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The relationship between objective financial knowledge, financial management, and financial self-efficacy among African American students

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Abstract

Research consistently shows the positive associations of objective financial knowledge, management, and self-efficacy on college students' financial literacy. However, there is a need for a more nuanced examination of the factors contributing to African American college students' financial literacy. Using the National Student Financial Wellness Study and structural equation modeling, findings suggest that for African American students, objective financial knowledge is not directly or indirectly associated with financial self-efficacy. Only financial management is significantly associated with increased financial self-efficacy. These findings indicate that experiential learning may be effective for improving African American students' financial literacy.
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1. Introduction

Financial literacy is essential to increase sound financial decision-making and to reduce financial distress (Asaad, 2015; Huston, 2010; Scott, Vu, Cheng, & Gibson, 2018). Greater financial literacy leads to healthy behaviors such as budgeting, saving for emergencies, and investing for goals such as retirement (Henager & Cude, 2016). Given the critical nature of these skills, one might assume that researchers understand how financial literacy develops. However, research is limited by conflicting definitions and unclear paths to its development (Willis, 2008). What researchers do understand thus far is that both knowledge and confidence are critical components to developing financial literacy.

Objective financial knowledge is a necessary component of financial literacy. However, to be a financially literate individual, one must also possess self-efficacy, or confidence, in his or her abilities to perform financial tasks (Bandura, 2006). Individuals with higher levels of objective financial knowledge and financial self-efficacy are associated with sound financial management leading to increased financial well-being (Robb & Woodyard, 2011). The link between objective financial knowledge and financial self-efficacy as integral components of financial literacy is evident. So, why has it proven so difficult to teach people these skills?

Basic financial education classes should increase knowledge (Mielitz, MacDonald, & Lurtz, 2018) and literacy (Al-Bahrani, Weathers, & Patel, 2019). However, well-intentioned interventions may fall short for African American students. For example, Al-Bahrani et al. (2019) reported the returns on financial education are higher for Whites than persons of color (POC). Huston (2010) concluded that a one-size-fits-all approach to personal financial education is not effective and should instead be tailored to different demographics. If not tailored, financial education in its current form could increase the objective financial knowledge gap between Whites and POC. Although the personal finance literature has extensively documented the effects of objective financial knowledge and financial self-efficacy for college students, the literature is lacking when specifically addressing the roles of objective financial knowledge, financial management, and financial self-efficacy regarding African American college students' financial literacy (Alhenawi & Elkhal, 2013; Lown, 2011).

Whereas many studies use financial literacy as an input variable to explore its influence on financial behavior, the purpose of this article is to explore differences in the paths to financial literacy for African American college students. We seek to examine three paths: (1) the path from objective financial knowledge to financial self-efficacy, (2) the path from objective financial knowledge to financial management, and (3) the path from financial management to financial self-efficacy. Our contribution is a comparison of African American college students to their peers in regards to objective financial knowledge, financial self-efficacy, and financial management experiences. Ultimately the study seeks to understand how African American college students become financially literate individuals. The article is organized as follows: Section 2 introduces the conceptual framework and hypotheses; Section 3 describes the data and measures; Section 4 presents the results; and Section 5 is the discussion, and Section 6 concludes the article.

2. Conceptual framework and hypotheses

2.1. The Huston framework of financial literacy

When defining what it means to be a financially literate individual, Huston (2010) presents two components, knowledge (objective financial knowledge) and application (financial management ability and financial self-efficacy). Huston (2010) carefully distinguishes objective financial knowledge as an integral component of financial literacy, but not equivalent to financial literacy. Objective financial knowledge is acquired through both formal financial education and and/or the experience of using financial concepts to manage one's personal finances (financial management experience) (Bapat, 2019; Huston, 2010). Huston (2010) goes on to explain that application is a combination of ability and confidence to apply knowledge (e.g., financial self-efficacy; Bandura, 1997). According to Huston (2010), financially literate individuals know information (objective financial knowledge) and apply it appropriately (financial management) and confidently (financial self-efficacy). Financial self-efficacy is a necessary component of literacy; the question remains if financial self-efficacy is built through knowledge or experience. Please see Fig. 1 for a visual depiction of this operationalization of financial literacy.

