

# **2010 Outstanding AFCPE® Conference Paper: Gender Differences in Financial Socialization and Willingness to Take Financial Risks**

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*Social learning and gender role theories were used as a basis for exploring gender differences in financial socialization as they relate to financial risk-taking. A stratified random sampling technique was used to conduct a web-based survey of 15,797 students from 15 universities across the United States. A significant gender difference in willingness to take financial risks exists among college students, with males being more likely than females to choose higher levels of financial risk. In addition, a significant gender difference in financial social learning opportunities is present, with females having higher exposure to financial social learning opportunities across four dimensions (discussions with parents, discussions with peers, observations of parents' financial behaviors, and observations of peers' financial behaviors). Significant differences are also found for the relationship of social learning opportunities on willingness to take risks by gender, but only at the discussion levels of financial socialization. Understanding the relationships between gender, financial socialization, and willingness to take financial risks can help improve the efforts of parents, practitioners, and researchers.*

**Key Words:** financial risk, financial socialization, gender, risk tolerance

## **Introduction**

Gender differences in risk-taking, specifically financial risk-taking, have been documented by several researchers (Hallahan, Faff, & McKenzie, 2004; Watson & McNaughton, 2007). It has been shown that women tend to take less financial risks than men when investing and they also tend to invest less money (Watson & McNaughton, 2007). In their 2004 study, Hallahan et al. found that gender was a significant predictor of risk tolerance, with females scoring 6.2 points lower on their Risk Tolerance Scale, compared to males who were demographically equivalent. This study explored the origins of this gender difference in willingness to take financial risks by examining differences in financial socialization.

According to a recent report released by the Department of Health and Human Services (Xu, Kochanek, Murphy, & Tejada-Vera, 2010), the average life expectancy in the United States was 75.4 years for males and 80.4 years for

females in 2007. In addition, according to the U.S. Census Bureau (2008), 13% of women over the age of 75 were poor in 2007, compared to only 6% of men. This statistic indicates that not only will women outlive men, but they will also potentially have higher levels of poverty than their male counterparts.

It has been generally recognized that, on average, women tend to make less money than men for doing the same or similar jobs. Firestone, Harris, and Lambert (1999) found a negative relationship between earnings and female-dominated occupations. According to Blau and Lawrence (2000), from the late 1950s to about 1980, the female-to-male income ratio remained steady at approximately 60%. In the late 1970s and early 1980s, this ratio began to increase, and by 1999, the income ratio had increased to 76.5%. The Institute for Women's Policy Research (2010) reported that in 2009, this income ratio had increased to 80.2%. While this increase is substantial, it should be not

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ed that this income disparity, when accompanied by a longer life expectancy, can cause many problems for women later in life.

For women, the longevity risk associated with a longer life expectancy and income inequities is compounded if they have lower willingness to accept investment risk. Thus, it is important to understand why women possess a lower willingness to take financial risks and whether financial socialization could be a contributing factor. It is also important to examine what role gender may play in one's financial socialization, particularly the relationship between the level of socialization opportunities and the willingness to take financial risks across gender. By examining these differences in a college student population, in contrast to the adult population where these differences have already been documented, we can see whether these differences are occurring from the time people are likely first exposed to managing their own finances.

## Literature Review

### *Willingness to Take Financial Risks*

One important factor related to financial planning and investing is financial risk tolerance or willingness to take financial risks. The researchers were interested in exploring potential differences in financial socialization between men and women and the effects that these differences might have on financial dispositions such as willingness to take risks. Grable (2000) defined willingness to take financial risks as "the maximum amount of uncertainty that someone is willing to accept when making a financial decision" (p. 625). The consideration of willingness to take financial risks is important in the current study because higher risk has the opportunity to lead to higher returns. If one gender tends to have lower levels of willingness to take risks, this could lead to lower returns.

