Influence of Family Financial Socialization on Academic Success in College

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Explicit parent–child financial socialization is one way that parents may help children feel less stress in college and increase their academic performance. To test this assumption, we used family financial socialization theory to inform multivariate analysis of variance (MANOVA) and structural equation models (SEM). The results largely support the theory. Participants were 752 college students from a U.S. university. Specific findings indicate that students from more affluent families were more often taught to budget. Parent–child teaching/training was strongly associated with felt parental–financial influence and fewer worrisome academic behaviors because of economic pressure. Students who felt greater parent–financial influence and experienced fewer effects of economic pressure, achieved higher college grade point averages (GPAs). An implication of this study is the importance of strengthening support for financial learning in families.

Keywords: academic achievement, college students, economic pressure, financial counseling, financial socialization, parenting

Family financial socialization is important in the lives of college students for several reasons. The college experience for many students often corresponds with higher stress levels as they encounter real-world financial realities (Heckman, Lim, & Montalto, 2014). Adolescents gradually emerge into adulthood by taking upon themselves more responsibility for financial decisions (Arnett, 2015). Many college students, especially those that live away from home, simultaneously experience greater liberty to make day-to-day financial decisions (Corio, Bettis, & Compas, 2017). Many students pursue work opportunities to help meet the financial demands placed upon them (Trombitas, 2012). Most college students have to make major long-term financial decisions about student loan debt and vocation (Johnson, O'Neill, Worthy, Lown, & Bowen, 2016). College student financial behaviors, expectations, and decision-making capabilities are heavily influenced by parental human capital and how that is transferred to the next generation (Becker, 1994). *Implicit* financial practices paired with child observation and *explicit* teaching/training (Gudmunson & Danes, 2011; Serido, Shim, Mishra, & Tang, 2010) influence financial decision-making. These experiences are a natural part of family life (Gibbons, Rhinehart, & Hardin, 2016).

High school (Deenanath, Danes, & Jang, 2019) and college students utilize the financial management practices they have seen modeled in the family as well as talking with parents to adjust to these new and growing financial realities, (Johnson et al., 2016; Serido et al., 2010) and to help them in financial decision-making. Students often tend to rely on the values, attitudes, standards, norms, knowledge, and behaviors that were used in their family, unless or until they begin to establish new attitudes, skills, and patterns of financial behavior (Curran, Parrott, Ahn, Serido, & Shim, 2018). Thus, family financial socialization can serve as an internalized resource for managing the changing financial demands associated with participation in educational

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programs (Grohmann, Kouwenberg, & Menkhoff, 2015; Jorgensen, Rappleyea, Schweichler, Fang, & Moran, 2017).

The current study investigates these processes to provide a better understanding of the ways in which parent–child financial socialization may influence academic success in college. Specifically, we consider the *explicit* efforts parents make in raising their children to help them reduce economic pressures associated with higher education and that could interfere with academic performance. We also consider the effects of key demographic variables on the potential impact of financial socialization for reducing the effects of economic pressure and increase academic success. Our study is guided by family financial socialization theory as first devised by Gudmunson and Danes (2011) and reviewed by Danes and Yang (2014).

This study also addresses a call from a 2008 national research symposium on financial literacy and education held in Washington, DC, to identify critical research questions in financial literacy and education. The U.S. Department of Treasury's report (Schuchardt et al., 2009) identified the nature of family influence in the process of consumer and financial socialization as a research gap. This study, along with many other studies published since the symposium, (e.g., see Montalto, Phillips, McDaniel, & Baker, 2018 for a review addressing other topics) seeks to help fill that gap by exploring linkages between explicit financial socialization, students' perception of parental–financial influence, academic–financial difficulties due to economic pressure, and academic success.

In particular, this study can provide two unique contributions to the literature on financial socialization. First, there is an examination of similarities and differences among students of different demographic groups (i.e., for gender, racial/ethnicity minority status, and socioeconomic status [SES]) on levels of financially socialized behaviors, showing how financial socialization varies within family groups. This is important for understanding the varying capabilities for financial management that college students bring with them to the college experience. Second, this study emphasizes the crossover between financial socialization and academic outcomes. This is important, because in the first two decades of life, it is not usually the directly observable *financial* outcomes that best predict success during the earning and wealth-building years of middle adulthood, but rather the development of human capital that makes a difference—nevertheless, financial socialization may yet play an important role in early life success.

Review of Literature

The effects of the family socialization process can be seen as children transition to adulthood. For many students, going to college initiates an important shift in parent–child relationships and parental influence on life decisions (Arnett, 2015). The quality of parent–child teaching/training gets tested for effectiveness and the impact of individual and family characteristics plays out within the college setting.

Parenting and College Student Success

Previous research using national longitudinal data discovered that the relationships between parental involvement and educational outcomes exist regardless of students' socioeconomic or race/ethnic background and regardless of whether parental practices are measured in the middle grades or in high school (Catsambis, 2001). For example, Goodall (2017) cites a range of international case studies to demonstrate that parental engagement and socialization at home is equally important for achievement in school. Research using national longitudinal data from 2002 to 2013 demonstrates that different combinations of parental education involvement strategies are beneficial for adolescents across racial/ethnic groups (Day & Dotterer, 2018).

Parenting involvement can take many forms. Engaged financial parenting (Serido et al., 2010) is likely to increase in importance as a factor for children's success, both academically and financially, as children take on adult roles and become more independent. A college experience is a testing-ground in this regard. Compared with K-12 education which is mostly tax-funded (i.e., few direct costs to the student), success in college may increasingly depend more on parents financial parenting, in addition to support for academic work. This "crossover work" between financial training and academic success has been understudied.

Explicit Financial Socialization. Parents have been and continue to be the primary source of financial information for teens and college students (Pinto, Parente, & Mansfield, 2005; Lyons, Scherpf, & Roberts, 2006; Peng, Bartholomae, Fox, & Cravener, 2007). Parents play a significant role in shaping a child's financial habits and values (Pinto et al.,

2005). One of the things a parent teaches their children is how to manage money. Most of the financial socialization of a child takes place almost imperceptibly through observing the money behaviors within the family. Intentional parent–child financial teaching and training can also be of great importance (Kim & Chatterjee, 2013). For example, Lyons, Scherpf, and Roberts (2006) found that 77% of college students indicated they had gone to their parents for financial information.

