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The state of financial literacy in Tennessee: do students need higher quality financial education?

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The State of Financial Literacy in Tennessee: Do Students Need Higher Quality Financial Education?

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Abstract

Financial literacy is the way that individuals understand, manage, and plan their personal finances, which is essential to making healthy financial decisions. In the United States, there is an overall lack of financial literacy. Some states, such as Tennessee, have tried to increase financial literacy by implementing a required personal finance course at the high school level. The purpose of this study is to understand the effectiveness of personal finance education in Tennessee high schools by measuring the financial literacy of college students who may or may not have been impacted by the requirement. When students were separated into Group A, who were impacted by the personal finance course requirement, and Group B, who were not impacted by the personal finance course requirement, there was not a meaningful difference in the financial literacy of the two groups. Furthermore, both groups report that their parents or guardians are the most likely source of their current financial education. The results from this study indicate the need for a stronger financial education program in Tennessee high schools.

Introduction

Managing personal finances is an essential part of life that involves a combination of skills, judgement, and resources. Every day, individuals and families must make financial decisions ranging from spending money at the grocery store to planning for retirement. While financial decisions are a necessary part of life, people are not always equipped with the resources and knowledge necessary to make these decisions due to the widespread issue of financial illiteracy in the United States. Financial literacy is a critical component of making financial decisions; however, it is a skill that many people lack (Lin et al., 2016). While the ability to make financial decisions is increasingly important in our society, personal finance education is not often a priority in public schools (CEE, 2018). While this study mainly examines personal finance education in Tennessee high schools, we must consider financial education on a national level to understand the context in which Tennessee financial education is based. Accordingly, one goal of this paper is to thoroughly understand financial education and its impact on financial literacy through a review of relevant literature. Another goal of this paper is to examine the impact of personal finance education in high schools and how it affects financial attitudes and behaviors. Through a survey given to students at the University of Tennessee at Chattanooga, this study uses a quantitative approach to determine whether students who have recently graduated from high school are appropriately prepared with the knowledge, resources, and skills to make financial decisions post-graduation. This paper attempts to contribute to our understanding of the effectiveness and impact of personal finance education in Tennessee high schools. Based on survey results, this paper will also provide recommendations for the Tennessee financial education standards.

Overview of Financial Literacy in the United States

Financial Literacy and Financial Education

This paper uses the terms "financial literacy" and "financial education" often; therefore, it is important to define how they are used for the purposes of this study. Financial literacy refers to the way in which individuals understand, manage, and plan their personal finances. Financial literacy has three core components: financial knowledge and understanding, financial skills and behavior, and financial attitudes and confidence (Amagir, Groot, Maassen van Den Brink, & Wilschut, 2017). These components impact the way in which individuals make financial decisions. Financial literacy is important as individuals have to make financial decisions every day of their lives. Financial education is the method in which students are taught financial concepts to increase financial literacy. Young people can learn about financial concepts from a variety of sources such as parents or guardians, books, friends, online resources, or financial counselors; however, more schools have started to introduce financial education programs within the curriculum.

Financial literacy is important because the use of financial instruments has become more complicated due to the "sophistication and expansion" of financial products and services (OECD, 2014). Young adults, people ranging from ages 18-34, have to make a greater number of financial decisions earlier in life. To make matters more complicated, studies show that young adults are having to make these decisions while earning the lowest incomes in their careers (Friedline & West, 2016). Some of these decisions include choosing whether or not to pursue post-secondary education, moving away from home, paying off student loans, getting married, starting a family, and saving for retirement. In the reviewed literature, financial education is often highlighted as a primary determinant of financial literacy. Individuals with low levels of financial literacy are less likely to wisely manage debt, invest, effectively manage wealth, make plans for retirement, and are more likely to use alternative financial services and accumulate higher levels of debt (A. Lusardi, Mitchell, & Curto, 2010; Annamaria Lusardi & Mitchell, 2014; Meier & Sprenger, 2010; Van Rooij, Lusardi, & Alessie, 2012). These types of decisions require a level of financial knowledge that young adults often do not have, which is why young adults often display lower levels of financial literacy (A. Lusardi et al., 2010).

The National Financial Capability Study

The Financial Industry Regulatory Authority (FINRA) is a not-for-profit corporation authorized by Congress to protect investors by ensuring that the United States securities industry operates justly. Every few years, FINRA, along with the U.S. Department of Treasury, conducts the National Financial Capability Study (NFCS). FINRA published the first NFCS in 2009 and another in 2012. The most recent study of 27,564 American adults was conducted in 2015 and published in 2016. The study, which is distributed on a state-by-state basis, measures Americans' financial capability over multiple years and looks at four key components: making ends meet, planning ahead, managing financial products, and financial knowledge and decision making. This survey gives a comprehensive view of the current condition of both financial capability and financial literacy in the United States. The summarized results below provide evidence that many individuals in the United States lack the capability to manage their finances.

1. ***Making Ends Meet***

According to FINRA, being able to balance monthly income and expenses (i.e. making ends meet) is a core component of measuring financial capability. Results from the NFCS suggest that the economy plays a huge role in Americans' ability to make ends meet. Since the Great Recession of 2007-2009, unemployment rates have steadily dropped (Bureau of Labor

Statistics, 2019), which has made it easier for Americans to cover their monthly expenses. While there has been an increase in Americans' ability to make ends meet, there has not been a significant increase in the Americans' tendency to save money since the first NFCS published in 2009 (see table 1).

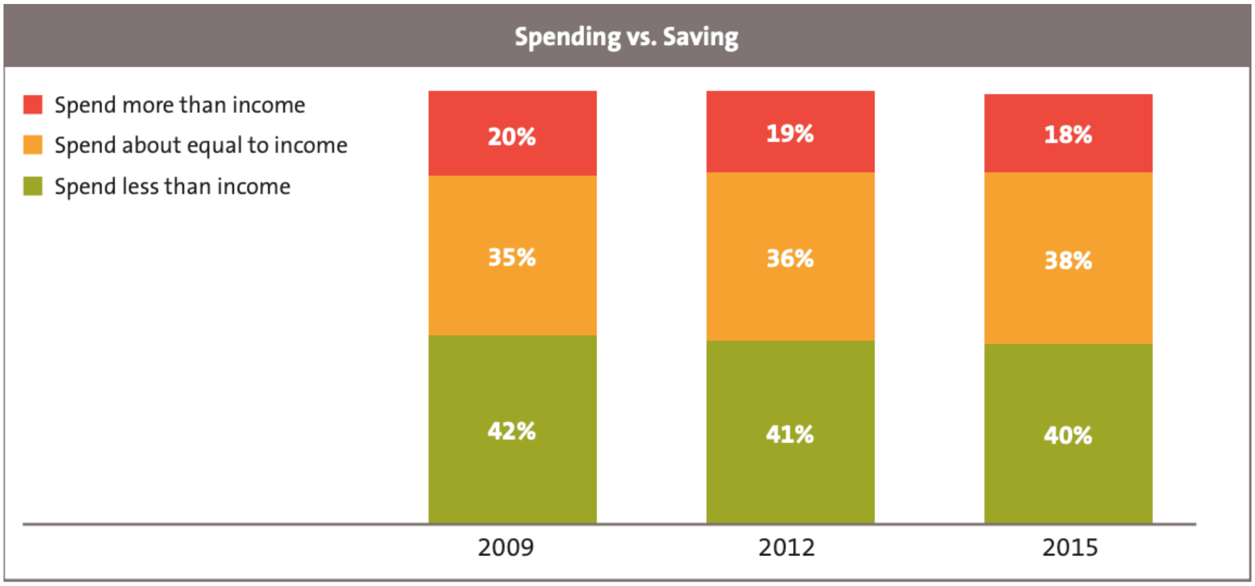

Table 1. NFCS 2015

FINRA also found that the percentage of Americans reporting that they have health insurance has increased from 78% to 87% since the NFCS in 2012. While more people have health insurance, 21% of Americans reported having overdue and unpaid medical bills. The results from the NFCS show that younger respondents are more likely to have unpaid medical expenses. Furthermore, 28% of respondents said that they avoided medical services such as visiting a doctor, following through on doctors' recommendations, and filling prescriptions due to cost-related apprehensions (Lin et al., 2016).