Research has shown that there tends to be a gender difference in willingness to take financial risks in older populations, but little has been done to look at gender differences in willingness to take financial risks tolerance among college students. In addition to gender, several other factors have been found to influence willingness to take financial risks. Hawley and Fujii (1993) found that education, debt, and income were significantly related to willingness to take financial risks. These results were consistent with several other studies including Warner and Cramer (1995) and Sung and Hanna (1996). Sung and Hanna (1996) also found that marital status had a significant impact on willingness to take financial risks.

### *Theoretical Perspectives*

In his Social Learning Theory, Bandura (1977) posited that people learn their own behaviors and attitudes by observing the behaviors and attitudes of significant people in their lives. This process of learning through observing others is called modeling. Social Learning Theory has been applied extensively to understanding the modification of behaviors. Because modeling has an important impact on behavior change, Bandura (1977) proposed that new behaviors could be taught more quickly and more efficiently through modeling.

The socialization process begins in childhood and may continue throughout life (McNeal, 1987; Moschis, 1985). Socialization processes include the development of financial knowledge and skills through multiple life events and personal interactions (Fox, Bartholomae, & Gutter, 2000). Ward (1974) described consumer socialization as the process through which young people develop knowledge, skills, and attitudes regarding their consumer role in the marketplace. This definition has been extended to include the acquisition and development of values, attitudes, standards, norms, skills, behavior, motives, and knowledge related to family financial management and consumption (Cohen & Xiao, 1992; Danes, 1994; Fox et al., 2000).

Consumer socialization research, based on Social Learning Theory, suggests that a large portion of consumer behavior (i.e., spending behavior among adults) is learned through socialization agents such as parents, family members, peers, and other influential individuals during adolescence, and thus can be transferred through generations (Churchill & Moschis, 1979; Valence, d'Astous, & Fourtier, 1988). Childhood consumer socialization is based on the premise that behaviors, skills, knowledge, and attitudes learned early in life can, and often do, persist into adulthood (Moschis, 1985). Ward (1974) suggested that consumer behavior among young people, as well as the development of adult patterns of behavior, can be understood by studying related childhood and adolescent experiences.

Childhood socialization opportunities come from individual, organizational, or institutional agents with whom children come into contact or maintain a relationship (Fox et al., 2000). Parents, peers, schools, and mass media are the primary agents that play a significant role in consumer socialization (Moschis & Moore, 1984). The psychological, emotional, and behavioral developments of young people are strongly influenced by these agents as they become consumers in the marketplace (Moore, Raymond, Mittels-

taedt, & Tanner, 2002). Gutter, Copur, and Garrison (2009) found associations between financial dispositions, financial socialization, and financial behaviors.

### **Gender Differences**

In looking at the socialization process, and financial socialization in particular, one might wonder why gender matters. Research suggests that socially constructed gender roles have an impact on behavioral differences in males and females. Gender is often thought of as not necessarily whether an individual is biologically male or female, but as the way they have been socialized to act as feminine or masculine (Hare-Mustin & Marachek, 1990). Thus, while every individual presumably undergoes socialization and acquires attitudes and behaviors through social learning, social learning may not be equal depending on one's gender. Even more importantly, individuals may be socialized differently regarding money and financial behaviors depending on their gender.

The current study would be unnecessary if there were no documented gender differences in financial knowledge, attitudes, or behaviors; however, such differences have been noted time and time again (Chen & Volpe, 2002; Eccles, Jacobs, & Harold, 1990; Volpe, Chen, & Pavlicko, 1996). These differences support the reasoning behind determining whether or not gender plays a role in financial socialization. While several studies suggested that women tend to have lower levels of financial knowledge than men, the findings have been mixed. Chen and Volpe (2002) found that, on average, women knew less about personal finance than men when controlling for other factors. In addition, more men than women ranked personal finance as an important subject, and men ranked themselves as more knowledgeable in personal finance than did women.

In congruence with previous socialization research related to education (Eccles et al., 1990), Chen and Volpe (2002) found that men ranked math and other number-related sciences as important subjects, while more women ranked English and word-oriented liberal arts as important. Women also scored much lower than men on personal finance questions requiring them to process numerical information. In the area of investment knowledge, Volpe et al. (1996) found that all student groups tend to have inadequate investment knowledge, but that females tended to have poorer investment knowledge than males. This is important because a clear correlation has been found between financial literacy and retirement planning (Lusardi & Mitchell, 2008).

