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Research Article

Relationships between state mandates for financial education and young adults' financial literacy and capability

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The purpose of this study was to describe the relationships between financial literacy and financial capability rates of 18-24-year-olds and formal financial education in public K-12 schools. Though much has been studied about financial education, financial literacy, and financial capability, there are few clear answers about the relationships among the three. This study unpacked associations and relationships between financial education in public K-12 schools and young adults' financial literacy and financial capability. Using extant data from national surveys about financial literacy and financial capability in 2015 and 2018, this study determined there was rarely a significant difference in young adults' financial literacy and financial capability as related to the level of financial education they received in high school. Such information is important because it can reveal the differences in outcomes of various levels of formal financial education; this information can be used to shape policies and implementation that will provide the greatest positive impact for individuals and, in turn, the nation.

Keywords: Educational leadership; Financial literacy; Financial capability; Financial education; Education policy

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1. Introduction

On a daily basis, people must make decisions that affect their financial wellbeing. Managing income is a key factor in socioeconomic success and is widely recognized as a necessary skill (Brown, 2017; Consumer Financial Protection Bureau, 2015; Gonzales & Sen, 2017; Office of Financial Education, 2002; President's Advisory Council on Financial Capability for Young Americans [PACFCYA], 2015). Organizations such as the U.S. Chamber of Commerce (2018) and the Organisation for Economic Co-operation and Development [OECD] believe that public schools should provide financial education for students. However, public schools in the United States often do not include financial literacy education in the curriculum or, if schools do include financial education, it is not rigorous (Council for Economic Education [CEE], 2018). Hensley (2019), the President and CEO of the National Endowment for Financial Education, wrote that

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politics such as these hinder financial education throughout the nation. Further, Hensley stated that poorly constructed mandates for financial education could actually be harmful.

1.1. Problem Statement

Financial education, literacy, and capability are frequently referred to in similar contexts. However, there are important distinctions among the terms, which are delineated by well-known organizations in the United States and speak to the common person.

- Financial education is a way to "enhance financial literacy by increasing financial knowledge, skills and attitudes" (The Organisation for Economic Co-operation and Development [OECD], 2015, p. 7)
- Financial literacy (also known as financial knowledge) is "possessing the skills and knowledge on financial matters to take effective action that best fulfills an individual's personal, family and global community goals" (National Financial Educators Council, 2018, p. 4)
- Financial capability is a "multi-dimensional concept that encompasses a combination of knowledge, resources, access, and habits" (Financial Industry Regulatory Authority [FINRA], 2016, p. 2)

1.2. Significance

Though much has been studied about financial education, financial literacy, and financial capability, there are few clear answers about the relationships among the three. This study unpacked associations and relationships between financial education in public K-12 schools and young adults' financial literacy and financial capability. Such information is important because it can reveal the differences in outcomes of various levels of formal financial education; this information can be used to shape policies and implementation that will provide the greatest positive impact for individuals and, in turn, the nation.

2. Literature Review

According to research by Lusardi and Mitchell (2014), the financial literacy of citizens possibly impacts economic decision-making, though it is difficult to establish a causal link. Yet, these authors discussed the links between higher financial literacy and higher rates of saving and investing; conversely, they discussed the links between lower financial literacy and higher rates of debt (Lusardi & Mitchell, 2014). However, financial literacy is only one element that can influence financial behavior. While researching relationships among demographics, one study found that young adults with low-income backgrounds or low levels of literacy, or who identified as minorities or females, were less likely to have sound financial footing (Sinha et al., 2018). This aligns with previous research (Chen & Volpe, 2002; Robb, 2011).

Urban et al. (2018) studied three states' changes in financial education implementation in 2007 and compared the credit scores of 18-21-year-olds to those of the same ages in similar states without financial education implementation in 2007. Their findings suggest that rigorous implementation of financial education mandates can positively impact students' later debt behaviors. However, little is known about which facets of education, if any, best provide improved financial situations. Financial education must do more than provide presentation of content: it must consider consumers' needs in order to address them effectively (Yoong, 2013).