2.1.1. Financial knowledge

The Huston (2010) framework has been used in other studies to highlight the importance of the link between objective financial knowledge and management (Alhenawi & Elkhal, 2013; Asaad, 2015; Henager & Cude, 2016; Seay, Kim, & Heckman, 2016; Seay, Preece, & Le, 2017). Research consistently shows that there is a positive relationship between objective financial knowledge and financial outcomes. As individuals' objective financial knowledge increases, they are less likely to report over-indebtedness (Varum & Kolyban, 2014) and experience financial distress associated with paying bills (Scott, Vu, Cheng, & Gibson,

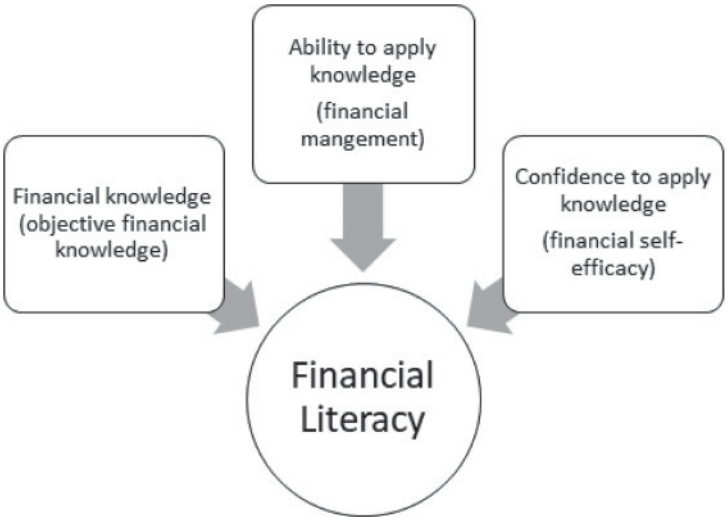

Fig. 1. Operationalizing financial literacy based on Huston (2010).

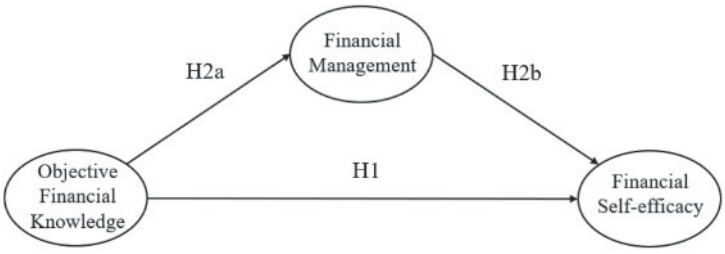

Fig. 2. Conceptual framework: The relationship between objective financial knowledge, financial management, and financial self-efficacy.

2018). Conversely, they are more likely to report higher monthly income (Varum & Kolyban, 2014) and are more willing to take on investment risks (Chung & Park, 2015).

Examining the role of objective financial knowledge for African American students is critical for understanding the factors associated with this group's financial literacy. Research notes that African Americans feel less financially knowledgeable than their White peers (Deenanath, Danes, & Jang, 2019; O'Connor, 2019) and are often less financially literate when compared with Whites (Killins, 2017). Mimura et al. (2015) conclude that parental influence was a significant factor in the objective financial knowledge and financial practices of college students who are first generation, POC, immigrant or children of immigrants. Factors such as a mother's and father's highest level of education are also positively correlated with a student's objective financial knowledge (Chambers, Asarta, & Farley-Ripple, 2019). Given these factors, it is imperative to understand how objective financial knowledge develops and affects financial literacy among African American students.

2.1.2. Financial management

Sound financial management encompasses budgeting, saving, tracking, and spending money over time while taking into account future needs, risks, managing credit, and understanding long-term financial planning concepts such as tax, insurance, investing, retirement, and estate planning needs (Bapat, 2019; Henry, Weber, & Yarbrough, 2001; Spuhlera & Dew, 2019). Positive relationships exist between sound financial management and accumulated savings; negative associations exist between sound financial management and accumulated consumer debt (Spuhlera & Dew, 2019). Bapat (2019) found that objective financial knowledge, measured through the ability to answer personal finance related questions, is positively associated with financial management. Additionally, sound financial management is related to reductions in financial stress and increases in financial peace of mind and well-being (Spuhlera & Dew, 2019).