2. *Planning Ahead*

Because many Americans have anticipated life events that require proactive financial planning, the next component of the NFCS is Americans' propensity to plan ahead. It is also important to plan for unexpected financial emergencies in addition to expected expenses. Being able to plan for both anticipated and unanticipated financial needs contributes to financial stability of individuals and families, which also leads to an increase in overall economic stability. In 2015, 54% of respondents indicated that they did not have an emergency savings fund. While this percentage has decreased from the 65% reported in 2009, it should be highlighted that over half of respondents did not indicate that they had money set aside for unexpected financial events. Respondents who were older and had higher levels of income were more likely to have an emergency fund (see table 2).

		Age			Income			Education		
	Total	18-34	35-54	55+	<$25K	$25-75K	$75K+	HS or less	Some college	College or more
Have set aside three months' worth of emergency funds	46%	40%	41%	56%	24%	44%	67%	36%	43%	62%

Table 2. NFCS 2015

As far as planning for expected life events, 44% of respondents indicated that they do not use a household budget to decide how to allocate income to spending, saving, or paying bills. Furthermore, only 39% of respondents said that they had tried to figure out retirement savings needs, which is only a 2% increase since the 2009 and 2012 studies. While only 39% have tried to figure out retirement savings needs, 56% of respondents indicated that they worry about running out of money during retirement (Lin et al., 2016).

3. *Managing Financial Products*

The next portion of the NFCS looks at managing financial products. Understanding and managing financial instruments such as saving accounts, investing tools, payment tools, and credit products is essential to managing personal finances. Some of the most noted financial products used are banks, credit cards, student loans, home mortgages, and non-bank borrowing methods such as auto title loans, payday loans, pawn shops, or rent-to-own stores.

One of the most commonly used financial products is the credit card. In 2015, 77% of Americans had at least one credit card. The NFCS found that of the respondents who use credit cards, 39% reported that they engage in behavior that make using credit cards more expensive, such as only paying the minimum balance, incurring late fees, incurring over the limit fees, and using the card for cash advances. Of these respondents, younger individuals (ages 18-34) were more likely to engage in expensive credit card practices.

Another noteworthy financial tool is the use of student loans. As of 2018, student loans have become the second highest type of consumer debt (Friedman, 2018). On the NFCS, 26% of the respondents reported that they had student loans. Predictably, younger respondents reported having student loans. The results from the NFCS suggest that students do not understand the impact of student loans before taking out the loan. Of the respondents who had student loans, 54% indicated that they did not try to estimate what their monthly payments would be upon taking out the loan and 53% of respondents said that they would make different choices about financing their education if they could go back and change them (see table 3).

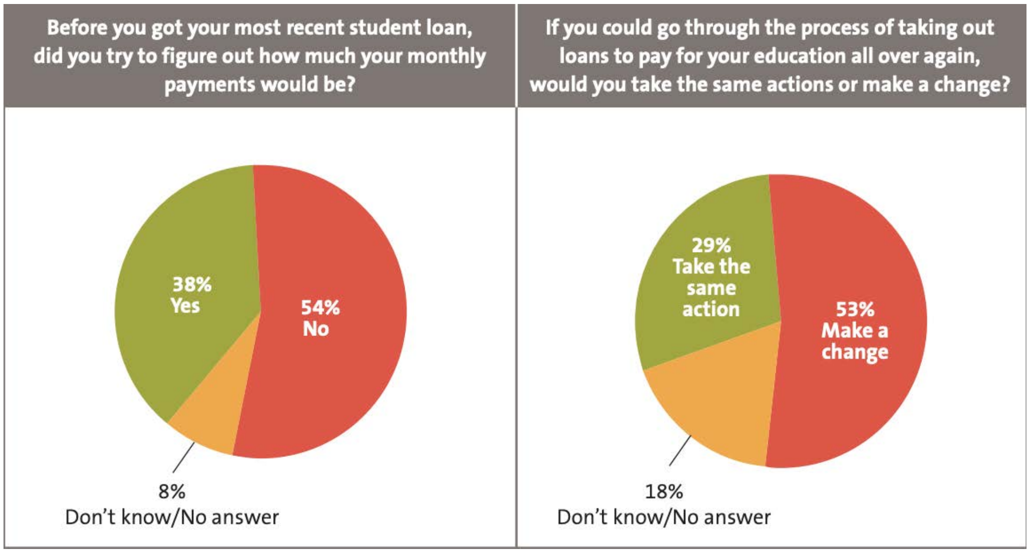

Table 3. NFCS 2015

4. Financial Knowledge and Decision Making

Finally, the NFCS shows that individuals need to have the financial knowledge and skills (i.e. financial literacy) to be able to make wise financial decisions. Because of that, financial literacy and financial capability go hand-in-hand. Results from the NFCS show that there is a gap between self-reported financial knowledge and actual behavior. To test financial knowledge, the respondents were asked five questions about concepts of economics and finance that individuals may encounter when making financial decisions (see Appendices F and G). These questions included an interest rate question, an inflation question, a bond price question, a mortgage question, and a risk question. The percentage of respondents who answered at least four or more questions correctly on the five-question test has decreased from 42% in 2009 down to 37% in 2015 (see table 4). Younger respondents (ages 18-34) performed worse than other age groups on these questions—scoring on average 2.6 of 5 questions correct.

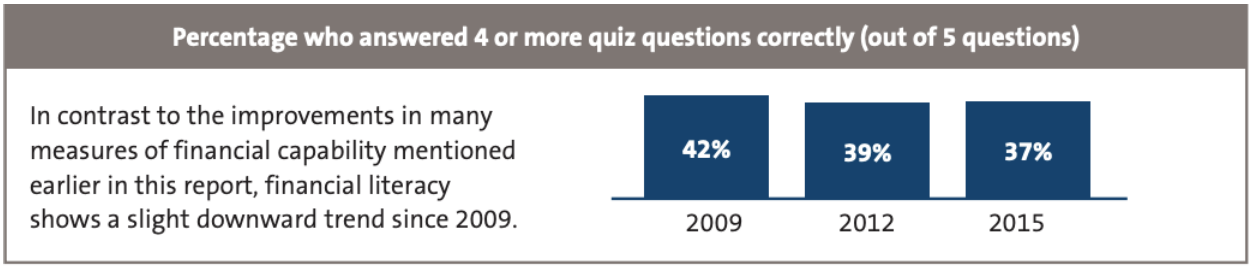

Table 4. NFCS 2015

The results from this survey indicate that Americans have low levels of financial literacy. In a separate question, respondents were asked to assess their financial knowledge. While respondents did not perform well on the financial questions, over three-quarters of the respondents rated themselves as having high levels of financial literacy, which implies that there is a gap between self-perception and financial behavior.