Studies have investigated how family processes, specifically parent–child interactions about finances, may impact children's and adolescents' financial socialization (Kim, LaTaillade, & Kim, 2011) and academic success (Starobin, Hagedorn, Purnamasari, & Chen, 2013). From a family systems and developmental perspective, parents are active agents in facilitating children's socialization (Gudmunson & Danes, 2011). Parents may interact with their children in distinct ways that can be linked to children's financial behaviors and practices. Sabri, MacDonald, Hira, and Masud (2010) found that discussing family finances with a parent is a positive influence on financial literacy, which suggests that more involvement with important aspects of family finance could provide better knowledge and experience about money management among college students. According to Lachance and Choquette-Bernier (2004), many students learn basic financial knowledge through observation, parental communication, and by trial-and-error. When Millennials were asked in-depth questions about they expect to pass on financial wisdom to their future children, they aspired to talk openly about money, provide children opportunities to manage money, show the value of hard work, and teach how to save money (LeBaron, Rosa-Holyoak, Bryce, Hill, & Marks, 2018)

Felt Parent–Financial Influence. Although parents may do a great deal to intentionally socialize their children in financial matters, it does not automatically follow that children will value the messages and instructions promoted by parents. Yet, when financial discussion is explicit, it may be easier for children to conscientiously make a decision that is similar to or in opposition to their parents' teachings. This may be particularly true when children are living apart from parents and are likely to maintain their own residences, creating more differences between their own and their parents' financial lives.

A few studies are beginning to show that the quality of the parent–child relationship plays a powerful role in the effectiveness of financial socialization. For example, Jorgensen et al. (2017) showed that attachment insecurity undermines locus of control and financial communication, both of which explained more than half of the variation in financial behavior (also see Jorgensen & Savla, 2010). Agnew, Maras, and Moon (2017) reported that physical closeness to parents and parent–child gender dynamics induced younger children to retain more of their pocket money when on shopping trips. Emerging adults that perceive financial expectations from their parents, also budget, save more, and feel a greater sense of subjective well-being (Serido et al., 2010).

Economic Pressure in College

Sources of Economic Pressure. Like all investments, a college degree comes at a cost. In recent decades those costs have increased dramatically. According to the U.S. Bureau of Labor and Statistics, the cost of college tuition and fees has risen 63% from 2006 to 2016 which is much faster than consumer prices and median family incomes (Bureau of Labor Statistics, 2016). For the 2015–2016 academic year, the average tuition, room, and board cost per year at public universities was $16,757. For private universities, the average cost was $43,065 (National Center for Education Statistics [NCES], 2017). To pay for these costs, most students rely on a combination of family support, personal earnings, scholarships, and student loans (Martinez, Sher, Krull & Wood, 2009). Unlike these other forms of support, student loans must be repaid and represent a fraught choice, because the amounts can grow large and the financial consequences can be delayed until after graduation. However, the total costs can vary according to repayment plans (Johnson et al., 2016). Thus, the financial stakes can be high when using debt to fund a college education.

Education costs exert significant economic pressure on college students (Montalto et al., 2018). Stress from economic pressure can make it difficult to perform well in school (Tran, Lam, & Legg, 2018). Given the importance of both obtaining post-secondary education and minimizing the financial risks associated with completing a college degree, it becomes important to understand factors that may be associated with each.

Behaviors Affected by Economic Pressure. Financial stress can lead to dropping out of school, loss of sleep, poor

ability to concentrate, working additional hours and reducing the number of credit hours taken in a semester (Joo, Durband, & Grable, 2009; Lim, Heckman, Letkiewicz & Montalto, 2014; Trombitas, 2012). It can also start to impact personal relationships (Dean, Carroll, & Yang, 2007; Kerkmann, Lee, Lown, & Allgood, 2000), employment outcomes (Kim & Garman, 2003), and health (O'Neill, Sorhaindo, Xiao, & Garman, 2005).

Children from economically disadvantaged homes face greater barriers to achieve positive academic performance (Lam, 2014; Sirin, 2005). For those who cite finances as a primary reason for leaving school, (Li & Killian, 1999) individual patterns of money management, more than family income has been suggested as the primary cause of dropping out, although parent financial resources do seem to have significant impacts (Crisp, Doran, & Salis Reyes, 2018; Ishitani & DesJardins, 2002; Kim & Kim, 2018). Thus, the pressure is on to complete an education and to prepare wisely for a sustainable career after graduation. In recent years, the financial aspects of seeking an education have occupied a prominent place in college students' minds (Heckman et al., 2014).

Working while going to college can create additional stressors. Trombitas (2012) finds students who work more than 20 hours per week during the academic year, are significantly more likely to indicate negative academic performance or reduced course load due to economic pressure. Similar results have surfaced in other studies. Curtis and Shani (2002) found students who work perceive that it had a negative effect on their academic performance. Callender (2008) found the more hours a student worked the greater the negative effect was on grade point average (GPA) and time to complete the degree.

Family Financial Socialization Theory

According to family financial socialization theory (Gudmunson & Danes, 2011) parents financially socialize their children in two ways. One of these mechanisms is through *explicit* financial socialization. That is, the intentional teaching and training that parents hope will result in particular financial knowledge, attitudes, or capabilities in their child. The other mechanism is through implicit *family interaction and relationships*. These are not specifically intended to teach about finances, but enable observation and vicarious experience of financial communication and practices within the family. The two modes of socialization may work together. This means the effectiveness of explicit financial teaching/training is partly based on the total set of family interactions and relationships that exist in the family (Danes & Yang, 2014). If these are frequent and high quality, the ability of parents to financially socialize their children will be greater. Furthermore, the financial, social, and human capital resources that are found in the family will also affect the parents' ability to financially socialize their children for beneficial outcomes and these may be accounted for, to some degree, by demographic factors.