2.1. Theory / Rationale

This study used human capital theory as a lens through which to complete a policy analysis of financial education mandates. Human capital theory focuses on the ways that education increases human capability and views formal education as valuable for participants' futures (Olaniyan & Okemakinde, 2008). According to Holden and Biddle (2017), Schultz developed the first modern concept based on ideas from Adam Smith; then, Becker and Mincer popularized the concept.

Prior to the end of the 1950s, education was often viewed as an effect of the economy rather than as an input (Holden & Biddle, 2017). As the nation entered the space race, however, policymakers began to see education as supportive of economics and defense, which allowed Heller to highlight the human capital theory of education, showing it as an input to national economic growth (Holden & Biddle, 2017). Given the meaning of the theory and the roots it has in education, it was appropriate to view states' mandates for financial education through this lens because one intent of educational policy is to provide the best possible education for students, with the belief that education can improve their lives. Since financial abilities are recognized as a national concern, financial education falls under the construct of human capital theory. While financial education frequently consists of similar information, how it is taught can vary widely, which will be partly explored in this research.

3. Method

Using quantitative methods and a non-experimental design, causal comparative, this study investigated the differences between students' participation in financial education and young adults' financial literacy and financial capability.

3.1. Research Design

The causal comparative design was selected because it enables examination of the study of differences between two variables after an event, while comparing different groups. The focus of the study was to investigate differences between groups and determined whether the independent variable (type of financial education mandate) could explain the differences in the groups (Fraenkel et al., 2015). The study accounted for the influence of categorical moderator variables, including gender, ethnicity, age, educational attainment, and income level.

3.2. Instrumentation and Data Collection

The current study relied on extant data obtained from FINRA's previous Financial Capability survey. Their unaggregated data sets were acquired for this current study by signing a non-disclosure agreement with FINRA. Applied Research and Consulting conducted FINRA's state-by-state study, which consisted of a 2015 questionnaire. Their 2015 questionnaire collected demographic data, then asked respondents a variety of questions related to financial knowledge and behaviors (Applied Research and Consulting, 2015). Their study questions' reliability and validity have been verified by many stakeholders over the years since then through use (Applied Research and Consulting, 2018). However, the financial literacy scale has not "been validated, though it is widely used" since its inception in 2009 (G. Mottola, personal communication, November 7, 2019). FINRA pulled many individual questions within the 2015 FINRA survey from existing surveys, including the Consumer Finance Protection Bureau [CFPB] Financial Well-Being Scale (G. Mottola, personal communication, November 7, 2019). The CFPB survey was validated using three sets of surveys, as well as comparing their newer questions and results to previous, related results, which found "a statistically significant relationship in an expected direction between those measures" (CFPB, 2017, p. 21). Sections in both FINRA surveys included topics like credit cards, homeownership, insurance, and an assessment of self-perception within the realm of financial literacy.

The total population of 27,564 state-by-state participants in the 2015 FINRA study answered questions to their online survey. From the total population, only 3,049 respondents were in the 18-24 age group. Likewise, the data from the 2018 FINRA study included 27,091 adults, with 2,795 respondents in the 18-24 age group. The data that was used for this study were pulled from the full FINRA data sets, which was then focused in on the variables necessary for this study, such as age, gender, race, educational attainment, and income, as well as the respondents' scores on the financial literacy questions and respondents' locations.

3.3. Research Questions

These questions were the basis for this research and aimed to determine the degree formal financial education programs impact the financial literacy and financial capability of young adults.

RQ 1) In what ways does the financial literacy of 18-24-year-olds vary according to the requirements for financial education?

RQ 2) In what ways does the financial capability of 18-24-year-olds vary according to the requirements for financial education?

RQ 3) What trends in these relationships, between financial education and financial literacy and capability, are observable over time?

RQ 4) In what ways is the financial literacy of 18-24-year-olds associated with their financial capability?

3.4. Variables

This current study includes a variety of variables including dependent, independent, and moderator variables. The dependent variables are young adults' financial literacy and financial capability and were extracted by using data from the Financial Industry Regulatory Authority's [FINRA] National Financial Capability 2015 Study. The independent variable, level of state mandates, represented the level of financial education required within each state, and was derived from data collected by the Council for Economic Education [CEE]. Since the post hoc data used as the independent variable was not manipulated and is categorical, a causal comparative design was ideal for this current study. Finally, this current study's moderator variables including gender, ethnicity, age, educational attainment, and income.

