FiCycle Academic Paper

The Combined Effects of Financial Education and Mathematical Confidence: Findings from the 2018 National Financial Capability Survey

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A significant ongoing project is to identify forms of education that can improve the financial behavior of people in the U.S. Two key components are often identified: courses in personal finance and improved mathematics education. Both have been shown to have positive effects; however, questions remain as to how they interact – are they competing solutions, or do they complement each other? In this paper, we examine data from the 2018 National Financial Capability Survey (NFCS) to explore this question. We find that both mathematical confidence and financial education predict improved financial behavior and, moreover, the effects are largely independent rather than cancelling each other out – so that pursuing both leads to a greater overall effect than pursuing either one alone.

Background

There is ongoing concern about the financial status and financial behavior of adults in the US. A worrying proportion have problems managing their financial situation or partake in problematic financial actions.

A recent government report found that 40% of Americans don't have $400 readily available to cover emergency expenses (Federal Reserve 2019). Further, one third of Americans in their 50's have failed to develop a retirement plan, leaving them with a precarious financial future (Lusardi, 2011). Many households fail to diversify their investment portfolios or fail to refinance their mortgages at opportune moments, creating completely avoidable financial-risk and interest-expense respectively (Campbell 2006). More generally, research by Ambuehl, Bernheim, & Lusardi (2014) shows how many people's financial decision-making is deeply flawed. Recent research also suggests that these problems have worsened due to the economic effects of the COVID-19 Pandemic (Clark et al 2020).

Among those who share this concern, there is disagreement about how best to remedy it. Potential solutions are divided between those that focus on education and those that look at other forms of intervention – such as tighter regulation of the financial sector. Our concern in this paper is educational solutions, but this is not to say that regulatory reforms are not also an important part of the broader project.

Within education, one influential and widespread approach is to implement *financial* education programs. Though results of such programs have been mixed, an examination of the total research available shows that taking financial education does, in general, improve financial outcomes.

Given the large body, of seemingly contradictory research on financial education, a systematic meta-study is required to gain a reliable picture on the overall evidence. One of the earliest attempts at this was an influential study by Fernandes, Lynch, and Netemeyer (2013), which found that financial education interventions were largely ineffective at improving financial behavior, with a statistically significant but minuscule effect. However, more recent research offers more nuanced findings. Comprehensive meta-studies by Kaiser and Menkhoff (2017, 2018a) and Kaiser et al (2020) incorporated the results from a range of studies not examined by Fernades et al. (2013), including many completed after the earlier paper was written. They found that, on the whole, financial education courses did have a significant impact on financial literacy. However, they also found a high level of heterogeneity in the results: some education interventions were much more effective than others. Similar results were found in another post-Fernandes meta-study by Miller et. al (2014).

A crucial project in light of this heterogeneity is discovering under what circumstances financial education is most effective. Much recent work has addressed this question. For example, Lusardi et al. (2017) find that incorporating visual learning tools improves the effectiveness of financial literacy programs, while Kaiser and Menkhoff (2018b) find that a financial literacy course with active learning is more effective than one with a traditional lecture format. A key issue is whether the teaching method should be theoretically driven, or rely more on "rules of thumb" and heuristics. Drexler et. al. (2014) find that a heuristic-based approach is more effective for unsophisticated micro-entrepreneurs, while Skimmyhorn et al (2016) find that a theoretical approach is at least as effective for sophisticated undergraduate students.

Of particular note is a recent paper by Walstad and Wagner (ms), which looks at how the timing and frequency of financial education affects a range of financial outcomes. Drawing upon a large national dataset, the find that taking *multiple* financial education courses at different stages in life significantly increases the beneficial results. It is their research model that we will be building on.

In addition, we will be incorporating another educational approach to improving financial wellness. This approach is based on a separate body of research, which shows the connection between *mathematics* education and financial outcomes. Taking additional courses in mathematics improves later financial results. Such coursework has been shown to improve creditworthiness, increase the propensity to accumulate assets, and decrease adverse financial outcomes including credit card delinquency and foreclosure (Brown, Van der Klaauw, Wen & Zafar 2016; Cole, Paulson and Shastry 2014). Further, a follow-up study by Cole, Paulson, and Shastry (2016) finds that "additional mathematics training leads to greater financial market participation, investment income, and better credit management." In addition, Goodman (2019) shows that additional math course work significantly increases later earnings, particularly among black students.

More generally, as Hastings et al. (2013) note, there is a well-documented relationship between numeracy and related cognitive abilities, and financial outcomes. Individuals with such attributes also tend to have higher levels of financial literacy (Banks and Oldfield, 2007; Gerardi, Goette, & Meier, 2010). In a detailed snapshot, Lenard and Huang (2018) show that there is a strong correlation between math and finance scores in Wake County high school students. On a larger scale, *national* mathematical knowledge level is correlated with national financial literacy level (Ambuehl, Bernheim, & Lusardi 2014).

This has led some to argue for mathematics education as a superior alternative to finance education (Ogden 2019), a claim that advocates for finance education have pushed back on

(Hensley 2019). It's not clear, however, that the two approaches are in competition – especially given the potential for combining mathematics and finance within a single course.

Research Question and Hypothesis

This paper investigates the combined effects of mathematics and financial education, to shed light on this question. If the two educational approaches were in competition, we would expect to see the effects of one diminished in the presence of the other – so that financial education acts as a *substitute* for mathematics education, and vice-versa. If they are not in competition, then the benefits might be independent, each unaffected by the presence of the other; or they might even be *complements* so that the benefits of taking both together, exceed the sum of the benefits of each individually. What we are interested in, therefore, is what, if any, interaction effects there are between finance and mathematics education, upon financial outcomes.

There is good theoretical reason to think that there will not be negative interaction. This is because a conceptual understanding of finance requires knowing the mathematics behind key financial principles (for example, exponents and probability). It's plausible that knowing the relevant mathematics better enables one to follow the theoretical side of financial education, as discussed above. In addition, fundamental research in education and learning shows that we learn and retain information better when it is part of an interconnected body of knowledge constituting a deep conceptual understanding, rather than an unconnected list of superficial facts (Brown et. al 2014).

To the best of our knowledge, the interaction between the effects of mathematics and financial education on financial outcomes has not previously investigated. We aim to do so using the NFCS dataset, discussed below. This dataset provides a wealth of information on financial education and financial outcomes of US adults. The only information provided by the dataset on subjects' mathematical knowledge, though, is a self-assessment of mathematical ability, which we use as a proxy for mathematical understanding – we believe this self-assessment is a generally reliable though imperfect measure. For ease of expression, we refer to a subject's self-assessment of their mathematical ability as their *mathematics confidence*, in which terms we state our hypotheses below:

H1: Taking additional financial education courses and increasing mathematics confidence are both positively associated with beneficial financial outcomes.
H2: The effects of financial education and mathematics confidence upon financial outcomes are independent.

The status of these hypotheses will have important consequences for the respective roles for mathematics and financial education in improving future financial outcomes.

Data and Model

This investigation will be based on data contained in the 2018 National Financial Capability Survey (FINRA 2019). The survey provides a comprehensive set of data on the financial situation of adults in the US. Approximately 27,000 adults completed the survey online in 2018. Survey quotas were employed to ensure the survey is demographically representative of the US population.

The survey contains approximately 130 questions – with the precise number depending on answers given by the respondent. It has ten sections: (1) basic demographics; (2) financial attitudes and behaviors; (3) banking and money management; (4) retirement accounts; (5) government benefits; (6) home and mortgages; (7) credit cards; (8) other debt and loans; (9) insurance; and (10) a financial self-assessment with questions about financial literacy and financial education (FINRA 2019). The national data is weighted to be representative of the national population in terms of age, gender, ethnicity, education, and census division.

Significantly, this dataset has been the basis of recent research on the effectiveness of financial education conducted by Walstad and Wagner (ms) and Xiao and Porto (ms). This allows us to build on existing models. The prior work demonstrates the positive effects of financial education upon financial outcomes for survey respondents, while we also incorporate a measure of mathematical confidence. Therefore, we can look at the combined effects of math and finance education within an established research framework.