In the current study, we focus exclusively on the effects of *explicit financial socialization*. Given this narrowed focus, we have modified the original model (Gudmunson & Danes, 2011), and redrawn the model as depicted in Figure 1. This model retains all the remaining concepts and ordering of effects from the original model after dropping *family interaction and relationships* (see Panel A). The constructs and relationships examined in the current study, have subsequently been "mapped" onto this modified version of the theory (see Panel B). Our study of college students asked retrospective questions about explicit financial socialization. We hypothesize these are positively associated with felt parent–financial influence or feelings that college students may have when they make financial decisions. They are being influenced by their parents prior teaching which best corresponds with financial attitudes in the theory. To a certain extent, we expected economic pressure to be normative in college. Then, we asked how this stress impacts academic–financial behaviors like financial worry, risks of not remaining enrolled, and the inability to concentrate on school work. We use college GPA as an indicator of academic success.

Our hypotheses are as follows:

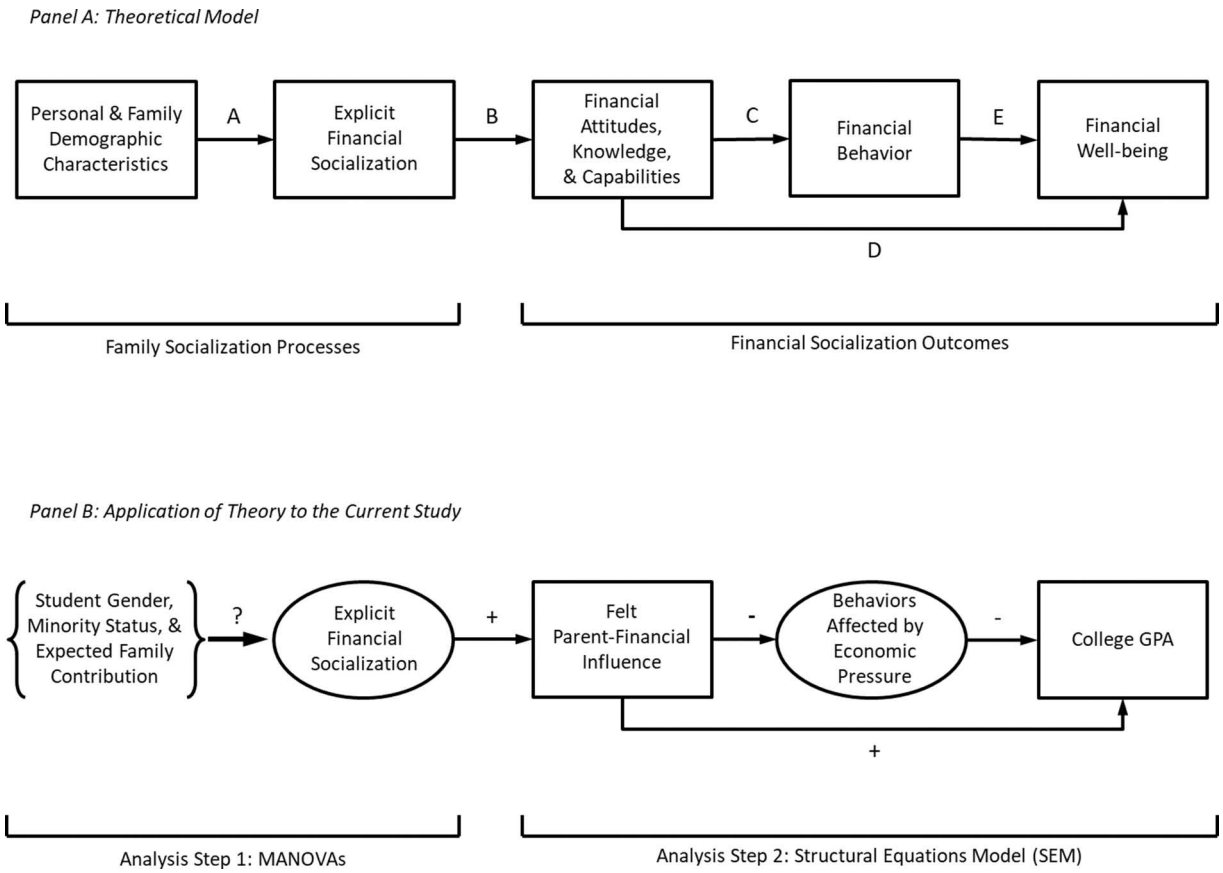
H1: Demographic characteristics may be associated with differences in explicit financial socialization, that is, this is an exploratory hypothesis.

H2: Explicit financial socialization will be positively associated with felt parent–financial influence.

H3: Felt parent–financial influence will be negatively associated with behaviors affected by economic pressure.

H4: Felt parent–financial influence will be positively associated with college GPA.

Figure 1. The explicit family financial socialization model (Panel A; adapted from Gudmunson & Danes, 2011) and the theory's application to the current study (Panel B).



Note: The original Family Financial Socialization model (Gudmunson & Danes, 2011) includes "Family Interaction & Relationships" a concept which implies *implicit* forms of financial socialization, which is omitted in this adaptation of the model. This focus is on *explicit* family financial socialization and all other concepts and relationships from the theory are included in this configuration (see Panel A). The constructs used in the current study are mapped onto the theory as shown in Panel B.

H5: Behaviors affected by economic pressure will be negatively associated with college GPA (see paths in Figure 1).

Methods

Sample

At a large Midwestern university in the United States, a financial literacy multidisciplinary team formed in the fall of 2009 in response to increasing concerns about undergraduate student loan and credit card debt. The investigation was designed to provide baseline data regarding the financial literacy of students in order to better serve them through adoption of university policies and procedures, additional proposed coursework, and information dissemination. A pilot study was first conducted in the spring of 2010 to further refine the survey instrument.

