

Financial Gender Gaps

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Differences in men and women's propensity for risky-behavior has been well researched and accounts for both risk tolerance and perception (Byrnes, Miller & Schafer, 1999; Harris, Jenkins & Glaser, 2006). Financial gender gaps (FGG) have also been well documented, but conclusions have been more fragmented (Ruel & Hauser, 2013). The FGGs demonstrated in research show that women are behind when it comes to financial independence and retirement preparedness (Van Rooij, Lusardi & Alessie, 2012; Bannier & Neubert, 2016; Lemaster & Strough, 2014). However, researching the gender gap directly with a strong theoretical rationale, clear constructs and large secondary data set has fallen short (Bannier & Neubert, 2016; Hibbert, Lawrence & Prakash, 2013). Researchers and policy makers alike need a clear understating of determinants if they intend to close the gap.

This study focused on assessing FGG by comparing models of risky-asset holdings using financial literacy as a moderator. The research question was would the gender gap remain after using financial literacy as a mediator in predicting risky asset holdings? Using the 2013 Survey of Consumer Finances (SCF) this study identified impacts of financial literacy (proxied by financial sophistication) as a mediator of risky asset holdings.

Significance

Careful and creative theoretical consideration has been a missing component within financial planning's investigation of the gender-gap. This study contributes to the literature by utilizing a novel theory, Risk-As-Feelings (RAF) (Loewenstein, Weber, Hsee, and Welch, 2001), to investigate this gender gap. RAF addresses risky-behaviors as a result of a broader range of explanatory variables when compared to the traditional, consequential expected utility model. The RAF framework allows for risk preference to be used in tandem with other predictors of behavior. In this study, we examine the effect of financial literacy and risk preferences on risky asset holding. Due to data limitations, financial sophistication is used as a proxy for financial literacy (see Huston, Finke, & Smith, 2012). The current study also uses Spaenjer & Spira's (2015) definition of risky assets, which was "directly held stock, stock mutual funds, retirement and saving accounts in stock" (p.97) divided by financial assets.

$$\text{Risky Assets} = \text{Stock accounts/Financial assets}$$

Method

This study utilized respondent data from the SCF 2013 ($N=6,015$). Respondents with zero risky financial assets were dropped from the sample ($n=3,320$). Descriptive analyses and the multivariate analyses used SCF population weights so that the results, of those individuals holding risky assets, would be generalizable to the U.S. population also holding risky assets. The decision to weight both the analyses and the descriptive information provides continuity.

The empirical strategy was to model the percentage of risky asset holdings (dependent variable) as a function of: financial sophistication, risk tolerance, luck, receipt of financial advice and subjective preparedness for retirement. A multinomial logit was used to predict the probability of risky assets as a function of the independent variables. The dependent variable is grouped into three levels, high percentage (66%+) of risky assets, medium (33%-66%) percentage of risky assets, and low (.1%-33%) percentage of risky assets, and was regressed onto the independent variables.

Results

The results of the multinomial regression can be found in Table 1. This model was selected over ordinary least squares because the dependent variable (risky assets) had a non-normal distribution. The multinomial regression had a significant global test, but the percent concordant and 'c' values were low; indicating only 50% of the time the model accurately predicted a correct outcome.

Findings provided potentially promising results with regard to the research question - Will the gender gap remain, using financial literacy as a moderator, of risky asset holdings? Looking at Table 1, the odds ratios and significance tests are presented and are robust to weighting. When financial literacy was part of the model the statistically significant gap in risky asset holding remained, but it is weak. In one

instance, comparing low and medium equity shares, the difference between men and women is already insignificant. Performing RII in the future, it is entirely possible that all significance will fall away; meaning when financial literacy is considered men and women holding risky assets are not statistically different from each other.