As mentioned above, the dataset contains a huge amount of information on an individual's financial situation. In order to get a useful framework for our analysis, we must restrict our focus to a few key variables. There are two ways to approach this: first one may look for questions that target specific financial behaviors of particular financial significance (call these narrow variables); second one can look at questions, or question composites, that give a more general picture of financial outlook (call these broad variables). The former approach has the advantage of precision while the latter is responsive to a broader range of factors. In order to gain both kinds of benefit, we will run two sets of models with each type of variable.

In identifying narrow variables for the former model, we will follow the approach of Walstad and Wagner (ms). The authors aimed to find financial behaviors measured in the dataset that capture financial literacy *directly*. These are actions that one will likely take if one is

financially knowledgeable and appropriately motivated, and likely not take otherwise. Crucially, these are actions that do not require significant financial resources to enact. Conversely, for example, though owning one's home is often financially beneficial, one needs more than financial knowledge to bring this about – one needs the money to make the purchase. Since the goal is to measure whether education leads to improved behavior rather than increased resources, such questions are not appropriate measures for our purposes.

Walstad and Wagner settle on four measures: (1) having an emergency fund; (2) having a savings account; (3) having non-retirement investments; (4) calculating retirement costs. Each of these actions are such that a person can take them without needing significant wealth – and further, there is good reason to do so. Our examination of the survey questions confirmed that these four did the best job of targeting financial actions that positively impacted financial wellness, without building in presuppositions about wealth level, and avoiding "double counting" by pertaining to overlapping sets of behavior. Therefore, given soundness of the rationale, we will also adopt these variables as outcomes to measure.

Walstad and Wagner (ms) look at a range of measures of financial education– in terms of duration, location, and quality – and observe their effects on the four narrow outcomes. One of the most striking results is the strong positive correlation between *number* of financial education courses taken and likelihood of engaging in positive financial behavior. Respondents were asked not just if they took a financial education course, but at what periods in their life they did so: high school, college, and employment. Respondents who took multiple courses were even more likely to engage in the relevant behavior than those who took a single course. Given that we are looking at interaction effects, this variable is particularly significant for our purposes, since it allows us to see whether extra financial education yields diminishing returns when combined with high levels of mathematics confidence.

Since we are adding an explanatory variable measuring mathematical confidence to our model, we believe it is best to focus on a single financial education variable to keep the results digestible. Therefore, we'll use number of financial education courses taken as an explanatory variable in our model: this variable will be an integer between 0 and 3.

The survey provides a question on mathematical confidence which allows us to gain an approximate measure of mathematical capacity. The question asks respondents to rate their mathematical ability on a scale of 1-7. As mentioned above, this is the only variable related directly to mathematics, included in the survey. We use the response to this question as an additional explanatory variable, taking an integer value between 1 and 7. Since we are interested in the combined effects of math and finance education – whether they have independent

influence, reinforce each other, or act as substitutes – we add an interaction variable $x_1 \bullet x_2$, where x_1 is the variable for financial education and x_2 is the variable for math confidence.

We introduce a number of controls to our model – these cover demographic factors such gender, race, age group, income, education, and census region. We treat each response option as a dummy variable. A full list of the variables in our model is provided in in appendix 1. We include all variables used in the survey weighting as controls, so we don't have to weight the regression analysis – reducing the standard errors in our results.

Given that the narrow outcome variables are binary, we follow Walstad and Wagner (ms) in using probit regression to produce predicted results between 0 and 1. This gives a model of the form: $p = \Phi(\beta_i x_i)$, where p represents the probability that the dependent variable has value 1; Φ is the standard normal distribution function; x_i is a vector of the explanatory variables and β_i is the vector of coefficients. Note that this provides four structurally similar models: one for each of the outcome variables outlined above.

In addition to the overall regression results, we also apply the model to the 18-24 and 25-34 age groups separately to compare these results to those of the entire dataset. Walstad and Wagner note that these age groups are the ones most likely to be affected by the recent increased focus on financial education, and so they deserve specific focus. Also, our exploratory data analysis revealed that a disproportionate number of military members received multiple financial education courses, and that might have a significant influence on results.[1] To test the effect of this, we also apply our model to the dataset with military members excluded.

As mentioned above, we also aim to create a model with broad outcome variables. First, we take the sum of positive actions taken out of the four positive actions identified in the narrow variables – providing a score between 0 and 4 for each respondent. In addition, the survey provides a measure of overall *subjective* financial wellness which we include in our model: respondents are asked to rate their satisfaction, providing a score between 1 (not at all satisfied) and 10 (extremely satisfied) which we use as an additional outcome variable.[2] Finally, the survey includes six multiple choice questions assessing objective knowledge of various financial topics. We take the sum of correct answers, an integer between 0 and 6, as a final outcome variable measuring level of financial knowledge.

[1] Overall, around 10% of respondents who received any financial education received a course from the military; however, out of those who received three financial education courses, 30% received a course from the military.
[2] Though subjective assessment of financial matters may not always match reality, it has been shown to be an important predictor of financial outcomes (Allgood & Walstad 2016).

For these models we use the same explanatory variables and control variables as before; however, since the dependent variable is not binary in this case, we use OLS linear regression: $Y = \beta_i x_i$, where Y is the outcome value, β_i and x_i are as before.

Results

A comprehensive summary of the descriptive data is provided in appendix 2 – note that these figures use the survey weighting. Some particular items are worth noting, especially with regard to our key explanatory variables. First, with number of financial education courses taken, the distribution of responses is highly skewed. Around 80% of respondents had taken no courses in financial education, with the rest taking between one and three courses. This should not come as a great surprise, given that finance education has not in general been a part of compulsory education; however, the irregular nature of the distribution should be kept in mind when interpreting the results.

It is also notable that the math confidence responses are higher than might be expected, given the phenomena of 'math anxiety' that is often thought to be prevalent in the US – the mean score is 5.5 out of 7. In particular, very few responders picked between one and three. To understand this, note that the precise question asks respondents whether they agree that they are "pretty good at math", which implies they are not asking about an advanced level of mathematical skill. We believe the goal here was to assess respondents' confidence in everyday mathematics, and so the question was phrased this way to make sure responses weren't skewed low based on advanced math respondents may have encountered at school. In addition, on the 7-point scale, only points 1, 4 and 7 were labelled, which may explain the 'jump' in frequency of responses from 3 to 4. For these reasons, when analyzing trends at the granular level, it will be best to focus on responses between 4 and 7, since there are potentially confounding factors in the move from 3 to 4.

Turning to the regression results, we'll first look at the narrow outcome variables. Key results are displayed in table 1, while complete results (including coefficient values for controls are provided in appendix 3).

	Emergency	Savings	Investment	Retirement
All ages				
Math Con	0.08 ***	0.07 ***	0.05 ***	0.08 ***
Finance	0.15 **	0.16 **	0.18 **	0.20 **
Math*Fin	-0.00	-0.00	0.00	0.00
Age 18-24				

Math Con	0.05 ***	0.05 ***	0.04 *	0.06 ***
Finance	0.16	0.10	0.24	0.01
Math*Fin	0.00	0.01	-0.01	0.04
Age 25-34				
Math Con	0.09 ***	0.09 ***	0.10 ***	0.09***
Finance	0.12	-0.01	0.26 *	0.29 **
Math*Fin	0.01	0.03	-0.00	-0.01
No Military				
Math Con	0.08 ***	0.07 ***	0.05 ***	0.08 ***
Finance	0.19 **	0.23 ***	0.18 **	0.21 **
Math*Fin	-0.01	-0.02	-0.01	-0.00

*** p < 0.001; ** p < 0.01; * p < 0.05.

Table 1

The first take-away from these results is that both mathematical confidence and financial education have a statistically significant effect on all financial behaviors of interest when looking at the dataset as a whole. When looking the younger age groups, the results are more mixed. There is a statistically significant correlation between mathematical confidence and outcome in all cases in the 18-24 group. For financial education, there is no statistically significant relationship in the 18-24 group for any variable; for the 25-34 group there is a significant value for the investment and retirement outcomes only. Note, though, that in almost all cases, the coefficient for finance has a positive value, despite failing to meet the 5% threshold for statistical significance (we'll return to these findings in the discussion section).