3.4.1. Dependent variables

The dependent variables, which were continuous level of measurement because they were scores, focused on young adults' financial literacy and financial capability. Each dependent variable was measured against the independent variable, state mandates for financial education, separately to determine what relationship the mandates had to each dependent variable. For financial literacy, the study used responses to the five questions that FINRA identifies as indicative of financial literacy (FINRA, 2015):

1) Suppose you had $100 in a savings account and the interest rate was 2% per year. After 5 years, how much do you think you would have in the account if you left the money to grow?

2) Imagine that the interest rate on your savings account was 1% per year and inflation was 2% per year. After 1 year, how much would you be able to buy with the money in this account?

3) If interest rates rise, what will typically happen to bond prices?

4) Suppose you owe $1,000 on a loan and the interest rate you are charged is 20% per year compounded annually. If you didn't pay anything off, at this interest rate, how many years would it take for the amount you owe to double?

5) A 15-year mortgage typically requires higher monthly payments than a 30-year mortgage, but the total interest paid over the life of the loan will be less.

For financial capability, the study used responses to five questions from a cross-section of questions within the FINRA study that encompass young adults' abilities to make ends meet, plan for the future, and manage financial products. These variables were chosen to mirror FINRA's financial literacy composite because they span multiple aspects of financial awareness, including budgeting, saving, and borrowing that apply to 18-24-year-olds (FINRA, 2015):

1) In a typical month, how difficult is it for you to cover all your expenses and bills?

2) Over the past year, would you say your household's spending was less than, more than, or about equal to your income?

3) Have you set aside emergency or rain day funds that would cover your expenses for three months in case of sickness, job loss, economic downturn, or other emergencies?

4) In the past 12 months, I always paid my credit card in full.

5) In the past five years, how many times have you taken out a payday loan?

3.4.2. Independent variables

The independent variable, level of state mandates, which were ordinal, represented the level of financial education required within each state. It was measured in six levels, which are the five levels created by CEE, plus a level for no mandate (CEE, 2018):

- No mandate
- Included in standards
- Standards required to be implemented by districts
- High school course required to be offered
- High school course required to be taken
- Student testing required

These six levels indicated what type of financial literacy education students should have received in each state and the District of Columbia.

3.4.3. Moderator variables

Influential factors that were considered include the demographics gender, ethnicity, age, educational attainment, and income (FINRA, 2016; Sinha et al., 2018). Research shows that these factors have a relationship to individuals' levels of financial literacy.

3.4.4. Measurement of variables

For this current study, the researcher added a new variable to the FINRA dataset that indicated which type of mandate that student experienced, as based on the CEE report. States with no mandates were coded as zero through states that required student testing, which were coded as 6. This enabled the current study analysis to be conducted with the six levels of financial education mandates.

The scores of the five financial literacy questions for respondents were combined to determine their score for overall financial literacy. For example, if a respondent answered three of the five questions correctly, that respondent would be coded with a score of 60% correct, as 3 out of 5 is 60%. The mean scores were compared to each financial education mandate and demographic variable to determine statistical significance for the main effect. The results of the financial capability questions were treated in a similar manner, with the financially responsible behavior earning a point, while irresponsible behaviors did not earn points. The respondent's points were added together and assigned a percentile. These scores (n = 3,049 in 2015 and n = 2,975 in 2018) were used to determine statistical significance for the main effect with education mandate and demographic variables.

Categorical moderator variables, including gender, ethnicity, age, educational attainment, and income, are connected to respondents' information in the 2015 and 2018 extant data set from FINRA. The current study compared the financial literacy scores of each demographic subset to the state education mandates to determine the statistical significance of the interaction effects.