When it comes to financial management, African American students may be at a disadvantage. Research has demonstrated that African American students tend to graduate with more debt than their White peers and face more challenges in the management of credit card debt. Reality Education and Assets Partnership (REAP) found that 55% of African American students who have student loans graduate with a debt burden that is nearly twice

that of White graduates (Dorrance & McDaniel, 2009). It is important to explore if these financial management issues are an artifact of lacking objective financial knowledge or other issues related to socioeconomic factors.

2.1.3. Financial self-efficacy

Self-efficacy is an individual's sense of confidence in their ability to perform a certain skill or task to obtain specific outcomes (Bandura, 1977, 2006). Financial self-efficacy then is one's confidence in their financial decision-making and management ability (Bandura, 1977; Farrell, Fry, & Risse, 2016). According to Social Learning Theory, self-efficacy spurs individuals to confront difficult tasks, and success in these difficult tasks then expands the individual's self-efficacy (Bandura, 1994). Applied to financial literacy research, there is a bidirectional relationship between self-efficacy and management behaviors. The more a person experiences the financial management behavior and succeeds (or learns from mistakes) the higher their self-efficacy will become. Thus, despite many studies using financial self-efficacy as an outcome variable, there is a strong argument that can be made for it to be a predictor variable.

Higher financial self-efficacy is linked to more productive financial behaviors and greater well-being (Amatucci & Crawley, 2011; Farrell et al., 2016). Research provides support that financial self-efficacy is important to saving behavior and increases in net worth (Asebedo & Seay, 2018). Students who are more confident in their financial decision-making and feel more knowledgeable engage in more healthy financial management (Deenanath, Danes, & Jang, 2019). Although financial self-efficacy is an important component of financial literacy, when self-efficacy is not grounded in appropriate knowledge it can result in overconfidence (McCoy et al., 2019). Overconfidence can be harmful and result in higher risk taking, less investment diversification, excessive borrowing, and may be a deterrent to seeking professional financial advice (Angrisani & Casanova, 2019; Atlas et al., 2019; Hauff & Nilsson, 2020; Kim, Lee, & Hanna, 2020; Merkle, 2017).

Previous studies on college students note financial self-efficacy to be related to positive outcomes like lower stress (Heckman, Lim, & Montalto, 2014; Lim, Heckman, Letkiewicz, & Montalto, 2014), higher subjective well-being, and negatively associated with credit hour reductions (Robb, 2017). Although race was included in two of these studies on college students (Heckman et al., 2014; Lim et al., 2014), to the authors' knowledge, no study has directly explored how race impacts financial self-efficacy among college students.

2.1.4. Importance of examining race/ethnicity

Despite the lack of explicit studies on how different racial or ethnic groups vary in financial self-efficacy, there has been research that may suggest differences in financial self-efficacy by race/ethnicity. First, racial differences in rates of financial self-efficacy may stem from the differences in rates of mathematical self-efficacy. Alliman-Brissett & Turner (2010) found that perceived racism negatively impacted mathematical self-efficacy (i.e., the

self-efficacy related to math-related tasks and to pursue math careers) in African American youth. It is not a large leap to imagine that self-efficacy in math would be highly correlated to one's self-efficacy with money (Almenberg & Widmark, 2011; Grohmann, Kouwenberg, & Menkhoff, 2015; Skagerlund, Lind, Strömbäck, Tinghög, & Västfjäll, 2018; Jayaraman, Jambunathan, & Counselman, 2018).

Second, Oliver and Shapiro (2013) describe how the "racialization of state policy" has led to a long legacy of wealth differences that have reinforced racial inequalities in the United States (p. 39). Socialization messages within African American families around how much wealth one can achieve may be shaped by these inequalities. Generations of barriers that prevented equal access to the means of generating wealth may limit African American's financial self-efficacy.

Finally, an important component of financial self-efficacy is the vicarious experiences of financial management (Bandura, 1997). Bandura (1997) suggests that we develop self-efficacy through experiencing the behavior itself. Research shows that the African American community is disproportionately underbanked or unbanked (Breitbach & Walstad, 2014). Potentially, this has led to African American's having fewer financial management experiences resulting in lower levels of financial self-efficacy.