Questionnaire development relied mostly on pre-existing studies of college students' financial conditions directed at understanding how students learn about personal finance, their credit use behaviors, and subjective and objective financial well-being. The use of pre-existing instruments and survey questions was intended to allow for comparisons with other institutional research projects (e.g., see Gutter, Copur, & Garrison, 2010; Shim, Barber, Card, Xiao, & Serido, 2010). Student survey responses were also merged with enrollment and financial aid data including information on academic grades, financial aid, and student retention.

Sample selection was aided by enrollment services personnel providing email addresses of all domestic students who were enrolled full-time and of traditional college age (i.e., ages 18–24). International students, part-time attenders, and graduate students were excluded from the study. A gender-balanced, simple random sample of 6,000 full-time domestic undergraduate students was emailed a link to a voluntary online questionnaire in the fall of 2010. Students received an email inviting them to participate and provided a link to the survey. Students who opened the survey were presented with a consent form and clicked "continue" for agreement to complete the survey. Two follow-up reminders were sent approximately 2 weeks apart to encourage better response rates (Dillman, 2000).

The final dataset consisted of 801 useable cases, representing a 13% response rate. Although our response rate was very similar to those obtained in previously-mentioned comparison studies, because we had access to the institutional records of our sampling frame, the research team compared respondent demographics with those of the student population. Comparisons across gender, racial/ethnic minority status, class rank, degree program (grouped by college), and state resident/non-resident student status revealed only one meaningful difference—female students were overrepresented in our sample compared with the target population (results not shown). To a major extent, except for gender, we were able to generalize findings to this university's traditionally-aged student population.

Table 1 shows the self-reported demographic characteristics of the subsample used in the current study (N = 752). As previously noted, there were more female (61.5%) than male (38.5%) respondents. There were roughly equal numbers of freshmen (23.7%), sophomores (21.1%), and juniors (24.7%), and a slightly higher number of seniors (30.5%). There were few racial/ethnic minorities (10.4%). The majority of the students were single (90.0%). Students had a variety of living arrangements, including many that lived in a residence hall (36.5%), in a fraternity or sorority (6.5%), in an apartment near campus (14.6%), and a simple majority that lived in housing that was further away from campus (42.4%). Forty percent of the students surveyed were not employed (40.2%) and the vast majority of those who were employed worked between 1 and 20 hours per week (50.4% cumulatively). These working hours resulted in earnings up to $249 for approximately 20% of the sample, between $250

TABLE 1. Sample Demographic Characteristics (*N* = 752)

Variable	Percentage
Gender	
Male	38.5
Female	61.5
Class Rank	
Freshman	23.7
Sophomore	21.1
Junior	24.7
Senior	30.5
Race/Ethnicity	
Majority	89.6
Minority	10.4
Marital Status	
Single	90.0
Cohabiting	7.0
Married	2.8
Other	0.2
Living Arrangement	
Residence Hall	36.5
Fraternity/Sorority	6.5
Apartment near campus	14.6
Away from campus	42.4
Hours Employed	
Not employed	40.3
1–10 hours per week	24.5
11–15 hours per week	15.8
16–20 hours per week	10.1
21–29 hours per week	7.2
30+ hours per week	2.0
Average Monthly Earnings	
$0 (not employed)	39.4
$1–$249	20.3
$250–$499	23.8
$500–$749	11.8
$750–$999	3.3
$1,000 or more	1.3

Note. Race and Ethnicity were not mutually exclusive categories; students that marked Hispanic or any racial category other than White were coded as minorities.

and $499 for another 20%, and 11.8% earned between $500 and $749 per month. Very few students earned more than this from their employment.

Measures

Personal and Family Demographic Characteristics. We included three key demographic variables that have been shown in prior research (Agnew et al., 2017; Mimura, Koonce, Plunkett, & Pleskus, 2015; Jury et al., 2017) to predict differences in individual and family financial conditions, financial behaviors, and financial outcomes. *Gender* was measured 0 (*male*) and 1 (*female*). *Racial/ethnic minority status* was measured 0 (*majority*) and 1 (*minority*). These variables were based on participant self-reports in the online questionnaire. *Expected family contributions* (EFC) is based on a dollar amount that was reported to the university on an official Free Application for Federal Student Aid (FAFSA) form prior to the study and later matched to the study respondents. In order to work responsibly regarding issues of top-coding for high-income families and the many students who expected no family contributions, we sorted the data on amounts and located four even-numbered break points that roughly corresponded with quartiles in the data. Each participation was scored on the following 4-point scale: 1 (*$0; quartile*), 2 (*$1–7,000; quartile*), 3 (*$7,000–$20,000; quartile*), and 4 (*$20,000 or more; quartile*). These measures were used in multivariate analysis of variance (MANOVA) tests in the first step of the analysis.

Explicit Financial Socialization. This measure was based on a retrospective question in the online questionnaire. The question was worded, "before coming to college while growing up at home, to what extent did your parent(s) do the following:" and a series of questions followed regarding the frequency with which the parents discussed or taught about: (a) budgeting, (b) saving, (c) comparison shopping, (d) credit use, and (e) financing a college education. This was measured on a 5-point scale from 0 (*never*) to 4 (*always*).

These items were part of a larger developing scale and were selected based on content coverage and because they held together in exploratory factor analysis (EFA; results not shown). Higher scores indicated more active and explicit parent–child financial socialization in the respondent's childhood. Each of the five items was used as a dependent variable in MANOVA tests. In the first step of the analysis, they were used again as indicators of a latent variable in our structural equation model (SEM). The inter-item reliability of these items was very high, $\alpha = .827$.

Felt Parent–Financial Influence. A single-item, non-retrospective question was asked to gauge the extent to which college students currently felt their parents' socialization efforts made a difference in their current financial decision-making. The question was, "when it comes to money matters, to what degree do you think your own behaviors are influenced by your parent(s)?" Answers were given on a 5-point scale ranging from 1 (*not influenced at all*) to 5 (*strongly influenced*). In the SEM model this was used as an observed variable, which in the theoretical context, represents a financial attitude and parental social influence on the student.

