Family Relations Interdisciplinary Journal of Applied Family Studies

ncfr catalyzing research, theory and practice

BRYCE L. JORGENSEN *East Carolina University*

JYOTI SAVLA *Virginia Polytechnic Institute and State University**

Financial Literacy of Young Adults: The Importance of Parental Socialization

This article tests a conceptual model of perceived parental influence on the financial literacy of young adults. Structural equation modeling was used to test whether (a) parents were perceived to influence young adults' financial knowledge, attitudes, and behaviors and (b) the degree to which young adults' financial attitudes mediated financial knowledge and perceived parental influence on young adults' financial behaviors. A sample consisting of 420 college students participated in the study. Findings by the College Student Financial Literacy Survey (CSFLS) indicated that perceived parental influence had a direct and moderately significant influence on financial attitude, did not have an effect on financial knowledge, and had an indirect and moderately significant influence on financial behavior, mediated through financial attitude.

Financial issues are an important part of everyday life for individuals and families. The recent downturn in the economy provides numerous examples of how the lack of financial capability can impact family life. Negative economic trends such as an increasing unemployment rate (6.2% in September 2008 to 10% in December 2009), as well as increasing consumer debt (Economic Report of the President, 2010) demonstrate the need for families to better understand the economy and have the knowledge and skills needed to make important financial decisions. Family financial difficulties can come from insufficient financial knowledge and relate to the health of the individual and their family physically (Norvilitis, Szablicki, & Wilson, 2003), economically (Alhabeeb, 1999), and psychologically (John, 1999). Increased consumer debt and bankruptcies (Lyons & Hunt, 2003), a loss of savings and investments for retirement (Grable & Joo, 1998), and unwise economic decisions (Allen, Edwards, Hayhoe, & Leach, 2007) contribute to the financial burden of families.

Young adults need to have the basic knowledge and skills to make important personal financial decisions (Chen & Volpe, 1998); unfortunately, few do. Many college students accumulate large amounts of debt that may contribute to academic failure (Parks-Yancy, DiTomaso, & Post, 2007) as well as future financial hardship (Roberts & Jones, 2001). On the basis of surveys by the Consumer Federation of America (1993) and Jump$tart Coalition (Mandell, 2008), American high school and college students have inadequate financial knowledge. In the most recent Jump$tart (Mandell) study, the average score of high school seniors was 48.3%. These scores have been declining since the first survey of 1997. This deficiency may lead to poor financial habits, influencing students' ability to become

Department of Child Development and Family Relations, East Carolina University, Rivers RW 335, Greenville, NC 27858 (brycevt@gmail.com).

*Center for Gerontology and Department of Human Development, Virginia Polytechnic Institute and State University, 237 Wallace Hall, Blacksburg, VA 24061.

Key Words: family resource management theory, financial attitudes, financial behavior, financial literacy, financial socialization, parental influence.

financially secure adults (Martin & Oliva, 2001). Many students acquire basic financial knowledge through trial and error, yet this knowledge may not be sufficient for them to become informed consumers (Lachance & Choquette-Berneir, 2004; Norvilitis et al., 2003).

Teaching children to be financially literate has been mostly left to parents, yet studies have found that many parents do not have these skills themselves (Moschis, 1985). Lyons and Hunt (2003) found that young adults wanted to gain financial knowledge and become responsible consumers but that financial issues were not discussed much in their home. TIAA-CREF Institute's (2001) Youth and Money Survey found that 94% of young adults turned to their parents for financial education, yet parents were not the best financial educators for their children nor did parents think it was their responsibility to teach finances to their children. Thus, whether parents believe teaching financial skills to their children is their responsibility or not, children look to their parents for guidance.

Several studies have found evidence that individuals' attitudes toward finances are associated with their spending habits, financial practices, and behaviors (Hayhoe, Leach, & Turner, 1999; Xiao, Noring, & Anderson, 1995). Although many education programs are targeted at assisting young adults in acquiring effective money management skills and knowledge, only a few aim at altering attitudes toward finances and spending. In this study, we examined the relationship between financial knowledge, attitudes, and behavior in order to shed light on what domains are of interest as targets of intervention.

Although scholars have examined levels of financial literacy for young adults, little research has investigated the influence parents have on college students' financial knowledge, attitudes, and behaviors. The purpose of this study was to test a conceptual model of perceived parental influence on the financial literacy of young adults. The model tested whether the perception of parental influence affected young adults' financial knowledge, financial attitudes, and financial behaviors. Furthermore, this study examined the degree to which young adults' financial attitudes mediated financial knowledge and the perceived influence of parents on young adults' financial behaviors. This article outlines the guiding theoretical framework, the perceived parental influences on the financial socialization of their children, and the relationship between financial knowledge, financial attitudes, and financial behaviors of young adults.

Theoretical Framework

Family resource management theory and social learning theory were used to consider the perceived influence parents have on shaping the financial knowledge, attitudes, and behaviors of young adults. Deacon and Firebaugh (1981) developed the family resource management theory as a management process with a systems orientation where management is ''the process of using resources to achieve goals'' (Goldsmith, 2005, p. 24). According to family resource management theory, financial behavior is influenced by demands and available resources (i.e., knowledge, attitudes, and personal characteristics). The four stages of the model (inputs, throughputs, outputs, and feedback loop) explain how people make financial decisions and develop financial behaviors (Figure 1). For this study,

Figure 1. Deacon and Firebaugh's Family Resource Management Model.