3.5. Procedures

The dependent variables (DVs) focused upon young adults' financial literacy and financial capability by using data from the Financial Industry Regulatory Authority's (FINRA) National Financial Capability Study. The independent variable (IV), level of state mandates, represented the level of financial education required within each state, and is based upon data collected by the Council for Economic Education (CEE). The study considered moderator variables, including gender, ethnicity, age, educational attainment, and income level.

This study utilized data collected by the Financial Industry Regulatory Authority (FINRA) through the National Financial Capability Study. The first study was conducted in 2009 alongside the U.S. Department of the Treasury and President Bush's Advisory Council on Financial Literacy; FINRA conducted subsequent studies in 2012, 2015, and 2018. By analyzing this data for the

indicators of financial literacy and financial capability, it was possible to determine young adults' levels of financial literacy and financial capability by state. The young adults surveyed may or may not have attended high school in these specific states. However, many young adults remain in their home state, so this age group was appropriate to use for state-to-state comparisons (Brown et al., 2016).

Information about each state's implementation of financial education initiatives in K-12 public schools was also used. The Council for Economic Education (CEE) has compiled a report about each of the states' mandates since 2004, with the most current data reflecting state mandates in 2017 (CEE, 2018). CEE researchers collaborated with each state's Department of Education to discern how and what the state requires to be taught (G. Reichert, personal communication, April 4, 2019). According to Reichert (personal communication, April 4, 2019), if the personal finance segment is set within an economics course, it must encompass "one-quarter or more of a semester" to count as a mandate. This information was used to determine whether there is a relationship between differences in the 18-24-year-old age group's financial literacy and financial capability and the implementation of states' financial education programs.

3.6. Data Analysis

The data were analyzed according to each research question to determine whether there was any relationship between the independent and dependent variables and, if so, the strength of that relationship. The data were also analyzed for the influence of moderator variables, which provided an understanding as to what extent, if any, other variables influence the effectiveness of financial literacy education. The data were analyzed using a two-way ANOVA to examine two factors simultaneously (state financial education mandates and moderator demographic variables) to measure the interaction of how those two influence the dependent variable (financial literacy or financial capability). For example, with gender as one independent variable and education mandate as the other, this study sought to understand whether there was any interaction between gender and education mandate on financial literacy. This allowed the study to explore whether the effect of gender on financial literacy was influenced by education mandate. This same understanding of the interactions was analyzed for each demographic variable for effects on financial literacy, then again for effects on financial capability. The use of a two-way ANOVA also provided results for simple main effects, which was important to answer the research questions.

While an ANCOVA would have used the demographic variables as controls, the variables were included for interaction effects, not excluded as pre-existing differences. Additionally, there were two separate analyses—one for financial literacy as the dependent variable, and one for financial capability as the dependent variable. This was why the two-way ANOVA was the analysis tool of choice.

To answer research question one (*In what ways does the financial literacy of 18-24-year-olds vary according to the requirements for financial education?*), descriptive statistics of mean and standard deviation presented data about the populations; cross-tabulation tables described how financial literacy rates vary by state mandate. A two-way analysis of variance (ANOVA) was conducted via SPSS 25 to investigate how financial literacy varies according to financial education requirements. This analysis revealed whether there was a statistically significant difference in young adults' financial literacy based on variances in their exposure to financial education in high school. For differences that were statistically significant, the degree to which the variance occurred was evaluated and findings were reported, including the partial eta squared and mean values. The two-way ANOVA results also accounted for moderator variables, including gender, ethnicity, age, educational attainment, and income, and indicated whether the interaction effects were statistically significant.

To answer research question two (*In what ways does the financial capability of 18-24-year-olds vary according to the requirements for financial education?*), descriptive statistics of mean and standard deviation presented data about the populations and cross-tabulation tables described how

financial capability rates varied by state. A two-way analysis of variance (ANOVA) was conducted via SPSS 25 to investigate how financial capability varied according to financial education requirements and also accounted for the interaction effects of moderator variables, while partial eta squared and mean values were reported for statistically significant relationships. Because financial capability encompasses behaviors rather than knowledge, it was important to analyze it separately from the financial literacy addressed in the first research question.

