_w<0$, $\Delta H_N<0$) to engage in additional self-employment activity. But Cases 4 and 5 more likely describe new participants in the labor force. In particular, Case 4 describes someone who responds by engaging in greater self-employment *and* wage-employment ($\Delta H_s>0$, $\Delta H_w>0$), suggesting how increased self-employment returns may exert positive spillover effects on wage work. Case 5 describes a purely

[3] Blau (1985) also modelled the self-employment/wage-employment choice as a corner solution. For such a solution, $U_s/U_w=X_s/X_w$ may or may not hold. However, given the constraint, the individual would still maximize utility.

[4] Exclusive self-employment would represent a special case in which the individual moves to the opposite corner equilibrium. While such a move may plausibly occur, an individual may regard an initial move to an interior solution as relatively less risky. Future research might study the extent to which self-employed individuals systematically use the combination to "test the waters" or as a transition to exclusive self-employment, as well as implications of each strategy for eventual success.

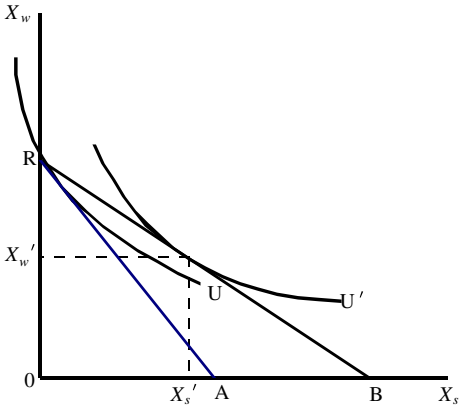

Fig. 1 Effect of increased self-employment returns on self-employment decision

entrepreneurial form, as wage-employment does not change ($\Delta H_w=0$) even as non-market time allocation decreases ($\Delta H_N<0$). In Cases 1 and 3, wage-employment declines ($\Delta H_w<0$), suggesting a substitution of self-employment for wage-employment with either unchanged or increased non-market time.

While any of the five cases may plausibly occur, some of them may particularly describe the experiences of women or generally of individuals who have significant time demands associated with household responsibilities. Such an individual may face a relatively greater constraint in his or her alteration of non-market time, the type most readily allocated to household production. If family care time more closely resembles non-market than work time, such a person may find it relatively difficult to reduce non-market time in response to greater self-employment returns. Such a person may more likely react in the manner of Cases 1 and 3, where non-market time stays constant or increases, than the other cases, where non-market time decreases. However, because Cases 1 and 3 also involve reductions in wage-employment, this result would imply

Table 1 Hypothetical time-allocation effects of increased returns to self-employment

Case 1: $\Delta H_w<0$, $\Delta H_s>0$, $\Delta H_N=0$ wage-employment decreases; self-employment increases; non-market time does not change
Case 2: $\Delta H_w<0$, $\Delta H_s>0$, $\Delta H_N<0$ wage-employment decreases; self-employment increases; non-market time decreases
Case 3: $\Delta H_w<< 0$, $\Delta H_s>0$, $\Delta H_N>0$ wage-employment decreases dramatically; self-employment increases; non-market time increases
Case 4: $\Delta H_w>0$, $\Delta H_s>0$, $\Delta H_N<<0$ wage-employment increases; self-employment increases; non-market time decreases dramatically
Case 5: $\Delta H_w=0$, $\Delta H_s>0$, $\Delta H_N<0$ wage-employment does not change; self-employment increases; non-market time decreases

that family-constrained individuals would exhibit a greater likelihood of substituting self-employment for wage-employment given greater self-employment returns.

But these possibilities do not rule out Cases 4 and 5, even for family-constrained individuals. Suppose women felt that, among the three modes of time allocation highlighted here, they indeed could best accomplish family care as part of non-market time, by definition uncompensated time. Any move out of non-market activity and into self-employment, initiated by exogenous enhancement of self-employment returns, would seem likely motivated by factors that make market work in general, of whatever form, more compatible with home time. In effect, enhancement of these factors would render self-employment and non-market time more readily substitutable, suggesting the hypothesis that especially *non-pecuniary* self-employment attributes would exert a greater influence on female self-employment than on male self-employment. At the same time, note that if women, in fact, are not less likely to experience enhancements of self-employment opportunities, or do not possess a more restrictive time constraint, then we have no basis for predicting such differences in the self-employment motivations of men and women. The empirical analysis, described in "Differences in Means", will address whether we can distinguish a sample of men and women in these ways and will provide clues as to how these individuals allocate time to the various activities more generally.

Taken as a whole, the conceptual analysis suggests several questions. Do men and women perceive different time constraints, returns to self-employment, or both? If so, do they appear to select into or out of self-employment for reasons consistent with those differences, as suggested theoretically? The observations made in this section, summarized among the five hypothetical cases, imply that the empirical analysis of gender differences in self-employment must address methodologically the fact that the self-employment choice also constitutes a selection into or away from wage-employment and labor force non-participation. For this reason, we investigate these questions empirically through analyses of means and using multinomial logit models that control for the inherently multifaceted nature of the self-employment choice.