In addition, there are no noteworthy differences in results between the dataset as a whole and with military members excluded. Finally, note that there are no significant values found for the interaction variable in any of the models. Also of interest may be the *Average Marginal Effect* of math confidence and financial education. The effect sizes looking at the entire dataset are presented in *table 2*.

	Math	Finance
Emergency	0.027	0.050
Savings	0.019	0.043
Investment	0.016	0.054
Retirement	0.027	0.067

Table 2

Next, we look at the results of our regression model on the broader outcome variables. The results are displayed in table 3:

	Actions	Satisfaction	Knowledge
All Ages			
Math Con	0.09 ***	0.22 ***	0.23 ***
Finance	0.21 ***	0.18	0.43 ***
Math*Fin	0.00	0.01	-0.04 ***
Age 18-24			
Math Con	0.06 ***	0.21 ***	0.20 ***
Finance	0.14	0.23	0.30 *
Math*Fin	0.02	-0.02	0.00
Age 25-34			
Math Con	0.11 ***	0.23 ***	0.23 ***
Finance	0.23 **	-0.02	0.57 ***
Math*Fin	0.00	0.06	-0.07 ***
No Military			
Math Con	0.08 ***	0.21 ***	0.23 ***
Finance	0.24 ***	0.33 **	0.34 ***
Math*Fin	-0.01	-0.03	-0.02

*** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$.

Table 3

Mathematics is highly significant for all dependent variables; finance education is significant for actions and knowledge, except actions in the 18-24 range. Finance does not have a significant coefficient value for satisfaction, except in the no military dataset. Significant negative coefficients are found for the interaction variable for knowledge for the overall dataset and for the 25-34 age range. The no military dataset differs from the overall dataset both in having a significant financial education value for satisfaction and not having a significant interaction variable for knowledge.

These results provide strong evidence in favor of our hypothesis that mathematical confidence and financial education are both beneficial when it comes to improving financial behavior. A sense of the correlation of each is provided by figures 1-2 which show the individual relationship between math and financial education respectively and financial actions taken (without controls).

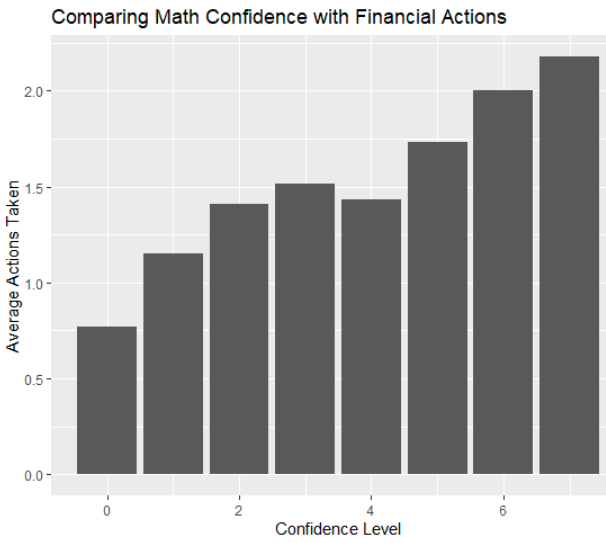

Figure 1

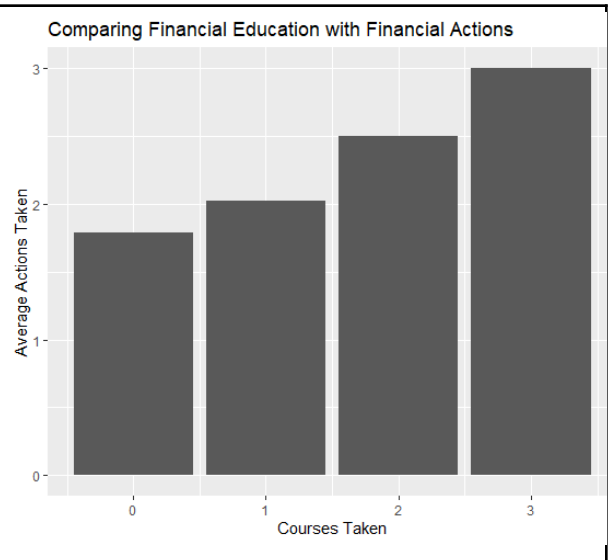

Figure 2

In addition, our results show that the benefits associated with the two factors appear to be for the most part independent. As mentioned above, however, there is a significant negative interaction coefficient for the knowledge outcome. This issue bears further exploration since, as Lewontin (1974) shows, there is often more to interaction between x and y than can be captured by the coefficient for x*y in a regression model. To see this, we need to examine how the outcome value changes when one variable changes (in this case mathematical confidence) while the other (in this case financial education) is held fixed at various values – this is what Lewontin refers to as the "norm of reaction". These results are displayed in *figure 3*.

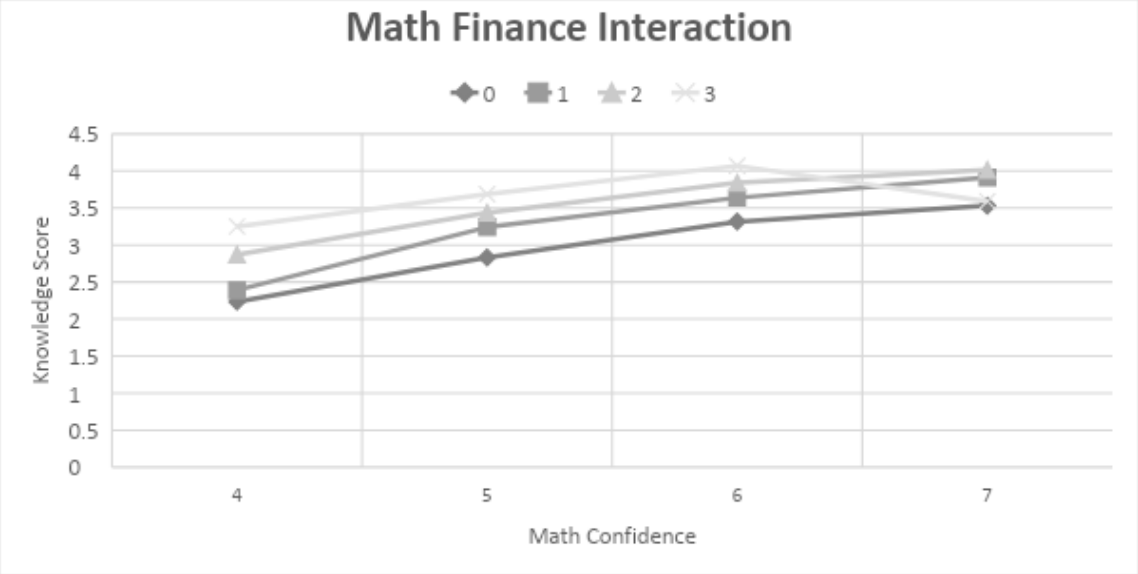

Figure 3

The most noteworthy feature of this chart is that for respondents taking 3 finance education courses, their score actually decreases on average from math confidence 6 to 7. This will play a role in creating a negative interaction coefficient. We also see that the lines for other education level flatten as they move from left to right, which will also play a role. The result for <fin 3, math 7> is unexpected – it suggests that increased financial education leads to *worse* results for highly mathematically confident people.

As discussed above, though, a disproprtionate number of respondents taking three financial education courses receive such education in the military. To see if this is affecting results, we look at the interaction chart with military members removed, displayed in figure 4.