There remains a large racial/ethnic wealth and income gap in the United States that may impact differences in financial literacy between African American and non-African American students (Hamilton & Darity, 2017). Differences in financial literacy are not an inherent trait of being one race or ethnicity per se, but instead are associated with financial experiences. Financial literacy then is tied to wealth or lack of wealth. Financial behaviors, such as paying bills on time, investing and saving for retirement, are limited for individuals with few financial resources to manage (Hamilton & Darity, 2017; Hamilton et al., 2015). In fact, if household income were equal, African American families would have a slightly higher savings rate than White families (Hamilton & Darity, 2017).

Although the literature may hint at differences between African American and non-African American students, there is not enough empirical data to presuppose a directional association between the components of Huston's financial literacy framework and race. Therefore, the three hypotheses in this study were derived from the conceptual framework (Huston, 2010) and the extant literature to examine the relationships between objective financial knowledge, financial management, and financial self-efficacy (see Fig. 2).

Hypothesis 1: African American and non-African American students' objective financial knowledge is positively associated with their financial self-efficacy.

Hypothesis 2a: Financial management is a mediating factor in the relationship between objective financial knowledge and financial self-efficacy among African American and non-African American students.

Hypothesis 2b: African American and non-African American students' financial management is positively associated with their financial self-efficacy.

Based on these hypotheses, the conceptual model (Fig. 1) is used to explore the relationships of the components of financial literacy and compare the relationships by race.

3. Method

3.1. Data and sample selection

This study relies upon data collected at The Ohio State University through the 2014 National Student Financial Wellness Study (NSFWS).[1] This survey is administered to undergraduate students (N = 18,795) from 52 participating two and four-year public institutions and four-year private higher education institutions across the United States. To learn more about the methodology of the Study on Collegiate Financial Wellness (SCFW), please see Montalto, Phillips, McDaniel, and Baker (2019). Questions relating to financial attitudes, financial management, and objective financial knowledge capture a picture of the overall financial literacy and wellness of undergraduate students in the United States. The original data sample size is 18,792. The sample includes 965 African American students and 13,697 non-African American students, excluding missing answers. To balance sample size, we drew random samples from the existing pools. First, we extracted several sets of sample combinations that are 350 samples for each group because structural equation modeling requires at least 350 samples to ensure the significant factor loadings for latent constructs (Hair, Black, Babin, &Anderson, 2014). Next, the sample size of each group was reduced after eliminating observations with missing answers. However, due to limitations with the data, we encountered difficulty extracting the same number of sample sizes for each group. We chose samples with a smaller difference in size between the two groups. The total sample size was 860, 394 for African American and 466 for non-African American.

3.2. Variables

Our model is constructed with three latent variables: financial knowledge, financial management, and financial self-efficacy. A latent variable is an underlying concept that cannot be observed or directly measured. Instead, it can be inferred by several indicators, or observed variables. The following section describes how we manifested the latent constructs with a set of indicator variables.

3.2.1. Financial self-efficacy

The outcome variable, financial self-efficacy, is a latent variable constructed by two observed indicators: confidence in finances and confidence in money management. Confidence in finances is measured by the item: “I am confident that I can manage my finances.” Respondents are asked to indicate 1 = strongly disagree, 2 = disagree, 3 = agree, or 4 = strongly agree. Confidence in money management is a variable measured by the item: “I manage my money well.” Respondents are also given four options to indicate 1= strongly disagree, 2 = disagree, 3 = agree, or 4 = strongly agree.

3.2.2. Objective financial knowledge

Objective financial knowledge is a latent variable consisting of three observed variables. Each variable is measured by a question testing respondents' objective financial knowledge (see Appendix A). The three questions have been widely used in prior studies (Al-Bahrani et al., 2019; O'Connor, 2019; Robb & Woodyard, 2011; Seay, Preece, & Le, 2017). The variables are coded as 1 if a respondent provides the correct answer, or 0 otherwise.