Data and Variables

For empirical analysis, we use data from the Wisconsin Entrepreneurial Climate Study 1992–1993 (WECS), which permits econometric analysis of self-employment activity in the context of a number of variables typically unavailable in self-employment research. Compiled under the direction of scholars at Marquette University and the University of Wisconsin-Milwaukee, the data set consists of a random sampling of representative adults residing in Wisconsin. Like many individual-level data sets used in the self-employment literature, the WECS tabulates traditional socioeconomic information such as employment status, age, education, and ethnicity. The WECS is unique, however, in its additional tabulation of information about individual preferences for job attributes and, as suggested by its name, individual opinions about the "entrepreneurial climate" in a person's locality.

In the multinomial logit (MNL) models estimated in this study, the dependent variable, as suggested by the conceptual analysis, takes on distinct values for each of three possible modes of time allocation: wage-employment, self-employment, and non-participation in the labor force. Score tests indicated that such an approach is appropriate

statistically. Individuals are classified as "self-employed" in the WECS if an individual reported this as his or her employment status or claimed to be currently "trying to start a business," either alone or with others.[5] The MNL reference group consists of the unemployed and those not in the labor force; the MNL models therefore reflect the theoretical analysis by directly modeling those who exhibit self-employment, wage-employment, and non-work. The independent variables, described below, capture individual job-attribute preferences, entrepreneurial climate, and demographic characteristics.

Job-Attribute Preferences

The WECS data set contains several measures of individual preferences for various job attributes. The eight incorporated into this study emanate from direct WECS survey items, which appear as Likert-scale categorical variables.[6] Surveyors asked respondents the extent to which they agreed with the following propositions relating to their preferences for pecuniary job attributes: "When you work, nothing is more important than creating wealth or building an estate for one's family" and "I would prefer work that provides a chance for great wealth or a very high income." By incorporating these variables, we can examine the importance with which men and women regard the creation of wealth and its influence on their labor-market choices.

The remaining six survey instruments in this category state propositions relating to the respondents' preferences for various non-pecuniary job attributes. They capture the importance of finding work that will engender "respect and recognition from others," that offers "a lot of autonomy and independence," and that "fully uses all of a person's skills and unique ability." Others capture the degree to which a respondent pursues his or her career in order to "meet responsibilities to others," the extent to which a person "might take work because it would be, under the circumstances, the best [he or she] could find," and the degree to which a respondent "would take work to remain in an area where [he or she] would like to live."

Entrepreneurial Climate Variables

Through a series of well over a dozen Likert-scale variables, the WECS also gathered information about factors present in the entrepreneurial market that may in general ease or hinder the self-employment experience. The fifteen such measures used here, broadly distinguished, capture responses to propositions that relate, first, to the potential influence of institutions—banks, government, and existing firms—and, second, to the influence of other people.

Variables relevant to the first category, which principally speak to pecuniary concerns, ascertain the degree to which respondents feel that the state and local governments

[5] By the WECS definition, those classified merely as "trying" had, at the time of their interview, given a venture serious thought, proposed a written business plan, helped organize a start-up team, sought facilities and/or equipment, or taken some other non-trivial step. However, because only one respondent in the sample self-identified as "trying," we do not statistically analyze such individuals separately; categorizing this person as non-employed does not affect the results.

[6] All Likert-scale variables used in this study were coded as follows: Strongly Agree = 4, Agree = 3, Disagree = 2, and Strongly Disagree = 1. Quotations appearing in "Data and Variables" and "Differences in Means" are taken from Reynolds and White (1995).

provide "good support for men [and women] starting new firms," that bankers and other investors "go out of their way to help new firms get started," and that respondents' male and female family members and friends would start businesses "if they could get financial help." In addition, the WECS ascertains the degree to which respondents agree that there are "many examples of well-respected people who were successful at starting new businesses" and that "more people would start new businesses if government assistance were not so complicated." These variables will assist in testing whether men and women carry different perceptions of the returns to self-employment and the extent to which this perception influences the self-employment choice.

Variables relevant to the potential influence of other people in society, reflecting largely non-pecuniary concerns, ascertain the degree to which respondents feel that successful entrepreneurs receive "a lot of attention and admiration" and whether a business failure will cause the unsuccessful entrepreneur to "never be respected again." Other variables ascertain whether young men and young women "try to find good jobs and careers in existing organizations [i.e., wage work]" and the extent to which young men and women "are encouraged to be independent and start their own businesses." Additional survey items query the extent to which respondents and their associates are "embarrassed to talk about those with failed businesses" and the extent to which respondents' family and friends view entrepreneurs cynically, believing that entrepreneurs "made their money by cheating someone else." Variables relating to the influence of other people will allow further testing of the role of non-pecuniary influences in general and social reinforcement in particular.[7]

Control Variables

Finally, this study makes use of several demographic variables that control for human capital skills and other personal characteristics and typically appear in self-employment research.[8] Continuous variables include the person's age, age squared, and the number of children in the household. Dummy variables indicate whether an individual is female (appropriate when men and women are pooled), is white, has formal education beyond high school, lives in a metropolitan area, and is married or single.[9]

Differences in Means

Prior to investigating the self-employment decision using more formal multinomial logit techniques, an analysis of means can establish basic empirical differences between the men and women in the sample. Table 2 displays means and standard deviations for each variable described above. The first columns of figures show descriptive statistics

[7] The variables that relate to fears about the consequences of a future entrepreneurial failure may also account for certain socially influenced attitudes toward risk.

