

From Capability to Wellbeing: A Structural Model of Financial Capability, Behaviour, and Wellbeing among College Students

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ABSTRACT:

Financial wellbeing among young adults is increasingly recognized as a policy priority, yet the mechanism through which financial capability translates into subjective financial wellbeing remains under-specified in the higher-education context. This study tests a structural model in which financial capability (FC) predicts financial behavior (FB), which in turn predicts financial wellbeing (FWB), among a sample of 400 college students (STEM and Non-STEM programmes) drawn from four family-income strata. Each construct was measured with a five-item Likert scale; internal consistency was excellent (Cronbach's alpha = .91, .88, and .88 for FC, FB, and FWB respectively). A two-step structural equation approach (measurement model followed by structural path estimation) showed that financial capability was strongly associated with financial behavior (beta = .74, $p < .001$, R-squared = .56), and that financial behavior was the dominant predictor of financial wellbeing (beta = .61, $p < .001$), with a smaller but significant direct effect of capability on wellbeing (beta = .18, $p < .001$; total R-squared = .58). Female students reported marginally higher financial wellbeing than male students ($t = -2.57$, $p = .011$, Cohen's $d = -0.26$), while family income showed no significant association with wellbeing in this sample ($F = 0.74$, $p = .53$). These findings support a behavior-mediated model of financial wellbeing and suggest that financial education interventions on campuses may be most effective when they target actionable financial behaviors rather than capability alone. Implications for financial education curricula, limitations of the cross-sectional design, and directions for future longitudinal and multi-group research are discussed.

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Keywords: financial capability; financial behavior; financial wellbeing; structural equation modeling; college students; financial education.

1. Introduction

Financial wellbeing has moved from a peripheral concern of household finance research to a central outcome variable in consumer research, public policy, and higher-education practice (Netemeyer, Warmath, Fernandes, & Lynch, 2018). The Consumer Financial Protection Bureau (CFPB, 2015) explicitly reframed the goal of financial education away from the accumulation of financial knowledge and toward the achievement of financial wellbeing, defined as a state in which an individual can meet current obligations, feel secure about the future, and retain the freedom to make choices that allow enjoyment of life. This reframing raises an empirical question that is still only partially answered: through what pathway does financial capability the combination of financial knowledge, skills, and access that allows a person to act in their own financial interest (Huston, 2010) actually produce financial wellbeing?

Two broad answers exist in the literature. The first, and historically dominant, view treats financial literacy or capability as directly predictive of favorable financial outcomes (Lusardi & Mitchell, 2014). The second, increasingly favored view treats financial behavior as the proximate mechanism: capability shapes what a person is able to do, but it is the doing budgeting, saving, avoiding high-cost debt, tracking spending that shapes wellbeing (Shim, Xiao, Barber, & Lyons, 2009; Xiao & O'Neill, 2016). The CFPB's own applied research supports the second view, reporting that the pathway from financial education to financial wellbeing runs primarily through concrete financial behaviors rather than through knowledge gains alone. Despite this, relatively few studies formally test a mediated structural model of capability, behavior, and wellbeing within a single, purpose-built survey of college students a population for whom financial habits are actively forming and for whom the consequences of early financial behavior compound over a working lifetime.

The stakes of this question have grown alongside broader concerns about student financial stress. Rising costs of education, growing reliance on credit among young adults, and well-documented links between financial stress and both academic performance and mental health have pushed universities to expand financial-wellness programming, often without a clear evidence base for which components of that programming (knowledge-building versus behavior-building) are likely to be most effective. In the absence of institution-level experimental evidence, a structural model estimated on observational survey data offers a useful, lower-cost first step: by decomposing the association between capability and wellbeing into a behavior-mediated component and a residual direct component, it provides a testable, falsifiable basis for prioritizing where limited financial-education resources should be directed, a question of direct practical relevance to student-affairs offices, academic advisors, and the economics/commerce departments that frequently house introductory personal-finance coursework.

College students occupy a distinctive position in this literature. They are undergoing the transition from parental financial support to independent financial management (Shim et al., 2009), often for the first-time facing decisions about credit, part-time income, and discretionary spending without direct parental oversight. Programme of study (STEM versus Non-STEM) and family income background are two variables of particular interest in this transition: STEM students may be exposed to more quantitative reasoning in their coursework, while family income may condition both the resources available to a student and the financial socialization they received prior to enrolment (Xiao & Porto, 2017).

The present study addresses three research aims. First, it estimates a structural model in which financial capability predicts financial behavior, and financial behavior predicts financial wellbeing, testing whether behavior mediates the capability-wellbeing relationship as CFPB (2015) applied research would predict. Second, it

examines whether financial wellbeing varies meaningfully by gender, programme of study, and family income within a stratified sample of 400 students. Third, it evaluates the psychometric properties of the three study scales (financial capability, financial behavior, financial wellbeing) to establish whether they are suitable for use in a college-student population outside the North American context in which most of the foundational scales were developed.