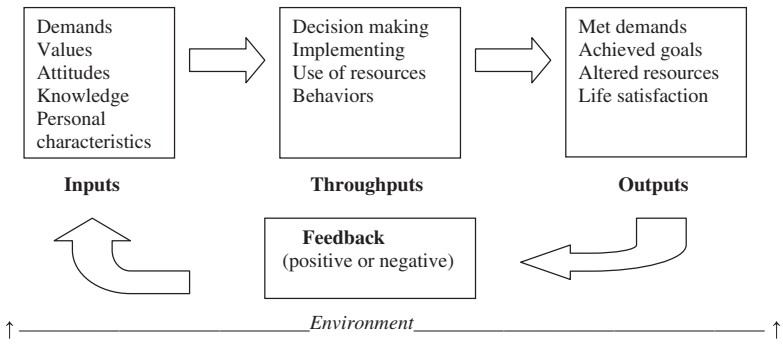
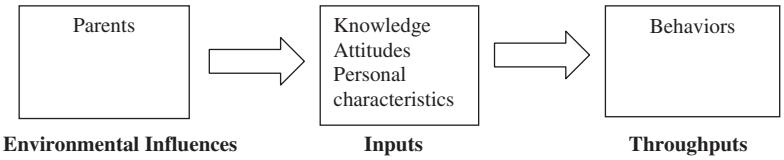


FIGURE 2. CONCEPTUAL MODEL OF STUDY.



we examined the inputs and throughputs sections of the model and combined it with Bandura's (1986) social learning theory in order to address the perceived influence of parents on the financial literacy of young adults (Figure 2).

Social learning theory asserts that environmental influences young adults have had throughout their life shape their attitudes and knowledge (Bandura, 1986; John, 1999). As young adults learn over the years through social interaction (Bandura), they begin to understand and form their attitudes and knowledge about finances. Thus, because parents are the key influence in children's lives as they grow, the positive and negative financial attitudes and knowledge young adults have about money are primarily influenced by their parents (Figure 2).

Financial Literacy

Financial literacy has been defined in multiple ways (Garman & Forgue, 2000; Johnson & Sherraden, 2007). Johnson and Sherraden noted that they prefer the term ''financial capability,'' which includes the ability and opportunity to act on financial knowledge. Vitt et al. (2000) defined financial literacy as

> the ability to read, analyze, manage, and communicate about the personal financial conditions that affect material well being. Financial literacy includes the ability to discern financial choices, discuss money and financial issues without (or despite) discomfort, plan for the future, and respond competently to life events that affect everyday financial decisions, including events in the general economy. (p. xii)

For this study, financial literacy is the relationship between the three concepts of financial knowledge, financial attitudes, and financial behaviors.

Chen and Volpe (1998) found that young adults with less financial knowledge had increased negative opinions about finances and made more incorrect financial decisions on their survey. They found that having a low level of financial knowledge limited young adults' ability to make informed decisions. This could be an issue because the financial habits young adults have while in college tend to carry on into adult life. That is, the better their financial literacy when they leave college, the fewer financial hardships they may have in life (Grable & Joo, 1998).

According to Chen and Volpe (1998), young adults were more knowledgeable on what they were familiar with (e.g., credit cards, bank accounts, and rental leases) and had lower scores in unfamiliar areas (e.g., life insurance and investing). Accordingly, the more consumer-related aspects of financial management (e.g., owning a credit card, having a bank account, purchasing insurance, leasing an apartment) young adults are taught or experience, the more they should know. Personal money management skills are increasingly necessary to survive in the present economy, and parents may play an important role in their children's financial socialization.

Parental Influence

Parents have been found to influence the financial socialization of their children (Alhabeeb, 1999; Clarke, Heaton, Israelsen, & Eggett, 2005; John, 1999). Socialization is the process through which people learn how to act and interact within their society. According to Danes (1994), financial socialization is ''the process of acquiring and developing values, attitudes, standards, norms, knowledge, and behaviors that contribute to the financial viability and well-being of the individual'' (p. 128). Some studies suggest that children learn about finances from parents through deliberate instruction, participation, and practice (i.e., explicitly) as well as through observations (i.e., implicitly; Clarke et al.; John; Moschis, 1985).

According to social learning theory, children have financial learning experiences through observations, positive or negative reinforcement, practice and participation, and deliberate instruction by parents (Alhabeeb, 1999; Bowen, 1996; Danes, 1994; Lachance & Choquette-Bernier, 2004). Danes argued that parents need to realize when children are ready to become involved in various financial decisions so that they can take advantage of these windows of opportunity by creating purposive learning experiences. Strong parenting practices such as explicitly teaching and demonstrating financial concepts can influence financial literacy from a young age through the teen years (Clarke et al., 2005). Direct influences such as family discussions and keeping track of allowance or gift income could lead to an increase in knowledge and the formation of attitudes, values, and behaviors toward money (Allen et al., 2007; Moore & Stephens, 1975; Moschis, 1985; Moschis, Prahasto, & Mitchell, 1986).

Parents teach children how to act by relying on their values, beliefs, and knowledge (Bandura, 1986; Clarke et al., 2005), thus shaping their children's attitudes toward finances as well as their behavior. Pritchard and Myers (1992) found that the financial values of teens and their parents were very similar. Implicit (i.e., nonspecific interaction) financial socialization tends to be more prevalent than explicit (i.e., purposive efforts) financial socialization (John, 1999). For example, Clarke et al. found a relationship between how prepared adolescents felt to perform financial tasks and how frequently the financial tasks were modeled in the home. Allen et al. (2007) found that young adults saw money as more problematic when coming from a home where parents argued about money. Often, students whose parents had financial problems followed the financial patterns of their parents, repeating their financial difficulties (Clarke et al.). In summary, although the mechanisms are unclear, because parents tend to be the key influence in their children's lives, the positive or negative financial knowledge, attitudes, and behaviors young adults have about money are influenced by their parents.

The Current Study

The current study tested a model of students' perception of parental influence on the financial socialization of their children using structural equation modeling (SEM) techniques. This study had two primary goals: first, to test whether parents were perceived to influence young adults' financial knowledge, financial attitudes, and financial behaviors and, second, the degree to which young adults' financial attitudes mediated financial knowledge and perceived parental influence on young adults' financial behaviors.