[8] For illustrative examples of such research, see Blau (1985), Evans and Leighton (1989), Fujii and Hawley (1991), and Blanchflower and Oswald (1998).

[9] Regrettably, the WECS does not allow finer identification of unmarried individuals as divorced, separated, widowed, etc. To incorporate all reasonable possible modes of time allocation, samples used for statistical analysis included individuals not working who were classified as homemakers, unemployed, and students were included in the sample alongside wage-employed and self-employed individuals. The sample excluded those not working because of retirement or disability, as these individuals do not make the time-allocation choices at issue here.

Table 2 Summary statistics and means tests

	Pooled sample		Women		Men		|*t*-stat|
	Mean	SD	Mean	SD	Mean	SD	
Self-employed	0.060	0.237	0.052	0.223	0.067	0.251	0.721
Job attributes							
Seek respect/Recognition from others	1.848	0.547	1.820	0.659	1.833	0.700	0.220
Create wealth for one's family	2.231	0.709	2.281	0.730	2.178	0.683	1.646[c]
Best to have autonomy and independence	1.825	0.568	1.854	0.553	1.794	0.583	1.209
Work to meet responsibilities to others	1.848	0.547	1.854	0.546	1.841	0.549	0.263
Work to fully use my special skills/Abilities	1.757	0.544	1.734	0.549	1.782	0.034	0.997
Would take best work I could find, under circumstances	2.206	0.626	2.281	0.683	2.127	0.035	2.819[a]
Would take work to remain in an area	2.031	0.611	2.075	0.583	1.984	0.040	1.694[c]
Work to provide chance for great wealth	2.135	0.644	2.195	0.654	2.071	0.040	2.190[b]
Entrepreneurial climate variables							
Successful firms get attention & admiration	2.110	0.594	2.135	0.566	2.083	0.039	0.987
Young men try to find work in existing firms	2.977	0.497	2.895	0.495	3.063	0.031	3.914[a]
Young women try to find work in existing firms	3.050	0.454	2.989	0.455	3.115	0.028	3.197[a]
If firm fails, there's no respect ever again	2.909	0.539	2.891	0.527	2.929	0.035	0.785
Young men are encouraged to self-employ	2.526	0.680	2.502	0.663	2.552	0.044	0.832
Young women are encouraged to self-employ	2.605	0.703	2.622	0.701	2.587	0.044	0.557
Government provides good support for men	2.584	0.646	2.521	0.651	2.651	0.040	2.305
Government provides good support for women	2.680	0.653	2.667	0.647	2.694	0.042	0.484
Bankers/Other investors help new firms get started	2.680	0.659	2.618	0.616	2.746	0.044	2.221[b]
There are examples of people with new businesses	2.193	0.550	2.195	0.527	2.190	0.036	0.089
More would start if government less complicated	1.951	0.630	1.948	0.611	1.956	0.041	0.159
Entrepreneurs make money by cheating others	1.983	0.747	1.921	0.719	2.048	0.049	1.930[b]
We are embarrassed to talk about failure	2.913	0.518	2.940	0.509	2.885	0.033	1.212
Men friends would start with money	1.979	0.564	2.004	0.538	1.952	0.037	1.037
Women friends would start with money	2.040	0.590	2.030	0.568	2.052	0.039	0.417
Control variables							
Age	36.12	11.51	36.15	11.02	36.09	12.03	0.062
Age squared	1437	975.2	1428	899.8	1447	1051	0.218
Female	0.514	0.500	—	—	—	—	—
Postsecondary education	0.279	0.449	0.262	0.441	0.298	0.458	0.899
Married	0.611	0.488	0.588	0.493	0.635	0.482	1.095
Children	0.634	1.303	0.719	1.385	0.544	1.208	1.534
White	0.480	0.500	0.472	0.500	0.488	0.501	0.368
Single parent	0.075	0.264	0.112	0.316	0.036	0.186	3.339[a]
City dweller	0.368	0.483	0.404	0.492	0.329	0.471	1.776[c]
Sample size	519		267		252		

[a] Statistically significant at 1 % level or better

[b] Statistically significant at 5 % level or better

[c] Statistically significant at 10 % level or better

for the usable pooled sample of 519 individuals, consisting of 267 women and 252 men. The remaining columns separate these by gender, and the final column shows the absolute value of the *t*-statistic associated with a test of differences in the means across gender groups.

