Do Job Preferences Add to the Explanation of the Gender Earnings Gap in Self-Employment? The Case of St. Croix County, Wisconsin

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ABSTRACT. This study uses data collected on self-employed women and men in a single county to analyze the influence of job preferences on the gender-based earnings gap. Data reduction, carried out on the pooled sample, reduces eleven job preference measures selected for the study to five: challenge of competition, make a lot of money, job security, close to extended family, and can be innovative. A separate regression for self-employed women indicates make a lot of money has a positive and close to extended family a negative effect on earnings. For self-employed men, results indicate positive effects on earnings for challenge of competition and make a lot of money. Sensitivity results indicate, in estimates for self-employed women, the positive effect of make a lot of money is not robust. At the same time, the sensitivity analysis indicates a positive effect of preference for financial risk-taker on the earnings of self-employed women. A Oaxaca decomposition using pooled, female, and male coefficients indicates the stronger preference of self-employed men in the sample towards make a lot of money explains at least 6.37 percent of the earnings gap. (J01, J13, J16, J22)

I. Introduction

The re-emergence of nonagricultural self-employment during the 1970s and 1980s has stimulated interest among researchers in this sector of the U.S. economy. Central to this re-emergence has been the increased participation of women. Devine (1994) indicates between 1975 and 1990 the self-employment rate among women increased from 4.1 to 6.7 percent. This compares to a lower rate of increase among men from 10.0 to 12.4 percent.[1]

Initial research focused on determinants of entry into self-employment. These studies suggested women entered self-employment for the flexibility to make it easier to simultaneously manage work and

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household responsibilities (MacPherson, 1988; Connelly, 1992; Carr, 1996; Lombard, 2001). For men, self-employment offered opportunities for those with experience and skills in pursuit of careers outside the confines of the wage and salary sector. At the same time, however, these studies suggested that men without skills (or with a disability) would default to the self-employment sector (Evans and Leighton, 1989; Carr, 1996).

Attracting the increased attention of researchers is the wider gender-based earnings gap in self-employment compared to the wage and salary sector. Studies in the 1990s reported a female/male annual earnings ratio of 46 percent for full-time self-employed (Aronson, 1991; Devine, 1994). This compared to the 75 percent earnings ratio for women and men in the wage and salary sector at that time (Blau and Kahn, 2000). Today the female/male earnings ratio in self-employment has improved to 66 percent (Roche, 2014). This, however, still indicates a wider gap than the current 82 percent ratio in the wage and salary sector (Bureau of Labor Statistics, 2014).[2]

Hundley (2001) focused attention on gender differences in effort as an important contributor to the lower earnings of women in self-employment. Applying Becker's (1985) theory of effort, Hundley argued self-employed women—because they pursue the dual roles of work and managing the household—have lower earnings because they are unable to devote the same level of effort to their businesses as men. Hundley (2001) found support for the hypothesis with the finding that more housework hours reduce the earnings of self-employed women. Walker (2009), using a direct measure of effort, also found support for the hypothesis with the finding that more housework effort expended by self-employed women contributed to their lower earnings compared to self-employed men.

Other factors contributing to the lower earnings of self-employed women include less tenure, fewer work hours, and location in service occupations (Hundley, 2001; Walker, 2009; Lechmann and Schnabel, 2012). Studies also indicate less capital among self-employed women results in their lower earnings (Hundley, 2001; Walker, 2009; Rybezynski, 2009).[3]

A large portion of the earnings gap, however, remains unexplained. Employer discrimination does not provide a plausible explanation, since self-employed women own their own businesses. In addition, evidence does not suggest consumer discrimination can account for earnings differences between self-employed women and men (Aronson, 1991;

Moore, 1983). It is plausible that the lower earnings of self-employed women may be related to discrimination they face in obtaining loans (Budig, 2006; Parker, 2009). The literature, however, has not provided a clear consensus regarding the influence of discrimination in reducing access of women business owners to capital. Research suggesting discrimination indicates women entrepreneurs (compared to their male counterparts) pay higher interest rates, face higher collateral requirements, and receive smaller counteroffers in negotiating loans (Riding and Swift, 1990; Coleman, 2000; Buttner and Rosen, 1989). At the same time, however, studies indicate that the lower access to capital by women-owned businesses can be attributed to non-discriminatory factors that include the smaller size of their firms, fewer years in operation, and a greater likelihood of being located in the service sector (Fabowale et al., 1995; Orser et al., 1994; Cole and Mehren, 2009).

To enhance our understanding of the gender wage gap in self-employment, it may be beneficial to include job preferences in the earnings analysis. Studies of wage and salary workers indicate variables measuring preference for "making money," "being a leader," "intellectual challenge," and "helping others" add to the explanation of earnings differences between women and men in that sector (Daymont and Andrisani, 1984; Filer, 1985; Filer, 1989). Moreover, there is evidence that gender differences in job preferences are influencing outcomes in the self-employment sector. Budig (2006) suggests compensating differences associated with flexible work may underlie her finding of lower earnings for women in nonprofessional self-employment compared to self-employed in professional occupations.[4] Bonte and Jarosch (2012) found the weaker inclination of women toward competition and risk has contributed to their lower entry into self-employment compared to men. Given the centrality of entrepreneurship to self-employment, researchers are particularly interested in the influence of attitudes towards risk and competition on earnings differences between self-employed women and men (Lechman and Schnabel, 2012). The main obstacle faced in the literature, however, is a lack of data on these and other variables measuring job preferences (Caliendo and Kritikos, 2011).[5]

This study helps to rectify this deficiency in the literature. The analysis takes advantage of data collected on self-employed women and men in St. Croix County, Wisconsin that provides direct measures of their attitudes towards eleven different job characteristics (including competition and risk). In addition to job preferences, the data provide other important measures including human capital, starting capital,

industry location, and effort which allows a comprehensive analysis of determinants of earnings differences between women and men in self-employment.

The remainder of the paper is organized as follows: Section 2 presents the data. Section 3 presents the earnings model, hypotheses, and descriptive statistics. Section 4 presents regression results and discussion of the findings. Section 5 presents a Oaxaca (1973) earnings decomposition indicating the degree to which job preferences add to the explanation of gender-based earnings differences in this sample. The final section concludes the study.

II. The Data

The data used in this study are drawn from a survey of self-employed in St. Croix County, Wisconsin conducted during fall 2004. The survey identified a population of 1,618 male and 587 female self-employed in the county. A random sample of 450 observations was selected from each group and a questionnaire mailed to respondents. With follow-ups, a total of 397 questionnaires were returned (203 from men and 194 from women) resulting in a 44 percent response rate. The survey provides measures on a number of variables needed to understand the determinants of earnings differences between self-employed women and men.[6]

Central to this study are measures obtained on the job preferences of self-employed women and men in the sample. The job preference measures were selected from two survey questions. The first asked respondents to "Consider your decision to become self-employed." Then using an eleven point likert scale (with 1 indicating least important and 11 most important) respondents indicated the importance of fourteen factors that influenced their decision to enter self-employment. From those fourteen factors we selected "Enjoy the challenges of a competitive environment," and "Consider myself to be a financial risk-taker." In addition, we selected the three factors (also important to entrepreneurship) "Can be my own boss," "Can be innovative," and "I want to lead and motivate others." Respondents were also asked to "Consider your attitude towards different job characteristics." Using the same eleven point likert scale, respondents indicated the degree of importance of eleven different job characteristics. From those eleven, the six job characteristics "Is intellectually challenging," "Provides the opportunity to make a lot of money," "Makes a contribution to society," "Provides job security," "Has pleasant co-workers," and "Is close to my

extended family" were selected for inclusion in the earnings analysis.[7]

Other important determinants of earnings obtained in the survey include the value of starting capital, hours worked, housework hours, number of young children (under six years of age), marital status, education, tenure, and labor market experience. Measures of effort at work and on housework were also obtained using the same eleven point likert scale used to measure job preferences. In this case the value of 1 indicated the least and 11 the most effort.[8]

The earnings of self-employed in this sample is measured by annual net income. The questionnaire asked respondents to identify one of twelve net income categories beginning at $0 - $6,999, increasing by increments of $6,999, and ending at $77,000 & above. In the earnings analysis below, net income is converted to a continuous variable by coding the income ranges at the midpoint and capping the variable at $77,000.[9] Table B1 (Appendix B) indicates the twelve categories of the net income variable and its distribution among self-employed women and men in the sample.