3.2.3. Financial management

Financial management is a latent variable manifested by three indicators. The financial management variable represents respondents' normative financial behavior. The indicator variables are budgeting, tracking spending, and tracking transactions. The variables are measured by the following items: "I have a weekly or monthly budget that I follow (budgeting)," "I track my spending to stay within my budget (tracking spending)," and "I track all debit card transactions/checks to balance my account (tracking transactions)." Respondents are given four options to choose 1 = never, 2 = sometimes, 3 = frequently, or 4 = always.

3.3. Covariates

This study includes eight control variables: age, gender, employment, annual income, marital status, having child(ren), first generation status, and financial education. These socio-demographic variables are known to be associated with financial management and financial self-efficacy (Al-Bahrani et al., 2019; Alhenawi & Elkhal, 2013; Chambers, Asarta, & Farley-Ripple, 2019; Harrington & Smith, 2016; Henager & Cude, 2016; Tang & Peter, 2015; Varum & Kolyban, 2014; Wagner, 2019). Age is a numeric value. Gender is coded as 1 = female, or 0 = male. Employment is coded as a dummy variable indicating 1 = employed and 0 = not employed. The "employed" category includes respondents who are working full-time, part-time, or self-employed. Annual income is also coded dichotomously: 1 = above median income, or 0 = median income or less. Because there is no direct measurement for marital status, we use a proxy variable measured by an item asking, "Are you financially responsible for a spouse/partner?" Having child(ren) is coded as 1 if respondents have any financially dependent child or children, or 0 otherwise. First generation status is an indicator of parents' education. It defines whether either parent completed a bachelor's degree. First generation is coded as 1 = first generation student, or 0 = not first generation student. Finally, financial education indicates whether respondents attended any personal finance classes/workshops when they were in high school or in college. The variable is coded dichotomously (1 = yes, 0 = no).

3.4. Model analysis

The analytic procedure is as follows. First, we specify the model to be tested. The variables are selected from the available information within the data. The relationships among

the variables are hypothesized based on previous literature. Similar to Bapat (2019), we employed structural equation modeling (SEM) to test the hypothesized relationship among the variables of interest. SEM is a statistical technique that conducts confirmatory factor analysis and path analysis simultaneously. Confirmatory factor analysis (CFA) examines whether a latent variable is conceptually well represented by its observed indicators. The strength of relationship between each indicator variable and a latent variable is assessed by factor loading. Factor loadings greater than 0.5 are generally considered as high; however, 0.3 and 0.4 are minimally acceptable if the sample size is 350 or larger (Hair et al., 2014; Kline, 1994). Path analysis identifies the significance of hypothesized relationships among the latent variables. Path analysis helps understand the sequential associations of the variables. As structural equation modeling takes advantage of both latent variable analysis (i.e., CFA) and path analysis, it is useful when testing a conceptual model as a whole. While traditional regressions are powerful when analyzing the marginal effect of an independent variable (when holding other variables constant) on a dependent variable, they have limited ability in examining the sequential relationships among the relevant variables. Also, structural equation modeling minimizes the measurement errors (Bollen, 1989). The second hypothesis of this study is to examine the mediating role of financial management. Thus, we chose structural equation modeling as our analytic method because it is the most appropriate method to analyze our research questions.

To compare the results of African American to the results of non-African American students, we applied a group comparison option when conducting SEM. The path coefficients are standardized for comparison. The model was tested using Stata 15.

4. Results

4.1. Descriptive characteristics of respondents

Table 1 shows the demographic characteristics of the sample. The average age of African American students (27.02) is higher than that of non-African American students (23.68). The sample is skewed to female for both African American students (74%) and non-African American students (72%). For employment status, the percentage of working full-time, part-time or self-employed is higher for African American students (73%) compared with non-African American (69%). These results may indicate a necessity for African American students to provide more of their own financial support than their non-African American counterparts. Both African American students and non-African American students show a low rate of having a spouse or partner; however, more African American students (27%) are financially responsible for a child or children than their non-African American counterparts (14%). The descriptive statistics indicate more African American students (57%) than non-African American students (43%) are the first generation attending college. Financial education experience of African American students and non-African American is 49% and 42%, respectively. Regarding objective

Table 1 Descriptive statistics of respondents (N = 860)