Looking first at the control variables, which include measures of individual family structure, we see no statistically significant difference in the proportion of women and men who are married, although the proportion for women is lower in absolute terms. Women have a higher average number of children at home than men do (0.719 vs. 0.514), but the difference is significant only at $p=0.13$, suggesting only a mild possibility that women possess a more stringent time constraint associated with child care. However, *single* parents may face the most stringent time constraint, as they may require child care that cannot be undertaken by a spouse. In this sample, 11.2 % of the women and 3.6 % of the men are unmarried with at least one child present in the household, a statistically significant difference at the 1 % level. In the absence of data instruments that directly query respondents about time constraints, these patterns provide some indication that women may face greater household-based demands on their time relative to men.

Among the job-attribute preferences, four variables show statistically significant mean differences across gender. Women express greater agreement that they would take the best work they could find, under the circumstances, and that they would take work to remain in an area. By the same token, women also express greater agreement that they work to provide a chance to create wealth, both in general and for their families. Neither men nor women express a particularly notable preference for work that provides "a lot of autonomy and independence," a job feature frequently cited as a motivation for self-employment. The means hover around 1.80 for both groups, with no statistically significant difference of opinion in this respect.

Among the entrepreneurial climate variables, men express significantly greater agreement with the proposition that young men and young women try to find work in existing organizations; male respondents also appear more favorable in their perceptions of the assistance available from government (at least for other men) and from banks and investors. At the same time, men appear to view entrepreneurs more cynically, expressing greater agreement that entrepreneurs succeed by cheating others. Men and women do not appear to have significant differences of opinion on the level of entrepreneurial encouragement young men and women receive, nor do they differ on the level of respect or admiration entrepreneurs in general receive.

This analysis reveals several differences in the experiences and perceptions of men and women, the most pertinent of which, in light of the conceptual analysis, suggesting that women may have greater time demands. Moreover, reflecting patterns visible in the economy as a whole, women exhibit a higher sample self-employment rate than men (6.7 % vs. 5.2 %), and the magnitude of the rates resembles what we observe in the overall economy. Multinomial logit analysis will enable us to see whether the various differences in means translate to differential motivations for male and female self-employment when accounting for multiple determinants of this choice in the context of the other time-allocation choices.[10]

[10] Because of occasional similarities in the phrasing of some of the WECS instruments, the data were scrutinized for the presence of serious linear correlation between independent variables. Variables found to be redundant were not used in the analysis.

Multinomial Logit Results

Table 3 displays multinomial logit (MNL) results estimated for the pooled sample of women and men to examine differences between wage-employed and self-employed respondents irrespective of their gender. The majority of the job attribute and entrepreneurial climate variables emerge as statistically insignificant for both groups. Among the determinants of self-employment, greater agreement among respondents that they "would take the best work [they] could find, under the circumstances" is the only significant job attribute, while greater agreement that "bankers/other investors help new firms get started" is the only significant entrepreneurial climate variable. The probability of self-employment increases in both cases. Perhaps the most notable result is the significantly negative coefficient for Female, indicating that women are less likely to choose self-employment relative to wage-employment and non-participation. This conforms to the basic aggregate findings reported earlier and lends credibility to these survey data. The general lack of significant results for the gender-pooled estimates raises the question of whether significant and more telling results would emerge if the sample is separated by gender, consistent with the conceptual analysis and as suggested by the analysis of means. Tables 4 and 5, respectively, display separate MNL estimates for men and women.

The gender-separated estimates reveal differences in the factors motivating the self-employment decision. Among the job attribute variables, we see mild evidence (p= 0.20) that a greater desire to achieve "great wealth" increases the probability of choosing self-employment for both men and women. However, a greater preference for "creating wealth for one's family" significantly increases the probability of female self-employment (p=0.10) but significantly decreases the probability of male self-employment (p=0.06). This pattern is consistent with the hypothesis that family-related reasons exert a greater influence on the self-employment of women than of men. By contrast, creating family wealth does not significantly influence the wage-employment choice for either men or women. Elsewhere, a specific preference for "taking the best work [a respondent] could find, under the circumstances" significantly increases the probability of self-employment for both men and women and also mildly enhances the probability of wage-employment among women (p=0.08). Possibly, many of the women under analysis are "trailing spouses" who seek the best work they can find given their restricted labor market—with self-employment representing a viable option. Such a phenomenon would itself reflect a female self-employment motivation related to family circumstances. Observe also that a greater preference for choosing "work to use [one's] special skills/abilities" significantly reduces the probability of self-employment among women (p=0.10), relative to non-participation, and exerts no significant influence on wage employment. This pattern also appears consistent with women making the self-employment decision as an accommodation to family or household production needs or that women in particular regard their skills as particularly complementary with non-market time.