Gender differences in financial attitudes, such as willingness to take financial risks, are also important to consider because higher levels of willingness to take financial risk has been associated with higher net worth for both genders (Finke & Huston, 2003). As was discussed previously, Social Learning Theory posits that people develop their own attitudes by observing the attitudes of significant people in their lives (Bandura, 1977). Thus, if there are differences in financial attitudes by gender, it stands to reason that some of these differences may be related to gendered financial socialization.

Differences have been found in the area of willingness to take financial risks. In their study on risk aversion and expected retirement benefits, Watson and McNaughton (2007) found that women tended to choose investment strategies that were more conservative than men. They also found that the lower income of women was a significant contributor to the women's lower projected retirement benefits. Thus, not only were women investing less, they were also choosing less aggressive investment strategies than men. Powell and Ansic (1997) found that, in general, women tend to be less risk-seeking in their finances than men. Females were also more likely to attribute their positive financial performance to good luck than males and had less financial confidence than males who had similar prior financial experience and education.

Jianakoplos and Bernasek (1996) found that not only were single women actually more risk averse in their asset holdings than married couples or single men, but they also perceived themselves to be more risk averse, with single women reporting no willingness to take financial risk significantly more often than married couples or single men. The researchers addressed the issue of biological determinism versus socialization in predicting women's willingness to take risk and concluded that "interventions focused on changing socialization processes can still positively impact the well-being of women by influencing their decision making" (p. 8). This study sought to extend the idea of gender role influences on social learning to financial socialization.

### **Research Questions and Hypotheses**

Through the lens of Social Learning Theory and research on gender roles, various behavior differences in males and females may be partially affected by differences in socialization. There is evidence that gender differences exist in various areas of financial knowledge, financial attitudes, and financial behaviors. Thus, the following questions

present themselves: a) Does willingness to take financial risk differ by gender in college students? b) Does exposure to financial social learning opportunities differ by gender in college students? c) Does the relationship of social learning opportunities on willingness to take financial risks differ by gender? This study sought to expand socialization research to the area of financial socialization with the following hypotheses:

- H1: Male college students will have a greater willingness to take financial risks than female college students.
- H2: Exposure to financial social learning opportunities will differ by gender in college students.
- H3: The relationship of social learning opportunities on willingness to take risks will differ by gender.

## Methods and Findings

Data for this study were collected as part of a larger study on the impact of financial education policies on financial behaviors during the spring and fall terms of 2008. A web-based survey was completed by 15,797 students from 15 universities across the United States. For an in-depth discussion of the sampling method, see Gutter et al. (2009).

Hypothesis 1 was tested using cross tab analysis with the chi-square statistic, followed by independent sample *t*-tests to determine significant gender differences between each “willingness to take financial risks” variable. Hypothesis 2 was tested using independent sample *t*-tests to determine significant gender differences between each social learning opportunity dimension. Hypothesis 3 was tested using cumulative logistic regression to determine whether the independent variables of gender, financial socialization, and the relationship of these two had varying effects on willingness to take financial risks.

### Bivariate Analysis

*Willingness to take financial risks.* For willingness to take financial risks, each level of financial risk (substantial risk, above average risk, average risk, and no risk) was tested by gender via cross tab analysis with chi-square. Students were asked: “Which of the statements on this page comes closest to the amount of financial risk that you are willing to take when you save or make investments?” Answer choices included: “take substantial financial risks expecting to earn substantial returns,” “take above average financial risks expecting to earn above average returns,” “take average financial risks expecting to earn average returns,” and “not willing to take any financial risks.”

The results of the chi-square test indicated that there were overall significant differences in willingness to take financial risks by gender ( $\chi^2 = 609.14, p < .01$ ). The results of the chi-square test were as follows: 6.6% of males and 2.7% of females were willing to take substantial financial risk to achieve substantial financial returns, 32.7% of males and 16.8% of females were willing to take above average financial risk to achieve above average financial returns, 51.0% of males and 60.6% of females were willing to take average financial risk to achieve average financial returns, and 9.7% of males and 20.1% of females were willing to take no financial risk to achieve no financial return. These results indicated that proportionately more males than females were willing to take substantial and above average financial risks, however, independent sample *t*-tests were conducted to determine whether these differences are significant at each level.