	African American (N = 394)		Non-African American (N = 466)	
Variables	%	Mean (*SE*)	%	Mean (*SE*)
Age		27.02 (10.89)		23.68 (7.03)
Gender				
Male	26.40		27.90	
Female	73.60		72.10	
Employment status				
Employed	72.59		69.31	
Not employed	27.41		30.69	
Annual income				
Median or less	52.03		61.59	
Above median	47.97		38.41	
Marital status				
Having spouse/partner	12.94		11.80	
No spouse/partner	87.06		88.20	
Having child(ren)				
Yes	26.90		13.95	
No	73.10		86.05	
First generation				
Yes	57.36		43.13	
No	42.64		56.87	
Financial education				
Yes	48.73		42.27	
No	51.27		57.73	
Objective financial knowledge				
Financial knowledge1 (correct)	48.22		61.59	
Financial knowledge2 (correct)	73.10		78.76	
Financial knowledge3 (correct)	72.59		82.62	
Financial management				
Budgeting		2.68 (0.94)		2.58 (0.97)
Tracking spending		2.93 (0.88)		2.94 (0.94)
Tracking transactions		3.15 (0.91)		3.09 (1.05)
Financial self-efficacy				
Confidence in finances		3.08 (0.75)		3.09 (0.67)
Confidence in money management		2.91 (0.72)		3.04 (0.66)

financial knowledge, the percentage of correct answers for each question is higher in non-African American students. With regards to financial management, the occurrence of three management behaviors (i.e., have budget, track spending, or track account balance) are similar between African American students and non-African American students. Overall, financial self-efficacy is slightly higher for non-African American students.

4.2. Structural equation modeling results

Figs. 3 and 4 are the results of structural equation modeling. Latent variables are graphically expressed by ovals and observed variables are visually represented by rectangles. The set of covariates (e.g., age, gender, employment, annual income, marital status, having child

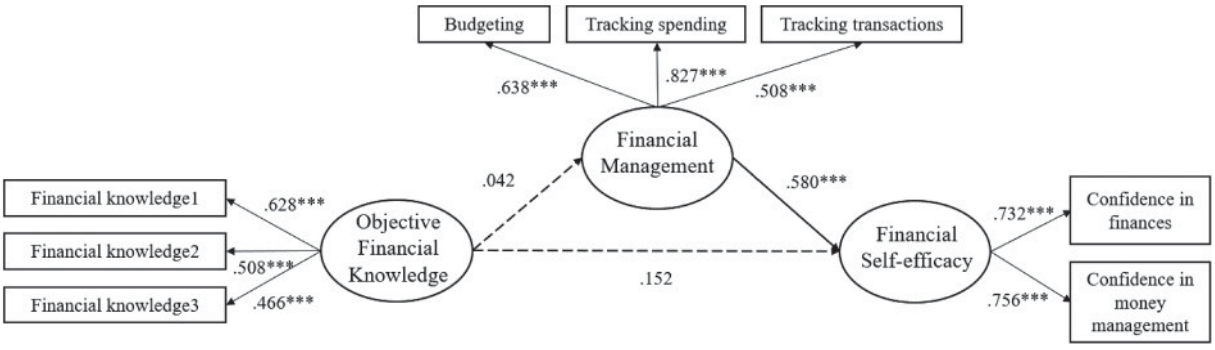

Fig. 3. Results from the structural equation modeling of African American college students with standardized coefficients. *Note.* Control variables are age, gender, employment, annual income, marital status having child(ren), first generation, financial education. $*p < .05$, $**p < .01$, $***p < .001$.

(ren), first generation status, or financial education) are included in the pathways to control for the background characteristics.

In SEM, the goodness of the model is evaluated by several fit indices, including the χ^2 statistic, the root mean square error of approximation (RMSEA), standardized root mean square residual (SRMR), and comparative fit index (CFI). Kline (2005) recommended at least these four indices should be reported. The model χ^2 test should be statistically insignificant if the model fit is good; however, this rule does not apply to a large sample because the χ^2 statistic is sensitive to sample size (Schermelleh-Engel, Moosbrugger, & Müller, 2003). Generally, the model is considered to be good if RMSEA is lower than 0.06, SRMR is less than 0.08, and CFI is higher than 0.90 (Hu & Bentler, 1999; Loehlin, 2004). The tested model statistics are $\chi^2 = 250.38$ ($df = 126$, $p < .001$), RMSEA = 0.048, SRMR = 0.038, CFI = .920. Based on the thresholds of goodness-of-fit indices, the model shows a good fit.