Other variables measured in terms of categories (and converted to continuous variables) are starting capital, education, and hours of housework. Starting capital uses the same categories (and is coded in the same way) as net income. Education indicated five categories. The categories and converted values are: less than high school=11 years, high school=12 years, some college=14 years, bachelor's degree=16 years, and graduate degree=19 years. Hours of housework is measured in terms of seven categories. The first six (beginning at 0-4 hours) increase by four hour increments with the seventh category indicating 30 + hours. The first six categories, then, were coded at the midpoint and the hours of housework variable is capped at 30.

To assess the representativeness of this sample, Table C1 (Appendix C) compares mean characteristics of self-employed in St. Croix County with the broader self-employment sector.[10] This comparison indicates self-employed in St. Croix County stand out because they earn more, are older, and have more education. The mean characteristics also suggest St. Croix County has more full-time self-employed indicated by more work hours for both women and men. More full-time self-employment for women in St. Croix County is also suggested by the mean value indicating fewer children under six years of age compared to self-employed women in the national sample.

Comparison of industry location (Table C1) indicates St. Croix County has similar gender differences as found in the national self-

employment sector. In particular, St. Croix County (as found at the national level) has a higher proportion of men in construction and manufacturing. At the same time, self-employed women in both samples indicate a higher proportion in services. St. Croix County, however, indicates a higher proportion of self-employed women in finance/real estate which reflects the housing boom that occurred in the county at the time of data collection in 2004.

The unique characteristics of self-employed in St. Croix County warrants caution in generalizing the results of this study. These data, however, provide a view of the determinants of earnings differences between self-employed women and men operating in a county with a vibrant self-employment sector. This should provide a strong basis for comparison with other studies examining the gender earnings gap in self-employment.[11]

III. Model Specification, Hypotheses, and Descriptive Statistics

A. MODEL SPECIFICATION

To examine the influence of job preferences on the earnings of self-employed women and men the analysis below estimates several wage specifications. To provide a point of comparison, we first estimate the following baseline model on the pooled sample and separately on self-employed women and men:

$$lnW = X_i \beta + HW_i \alpha + \varepsilon_i \quad (1)$$

where W represents net income of self-employed in the sample. The vector X_i includes human capital measures (education, labor market experience, and tenure), starting capital, industry location, and work hours. Also included in X_i are the personal characteristics marital status, number of young children, and having a disability. The vector HW_i represents hours spent doing housework and the amount of effort self-employed spend on housework. Random error is indicated by the term ε_i.

The analysis then incorporates job preferences into the model:

$$lnW = X_i \beta + HW_i \alpha + JP_i \lambda + \varepsilon_i \quad (2)$$

where JP_i represents a vector of job preference measures. The other terms X_i, HW_i, and ε_i are the same as indicated in model (1). Identifying individual effects of the job preference coefficients is difficult due to multicollinearity between the variables (Filer, 1989).[12] Correlation analysis (see Appendix D) indicates a number of job preference measures in this sample are significantly related to each other for both self-employed women and men. Also, given the small sample size, standard errors tend to be higher contributing to the difficulty in identifying the individual effects of these measures.

To identify individual effects, model (2) is first estimated on the pooled sample of self-employed women and men to determine the job preference measures that maximize the adjusted R-squared. These job preference measures, then, are included in regressions estimated separately on self-employed women and men to examine their effects on earnings.[13] In addition, sensitivity analysis is conducted in which model (2) is estimated on the separate samples using different combinations of the selected job preference variables. This analysis also includes job preference variables initially dropped in the pooled estimates. Inclusion of these variables allows examination of their effects on the selected job preference measures. The possible effects of these excluded measures on the earnings of self-employed women and men can also be examined.

B. HYPOTHESES

Table 1 provides definitions of the dependent and independent variables used in the analysis. Also indicated is whether the variable is binary or continuous. In addition, Table 1 indicates expected signs of the coefficients for the separate regressions to be estimated on self-employed women and men.

Among the job preference measures, challenge of competition and financial risk-taker should have a positive effect on the earnings of self-employed women and men. Bonte and Jarosch (2012) suggest women are less inclined toward entrepreneurship due to their tendency to be less competitive and more risk averse. Still, those who embrace competition (women or men) are better at bargaining and put forth extra effort (Croson and Gneezy, 2009) which should result in higher earnings.

TABLE 1–Variable Definitions, Data Type, and Expected Effects on Earnings

Variable	Definition	Data Type	Coefficient Sign	
Dependent			Women	Men
Net Income	Annual net income self-employed will earn in 2004.	Continuous variable*	NA	NA
Human Capital				
Education	Number of years of school.	Continuous variable*	+	+
Years Work	Total number of years worked in all jobs.	Continuous variable	+	+
Years Worked Squared	Total number of years worked in all jobs squared.	Continuous variable	-	-
Full-Time Three Previous	# of years worked full-time in three previous occupations.	Continuous variable	+	+
Tenure	Total number of years operating this firm.	Continuous variable	+	+
Tenure Squared	Total number of years operating this firm squared.	Continuous variable	-	-
Personal				
Married	=1 if married, =0 if not married.	Binary variable	NS	+
Children Under Six	Number of children under six years of age.	Continuous variable	-	+
Disability	=1 has disability that limits work, =0 no disability	Binary variable	-	-
Financial Capital				
Starting Capital	Starting capital expenditures if same investment made today.	Continuous variable*	+	+
Industry				
Construction	=1 if firm in construction trades, =0 if otherwise.	Binary variable	+	+
Manufacturing	=1 if firm in manufacturing, =0 if otherwise.	Binary variable	NS	+
Trade	=1 if firm in sales, =0 if otherwise.	Binary variable	NS	+
Finance/Real Estate	=1 if firm in finance or real estate, =0 if otherwise.	Binary variable	+	+
Services[a]	=1 if firm in services, =0 if otherwise.	Binary variable	NA	NA
Practice	=1 if firm in professional practice, =0 if otherwise.	Binary variable	+	+

Variable	*Definition*	*Data Type*	*Coefficient Sign*	
Work			Women	Men
Work Hours	Average hours worked per week.	Continuous variable	+	+
Housework				
Housework Hours	Average hours worked on household chores per week.	Continuous variable*	NS	+
Housework Effort	Effort expended working at household chores (scale: 1-11)	Continuous variable	-	-
Job Preferences				
Challenge of Competition	Enjoys challenges of competitive environment (scale: 1-11).	Continuous variable	+	+
Financial Risk-Taker	Consider myself to be a financial risk-taker (scale: 1-11).	Continuous variable	+	+
Make a Lot of Money	Job provides the opportunity to make a lot of money (scale: 1-11)	Continuous variable	+	+
Lead and Motivate Others	Self-employed to lead and motivate others (scale: 1-11).	Continuous variable	+	+
Can be Innovative	Self-employed because I can be innovative (scale: 1-11).	Continuous variable	+	+
Can be my Own Boss	Self-employed because I can be my own boss (scale: 1-11).	Continuous variable	?	?
Close to Extended Family	Job is close to my extended family (scale: 1-11).	Continuous variable	?	?
Makes a Contribution	Job makes a contribution to society (scale: 1-11).	Continuous variable	-	-
Intellectually Challenging	Job is intellectually challenging (scale: 1-11).	Continuous variable	+	+
Job Security	Job provides job security (scale: 1-11).	Continuous variable	-	-
Pleasant Co-Workers	Job has pleasant co-workers (scale: 1-11).	Continuous variable	-	-

[a]Reference category, *Converted from categorical to continuous variable. NA=Not Applicable, NS = Not Significant.

Similarly, since those with a tolerance for risk seek greater financial reward (Croson and Gneezy, 2009; McGoldrick, 1995), self-employed women and men who prefer financial risk should have higher net income.

The job preferences make a lot of money, lead and motivate others, and can be innovative should also increase the earnings of self-employed women and men. Schumpeter (1934) suggested entrepreneurs (because they are motivated to show their superiority) have a preference for making money because it provides an indication of success. At the same time, entrepreneurs who are successful leaders should have higher earnings because they are able to articulate a vision that assists in obtaining financial resources (Schumpeter, 1934) and eliciting maximum effort from employees (Gupta, MacMillan, and Surie, 2004).[14] Finally, self-employed with a preference for innovation suggests a desire to develop "new combinations" in terms of products, markets, and redirection of resources (Schumpeter, 1934) which should promote increased earnings.