Financial Education in the United States

The results from the NFCS show that there is room for improvement in financial literacy. Because financial literacy is a key component of maintaining financial health, financial education programs are becoming more popular. While the role of financial education as a component of public education in the United States is controversial, states are beginning to mandate that personal finance classes are a requirement in the K-12 education curriculum (CEE, 2018).

Colleges, workplaces, not-for-profits, and governmental agencies are also working to provide financial education to Americans. In 2003, the Financial Literacy and Education Commission (FLEC) was established under the Fair and Accurate Credit Transactions (FACT) Act of 2003. The FLEC is chaired by the Secretary of the Treasury and the vice chair is the Director of the Bureau of Consumer Financial Protection. The purpose of this organization is to enhance national financial literacy, financial capability, and individual financial well-being. The FLEC's vision is of sustained financial well-being for all individuals and families in the U.S

(FLEC, 2016). In 2011, the FLEC developed a national strategy to increase consumer financial literacy called *Promoting Financial Success in the United States: National Strategy for Financial Literacy*. The goals of this strategy were to:

1. Increase awareness of and access to effective financial education.
2. Determine and integrate core financial competencies.
3. Improve financial education infrastructure.
4. Identify, enhance, and share effective practices.

In 2016, FLEC published an update to the strategy to summarize the efforts and successes related to the progress of financial education since 2011. The update also features recommendations for the future of financial education in order to increase financial capability and well-being in the United States (FLEC, 2016). While FLEC noted many approaches to helping people gain the knowledge and skills to make wise financial decisions, they emphasized that financial education should not be a “one-time intervention”. Financial education should start during childhood and continue throughout adulthood so that individuals have comprehensive understanding of financial matters (Schmeiser, 2015).

Recently, more research has been conducted on the impact of financial education on young adults, which has partly influenced the inclusion of mandatory personal finance classes in some states. In a study by the Federal Reserve Board, young adults from Georgia, Texas, and Idaho were examined after completing a mandatory personal finance course in high school. The study found that the students who had completed the personal finance course had higher levels of credit scores and lower delinquency rates after high school than students in states without a mandatory personal finance course (Brown, Collins, Schmeiser, & Urban, 2014). It is significant, however, that approximately half of the sample in the study was affected by The Credit Card

Accountability Responsibility and Disclosure (CARD) Act of 2009 because the law made it more difficult for younger individuals to obtain credit cards. It is possible that this law would shift the sample towards higher credit and lower delinquency levels.

Another study, by Tennyson and Nguyen, examined how personal finance education impacts student performance on a financial literacy test. They used the financial literacy test developed by the Jump$tart Coalition, a non-profit organization that seeks to advance financial literacy in young adults. They found that having a state-mandated personal finance course was positively and significantly related to higher scores on the financial literacy test (Tennyson & Nguyen, 2001). Another study specifically looked at senior students in a business college in the northwestern United States. In this study, the survey distributed to students asked the same five financial literacy questions from the NFCS developed by FINRA. The results of the survey distributed to these business students revealed that financial education is positively related to financial literacy (Chung & Park, 2014).

Even though studies have indicated that financial literacy is positively impacted by financial education, only a minority of states have a mandated personal finance course. While there is a national strategy for financial literacy, no financial education standards have been nationally implemented. While organizations such as the Council for Economic Education (CEE) and the Jump$tart Coalition have developed national standards, financial education standards are implemented on a state-by-state basis. In the United States, each state has different financial education requirements. Some states require students to take a personal finance course in order to graduate. Other states do not mandate a personal finance course for students. Every two years, the CEE, a nonprofit organization that advocates for economic and finance education for K-12 students, administers a survey that looks at economics and personal finance education in schools in the United States. They collect data from all 50 states and the District of Columbia. According to the 2018 *Survey of the States*, only 17 states require a personal finance course as a part of their required curriculum. Furthermore, only seven of these states require a standardized test to be taken at the end of the course, which could indicate that there is not much emphasis on financial education as much as general education concepts (i.e. math, history, science, etc.). With personal finance courses not being required in the majority of schools in America, high school students are not appropriately prepared to make financial decisions post-graduation. The CEE observed in their most recent *Survey of the States* that there have been no states since the 2016 survey that have added a personal finance requirement to their K-12 standards. By increasing financial education at the high school level, schools can better equip their students to make sound financial decisions after graduation. Increasing the overall financial literacy of our population could positively impact the nation’s economic health (Annamaria Lusardi & Mitchell, 2014).

Financial Education in Tennessee

The Tennessee Financial Literacy Commission (TFLC) was established by the Financial Literacy Program Act of 2010 by TN Code § 49-6-1704. The mission of this organization is to improve financial literacy by providing educational resources to Tennessee schools and families (Tennessee Department of the Treasury). Since its creation, the TFLC has trained educators in the *Financial Fitness for Life* curriculum, worked with school districts to implement financial education, and created a Financial Empowerment Resource Library for adults. After the 2010 Act was signed, Tennessee became one of the states that requires a personal finance course to be completed in order to graduate from high school. This course requirement began with students graduating in 2013 (Canan, 2011). The purpose of the personal finance course is to prepare and help students to understand how their individual decisions can impact occupational goals, earning potential, and long-term financial well-being (Tennessee Department of Education, 2016). The standards for this course are made publicly available on the Tennessee Department of Education's website. Over the course of 9 weeks, or half a semester, students learn:

- Financial Responsibility and Personal Decision Making
- Education, Careers, and Income
- Planning and Money Management
- Credit and Debt
- Risk Management
- Saving and Investing

In order to teach this course, teachers must undergo a two-day training workshop provided by one of the three approved organizations: Tennessee Jump$tart, the Federal Reserve, or The University of Tennessee Extension. Each of the programs is designed to prepare teachers to successfully teach the course. In the next section of this paper, we examine the impact of the personal finance course on students who have graduated from Tennessee high schools.

Financial Literacy Survey

Purpose of Study

The overall objective of this study is to examine and evaluate the financial literacy of Tennessee college students. It is important to understand the financial literacy of college students in Tennessee, specifically, because Tennessee requires the completion of a personal finance course for high school graduation. In looking at the financial literacy of college students, we will be able to better understand the impact that financial education in Tennessee is having on high school students. It is also important to understand the financial literacy of college students in relation to certain issues (i.e. budgeting, saving, credit, investing, etc.) in order to evaluate which issues are of higher significance. This study is unique in that there have been no studies on the financial literacy of Tennessee college students particularly after the enactment of the law.

Furthermore, the information from the survey should be able to provide insight into how the current state of financial education in Tennessee can be improved.

Method

Participants and Design

The participants in this study were 492 students from the University of Tennessee at Chattanooga (UTC). These students consisted of 248 males (50.41%) and 242 females (49.19%). The remaining two participants responded as “Other” or “Prefer not to answer”. Participation in this survey was voluntary and students from the Rollins College of Business (RCOB) and the Honors College were recruited. Of the participants, 72.36% were business majors and 27.64% were non-business majors. Several professors from the RCOB agreed to give extra credit to students to complete the survey.[1] Extra credit was only awarded if students completed the entire survey. Out of 492 responses, 393 (79.88%) of them were from students who received extra credit for their participation. A majority of our responses came from sophomores, juniors, and seniors (see Figure 1). There were relatively few responses that came from freshmen and graduate students, which is likely due to the lack of freshmen and graduate students in the classes where extra credit was offered.