Fig. 3 shows the results for the African American students. When evaluating construct validity, all indicators are significantly loaded on each corresponding latent factor. It means the three latent variables (objective financial knowledge, financial management, and financial self-efficacy) are properly represented by its observed variables. The

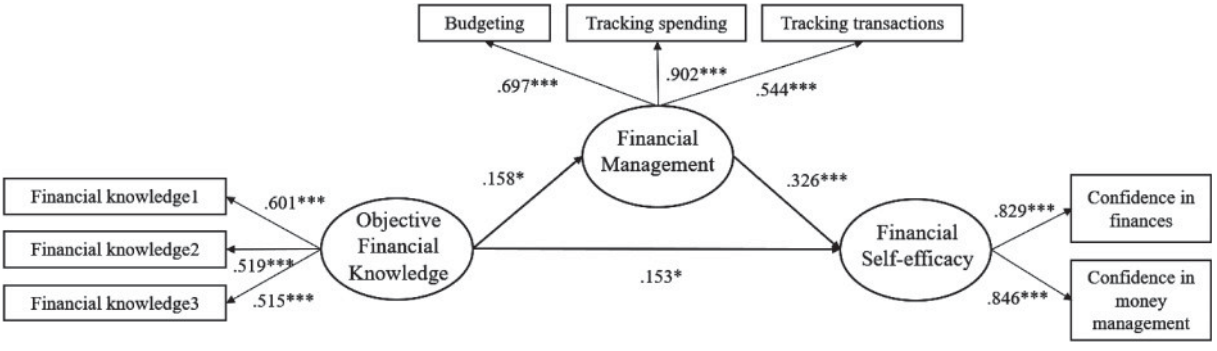

Fig. 4. Results from the structural equation modeling of non-African American college students with standardized coefficients. *Note.* Control variables are age, gender, employment, annual income, marital status having child(ren), first generation, financial education. $*p < .05$, $**p < .01$, $***p < .001$.

Table 2 Summary of results

	Hypothesis	African American	Non-African American
H1	Objective financial knowledge → Financial management	Not supported	Supported
H2a	Objective financial knowledge → Financial self-efficacy	Not supported	Supported
H2b	Financial management→ Financial self-efficacy	Supported	Supported

results also demonstrate the significance of the hypothesized relationship among the latent constructs. First, the effect of objective financial knowledge on financial management is not significant (β = 0.042, p = .636). This indicates, for African American students, objective financial knowledge contributes little in forming positive financial management. Second, objective financial knowledge is also not significantly linked to financial self-efficacy (β = 0.152, p = .069). This means objective financial knowledge does not suffice to build financial self-efficacy for African American students. Third, financial management is greatly and positively associated with financial self-efficacy (β = 0.580, p < .001). In short, only financial management is effective to establish financial self-efficacy for African American students.

Fig. 4 shows the results for non-African American students. All factor loadings for latent constructs are fairly high and significant at the level of .001. The associations among the latent variables are found to be significant. First, objective financial knowledge is positively associated with financial management (β = 0.158, p < .05) and financial self-efficacy (β = 0.153, p < .05). This indicates, for non-African American students, higher objective financial knowledge is linked to more positive financial management behavior and higher financial self-efficacy. Second, financial management is positively related to financial self-efficacy (β = 0.326, p < .001).

5. Discussion

This study contributes to the literature by examining how objective financial knowledge, financial management, and financial self-efficacy are associated with African American college students' financial literacy. The summary of results are found in Table 2. Results show that objective financial knowledge is positively associated with financial self-efficacy supporting Hypothesis 1 among the non-African American sample. However, when examining the link between objective financial knowledge and financial efficacy for only African American students, this association does not exist.