It is not clear the effects that the job preferences can be my own boss and close to extended family will have on the earnings of self-employed women and men. Hamilton (2000) and Kawaguchi (2002) suggest self-employed (compared to wage and salary workers) forgo earnings as compensation for achieving greater autonomy (or "being your own boss"). Within self-employment, however, greater autonomy could result in more productivity and higher earnings. In terms of being close to extended family, Filer (1985) suggests this reduces earnings because of lower costs for traveling to work. Compton and Pollack (2013), however, indicate being close to extended family increases the labor supply of mothers with young children due to help received for child care. If self-employed women in this sample are receiving help with child care from extended family members—which allows them to work more—then being close to extended family may result in higher earnings.

Self-employed women and men who indicate a preference for makes a contribution (to society) should have lower earnings. Placing emphasis on work which makes a contribution suggests a preference for cooperation over competition. Croson and Gneezy (2009) point out that those who emphasize cooperation have weaker bargaining skills because they place less emphasis on their own interests which could result in lower earnings. Results in Daymont and Andrisani (1984) which indicated a negative effect on the earnings of women and men with a preference for "helping others" is consistent with this hypothesis.

Among the remaining job preference variables (Table 1), having

interest in work that is intellectually challenging suggests a commitment to problem solving which should increase productivity and earnings of both self-employed women and men. At the same time, preference for job security and having pleasant co-workers suggests less concern for monetary reward. As a result, these preferences should have a negative effect on earnings.

In terms of the housework variables (Table 1), more effort expended on household chores should reduce the earnings of self-employed women and men (Becker, 1986; Hundley, 2001; Walker, 2009). Stratton (2001) suggests, due to inflexibility of work in the wage and salary sector, housework hours place inconvenient time constraints on women which reduces their earnings. Table 1, however, indicates housework hours should not significantly influence the earnings of self-employed women. This is consistent with the hypothesis that self-employment offers women flexibility so that time spent doing housework should not interfere with productivity at their business.[15]

Among the remaining variables, the human capital measures education, labor market experience, and tenure should have a positive effect on earnings. Starting capital should increase earnings as self-employed have incentive to increase income to cover the cost of borrowing (Schumpeter, 1934; Barzel, 1987). More work hours should increase earnings due to the acquisition of additional skills or the establishment of beneficial networks which increase output (Kuhn and Lozano, 2006). Anticipated effects indicated for being married and children under six are consistent with research suggesting men have higher earnings if they are married and have young children (Korenman and Neumark, 1991; Hersch and Stratton, 2000). Women, however, do not benefit from a marriage premium while the presence of young children reduces their earnings (Korenman and Neumark, 1992). In the broader economy the effect of industry location on earnings is an empirical question (Krueger and Summers, 1988). The expected signs of these coefficients reflect the findings of Walker (2009).

C. DESCRIPTIVE RESULTS

Mean values and difference tests of the dependent and independent variables are presented in Table 2. Results for the dependent variable indicate significantly higher net income (both in non-log and log terms) for self-employed men compared to self-employed women.[16]

TABLE 2–Mean Values and Difference Tests by Gender

	Women		Men		
Variables	**Mean**	**n**	**Mean**	**n**	**t-Statistic**
Dependent					
Net Income	37,124.28	173	53,728.72	188	6.29***
Log Net Income	10.11	173	10.7	188	6.16***
Human Capital					
Education	14.62	180	15.07	192	1.82*
Years Worked	27.25	170	31.61	188	4.32***
Years Worked Squared	833.27	170	1089.35	188	4.24***
Full-Time Three Previous	10.74	169	11.03	185	.34
Tenure	10.24	179	15.27	192	4.76***
Tenure Squared	186.16	179	356.21	192	4.22***
Personal					
Married	.77	180	.83	192	1.62
Children Under Six	.16	179	.19	192	.55
Disability	.07	180	.04	192	-1.07
Financial Capital					
Starting Capital	3.597(*10k*)	173	4.704(*10k*)	188	3.64***
Industry					
Construction	.00	179	.18	193	628***
Manufacturing	.02	179	.09	193	2.92***
Trade	.23	179	.14	193	-2.23**
Financial/Real Estate	.18	179	.09	193	-2.60**
Services	.46	179`	.33	193	-2.62***
Practice	.11	179	.17	193	1.63

	Women		Men		
Variables	**Mean**	**n**	**Mean**	**n**	**t-Statistic**
Work					
Work Hours	44.65	176	50.73	191	3.63***
Housework					
Housework Hours	16.73	179	11.82	192	-5.88***
Housework Effort	7.08	178	5.63	188	-5.32***
Job Preferences					
Challenge of Competition	7.71	176	7.63	189	-.296
Financial Risk-Taker	5.25	173	5.83	188	1.87*
Make a Lot of Money	7.15	174	7.96	184	1.74*
Lead and Motivate Others	6.69	175	6.11	188	-1.90*
Can be Innovative	8.79	173	8.29	186	-2.16**
Can be my Own Boss	9.26	176	9.02	188	-1.12
Close to Extended Family	5.67	174	5.54	187	-.347
Makes a Contribution	7.85	175	7.31	188	-1.98**
Intellectually Challenging	8.65	176	8.32	191	-1.56
Job Security	7.30	175	7.00	189	-.910
Pleasant Co-Workers	7.05	172	6.73	188	-.942

***Significant @ 1 percent, **Significant @ 5 percent, *Significant @ 10 percent. All use two tail tests and assume equal variances between the samples.

In terms of job preferences, consistent with previous research, results indicate a stronger preference for financial risk-taker among self-employed men (Bonte and Jarosch, 2012; Croson and Gneezy, 2009). The stronger preference among self-employed men for make a lot of money is consistent with the findings of Daymont and Andrisani (1984). Also consistent with Daymont and Andrisani (1984) is the result indicating a stronger preference among self-employed women for makes a contribution.

Inconsistent with Daymont and Andrisani (1984) is the result indicating a stronger preference among self-employed women to lead and motivate others. This may, however, be consistent with research suggesting female business owners place more emphasis on incorporating management practices which, instead of being hierarchical, consider the strengths and weaknesses of employees (Blake and Hanson, 2005). Self-employed women in this sample may be enthusiastic about these alternative management techniques which is reflected in a stronger preference to "lead and motivate others." At the same time, self-employed men may be weaker regarding this preference because they view leadership in narrower terms of providing a vision to obtain financial backing for the firm and not motivating employees (Schumpeter, 1934).[17]

The stronger preference of self-employed women towards can be innovative may be an indication that self-employment attracts women who embrace innovation because of the need to solve problems as they simultaneously manage their household and business. In addition, Coleman and Robb (2014) indicate female business owners—compared to their male counterparts—have a stronger interest in "soft" types of innovation (such as changes in management and marketing practices) which are easier to achieve. The stronger preference among self-employed women, then, may also reflect a greater confidence they can be innovative because of their interest in the more easily attainable types of innovation.[18]

Among the other variables, self-employed men have higher levels of human capital in terms of education, experience, and tenure compared to their female counterparts. In addition, self-employed men have more starting capital, work more hours, and spend less time and effort at housework. Self-employed men are also more highly concentrated in construction, manufacturing, and professional practice. These differences are consistent with the higher average net income of self-employed men compared to self-employed women.

IV. Regression Results

OLS regression results from the estimates of the baseline and job preference models are reported in Table 3. The baseline estimates on the pooled and separate samples of self-employed women and men are indicated in models (1)–(3). Model (4) indicates the job preference coefficients identified in the variable selection procedure estimated on the pooled sample. Models (5) and (6) include those same job preference measures in the separate regressions estimated on self-employed women and men.

Results of the baseline model are consistent with previous research (Hundley, 2001; Walker, 2009). In particular, model (2) indicates more effort expended on housework reduces the earnings of self-employed women. At the same time, self-employed women with more tenure receive higher earnings. Models (2) and (3) indicate the positive effects of starting capital on the earnings of both self-employed women and men. Also indicated in models (2) and (3) are the positive effects on earnings for self-employed located in construction, finance/real estate, and professional practice.

The variable selection procedure on the pooled sample (model (4)) indicates the job preference measures with significant effects are challenge of competition, make a lot of money, job security, close to extended family, and can be innovative. The expected positive effects are indicated for challenge of competition and make a lot of money. Unexpected effects are indicated for job security (positive) and can be innovative (negative). Finally, close to extended family (expected to be positive or negative) indicates a negative effect on earnings.