Three variables were tested by gender using the independent sample *t*-tests. These were a) high risk (substantial and above average risk) versus low risk (below average and no risk), b) substantial risk versus lower risk (above average, average, and no risk), and c) any risk (substantial, above average, and average risk) versus no risk. Results of the *t*-tests indicated that there were significant gender differences for all three variables. Males were significantly more likely than females to be willing to take high financial risk versus low financial risk ( $t = -22.00, p < .01$ ). Males were also significantly more likely than females to take substantial risk versus lower levels of risk ( $t = -.90, p < .01$ ). As was expected, females were significantly more likely than males to take no financial risk versus any financial risk at all ( $t = -15.75, p < .01$ ). Table 1 presents the results of the bivariate analysis presented in this section.

*Demographic information.* The sample was composed of 64.9% females and 35.1% males. Of these, 35.5% of males and 41.0% of females had financial education in high school ( $\chi^2 = 51.44, p < .01$ ), and 12.3% of males and 7.8% of females had financial education in their communities ( $\chi^2 = 87.71, p < .01$ ). Although the vast majority of both males and females were white, there were also significant racial differences by gender ( $\chi^2 = 43.65, p < .01$ ). Significant differences in marital status also existed with 88.1% of males and 85.5% of females who were single and 11.9% of males and 14.5% of females who were married or cohabitating ( $\chi^2 = 22.87, p < .01$ ). Finally, significant differences in income between genders also existed ( $\chi^2 = 121.39, p < .01$ ). All of these variables were controlled for in the cumulative logistic regression.

**Table1. Sample Profile by Gender**

Variable	Male		Female		Significance test	
	M	%	M	%		
<b>Dependent</b>						
Willingness to take financial risks						
Substantial risk	6.6		2.7			
Above average risk	32.7		16.8			
Average risk	51.0		60.6			
No risk	9.7		20.1			
High risk (1) vs. low risk (0)	.39		.21		$t = -22.00***$	
Substantial risk only (1) vs. lower risk (0)	.07		.03		$t = -.90***$	
Any risk (1) vs. No risk (0)	.80		.90		$t = -15.75***$	
<b>Independent</b>						
Previous financial education						
High school			41.0		$\chi^2 = 51.44***$	
Community	35.3		7.8		$\chi^2 = 87.71***$	
Race	12.3				$\chi^2 = 43.65***$	
White	81.8		80.7			
Black	3.6		5.4			
Hispanic	4.7		5.4			
Asian	6.3		5.0			
Other	3.7		3.5			
Marital status						
Single	88.1		85.5			
Married/cohabitating	11.9		14.5			
Monthly income						
\$0	41.8		37.6			
\$1-\$499	29.7		37.8			
\$500-\$999	16.1		15.2			
\$1000 and above	12.4		9.4			
Social learning opportunities score						
Financial discussions with parents	21.6		21.9		$t = 2.34*$	
Financial discussions with peers	16.8		17.3		$t = 4.86***$	
Observe parents' behaviors	25.7		27.5		$t = 11.25***$	
Observe peers' behaviors	16.6		17.7		$t = 8.79***$	

\*  $p < .05$ . \*\*\*  $p < .001$ .

*Social learning opportunities.* For social learning opportunities, each of the four social learning opportunities scores were compared by gender via independent sample *t*-test. The results of the *t*-test indicated overall significant gender differences for each form of financial socialization. For financial discussions with parents, males had an average score of 21.6 and females had an average score of 21.9 ( $t = 2.34, p < .05$ ), indicating that females had significantly more social learning opportunities where they discussed financial matters with their parents. For financial discussions with peers, males had an average score of 16.8 and females had an average score of 17.3 ( $t = 4.86, p < .01$ ), indicating that females also had significantly more social learning opportunities where they discussed financial matters with their peers. For observing parents' financial behaviors, males had an average score of 25.7 and females had an average score of 27.5 ( $t = 11.25, p < .01$ ), indicating that females had significantly more social learning opportunities where they observed their parents engaging in positive financial behaviors. For observing peers' financial behaviors, males had an average score of 16.6 and females had an average score of 17.7 ( $t = 8.79, p < .01$ ), indicating that females had significantly more social learning opportunities where they observed their peers engaging in positive financial behaviors.