To answer research question three (*What trends in these relationships, between financial education and financial literacy and capability, are observable over time?*), descriptive statistics and visual data analysis provided interpretation of changes in the outcomes of financial literacy and financial capability. The first analysis set compared financial literacy from the 2015 FINRA data to the 2018 FINRA data and the second analysis set compared financial capability.

To answer research question number four (*In what ways is the financial literacy of 18-24-year-olds associated with their financial capability?),* an ANOVA was used to determine the relationship between respondents' financial literacy and financial capability. An ANOVA was appropriate because the independent variable, financial literacy, was presented as categorical scores of 0, 20, 40, 60, 80, and 100, while the dependent variable, financial capability, was a scale score of means. Descriptive statistics showed the number of cases and the means of financial literacy and financial capability for 2015 and 2018 independently.

All research questions, their variables, and the statistical test used in analysis are presented in Table 1.

Table 1
Research questions and variables

Research Question	*Independent Variable*	*Dependent Variable*	*Moderator Variables*	*Statistical Tool*
In what ways does the financial literacy of 18-24-year-olds vary according to the requirements for financial education by each state?	Financial education policy level (categorical)	Financial literacy score (continuous)	Gender, ethnicity, age, educational attainment, income	Two-way ANOVA
In what ways does the financial capability of 18-24-year-olds vary according to the requirements for financial education by each state?	Financial education policy level (categorical)	Financial capability score (continuous)	Gender, ethnicity, age, educational attainment, income	Two-way ANOVA
What trends in these relationships, between financial education and financial literacy and capability, are observable over time?	Financial education policy level (categorical)	Financial literacy and capability scores (continuous)		Visual comparison
In what ways is the financial literacy of 18-24-year-olds associated with their financial capability?	Financial literacy score (categorical)	Financial capability score (continuous)		ANOVA

3.7. Population and Sample

The post-hoc participants in this study were selected and surveyed in the extant pre-existing data set that FINRA provided. The total population of 27,564 state-by-state participants in the 2015 FINRA study answered questions to their online survey. From the total population, only 3,049

respondents were in the 18-24 age group. That was the targeted sample utilized in this current study. First, researchers selected participants via nonprobability quota sampling, using established panels of online survey respondents (FINRA, 2015). The panels used ensure that the demographic characteristics are valid and current by using industry-standard techniques, which includes quotas based on Census distributions (Mottola & Kieffer, 2017). To account for populations in large states, the researchers used oversamples in four states. As the survey did not specifically target heads of households, any respondent within the pool was able to complete the survey between June and October of 2015 (FINRA, 2016). Researchers then weighted the responses to match Census data; finally, researchers weighted state numbers according to various demographics, including gender, ethnicity, age, educational attainment, and income (FINRA, 2019). Likewise, the data from the 2018 FINRA study included 27,091 adults, with 2,795 respondents in the 18-24 age group (Applied Research and Consulting, 2019).

4. Findings

Overall, the data showed that there was not a significant relationship between the type of financial education mandate and young adults' financial literacy and financial capability. However, there were small interaction effects for certain demographic moderator factors and independent variables. Additionally, there were small significant differences in financial capability as based on different mean financial literacy scores. Table 2 summarizes these significant factors.