Behaviors Affected by Economic Pressure. To the extent that economic pressure was a normative part of their college experience, we queried students regarding its potential effects on their ability to remain academically engaged without facing peril from this common stressor. We addressed this issue with three questions. To measure *financial worrying* we asked, "how is your present financial situation impacting your academic progress?" and this was answered on a scale from 1 (*I feel comfortable*) to 10 (*I feel overwhelmed*). To measure *risk of not remaining enrolled* we asked, "what impact has your financial situation had on your ability to remain enrolled in college?" and this was answered on a scale from 1 (*no impact at all*) to 10 (*overwhelming impact*). To measure *inability to concentrate* we asked, "does your financial situation affect your ability to concentrate on your studies?" and this was answered either 0 (*no*) or 1 (*yes*). This last item was asked in a different section of the questionnaire. Because the items did not all possess the same scale we did not test them using EFA but they were moderately-to-highly correlated (r's = .42, .48, and .55). We used them as indicators of a latent variable in SEM and this method of analysis appropriately accommodates indicators with different scales and accounts for measurement error.

College GPA. GPA represents a human capital variable and college GPA is a predictor of life satisfaction (Xiao, Tang, & Shim, 2009). In the questionnaire, students were asked "what is your current GPA?" and self-reported their scores based on a 5-point scale, reverse coded, with this system of scoring: 1 (*lower than 2.00*), 2 (*2.00–2.49*), 3 (*2.50–2.99*), 4 (*3.00–3.49*), and 5 (*3.50–4.00*), which reflects upon the 0.00

to 4.00 system commonly used throughout higher education in the United States. Higher scores indicated better academic performance. This measure was used as an observed variable in the SEM.

Data Analysis

As depicted in Figure 1, our analysis proceeded in two steps. The first step was to assess the impact of key demographic variables on the indicators of explicit financial socialization variables. Family financial socialization theory (Gudmunson & Danes, 2011) states that personal and family demographic characteristics will be associated with differences in implicit and explicit family financial socialization and here we test this connection to explicit parent–child financial socialization. This was done using MANOVA tests with each of the five financial socialization indicators (budgeting, saving, shopping, credit used, finance college) used as a dependent variable. We intentionally chose this more detailed assessment (rather than including the demographic variables as predictors of the latent variable in SEM) because it could lend additional insight on how specific content varied among different individuals and families.

The second step in the analysis was reporting the measurement characteristics of our indicators and observed variables (correlations, means, and standard deviations [*SD*]). Then, we produced a test of explicit family financial socialization (see Figure 1) in a SEM framework. We also used the theory, correlation matrix, and SEM fit statistics to see if the model could be improved with additional paths and included those in the final model to lend greater insights to the underlying processes with this sample.

Structural equation modeling has a number of advantages over other regression-based analytic models, which were important for this study. First, SEM permits multiple endogenous (i.e., predicted) variables to be tested at the same time. This was important for testing the mediating processes which are proposed in family financial socialization theory (Gudmunson & Danes, 2011). Second, SEM permits the use of directly-observed, manifest variables, as well as indirectly-observed, latent variables. Latent variables rely on factor scoring to identify the common measurement of an underlying characteristic through two or more indicator variables. The "extra" variance is relegated to error variables, thus improving the identification of variables that are difficult to measure directly (e.g., financial socialization). Finally, SEM is a *confirmatory* approach supplying fit statistics that can be used to confirm or disconfirm specific theoretical hypotheses—relationships between variables. Post hoc addition of new pathways (when empirically supported by findings from prior research) with corresponding improvements in model fit can signal potential modification and expansions of theory.

Results

Means Testing With MANOVA

Consistent with the theory and the initial step in our analysis plan, we first assessed the impact of student gender, racial/ethnic minority status, and EFC (a proxy for family SES) on our five indicators of explicit family financial socialization using MANOVA tests. Table 2 shows the findings of these tests. MANOVA tests compare mean scores and are appropriate for simultaneously testing the effects of categorical predictors across multiple, similar dependent variables, thereby reducing the possibility for type 1 errors (rejecting a true null hypothesis). In the context of the current study, this means that we reduced the possibility for concluding that differences in gender, racial/ethnic minority status, and EFC that could be tied to differences in levels of explicit financial socialization, *arising by chance*, would be minimized. When such differences did occur, we could interpret these effects with greater confidence.

In the first MANOVA, student gender was used to predict mean differences in financial socialization (budgeting, saving, shopping, credit use, and finance college). The results suggested only a marginal difference, $p < .10$, between males and females for any of these variables, Wilks' $\lambda = .985$, $F(5, 697) = 2.166$, $p = .056$. Then, we did not pursue any post hoc univariate *F tests* to probe for differences. This process was repeated for racial/ethnic minority status as a categorical predictor and again there were no significant differences, Wilks' $\lambda = .994$, $F(5, 697) = 0.860$, $p = .507$, and no follow-up testing. There were, however, significant differences, $p < .05$, when EFC was used as a categorical predictor for these five financial socialization outcomes, Wilks' $\lambda = .960$, $F(15, 1{,}918) = 1.921$, $p = .018$. Thus we continued with univariate *F tests* to pinpoint those differences. The *F test* = 4.272, $p < .01$, showed that there were mean differences in budgeting among the four quintile groups in terms of EFC. We further noted that the means for budgeting were highly similar for the first three quintiles (*M*s = 2.96, 2.97,

TABLE 2. Sociodemographic Group Means and MANOVA Results Comparing Levels of Explicit Family Financial Socialization