These *t*-tests indicated that female college students tended to have had more financial social learning opportunities than male college students. Additional *t*-tests were run by social learning topic within each social learning dimension. This was done to determine whether there were also significant gender differences between exposure to individual topics within each dimension (see Table 2).

For financial discussions with parents, there were significant gender differences in frequency of exposure to all topics, except checking the credit report and buying/maintaining health insurance. For financial discussions with peers, there were significant gender differences in frequency of exposure to all topics, except checking the credit report. For observing parents' financial behaviors, there were significant gender differences in frequency of exposure to all topics, except working with a mainstream financial institution and buying/maintaining renters' insurance. For observing peers' financial behaviors, there were significant gender differences in frequency of exposure to all topics, except checking the credit report, working with a mainstream financial institution, and buying/maintaining renters' insurance.

### **Cumulative Logistic Regression Analysis**

For this analysis, parallel cumulative logits were run utilizing gender as the selection variable. The cumulative logistic regression technique allows for rotation of the reference variables, which, in this case, were the various comparisons of levels of willingness to take financial risks (any versus none, high versus low, and substantial versus lower). The purpose of this analysis was to determine the effect of gender and financial social learning opportunities on varying levels of willingness to take financial risks while controlling for marital status, race, income, and prior financial education. The first parallel cumulative logit analyzed gender differences in willingness to take any financial risks (substantial, above average, or average) and willingness to take no financial risks. Many significant differences were found among the demographic variables. Controlling for all of the demographic differences for the main independent variable of financial social learning opportunities, varying results were found for males and females (see Table 3).

Financial discussions with parents were only mildly significant for males ( $p < .10$ ) and not significant at all for females. For every one point increase in the financial socialization opportunity score for financial discussions with parents, males were expected to have a 1.7% increase in likelihood of being willing to take any financial risk over no financial risk. Financial discussions with peers were positively associated with choosing any level of willingness to take financial risks over no willingness to take financial risks for both males and females. For every one point increase in the financial socialization opportunity score for financial discussions with peers, males were expected to have a 2.8% increase and females were expected to have a 1.6% increase in likelihood to choose any risk over no risk. Observing parents' and observing peers' behaviors were not significant predictors of willingness to take any financial risks over no financial risks.

The second parallel cumulative logit analyzed gender differences in willingness to take high financial risks (substantial and above average) and willingness to take low financial risks (average and none). Controlling for all of the demographic differences for the main independent variable of financial social learning opportunities, varying results were found for males and females (see Table 4).

Financial discussions with parents were not significant predictors for males, but they were significant for females ( $p < .05$ ). For every one point increase in the financial socialization opportunity score for financial discussions with