To examine whether the perceived financial socialization young adults received from their parents would predict their financial literacy, the conceptual model (Figure 2) was used to test our hypothesized model. We hypothesized that (a) perceived parental influence predicted higher levels of financial knowledge, (b) perceived parental influence predicted better financial attitudes, (c) higher financial knowledge predicted better financial attitudes, and (d) the effect of perceived parental influence and financial knowledge on financial behavior was mediated by financial attitudes. Finally, we examined whether several demographic variables influenced these latent constructs. In particular, we expected that parents with higher incomes may be more likely to discuss financial issues with their children. We anticipated men and those with higher class rank to have more financial knowledge. Finally, we tested whether paying for one's own college education positively influenced financial attitudes.

Method

Survey Instrument

The College Student Financial Literacy Survey (CSFLS; Jorgensen, 2007) was developed by the principal researcher in 2006 based on a review of the literature and feedback from independent experts in the area of personal financial literacy. The CSFLS measures financial knowledge, financial attitudes, financial behavior, and perceived influences (e.g., parents), and includes various demographic factors. The survey consists of 44 content questions (82 items), 18 demographic questions, and takes around 20 minutes to complete. The financial knowledge section of the CSFLS has 25 questions (27 items), 11 of which pertain to general financial knowledge, 4 to saving and borrowing, 6 to insurance, and 4 to investing. The financial attitudes section has six questions (25 items) regarding students' perception of money and finances. The financial

behaviors section has six questions (23 items) regarding the current financial behaviors of the participants. The perceived influences section contains seven questions.

The CSFLS addressed some of the limitations of previous financial literacy surveys; specifically, it adds a section on students' perception of influences that may relate to financial literacy as well as including financial knowledge, financial attitudes, and financial behavior measures within the same instrument. Relevant questions were selected from Chen and Volpe's (1998) survey, the Personal Financial Survey (Jump$tart, 2004), the College Student Consumer Knowledge Survey (Consumer Federation of America, 1993), and the Financial Management Survey (Micomonaco, 2003). New questions were also created specifically for the CSFLS.

Following scale development procedures recommended by Crocker and Algina (1986), four experts in financial management and survey design independently assessed the items for content and face validity. Clarity and readability of the on-line survey were assessed by six diverse students. Many CSFLS questions came from the validated items of the previously mentioned surveys. Additionally, the four constructs were highly correlated with one another, suggesting good criterion validity. The internal consistency of the scales from this instrument ($N = 420$), as indicated by Cronbach's α, were financial knowledge $\alpha = .75$; financial attitudes $\alpha = .77$; financial behavior $\alpha = .73$; and perceived parental influence $\alpha = .70$.

Data Collection

Data were gathered using the on-line survey program, Survey.vt.edu. Research conducted on-line with a college student sample has been found to be as good as, and in some instances better than, a paper and pencil survey (Carini, Hayek, Kuh, Kennedy, & Ouimet, 2003). We tested for data quality by removing submissions that either had 10 or more repetitive answers in the financial knowledge section (7 submissions) or left full sections incomplete (15 submissions). After removing these inconsistencies, there were 420 usable entries out of 1,046 invited students, a 40% completion rate.

Sample

Participants in this study (Table 1) were undergraduate college students recruited as a multidisciplinary convenience sample from Tennessee, Nevada, Oklahoma, South Dakota, Idaho, and Virginia. The sample included public, private, land-grant, research, liberal arts, and undergraduate universities. Students were recruited from a wide range of majors and disciplines using a snow balling technique (Pedhazur & Schmelkin, 1991). We tested for school effects in this data and found very low between-school variances; therefore, we did not correct the standard errors for clustering (Snijders & Bosker, 1999).

Measures

Financial knowledge. Financial knowledge consists of 27 items and covers four content

Table 1. *Demographic Characteristics of College Students (N = 420)*

Variables	Proportions
Gender	
Women	.58
Men	.42
Race	
Caucasian-not Hispanic	.87
Asian	.04
African American	.03
Hispanic	.02
Multiracial	.01
Other	.03
Age	
18 – 22	.84
23 – 29	.16
Class rank	
First-year freshmen	.32
Sophomore	.19
Junior	.17
Senior	.32
Parental income	
<$35,000	.13
$35,000 – $49,999	.11
$50,000 – $79,999	.24
>$80,000	.41
Don't know	.11
College education paid	
Self (100%)	.22
Parents (100%)	.28
Implicit/explicit learning	
Implicit only	.39
Explicit	.38

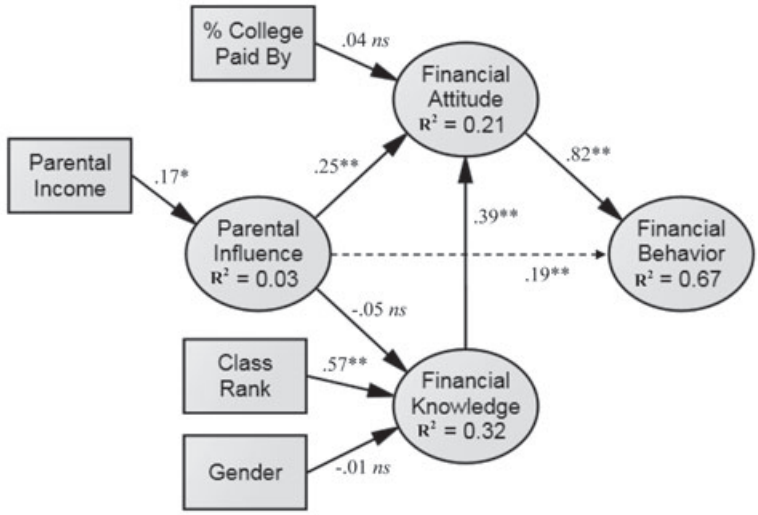
areas: general financial knowledge, saving and borrowing, insurance, and investing. Responses were scored 1 (*correct*) or 0 (*incorrect*) and summed. The overall mean financial knowledge score was 57.6%. Scores on the general financial knowledge items (e.g., ''What does a credit bureau do'' and ''Net worth is:'') ranged from 0 to 11 ($M = 6.17$, $SD = 2.25$) with a sum score of 53.8% correct. The six saving and borrowing items (e.g., ''The MOST important factors that lenders use when deciding whether to approve a loan are'' and ''If you co-sign a loan for a friend, then you'') yielded a range of 0 to 6 ($M = 4.09$, $SD = 1.31$) with a sum score of 65.2% correct. The six insurance items (e.g., ''Choose the type of insurance coverage [liability, comprehensive, collision, uninsured motorist] that pays for the following'') ranged from 0 to 6 ($M = 3.67$, $SD = 1.48$) with a sum score of 58.8% correct. Finally, the four investing items (e.g., ''Which of the following combination of investments is most risky'') ranged from 0 to 4 ($M = 2.30$, $SD = 1.21$) with a sum score of 54.8% correct.