	Budgeting	Saving	Shopping	Credit Use	Finance College
	M (*SD*)	*M* (*SD*)	*M* (*SD*)	*M* (*SD*)	*M* (*SD*)
Gender					
Male	3.01 (1.20)	3.97 (0.96)	3.61 (1.17)	3.28 (1.33)	3.19 (1.24)
Female	3.09 (1.24)	4.08 (1.01)	3.87 (1.18)	3.28 (1.41)	3.25 (1.33)
MANOVA multivariate test		Wilks' λ = .985, F(5,697) = 2.166, p = .056			
Univariate *F tests*	–	–	–	–	–
Racial/Ethnicity Minority Status					
Majority (White)	3.08 (1.21)	4.06 (0.96)	3.79 (1.15)	3.30 (1.37)	3.24 (1.27)
Minority	2.90 (1.36)	3.85 (1.23)	3.59 (1.41)	3.06 (1.49)	3.14 (1.50)
MANOVA multivariate test		Wilks' λ = .994, F(5,697) = 0.860, p = .507			
Univariate *F tests*	–	–	–	–	–
Expected Family Contribution					
$0 (quartile)	2.96 (1.20)	3.93 (1.09)	3.60 (1.23)	3.16 (1.46)	3.03 (1.36)
$1–$7,000 (quartile)	2.97 (1.22)	3.96 (1.02)	3.79 (1.17)	3.20 (1.34)	3.27 (1.25)
$7,000–$20,000 (quartile)	2.96 (1.25)	4.06 (0.97)	3.84 (1.17)	3.24 (1.44)	3.29 (1.31)
$20,000 or more (quartile)	3.34 (1.20)	4.19 (0.86)	3.85 (1.16)	3.51 (1.28)	3.30 (1.26)
MANOVA multivariate test		Wilks' λ = .960, F(15, 1,918) = 1.921, p = .018			
Univariate *F tests*	4.272**	2.396	1.717	2.370	1.734

Note. MANOVA = multivariate analysis of variance; *SD* = standard deviation.
Expected Family Contribution was used as a proxy for family socioeconomic status because there was no information available in the data for parents' education or income.
*p < .05. ***p < .001.

2.96, respectively), but higher for those in the top quintile (*M* = 3.34, *SD* = 1.20). Overall, the MANOVA tests showed few differences in mean scores of financial socialization according to key demographic variables, with the exception that students from the most financially prosperous families reported having been more explicitly taught by their parents about budgeting in their childhood, before they attended the university.

Structural Equation Models

Before proceeding with our examination of the hypothesized SEM (see Figure 1), we examined the correlations, means, and *SD*s of the observed variables for their appropriateness to be used as indicators or observed variables within the model. The five proposed indicators for *explicit financial socialization* (budgeting, saving, shopping, credit use, and finance college) were all moderately-to-well correlated with each other (*r*s ranged from .42 to.57, p < .001). These five items were also positively correlated with the (observed) variable that appear next in the SEM model, *felt parent–financial influence* (*r*s = .29, .42, .33, .32, and .33, p < .001 respectively). Correlations of these five items with other variables were much lower and in certain cases non-significant. However, all the signs were consistent with the theoretical predictions in the hypothesized model (see Table 3).

The three proposed indicators of *behaviors affected by economic pressure* (financial worrying, risk of not remaining enrolled, and inability to concentrate) were all highly

TABLE 3. Correlations, Means, and Standard Deviations of the Observed and Indicator Variables in the SEM

Variable	1	2	3	4	5	6	7	8	9	10	11
1. Budgeting[a]	–										
2. Saving[a]	.57***	–									
3. Shopping[a]	.42***	.46***	–								
4. Credit use[a]	.53***	.44***	.47***	–							
5. Finance college[a]	.55***	.52***	.44***	.56***	–						
6. Felt parent–financial influence	.29***	.42***	.33***	.32***	.33***	–					
7. Financial worrying[b]	−.14***	−.16***	−.17***	−.19***	−.18***	−.17***	–				
8. Risk of not remaining enrolled[b]	−.07	−.13***	−.13***	−.15***	−.15***	−.13***	.48***	–			
9. Inability to concentrate[b]	−.07	−.13***	−.07	−.12***	−.13***	−.13***	.55***	.42***	–		
10. College GPA	.06	.11**	.17***	.14***	.12***	.27***	−.31***	−.29***	−.26***	–	
11. Expected family contribution[c]	.12***	.11**	.08*	.10**	.07	.09*	−.14***	−.09*	−.07	.08*	–
Mean	3.06	4.03	3.77	3.28	3.23	3.88	4.99	3.67	0.25	3.96 [d]	$15,646
Standard deviation	1.23	0.99	1.18	1.38	1.30	1.05	2.60	2.45	0.43	0.97	$24,878
Range	1–5	1–5	1–5	1–5	1–5	1–5	1–10	1–10	0–1	1–5	$0–262,372

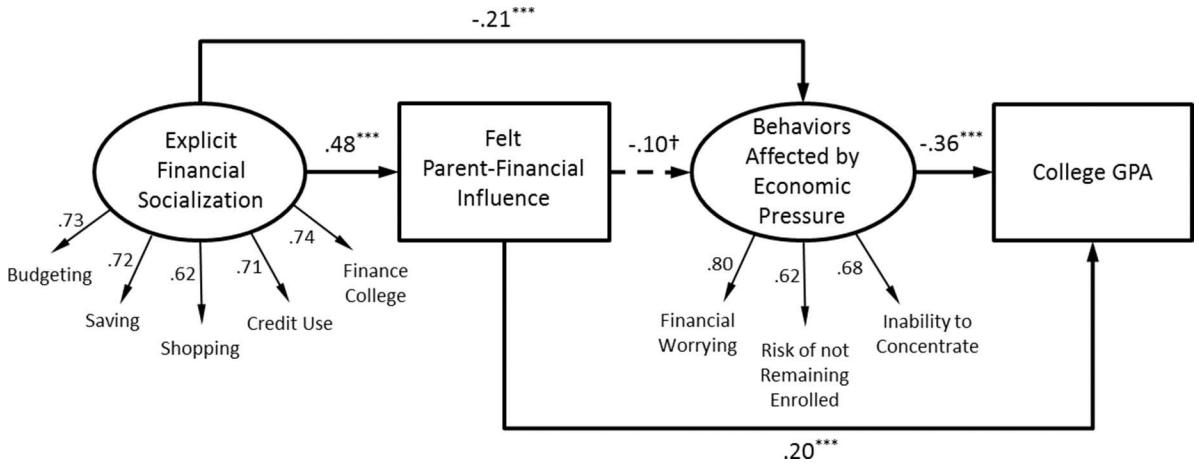
Note. GPA = grade point average; SEM = structural equation model.
[a]This variable was used as an indicator of *explicit financial socialization* in the SEM model. [b]This variable was used as an indicator of *behaviors affected by economic pressure* in the SEM model. [c]This variable is reported here in its continuous form, but was reduced to four quasi-quintiles when it was used as a control variable in the SEM model. [d]Because GPA was measured using response categories; this variable mean would fall near the upper range of a 2.50–2.99 GPA.
*$p < .05$. **$p < .01$. ***$p < .001$.