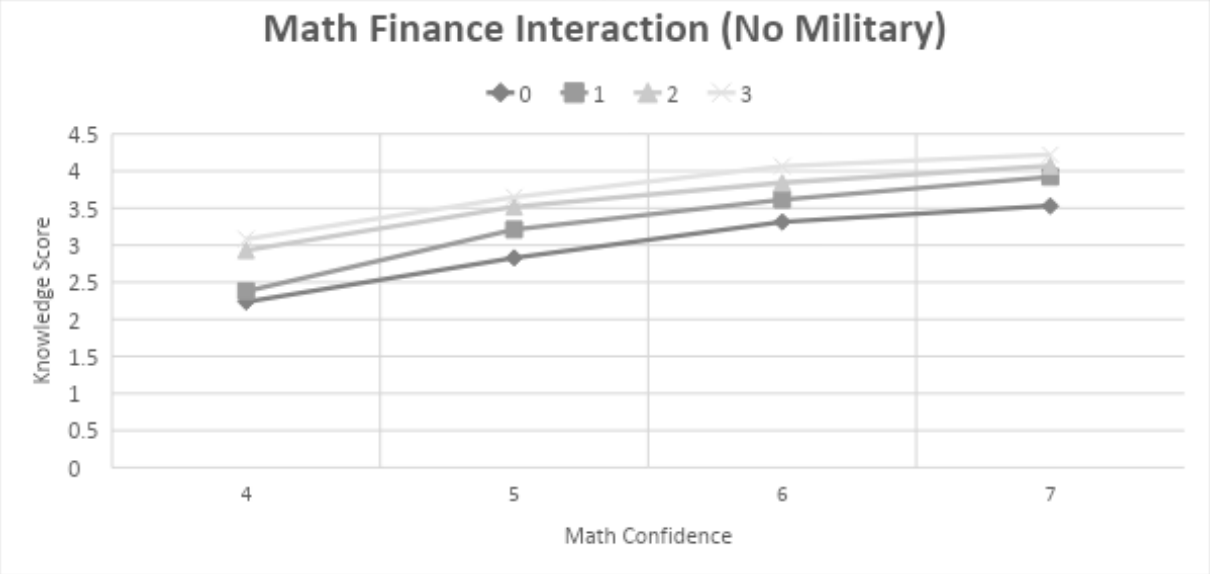

Figure 4

With military members removed, we see that the unexpected result for <fin 3, math 7> no longer appears. This accords with the fact that no significant interaction coefficient was found in the corresponding regression analysis without military members.

Discussion

The key takeaway from these results is that it appears that the two approaches to improving financial outcomes, math education and finance education, are not in competition: in general, however well a person does in the one area, they will still likely benefit from improving in the other. This suggests that both strands of the educational approach to improving financial outcomes are headed in the right direction.

Both of our hypotheses are at least partially validated. For H1, a statistically significant positive effect is found for both math and finance across almost all variables in the general dataset, and all variables in the non-military dataset. For the younger age groups, math was significant across virtually all outcome variables while finance was only significant for a fraction of them.

For H2, the results were generally supportive of the hypothesis. The only outcome with significant coefficient for the interaction was the knowledge, and this effect did not show up with military members removed. A graphical representation of the interaction confirmed this. This

suggests that though the two independent variables were not entirely independent, they were not acting as complements or substitutes in any systematic way.

A point worth discussing is that though the positive effects of mathematical confidence were consistent, the results of financial education were more mixed. Of particular note was the general lack of significant results for the 18-24 range. This shouldn't lead us to jump to the conclusion that the financial education members of this group have received has been less effective than that received by other groups. This dataset is especially messy which may underlie the lack of significance. First of all, the group covers a smaller age-range – seven years, rather than ten years – and the sample size is correspondingly smaller too. Second, the difference in situation across the age group is particularly extreme. The group includes high school seniors, either full-time or part-time college students, and people who have been working full-time for up to six years. These factors will all have a massive influence on the measured financial behavior and cannot be fully controlled for in our model. As noted above, the coefficients, though failing to meet the threshold for statistical significance, were consistently positive, making it plausible that the data available simply lacked the power to detect positive associations definitely.

It should be noted that Walstad and Wagner (ms), while finding mixed results for this age group, did find some statistically significant positive associations between certain types of financial education and certain financial outcomes. This suggests that there may well be positive effects from the financial education this group received, but further investigation is required to better understand them. It's also significant that despite the messiness of the data, math confidence was found to have a consistent positive effect within this age group.

In so far as one wants to evaluate the relative benefits of math and finance education, one might want to compare the respective size of impact they have on outcome within our model – if, for example, one was deciding on how to allocate resources between the two. Unfortunately, the nature of the variables available in the data set prevents meaningful analysis on this measure. Subjective math capability (i.e., math confidence) and financial education courses taken are completely different types of measures, so to try to assess the relative impact of each would not be comparing like with like.

We've noted, though, that the information we have available does show that the impact of both is far from negligible – as *figures 1-2* above illustrates. The results in *table 3* show that an increase of math confidence by one point on the scale is associated with a 0.08 increase in financial actions taken, a 0.23 increase in subjective financial satisfaction and a 0.22 increase in financial knowledge score. Similarly, taking an additional course in financial education is

associated with a 0.15 increase in financial actions taken, a 0.12 increase in subjective financial satisfaction and a 0.20 increase in financial knowledge score.

The effects of the narrow variables cannot be read straight off table 1, as with a probit regression, the change in predicted outcome variable upon changing an input variable depends on the prior value of all variables. An analysis of marginal effect can tell us the *average* change in outcome upon changing a given input variable. These results, presented in *table 2*, show that the effect is large enough to be of interest for both math and finance.

This should be enough to advise against eliminating a math course from the high school curriculum to make room for finance education, as some states in the US are currently considering (Llanes 2019), or to give up on finance education entirely as discussed above.

A limitation with the present study concerns the mathematical confidence variable. Though the dataset provides a wealth of information on financial education, financial situation and financial knowledge, the information on respondents' mathematical capacity is limited. As discussed, there is only a single question that asks for a self-assessment of mathematical capability – and this leaves much unknown. Key additional factors are respondents' objective level of mathematical knowledge, their level of mathematics education, and the relevance of math to their career.

The purpose of NFCS in creating this dataset was looking at levels of financial wellness and financial education, and not mathematics education, and so the inclusion of any information on math was fortuitous for the present study. However, our results show the relevance of math education to the interests and goals of the survey. Therefore, we believe it would be beneficial to include further questions on math in future iterations of the survey.

The present study demonstrates that mathematics education and finance education are not in competition as approaches to improving financial wellness in the US but are independently valuable parts of an overall solution. This conclusion can help avoid unproductive arguments for and against financial education and allow us to focus instead on how to implement education projects most effectively. In addition, this work motivates gathering further data that looks at the interrelationship between finance and math education at a higher level of resolution.

Appendix 1: Variable Specification

Our regression models use the following variables, all taken from the 2018 NFCS survey data:

Name	Description	Value	Survey Source
Explanatory Variables			
Math Con	Measure of subjective mathematical confidence	Integer between 0 and 7	M1_2
Finance	Total number of finance education course taken	Integer between 0 and 3	M21_1, M21_2_2015, and M21_
Outcome Variables			
Emergency	Assesses whether subject has every set aside an emergency fund	Dummy variable	J5
Savings	Assesses whether subject has a savings account	Dummy variable	B2
Investment	Assesses whether subject has non-retirement investments	Dummy variable	B14
Retirement	Assesses whether subject has calculated retirement needs	Dummy variable	J8/J9
Actions	Assesses total narrow actions taken	Integer between 0 and 4	Sum of Emergency, Savings, Investment and Retirement values
Satisfaction	Subjective measure of financial satisfaction	Integer between 0 and 10	J1
Knowledge	Objective measure of financial knowledge	Integer between 0 and 6	Sum of correct responses to M6, M7, M31, M8, M9, M10
Control Variables			
Female	Subject is female	Dummy (reference male)	A3
Minority	Subject belongs to a minority group	Dummy (reference non-minority)	A4A_new_w
Married	Subject is married	Dummy (reference not married)	A6
No HS	Subject did not complete high school	Dummy (reference graduate degree)	A5_2015
High School	Subject completed high school	Dummy (reference graduate degree)	A5_2015
Some College	Subject attended some college	Dummy (reference graduate degree)	A5_2015

Associate's	Subject has associate degree	Dummy (reference graduate degree)	A5_2015
Bachelor's	Subject has bachelor's degree	Dummy (reference graduate degree)	A5_2015
Children	Subject has children	Dummy (reference no children)	A11
Military	Subject's family is or was in military	Dummy	AM21
< $25k	Income is below $25k	Dummy (reference income 150k+)	A8
$25-50k	Income is $25-50k	Dummy (reference income 150k+)	A8
$50-75k	Income is $50-75k	Dummy (reference income 150k+)	A8
$75-150	Income is $75-150	Dummy (reference income 150k+)	A8
New England	Subject lives in census region	Dummy (reference Pacific)	CENSUSDIV
Mid Atlantic	Subject lives in census region	Dummy (reference Pacific)	CENSUSDIV
East North Central	Subject lives in census region	Dummy (reference Pacific)	CENSUSDIV
West North Central	Subject lives in census region	Dummy (reference Pacific)	CENSUSDIV
South Atlantic	Subject lives in census region	Dummy (reference Pacific)	CENSUSDIV
East South Central	Subject lives in census region	Dummy (reference Pacific)	CENSUSDIV
West South Central	Subject lives in census region	Dummy (reference Pacific)	CENSUSDIV
Mountain	Subject lives in census region	Dummy (reference Pacific)	CENSUSDIV