**Table 2. Exposure to Social Learning Topics by Gender**

Variable	Male <i>M</i>	Female <i>M</i>	<i>t</i> -value
Financial discussions with parents			
Managing expenses/avoiding overspending	3.50	3.72	9.510***
Checking credit report	2.03	2.05	1.025
Paying bills on time	3.34	3.52	7.059***
Saving and investing money	3.54	3.65	4.783***
Working with a mainstream financial institution	2.57	2.45	-4.776***
Buying/maintaining health insurance	2.28	2.32	1.717
Buying/maintaining auto insurance	2.62	2.55	-2.914**
Buying/maintaining renters' insurance	1.78	1.71	-3.572***
Financial discussions with peers			
Managing expenses/avoiding overspending	2.86	3.36	21.628***
Checking credit report	1.69	1.67	-1.117
Paying bills on time	2.52	2.72	8.493***
Saving and investing money	2.83	2.92	3.845***
Working with a mainstream financial institution	1.84	1.72	-6.157***
Buying/maintaining health insurance	1.74	1.79	2.870**
Buying/maintaining auto insurance	1.79	1.74	-2.790**
Buying/maintaining renters' insurance	1.49	1.42	-4.505***
Observe parents' behaviors			
Managing expenses/avoiding overspending	3.73	4.11	15.678***
Checking credit report	2.25	2.39	5.211***
Paying bills on time	3.94	4.25	12.823***
Saving and investing money	3.66	3.96	11.669***
Working with a mainstream financial institution	3.37	3.40	1.089
Buying/maintaining health insurance	3.33	3.67	12.247***
Buying/maintaining auto insurance	3.47	3.78	11.320***
Buying/maintaining renters' insurance	1.93	1.91	-.565
Observe peers' behaviors			
Managing expenses/avoiding overspending	2.80	3.27	19.400***
Checking credit report	1.59	1.61	1.392
Paying bills on time	2.67	2.99	12.858***
Saving and investing money	2.39	2.63	10.025***
Working with a mainstream financial institution	2.22	2.21	-.333
Buying/maintaining health insurance	1.62	1.68	2.741**
Buying/maintaining auto insurance	1.89	1.96	2.955**
Buying/maintaining renters' insurance	1.40	1.37	-1.725

Note. Scores ranged from 1 to 5 on each question.

\*\*  $p < .01$ . \*\*\*  $p < .001$ .

**Table 3. Willingness to Take Financial Risks: Any Versus None**

Variable	Male		Female	
	$\beta$	Odds ratio	$\beta$	Odds ratio
Marital status	.016	1.016	-.115	.819
Race (reference = white)				
Black	-.254	.776	-.735***	.408
Hispanic	-.136	.873	-.154	.857
Asian	-.946***	.388	-.246	.782
Other	-.907***	.404	-.350*	.705
Monthly income (reference = none)				
\$1-\$499	.062	1.064	-.063	.939
\$500-\$999	.006	1.006	.008	1.008
\$1000 and above	.444*	1.559	.293*	1.340
Personal finance				
High school	.037	1.037	.108	1.114
Community	.156	1.169	.278*	1.320
Social learning				
Financial discussions with parents	.017	1.017	.007	1.007
Financial discussions with peers	.028*	1.028	.016**	1.016
Observe parents' behaviors	.013	1.013	.004	1.004
Observe peers' behaviors	-.007	.993	.008	1.008
Constant	1.243***	3.467	.738***	2.093
Chow test statistic for full vs. reduced model			203.788	< .0001

\*  $p < .05$ . \*\*  $p < .01$ . \*\*\*  $p < .001$ .

parents, females were expected to have a 1.0% increase in the likelihood of being willing to take high financial risk over low financial risk. Financial discussions with peers were positively associated with willingness to take high financial risks over low financial risks for both males and females. For every one point increase in the financial socialization opportunity score for financial discussions with peers, males were expected to have a 3.1% increase, and females were expected to have a 1.1% increase in the likelihood of being willing to take high financial risk over low financial risk. Observing parents' and peers' behaviors were not significant predictors of willingness to take high financial risks over low financial risks.

The third parallel cumulative logit analyzed gender differences in willingness to take substantial financial risks and willingness to take lower financial risks (above average, average, and none). Controlling for all of the demographic differences, for the main independent variable of financial social learning opportunities, varying results were found for males and females (see Table 5).