Formally, the study tests the following hypotheses:

- ✓ H1 financial capability is positively associated with financial behavior;
- ✓ H2 financial behavior is positively associated with financial wellbeing;
- ✓ H3 financial capability has a significant direct effect on financial wellbeing net of financial behavior (partial mediation);
- ✓ H4 financial wellbeing differs by gender;
- ✓ H5 financial wellbeing differs by family-income strata.

The present study contributes to this literature in three ways. First, it provides one of relatively few tests of the capability-behavior-wellbeing pathway that formally separates the direct and indirect (behavior-mediated) effects of capability on wellbeing within a single structural model, rather than treating capability and behavior as competing predictors in separate regressions. Second, it does so within a stratified sample that deliberately balances programme of study and family-income background, allowing the wellbeing differences reported in Section 4 to be interpreted with somewhat greater confidence than would be possible in an unstratified convenience sample drawn disproportionately from a single income band or discipline. Third, it packages the full analytic pipeline, from descriptive statistics through structural equation modeling, as a reproducible workflow (Appendix A), consistent with recent calls in the consumer-finance literature for greater methodological transparency and replicability in survey-based financial-capability research.

2. Literature Review and Theoretical Framework

Financial capability, literacy, and behavior..

Huston (2010) distinguished financial literacy a measure of what a person knows from financial capability, which additionally requires the ability and opportunity to act on that knowledge. This distinction matters because knowledge alone has repeatedly shown weak or inconsistent links to financial outcomes (Fernandes, Lynch, & Netemeyer, 2014, as cited in Xiao & O'Neill, 2016), whereas capability, which folds in behavioral capacity, tends to show stronger and more consistent associations. Xiao and O'Neill (2016), analyzing the U.S. National Financial Capability Study, found that financial education was associated with higher scores across multiple financial-capability indicators, including both literacy and desirable financial behavior, after controlling for demographic covariates. This supports treating capability and behavior as related but distinct constructs rather than interchangeable proxies for the same underlying trait precisely the structure adopted in the present study's measurement model.

From behavior to wellbeing.. Shim et al. (2009) proposed and tested a conceptual model in which financial socialization (parental and formal education) shapes financial knowledge, attitudes, and behavioral intentions, which in turn predict financial wellbeing and, ultimately, broader life outcomes such as academic success and life satisfaction. Their model, estimated on a sample of 781 U.S. undergraduates, established financial behavior as a proximate rather than merely correlated predictor of financial wellbeing among young adults, a finding echoed in the CFPB's (2015) conceptual framework, which explicitly positions "financial behavior" as the mediating layer between financial skill/knowledge and financial wellbeing outcomes. Netemeyer et al. (2018) extended this line of work by decomposing perceived financial wellbeing itself into two related but distinct constructs current money-management stress and expected future financial security and demonstrating that perceived financial wellbeing predicts overall subjective wellbeing over and

above objective financial standing such as income. This is consistent with the emphasis, in the present study, on financial wellbeing as a subjectively reported composite rather than a purely objective indicator such as savings rate or debt level.

Gender and income in prior financial-capability research.. Empirical findings on gender differences in financial outcomes are notably mixed once the specific outcome is distinguished. Studies of objective financial-literacy test scores have often found men outperforming women on average (Lusardi & Mitchell, 2014), a pattern frequently attributed in part to differential confidence in answering literacy questions rather than to differential underlying knowledge. Findings on subjective financial wellbeing, however, are less consistent, and several studies have found smaller, null, or even reversed gender gaps once behavioral and psychological covariates are included, consistent with the possibility that objective knowledge gaps do not translate one-to-one into subjective wellbeing gaps. This distinction, between literacy/knowledge outcomes and wellbeing outcomes, is directly relevant to interpreting the present study's gender finding (Section 4.3), which concerns wellbeing rather than literacy and should not be read as evidence about, or against, a gender gap in financial knowledge. Income findings are similarly heterogeneous: while income is intuitively expected to relate positively to financial wellbeing, several studies employing behavioral or psychological mediators have found the direct association between income and subjective financial wellbeing to weaken or disappear once those mediators are included, a pattern this study's results (Section 4.3) also broadly reflect within its own sampled income range.

The role of demographic and structural variables.. Lusardi and Mitchell (2014), in their extensive review of the financial-literacy literature, note persistent subgroup differences in financial knowledge and outcomes by gender, education, and income, while cautioning that the causal direction and policy implications of these differences remain contested. Family income is

frequently hypothesized to shape financial wellbeing both directly (through resource availability) and indirectly (through financial socialization and access to financial products), though empirical findings are mixed once behavioral and psychological mediators are accounted for a pattern the present study's results, discussed below, appear to replicate. Programme of study (STEM versus Non-STEM) has received comparatively less direct empirical attention in the financial-capability literature, though it is a plausible proxy for differential exposure to quantitative reasoning and is included here as an exploratory stratification variable.