Appendix 2: Descriptive Data

	Mean	Standard Deviation
Female	0.51	0.5
Minority	0.36	0.48
Age		
18-24	0.12	0.32
25-34	0.18	0.39
35-44	0.16	0.37
45-54	0.17	0.37
55-64	0.18	0.38
65+	0.19	0.39
Married	0.51	0.5
Education		
No high school	0.03	0.17
High school	0.28	0.45
Some College	0.28	0.45
Associates Degree	0.11	0.31
Bachelor's Degree	0.18	0.39
Graduate Degree	0.11	0.31
Have children	0.36	0.48
Military	0.14	0.35
Income		
<$25%	0.23	0.42
$25-50k	0.26	0.44
$50-75k	0.19	0.39
$75-150k	0.26	0.44
$150k+	0.06	0.24
Census Region		
New England	0.05	0.21
Mid Atlantic	0.13	0.34
East North Central	0.14	0.35
West North Central	0.06	0.25
South Atlantic	0.2	0.4
East South Central	0.06	0.23
West South Central	0.12	0.32
Mountain	0.07	0.26

Pacific	0.16	0.37
Financial Actions		
Emergency	0.49	0.5
Savings	0.71	0.45
Investment	0.32	0.47
Retirement Plan	0.32	0.46
Total Actions Taken	1.4	1.41
Financial Satisfaction	5.6	2.97
Knowledge	3	1.68
Total Financial Courses Taken	0.26	0.66
Financial Courses Taken		
One Course	0.08	0.28
Two Courses	0.05	0.21
Three Courses	0.03	0.16
Mathematical Confidence	5.48	1.76

Appendix 3: Regression Tables; Table A: Narrow Variables Total

	Emergency	Savings	Investment	Retirement
(Intercept)	0.92 ***	1.40 ***	0.76 ***	0.35 ***
	(0.06)	(0.07)	(0.06)	(0.06)
Math Con	0.08 ***	0.07 ***	0.05 ***	0.08 ***
	(0.01)	(0.01)	(0.01)	(0.01)
Finance	0.15 **	0.16 **	0.18 **	0.20 ***
	(0.05)	(0.06)	(0.06)	(0.05)
Math*Fin	-0.00	-0.00	0.00	0.00
	(0.01)	(0.01)	(0.01)	(0.01)
Female	-0.10 ***	0.04 *	-0.20 ***	-0.08 ***
	(0.02)	(0.02)	(0.02)	(0.02)
Minority	0.02	-0.07 ***	-0.08 ***	-0.01
	(0.02)	(0.02)	(0.02)	(0.02)
18-24	-0.49 ***	-0.21 ***	-0.40 ***	-0.43 ***
	(0.03)	(0.04)	(0.04)	(0.03)
25-34	-0.56 ***	-0.33 ***	-0.43 ***	-0.34 ***
	(0.03)	(0.03)	(0.03)	(0.03)
35-44	-0.68 ***	-0.38 ***	-0.55 ***	-0.33 ***
	(0.03)	(0.03)	(0.03)	(0.03)
45-54	-0.68 ***	-0.43 ***	-0.53 ***	-0.28 ***
	(0.03)	(0.03)	(0.03)	(0.03)
55-64	-0.33 ***	-0.18 ***	-0.26 ***	-0.01
	(0.03)	(0.03)	(0.03)	(0.03)
Married	0.08 ***	0.08 ***	-0.04 *	0.09 ***
	(0.02)	(0.02)	(0.02)	(0.02)
No HS	-0.54 ***	-0.82 ***	-0.77 ***	-0.70 ***
	(0.07)	(0.06)	(0.08)	(0.07)

High School	-0.24 ***	-0.32 ***	-0.41 ***	-0.35 ***
	(0.03)	(0.04)	(0.03)	(0.03)
Some College	-0.29 ***	-0.19 ***	-0.35 ***	-0.24 ***
	(0.03)	(0.03)	(0.03)	(0.03)
Associate's	-0.20 ***	-0.13 **	-0.35 ***	-0.20 ***
	(0.03)	(0.04)	(0.04)	(0.03)
Bachelor's	-0.01	-0.00	-0.10 ***	-0.10 ***
	(0.03)	(0.04)	(0.03)	(0.03)
Children	-0.21 ***	-0.16 ***	-0.05 *	0.00
	(0.02)	(0.02)	(0.02)	(0.02)
Military	0.19 ***	0.06	0.23 ***	0.21 ***
	(0.03)	(0.03)	(0.03)	(0.03)
Income < $25k	-1.33 ***	-1.21 ***	-1.44 ***	-1.13 ***
	(0.04)	(0.05)	(0.04)	(0.04)
$25-50k	-0.91 ***	-0.71 ***	-1.01 ***	-0.74 ***
	(0.04)	(0.05)	(0.04)	(0.04)
$50-75k	-0.61 ***	-0.41 ***	-0.73 ***	-0.49 ***
	(0.04)	(0.05)	(0.04)	(0.04)
$75-150	-0.33 ***	-0.13 **	-0.39 ***	-0.21 ***
	(0.04)	(0.05)	(0.04)	(0.04)
New England	-0.08 *	-0.04	-0.07 *	-0.10 **
	(0.03)	(0.04)	(0.03)	(0.03)
Mid Atlantic	-0.02	-0.21 ***	-0.04	-0.04
	(0.04)	(0.04)	(0.04)	(0.04)
East North Central	-0.03	-0.17 ***	-0.12 ***	-0.09 *
	(0.03)	(0.04)	(0.04)	(0.03)
West North Central	-0.07 *	-0.06	-0.05	0.01
	(0.03)	(0.03)	(0.03)	(0.03)

South Atlantic	-0.06 *	-0.13 ***	-0.08 **	-0.03
	(0.03)	(0.03)	(0.03)	(0.03)
East South Central	-0.03	-0.25 ***	-0.15 ***	-0.06
	(0.04)	(0.04)	(0.04)	(0.04)
West South Central	-0.08 *	-0.30 ***	-0.10 *	-0.03
	(0.04)	(0.04)	(0.04)	(0.04)
Mountain	-0.02	-0.04	-0.05	0.02
	(0.03)	(0.03)	(0.03)	(0.03)
N	27091	27091	27091	27091
AIC	31430.57	26305.58	28550.12	31868.87
BIC	31684.98	26560.00	28804.53	32123.29
Pseudo R2	0.27	0.25	0.27	0.25

*** p < 0.001; ** p < 0.01; * p < 0.05.

Table B: Narrow Variables 18-24

	Emergency	Savings	Investment	Retirement
(Intercept)	0.26	0.62 *	0.10	-0.32
	(0.24)	(0.25)	(0.25)	(0.25)
Math Con	0.05 ***	0.05 ***	0.04 *	0.06 ***
	(0.02)	(0.01)	(0.02)	(0.02)
Finance	0.16	0.10	0.24	0.01
	(0.12)	(0.12)	(0.13)	(0.13)
Math*Fin	0.00	0.01	-0.01	0.04
	(0.02)	(0.02)	(0.02)	(0.02)
Female	-0.01	0.06	-0.36 ***	-0.16 **
	(0.05)	(0.05)	(0.06)	(0.06)
Minority	0.09	-0.05	-0.08	0.06
	(0.05)	(0.05)	(0.06)	(0.06)