Class Standing	*Percent*	*Count*
Freshman	2.24%	11
Sophomore	38.82%	191
Junior	35.57%	175
Senior	22.97%	113
Graduate student	0.41%	2
Total Responses	100.00%	492

Figure 1. Class Standings

[1] Students who opted for extra credit were required to provide their name, student ID, and course number on a separate survey to maintain anonymity.

Before completing the survey, participants were required to read an informed consent letter (see Appendix A) and were assured that their responses would be kept confidential. Participants had to consent to participate in the study prior to answering the survey questions and responses were not recorded for participants who did not consent to the study. Furthermore, students were required to be over the age of 18 to complete this survey. This study was approved by the UTC's Institutional Review Board (see Appendix C) prior to administering the survey.

Materials and Procedure

Students were recruited from the RCOB and the UTC Honors College. Emails containing a link to the survey were sent out to RCOB professors and the professors encouraged their students to complete the survey. An additional email was sent through UTC's Blackboard to distribute the survey to the Honors College organization. The survey was created using Qualtrics software and participants accessed the survey through an anonymous link. The survey can be found in Appendix B. At the beginning of the survey, participants were asked a series of demographic questions such as gender, age, class standing, major, the year they graduated from high school, and the state they graduated from high school. Then, participants were asked a series of background questions that pertained to their financial background such as financial education courses completed, employment status, interest in increasing financial knowledge, and where they felt they received most of their financial education. In this section, participants were also asked to indicate financial topics that they would be interested in learning more about.

After the demographic and financial background questions, participants were asked to rate 21 statements regarding their financial attitudes and financial behaviors. The first set of statements pertained to financial attitudes. Students answered questions that were based on a seven-point Likert-type scale with a range from *strongly disagree* to *strongly agree*. We assigned numbers to this range, where “1” meant *strongly disagree* and “7” meant *strongly agree*. Students were then asked to rate certain statements based on this scale. The next section of the survey pertained to financial behaviors. In this section, students were asked to rate statements from *strongly disagree* to *strongly agree*. As before, we associated “1” with strongly disagree and “7” with strongly agree.

In some statements, *strongly agree* was associated with higher financial literacy and in others it was associated with lower financial literacy. For example, a response of *strongly agree* on the statement “My finances are a significant worry for me” or “I am afraid of credit and credit cards” would indicate lower financial literacy whereas a response of *strongly agree* on the statement “I budget and track my spending habits” or “I feel in control of my financial situation” would indicate higher financial literacy. In the questions where *strongly agree* was associated with lower financial literacy, the 7-point scale was inverted to more accurately represent the average level of financial literacy indicated on the survey. In this case, where *strongly agree* was associated with lower financial literacy “1” was associated with *strongly agree* and “7” was associated with *strongly disagree*. In this way, we were able to look at the students’ financial literacy on a scale from “1” to “7”, where “1” was always associated with lower financial literacy and “7” was always associated with higher financial literacy.

It is important to note that the scale was only inverted when looking at mean response in order to accurately represent the financial literacy of students. When evaluating the percentage of students who answered a specific question, the scale was not inverted because we were not looking to assess financial literacy. There were some instances where we totaled the *agree (*5-7 on a seven-point scale), *neither agree nor disagree* (4 on a seven-point scale), and *disagree* (1-3 on a seven-point scale) responses. In this case, we left the scale as normal because we were looking at the percentage of each response type and not assessing financial literacy level.

We omitted some of the statements when evaluating the financial literacy level of students because the statements were merely informational and not an indicator of financial literacy. The statements were still used for informational purposes. The following omitted statements are listed below:

- “I am satisfied with my level of personal finance training.”
- “I would like to increase my knowledge of personal finance.”
- “I receive financial help from my parents/guardians.”

Results

Our main focus is to understand and evaluate the financial literacy of college students from an independent standpoint; thus, we first performed univariate analysis to summarize the results from the survey. It is important to note that all responses were a result of self-perceived financial attitudes and financial behaviors, which resulted in a financial literacy score that is dependent on how the student perceives his or her financial literacy. In the analysis, financial literacy scores were assigned to the students’ responses to each statement. For example, if a student answered *strongly disagree* to the statement “I pay my bills on time,” the answer was associated with a low financial literacy score (1). If the student answered *strongly agree* to the same statement, then their answer was associated with a high financial literacy score (7).

Financial Attitudes

First, we analyzed the set of statements pertaining to financial attitudes (see Figure 2) to assess financial literacy. The statements were evaluated on a scale from one to seven and statements that did not provide a measure for financial literacy were omitted. The average response for this set of statements was a 4.76 out of 7. Some of the statements associated with lower financial literacy were “I understand how my tax refund or tax due is calculated” and “My finances are a significant worry for me.” Some of the statements associated with a higher level of financial literacy were “I understand how to apply for financial aid through the FAFSA” and “It is important to maintain adequate financial records.”

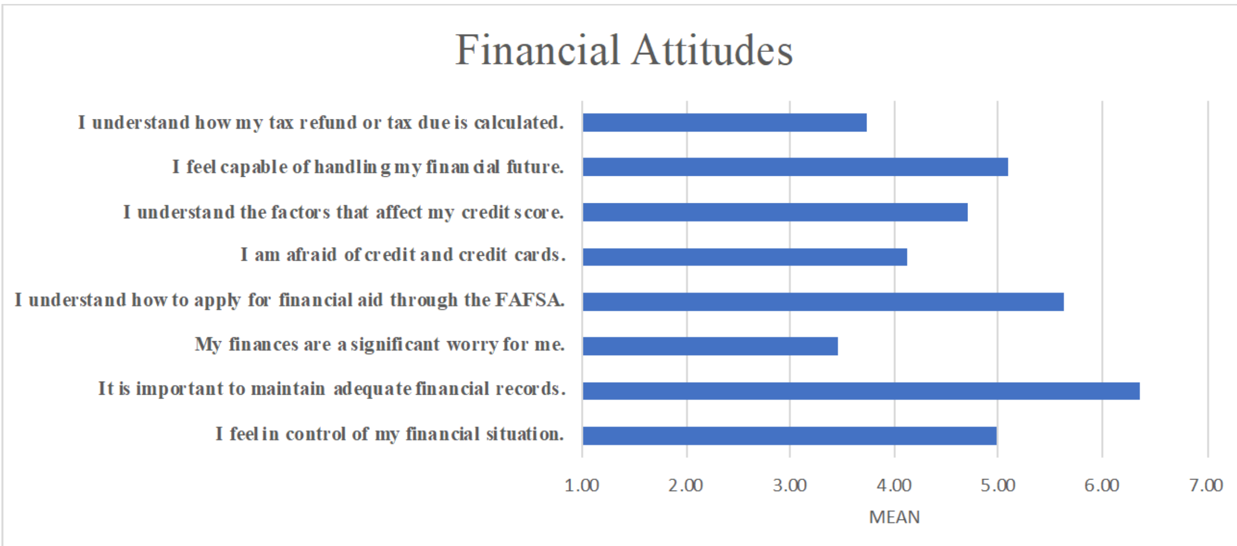

Figure 2. Financial attitudes of UTC college students

Many respondents indicated that they were interested in increasing their knowledge of personal finance (see Figure 3). Out of 492 responses, 96% of students agreed that they want to increase their financial knowledge. Furthermore, 31% of students indicated that they are dissatisfied with their current level of personal finance training and 57% of students expressed that their finances are a significant worry for them. Despite the overall interest in increasing financial awareness, dissatisfaction with personal finance training, and concerns about managing finances, 75% of students responded they feel in control of their financial situation. This response can be compared to the high rating of perceived financial literacy in the NFCS to show that individual perception is often different from reality (Lin, 2016).