Job preference results in the separate estimates indicate, for self-employed women (model (5)), the expected positive effect for make a lot of money on earnings. Close to extended family indicates a negative effect on earnings of self-employed women. For self-employed men (equation (6)) challenge of competition and make a lot of money have the expected positive effects on earnings.

The remaining coefficients in models (4)-(6) are similar to the baseline model. With the exception of the sex dummy (which remains positive but no longer significant in model (4)), the same coefficients are significant (and show the same effect on earnings) as the baseline estimates.[19]

TABLE 3–OLS Estimates With and Without Job Preferences

	Without Job Preferences			With Job Preferences		
	Pooled	**Women**	**Men**	**Pooled**	**Women**	**Men**
	(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**
Intercept	9.45***	9.48***	9.29***	8.79***	9.53***	8.18***
	(.578)	(.920)	(.658)	(.578)	(1.08)	(.596)
Human Capital						
Education	.010	.012	.019	.024	.008	.024
	(.024)	(.042)	(.026)	(.024)	(.040)	(.026)
Years Worked	.008	.016	.009	-.008	-.003	.003
	(.023)	(.040)	(.023)	(.019)	(.046)	(.019)
Years Worked Squared	-.000	-.001	-.000	-.000	-000	-.000
	(.000)	(.000)	(.000)	(.000)	(.000)	(.000)
Full-Time Three Previous	.012	.006	.017**	.012	.002	.016*
	(.009)	(.014)	(.008)	(.009)	(.011)	(.009)
Tenure	.044***	.065**	.017	.042**	.055*	.016
	(.014)	(.029)	(.014)	(.013)	(.029)	(.013)
Tenure Squared	-.000*	-.000	.000	-.000*	-.001	-.000
	(.000)	(.000)	(.000)	(.000)	(.001)	(.000)
Financial Capital						
Starting Capital	.054***	.054**	.046**	.041***	.048*	.038*
	(.016)	(.024)	(.018)	(.015)	(.027)	(.020)
Personal						
Married	.124	-.009	.236*	.133	-.054	.262*
	(.102)	(.162)	(.135)	(.104)	(.174)	(.133)
Children Under Six	.157**	.179	.137*	.169**	.127	.144**
	(.071)	(.127)	(.072)	(.067)	(.164)	(.058)
Disability	-.697***	-1.075***	-.386**	-.634***	-1.012***	-.349**
	(.192)	(.291)	(.183)	(.190)	(.334)	(.148)

TABLE 3–OLS Estimates With and Without Job Preferences (Continued)

	Without Job Preferences			With Job Preferences		
	Pooled	**Women**	**Men**	**Pooled**	**Women**	**Men**
	(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**
Industry						
Construction	.375*** (.118)	-	.359*** (.130)	.472*** (.113)	-	.471*** (.133)
Manufacturing	.091 (.216)	-.743 (.673)	.319 (.234)	.160 (.186)	.110 (.905)	.251 (.215)
Trade	.009 (.139)	-.08 (.198)	.110 (.190)	.079 (.134)	.035 (.186)	.125 (.190)
Financial/Real Estate	.636*** (.128)	.567*** (.188)	.786*** (.139)	.456*** (.129)	.406** (.192)	.636*** (.131)
Service[a]	-	-	-	-	-	-
Practice	.627*** (.147)	.727** (.241)	.727*** (.187)	.545*** (.143)	.630** (.283)	.663*** (.168)
Work						
Work Hours	.007* (.004)	.003 (.006)	.011** (.005)	.006 (.004)	.001 (.005)	.011** (.004)
Housework						
Housework Hours	.001 (.006)	.013 (.012)	-.017*** (.006)	-.000 (.006)	.015 (.010)	-.016*** (.006)
Effort						
Housework Effort	-.039** (.018)	-.076** (.033)	-.003 (.021)	-.048*** (.018)	-.094*** (.034)	-.014 (.021)
Sex	.258** (.109)	-	-	.127 (.113)	-	-

TABLE 3–OLS Estimates With and Without Job Preferences (Continued)

	Without Job Preferences			With Job Preferences		
	Pooled	**Women**	**Men**	**Pooled**	**Women**	**Men**
	(1)	**(2)**	**(3)**	**(4)**	**(5)**	**(6)**
Job Preferences[b]						
Challenge of Competition				.053***	.049	.056***
				(.018)	(.034)	(.019)
Make a Lot of Money				.066***	.056*	.067**
				(.021)	(.033)	(.032)
Job Security				.032**	.047	.024
				(.015)	(.029)	(.017)
Close to Extended Family				-.023*	-.048**	-.003
				(.012)	(.022)	(.012)
Can be Innovative				-.041*	-.040	-.035
				(.021)	(.040)	(.022)
Excluded in Pooled Procedure						
Makes a Contribution				-	-	-
Can be my Own Boss				-	-	-
Pleasant Co-Workers				-	-	-
Intellectually Challenging				-	-	-
Lead and Motivate Others				-	-	-
Financial Risk-Taker				-	-	-
Adjusted R-Square	.29	.25	.24	.341	.27	.34
n	328	153	175	311	143	168

a. Reference category
b. Job preferences that are included were determined using data reduction on pooled sample.
***Significant @ 1 percent, **Significant @ 5 percent, *Significant @ 10 percent. All use a two-tail test.
Robust standard errors.

Table 4 presents results of four additional models, estimated on the separate samples of self-employed women and men, which examine the sensitivity of the job preference coefficients. The sensitivity results for self-employed women are presented in models (1)-(4). For self-employed men the sensitivity results are presented in models (5)-(8). As a point of reference, the highlighted columns indicate the job preference coefficients for self-employed women and men reported in Table 3. In these estimates, models (1) and (5) drop the job preference variables indicating significant effects in Table 3. Models (2) and (6) includes those variables along with any job preferences indicating significant effects in the first sensitivity estimate. Models (3) and (7) add the job preference variables makes a contribution, lead and motivate others, and financial risk-taker which were excluded in the pooled procedure. Models (4) and (8) includes only makes a contribution, lead and motivate others, and financial risk-taker.[20]

Results in Table 4 indicate, for self-employed women, the coefficient for make a lot of money is not robust in the estimates. In model (2), which adds the significant effect of job security, make a lot of money remains positive, but loses significance. This is also the case in model (3) which adds the job preference measures makes a contribution, lead and motivate others, and financial risk-taker.

The results for self-employed men indicate the positive effects of challenge of competition and make a lot of money are robust in the estimates. As indicated, challenge of competition and make a lot of money remain positive and significant with the inclusion of job security (model (6)) and when makes a contribution, lead and motivate others, and financial risk-taker are added to the estimate (model (7)).

Other sensitivity results of interest include, for self-employed women, the positive effects of job security and financial risk-taker. For self-employed men, makes a contribution indicates consistent positive effects on earnings. At the same time, the coefficient for lead and motivate others indicates a negative effect in model (7).

The results (Tables 3 and 4) indicating self-employed women do not receive higher earnings for challenge of competition (though Table 2 suggests a similar preference to self-employed men) may reflect their concentration in lower paying service occupations that do not reward this preference. It is also plausible that self-employed women, even though they value competition, still do not pursue their interests as aggressively as self-employed men.