The entrepreneurial climate variables reveal further differences in male-female self-employment motivations. Concrete or pecuniary factors exert much more of an influence on the self-employment of men than of women. The probability of male self-employment increases with greater agreement that "government provides good support for men," that "bankers and other investors help new firms get started" (p=0.09), and

Table 3 Multinomial logit analysis of labor-market choices: pooled sample

	Wage-employed			Self-employed		
	Estimate	SE	*p*	Estimate	SE	*p*
Intercept	−5.090	2.438	0.04	−15.342	5.23	0.00
Job attributes						
Seek respect/Recognition from others	0.150	0.237	0.53	0.497	0.420	0.24
Create wealth for one's family	0.043	0.238	0.86	−0.392	0.455	0.39
Best to have autonomy and independence	−0.519	0.266	0.05	−0.630	0.516	0.22
Work to meet responsibilities to others	0.104	0.276	0.71	0.025	0.556	0.97
Work to fully use my special skills/Abilities	−0.238	0.280	0.40	−0.449	0.554	0.42
Would take best work I could find, under circumstances	0.529	0.246	0.03	1.139	0.443	0.01
Would take work to remain in an area	0.215	0.246	0.38	−0.148	0.446	0.74
Work to provide chance for great wealth	−0.384	0.235	0.10	0.426	0.452	0.35
Entrepreneurial climate variables						
Successful firms get attention & admiration	0.235	0.250	0.35	−0.187	0.477	0.70
Young men try to find work in existing firms	0.751	0.307	0.02	0.538	0.667	0.42
Young women try to find work in existing firms	−0.043	0.357	0.90	−0.015	0.721	0.98
If firm fails, there's no respect ever again	0.008	0.267	0.98	−0.038	0.519	0.94
Young men are encouraged to self-employ	0.256	0.255	0.32	−0.226	0.527	0.67
Young women are encouraged to self-employ	0.439	0.249	0.08	0.314	0.496	0.53
Government provides good support for men	0.011	0.273	0.97	0.479	0.608	0.43
Government provides good support for women	0.034	0.267	0.90	−0.613	0.547	0.26
Bankers/Other investors help new firms get started	0.114	0.230	0.62	0.850	0.453	0.06
There are examples of people with new businesses	−0.163	0.269	0.54	−0.259	0.481	0.59
More would start if government less complicated	0.236	0.233	0.31	0.286	0.433	0.51
Entrepreneurs make money by cheating others	0.005	0.188	0.98	−0.612	0.413	0.14
We are embarrassed to talk about failure	−0.132	0.266	0.62	−0.344	0.514	0.50
Men friends would start with money	0.090	0.311	0.77	−0.065	0.687	0.92
Women friends would start with money	−0.089	0.296	0.77	−0.045	0.618	0.94
Control variables						
Age	0.103	0.052	0.05	0.443	0.140	0.00
Age squared	−0.001	0.001	0.04	−0.004	0.001	0.01
Female	−0.974	0.284	0.00	−1.031	0.541	0.06
Postsecondary education	−0.143	0.322	0.66	−0.360	0.617	0.56
Married	0.612	0.311	0.05	−0.105	0.657	0.87
Children	0.253	0.242	0.30	−0.416	0.430	0.33
Married×Children	−0.085	0.269	0.75	0.495	0.449	0.27
White	0.841	0.301	0.01	2.514	0.667	0.00
City dweller	0.161	0.279	0.56	−0.151	0.603	0.80
Sample size	516					
χ^2 (H_0: β=0)	150.81 (p=0.000)					

Table 4 Multinomial logit analysis of labor-market choices: male respondents

	Wage-employed			Self-employed		
	Estimate	SE	*p*	Estimate	SE	*p*
Intercept	−8.856	5.066	0.08	−41.409	13.604	0.00
Job attributes						
Seek respect/Recognition from others	0.536	0.411	0.19	0.946	0.917	0.30
Create wealth for one's family	−0.415	0.481	0.39	−2.036	1.089	0.06
Best to have autonomy and independence	−1.163	0.508	0.02	−0.216	1.220	0.86
Work to meet responsibilities to others	0.667	0.514	0.19	−1.303	1.347	0.33
Work to fully use my special skills/Abilities	−0.260	0.549	0.64	0.864	1.306	0.51
Would take best work I could find, under circumstances	0.857	0.642	0.18	3.231	1.354	0.02
Would take work to remain in an area	0.263	0.423	0.53	0.514	0.731	0.48
Work to provide chance for great wealth	−0.040	0.483	0.93	1.330	1.047	0.20
Entrepreneurial climate variables						
Successful firms get attention & admiration	0.445	0.464	0.34	−1.197	0.992	0.23
Young men try to find work in existing firms	0.875	0.648	0.18	4.799	2.088	0.02
Young women try to find work in existing firms	−0.709	0.786	0.37	−3.680	2.406	0.13
If firm fails, there's no respect ever again	0.114	0.491	0.82	2.334	1.401	0.10
Young men are encouraged to self-employ	−0.188	0.493	0.70	−0.947	1.106	0.39
Young women are encouraged to self-employ	1.183	0.511	0.02	0.362	1.068	0.73
Government provides good support for men	0.664	0.506	0.19	3.499	1.492	0.02
Government provides good support for women	−0.352	0.502	0.48	−4.201	1.612	0.01
Bankers/Other investors help new firms get started	−0.054	0.498	0.91	1.756	1.045	0.09
There are examples of people with new businesses	0.313	0.558	0.58	−1.046	1.258	0.41
More would start if government less complicated	0.165	0.440	0.71	3.612	1.381	0.01
Entrepreneurs make money by cheating others	0.403	0.328	0.22	−0.306	0.916	0.74
We are embarrassed to talk about failure	0.096	0.538	0.86	0.881	1.163	0.45
Men friends would start with money	0.079	0.649	0.90	−3.181	1.592	0.05
Women friends would start with money	0.213	0.565	0.71	0.800	1.061	0.45
Control variables						
Age	0.107	0.092	0.25	0.738	0.243	0.00
Age squared	−0.001	0.001	0.24	−0.005	0.002	0.01
Female	—	—	—	—	—	—
Postsecondary education	−0.144	0.611	0.81	−0.009	1.136	0.99
Married	0.915	0.659	0.17	−1.821	1.413	0.20
Children	−0.370	0.737	0.62	−2.974	1.619	0.07
Married×Children	0.332	0.770	0.67	2.601	1.634	0.11
White	0.838	0.607	0.17	4.505	1.547	0.00
City dweller	−0.520	0.543	0.34	−1.583	1.239	0.20
Sample size	249					
χ^2 (H_0: β=0)	112.47 (p=0.0001)					