Statement	Agree (5-7)	Neither agree nor disagree (4)	Disagree (1-3)
I am satisfied with my level of personal finance training.	58%	11%	31%
I would like to increase my knowledge of personal finance.	96%	3%	2%
I feel in control of my financial situation.	75%	11%	15%
It is important to maintain adequate financial records.	97%	2%	1%
My finances are a significant worry for me.	57%	14%	29%
I understand how to apply for financial aid through the FAFSA.	82%	5%	12%
I am afraid of credit and credit cards.	42%	13%	45%
I understand the factors that affect my credit score.	64%	5%	30%
I feel capable of handling my financial future.	75%	10%	15%
I understand how my tax refund or tax due is calculated.	39%	8%	52%

Figure 3. Responses to financial attitudes statements

Financial Behaviors

Next, we examine a set of statements pertaining to financial behaviors (see Figure 4). Again, the statements were evaluated on a scale from one to seven. Statements that were only informational and did not provide a measure for financial literacy were omitted. The average response for this set of statements was 4.92 out of 7. Some of the statements associated with low financial literacy were “I prepare a budget every month” and “I check my credit report at least once per year.” Some of the statements associated with higher financial literacy were “I pay my bills on time” and “Before I buy something, I carefully, consider whether I can afford it.”

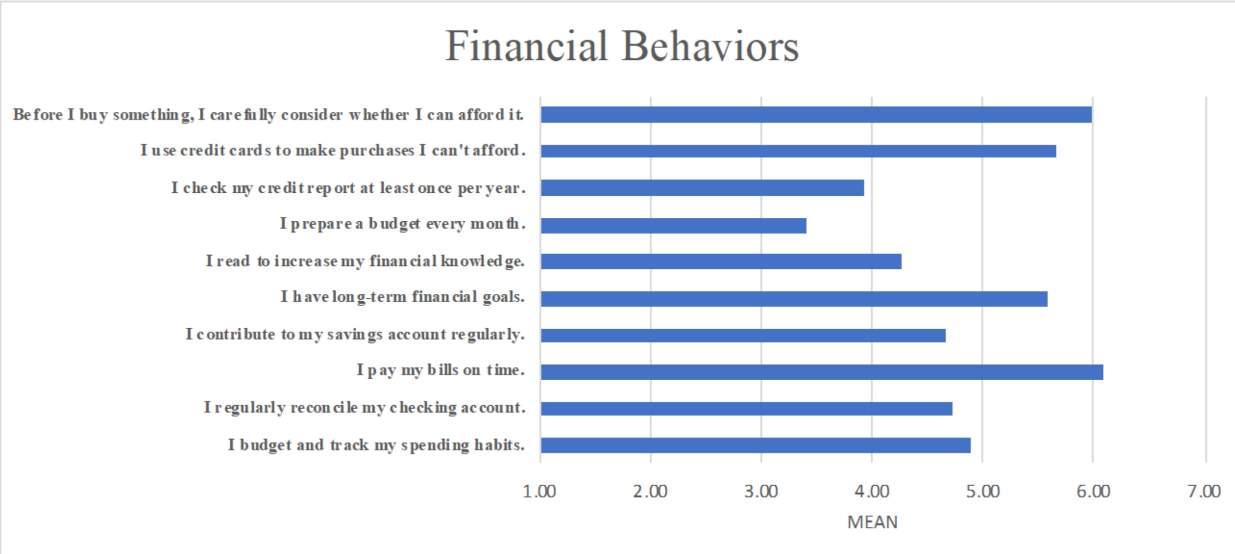

Figure 4. Financial behaviors of UTC college students

Results from the survey show that 59% of students do not prepare a budget each month and 60% of students do not check their credit report at least once per year (see Figure 5). Interestingly, 14% of students indicate that they use credit cards to make purchases they can't afford, but 92% of students report that they carefully consider if they can afford something before they buy it. Another noteworthy takeaway from the survey is that 79% of students report that they receive financial help from a parent or guardian.

Statement	Agree (5-7)	Neither agree nor disagree (4)	Disagree (1-3)
I budget and track my spending habits.	73%	7%	20%
I regularly reconcile my checking account.	62%	12%	26%
I receive financial help from my parents/guardians.	79%	4%	17%
I pay my bills on time.	87%	12%	0%
I contribute to my savings account regularly.	60%	11%	29%
I have long-term financial goals.	81%	8%	11%
I read to increase my financial knowledge.	52%	12%	37%

Statement	Agree (5-7)	Neither agree nor disagree (4)	Disagree (1-3)
I prepare a budget every month.	29%	12%	58%
I check my credit report at least once per year.	40%	15%	44%
I use credit cards to make purchases I can't afford.	14%	10%	77%
Before I buy something, I carefully consider whether I can afford it.	92%	4%	4%

Figure 5. Responses to financial behaviors statements

Tennessee Personal Finance Education

We established two groups of respondents in order to evaluate the effectiveness of the Tennessee personal finance course requirement for graduating high school. Because the mandate affected all Tennessee high school students from the graduating class of 2013 and forward, students who graduated from a Tennessee high school from years 2013-2018 were put into Group A. Any student who graduated from a Tennessee high school prior to 2013 or did not graduate from a Tennessee high school was put into Group B. There were 16 respondents who did not provide the year they graduated from high school. This group of students made up 3.25% of the overall sample. Because we could not separate the students into either of Group A or Group B, their responses were not considered when evaluating the Tennessee personal finance course requirement. Group A consists of 395 students and group B consists of 79 students.

Again, we evaluated the two sets of statements on a scale from one to seven, where "1" was an indicator of low financial literacy and "7" was an indicator of high financial literacy. As before, statements that were purely informational and did not provide a measure for financial literacy were omitted in this analysis. Instead of evaluating each set of statements separately, we looked at the responses as a whole to find the average response for each group (see Figure 6). Group B scored slightly higher (.07) in overall financial literacy than Group A with an average response of 4.88 out of 7.