TABLE 4–Alternate Specifications and the Sensitivity of Job Preference Coefficients[a]

	Table 3: Women	**Sensitivity Results: Women**				***Table 3: Men***	**Sensitivity Results: Men**			
		(1)	**(2)**	**(3)**	**(4)**		**(5)**	**(6)**	**(7)**	**(8)**
Job Preferences										
Challenge of Competition	***.049*** ***(.034)***	.043 (.031)	-	-	-	***.056**** ***(.019)***	-	.040*** (.015)	.049** (.019)	-
Make a Lot of Money	***.056**** ***(.033)***	-	.049 (.030)	0.38 (.031)	-	***.067**** ***(.032)***	-	.069** (.030)	.068** (.031)	-
Job Security	***.047*** ***(.029)***	.058** (.029)	.060** (.029)	.059** (.030)	-	***.024*** ***(.017)***	.035* (.018)	.023 (.018)	.023 (.019)	-
Close to Extended Family	***-.048**** ***(.022)***	-	-.052* (.022)	-.052** (.023)	-	***-.003*** ***(.012)***	-.007 (.013)	-	-	-
Can be Innovative	***-.040*** ***(.040)***	-.030 (.039)	-	-	-	***-0.35*** ***(.022)***	.010 (.021)	-	-	-
Excluded in Pooled Procedure										
Makes a Contribution	**-**	-	-	-.033 (.034)	-.001 (.036)	**-**	-	-	.042** (.020)	.053** (.022)
Lead and Motivate Others	**-**	-	-	-.005 (.031)	-.006 (.031)	**-**	-	-	-.037* (.019)	-.017 (.019)
Financial Risk-Taker	**-**	-	-	.040 (.029)	.052* (.027)	**-**	-	-	-.006 (.024)	.021 (.021)
Can be my Own Boss	**-**	-	-	-	-	**-**	-	-	-	-
Pleasant Co-Workers	**-**	-	-	-	-	**-**	-	-	-	-
Intellectually Challenging	**-**	-	-	-	-	**-**	-	-	-	-
Adjusted R-Square	***.27***	.223	.32	.31	.27	***.34***	.25	.35	.36	.28
n	***143***	144	149	145	148	***168***	168	171	170	170

[a]The X_i and HW_i coefficients not reported.
***Significant @ 1 percent, **Significant @ 5 percent, *Significant @ 10 percent. All use a two-tail test.
Columns in bold indicate job preference results reported in Table 3.
Models (1) and (5) drop significant job preference coefficients reported in Table 3. Models (2) and (6) include job preference coefficients that are significant in Table 3 and in models (1) and (6). Models (3) and (7) add makes a contribution, lead and motivate others, and financial risk-taker excluded in the pooled procedure. Models (4) and (8) include only makes a contribution, lead and motivate others, and financial risk-taker as the job preference measures. Robust standard errors.

The greater emphasis self-employed women place on makes a contribution (Table 2) suggests a tendency towards cooperation and weak bargaining (Croson and Gneezy, 2009) which could dampen earnings. In addition, the lower preference of self-employed women towards financial risk (Table 2) suggests a weaker tolerance for risk which may translate into less confidence when facing uncertainty in a competitive environment (Croson and Gneezy, 2009) that could limit opportunities for increased income.[21]

The negative effect of close to extended family in the estimates for self-employed women (Tables 3 and 4) is consistent with the argument that earnings are lower due to reduced costs of travel (Filer, 1985). It may also be the case, however, that self-employed women receive child care assistance from extended family members which allows an increase in labor supply as suggested by Compton and Pollack (2013). At the same time, obtaining help with child care lowers costs which (similar to the case with travel) allows self-employed women to accept lower earnings.

The sensitivity results indicate a positive effect for financial risk-taker on the earnings of self-employed women. This result complements the finding, in the initial estimate for self-employed women, of a positive effect on earnings for make a lot of money. Both preferences are similar in indicating an assertive attitude towards the market with an interest in financial reward. Though make a lot of money is not robust, the positive effect of financial risk-taker provides additional evidence that self-employed women in this sample, who are assertive and have an interest in financial gain, receive higher earnings.

Among the other sensitivity results, the positive effect of job security (particularly for self-employed women) may reflect the view that higher income is needed to insure a stable business. The positive effect of makes a contribution in the estimates for self-employed men could reflect the attitude that an individual can simultaneously earn a high income and make a contribution to society. This may apply most to self-employed men in professional occupations, including medical, dental, and legal services. For self-employed men, the negative effect of lead and motivate others may indicate management strategies that place emphasis on obtaining finance (Schumpeter, 1934) and not motivating employees through inclusive practices (Blake and Hanson, 2005).

Finally, an interesting result in Table 3 (though it did not achieve significance in the separate estimates) is the negative effect of can be

innovative on earnings indicated in the pooled procedure. This suggests the difficulty entrepreneurs face in translating innovations into higher income (Drucker, 1985). The negative effect on earnings, however, may also indicate a nonpecuniary incentive for self-employed in this sample who may be motivated by the intrinsic challenge of developing an innovation and less by the financial reward (Sauermann and Cohen, 2008).

V. Earnings Decomposition

Table 5 presents Oaxaca (1973) decomposition results which examine the degree to which job preferences contribute to earnings differences between self-employed women and men in this sample. The analysis, which focuses on attribute differences between self-employed women and men, is based on the earnings estimates reported in Table 3 that include the job preference variables.[22]

The Oaxaca (1973) method, at the detailed level, allows examination of the marginal effect on the earnings gap of a specific attribute difference between self-employed women and men. The marginal effect is calculated by multiplying the difference in mean values (between self-employed women and men) of that attribute by the corresponding estimated regression coefficient. Results, however, may differ depending on whether the coefficient used is from regressions estimated on self-employed women or men. As a result, Table 5 indicates marginal effects using estimated coefficients from the pooled and separate samples of self-employed women and men. In addition, the results in Table 5 indicate the percentage contribution by dividing each marginal effect by the average difference in net income (in natural log terms).

Results based on pooled sample indicate job preferences explain 8.69 percent of the earnings gap. Among the job preferences make a lot of money (which is significant) contributes the most at 7.5 percent. The preference can be innovative, which is not significant, increases the earnings gap by 2.67 percent. The remaining job preference measures indicate small and insignificant effects due primarily to the similar mean values between self-employed women and men regarding these preferences.

Job preference results are similar with the application of the female and male coefficients. The female coefficients indicate job preferences explain 7.53 percent of the earnings gap.

TABLE 5–Percent of Male-Female Earnings Gap Based on Attribute Differences[a]

Independent Variable	Pooled Sample Coefficients	Female Coefficients	Male Coefficients
Human Capital			
Education	1.43	.50	1.42
Years Worked	-6.67	-2.60	2.50
Years Worked Squared	-.417	-11.60	-6.32
Full-Time Three Previous	1.67	.30	2.22
	-3.99	**-13.40**	**-.18**
Tenure	39.33***	51.50*	15.50
Tenure Squared	-18.00*	-26.20	.67
	21.33	**25.30**	**16.17**
Personal			
Married	1.16	-.47	2.28
Children Under Six	-.283	-.22	-.25
Disability	.77	1.23	.42
	1.65	**.54**	**2.45**
Financial Capital			
Starting Capital	8.50**	9.92*	7.80*
Industry			
Construction[b]	14.00***	-	14.00***
Manufacturing	2.33	1.62	3.67
Trade	-1.33	-.60	-3.83
Financial/Real Estate	-7.05**	-6.27	-9.80**
Professional Practice	4.33	5.00	5.33
Service[c]	-	-	-
	12.28	**-.25**	**9.37**
Work			
Work Hours	5.83	1.32	11.33***
Housework			
Housework Hours	.167	-12.17	13.67**
Housework Effort	11.50**	22.67**	3.50
	11.67	**10.50**	**17.17**
Job Preferences			
Challenge of Competition	-.30	-.28	-.33
Make a Lot of Money	7.50**	6.37	7.60
Job Security	-1.85	-2.67	-1.38
Close to Family	.67	1.43	.10
Can be Innovative	2.67	2.68	2.30
	8.69	**7.53**	**8.29**
TOTAL	**65.96**	**41.46**	**72.41**

[a]Values indicate marginal effect of attribute difference on earnings gap divided by mean difference in earnings in Natural Log terms. Marginal effects weighted by pooled, female, and male coefficients.

[b]Omitted in earnings estimate of self-employed women.

[c]Reference Category.

***Significant @ 1 percent, **Significant @ 5 percent, *Significant @ 10 percent. All use a two-tail test. Robust standard errors.

Using the male coefficients 8.29 percent of the earnings gap is explained by the job preferences measures. In both cases make a lot of money, though not significant, contributes most (6.37 and 7.60 percent) to the earnings gap. The effect of the remaining job preferences, using the female and male coefficients, are similar to the pooled sample estimates.

Among the remaining variables, starting capital significantly increases the earnings gap in all the estimates. In the estimates based on the pooled sample and female coefficients, significant increases in the earnings gap are indicated for tenure and housework effort. Estimates based on the pooled and male coefficients indicate location in construction significantly increases the earnings gap. At the same time, results based on the pooled and male coefficients indicate location in finance/real estate (which has a significantly larger proportion of self-employed women) significantly reduces the earnings gap.