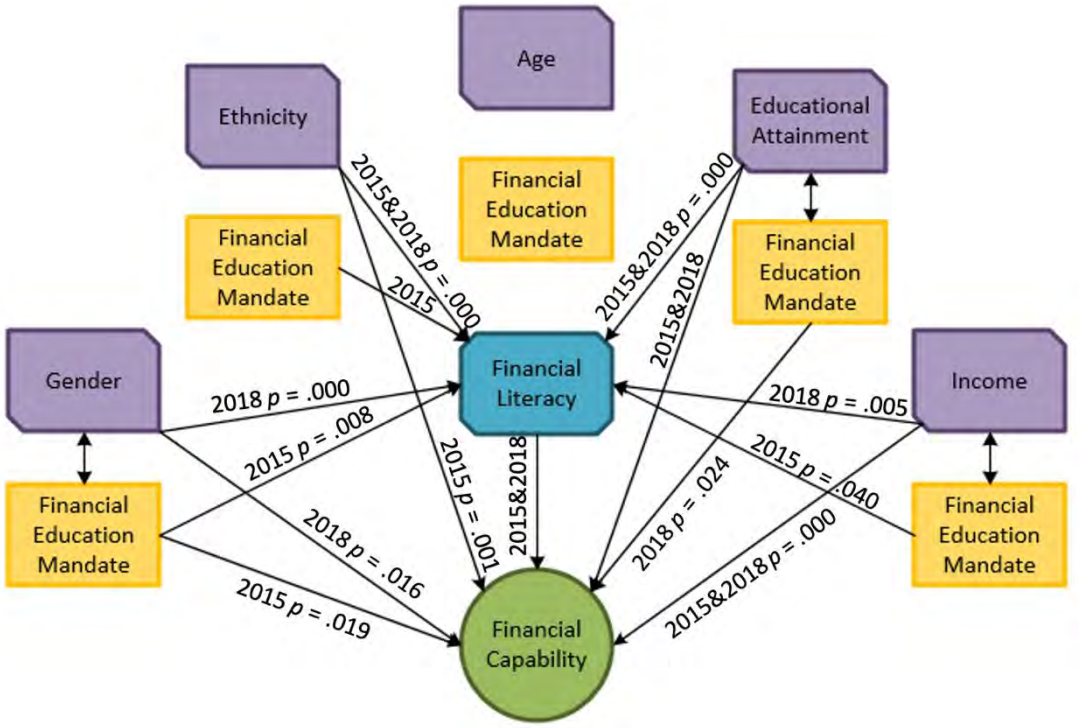
Table 2
Summary of significant findings about financial literacy and financial capability

Dependent Factor	*Year*	*Factor*	*Significance*	*Partial eta squared*	*Effect Size*	*Research Question*
Literacy	2015	Mod. – Gender by Ed. Man.	**.008	.005	Small	RQ 1 Lit.
		Ind. – Ethnicity	**.000	.010	Small	RQ 1 Lit.
		Ind. – Ed. Man. (within Ethnicity)	*.025	.004	Small	RQ 1 Lit.
		Ind. – Ed.Attainment	**.000	.021	Small	RQ 1 Lit.
		Mod. – Income by Ed. Man.	*.040	.016	Small	RQ 1 Lit.
	2018	Ind. – Gender	**.000	.010	Small	RQ 1 Lit.
		Ind. – Ethnicity	**.000	.016	Small	RQ 1 Lit.
		Ind. – Ed. Attainment	**.000	.050	Small	RQ 1 Lit.
		Ind. – Income	**.005	.007	Small	RQ 1 Lit.
Capability	2015	Mod. – Gender by Ed. Man.	*.019	.004	Small	RQ 2 Cap.
		Ind. – Ethnicity	**.001	.006	Small	RQ 2 Cap.
		Ind. – Ed. Attainment	**.000	.021	Small	RQ 2 Cap.
		Ind. – Income	**.000	.014	Small	RQ 2 Cap.
	2018	Ind. – Gender	*.016	.002	Small	RQ 2 Cap.
		Ind. – Ethnicity	**.000	.001	Small	RQ 2 Cap.
		Ind. – Ed. Attainment	**.000	.056	Small	RQ 2 Cap.
		Mod. – Ed. Attainment by Ed. Man.	*.024	.017	Small	RQ 2 Cap.
		Ind. – Income	**.000	.054	Small	RQ 2 Cap.
Capability	2015	Ind. – Literacy	**.000	.043	Small	RQ 4 Lit. & Cap.
Capability	2018	Ind. – Literacy	**.000	.071	Small	RQ 4 Lit. & Cap.

Note. *$p < .05$; **$p < .01$; Mod. = Moderator, Ind. = Independent, Man. = Mandate, Ed. = Education, Lit. = Literacy, Cap. = Capability.

The results are summarized visually in Figure 1.

Figure 1
Visual map of relationships among variables



5. Results

5.1. Results in Relation to Previous Studies

According to the results, significant differences in young adults' financial literacy and financial capability are influenced by factors beyond state mandates for financial education, some of which were explored in this study.