Financial attitudes. The 20 financial attitude items were organized by the same four content areas as financial knowledge. Participants rated the importance of various items using a 5-point Likert-scale (from 1 = *not important* to 5 = *very important*). Negative items were reversed so that higher scores on these scales indicated more positive financial attitudes. General financial attitudes included seven items (e.g., ''rate the importance of maintaining adequate financial records'') and ranged from 7 to 35 ($M = 23.48$, $SD = 4.51$). Saving and borrowing included seven items (e.g., ''I feel credit cards are safe and risk free'' and ''I feel it is important to understand loan agreements before I sign'') and ranged from 7 to 35 ($M = 27.36$, $SD = 3.60$). Insurance included three items (e.g., ''I feel having life insurance is an important way to protect loved ones'') and ranged from 3 to 15 ($M = 12.25$, $SD = 2.22$). Investing included three items (e.g., ''Rate the importance of planning and implementing a regular savings/investment program'') and ranged from 3 to 15 ($M = 11.75$, $SD = 2.00$).

Financial behavior. Financial behavior was also measured using the four content areas via 17 items. Participants rated items using a 5-point Likert-scale (ranging from 1 = *not at all true of me* to 5 = *very true of me*). Negative items were reversed so that higher scores on these scales indicated better financial behaviors. General financial behavior included six items (e.g., ''I budget and track spending'') and ranged from 6 to 30 ($M = 16.84$, $SD = 4.49$). Saving and borrowing included six items (e.g., ''I use credit cards to make purchases that I can't afford and don't have the money in the bank to pay the bill'') and ranged from 6 to 30 ($M = 25.21$, $SD = 3.78$). Investing included two items (e.g., ''I contribute to an investment account'') and ranged from 2 to 10 ($M = 4.74$, $SD = 2.24$). Insurance responses were scored 1 (*yes*) or 0 (*no*) and summed. Insurance included three items (e.g., ''I am covered by a homeowner's or renter's insurance policy'') and ranged from 0 to 3 ($M = .48$, $SD = .742$).

Perceived parental influence. The *parental influence construct*, which measures students' perceptions of parental influence, included two items. For the first question, participants were asked: ''How much did you learn about managing your money from your parents?'' and rated this item using a 5-point Likert-scale (ranging from 1 = *none* to 5 = *a lot*). The average rating for this question was 4.22 ($SD = 1.07$, range = 1 – 5). For the second question, participants were asked: ''How often were you influenced by or did you discuss finances with your parents?'' and rated this item using a 5-point Likert-scale (1 = *never*, 2 = *once per year*, 3 = *every few months*, 4 = *twice per month*, 5 = *weekly*). The average rating for this question was 3.87 ($SD = 1.12$, range = 1 – 5). The *implicit/explicit variable* measured students' perceptions of how they learned about finances in the home. Students answered the question: ''How would you describe how finances were communicated in your family?'' (implicit only = ''We didn't talk much about finances but I learned from their examples; explicit = ''My parents explicitly taught me about finances [e.g., credit cards, debt, budgeting, and saving]).'' Although *implicit only* denotes little to no explicit teaching/learning in the home, *explicit* implies both explicit and implicit learning. It is assumed that students who learned explicitly from their parents about finances also learned from their parents' examples. The implicit/explicit variable was assessed in order to compare students who thought they had received explicit financial teaching from their parents to

FIGURE 3. STANDARDIZED PATH VALUES FOR THE HYPOTHESIZED MODEL.



Note: Dash arrow indicates indirect path. *ns* represents nonsignificant paths. $*p < .05$. $**p < .01$.

students who thought they had only learned implicitly about finances from their parents.

Demographic variables. Gender, class rank, parental income, and college paid by were examined (Figure 3). *College paid by* compared students who paid 100% of their own college expenses with students who had 100% of their college expenses paid by someone else.

Analytic Procedures

The hypothesized model was tested using SEM in LISREL (Jöreskog & Sorbom, 2007). Missing data were estimated and replaced using the expectation maximization (EM) procedure (Schafer, 1997). The amount of missing data that was imputed was 1.17%. Before empirically testing the model, the data were examined for normality and homoscedasticity. All but one variable (Behavior toward Savings and Borrowing) showed univariate and multivariate normality. The covariance matrix and means using the EM algorithm were generated by PRELIS Version 2.80 to test the model using the maximum likelihood estimation.

A two-step procedure to model testing was implemented where the factor loadings for each of the constructs were assessed through a measurement model before testing the full structural model (Anderson & Gerbing, 1988; Bollen, 1989; Hu & Bentler, 1999). Table 2 shows the standardized factor loadings and squared multiple correlations for the content areas of the latent constructs in the model. All factor loadings in the measurement model were statistically significant ($p < .01$). Financial attitude explained a very small amount of the variation in the content area attitude toward saving and borrowing (17%), and financial behavior explained a very small amount of the variation in the content area behavior toward saving and borrowing (10%). These two error terms were correlated based on theory. No other modifications were made to the measurement and structural model. All the exogenous factors were correlated with each other in the structural model. The implicit and explicit learning variables were tested using two-way analyses of variance (ANOVAs).