Table 5 Multinomial logit analysis of labor-market choices: female respondents

	Wage-employed			Self-employed		
	Estimate	SE	*p*	Estimate	SE	*p*
Intercept	−5.367	3.118	0.11	−12.970	11.463	0.26
Job attributes						
Seek respect/Recognition from others	0.011	0.324	0.97	0.041	0.995	0.97
Create wealth for one's family	0.190	0.312	0.54	1.457	0.889	0.10
Best to have autonomy and independence	−0.232	0..351	0.51	−1.161	1.266	0.36
Work to meet responsibilities to others	−0.343	0.374	0.36	0.510	0.985	0.61
Work to fully use my special skills/Abilities	−0.115	0.378	0.76	−1.828	1.116	0.10
Would take best work I could find, under circumstances	0.525	0.302	0.08	1.284	0.666	0.05
Would take work to remain in an area	−0.085	0.339	0.80	0.374	1.009	0.71
Work to provide chance for great wealth	−0.459	0.307	0.14	1.006	0.790	0.20
Entrepreneurial climate variables						
Successful firms get attention & admiration	0.231	0.325	0.48	−0.995	1.070	0.35
Young men try to find work in existing firms	1.113	0.408	0.01	−2.100	1.493	0.16
Young women try to find work in existing firms	0.058	0.446	0.90	2.246	1.443	0.12
If firm fails, there's no respect ever again	0.057	0.368	0.88	−1.424	0.987	0.15
Young men are encouraged to self-employ	0.463	0.333	0.17	−0.937	0.937	0.32
Young women are encouraged to self-employ	0.234	0.326	0.47	0.003	0.765	0.99
Government provides good support for men	−0.315	0.353	0.37	−1.366	1.268	0.28
Government provides good support for women	0.180	0.349	0.61	0.546	1.091	0.62
Bankers/Other investors help new firms get started	0.161	0.304	0.60	0.416	0.863	0.63
There are examples of people with new businesses	−0.373	0.370	0.31	0.717	0.999	0.47
More would start if government less complicated	0.276	0.311	0.37	−0.754	0.972	0.44
Entrepreneurs make money by cheating others	−0.225	0.260	0.39	−1.903	0.915	0.04
We are embarrassed to talk about failure	−0.223	0.346	0.52	−3.001	1.178	0.01
Men friends would start with money	0.2941	0.399	0.47	−1.196	1.581	0.45
Women friends would start with money	−0.324	0.389	0.40	−0.129	1.300	0.92
Control variables						
Age	0.113	0.070	0.11	1.099	0.427	0.01
Age squared	−0.001	0.001	0.09	−0.010	0.004	0.02
Female	—	—	—	—	—	—
Postsecondary education	−0.148	0.438	0.74	−0.660	1.227	0.59
Married	0.621	0.397	0.12	0.373	1.185	0.75
Children	0.415	0.290	0.15	−0.748	0.779	0.34
Married×Children	−0.172	0.338	0.61	0.138	0.717	0.85
White	0.707	0.367	0.05	3.190	1.246	0.01
City dweller	0.330	0.361	0.36	−2.447	1.719	0.16
Sample size	267					
χ^2 (H_0: β=0)	94.23 (p=0.0052)					

that "more would start firms if government was less complicated." The probability decreases with greater agreement that "government provides good support for women" and that "men friends would start with money." None of these five variables significantly influences the female self-employment choice. Women appear influenced more significantly by non-pecuniary factors. The probability of female self-employment decreases with greater agreement that entrepreneurs make money by cheating others and when respondents express greater embarrassment from talking about business failures. Neither of these variables significantly influenced the male self-employment choice.

Among the control variables, the presence of children in the household, when considered independently, reduces the probability of male self-employment (p=0.07). However, the model shows mild evidence (p=0.11) that *married* men with children more likely choose self-employment. This suggests that the non-market time constraint associated with producing child care is relaxed for men by their spouse. Neither of these variables is significant for women.