Variation in the decomposition results, based on the female and male coefficients, may reflect structural differences in firms operated by self-employed women and men. In particular, the significant effect of housework hours in increasing the earnings gap using the male coefficients may reflect less flexibility of work among self-employed men. Greater flexibility of work among self-employed women may account for the decrease (though not significant) of the earnings gap by 12.17 percent when using the female housework hours coefficient. Also, the significant positive effect of housework effort using the female coefficients may be related to greater flexibility of work among self-employed women. Greater work flexibility would allow self-employed women to devote more effort to housework (significantly increasing the earnings gap) which may not occur with the less flexible work arrangements of self-employed men.

Variation in the female and male decomposition results may also reflect bias due to capping net income at $77,000. This may particularly be the case regarding the insignificant effect for tenure using the male coefficients which may reflect greater understatement of net income among self-employed men (see Table B1, Appendix B).

VI. Conclusion

The results of this study indicate job preferences add to the explanation of gender-based earnings differences in self-employment. In particular, Oaxaca (1973) decomposition results indicate the stronger preference

among self-employed men towards make a lot of money contributes at least 6.37 percent to the gender-based earnings gap. These results should be viewed with caution, however, since the decomposition did not indicate significant effects for make a lot of money when applying the female and male coefficients. Since the insignificance in these decomposition results may be related to the small sample size, the findings in this study still suggest examining the effects of job preferences is a fruitful line of research to pursue in understanding the determinants of earnings differences between women and men in self-employment.

Sensitivity analysis indicates, in the estimates for self-employed women, the positive effect of make a lot of money is not robust. The sensitivity regressions, however, indicate a positive effect of preference for financial risk-taker. The positive effects indicated for both preferences suggest self-employed women in this sample, who are assertive and have an interest in financial gain, receive higher earnings. In addition to these findings, descriptive results—consistent with previous research regarding gender differences in preferences (Daymont and Andrisani, 1984; Croson and Gneezy, 2009)—indicate self-employed women in this sample are less inclined towards make a lot of money and financial risk-taking. Taken together, then, the regression and descriptive results suggest both preferences should continue to be included in the analysis to enhance our understanding of the gender-based earnings gap in self-employment.

These results indicate challenge of competition, due to the similarity in this preference between self-employed women and men, does not contribute to the earnings gap. Since previous studies indicate women are less inclined towards competition (Croson and Gneezy, 2009; Bonte and Jarosch, 2012) the result suggesting there is not a gender difference in preference towards challenge of competition may be unique to this sample. Future studies, then, should continue to examine the influence of this preference as gender differences in attitudes towards competition may still be shown to influence the earnings gap in self-employment.

Another result that may be unique to this study is the finding that self-employed women have a stronger preference to lead and motivate others. This finding is not consistent with Daymont and Andrisani (1984) who found men (in the wage and salary sector) indicated a stronger preference to "be a leader." The wording of the preference in this study "to lead and motivate others," however, may have revealed

general differences between self-employed women and men regarding their attitude towards leadership. Self-employed women may indicate a stronger preference to "lead and motivate others" due to an interest in instituting inclusive management practices in their businesses (Blake and Hanson, 2005). Self-employed men, on the other hand, may have a weaker preference due to a narrower view that leadership should be directed towards a vision that serves in gaining access to financial resources and not motivating employees through inclusive practices (Schumpeter, 1934). Future research should examine the degree to which self-employed women and men differ in their view of leadership. In addition, determining the effect of different leadership practices on earnings may identify another source of earnings differences between self-employed women and men.

The stronger preference of self-employed women towards can be innovative may also be unique to this sample. It may generally be the case, however, that self-employment attracts women who embrace innovation because of the need to be creative in solving problems associated with simultaneously managing the household and a business. Given the importance of innovation to entrepreneurship (Schumpeter, 1934) future research should continue to examine gender differences regarding this preference. Differentiating between "soft" versus "hard" types of innovation (Coleman and Robb, 2014) may also be helpful in identifying the source of gender differences in this preference, In addition, exploring the effects of preference for different types of innovation on earnings may identify additional determinants of the gender wage gap in self-employment.

Other results of interest that warrant further investigation include the findings with regard to makes a contribution and job security. Results indicate, consistent with Daymont and Andrisani (1984), that self-employed women have a stronger preference for work that makes a contribution to society. Sensitivity results for self-employed men, however, indicate a positive effect on earnings which is not consistent with Daymont and Andrisani (1984). Future research should investigate if self-employment, in contrast to the wage and salary sector, offers avenues in which those inclined towards cooperation may also achieve higher earnings. In addition, examining if it is generally the case that job security has a positive effect on the earnings of self-employed would point to an interesting difference in attitudes with wage and salary workers regarding the requirements for gaining secure employment.

Appendix A

TABLE A1: Job Preference Measures[a]

The Decision to be Self-Employed
1. Had a good idea for a product or service.
2. Can be my own boss.
3. Can be innovative.
4. Enjoy the challenges of a competitive environment.
5. I want to lead and motivate others.
6. Can advance my career.
7. Can make more money than working for someone else.
8. Can help create jobs.
9. Consider myself to be a financial risk-taker.
10. Can pursue a hobby.
11. My father/mother was self-employed.
12. Provides flexible work hours.
13. Was dissatisfied with my previous job.
14. Was unemployed and needed work.
Attitudes Towards Job Characteristics
1. Is intellectually challenging.
2. Provides independence or work autonomy.
3. Provides the opportunity to make a lot of money.
4. Makes a contribution to society.
5. Provides the opportunity to travel.
6. Provides job security.
7. Has pleasant co-workers.
8. Is close to my extended family.
9. Minimizes risk of accident or injury.
10. Does not require a lot of heavy lifting.
11. Minimizes financial risk.

a. Preference indicated using a 1 to 11 likert Scale

Appendix B

TABLE B1: Frequency Distribution for Annual Net Revenue of Self-Employed Women and Men

		Women		Men	
Category #	**Dollar Range**	**Frequency**	**Percent**	**Frequency**	**Percent**
1.	**$0-$6,999**	27	15	9	4.8
2.	**$7,000-$13,999**	19	10.6	3	1.6
3.	**$14,000-$20,999**	16	8.9	12	6.4
4.	**$21,000-$27,999**	10	5.6	13	6.9
5.	**$28,000-$34,999**	17	9.4	11	5.9
6.	**$35,000-$41,999**	17	9.4	11	5.9
7.	**$42,000-$48,999**	12	6.7	17	9.0
8.	**$49,000-$55,999**	6	3.3	11	5.9
9.	**$56,000-$62,999**	7	3.9	17	9.0
10.	**$63,000-$69,999**	8	4.4	6	3.2
11.	**$70,000-$76,999**	4	2.3	8	4.3
12.	**$77,000 & over**	30	16.7	70	37.2
	Missing	7	3.9	5	2.6
	Total	173		188	

Table B1 indicates the frequency distribution of the twelve net income categories for self-employed women and men. Self-employed women are more highly concentrated in the lower income ranges. Focusing on the first three categories, 34.5 percent of self-employed women identified net income in those ranges. This compares to 12.8 percent of self-employed men who indicated net income in those categories. At the same time self-employed men indicate a much higher percentage (37.2 compared to 16.7 percent) in the $77,000 & over category. This suggests the net earnings of self-employed men have a higher degree of understatement compared to self-employed women.

Appendix C

TABLE C1: Mean Values of Self-Employed in St. Croix and CPS Samples

	St. Croix County, Wisconsin				**Current Population Survey[a]**	
	Women		**Men**		**Women**	**Men**
Variables	**Mean**	**n**	**Mean**	**n**	**Mean**	**Mean**
Net Income	37,124.28 (26,190.61)	173	53,728.72 (23,909.77)	188	21,972.91 (34,583.29)	43,128.39 (53,445.97)
Age	45.61 (10.04)	179	48.80 (9.91)	192	44.18 (10.34)	44.94 (10.25)
Education	14.62 (2.24)	180	15.07 (2.51)	192	13.57 (2.89)	13.00 (2.86)
Married	.77 (.42)	180	.83 (.37)	192	.72 (.45)	.76 (.43)
Children Under Six	.16 (.46)	179	.19 (.61)	192	.25 (.57)	.22 (.55)
Disability	.07 (.25)	180	.04 (.20)	192	.04 (.19)	.03 (.16)
Work Hours	44.65 (16.24)	176	50.73 (15.90)	191	34.76 (16.25)	44.46 (13.32)
Industry						
Construction	.00 (.00)	179	.18 (.39)	193	.04 (.19)	.33 (.47)
Manufacturing	.02 (.15)	179	.09 (.29)	193	.03 (.18)	.05 (.21)
Trade	.23 (.42)	179	.14 (.35)	193	.18 (.38)	.18 (.39)
Financial/ Real Estate	.18 (.38)	179	.09 (.28)	193	.07 (.26)	.07 (.26)
Services	.46 (.50)	179	.33 (.47)	193	.55 (.49)	.21 (.41)
Practice	.11 (.32)	179	.17 (.38)	193	.16 (.36)	.12 (.32)
					n=1,915	**n=2,905**

a. Source 2005 Annual Social and Economic Supplement of the Current Population Survey.