RESULTS

Model Fit

The fit statistics, standardized path values, and their associated t values for the model are reported in Table 3. We used a cutoff value of $t = |1.96|$ to determine whether direct and indirect paths were statistically significant. In terms of size and influence of the standardized path values, we used Keith's (1993) recommended criteria: Standardized path values ranging from .05 to .10 are small but meaningful influences;

Table 2. *Standardized Factor Loadings and Squared Multiple Correlations for Hypothesized Model for College Students*

	Factor Loadings	Measurement Error[a]	SMC[a]	SMC[b]
Parental influence				.03
Learn from parents	.57	.68	.32	
Discuss with parents	.85	.28	.72	
Financial knowledge				.32
General knowledge	.75	.44	.56	
Knowledge regarding savings and borrowing	.56	.69	.31	
Knowledge regarding insurance	.60	.64	.36	
Knowledge regarding investments	.56	.69	.31	
Financial attitude				.21
General attitude	.65	.57	.43	
Attitude toward savings and borrowing	.41	.83	.17	
Attitude toward insurance	.58	.67	.33	
Attitude toward investments	.75	.43	.57	
Financial behavior				.67
General behavior	.75	.43	.57	
Behavior toward savings and borrowing	.31	.90	.10	
Behavior toward insurance	.44	.81	.19	
Behavior toward investments	.50	.75	.25	

Note: Measurement model $\chi^2(110) = 333.0$; RMSEA = .06; SRMR = .06; IFI = .093. Factor loadings significant at 1% level of significance; SMC = squared multiple correlations.

[a]Measurement model.

[b]Structural model.

path values ranging from .11 to .25 are moderate in size and influence; and path values about .25 are large in size and influence.

Direct and Indirect Effects

Table 3 summarizes the direct and indirect effects. Of the 10 direct effects, 5 were significant. Parental income had a significant and moderate influence on perceived parental influence. Class rank had a significant and large influence on financial knowledge; higher class ranked students had higher financial knowledge than those from lower class ranks. Gender, however, did not have any influence on financial knowledge. Students who paid for their college did not have a significantly higher financial attitude than those who did not pay for their college. Perceived parental influence had a significant and moderate influence on financial attitude, but did not have an effect on financial knowledge. Financial knowledge had a significant and large influence on financial attitude, which in turn had a significant and large influence on financial behavior.

Table 3 also shows the indirect paths and associated *t* values. Parental income had a significant indirect effect, through perceived parental influence, on financial attitude and financial behavior, but not financial knowledge. Class rank had a significant influence on financial attitude and behavior through financial knowledge. Gender and the percentage of college paid by the student were not statistically significant. Perceived parental influence had an indirect effect on financial behavior mediated through financial attitude. Similarly, financial knowledge had a significant indirect effect on financial behavior mediated through financial attitude.

In order to test for complete mediation between perceived parental influence and financial behavior through financial attitude, we first tested the path between perceived parental influence and financial behavior without financial attitude in the model. This path was significant ($b = .16$, $p < .05$). Because a complete mediation model has the direct path from the independent variable to the dependent variable theoretically set to zero, we used the goodness-of-fit test with one degree of freedom to ascertain if the hypothesized lack of direct effect of perceived parental influence on financial behavior and financial knowledge on financial

Table 3. *Decomposition of Direct and Indirect Effects for the Hypothesized Model Based on College Students (*N = *420)*

	Direct		Indirect	
Predictor and Criterion	Path Coefficient	*t*	Path Coefficient	*t*
Parental income				
Parental influence	.17*	2.41		
Financial knowledge			−.01	−0.77
Financial attitude			.04*	2.11
Financial behavior			.03*	2.11
Class rank				
Financial knowledge	.57**	10.24		
Financial attitude			.22**	5.49
Financial behavior			.18**	5.45
Gender				
Financial knowledge	−.01	−0.10		
Financial attitude			−.01	−0.10
Financial behavior			−.01	−0.10
College paid				
Financial behavior			.03	0.72
Financial attitude	.04	0.72		
Parental influence				
Financial knowledge	−.05	−0.80		
Financial attitude	.25**	3.84	−.09	−0.80
Financial behavior			.19**	3.55
Financial knowledge				
Financial behavior			.32**	5.72
Financial attitude	.39**	5.76		
Financial attitude				
Financial behavior	.82**	10.21		

Note: Structural model $\chi^2(124) = 355.50$; RMSEA = .06; SRMR = .06; IFI = .92.
* $p < .05$. ** $p < .01$.

behavior could be confirmed empirically (James, Mulaik, & Brett, 2006). To do this, we ran the model with the path from perceived parental influence to financial behavior constrained to zero, which resulted in $\chi^2(124) = 355.50$. Next, we ran the model with the path freely estimated resulting in $\chi^2(123) = 355.10$. The χ^2 difference test for these two models with one degree of freedom was not significant, inferring that there was a significant mediation. This model predicted a significant amount of variance in financial behavior ($R^2 = .67$). The squared multiple correlations are shown in Table 2.