correlated with each other (rs = .48,.55, and.42, $p < .001$). Surprisingly, they were less-well correlated with felt parent–financial influence, (rs = −.17, −.13, and −.13, respectively, $p < .001$) than was expected according to our proposed model. They were reasonably-well correlated with college GPA, the next variable in the model (rs = −.31, −.29, and −.26, respectively, $p < .001$). Finally, drawing on the findings from the MANOVA tests, we included *EFC* as a control variable in the SEM model although we noted that it had very small or no correlations with other variables (see Table 3).

Figure 1 depicts the hypothesized model. The first path (a) was explored in the MANOVA tests which largely disconfirmed the theory except for one specific difference related to higher levels of parent–child teaching about budgeting in the most financially prosperous families. Due to these lackluster results, EFC was included in the SEM only as a control variable (results not shown). The remaining paths, from explicit financial socialization to (b) felt parent–financial influence to (c) behaviors affected by economic pressure and also to (d) college GPA, and (e) from behaviors affected by economic pressure to college GPA, were all examined in the initial test of the model. Further testing of additional paths substantially improved the model fit by introducing an additional path from explicit financial socialization to behaviors affected by economic pressure—and so this path was added to the final model. The final model had good fit, $X^2 = 77.2$ (degrees of freedom [df] = 38, $p < .001$), as indicated by a *Comparative Fit Index* above .95, (CFI = .98), and a *Root Mean Square Error of Approximation* below.05, (RMSEA = .036).

The model accounted for a small or modest amount of variance in each of the exogenous variables in the model; for felt parent–financial influence ($R^2 = .23$), for behaviors affected by economic pressure ($R^2 = .10$), and for college GPA ($R^2 = .20$). Yet, the significant paths in the model largely supported the theoretical model (see standardized effects shown in Figure 2). The path from explicit financial socialization to felt parent–financial influence was the strongest path in the model, ($\beta = .48$, $p < .001$). Explicit financial socialization also negatively affected behaviors affected by economic pressure, ($\beta = -.21$, $p < .001$), but it did so directly, instead

Figure 2. The influence of explicit financial socialization on academic success in college.



Note: The fit of this model was good, $X^2 = 77.2$ ($df = 38$, $p < .001$), CFI = .98, RMSEA = .036. The levels of significance for paths in the model are indicated by †$p < .10$, *$p < .05$, **$p < .01$, ***$p < .001$. All factor loadings for the indicators of *Explicit Financial Socialization* and *Behaviors Affected by Economic Pressure* were highly significant, $p < .001$ (not shown in the figure). This model controls expected family contribution towards education (from Free Application for Federal Student Aid [FAFSA]) and gender and race were not as controls included because they did not affect financial socialization in the MANOVA analyses.

of being mediated by felt parent–financial influence. It only had a marginally significant effect on behaviors affected by economic pressure, ($\beta = -.10$, $p < .10$), and both of these findings were unexpected. However, as expected, college GPA was positively predicted by felt parent–financial influence ($\beta = .20$, $p < .001$), and negatively by behaviors affected by economic pressure, ($\beta = -.36$, $p < .001$), showing strong support for the theory.

Discussion, Limitations, and Implications

For many traditionally-aged college students, academic and financial demands seem to go hand-in-hand (Lyons et al., 2006). Compared to their non-college peers, college degree seekers are more likely to come from advantaged families (Jury et al., 2017), but they may also face greater near-term financial demands because a quality post-secondary education is expensive (NCES, 2018). The current study examines the consequences of a particular resource which originates in the family and have a beneficial impact on the college student's academic and financial affairs; that is, *explicit financial socialization.*

Financially savvy and caring parents teach their children basic financial principles which can benefit their children during adolescence (Gudmunson & Beutler, 2012) and into adulthood (Kim, Chatterjee, & Kim, 2012). This may include such topics such as budgeting, saving for the future, effective spending, wise credit use, and strategies for financing a college education. In this study, we used retrospective reports of these family activities to investigate whether the effects of engaged financial parenting (Serido et al., 2010) would be felt by college students when it came time to make financial decisions. We further examined whether there would be fewer ensuing academic difficulties due to normative economic pressures that occur in college and whether this sequence of events could impact academic achievement (Shim, Xiao, Barber, & Lyons, 2009), in the form of student GPA. This sequence was modeled on family financial socialization theory (Gudmunson & Danes, 2011), adapted to study explicit financial socialization (see Figure 1).

A majority of the theoretical propositions were supported. College students that were explicitly taught financial basics by their parents, felt a beneficial influence of this teaching when they made financial decisions. Explicit financial socialization seemed to contravene such troublesome academic–financial behaviors such as worrying about finances,

contemplating dropping out (unenrolling) before completing a college degree and failing to remain concentrated on academics. These concerns were associated with poorer student GPA, whereas the social influence of a parent for financial decisions made a positive contribution to student GPA. One important new path that was discovered (not proposed in the theory) was a direct link from explicit financial socialization and less worrisome behaviors affected by economic pressure. We believe that this path likely had an impact on economic pressure itself and consequently reduced the effects of economic pressure. This interpretation is consistent with findings from other studies (Serido et al., 2010; Shim et al., 2010). This is also a potential weakness of family financial socialization theory, in that it does not specify relationships between proximal socialization outcomes, but "lumps together" psychologically distinguishable variables such as attitudes, skills, and capabilities (Danes & Yang, 2014).

