

Financial Knowledge and Financial Confidence as Mediators Between Gender and Positive Financial Behaviors

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Significance and Purpose

Evidence suggests that women accumulate less wealth than men (e.g. Weir & Willis, 2000). Specifically, single female households are less wealthy than single male households (Brown, 2012; Fisher, 2010) and women regularly have higher odds of living in poverty during retirement as compared to men (Collinson, 2013). According to the 2015 National Financial Capability Study (FINRA, 2016), women reported having a harder time making ends meet, were more likely than men to have medical debt, had more financial difficulty with the cost of medical services, and were more likely to have difficulty handling a short-term unexpected expense (FINRA, 2016).

The wealth disparity between men and women has been attributed to economic factors such as women living longer than men, participating in the workforce for fewer years than men, and earning lower wages during their working years (Levine, Mitchell, & Phillips, 2002; Zissimopoulos, Karney, & Rauer, 2008). Although these economic factors certainly contribute to the wealth disparity between men and women, previous research has established that gender differences in financial behaviors could also play a role. For instance, women tend to be more risk averse than men, leading them to invest in low risk products that offer lower returns (Joo & Pauwels, 2002), women are less likely than men to save regularly (Fisher, 2010), and women are less likely to plan for retirement (Noone, Alpass, & Stephens, 2010; Stanford & Usita, 2002).

Social Cognitive Theory (SCT) provides a lens for exploring gender differences in financial behaviors. According to SCT, gender roles are assigned by society through conceptions

individuals have of themselves, talents they acquire, constraints they encounter, and the career paths they pursue (Bussey and Bandura, 1999). As young children, individuals are assigned gender roles by their parents and begin to identify with the parent of the same sex between the ages of three and five (Bussey and Bandura, 1999). As years pass, children begin to focus on doing “boy” or “girl” things based upon their observations (Bussey and Bandura, 1999). Although gender-linked behaviors begin in childhood, these observations continue as the individual ages and must be continuously negotiated throughout an individual’s life (Bussey and Bandura, 1999). These gender roles influence both individual and societal perceptions related to money and how it should be saved or spent (Sekscinska, Trzcinska, and Maison, 2016). Further, the Social Cognitive Theory (Bandura, 1986) illustrates the relationship between the learning process from others and how it influences one’s self-efficacy and knowledge regarding finances. Bandura (1986) defined self-efficacy as having the confidence in one’s ability to perform a behavior (Bandura, 1977). These beliefs are deeply rooted into one’s core and affect how future decisions are made (Bong & Skaalvik, 2003).

It is possible that the evidence suggesting the existence of gender differences in financial behaviors can be explained by SCT because gender roles influence women to be less receptive to seeking financial knowledge and less confident when making financial decisions. Previous research has consistently linked financial knowledge and financial confidence with positive financial behaviors. For instance, financial knowledge has been associated with positive financial behaviors such as saving and investing activities (Henager & Cude, 2016), positive investment returns (Chu, Wang, Xiao, & Zhang, 2017), and reduced odds of using high-cost alternative financial services such as payday and tax anticipation loans (Robb, Babiarz, Woodyard, & Seay, 2015). Financial confidence has been associated with positive financial behaviors such as saving

for an emergency (Henager & Cude, 2016; Woodyard, Robb, Babiarz, & Jung, 2017) and increased risk tolerance (Montford & Goldsmith, 2016).

Given this backdrop, the purpose of this study is to explore financial knowledge and financial confidence as mediators between gender and positive financial behaviors. The conceptual model (Figure 1) for this study is informed by the SCT framework. It proposes that financial behaviors differ by gender, but these effects are mediated by the levels of financial knowledge and financial confidence that an individual possesses. The following hypotheses have been developed:

H1: Women will report fewer positive financial behaviors than men

H2: Women will exhibit lower financial knowledge than men

H3: Women will report having lower financial confidence than men.

H4: Both financial knowledge and financial confidence will mediate the effect of gender on positive financial behaviors.