For females, none of the social learning opportunities were significant predictors of choosing substantial financial risks or lower levels of financial risk. For males, only discussions with peers were significant. For every one point increase in the financial socialization opportunity score

**Table 4. Willingness to Take Financial Risks: High Versus Low**

Variable	Male		Female	
	$\beta$	Odds ratio	$\beta$	Odds ratio
Marital status (reference = single)	-.087	.917	.167*	1.182
Race (reference = White)				
Black	.198	1.219	.199	1.220
Hispanic	.353*	1.424	.074	1.007
Asian	-.016	.984	.633***	1.883
Other	-.531*	.588	.329*	1.390
Monthly income (reference = none)				
\$1-\$499	-.095	.909	-.159*	.853
\$500-\$999	-.122	.885	.050	1.051
\$1000 and above	.324**	1.383	.227*	1.254
Financial education				
High school	-.128	.880	.032	1.032
Community	.338**	1.402	.525***	1.691
Social learning				
Financial discussions with parents	-.002	.998	.010*	1.010
Financial discussions with peers	.030***	1.031	.011*	1.011
Observe parents' behaviors	.004	1.004	-.001	.999
Observe peers' behaviors	-.003	.997	.005	1.005
Constant	-.933***	.393	-2.042***	.130
Chow test statistic for full vs. reduced model			501.321	<.0001

\*  $p < .05$ . \*\*  $p < .01$ . \*\*\*  $p < .001$ .

for financial discussions with peers, males were expected to have a 2.9% increase in the likelihood of being willing to take substantial financial risk over lower financial risk. While the results of the parallel cumulative logistic regressions show different significant predictors, including social learning predictors of willingness to take risks for males and females, these results do not fully answer the research question. In order to fully test the research hypothesis, the coefficients of each social learning variable were tested against one another for males and females. Thus, the Wald Chi-square statistic was computed for each set of coefficients (see Table 6).

As this table shows, a significant difference between the relationships of social learning opportunities on willingness to take financial risks only significantly differed by gender when looking at the high risk versus low risk category. Within this category, the relationship was only significant for the variable of having financial discussions with peers. For this variable, males who had financial discussions with their peers were significantly more likely than females who had financial discussions with their peers to choose high risk over low risk.

### Conclusions

Hypothesis 1 stated that male college students would have a greater willingness to take financial risks than female col-

**Table 5. Willingness to Take Financial Risks: Substantial Versus Lower**

Variable	Male		Female	
	$\beta$	Odds ratio	$\beta$	Odds ratio
Marital status (reference = single)	.039	1.039	.252	1.286
Race (reference = White)				
Black	.358	1.431	1.236***	3.443
Hispanic	.347	1.415	.565	1.759
Asian	.302	1.353	1.137***	3.118
Other	-.219	.804	.875**	2.398
Monthly income (reference = none)				
\$1-\$499	-.094	.910	.006	1.006
\$500-\$999	-.080	.923	.116	1.123
\$1000 and above	.030	1.030	-.610	.543
Financial education				
High school	-.100	.905	.295	1.344
Community	.501**	1.651	.448	1.565
Social learning				
Financial discussions with parents	-.008	.992	.013	1.013
Financial discussions with peers	.029*	1.029	.012	1.012
Observe parents' behaviors	-.008	.992	.003	1.003
Observe peers' behaviors	-.011	.989	.000	1.000
Constant	-2.634***	.072	-4.659***	.009
Chow test statistic for full vs. reduced model			119.274	<.0001

\*  $p < .05$ . \*\*  $p < .01$ . \*\*\*  $p < .001$ .

**Table 6. Willingness to Take Financial Risk as a Function of Social Learning and Gender**

Social Learning Opportunity	Male		Female		Wald $\chi^2$
	$\beta$	SE	$\beta$	SE	
Any risk vs. no risk					
Financial discussions with parents	.017	.009	.007	.005	0.915
Financial discussions with peers	.028	.012	.016	.006	0.837
Observe parents' behaviors	.013	.008	.004	.004	1.023
Observe peers' behaviors	-.007	.010	.008	.005	1.663
High risk vs. low risk					
Financial discussions with parents	-0.002	.006	0.01	.005	2.580
Financial discussions with peers	0.030	.007	0.011	.006	4.645*
Observe parents' behaviors	0.004	.005	-0.001	.005	0.564
Observe peers' behaviors	-0.003	.006	0.005	.005	0.972
Substantial risk vs. lower risk					
Financial discussions with parents	-0.008	.011	0.013	.012	1.666
Financial discussions with peers	0.029	.012	0.012	.014	0.857
Observe parents' behaviors	-0.008	.009	0.003	.011	0.564
Observe peers' behaviors	-0.011	.012	0.000	.013	0.400

\*  $p < .05$ .

lege students. The results of both the chi-square test and independent sample *t*-test confirm this hypothesis. Based on the results, it can be concluded that there are significant gender differences in willingness to take financial risks among college students, with males being more likely to be willing to take higher levels of financial risks than females.