Sample includes self-employed aged 22 to 65 with net income greater than or equal $1.
Standard Deviations in Parentheses.

Appendix D

Job preferences often reflect the same construct and, as a result, tend to be correlated. This makes it difficult to identify the individual effects of each variable in an earnings model. Table D1 (see below) presents Pearson correlation coefficients estimated on the total sample for the eleven job preference measures. Tables D2 and D3 (see below) present these estimates on the separate samples of self-employed men and women.

The results indicate significant positive correlations between job preferences suggesting an ambitious attitude towards the labor market. Examples include, in Tables D1—D3, the significant positive correlations between challenge of competition and the measures financial risk-taker, make a lot of money, lead and motivate others, and innovative.

The results also suggest positive correlations between job preferences indicating a less ambitious attitude towards the labor market. These examples include (Tables D1—D3) the positive correlation between pleasant co-workers and the preferences being close to extended family, makes a contribution, and job security.

Some results indicate a significant positive correlation between job preferences reflecting ambitious and less ambitious attitudes towards the labor market. Examples of these include (Table D1—D3) the positive correlation between make a lot of money and the preferences makes a contribution and job security. The positive correlation between make a lot of money and contribution to society may be capturing the attitude of self-employed professionals who value making money and also hold the view that their occupation (which includes doctors, lawyers, and dentists) makes a broader contribution to society. The correlation between make a lot of money and job security may reflect the attitude of these self-employed that obtaining a high income is the best means to achieve security in the self-employment sector.

TABLE D1: Correlation Coefficients of Job Preferences Total Sample

	Challenge of Competition (1)	Financial Risk-Taker (2)	Make a Lot of Money (3)	Lead and Motivate Others (4)	Can be Innovative (5)	Be my Own Boss (6)	Close to Extended Family (7)	Makes a Contribution (8)	Intellectually Challenging (9)	Job Security (10)	Pleasant Co-Workers (11)
Challenge of Competition	1.00 n=374										
Financial Risk-Taker	.404*** n=366	1.00 n=370									
Make a Lot of Money	.256*** n=369	.231** n=366	1.00 n=373								
Lead and Motivate Others	.432*** n=370	.349*** n=366	.147*** n=369	1.00 n=372							
Can be Innovative	.487*** n=366	.124** n=361	.144*** n=364	.321*** n=366	1.00 n=368						
Be my own Boss	.184 n=369	.085 n=365	.249*** n=367	.026 n=368	.367*** n=364	1.00 n=372					
Close to Extended Family	.125** n=366	.071 n=363	-.038 n=367	.118** n=365	.025 n=362	-.025 n=364	1.00 n=370				
Makes a Contribution	.098 n=369	.151*** n=367	.234*** n=371	.364*** n=369	.215*** n=364	.046 n=367	.158*** n=369	1.00 n=373			
Intellectually Challenging	.207*** n=372	.034 n=368	.128 n=372	.184*** n=370	.302*** n=366	.142*** n=370	-.024 n=370	.360*** n=373	1.00 n=377		
Job Security	.079 n=369	.066 n=376	.278*** n=369	.197*** n=368	.014 n=363	.121** n=367	.207** n=367	.258*** n=370	.072 n=371	1.00 n=373	
Pleasant Co-workers	.137*** n=365	.129** n=363	.085 n=366	.406*** n=365	.131** n=361	-.052 n=363	.379*** n=364	.403*** n=368	.261*** n=368	.431*** n=366	1.00 n=369

Pearson Correlation Coefficients.
***Significant @ 1 percent; ** Significant @ 5 percent; All use a two tail test.

TABLE D2: Correlation Coefficients of Job Preferences Self-Employed Men

	Challenge of Competition (1)	Financial Risk-Taker (2)	Make a Lot of Money (3)	Lead and Motivate Others (4)	Can be Innovative (5)	Be my Own Boss (6)	Close to Extended Family (7)	Makes a Contribution (8)	Intellectually Challenging (9)	Job Security (10)	Pleasant Co-Workers (11)
Challenge of Competition	1.00 n=189										
Financial Risk-Taker	.450*** n=187	1.00 n=188									
Make a Lot of Money	.333*** n=186	.309*** n=186	1.00 n=188								
Lead and Motivate Others	.422*** n=188	.348*** n=187	.228*** n=186	1.00 n=188							
Can be Innovative	.523*** n=186	.113 n=185	.133 n=184	.349*** n=186	1.00 n=186						
Be my own Boss	.235*** n=187	.104 n=186	.278*** n=185	.127 n=186	.293*** n=184	1.00 n=188					
Close to Extended Family	.072 n=185	.066 n=185	.015 n=186	.164** n=185	.082 n=183	-.027 n=184	1.00 n=87				
Makes a Contribution	.200*** n=186	.261*** n=186	.288*** n=187	.413*** n=186	.189*** n=184	-.029 n=185	.216*** n=187	1.00 n=188			
Intellectually Challenging	.262*** n=188	.116 n=188	.169 n=188	.176** n=187	.245*** n=185	.065 n=187	-.018 n=187	.373*** n=188	1.00 n=191		
Job Security	.014 n=188	.049 n=187	.238*** n=187	.191*** n=187	-.050 n=185	.027 n=187	.310*** n=186	.256*** n=187	.069 n=188	1.00 n=187	
Pleasant Co-workers	.107 n=186	.206*** n=186	.106 n=186	.415*** n=186	.144** n=184	-.029 n=185	.445*** n=186	.413*** n=187	.213*** n=187	.436*** n=187	1.00 n=188

Pearson Correlation Coefficients.
***Significant @ 1 percent; ** Significant @ 5 percent; All use a two tail test.

TABLE D3: Correlation Coefficients of Job Preferences Self-Employed Women

	Challenge of Competition (1)	Financial Risk-Taker (2)	Make a Lot of Money (3)	Lead and Motivate Others (4)	Can be Innovative (5)	Be my Own Boss (6)	Close to Extended Family (7)	Makes a Contribution (8)	Intellectually Challenging (9)	Job Security (10)	Pleasant Co-Workers (11)
Challenge of Competition	1.00 n=176										
Financial Risk-Taker	.375*** n=170	1.00 n=173									
Make a Lot of Money	.180** n=175	.148 n=172	1.00 n=177								
Lead and Motivate Others	.451*** n=173	.381*** n=170	.124 n=175	1.00 n=175							
Can be Innovative	.458*** n=171	.165** n=167	.213*** n=172	.285*** n=171	1.00 n=173						
Be my own Boss	.147 n=174	.095 n=171	.245*** n=175	.017 n=174	.460*** n=172	1.00 n=176					
Close to Extended Family	.172** n=172	.088 n=169	-.089 n=173	.087 n=171	.-034 n=170	-.031 n=172	1.00 n=174				
Makes a Contribution	.012 n=174	.067 n=172	.234*** n=176	.297*** n=174	.224*** n=171	.157** n=174	.098 n=193	1.00 n=176			
Intellectually Challenging	.147 n=175	-.032 n=172	.094 n=176	.187** n=174	.364*** n=172	.230*** n=175	-.026 n=174	.374*** n=176	1.00 n=177		
Job Security	.014 n=172	.107 n=171	.346*** n=174	.222*** n=172	.056 n=169	.203*** n=172	.105 n=172	.269*** n=174	.087 n=174	1.00 n=175	
Pleasant Co-workers	.171** n=170	.089 n=168	.089 n=172	.401*** n=170	.103** n=168	-.085 n=170	.323*** n=169	.377*** n=172	.239*** n=172	.426*** n=170	1.00 n=172

Pearson Correlation Coefficients.
***Significant @ 1 percent; ** Significant @ 5 percent; All use a two tail test.