Explicit and Implicit Learning

Participants who believed they learned explicitly about finances from their parents had better financial attitudes ($p < .001$) and behaviors ($p < .001$) but marginally lower financial knowledge ($p = .061$) compared to participants who believed they learned only implicitly about finances from their parents. An interesting interaction effect occurred between gender and implicit/explicit learning for perceived parental influence and financial knowledge, attitudes, and behavior. Men who thought they learned implicitly about finances from their parents had a significantly higher financial knowledge score ($p < .05$) than men and women who believed they learned explicitly, whereas women's financial knowledge score did not significantly differ by how they thought they learned about finances from their parents. Women who perceived learning explicitly about finances from their parents had a significantly higher financial behavior score than women who perceived learning implicitly ($p < .01$) and men who perceived learning explicitly ($p < .05$), whereas men's

financial behavior score did not significantly differ by how they perceived learning about finances from their parents. Both men ($p < .05$) and women ($p < .01$) had better financial attitudes if they perceived to be taught explicitly about finances from their parents rather than implicitly. Finally, parents were perceived to have a greater influence ($p < .001$) on participants who reported being explicitly taught than on participants who reported having been implicitly taught.

Discussion

This study found that parents were perceived to influence young adults' financial attitudes and financial behaviors. The perceived parental influence construct consisted of two main ideas: (a) the amount of financial learning that took place and (b) the frequency of financial learning. Taken together, parents were perceived to have a direct and moderately significant influence on financial attitude, had an indirect and moderately significant influence on financial behavior, mediated through financial attitude, but did not have an effect on financial knowledge. The perceived influence parents had on their children's financial attitudes and behaviors was consistent with our conceptual model and confirmed and extended previous findings (Clarke et al., 2005; John, 1999). The mediating effects of financial attitudes on perceived parental influence and financial knowledge and financial behavior are important for intervention programs targeted at changing financial behavior.

Our finding that young adults did not perceive parents to influence their financial knowledge was surprising and contrary to our conceptual model and other studies (Bandura, 1986; John, 1999). The nonsignificant relationship between perceived parental influence and financial knowledge supports the idea that many parents are not teaching their children financial knowledge (Lyons & Hunt, 2003; Moschis, 1985; TIAA-CREF Institute, 2001). Additionally, the parental influence construct may not tap into what parents do to promote knowledge. Despite the finding that parents were perceived not to influence their children's financial knowledge, 67% of students from this sample expected to learn financial knowledge from parents.

Our findings that financial knowledge had a significant and large influence on financial attitudes, which had a significant and large influence on financial behaviors, is consistent with our conceptual model and supports what other studies have found (Chen & Volpe, 1998; Deacon & Firebaugh, 1981). As the level of financial knowledge increased, young adults' financial attitudes and behavior improved. These results are encouraging and suggest that as knowledge and attitudes increase, the ability for young adults to make informed financial decisions improves. This may be important for policymakers and educators who desire to create programs that improve financial behavior. This study was, however, cross-sectional; therefore, no causal relationships should be assumed.

No significant differences were found in the level of financial knowledge, attitudes, or behaviors between men and women. Although most previous research (Borden, Lee, Serido, & Collins, 2008; Volpe, Chen, & Pavlicko, 1996) found that male students had more financial knowledge than female students, others (Danes & Hira, 1987) have found mixed findings in the relationship between financial literacy and gender. For example, Danes and Hira found that men knew more about insurance and personal loans but that women knew more about general financial management. We suggest the lack of difference in financial literacy between men and women found in our study may be due to the idea that men and women differ by content area. An interesting companion finding was that women perceived they were influenced marginally more ($p = .056$) by their parents than were men.

Class rank had a strong direct effect on knowledge and an indirect influence on attitudes and behavior. Financial knowledge, attitudes, and behaviors increased incrementally from first-year freshmen to senior year. This suggests that students gained financial literacy as they grew older over time, which may be due to education (financial or otherwise) or trial and error through an increased number of financial experiences. Older students may be motivated to learn more because they are confronted with more financial decisions and are closer to being out on their own. Other research (Mandell, 2008) found a strong relationship between financial literacy and college entrance exam scores. This suggests the increase in financial literacy may be influenced by young adults' cognition or ability to work out problems in general; because higher class ranked students have taken more advanced courses that teach critical thinking skills, these skills may have increased their ability to make

better financial decisions. Parental income was also associated with perceived parental influence and students' financial literacy. The higher the income for parents, the more perceived influence they had on their children's financial literacy and the more positive their children's financial attitudes and behaviors. The increase in students financial literacy may be because parents with higher incomes had increased opportunities to interact with their children in more diverse financial areas (e.g., life insurance, investing, purchasing a new car) than parents with lower incomes.

To better understand how parents financially socialize their children, we also looked at student reports of whether they learned explicitly (i.e., both explicitly and implicitly) or implicitly (i.e., implicitly only) from their parents. In our study, participants who reported learning explicitly about finances from their parents had better financial attitudes and behaviors yet had marginally lower financial knowledge compared to participants who reported learning only implicitly about finances from their parents. The lower financial knowledge was again surprising and contrary to previous literature, which states that financial knowledge, attitudes, and behaviors can be influenced through explicit teaching whereas parents' example or implicit teaching primarily influence financial attitudes and behaviors (Allen et al., 2007; Clarke et al., 2005; Moschis, 1985). After looking at the interaction effect of gender, we found that only men who learned implicitly about finances from their parents had a significantly higher financial knowledge score, yet women's financial knowledge score did not significantly differ by how they learned about finances from their parents. Our findings that parents were perceived to have little to no influence over financial knowledge may be due to men having higher scores when they implicitly learn. These findings may be unique to these data and merit additional research with other samples and populations. Additionally, these findings may be due to measuring students' perceptions of parental influence and socialization.

Consistent with previous studies that found that explicit teaching and implicit examples of parents helped shape the attitudes and behaviors of their children (Allen et al., 2007; Bandura, 1986; Danes, 1994; Moschis, 1985), we found both explicit and implicit reported learning increased students' financial attitudes and behaviors. Both men and women learned financial attitudes more through explicit financial teaching than implicit only teaching, and women who reported to learn explicitly about finances from their parents had a significantly higher financial behavior score. Findings indicate that men and women gained financial knowledge and behaviors from their parents differently but both acquired financial attitudes through explicit teaching. Both explicit and implicit teachings are, however, important if the financial literacy of young adults is going to be improved.