Method

A multiple mediation model (Jose, 2013), depicted in Figure 1, was employed for this analysis. Regression computations were performed for the total effect path (c), the indirect effect paths (a_1 , b_1 , a_2 , and b_2), and the direct effect path (c_1). For the direct effect of gender on positive financial behaviors to be considered mediated by financial knowledge and financial confidence, each path must be significant with the exception of the direct effects path (c_1). Additionally, the direct effect of gender with the mediating variables included in the model (path c_1) must be less than the total effect of gender (c) without the mediating variables in the model. If the effect of gender becomes insignificant in path c_1 , then the gender effect would be considered fully mediated; however, any reduction in the effect of gender in path c_1 when compared to path c

would be considered partial mediation. Due to the nature of the dependent variables, OLS regression was used to analyze each path.

Data from the 2015 National Financial Capability Study (NFCS) State-by-State Survey Instrument were utilized in this study. From the original 27,564 respondents, the analytic sample was limited to 6,578 respondents who reported being the only adult in the household so that the effect of a partner's financial decisions was not a factor in the analyses. Due to missing data for some key variables, listwise deletion further reduced the analytic sample size to 5,645. Weighted data were used.

Factor loadings, Cronbach's alpha results, index construction, and specific questions used from the 2015 NFCS have all been omitted from this proposal due to space limitations. A financial behavior index extended from Henager and Cude (2016) served as the dependent variable for this study. The key independent variable for this analysis was gender. Levels of financial knowledge and financial confidence were tested as potential mediating variables and were defined to reflect Huston's (2010) conceptual framework for financial literacy that suggests financial literacy consists of both financial knowledge and the confidence and ability to apply that knowledge.

Summary Preliminary Results

Due to space limitations, descriptive results are omitted from the body of this proposal, but details are in Table 1. Full results from the multiple mediation model are available in Table 2. The total effect path (path c) as well as each indirect path (paths a_1 , b_1 , a_2 , and b_2) were significant, which are all requirements to support the mediation model (Jose, 2013). Further, the direct effect of gender on positive financial behaviors, with the mediating variables in the model (path c_1), was less than the total effect of gender on positive financial behaviors without the mediating variables in the model (path c). Taking the coefficient of gender on the total effect path (c) less the coefficient of gender on the direct effect path (c_1)

yields a coefficient reduction of .08 and a movement from significant to non-significant, both of which are an indication that the effect of gender on positive financial behaviors is mediated by financial confidence and financial knowledge.

Although both financial confidence and financial knowledge were significant mediators in the model, because the coefficients in the indirect path for financial knowledge ($a_2b_2 = .07$) are larger than those in the indirect path for financial confidence ($a_1b_1 = .03$) there is an indication that financial knowledge is the better mediator between gender and positive financial behaviors. Finally, the mediated model (c_1) also better explained the variance in positive financial behaviors with an adjusted R^2 value of .36 as compared to the model without the mediating variables (c) (adjusted $R^2 = .30$).

Conclusions and Relevance

Each hypothesis was supported by the multiple mediation model. Women performed fewer positive financial behaviors, exhibited lower financial knowledge, and reported lower financial confidence than men. Moreover, the relationship between gender and positive financial behaviors was fully mediated by the levels of both financial knowledge and confidence. These results suggest that gender differences exist, but they can be eliminated with increased attention to the financial knowledge and confidence of women. Financial planners, therapists, and educators can use these results to target financial education programs toward women with an emphasis on not just delivering financial knowledge to women, but also encouraging them to seek out financial education and cultivating their confidence to apply it when given the opportunity to do so.