Similarly, for the non-African American sample, there is a significant indirect relationship from objective financial knowledge to financial self-efficacy mediated by financial management. Both objective financial knowledge and financial management are positively related to their financial self-efficacy. This provides support for both Hypothesis 2a and Hypothesis 2b. However, this relationship again differs for the African American students in the study. There is only a significant link from 'financial management' to 'financial self-efficacy'.

These results suggest that financial management experience is important for African American students to attain financial self-efficacy.

The findings of this study appear to suggest that simply having objective financial knowledge is not as powerful a tool as providing experiences to counteract this difference in African American communities. It is important for African American students to manager finances to acquire the ability and confidence to become financially literate individuals.

6. Conclusions

The results of this study show it is important to not generalize findings of studies to all populations. More research is needed to explore between group differences to ensure that best practices are truly best for all groups. For instance, our study shows that an essential ingredient in financial education programs is a focus on building financial self-efficacy. For African American students, providing opportunities for learning through financial management experiences must be an important component of financial education (Henager & Cude, 2016; Robb & Woodyard, 2011). Thus, financial education programs focusing on experiential learning may enhance financial literacy among African American students and ultimately mitigate financial problems that individuals and families face (Huston, 2010). This is consistent with Tang and Peter (2015) who suggest that hands-on experience and application-orientated financial education is effective in improving the acquisition of objective financial knowledge.

Established university-based, peer-mentoring or counseling programs (e.g., the ASPIRE Clinic at the University of Georgia and PowerCat Financial at Kansas State University) are invaluable resources to increase the self-efficacy of African American students through financial management experiences. Providing financial education in its current form may increase the objective financial knowledge gap between White and African American college students. Although financial literacy is associated with positive financial outcomes, we must acknowledge that financial literacy alone does not influence positive or negative financial outcomes. Factors such as culture, family, economic, and institutional policies may result in individuals engaging in ineffective personal financial behaviors that disrupt their financial well-being (Huston, 2010).

This study highlights the importance of offering a variety of financial education instructional methods to make targeted financial outcomes accessible to a broader and more diverse range of students. It is important to note some of the study's limitations. Due to the cross-sectional nature of the data, causations cannot be concluded from these results. Future research should focus on the use of longitudinal data or experimental designs to find direct causes. In addition, our findings suggest the need for experiential learning, yet an experimental design is needed to formalize the best practice suggestion. Furthermore, more research is needed to explore the relationship between objective financial knowledge, financial self-efficacy, and financial management experiences in African Americans to provide more insights in the underlying factors that cause

different results across racial groups. Current and future financial education curricula should focus not only on how individuals perform financial management behaviors but also how to help increase a person's financial self-efficacy as this is an essential component of one's ability to be financially literate. As aforementioned, there is a bidirectional relationship between financial self-efficacy and financial management behaviors. In the current study, we tested how objective financial knowledge, financial management, and financial self-efficacy, are associated with college students' financial literacy across racial groups. Further research is needed to explore any potential for reverse causality in how we tested the relationship between these variables.

Despite these limitations, financial practitioners and educators can use these findings to create culturally responsive financial education programs to help increase financial self-efficacy and close the objective financial knowledge and literacy gap between African Americans and other races/ethnicities.

Note

1 In 2014, when the data were originally collected and released for use, it was titled NSFWS. The name was later changed to SCFW for subsequent data collection beginning in 2017.

Appendix A Financial knowledge items

Financial knowledge questions	Scale
(1) Imagine that the interest rate on your savings account is 1% per year and inflation is 2% per year. After 1 year, would you be able to buy more than today, exactly the same as today, or less than today with the money in this account?	1 = More than today 2 = Exactly the same as today 3 = Less than today 4 = Don't know
(2) Suppose you have $100 in a savings account and the interest rate was 2% per year. After 5 years, how much would you have in the account if you left the money to grow?	1 = More than $102 2 = Exactly $102 3 = Less than $102 4 = Don't know
(3) Suppose you borrowed $5,000 to help cover college expenses for the coming year. You can choose to repay this loan over 10 years, 20 years, or 30 years. Which of these repayment options will cost you the least amount of money over the length of the repayment period?	1 = 10-year repayment option 2 = 20-year repayment option 3 = 30-year repayment option 4 = Don't know

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