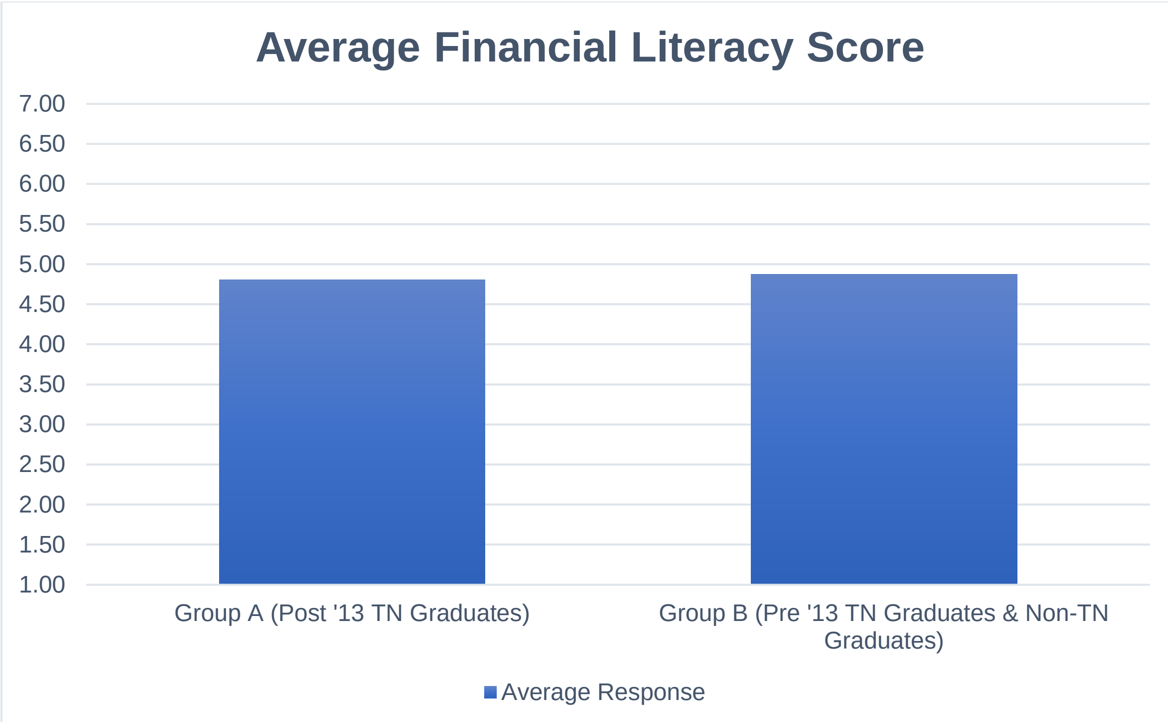

Figure 6. Average response comparison

When Group A was asked to rate their satisfaction with their level of personal finance training, 31% indicated that they were unsatisfied and 93% said that they would like to increase their knowledge of personal finance. In Group A, 55% of students reported that they felt they received the majority of their financial education from their parents or guardians. The second highest reported source of financial education was from college at 22%.

Group B was overall more satisfied with their level of personal finance training than Group A. Out of the students in Group B, only 26% indicated that they were unsatisfied. Similar to Group A, 93% expressed an interest in increasing their knowledge of personal finance and 46% of the students in Group B reported that they felt that they received most of their financial education from their parents or guardians. Neither of the groups rated high school highly as a major source of financial education. Only 11% of the students in Group A and 3% of the students in Group B reported that they received the majority of their financial education from high school.

Discussion

The results from this survey show that, overall, students rate themselves as having average financial literacy when it comes to both financial attitudes and financial behaviors. On the 7-point Likert-type scale used to determine financial literacy, the average ratings fell slightly above the middle of the range in both sets of statements. There were a few statements that were rated the lowest among the overall sample. One of the statements that received the lowest ratings was “I understand how my tax refund or tax due is calculated.” Over half of the sample reported that they either *somewhat disagreed*, *disagreed*, or *strongly disagreed* with the statement. This finding was interesting as the current Tennessee Personal Finance Standards include a tax education component where students are required to complete a 1040EZ or 1040A within the course (T. D. o. Education, 2016). Furthermore, 65% of students reported that they either have full-time or part-time employment, which suggests that they should have some experience with completing a tax return (see Appendix D).

Another noteworthy finding from the survey is that 58% of the students reported that they either *somewhat disagreed*, *disagreed*, or *strongly disagreed* to the statement “I prepare a budget every month,” which shows that budgeting is an area of weakness for over half of our respondents. Only 29% of the respondents indicated that they do use a budget to track their finances, which is not on par with the national average. The NFCS found that 56% of families use a household budget to track spending, saving, or paying bills (Lin et al., 2016). It is important for individuals and families to use a budget to track income and expenses.

The results from the survey also demonstrate a weakness in student understanding of credit. Many students (42%) indicated that they were afraid of credit and credit cards and there were some students (14%) who admitted to using credit cards to make purchases they could not afford. The knowledge and proper use of financial tools such as credit is an indicator of financial literacy (Bay, 2014).

In light of the survey results, the Tennessee personal finance course requirement seems to have little to no influence on students. When students were separated into Group A, who were impacted by the personal finance course requirement, and Group B, who were not impacted by the personal finance course requirement, there was not a meaningful difference in the financial literacy of the two groups. The results suggest that the students of Group B may have had more impactful personal finance education outside of the classroom, as they scored slightly higher in financial literacy. It is also possible that this slight difference is due to overconfidence or lack of financial understanding. The highest rated source of personal finance education for both groups was from a parent or a guardian, which suggests that students do not currently view high school as a valuable source of personal finance education. While some students may have had a positive experience with learning about finances from a parent or guardian, this may not be the case for all students because the financial literacy of each parent or guardian is different. Many students report that they are unsatisfied with their level of personal finance training and that their finances are a significant worry for them.

The majority of students (96%) in Group A indicate that they are interested in increasing their financial knowledge, which could suggest that if Tennessee made improvements to its current personal finance standards, students might be more receptive to financial training. We have identified three potential issues that could be hindering the quality of financial education in Tennessee. The first issue is that students are only required to take half a semester, or nine weeks, of personal finance education. By extending the length of the course, students may have more time to learn and understand the information provided to them. The second issue is that teachers only have to undergo a two-day training in order to be qualified to teach this course, and they only need to attend this training one time. The financial literacy of the average American is low, which could suggest teachers need more than a two-day training to be qualified to teach the course effectively (Lin et al., 2016). The third issue is that the financial education requirement in Tennessee is an unfunded mandate, meaning the state began requiring schools to teach this course without additional funding. Because of this, schools may not be providing the teacher with the curriculum and preparation to effectively teach the course. A primary component of effective financial education is a well-funded program (Urban, Schmeiser, Michael Collins, & Brown, 2018). The results from the survey show that there are specific subjects that students are interested in learning (see Appendix E). The highest rated topics were investing, managing money, saving money, budgeting, and taxes. Each of these topics is included in the current personal finance standards for high school students, but could be taught more effectively if the course was longer, taught by a well-informed instructor, and had more funding. By improving these three components of the personal finance course implementation, educators in Tennessee could set high school students up for financial success in adulthood.

Limitations

While this study provides valuable information about the current state of financial literacy and financial education in Tennessee, there are several limitations that could have impacted the survey results. One of these limitations is perception, which is a common issue with survey-based studies. The survey relied on students' self-perception of financial literacy. Often, there is an inconsistency between self-perception and reality, which could have influenced the way students answered questions (Asaad, 2015).

Another limitation is the unequal number of business students to non-business students. Because this study was associated with the accounting department within the Rollins College of Business (RCOB), it was easier to get business students to participate than non-business students. Business students are required to take a number of introductory level accounting and finance courses, which could mean that these students have higher financial literacy than students in other departments at UTC. Furthermore, many professors in the RCOB offered students extra credit to participate in the study, which could have impacted the quality of responses from students.

There was also an unequal number of students from each class standing. Only a small percentage of freshmen participated in the study, which was likely due to the reach of our advertising. Because freshmen are typically recent high school graduates with less experience with financial matters, they may have provided different answers to the survey questions.

Conclusion

By looking at the financial literacy of Tennessee college students, we conclude that the required personal finance course for Tennessee high school students has little, if any, impact. Students consistently rate their parents or guardians as the most likely source of their current financial education. Many students expressed their interest in increasing their financial knowledge, so parents should be aware that the Tennessee requirement is not a substitute for their guidance. Students rated investing as the topic they were most interested in learning more about. The results of the study show that students at UTC have somewhat average financial literacy, but are weak in the areas of taxes, credit, and budgeting. In order for Tennessee financial education to be impactful, educators should prioritize training teachers and appropriately funding the financial education program for high school students. By implementing a stronger financial education program, Tennessee students will have higher levels of financial literacy, meaning that they will be able to understand, manage, and plan their personal finances in a way that sets them up for financial success in adulthood.