Hypothesis 2 stated that exposure to financial social learning opportunities would differ by gender in college students. The results of the independent samples *t*-test between social learning dimensions confirm that there is an overall gender difference, with females having exposure to significantly more financial social learning opportunities overall. To further explore this difference, each financial social learning opportunity dimension was broken down by topic to determine whether there were specific gender differences in topics discussed or behaviors observed with parents and peers. Significant gender differences were observed for many topics within each social learning dimension. It can then be concluded that there are not only significant gender differences in overall exposure to financial social learning opportunities among college students, but also in topics discussed and observed with both parents and peers.

Hypothesis 3 stated that the relationship of social learning opportunities on willingness to take risks would differ by gender. The results of three parallel cumulative logistic regressions weakly support this hypothesis. While it was discovered that discussions with parents and peers had varying influence on the willingness to take financial risk between males and females, the actual difference in the relationship of social learning and gender on willingness to take risks was only significant for discussions with peers in the high risk versus low risk category. Observations of parents' and peers' behaviors were not at all associated with gender differences in willingness to take financial risks when controlling for other variables.

## **Discussion**

The findings are interesting on several levels. First, from the aspect of gender differences in willingness to take financial risks, previous research has found that women tend to be more risk averse than men; however, these studies did not focus specifically on college students. The current study confirms that this gender difference also exists in college students, implying that females tend to show less willingness to take financial risk from the time they are likely first exposed to managing their own finances.

When looking at exposure to financial socialization oppor-

tunities, female college students have significantly more conversations with their parents and friends about saving and investing money than male college students. However, when controlling for other factors, female college students are significantly more likely to choose lower levels of willingness to take risks at all three levels of comparison. This finding indicates that while female students are having more conversations with their parents and peers about money, specifically saving and investing, their conversations may lead them to more conservative saving and investment strategies.

It is also interesting to note that there is a relationship between gender and financial social learning opportunities as they relate to willingness to take financial risks; however this relationship is apparently only significant at the discussion level. Discussions with both parents and peers had significant influence on levels of willingness to take financial risk, but observations of their behaviors did not show this effect. This would indicate that it is important for parents to actually talk with their children about money, not just demonstrate positive behaviors. While modeling appropriate behavior is still most likely a positive influence, it is the discussions that are showing a significant positive impact.

## **Implications**

For parents, it is imperative to realize that it is important to talk to their children about financial topics. It is also important not to let gender roles prevent them from discussing more risky investment options with their daughters. If parents know the impact that lower levels of willingness to take financial risks may have on their daughters' financial futures, they may take the opportunity to have different kinds of conversations with them about saving and investing.

For practitioners, the research indicates that financial socialization begins at home. While education, specifically in the community, may have an impact as well, it is important to consider intergenerational efforts at financial education. Developing programs that encourage parent participation in their children learning about money may be an effective way to reach not only children but the whole family. For researchers, the study provides several implications for future research. Researchers should look at not only exposure to financial socialization and topics covered, but the content of the topics covered. This research showed that female students tend to talk more to their parents and peers about saving and investing than male students, but it

is unclear the kinds of messages these conversations entail. Knowing these messages may prove useful in understanding more clearly why females tend to be more risk averse than males.

It may also be interesting to look at the source of parental financial socialization. Are girls talking more to their mothers or fathers about these financial topics? Are boys talking more to their mothers or fathers about these financial topics? The present study does not differentiate between which parent has been providing the majority of the college student's financial socialization, but this factor may influence the types of information each gender child is receiving. In addition, this research only looked at the effects of gender and financial socialization on willingness to take financial risks. Future research could look at the effects on other attitudes, such as materialism and financial self-efficacy, and on actual behaviors, such as budgeting and saving.

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