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Figure 1

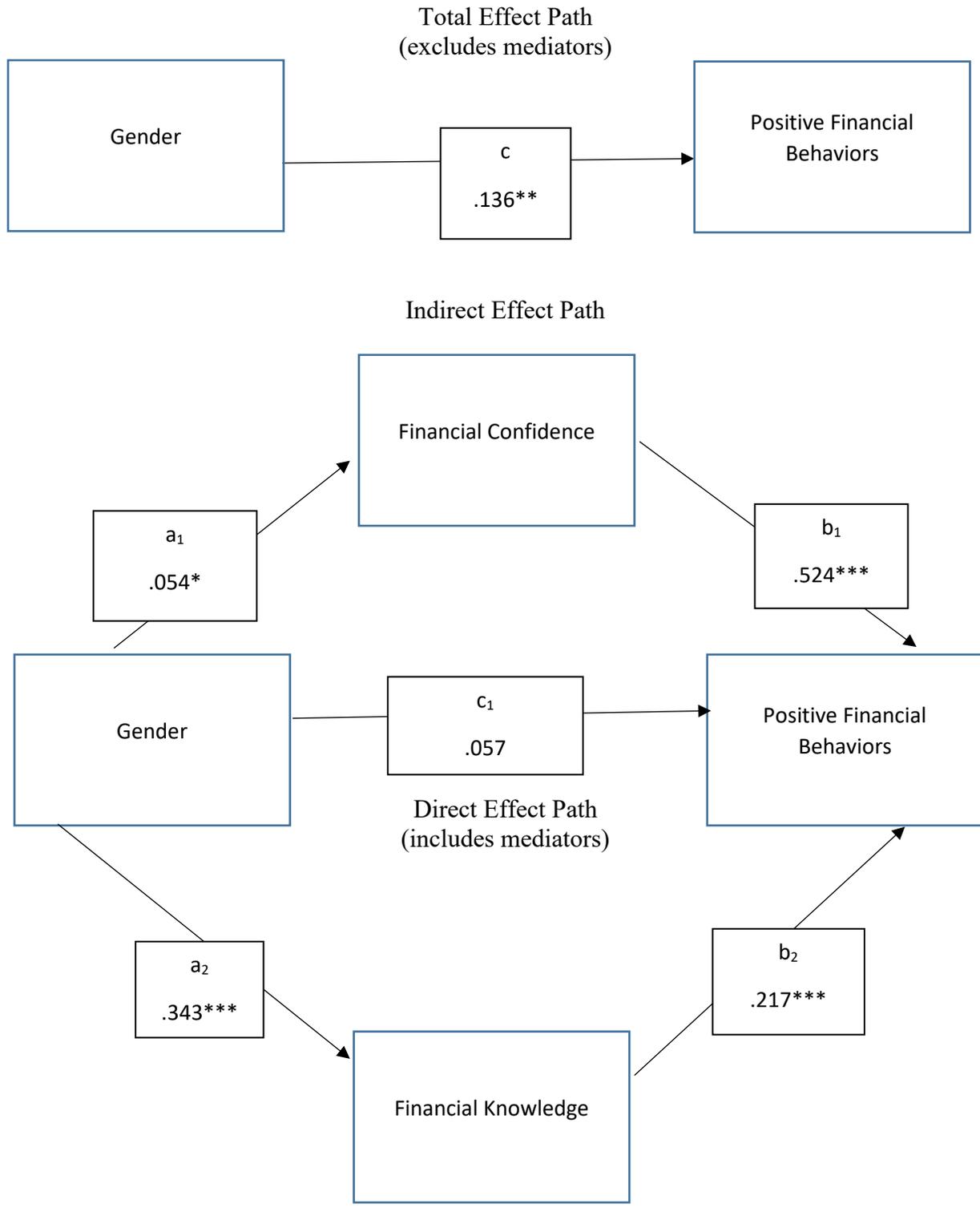


Table 1. Descriptive Results - 2015 NFCS, Identified as Only Adult in Household

Variable	Full sample (<i>N</i> = 5,645)	Male (<i>N</i> = 2,630)	Female (<i>N</i> = 3,015)
Gender		46.59%	53.41%
Financial Behavior Index (Mean SD)	3.36 1.92	3.59 1.95	3.16 1.88
Has Emergency Fund	48.43%	53.36%	44.13%
Spends Less Than or Equal to Income	41.01%	43.16%	39.14%
No overdrafts	73.82%	72.93%	74.59%
Has Tried to Determine Retirement Needs	42.95%	46.61%	39.31%
Has Set Financial Goals	56.73%	62.36%	51.79%
Has a Retirement Account	57.31%	58.25%	56.48%
Has Investments Outside of Retirement Accounts	31.19%	36.67%	26.40%
Financial Confidence Factor (Mean SD)	.03 .83	.07 .83	-.01 .83
Day to Day Financial Decisions	5.91 1.42	5.86 1.44	5.94 1.40
Subjective Financial Knowledge	5.31 1.25	5.44 1.24	5.20 1.25
Math Skills	5.68 1.57	5.83 1.49	5.55 1.63
Financial Knowledge Index (Mean SD)	2.92 1.45	3.11 1.47	2.75 1.41
<i>Percent Correct:</i>			
Compound Interest	75.00%	76.77%	73.47%
Inflation	62.07%	66.35%	58.34%
Bonds	30.33%	35.86%	25.51%
Mortgages	75.68%	76.77%	74.73%
Stocks	48.96%	55.40%	43.35%
Financial Education			
Yes	23.05%	25.51%	20.90%
No	76.95%	74.49%	79.10%
Age Category			
18 to 34	23.70%	55.38%	44.62%
35 to 44	14.97%	52.43%	47.57%
45 to 54	18.37%	50.14%	49.86%
55 to 64	19.81%	46.24%	53.76%
65 and older	23.15%	31.29%	68.71%
Race			
White	69.88%	71.06%	68.86%
Not white	30.12%	28.94%	31.14%
Education			
High school or less	22.91%	22.17%	23.55%
Some college	38.26%	36.05%	40.20%
College	38.83%	41.79%	36.25%
Income Category			
Less than \$35,000	50.79%	44.37%	56.38%
\$35,000 to \$49,999	16.49%	14.90%	17.31%
\$50,000 to \$74,999	17.82%	20.57%	15.42%
\$75,000 to \$99,999	8.29%	10.87%	6.04%