5.1.1. Gender

It is clear that in general, males tended to perform better on both financial literacy and financial capability with low levels of financial education mandates. Females only close this gap with higher levels of financial education mandates, which suggests that males possibly receive more financial education outside of the school system and that females require the school's financial education to catch up. This may be due, in part, to differences in parental socialization of finances. Previous studies have shown that parents emphasize financial abilities more strongly in male children than in female children (Chen & Volpe, 2002; Robb, 2011). For example, after controlling for variables in education and other student characteristics, researchers determined that parents have an influence on financial literacy, with a preference for ensuring male children have stronger financial capability (Chambers et al., 2019). Sinha et al. (2018) analyzed data from a national survey to identify characteristics of young adults that correlate to their financial behaviors. While researching relationships among demographics, one study found that young adults who identified as females were less likely to have sound financial footing (Sinha et al., 2018). Due to these noted differences in parental socialization, males may perform better at the lower levels of financial education mandates, while females may catch up when exposed to more rigorous education that can make up for their lower levels of parental socialization.

Though the data showed that there was a statistically significant difference in males' and females' financial literacy under two of the more rigorous types of mandates, the other mandate levels did not present significant differences in financial literacy scores. These results suggest that

the more rigorous financial education mandates resulted in more equal outcomes, as females may have caught up to males' parental socialization levels of financial literacy.

5.1.2. Ethnicity

Different ethnicities also had different rates of financial literacy and capability, with White and Asian groups outscoring Black and Hispanic groups. This suggests that financial education should address differences in ethnic perceptions and experiences to effectively close the gap. These results align with previous research; influential factors that were considered moderator variables included demographics such as ethnicity and socioeconomic status (Sinha et al., 2018).

In the current study, the data show that certain ethnicities, usually Whites and Asians, tend to outscore others on financial literacy, without any significant effect from the education mandate. These results suggest that policy should find ways to address differences in ethnic approaches and understanding of financial education by addressing ethnic differences in approaches to finances, especially for Black students, whose scores are generally lowest and even fell further behind in 2018.

5.1.3. Educational attainment

In the current study, higher educational attainment was associated with higher financial literacy and capability scores, which suggests that students may find tangible financial benefits as a result of post-secondary education. These results align with previous research, which revealed that those who had not completed high school showed only a 0.29 correlation to being financially stable while those who had at least some college education showed a 0.50 correlation to being financially stable (Sinha et al., 2018). Others, such as Chen and Volpe (2002), Robb and Sharpe (2009), and Robb (2011), found similar correlations. Mandell and Klein (2009) surveyed 79 young adults who had graduated from multiple schools within one school district. In their findings, they reported that there was no statistical difference in the financial behaviors of students who took a financial education course and those who did not; rather, they found that full-time college and graduate students had the most responsible financial behaviors, such as paying off credit cards and having savings (Mandell & Klein, 2009).

This indicates that education beyond K-12 can also impact young adults' financial literacy. Even obtaining some college or an associate's degree appears to have a beneficial impact, which suggests that even minor increases in the number of post-secondary students could increase the general rate of financial literacy. As such, it appears that higher education can improve young adults' financial literacy, which may influence policymakers to consider the requirements, cost, accessibility, and outcomes of state policies concerning higher education.

5.1.4. Income

Finally, in the current study, higher income generally correlated to higher financial literacy and capability, which suggests that policymakers consider ways to address earnings that span beyond K-12 education. These findings agree with previous literature. Deenanath et al. (2019) found that student behaviors are most strongly influenced by intentional factors, such as student-earned income, which showed a strong relationship to student financial behavior at B = 0.74. Additionally, Luksander et al. (2014) discovered that gender, age, and income had a relationship to levels of financial literacy. Other research suggests that content knowledge may be less crucial than soft skills of control, such as planning and being proactive; they also determined that people with low incomes are less likely to have control of their circumstances and, thus, may not internalize the soft skills as readily (Fernandes et al., 2014).