Married	0.04	0.15 *	0.11	0.31 ***
	(0.07)	(0.08)	(0.08)	(0.08)
No HS	-0.61 **	-0.88 ***	-0.73 ***	-0.57 **
	(0.19)	(0.19)	(0.22)	(0.21)
High School	-0.35 *	-0.34 *	-0.39 *	-0.09
	(0.15)	(0.16)	(0.16)	(0.16)
Some College	-0.36 *	-0.08	-0.39 *	-0.19
	(0.15)	(0.16)	(0.16)	(0.16)
Associate's	-0.45 *	-0.08	-0.35	-0.14
	(0.17)	(0.18)	(0.18)	(0.18)
Bachelor's	-0.06	0.16	-0.16	0.04
	(0.16)	(0.17)	(0.16)	(0.16)
Children	-0.10	-0.37 ***	-0.15	0.15 *
	(0.07)	(0.07)	(0.08)	(0.07)
Military	0.61 ***	-0.07	0.61 ***	0.55 ***
	(0.10)	(0.10)	(0.10)	(0.10)
Income < $25k	-0.90 ***	-0.47 *	-0.83 ***	-0.83 ***
	(0.18)	(0.19)	(0.18)	(0.18)
$25-50k	-0.68 ***	-0.17	-0.63 ***	-0.66 ***
	(0.18)	(0.19)	(0.18)	(0.18)
$50-75k	-0.42 *	-0.14	-0.40 *	-0.47 *
	(0.18)	(0.20)	(0.18)	(0.18)
$75-150	-0.43 *	0.04	-0.32	-0.42 *
	(0.19)	(0.20)	(0.19)	(0.19)
New England	-0.11	0.08	-0.10	-0.11
	(0.11)	(0.11)	(0.12)	(0.12)
Mid Atlantic	-0.16	-0.21	0.01	0.05
	(0.12)	(0.12)	(0.14)	(0.13)

East North Central	0.07	-0.19	-0.12	-0.01
	(0.10)	(0.10)	(0.12)	(0.11)
West North Central	0.02	0.11	0.08	0.04
	(0.10)	(0.10)	(0.11)	(0.11)
South Atlantic	-0.03	-0.07	-0.04	0.01
	(0.09)	(0.09)	(0.10)	(0.10)
East South Central	-0.01	-0.25 *	-0.18	-0.17
	(0.11)	(0.11)	(0.14)	(0.13)
West South Central	-0.11	-0.27 *	-0.12	0.02
	(0.11)	(0.11)	(0.13)	(0.12)
Mountain	0.01	-0.05	-0.11	-0.04
	(0.10)	(0.10)	(0.11)	(0.10)
N	2795	2795	2795	2795
AIC	3423.39	3351.82	2566.90	2944.75
BIC	3577.72	3506.14	2721.22	3099.07
Pseudo R2	0.12	0.16	0.15	0.15

*** p < 0.001; ** p < 0.01; * p < 0.05.

Table C: Narrow Variables 25-34

	Emergency	Savings	Investment	Retirement
(Intercept)	-0.11	0.62 ***	-0.20	-0.33 *
	(0.15)	(0.16)	(0.15)	(0.15)
Math Con	0.09 ***	0.09 ***	0.10 ***	0.09 ***
	(0.01)	(0.01)	(0.01)	(0.01)
Finance	0.12	-0.01	0.26 *	0.29 **
	(0.11)	(0.12)	(0.12)	(0.11)
Math*Fin	0.01	0.03	-0.00	-0.01
	(0.02)	(0.02)	(0.02)	(0.02)
Female	-0.18 ***	0.08	-0.33 ***	-0.15 ***
	(0.04)	(0.05)	(0.05)	(0.04)
Minority	0.21 ***	-0.00	0.11 *	0.09 *
	(0.04)	(0.04)	(0.05)	(0.04)
Married	0.15 ***	0.12 *	0.02	0.03
	(0.05)	(0.05)	(0.05)	(0.05)
No HS	-0.46 **	-0.83 ***	-0.58 **	-0.68 ***
	(0.15)	(0.14)	(0.19)	(0.17)
High School	-0.20 **	-0.44 ***	-0.33 ***	-0.26 ***
	(0.07)	(0.08)	(0.08)	(0.08)
Some College	-0.22 **	-0.20 *	-0.21 **	-0.12
	(0.07)	(0.08)	(0.07)	(0.07)
Associate's	-0.14	-0.16	-0.31 ***	-0.11
	(0.08)	(0.09)	(0.09)	(0.08)
Bachelor's	0.02	0.07	-0.09	-0.06
	(0.07)	(0.08)	(0.07)	(0.07)
Children	-0.16 ***	-0.23 ***	-0.01	0.05
	(0.05)	(0.05)	(0.05)	(0.05)

Military	0.57 ***	0.19 **	0.69 ***	0.70 ***
	(0.06)	(0.07)	(0.06)	(0.06)
Income < $25k	-0.85 ***	-0.83 ***	-1.18 ***	-0.93 ***
	(0.12)	(0.14)	(0.12)	(0.12)
$25-50k	-0.75 ***	-0.34 *	-0.86 ***	-0.63 ***
	(0.12)	(0.13)	(0.12)	(0.11)
$50-75k	-0.51 ***	-0.08	-0.64 ***	-0.37 **
	(0.12)	(0.14)	(0.12)	(0.11)
$75-150	-0.22	0.14	-0.31 **	-0.08
	(0.11)	(0.14)	(0.11)	(0.11)
New England	0.04	-0.00	-0.16	-0.06
	(0.08)	(0.09)	(0.09)	(0.08)
Mid Atlantic	0.18	-0.18	0.00	-0.04
	(0.10)	(0.10)	(0.10)	(0.10)
East North Central	0.06	-0.18 *	-0.20 *	-0.05
	(0.08)	(0.09)	(0.09)	(0.08)
West North Central	-0.08	-0.11	-0.13	0.02
	(0.07)	(0.08)	(0.08)	(0.07)
South Atlantic	0.01	-0.17 *	-0.03	-0.06
	(0.07)	(0.07)	(0.07)	(0.07)
East South Central	0.03	-0.25 **	-0.23 *	-0.08
	(0.09)	(0.09)	(0.10)	(0.09)
West South Central	-0.06	-0.36 ***	-0.25 **	-0.11
	(0.09)	(0.09)	(0.10)	(0.09)
Mountain	-0.03	-0.04	-0.23 **	-0.01
	(0.07)	(0.08)	(0.08)	(0.07)
N	4686	4686	4686	4686
AIC	5562.20	4858.77	4538.85	5322.86

BIC	5729.96	5026.53	4706.62	5490.62
Pseudo R2	0.23	0.26	0.31	0.27

*** $p < 0.001$; ** $p < 0.01$; * $p < 0.05$.

Table D: Narrow Variables No Military

	Emergency	Savings	Investment	Retirement
(Intercept)	1.05 ***	1.51 ***	0.97 ***	0.46 ***
	(0.07)	(0.08)	(0.07)	(0.06)
Math Con	0.08 ***	0.07 ***	0.05 ***	0.08 ***
	(0.01)	(0.01)	(0.01)	(0.01)
Finance	0.19 **	0.23 ***	0.18 **	0.21 ***
	(0.06)	(0.06)	(0.06)	(0.06)
Math*Fin	-0.01	-0.02	-0.01	-0.00
	(0.01)	(0.01)	(0.01)	(0.01)
Female	-0.13 ***	0.05 *	-0.24 ***	-0.10 ***
	(0.02)	(0.02)	(0.02)	(0.02)
Minority	0.02	-0.08 ***	-0.11 ***	-0.02
	(0.02)	(0.02)	(0.02)	(0.02)
18-24	-0.54 ***	-0.19 ***	-0.49 ***	-0.52 ***
	(0.04)	(0.04)	(0.04)	(0.04)
25-34	-0.65 ***	-0.35 ***	-0.59 ***	-0.47 ***
	(0.03)	(0.04)	(0.03)	(0.03)
35-44	-0.72 ***	-0.39 ***	-0.65 ***	-0.40 ***
	(0.03)	(0.04)	(0.03)	(0.03)
45-54	-0.69 ***	-0.45 ***	-0.58 ***	-0.33 ***
	(0.03)	(0.03)	(0.03)	(0.03)
55-64	-0.35 ***	-0.18 ***	-0.31 ***	-0.05
	(0.03)	(0.03)	(0.03)	(0.03)
Married	0.12 ***	0.10 ***	-0.01	0.11 ***