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Appendices

Appendix A: Informed Consent Form

Informed Consent

Welcome to the research study!

You are being invited to participate in a research study about student readiness to make financial decisions. This study is being conducted by Jordan Barnes and Stephan Davenport, Ph.D. at the University of Tennessee at Chattanooga. If you have questions at any time about the survey or the procedures, you may contact Jordan Barnes (krh461@mocs.utc.edu) or Dr. Davenport (steve-davenport@utc.edu; 423-425-4179).

The questionnaire(s) will take about 10 minutes to complete.

This survey is anonymous. Do not indicate your name on the survey. The records of this study will be kept strictly confidential. The results of this study may be used in publications or presentations. If the results of this study are published or presented, individual names and other personally identifiable information will not be used. No one will be able to identify you or your answers, and no one will know whether or not you participated in the study. If you are receiving extra credit for participating in the survey, your personal information will not be linked to your responses. Your participation, but not your responses, will only be reported to your professor.

Your participation in this study is voluntary. By continuing with this survey, you are voluntarily agreeing to participate and you are acknowledging that you are **18 years of age or older**. You are free to stop answering questions at any time or to decline to answer any particular question you do not wish to answer for any reason. If you are younger than 18, do not proceed.

Research at the University of Tennessee at Chattanooga involving human participants is carried out under the oversight of the Institutional Review Board. Address questions or problems regarding these activities to Dr. Amy Doolittle, UTC IRB Chair, email: amy-doolittle@utc.edu; phone: (423) 425-5563.

- ○ I consent, begin the study
- ○ I do not consent, I do not wish to participate

Appendix B: Survey

Demographic Questions

What is your gender?

- Male
- Female
- Other
- Prefer not to answer

Age:

Class Standing:

- Freshman
- Sophomore
- Junior
- Senior
- Graduate Student

Major:

What year did you graduate from high school?

From which state did you graduate high school?

General Questions

Which of the following courses did you complete in high school?

- ☐ Personal Finance
- ☐ Economics
- ☐ Accounting
- ☐ None of these

Which of the following courses did you complete in college?

- ☐ Personal Finance
- ☐ Economics
- ☐ Accounting
- ☐ None of these

Are you currently employed?

- ◯ Part-time
- ◯ Full-time
- ◯ Not-employed

How interested are you in increasing your financial knowledge?

- ◯ Very uninterested
- ◯ Somewhat uninterested
- ◯ Not sure
- ◯ Somewhat interested
- ◯ Very interested

Why or why not?

What topics would you be interested in learning more about? (Check all that apply)

- [ ] Avoiding loans and paying for college
- [ ] Banking/Insurance
- [ ] Budgeting
- [ ] Credit/Credit cards
- [ ] Employment ideas
- [ ] Investing
- [ ] Managing debt
- [ ] Managing money
- [ ] Saving
- [ ] Student loans
- [ ] Taxes
- [ ] Other (please specify):

Where did you receive the ***majority*** of your financial education? (Select one)

- Parents/Guardians
- High School
- College
- Books
- Friends/Peers
- Online resources
- Professional financial planner or counselor
- Other (please specify):

Financial Attitudes

Please rate how you feel about the following statements:

	Strongly agree	Agree	Somewhat agree	Neither agree nor disagree	Somewhat disagree	Disagree	Strongly disagree
I am satisfied with my level of personal finance training.	O	O	O	O	O	O	O
I would like to increase my knowledge of personal finance.	O	O	O	O	O	O	O
I feel in control of my financial situation.	O	O	O	O	O	O	O
It is important to maintain adequate financial records.	O	O	O	O	O	O	O
My finances are a significant worry for me.	O	O	O	O	O	O	O
I understand how to apply for financial aid through the Free Application for Federal Student Aid (FAFSA).	O	O	O	O	O	O	O
I am afraid of credit and credit cards.	O	O	O	O	O	O	O
I understand the factors that affect my credit score.	O	O	O	O	O	O	O
I feel capable of handling my financial future.	O	O	O	O	O	O	O
I understand how my tax refund or tax due is calculated.	O	O	O	O	O	O	O

Financial Behaviors

Please rate how you feel about the following statements:

	Strongly agree	Agree	Somewhat agree	Neither agree nor disagree	Somewhat disagree	Disagree	Strongly disagree

	Strongly agree	Agree	Somewhat agree	Neither agree nor disagree	Somewhat disagree	Disagree	Strongly disagree
I budget and track my spending habits.	○	○	○	○	○	○	○
I regularly reconcile my checking account.	○	○	○	○	○	○	○
I receive financial help from my parents/guardians.	○	○	○	○	○	○	○
I pay my bills on time.	○	○	○	○	○	○	○
I contribute to my savings account regularly.	○	○	○	○	○	○	○
I have long-term financial goals.	○	○	○	○	○	○	○
I read to increase my financial knowledge.	○	○	○	○	○	○	○
I prepare a budget every month.	○	○	○	○	○	○	○
I check my credit report at least once per year.	○	○	○	○	○	○	○
I use credit cards to make purchases I can't afford.	○	○	○	○	○	○	○
Before I buy something, I carefully consider whether I can afford it.	○	○	○	○	○	○	○

Extra Credit Question

Would you like to enter your information to receive extra credit? Please only enter your information if your professor has agreed to give extra credit for your response.

○ Yes

○ No

Appendix C: IRB Approval Letter

THE UNIVERSITY OF TENNESSEE
CHATTANOOGA

Institutional Review Board
Dept 4915
615 McCallie Avenue
Chattanooga, TN 37403
Phone: (423) 425-5867
Fax: (423) 425-4052
instrb@utc.edu
http://www.utc.edu/irb

TO:	Jordan Barnes Dr. Stephan Davenport	**IRB # 18-156**
FROM:	Lindsay Pardue, Director of Research Integrity Dr. Amy Doolittle, IRB Committee Chair	
DATE:	11/30/2018	
SUBJECT:	IRB #18-156: The Examination of Personal Finance Education in Tennessee	

Thank you for submitting your application for exemption to The University of Tennessee at Chattanooga Institutional Review Board. Your proposal was evaluated in light of the federal regulations that govern the protection of human subjects.

Specifically, 45 CFR 46.101(b) identifies studies that are exempt from IRB oversight. The UTC IRB Chairperson or his/her designee has determined that your proposed project falls within the category described in the following subsection of this policy:

46.101(b)(2): Research involving the use of educational tests (cognitive, diagnostic, aptitude, achievement), survey procedures, interview procedures or observation of public behavior, unless: (i) information obtained is recorded in such a manner that human subjects can be identified, directly or through identifiers linked to the subjects; and (ii) any disclosure of the human subjects' responses outside the research could reasonably place the subjects at risk of criminal or civil liability or be damaging to the subjects' financial standing, employability, or reputation.

Even though your project is exempt from further IRB review, the research must be conducted according to the proposal submitted to the UTC IRB. If changes to the approved protocol occur, a revised protocol must be reviewed and approved by the IRB before implementation. For any proposed changes in your research protocol, please submit an Application for Changes, Annual Review, or Project Termination/Completion form to the UTC IRB. Please be aware that changes to the research protocol may prevent the research from qualifying for exempt review and require submission of a new IRB application or other materials to the UTC IRB.