Though the current study results showed that there was a statistically significant difference in financial literacy scores between two income groups in relationship to two education mandates, the remaining six income groups and four education mandates do not appear to have an interaction effect. However, respondents with higher incomes generally had higher financial literacy scores than those with lower incomes. This aligns with previous research, which indicated

that those with higher incomes are better able to internalize soft skills, like control and decision-making, than those with lower incomes. Therefore, policymakers should consider policies that not only support lower-income students, but also help address income levels and financial literacy for adults.

6. Limitations

One of the limitations of this study was that it did not consider the variations in implementation of financial mandates across individual school districts or schools. Investigating variations of these facets of education at the level of curriculum delivery may shed some more light upon why, as a whole, there was not a significant difference in young adults' financial literacy and financial capability when compared to various state mandates for financial education.

Another limitation of this study was that it did not follow any subgroup longitudinally. It would be worth investigating whether the same cohort improved financial literacy and capability as it aged. Such results could indicate whether financial literacy and capability develop through practice and, if so, how to integrate more practice into financial education efforts.

A limitation of the data was in the ability to determine whether respondents were fully truthful in their responses. If a significant number of respondents were less than truthful, the results could be skewed. Additionally, other questions, rather than the ones used by the FINRA study, could yield varying results.

Finally, anyone reading this study are cautioned to not generalize these results to populations or years beyond those for which this study was conducted. Other groups, other years, and other educational mandates may yield different results.

7. Recommendations for Policy, Practice, and Further Study

The results of this study show that, more than educational mandates, students' improvement of financial capability is related to demographic factors. Educators must develop methods to address these differences in ways that allow learners to gain the most benefit from financial literacy education. Policymakers and practitioners could develop mandates and curricula that help reduce barriers to improve students understanding of financial literacy and financial capability.

Because the results found that financial education can have a positive causal-comparative relationship based on demographic variables, further research is needed to determine which types of financial education can be effective in improving students' human capital as it relates to financial literacy and financial capability. National researchers, including private entities, may consider reproducing this study with other years' sets of data from FINRA and CEE to create a longitudinal view of the results, which would help establish a stronger pattern. Additionally, performing this study across other age groups could provide more insight, as could tracking one age group across multiple years.

Understanding whether there are any commonalities among states that mandate each level of education may also prove illuminating. There may be patterns according to political leanings, region, state economics, or other factors, which could help describe the status and importance of financial education of these states. State and national groups alike could benefit from this information.

States and school districts may wish to conduct studies that investigate how financial education is delivered, which could provide key insights that this broad-based study could not. Understanding how districts and schools implement financial education may shed more light upon the reasons that, from a broad view, there was not a significant difference in young adults' results across the different types of financial education mandates.

Additionally, school districts and teachers should analyze which methods of instruction and which elements of curricula are most effective in providing memorable, useful financial education. Such data would inform methods going forward for all states.

Understanding respondents' locus of control may also shed light upon the impacts of financial education. Those with an external locus of control may respond differently to education efforts than those with an internal locus and, if such differences exist, they could inform other aspects of policy and implementation. Further, there may be connections between respondents' locus of control and other demographic factors. These details could be studied at the district, state, and national levels.

Holistically, further research is needed into the effects of demographic factors on young adults' financial literacy and capability. The results show that there is a significant main effect for most of the demographic factors and suggest that certain demographics tend to have better financial literacy and financial capability than others. Understanding what causes these differences beyond the classroom could be invaluable for future policy decisions.

8. Conclusion

This study aimed to determine whether formal financial education programs can impact the financial literacy and financial capability of young adults and is an important topic for policymakers because it can inform whether and how financial education is implemented in K-12 education. From the current study results, it is clear that financial literacy and capability are not strong across any group, so creating and delivering better financial education could help young adults. Additionally, implementing such education effectively appears to depend upon a host of factors. Many factors are external to the school environment, but which can nevertheless inform decision-making at the state, district, and school level as policymakers and practitioners develop and deliver curricula that address these factors.

Policymakers and educational practitioners should develop mandates and curriculums that cut across the barriers of gender, ethnicity, educational attainment, and income to effectively improve all students' understanding of financial literacy and financial capability. By improving these rates, they could develop stronger human capital and improve individuals' and, by natural extension, hopefully, the nation's economic status.

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