	(0.02)	(0.02)	(0.02)	(0.02)
No HS	-0.59 ***	-0.90 ***	-0.88 ***	-0.75 ***
	(0.07)	(0.06)	(0.09)	(0.07)
High School	-0.27 ***	-0.37 ***	-0.46 ***	-0.39 ***
	(0.03)	(0.04)	(0.03)	(0.03)
Some College	-0.33 ***	-0.24 ***	-0.38 ***	-0.26 ***
	(0.03)	(0.04)	(0.03)	(0.03)
Associate's	-0.21 ***	-0.16 ***	-0.33 ***	-0.21 ***
	(0.04)	(0.04)	(0.04)	(0.04)
Bachelor's	-0.01	-0.02	-0.07 *	-0.10 **
	(0.03)	(0.04)	(0.03)	(0.03)
Children	-0.25 ***	-0.18 ***	-0.10 ***	-0.04 *
	(0.02)	(0.02)	(0.02)	(0.02)
Income < $25k	-1.34 ***	-1.24 ***	-1.48 ***	-1.15 ***
	(0.05)	(0.06)	(0.05)	(0.04)
$25-50k	-0.89 ***	-0.74 ***	-1.03 ***	-0.73 ***
	(0.04)	(0.05)	(0.04)	(0.04)
$50-75k	-0.63 ***	-0.44 ***	-0.76 ***	-0.50 ***
	(0.04)	(0.05)	(0.04)	(0.04)
$75-150	-0.39 ***	-0.18 ***	-0.45 ***	-0.25 ***
	(0.04)	(0.05)	(0.04)	(0.04)
New England	-0.12 ***	-0.04	-0.12 **	-0.12 ***
	(0.04)	(0.04)	(0.04)	(0.04)
Mid Atlantic	-0.04	-0.23 ***	-0.06	-0.02
	(0.04)	(0.05)	(0.05)	(0.04)
East North Central	-0.06	-0.19 ***	-0.15 ***	-0.09 *

	(0.04)	(0.04)	(0.04)	(0.04)
West North Central	-0.09 **	-0.09 *	-0.05	0.01
	(0.03)	(0.04)	(0.04)	(0.03)
South Atlantic	-0.08 *	-0.15 ***	-0.09 **	-0.02
	(0.03)	(0.03)	(0.03)	(0.03)
East South Central	-0.06	-0.31 ***	-0.20 ***	-0.07
	(0.04)	(0.04)	(0.04)	(0.04)
West South Central	-0.11 **	-0.33 ***	-0.12 **	-0.01
	(0.04)	(0.04)	(0.04)	(0.04)
Mountain	-0.02	-0.04	-0.04	0.04
	(0.03)	(0.04)	(0.03)	(0.03)
N	23291	23291	23291	23291
AIC	27092.69	23011.79	23700.09	27158.35
BIC	27334.37	23253.47	23941.77	27400.02
Pseudo R2	0.27	0.25	0.27	0.24

*** p < 0.001; ** p < 0.01; * p < 0.05.

Table E: Broad Variables Total

	Actions	Satisfaction	Knowledge
(Intercept)	3.11 ***	7.10 ***	3.61 ***
	(0.05)	(0.11)	(0.06)
Math Con	0.09 ***	0.22 ***	0.23 ***
	(0.00)	(0.01)	(0.01)
Finance	0.21 ***	0.18	0.43 ***
	(0.04)	(0.10)	(0.05)
Math*Fin	0.00	0.01	-0.04 ***
	(0.01)	(0.02)	(0.01)
Female	-0.11 ***	-0.41 ***	-0.49 ***
	(0.01)	(0.03)	(0.02)
Minority	-0.05 **	0.04	-0.29 ***
	(0.02)	(0.04)	(0.02)
18-24	-0.49 ***	-0.73 ***	-0.76 ***
	(0.03)	(0.06)	(0.03)
25-34	-0.53 ***	-1.01 ***	-0.90 ***
	(0.02)	(0.06)	(0.03)
35-44	-0.62 ***	-1.40 ***	-0.66 ***
	(0.02)	(0.06)	(0.03)
45-54	-0.61 ***	-1.55 ***	-0.36 ***
	(0.02)	(0.05)	(0.03)
55-64	-0.24 ***	-0.78 ***	-0.17 ***
	(0.02)	(0.05)	(0.03)
Married	0.07 ***	0.26 ***	0.08 ***
	(0.02)	(0.04)	(0.02)
No HS	-0.80 ***	-0.35 **	-1.24 ***
	(0.05)	(0.11)	(0.06)

High School	-0.43 ***	0.05	-0.99 ***
	(0.02)	(0.06)	(0.03)
Some College	-0.35 ***	-0.41 ***	-0.59 ***
	(0.02)	(0.06)	(0.03)
Associate's	-0.29 ***	-0.21 **	-0.51 ***
	(0.03)	(0.07)	(0.04)
Bachelor's	-0.07 **	-0.06	-0.12 ***
	(0.02)	(0.06)	(0.03)
Children	-0.13 ***	-0.25 ***	-0.12 ***
	(0.02)	(0.04)	(0.02)
Military	0.23 ***	0.57 ***	-0.17 ***
	(0.02)	(0.05)	(0.03)
Income < $25k	-1.64 ***	-3.02 ***	-0.78 ***
	(0.03)	(0.08)	(0.04)
$25-50k	-1.10 ***	-2.19 ***	-0.50 ***
	(0.03)	(0.07)	(0.04)
$50-75k	-0.72 ***	-1.45 ***	-0.29 ***
	(0.03)	(0.07)	(0.04)
$75-150	-0.33 ***	-0.71 ***	-0.21 ***
	(0.03)	(0.07)	(0.04)
New England	-0.09 ***	-0.09	-0.10 **
	(0.03)	(0.06)	(0.03)
Mid Atlantic	-0.09 **	0.01	-0.12 **
	(0.03)	(0.08)	(0.04)
East North Central	-0.12 ***	0.09	-0.09 *
	(0.03)	(0.07)	(0.04)
West North Central	-0.05	-0.00	0.04
	(0.03)	(0.06)	(0.03)

South Atlantic	-0.09 ***	0.01	-0.16 ***
	(0.02)	(0.06)	(0.03)
East South Central	-0.14 ***	0.05	-0.16 ***
	(0.03)	(0.07)	(0.04)
West South Central	-0.15 ***	-0.03	-0.09 *
	(0.03)	(0.07)	(0.04)
Mountain	-0.02	-0.02	0.05
	(0.02)	(0.06)	(0.03)
N	27091	27091	27091
AIC	81365.47	128225.66	94732.72
BIC	81628.10	128488.28	94995.34
Pseudo R2	0.37	0.24	0.33

*** p < 0.001; ** p < 0.01; * p < 0.05.

Table F: Broad Variables 18-24

	Actions	Satisfaction	Knowledge
(Intercept)	2.25 ***	6.56 ***	1.67 ***
	(0.19)	(0.48)	(0.25)
Math Con	0.06 ***	0.21 ***	0.20 ***
	(0.01)	(0.03)	(0.02)
Finance	0.14	0.23	0.30 *
	(0.09)	(0.24)	(0.13)
Math*Fin	0.02	-0.02	0.00
	(0.02)	(0.04)	(0.02)
Female	-0.13 **	-0.84 ***	-0.37 ***
	(0.04)	(0.11)	(0.06)
Minority	0.01	-0.15	-0.33 ***
	(0.04)	(0.11)	(0.06)
Married	0.20 ***	0.28	0.15

	(0.06)	(0.15)	(0.08)
No HS	-0.86 ***	-1.05 **	-0.77 ***
	(0.15)	(0.37)	(0.20)
High School	-0.42 ***	-0.51	-0.57 ***
	(0.12)	(0.31)	(0.17)
Some College	-0.35 **	-0.90 **	-0.16
	(0.12)	(0.31)	(0.16)
Associate's	-0.35 *	-0.49	-0.25
	(0.14)	(0.36)	(0.19)
Bachelor's	-0.02	-0.23	0.08
	(0.12)	(0.32)	(0.17)
Children	-0.14 **	-0.00	-0.27 ***
	(0.05)	(0.13)	(0.07)
Military	0.58 ***	0.72 ***	0.00
	(0.08)	(0.21)	(0.11)
Income < $25k	-1.01 ***	-2.20 ***	0.21
	(0.14)	(0.36)	(0.19)
$25-50k	-0.74 ***	-1.83 ***	0.21
	(0.14)	(0.36)	(0.19)
$50-75k	-0.50 ***	-1.07 **	0.27
	(0.15)	(0.37)	(0.20)
$75-150	-0.40 **	-0.75 *	0.12
	(0.15)	(0.38)	(0.20)
New England	-0.06	-0.07	0.13
	(0.08)	(0.21)	(0.11)
Mid Atlantic	-0.11	0.32	0.08
	(0.10)	(0.25)	(0.13)
East North Central	-0.07	0.25	0.13