Extensions

The Role of Age

The coefficient estimates for Age and Age Squared in the MNL models reveal patterns that speak further to the differential experiences of men and women in entrepreneurial labor markets and lend further perspective to the main findings described above. In relation to the pooled sample, as summarized in Table 3, the coefficient estimates for these variables are 0.443 and −0.004, respectively, implying that the probability of self-employment, relative to non-work, increases at a decreasing rate at higher ages for the individuals under analysis. Comparable patterns emerge in the models estimated separately for men and women. The implied concave age/self-employment profiles suggest that the various returns to self-employment eventually become exhausted over the arc of a career. Do these profiles differ between men and women?

To probe this in the multinomial logit environment, we examine how predicted probabilities of self-employment vary over the age distribution for the pooled sample, the male respondents, and the female respondents—based directly on the MNL models estimated for each sample group. As discussed by Greene (2008), a given MNL model reflects the underlying regression relationship $y_i = X_i\beta_i$, where in the present context y_i takes on any of three categorical outcomes corresponding to wage-employment (coded as y=1), self-employment (coded as y=2), and the reference outcome non-work (coded as y=0). In this setting, the probability of self-employment therefore is computed as $\Pr(y=2)=\exp(X\beta^{(2)})/[1+\exp(X\beta^{(1)})+\exp(X\beta^{(2)})]$, where superscripts index each specific categorical outcome. (For the reference category non-work, β=0 computationally, rendering $\exp(X\beta^{(0)})=1$ in the denominator of this expression.)

Table 6 displays mean levels of these predicted probabilities, computed at key percentiles of the respondent's age. For the pooled sample, observe that although the overall mean predicted self-employment probability is 6.0 %, the predicted probability increases to a maximum of 22.3 % at or around age 55. We cannot empirically observe the returns to self-employment directly in this study, but to the extent that self-

Table 6 Mean predicted probabilities of self-employment, by age percentile

Age (Percentile)	Pooled sample	Male	Female
18 (1 %)	0.0005466	0.0027063	0.0000652
20 (5 %)	0.0012348	0.0004239	0.0000256
22 (10 %)	0.0035508	0.0384077	0.0000022
27 (25 %)	0.0104002	0.0332158	0.0003329
35 (50 %)	0.0355396	0.0678026	0.0593875
43 (75 %)	0.0970448	0.0565641	0.0592906
50 (90 %)	0.2200238	0.2766209	0.4032321
55 (95 %)	0.2230022	0.3583187	0.1487399
Overall	0.0600775	0.0682731	0.0524345

employment reflects such returns, this suggests that, for the overall sample, returns to self-employment peak at approximately that age. Comparing the mean predicted probabilities for men and women separately, it becomes clear that men exhibit a generally higher predicted probability over the age distribution and that the probability peaks at an earlier age for women. At younger ages, from the first to the fiftieth percentile, men exhibit a demonstrably higher predicted self-employment probability than women. The difference appears most stark for men and women in their twenties, just following the traditional college years: a 3.3 % −3.8 % predicted self-employment rate for male respondents, but virtually 0 % for female respondents. Mirroring the pattern seen for the pooled sample, males exhibit the highest predicted probability, 35.8 %, at age 55 (among the age levels highlighted in Table 6).[11] By contrast, the peak predicted rate for females, 40.3 %, occurs at age 50.

The primary findings of this study, as summarized in the preceding section, demonstrate that, on balance, non-pecuniary and family-related concerns exert a more substantial influence on the self-employment choice of women than of men. These main results help us clarify which aspects of the self-employment experience appear to translate either to relatively attractive or unattractive returns to self-employment, of whatever form. The findings relating to the role of age suggest that women, relative to men, generally do not encounter significantly favorable self-employment returns until their thirties and that those returns exhaust themselves demonstrably earlier over the course of a career, a fact that may help to explain the greater overall self-employment rates observed among men even as women increasingly choose self-employment. Consistent with this interpretation, the oldest self-employed respondents within the WECS sample are predominantly male. Of the nine self-employed respondents over age 50, seven are male; of the five self-employed over age 55, four are male; and of the five self-employed over age 60, four are male. Along similar lines, Karoly and Zissimopoulos (2004) point out that although female self-employment rates show a trend towards converging on male rates, "female self-employed workers on average earn less than their male counterparts (p. 27)," also evident in lower levels of income,

[11] Calculations for men over age 55 yield predicted probabilities less than that shown at age 55, indicating that the probability does peak at age 55 for the men in the present sample.

financial assets, and employment benefits.[12] As self-employment becomes an even more prevalent career choice for women, an intriguing question for future research becomes whether the implied returns to female entrepreneurial activity begin to emerge sooner and last longer.

Revisiting the Conceptual Cases

Recall from the conceptual analysis that favorable self-employment returns logically enhance the incentive for a person to choose self-employment; a set of five plausible theoretical cases, summarized in Table 1, illustrated how a person's wage employment, non-market time, or both might also change, given a binding time constraint. Along the lines of the earlier analysis, the empirical results emanating from the gender-separated multinomial logit models shed light on how individual self-employment activity appears to coexist with these other modes of time allocation in practice, especially in the presence of factors that indeed encourage self-employment.