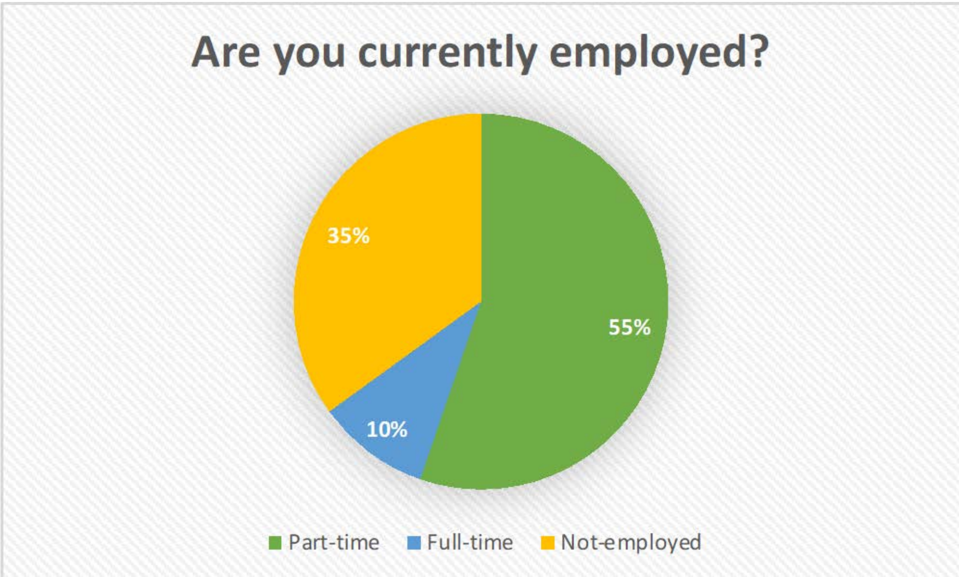
A goal of the IRB is to prevent negative occurrences during any research study. However, despite our best intent, unforeseen circumstances or events may arise during the research. If an unexpected situation or adverse event happens during your investigation, please notify the UTC IRB as soon as possible. Once notified, we will ask for a complete explanation of the event and your response. Other actions also may be required depending on the nature of the event.

Please refer to the protocol number denoted above in all communication or correspondence related to your application and this approval.

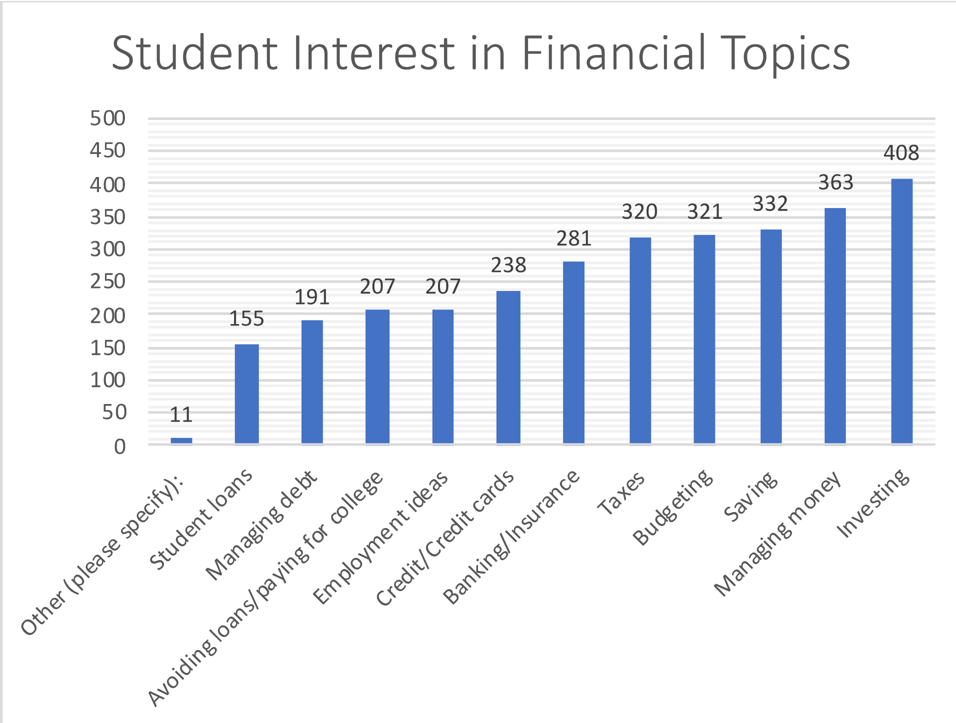
For additional information, please consult our web page http://www.utc.edu/irb or email instrb@utc.edu.

Best wishes for a successful research project.

Appendix D: Student Employment



Appendix E: Student Interest in Financial Topics



Appendix F: FINRA Financial Literacy Quiz

1. Suppose you have $100 in a savings account earning 2 percent interest a year. After five years, how much would you have?
   a. **More than $102**
   b. Exactly $102
   c. Less than $102
   d. Don't Know
2. Imagine that the interest rate on your savings account is 1 percent a year and inflation is 2 percent a year. After one year, would the money in the account buy more than it does today, exactly the same, or less than today?
   a. More
   b. Same
   c. **Less**
   d. Don't Know
3. If interest rates rise, what will typically happen to bond prices? Rise, fall, stay the same, or is there no relationship?

a. Rise
b. Fall
c. Stay the Same
d. Don't Know

4. True or false: A 15-year mortgage typically requires higher monthly payments than a 30-year mortgage but the total interest over the life of the loan will be less.
   a. True
   b. False
   c. Don't Know
5. True or false: Buying a single company's stock usually provides a safer return than a stock mutual fund.
   a. True
   b. False
   c. Don't Know

Appendix G: FINRA Financial Literacy Quiz Results

	Correct	Incorrect	Don't know
Interest rate question	75%	13%	12%
Inflation question	59%	20%	20%
Bond price question	28%	33%	38%
Mortgage question	75%	8%	16%
Risk question	46%	10%	44%

Figure 7. Financial Literacy Quiz Results, NFCS 2015

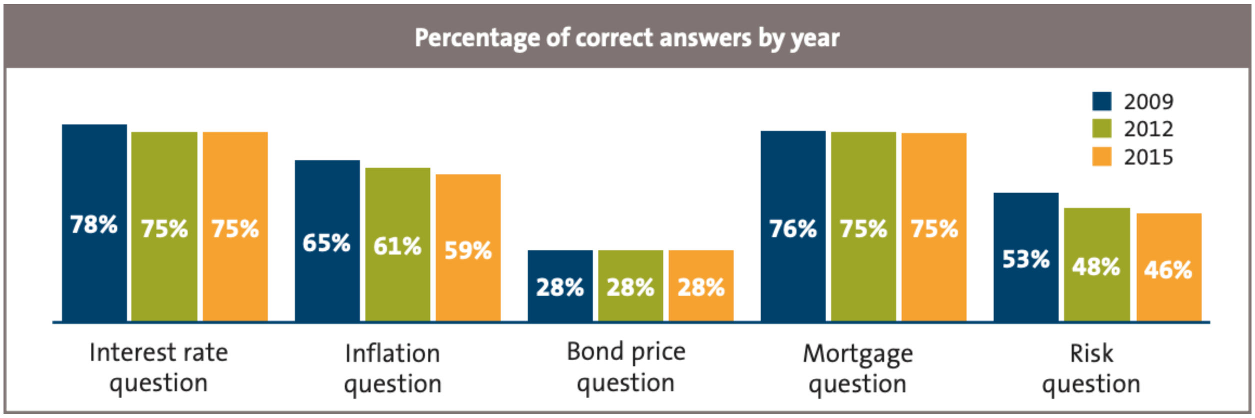


Figure 8. Financial Literacy Quiz Results by Year, NFCS 2015