Conclusions

The study, although still preliminary, has contributed to the literature in its application of Loewenstein et al.'s framework, Risk-As-Emotion (Loewenstein et al., 2001). When better data is available from the 2016 SCF study, including measures of financial knowledge and improved risk measures, the groundwork for a follow up study will already be in place. Health, number of children and home ownership were left out of the model, but mentioned in previous literature. As such, these may have been what lead to the lower percent concordant and 'c' values and may possibly have also impacted financial sophistication's ability to impact the gender gap in risk. Model selection is also a consideration for future studies. Specifically a two-step selection model may be useful. The Heckman model (1979) is a two-step model, and first model allows researchers to model the decision to own or not to own risky assets, instead of setting the model up for selection bias issues.

This study brings up interesting considerations for both policy makers and financial educators. For educators, if FGGs between men and women can be mediated by financial literacy – how best can we focus on literacy? Many studies focus on changing or adding to women's financial knowledge. Financial knowledge is a component of financial literacy, but literacy also entails action (Huston, 2010). Education for women should continue to include rote knowledge but also place additional emphasis on behavior modification and development. Financial therapy, positive psychology and or programs that utilize Cognitive Behavioral therapy may offer enhanced behavioral change results (Klontz, Kahler & Klontz, 2016). Educators should also consider dropping the male/female distinction. Comparing one group to another group can lead to change resistance (Klontz, Kahler & Klontz, 2016). Instead education programs should focus on normative goals, regardless of gender, that make sense in terms of portfolio capacity, financial literacy and risk preference.

In terms of policy, a similar opinion follows. Financial literacy and education programs need consider placing greater emphasis on experiential learning initiatives. When individuals are physically interacting and responsible, paying off credit cards each month, for their financial situation, better financial outcomes follow. Policy can encourage the development of behavior-based programs.

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Tables

Table 1
Odds Ratio Estimates of OLS Regression (N=3320)

	With Financial Sophistication			Without Financial Sophistication		
	Low v. Med. Equity Share	Low v. High Equity Share	Med. V. High Equity Share	Low v. Med. Equity Share	Low v. High Equity Share	Med. V. High Equity Share
Intercept	-2.62**	-1.01	1.60*	-3.35***	-1.99**	1.36
Gender (Male)						
Female	0.96	0.79*	0.82*	0.91	0.73**	0.80*
Financial Sophistication	1.20	1.02	0.85			
Risk Tolerance (High)						
Average	1.02	0.61	0.60***			
None	0.65	0.41***	0.64**			
Luck (Strongly Agree)						
Agree	1.05	0.94	0.90	1.02	0.89	0.87
Neither	1.26	1.35	1.07	1.21	1.29	1.07
Disagree	1.15	1.03	0.89	1.07	0.95	0.89
Strongly Disagree	1.03	1.11	0.84	1.22	1.04	0.85
Saving Decision (Professional)						
Non Professional Advice	0.92	0.76	0.83	0.98	0.82*	0.84
Prepared for Retirement (Satisfactory)						
Okay	1.09	0.89	0.82	1.15	0.97	0.84
Enough	1.14	0.87	0.76*	1.19	0.90	0.76*
Not Okay	0.968	0.70**	0.72*	1.02	0.72*	0.71*
Inadquate	1.09	0.74	0.68*	1.14	0.79	0.70
Control						
Age	1.07**	1.05**	0.98	1.08***	1.05**	0.98
Age Squared	0.99**	1.00*	1.00	0.99**	0.99**	1.00
Education (Graduate)						
Non Graduate	1.03	0.83	0.80	1.14	0.92	0.81
Log Income	1.09	1.09	1.00	1.14*	1.14**	1.00
Race (White)						
Black	0.87	0.75	0.86	0.77	0.68*	0.88
Hispanic	0.86	0.94	1.09	0.75	0.83	1.10
Asian Other	1.21	1.24	1.02	1.18	1.20	1.02
Relationship Status						
Couple	0.8*	0.91	1.13	0.79*	0.87	1.11
Model Fit Statistics						
Likelihood Ratio	<.0001			<.0001		
R-Squared Value	0.01			0.01		

Note: * $p < .05$, ** $p < .01$, *** $p < .0001$

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