To probe this further, we concentrate on the empirical circumstances and stated preferences that appear favorable to self-employment among men and women separately. As seen above, many such variables in more than one category appear to encourage male self-employment, consistent with the observably higher overall self-employment rates among men. Noting just a few, lesser agreement that they work to create wealth for the family in particular, greater agreement that government, bankers and other investors assist prospective entrepreneurs and that more would start businesses if greater funds were available, older age, and being white[13] all significantly translate to a greater probability of self-employment among men. For every such variable (nearly a dozen in all), the MNL model indicates no statistically significant accompanying effect on the probability of wage employment, altogether implying consistently negative (i.e., reductive) effects on non-market time allocation, the reference outcome. Each of the empirical circumstances favorable to male self-employment therefore reflect theoretical Case 5, the only conceptual case whereby hypothetically enhanced returns to self-employment motivate greater self-employment with unchanged wage employment. This suggests that the factors that empirically encourage self-employment by men do so pointedly towards entrepreneurial activity.

Comparatively fewer empirical factors appear favorable to female self-employment, and of course these have a decidedly non-pecuniary character, as initially hypothesized. As discussed earlier, female self-employment appears more likely given greater agreement with the proposition that respondents work to create wealth specifically for the family. It also appears more likely given lesser agreement that they work to fully use their special skills, lesser embarrassment from discussing business failures, and lesser general cynicism about whether entrepreneurs succeed by cheating others. For each of these four factors, the MNL model estimated for female respondents indicates no statistically significant accompanying effect on the probability of wage employment.

[12] Karoly and Zissimopoulos (2004) also note, based on research using data from the Health and Retirement Study, that older entrepreneurs appear able to work longer even when many of them report poorer health, likely aided by the fact that they are also able to "work with more flexibility in hours (p. 43)," further indication of how self-employment complements non-market time allocation in practice.

[13] For extensive analyses of the causes and consequences of less prevalent and less successful self-employment among ethnic minorities, see Fairlie and Meyer (1996, 2000) and Fairlie and Robb (2007).

As with the male respondents, these empirical patterns therefore reflect theoretical Case 5, again indicating that the associated factors pointedly influence *entrepreneurial* activity. Perhaps more importantly, these factors reflect Case 5 in a manner unique to women, further emphasizing how the motivations for self-employment evidently take different forms as perceived by males and females.

Intriguingly, though, we also see that older age and being white significantly encourage not only self-employment but also wage employment among women. To the extent that these demographic characteristics at least indirectly reflect enhanced returns to self-employment in their own right, these effects conform to theoretical Case 4, the only conceptual case whereby favorable self-employment returns motivate increases in both wage work and self-employment. The effects of age and race, taken alongside the finding that neither of these variables significantly influences the wage employment outcome of men, seem consistent with the finding of a younger self-employment-maximizing age among the women under analysis, as outlined above. Many women who participate in the labor market—entrepreneurial or otherwise—may quickly come to understand the relatively limited returns to self-employment available to them at any given point in their working lives, thus motivating them to choose wage employment as a significant alternative to entrepreneurial activity.

Viewed from a different perspective, none of the factors that significantly encourage self-employment, by men *or* women, does so in a manner reflective of Cases 1, 2, or 3, the only conceptual cases wherein enhanced self-employment returns would motivate self-employment while reducing wage employment. At least at a micro level, this indicates that aspects of the overall labor market can encourage entrepreneurial activity without adversely affecting the individual incentive to engage in wage work. If this pattern holds widely, it suggests that policy efforts designed to facilitate entrepreneurial ventures, especially among women, can result in a net gain to job creation and economic activity rather than a less productive shuffling of an existing pool of labor from wage work to self-employment. Future research on individual-level self-employment may provide additional insights in this regard.

Conclusion

Men and women appear to enter self-employment for different reasons. The women in this study express less optimism about institutional support for self-employment and seem to face greater demands on their time than men. Their motivation toward or away from self-employment appears more significantly influenced by non-pecuniary factors than that of men. Women appear motivated by the desire to create wealth, when wealth is specifically expressed as to the benefit of the family. Male self-employment does not appear motivated specifically by wealth creation, whether for the family or in general, but other pecuniary concerns appear quite influential.

Our results suggest that public policy initiatives designed to encourage entrepreneurial activity, which exist in the U.S. and other nations,[14] may not be equally effective for men and women. Women appear sensitive to social and other

[14] Johnson (1981) and Bendick and Egan (1987) discuss and evaluate major entrepreneurial programs in Great Britain and France.

nonpecuniary influences in ways that men are not. If this holds across most entrepreneurial labor markets (an important question for future research), then a key element of entrepreneurial assistance may involve quelling fears about failure and its social consequences (real or imagined) and facilitating direct and quality interaction with other hopeful and established entrepreneurs—individuals who may be more supportive of and less cynical about self-employment than the women studied here and their associates. This sort of assistance could accompany low-interest loans, tax and legal advice, and other pecuniary measures already provided by most entrepreneurial assistance programs.

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