Oddly enough, one of the ways in which the theory was not supported, was the finding of *no differences* for gender and racial/ethnic minority status in the mean levels of financial socialization by parents. There was only one minor difference according to EFC (a proxy for parent SES). The difference was that students from the most affluent families (EFC, quartile) were more explicitly taught to budget their money. However, there were no differences on the parent–child financial socialization of saving, shopping, credit use, or financing a college education for any of these groups. Although this finding was clearly at odds with research that shows socialization differences for males and females, different racial and ethnic groups, and by family SES (Agnew et al., 2017; Mimura et al., 2015; Jury et al., 2017). Future work should seek to resolve ambiguities in our understanding of differences in financial socialization according to demographic factors regarding when and why they are found or not. It is also possible that financial socialization changes across generations. Perhaps parents in the 50s would approach teaching their children differently based on the child's gender, than they would today where gender equality is increasing. Future research is needed to illuminate what impact these different approaches may have on family and children's outcomes.

The findings of this study, as with many similar studies, provide support for the idea that the quality and content of parent–child financial communication can make a positive difference in the lives of college students (Grohman et al., 2015; Jorgensen et al., 2017; Jorgensen & Savla, 2010; Sabri et al., 2010; Mimura et al., 2015; Serido et al., 2010; Shim et al., 2010; Tang, Baker, & Peter, 2015). For many students, the first year of college is viewed as an important transitional stage in which parental supervision and influence dominate student financial decision-making (Johnson et al., 2016; Shim et al., 2010). Students may be confronted, for the first time, with financial challenges such as paying bills, creating a budget, and using credit (Lyons et al., 2006). Gradually, however, the effects of parent financial socialization are likely to subside as students begin to achieve financial autonomy. This principle is beautifully evidenced in a groundbreaking study which shows that individuals begin to rely more on their own financial behavior patterns, and that of their romantic partners, once they have transitioned out of college (Curran et al., 2018), underscoring the need to investigate financial socialization across the entire life course.

Our study found that academic fallout from economic pressure had a large influence on academic achievement. This finding is similar to findings in some studies (Montalto et al., 2018; Shim et al., 2009) but not another (Britt, Mendiola, Schink, Tibbetts, & Jones, 2016). The role of financial stress is important not only for the sake of obtaining degrees, but because GPA leads to academic satisfaction and ultimately life satisfaction among college students (Xiao, Tang, & Shim, 2009). Other research shows that financial stress increases the chances of taking breaks from college, reducing course loads, extending the time to graduation, and dropping out of college (Britt, Ammerman, Barrett, & Jones, 2017; Montalto et al., 2018).

Inasmuch as our findings support a process model that retrospectively begins in the family, and clarifies the ongoing processes while the respondents are in college, a key implication is that providing supports for reducing financial stress should be a priority among families and in institutions of higher education. Harris and Robinson (2016) suggest families and schools can reinforce one another through greater parental involvement. Family life educators can focus their attention on helping parents teach their children basic skills in budgeting, saving, shopping and credit use. High school guidance counselors can greatly assist families with building strategies for financing a college education. College

courses in personal and family finance can lead to better financial practices (Mimura et al., 2015). This may be because course participation encourages indebted students to seek financial counseling (Lim et al., 2014). College student financial counseling boosts financial knowledge and healthy financial attitudes (Britt, Canale, Fernatt, Stutz, & Tibbetts, 2015) and will be most appropriate when focused on the comprehensive financial needs of the student (Choi, Gudmunson, Griesdorn, & Hong, 2016). Finally, making financial counseling accessible and continuously available is important because the route of referral (Choi, Bartholomae, Gudmunson, & Fox, 2016) and timing (Britt, Ammerman et al., 2017) adds to its effectiveness.

Limitations

The results of the study add to the overall body of knowledge with regard to financial socialization. However, a few limitations of this study need to be acknowledged. First, the study is cross-sectional and so it is possible that that processes described in our model actually develop in a different sequence than what we have modeled. In addition, participants were asked about events that occurred in the past and therefore might be subject to hindsight bias. Although, generally retrospective questions in a cross-sectional dataset are one way to begin to sort out temporal effects. Second, in some cultures, money is a very sensitive topic and the responses could be influenced by a social desirability bias. Third, the research was conducted at a single institution in the Midwestern part of the United States and therefore may not be generalized to students at other universities, and within the university where the research was conducted there was an overrepresentation of female respondents. Additional research with more representative samples and longitudinal datasets is needed. Finally, the family financial socialization model that we adapted for use in this study omits family interaction and relationship variables and ignores implicit family financial processes. These are factors the theory suggests may rival explicit family financial socialization for outcome effectiveness. Unfortunately, due to lack of suitable data, we are unable to shed any additional light on the most under-utilized propositions of the theory. Some of those propositions have been supported in other research (see Danes & Yang, 2014; Jorgensen et al., 2017).

Implications

We have suggested a number of implications for financial educators and financial counselors in our previous discussion and we end by adding a few more, including additional recommendations for researchers and those who work with parents. First, parents should be taught that they remain a primary source of socialization for their children well into their college years (Kim & Chatterjee, 2013) and financial counselors should realize that addressing family-of-origin issues can improve their ability to address student's financial needs (Hawkins & Zuiker, 2019). Therefore, parents should begin teaching sound money management practices with their children at a young age, continue the discussions as they grow, and reinforce the idea that financial education is a life-long process. Financial education in high school and college should emphasize the importance of family financial teaching and practices, reinforcing positive socialization that has taken place in the home environment (Van Campenhout, 2015). Parents could benefit from access to additional financial education resources that would enhance their knowledge and skills, and help them involve children in family financial decision-making.

Many students deal with high debt loads and economic uncertainty. This research shows student grades decrease as economic pressure increases. Therefore, it is important that students have access to on-campus financial counseling and strong financial literacy skills, perhaps even by requiring personal finance as part of general education requirements. These skills are formed in the home and reinforced by peers, community, and government policies.

Finally, researchers that focus on financial socialization processes should also investigate specific topics and levels of socialization in addition to relationships between variables. These efforts are likely to be most effective in the lead-up to discrete decision-making such as understanding how to finance college while in K-12, or knowing how much student debt is owed prior to graduation (Andruska, Hogarth, Fletcher, Forbes, & Wohlgemuth, 2014). These approaches will help young people make the most of positive family financial socialization.

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