	(0.08)	(0.21)	(0.11)
West North Central	0.07	0.21	0.16
	(0.08)	(0.20)	(0.10)
South Atlantic	-0.05	0.16	-0.08
	(0.07)	(0.18)	(0.10)
East South Central	-0.17	-0.20	-0.23
	(0.09)	(0.23)	(0.12)
West South Central	-0.15	0.20	0.05
	(0.09)	(0.23)	(0.12)
Mountain	-0.05	0.17	0.01
	(0.07)	(0.19)	(0.10)
N	2795	2795	2795
AIC	8158.45	13432.72	9880.19
BIC	8318.71	13592.98	10040.45
Pseudo R2	0.21	0.14	0.20

*** p < 0.001; ** p < 0.01; * p < 0.05.

Table G: Broad Variables 25-34

	Actions	Satisfaction	Knowledge
(Intercept)	2.09 ***	5.53 ***	2.69 ***
	(0.12)	(0.28)	(0.15)
Math Con	0.11 ***	0.23 ***	0.23 ***
	(0.01)	(0.02)	(0.01)
Finance	0.23 **	-0.02	0.57 ***
	(0.09)	(0.21)	(0.12)
Math*Fin	0.00	0.06	-0.07 ***
	(0.01)	(0.03)	(0.02)
Female	-0.19 ***	-0.89 ***	-0.27 ***
	(0.03)	(0.08)	(0.04)
Minority	0.12 ***	0.27 ***	-0.15 ***
	(0.03)	(0.08)	(0.04)
Married	0.10 **	0.68 ***	0.05
	(0.04)	(0.09)	(0.05)
No HS	-0.72 ***	-0.37	-1.03 ***
	(0.10)	(0.25)	(0.14)
High School	-0.41 ***	0.01	-0.80 ***
	(0.06)	(0.14)	(0.08)
Some College	-0.28 ***	-0.48 ***	-0.47 ***
	(0.06)	(0.14)	(0.07)
Associate's	-0.24 ***	-0.16	-0.43 ***
	(0.07)	(0.16)	(0.09)
Bachelor's	-0.03	-0.04	-0.10
	(0.05)	(0.13)	(0.07)

Children	-0.10 **	-0.17	-0.21 ***
	(0.04)	(0.09)	(0.05)
Military	0.72 ***	1.67 ***	-0.59 ***
	(0.05)	(0.12)	(0.07)
Income < $25k	-1.26 ***	-2.33 ***	-0.88 ***
	(0.10)	(0.23)	(0.13)
$25-50k	-0.91 ***	-1.84 ***	-0.59 ***
	(0.09)	(0.22)	(0.12)
$50-75k	-0.58 ***	-1.19 ***	-0.39 **
	(0.09)	(0.22)	(0.12)
$75-150	-0.21 *	-0.50 *	-0.39 ***
	(0.09)	(0.22)	(0.12)
New England	-0.06	-0.17	-0.09
	(0.06)	(0.15)	(0.08)
Mid Atlantic	-0.01	0.33	-0.16
	(0.08)	(0.19)	(0.10)
East North Central	-0.11	0.19	-0.17
	(0.06)	(0.16)	(0.09)
West North Central	-0.10	-0.19	0.03
	(0.06)	(0.14)	(0.08)
South Atlantic	-0.08	0.19	-0.19 **
	(0.05)	(0.13)	(0.07)
East South Central	-0.16 *	0.20	-0.16
	(0.07)	(0.17)	(0.09)
West South Central	-0.24 ***	-0.25	-0.03
	(0.07)	(0.17)	(0.09)

Mountain	-0.09	-0.42 **	0.13
	(0.06)	(0.14)	(0.07)
N	4686	4686	4686
AIC	13883.39	22143.61	16460.36
BIC	14057.61	22317.82	16634.58
Pseudo R2	0.38	0.29	0.23

*** p < 0.001; ** p < 0.01; * p < 0.05.

Table H: Broad Variables No Military

	Actions	Satisfaction	Knowledge
(Intercept)	3.29 ***	7.39 ***	3.59 ***
	(0.05)	(0.12)	(0.06)
Math Con	0.08 ***	0.21 ***	0.23 ***
	(0.00)	(0.01)	(0.01)
Finance	0.24 ***	0.33 **	0.34 ***
	(0.05)	(0.11)	(0.06)
Math*Fin	-0.01	-0.03	-0.02
	(0.01)	(0.02)	(0.01)
Female	-0.13 ***	-0.47 ***	-0.49 ***
	(0.01)	(0.04)	(0.02)
Minority	-0.06 ***	0.04	-0.30 ***
	(0.02)	(0.04)	(0.02)
18-24	-0.57 ***	-0.86 ***	-0.72 ***
	(0.03)	(0.07)	(0.04)
25-34	-0.67 ***	-1.33 ***	-0.78 ***
	(0.03)	(0.06)	(0.03)
35-44	-0.69 ***	-1.58 ***	-0.61 ***
	(0.03)	(0.06)	(0.03)
45-54	-0.65 ***	-1.61 ***	-0.37 ***
	(0.02)	(0.06)	(0.03)
55-64	-0.28 ***	-0.88 ***	-0.14 ***
	(0.02)	(0.06)	(0.03)
Married	0.10 ***	0.38 ***	0.06 **
	(0.02)	(0.04)	(0.02)
No HS	-0.86 ***	-0.45 ***	-1.26 ***
	(0.05)	(0.12)	(0.06)

High School	-0.49 ***	0.01	-1.02 ***
	(0.03)	(0.06)	(0.03)
Some College	-0.40 ***	-0.49 ***	-0.61 ***
	(0.03)	(0.06)	(0.03)
Associate's	-0.30 ***	-0.18 *	-0.59 ***
	(0.03)	(0.07)	(0.04)
Bachelor's	-0.07 **	-0.04	-0.18 ***
	(0.03)	(0.06)	(0.03)
Children	-0.17 ***	-0.34 ***	-0.09 ***
	(0.02)	(0.04)	(0.02)
Income < $25k	-1.65 ***	-3.01 ***	-0.80 ***
	(0.03)	(0.08)	(0.05)
$25-50k	-1.10 ***	-2.15 ***	-0.54 ***
	(0.03)	(0.08)	(0.04)
$50-75k	-0.75 ***	-1.45 ***	-0.29 ***
	(0.03)	(0.08)	(0.04)
$75-150	-0.39 ***	-0.85 ***	-0.19 ***
	(0.03)	(0.07)	(0.04)
New England	-0.12 ***	-0.14 *	-0.09 *
	(0.03)	(0.07)	(0.04)
Mid Atlantic	-0.10 **	0.02	-0.13 **
	(0.03)	(0.08)	(0.04)
East North Central	-0.15 ***	0.03	-0.10 **
	(0.03)	(0.07)	(0.04)
West North Central	-0.06 *	-0.02	0.02
	(0.03)	(0.06)	(0.03)
South Atlantic	-0.10 ***	-0.01	-0.16 ***
	(0.03)	(0.06)	(0.03)

East South Central	-0.19 ***	0.03	-0.17 ***
	(0.03)	(0.08)	(0.04)
West South Central	-0.17 ***	-0.06	-0.10 *
	(0.03)	(0.08)	(0.04)
Mountain	-0.02	-0.02	0.04
	(0.03)	(0.06)	(0.03)
N	23291	23291	23291
AIC	69316.47	110240.26	81437.03
BIC	69566.20	110489.99	81686.76
Pseudo R2	0.38	0.23	0.33

*** p < 0.001; ** p < 0.01; * p < 0.05.

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