Greater than or equal to \$100,000	6.91%	9.28%	4.84%
Dependents			
Yes	22.30%	21.14%	23.22%
No	77.70%	78.86%	76.78%
Homeowner			
Yes	52.91%	53.61%	52.31%
No	47.09%	46.39%	47.69%

Table 2. Mediator Testing Results (OLS Regressions)

N = 5,645

Variable	Gender to Behavior (Path c)		Gender to Confidence (Path a ₁)		Confidence to Behavior (Path b ₁)		Gender to Knowledge (Path a ₂)		Knowledge to Behavior (Path b ₂)		Gender to Behavior (Path c ₁)	
	B	SE B	B	SE B	B	SE B	B	SE B	B	SE B	B	SE B
Intercept	1.96 ***	0.10	(0.49) ***	0.05	2.30 ***	0.09	1.84 ***	0.07	1.62 ***	0.09	1.99 ***	0.09
<u>Key Independent Variable:</u>												
Male	0.14 **	0.04	0.05 *	0.02	0.11 *	0.04	0.34 ***	0.04	0.06	0.04	0.06	0.04
<u>Mediating Variables:</u>												
Financial Confidence					0.05 ***	0.02					0.48 ***	0.03
Financial Knowledge									0.22 ***	0.02	0.16 ***	0.02
<u>Control Variables:</u>												
Financial Education	0.25 ***	0.05	0.23 ***	0.03	0.12 *	0.05	0.22 ***	0.04	0.20 **	0.05	0.10	0.05
Age Category	(0.01)	0.02	0.07 ***	0.01	(0.05) **	0.02	0.25 ***	0.01	(0.07) ***	0.02	(0.09) ***	0.02
White	0.04	0.05	0.04	0.02	0.02	0.04	0.32 ***	0.04	(0.03)	0.05	(0.03)	0.04
College	-	-	-	-	-	-	-	-	-	-	-	-
High School or Less	(0.59) ***	0.06	(0.23) ***	0.03	(0.46) ***	0.06	(0.96) ***	0.05	(0.38) ***	0.06	(0.33) ***	0.06
Some College	(0.45) ***	0.05	(0.05) ***	0.03	(0.42) ***	0.05	(0.49) ***	0.04	(0.35) ***	0.05	(0.35) ***	0.05
Income Category	0.52 ***	0.02	0.09 ***	0.01	0.47 ***	0.02	0.12 ***	0.02	0.49 ***	0.02	0.46 ***	0.02
Dependents	(0.06)	0.05	(0.02)	0.03	(0.05)	0.05	(0.26) ***	0.04	(0.00)	0.05	(0.01)	0.05
Homeowner	0.92 ***	0.05	0.22 ***	0.02	0.80 ***	0.04	0.13 **	0.04	0.89 ***	0.05	0.79 ***	0.04
Adjusted R ²	0.30		0.10		0.35		0.21		0.32		0.36	

*p<.05, **p<.01, ***p<.0001