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Endnotes

1. The total nonagricultural self-employment rate from 1975 to 1990 increased from 7.4 to 9.7 percent (Devine, 1994). Aronson (1991) indicates a steady decline in self-employment prior to this re-emergence falling from 10.4 percent in 1955 to 6.9 percent in 1974. Since the 1990s self-employment has leveled off indicated by a total rate of 10.5 percent (in 1993) and 9.4 percent (in 2012). The corresponding rates for women are 8.1 and 7.1 percent and for men 12.7 and 11.5 percent (Roche, 2014).
2. Data we obtained from the 2005 Annual Social and Economic Supplement of the

Current Population Survey (Ruggles, et. al, 2015) indicate a female/male earnings ratio for full-time self-employed in 2004 of 61 percent. This suggests the growth in female relative to male earnings was well under way when the data for this study were collected in the fall of 2004.

3. Lechman and Schnabel (2012) examine the gender earnings gap in self-employment using German data. Rybezynski (2009) uses data on self-employed in Canada to examine the influence of investment on the gender earnings gap.
4. Hamilton (2000) and Kawaguchi (2002), though they do not focus on gender differences, suggest job preferences may be influencing differences in earnings between self-employment and the wage and salary sector. In particular, self-employed accept lower earnings as compensation for being able to "be your own boss."
5. There is interest in the role of gender differences in attitudes towards risk and competition on labor market outcomes in general and not just in self-employment. A nice overview of studies examining gender differences in attitudes towards risk and competition is provided by Croson and Gneezy (2009).
6. See Walker (2009) for description of St. Croix County and details of population identification and sample selection methods.
7. Table A1 (Appendix A) indicates the fourteen factors and eleven job characteristics. To minimize problems with multicollinearity (which we discuss below) the number of measures selected was narrowed down to include those we felt were most important based on our reading of the literature. In addition, some variables were dropped because of their similarity with included measures. As a result, the job characteristics "Provides independence or work autonomy," and "Minimizes financial risk" are excluded due to their similarity with the included factors "Can be my own boss" and "Consider myself to be a financial risk-taker." The factor "Can make more money than working for someone else" is excluded because it overlaps with the job characteristic "Provides the opportunity to make a lot of money." Finally, we exclude "Provides flexible work hours" (even though this measure is of interest due to the findings of Budig (2006)) because it was not a significant predictor of earnings in Walker (2009).
8. This follows Stratton (2001) who used the eleven point likert scale to measure work effort and housework effort of women in the wage and salary sector. Also, following Stratton (2001), respondents used the eleven point scale to indicate their effort expended watching "a typical hour of television." Dividing this into work effort and housework effort provides normalized measures of these variables to control for overstatement of the self-reported values. The regression analysis below reports results that use housework effort in the earnings estimates. Work effort, normalized work effort, and normalized housework effort were not significant in the analysis. As a result, these earnings estimates are not reported. Walker (2009) also found work effort, normalized work effort, and normalized housework effort were not significant in the earnings estimates.
9. Ranges were used to maximize the response rate due to the sensitivity of the information (Dillman, 1978). The narrower range of $6,999 was chosen to minimize error due to coding at the midpoint. Also, the lower cap of $77,000 was chosen to maximize the response rate from high income self-employed.
10. Characteristics of women and men in the broader self-employment sector were obtained using the Annual Social and Economic Supplement of the Current

Population Survey (Ruggles, et. al, 2015). The year 2005 was selected because net income reported by self-employed is from the previous year (2004) which corresponds to the data obtained on net income in Saint Croix County.

11. Close proximity to Minneapolis-St. Paul, Minnesota (25 miles to the west) and being directly connected to this metropolitan area by a major interstate highway (I-94) are important reasons for the vibrancy of self-employment in the county. At the time of data collection (fall 2004), St. Croix County was a leader in Wisconsin in terms of population growth and per capita income (Walker, 2009). A healthy self-employment sector is suggested by Census data indicating between 1998 and 2004 nonfarm establishments in the county increased by 27 percent (from 1,579 to 2,009). This is similar to Washington County, Minnesota (which borders St. Croix County to the west and also connects to the Twin Cities via I-94) in which nonagricultural establishments increased by 23 percent (from 4,197 to 5,202). By contrast, Pierce County, Wisconsin (which borders St. Croix County to the south and is not connected to the Twin Cities by an interstate highway) had growth in nonagricultural establishments of 6 percent between 1998 and 2004. It is also interesting to note that, due to the great recession, nonagricultural establishments in St. Croix and Washington Counties have increased by only six percent (between 2004 and 2013). Pierce County has had an eight percent decline in nonagricultural establishments between 2004 and 2013. The U.S. Census, County Business Patterns, 1998, 2004, and 2015 retrieved May 29, 2015, from http://www.census.gov/econ/cbp/.
12. Filer (1989) encountered the problem analyzing the effects of actual job attributes on earnings. The problem is similar in analyzing the preferences of individuals towards jobs.
13. We use a stepwise procedure on the pooled sample to determine which job preferences maximize the adjusted R-squared. Filer (1989) used a similar data reduction procedure in analyzing the influence of compensating differences on the gender earnings gap in the wage salary sector.
14. The wage and salary studies (Daymont and Andrisani, 1984; Filer, 1985) characterize preference for making money as the desire for pecuniary reward and not necessarily a measure of success. Daymont and Andrisani (1984) characterize being a leader as reflecting a desire to be assertive and dominant in the labor market which is similar to Schumpeter's (1934) depiction of the entrepreneur. Daymont and Andrisani (1984) found a stronger preference for making money and being a leader among men. They suggested this reflected social expectations that men are the primary income earners and, as a result, should be dominant in the labor market.
15. The expected negative effect for housework hours on the earnings of self-employed men indicated in Table 1 reflects the findings of Walker (2009). This negative effect can be attributed to the inflexibility of work among self-employed men. In addition, self-employed men in this sample (compared to self-employed men in Hundley (2001)) spend more time doing household chores. Table 2 indicates self-employed men in this sample devote 11.8 hours per week doing household chores compared to 6.5 hours per week in Hundley (2001).
16. The mean values indicate a much higher female/male earnings ratio (.69) compared to .30 (Hundley 2001, Devine 1994), .55 (weekly earnings ratio) Lechmann and Schnabel (2012), and .51 in Table C1. This may reflect overall growth in the relative earnings of female self-employed that occurred by 2004 (see footnote 2). Also, see Walker (2009) for a discussion of other factors unique to this sample that may be

contributing to the higher ratio which include understatement of self-employed male earnings due to capping of net income, a stronger labor market commitment of self-employed women (in terms of hours worked and tenure), and the higher proportion of women located in finance/real estate which paid lucrative wages due to the expanding housing market in St. Croix County.

17. In Schumpeter's depiction the entrepreneur leads "not by convincing [employees] of the desirability of carrying out his plan or by creating confidence in his leading in the manner of a political leader—the only man he has to convince…is the banker who is to finance him—but by buying them or their services, and using them as he sees fit." (Schumpeter, 1934, pp. 89).
18. The "harder" types of innovation emphasized by male business owners, which are more difficult to achieve, include developing new ideas and products and incorporating new production techniques (Coleman and Robb, 2014).
19. In the stepwise procedure on the pooled estimate the sex coefficient lost significance with the inclusion of the last job preference can be innovative. The adjusted R-squared fell from .356 to .341. Though the adjusted R-squared is not maximized, we decided to keep can be innovative because of its significance and to see if it would have an effect on earnings in the separate estimates.
20. These job preference variables were selected due to the significant difference in mean values between self-employed women and men indicated in Table 2. They are also of interest based on the significant effects indicated for these variables in previous research (Bonte and Jarosch, 2012; Daymont and Andrisani, 1984).
21. Interaction terms attempting to capture these effects were entered individually into the estimates. None of the terms indicated a significant effect on earnings.
22. The Oaxaca (1973) method identifies two components to average earnings differences between groups. The first is "explained" variation based on differences in average attributes (i.e., human capital and other background characteristics). The second component identifies "unexplained" variation (often associated with discrimination) indicated by differences in regression coefficients estimated within groups. Since discrimination is less of a concern in self-employment, the decomposition analysis in Table 5 focuses on attribute differences.