Study Limitations and Implications

Although the findings of this study provide unique insights into the importance of parental socialization on the financial literacy of their children, it also has limitations. One limitation is that only student data was gathered. Data from both parents and children are needed in order to measure parental influence. The measurements of parental influence and explicit/implicit learning were young adults' perceptions of these measures rather than actual parental influence and teaching. Additionally, the explicit/implicit measure could be refined and include a ''neither'' option. Furthermore, validity of the CSFLS could use additional testing, especially the parental influences construct, comparing its measures to other measures and data. Finally, this study was a cross-sectional study with data taken at one point in time. Therefore, no causal relationships can be assumed, and all generalizations drawn should be limited to the populations sampled or cautiously applied to groups that closely resemble those in this study.

Implications of this study include using the CSFLS to gather data on a noncollege student population of similarly aged young adults to compare differences in financial literacy and parental or other influences. Young adults who have never attended college may have more work experience and be more financially independent from their parents. A comparison study could explore whether life (outside of school) and work experiences trump the experiences of college life. For example, previous studies found that work experience positively influenced financial knowledge (Chen & Volpe, 1998) and financial attitudes and behaviors (APLUS, 2009; Xiao, Sorhaindo, & Garman, 2006). Additionally,

influences other than parents (e.g., peers, life experiences, job status) should also be examined.

Colleges might consider offering personal finance courses that not only build knowledge, but also include facets of attitude and behavior modification. Ways to incorporate families into the process of increasing students' financial literacy is also important. Cooperative Extension and other educators could create information sheets to use with parents and students about the influence parents have on the financial socialization of their children, both explicitly and implicitly, and how and where to obtain more financial knowledge for both college students and parents. These educators could then offer financial seminars and workshops to teach both financial literacy and how parents can increase their ability to discuss, teach, and model financial principles to their children, especially to families with lower income.

Conclusion

This study provides insight into the perceived influence parents have on the financial socialization of their children. This study explored the linkages among students' perception of parental influence, financial knowledge, attitudes, and behaviors, and various demographic variables. Parents' perceived explicit and implicit teachings influenced their children's financial literacy. This study confirms previous findings that many young adults have inadequate financial knowledge, attitudes, and behaviors. This lack in financial literacy may influence young adults' ability to make important positive financial decisions throughout their lives. Parents should be included in any effort to improve the financial literacy of young adults.

Note

The authors thank and acknowledge Peggy S. Meszaros, Celia R. Hayhoe, and Katherine R. Allen for their assistance with this project. We also thank Rosemary Blieszner and Joyce A. Arditti for their very helpful reviews and comments.

References

Alhabeeb, M. J. (1999). Allowances and the economic socialization of children. *Association for Financial Counseling and Planning Education, 10*(2), 1 – 9.

Allen, M. W., Edwards, R., Hayhoe, C. R., & Leach, L. (2007). Imagined interaction, attitudes towards money and credit, and family coalitions. *Journal of Family and Economic Issues, 28,* 3 – 22.

Anderson, J. C., & Gerbing, D. W. (1988). Structural equation modeling in practice: A review and recommended two-step approach. *Psychological Bulletin, 103,* 411 – 423.

APLUS—Arizona Pathways to Life Success for University Students. (2009). *Cultivating positive financial attitudes and behaviors for healthy adulthood.* Retrieved from http://www.nefe.org/LinkClick.aspx?fileticket=1R5gjvUaxps%3d&tabid=712

Bandura, A. (1986). *Social foundations of thought and action: A social cognitive theory.* Englewood Cliffs, NJ: Prentice-Hall.

Bollen, K. A. (1989). *Structural equations with latent variables.* New York: Wiley.

Borden, L. M., Lee, S., Serido, J., & Collins, D. (2008). Changing college students' financial knowledge, attitudes, and behavior through seminar participation. *Journal of Family and Economic Issues, 29,* 23 – 40.

Bowen, C. (1996). Informal money management education: Perceptions of teens and parents. *Consumer Interests Annual, 42,* 233 – 234.

Carini, R. M., Hayek, J. C., Kuh, G. D., Kennedy, J. M., & Ouimet, J. A. (2003). College student responses to web and paper surveys: Does mode matter? *Research in Higher Education, 44*(1), 1 – 19.

Chen, H., & Volpe, R. P. (1998). An analysis of personal financial literacy among college students. *Financial Services Review, 7*(2), 107 – 128.

Clarke, M. D., Heaton, M. B., Israelsen, C. L., & Eggett, D. L. (2005). The acquisition of family financial roles and responsibilities. *Family and Consumer Sciences Research Journal, 33,* 321 – 340.

Consumer Federation of America. (1993). *Consumer student consumer knowledge: A nationwide test.* Washington, DC: Consumer Federation of America.

Crocker, L., & Algina, J. (1986). *Introduction to classical and modern test theory.* Orlando, FL: Harcourt-Brace.

Danes, S. M. (1994). Parental perceptions of children's financial socialization. *Financial Counseling and Planning, 5,* 127 – 146.

Danes, S. M., & Hira, T. K. (1987). Money management knowledge of college students. *Journal of Student Financial Aid, 17*(1), 4 – 16.

Deacon, R. E., & Firebaugh, F. M. (1981). *Family resource management principles and applications*. Boston: Allyn and Bacon.

Economic Report of the President. (2010). *The annual report of the council of economic advisers.* Retrieved from http://www.gpoaccess.gov/eop/index.html

Garman, E. T., & Forgue, R. E. (2000). *Personal finance* (6th ed.). Boston: Houghton Mifflin.

Goldsmith, E. (2005). *Resource management for individuals and families.* Belmont, CA: Wadsworth.

Grable, J. E., & Joo, S. (1998). Does financial education affect knowledge, attitudes, and behavior? An empirical analysis. *Personal Finances and Worker Productivity, 2*(2), 213 – 220.

Hayhoe, C. R., Leach, L., & Turner, P. R. (1999). Discriminating the number of credit cards held by college students using credit card and money attitudes. *Journal of Economic Psychology, 34,* 643 – 656.

Hu, L., & Bentler, P. M. (1999). Cutoff criteria for fit indexes in covariance structure analysis: Conventional fit criteria versus new alternatives. *Structural Equation Modeling, 6,* 1 – 55.

James, L. R., Mulaik, S. A., & Brett, J. M. (2006). A tale of two methods. *Organizational Research Methods, 9*(2), 233 – 244.

John, D. R. (1999). Consumer socialization of children: A retrospective look at twenty-five years of research. *The Journal of Consumer Research, 26*(3), 183 – 213.

Johnson, E., & Sherraden, M. S. (2007). From financial literacy to financial capability among youth. *Journal of Sociology & Social Welfare, 34*(3), 119 – 145. Retrieved from http://www.thefreelibrary.com/From financial literacy to financial capability among youth.-a0167304991

Jöreskog, K. G., & Sorbom, D. (2007). *LISREL (Version 8.8)* [Computer software]. Chicago: Scientific Software International.

Jorgensen, B. L. (2007). *Financial literacy of college students: Parental and peer influences.* Unpublished master's thesis, Virginia Polytechnic Institute and State University, Blacksburg, Virginia. The CSFLS can be retrieved at http://scholar.lib.vt.edu/theses/available/etd-1016 2007-143627/unrestricted/CSFLC_Survey.pdf

Jump$tart. (2004). *Personal financial survey*. Unpublished instrument. Retrieved from http://www.radicalmath.org/docs/FinancialLitSrvy_Answers.pdf

Keith, T. Z. (1993). Causal influences on school learning. In H. J. Walberg (Ed.), *Analytic methods for educational productivity* (pp. 21 – 47). Greenwich, CT: JAI Press.

Lachance, M. J., & Choquette-Bernier, N. (2004). College students' consumer competence: A qualitative exploration. *International Journal of Consumer Studies, 28,* 433 – 442.

Lyons, A. C., & Hunt, J. L. (2003). The credit practices and financial education needs of community college students. *Association for Financial Counseling and Planning Education, 14*(1), 63 – 74.

Mandell, L. (2008). *The financial literacy of young American adults: Results of the 2008 national JumpStart coalition survey of high school seniors and college students*. Retrieved from JumpStart Coalition for Personal Financial Literacy website: http://www.jumpstartcoalition.org/upload/2009Book_complete_after_Lew_Edits.pdf

Martin, A., & Oliva, J. C. (2001). Teaching children about money: Applications of social learning and cognitive learning developmental theories. *Journal of Family and Consumer Sciences, 93*(2), 26 – 29.

Micomonaco, J. P. (2003). *Borrowing against the future: Practices, attitudes and knowledge of financial management among college students.* Unpublished master's thesis, Virginia Polytechnic Institute and State University, Blacksburg, Virginia.

Moore, R. L., & Stephens, L. F. (1975). Some communication and determinants of adolescent consumer learning. *Journal of Consumer Research, 2,* 80 – 92.

Moschis, G. P. (1985). The role of family communication in consumer socialization of children and adolescents. *Journal of Consumer Research, 11,* 898 – 913.

Moschis, G. P., Prahasto, A. E., & Mitchell, L. G. (1986). Family communication influences on the development of consumer behavior: Some additional findings. *Advances in Consumer Research, 13,* 365 – 369.

Norvilitis, J. M., Szablicki, P. B., & Wilson, S. D. (2003). Factors influencing levels of credit-card debt in college students. *Journal of Applied Social Psychology, 33,* 935 – 947.

Parks-Yancy, R., DiTomaso, N., & Post, C. (2007). The mitigating effects of social and financial capital resources on hardships. *Journal of Family and Economic Issues, 28,* 429 – 448.

Pedhazur, E. J., & Schmelkin, L. P. (1991). *Measurement, design, and analysis: An integrated approach.* Hillsdale, NJ: Lawrence Erlbaum Associates.

Pritchard, M. E., & Myers, B. K. (1992). Consumer education: A partnership between schools and families. *Journal of Consumer Education, 10,* 38 – 43.

Roberts, J. A., & Jones, E. (2001). Money attitudes, credit card use, and compulsive buying among American college students. *The Journal of Consumer Affairs, 35,* 213 – 240.

Schafer, J. L. (1997). *Analysis of incomplete multivariate data, Monographs on statistics and applied probability* (Vol. 72). London: Chapman & Hill/CRC Press.

Snijders, T. A. B., & Bosker, R. J. (1999). *Multilevel analysis: An introduction to basic and advanced multilevel modeling.* Thousand Oaks, CA: Sage Publications.

TIAA-CREF Institute. (2001). *2001 Parents, youth & money survey: Parents miss the mark as financial educators for their kids*. Retrieved from http://www.tiaa-crefinstitute.org/about/news/ym_survey.html

Vitt, L. A., Anderson, C., Kent, J., Lyter, D. M., Siegenthaler, J. K., & Ward, J. (2000). *Personal finance and the rush to competence: Financial literacy education in the U.S.* Middleburg, VA: Fannie Mae Foundation.

Volpe, R. P., Chen, H., & Pavlicko, J. J. (1996). Personal investment literacy among college students: A survey. *Financial Practice and Education, 6*(2), 86 – 94.

Xiao, J. J., Noring, F. E., & Anderson, J. G. (1995). College students' attitudes towards credit cards. *Journal of Consumer Studies and Home Economics, 19,* 155 – 174.

Xiao, J. J., Sorhaindo, B., & Garman, E. T. (2006). Financial behavior of consumers in credit counseling. *International Journal of Consumer Studies*, *30*, 108 – 121.