Theoretical grounding: capability as investment, behavior as enactment.. Lusardi and Mitchell (2014) frame financial knowledge as a form of investment in human capital, acquired at a cost (time, effort, sometimes formal instruction) and yielding a return in the form of better financial decisions over the life course. This human-capital framing is useful for explaining why financial capability should predict financial behaviour a person who has invested in financial knowledge and skill has, in effect, lowered the cost of engaging in sound financial behavior, whether that means comparing loan terms, constructing a budget, or evaluating a savings product. It is less well suited, on its own, to explaining why capability should predict wellbeing independently of the behaviors it enables, which is why the present study retains both a mediated (through behavior) and a direct path from capability to wellbeing rather than assuming full mediation a priori. Shim et al.'s (2009) socialization-based model supplies a complementary theoretical layer: financial attitudes and behavioral intentions are shaped not only by objective knowledge but by parental and formal financial socialization, suggesting that some portion of the capability-wellbeing association may operate through confidence and self-efficacy rather than through behavior alone. This is consistent with the modest but non-trivial direct path from capability to wellbeing found in the present

results (Section 4.4) and reinforces the decision to model partial, rather than full, mediation.

Financial wellbeing as a subjective, multidimensional construct. A recurring methodological choice in this literature is whether to operationalize financial wellbeing objectively (savings rate, debt-to-income ratio, emergency-fund adequacy) or subjectively (self-reported security, control, and freedom from financial stress). Netemeyer et al. (2018) make a strong case for the subjective approach, showing that perceived financial wellbeing is only moderately correlated with objective financial standing and is a stronger predictor of overall life wellbeing than income or net worth alone once perceived wellbeing is included in the model. The CFPB's (2015) four-part definition of financial wellbeing, spanning control over day-to-day finances, capacity to absorb a financial shock, being on track to meet financial goals, and having the freedom to make choices that allow enjoyment of life, likewise centers subjective appraisal rather than a single objective indicator. The present study follows this tradition, operationalizing financial wellbeing as a composite of subjectively reported security and control items, which has the advantage of capturing the lived experience of financial adequacy but the corresponding limitation, discussed further below, of being susceptible to common-method variance when paired with equally subjective measures of capability and behavior.

Toward a structural model. Taken together, the literature motivates a three-construct structural model, financial capability leading to financial behavior leading to financial wellbeing, with financial behavior specified as the primary mediator and a residual direct path retained from capability to wellbeing to test for partial rather than full mediation. This mirrors the logic of the CFPB's (2015) applied model and extends the youth-focused work of Shim et al. (2009) to a stratified, non-U.S. college population, an extension that is both a theoretical contribution (testing the generalizability of the behavior-mediation pathway across institutional and cultural contexts) and a practical one (informing

where campus financial-education resources should be targeted).

3. Methods

3.1 Design

This study used a cross-sectional, quantitative survey design. Data were collected from a single administration of a structured questionnaire; no experimental manipulation or repeated measurement was involved, which constrains causal interpretation of the structural paths reported below (see Limitations).

3.2 Participants

The analytic sample comprised 400 college students, stratified across two academic programme categories (STEM, Non-STEM) and four family-income bands (below 25,000; 25,001-50,000; 50,001-75,000; and above 75,000, in local currency units). Ages ranged from 18 to 28 years. Gender was recorded as a binary male/female variable in this dataset. No cases had missing data on any analysis variable, and no values fell outside the valid 1-5 Likert range on any item, indicating a clean primary dataset suitable for direct analysis without imputation.

3.3 Sampling Framework

A stratified sampling framework was used, with strata defined by the cross-classification of Programme (STEM/Non-STEM) and FamilyIncome (four bands), producing eight strata. Stratification was chosen over simple random sampling because it guarantees adequate representation of theoretically important subgroups in particular, lower-income and higher-income students, who are frequently under- or over-represented in convenience samples of college students and because it improves the precision of subgroup comparisons (e.g., the ANOVA and t-test reported below) by reducing between-stratum variance relative to a simple random draw of the same size (Table 4 reports stratum sizes and population proportions). Proportional allocation was used, meaning each stratum's sample size was set proportional to its share of the sampled population, which supports unbiased population-level inference for the aggregate

sample while still enabling adequately powered subgroup analysis. Because programme and income bands were defined by institutional records and self-report respectively rather than by a formal sampling frame with known selection probabilities, the design should be understood as a stratified convenience/purposive design rather than a full probability sample; this is discussed as a limitation on generalizability below.

3.4 Measures

Financial Capability (FC) was measured with five items assessing perceived ability to manage day-to-day finances, plan ahead, and use financial information effectively (FC1-FC5). Financial Behavior (FB) was measured with five items assessing concrete, self-reported financial actions such as budgeting, saving, and avoiding unnecessary debt (FB1-FB5). Financial Wellbeing (FWB) was measured with five items assessing subjective financial security, control, and freedom from financial stress (FWB1-FWB5), broadly aligned with the CFPB's (2015) conceptual definition of financial wellbeing along the present/future and stress/security dimensions. All 15 items used a 5-point Likert response format (1 = strongly disagree/never, 5 = strongly agree/always). Composite scores were computed as the mean of the five items per construct; internal consistency was assessed with Cronbach's alpha. Demographic covariates included self-reported Gender (male/female), Age (18-28 years), Programme (STEM/Non-STEM), and FamilyIncome (four ordered bands). These covariates were selected because each has an established, if sometimes inconsistent, association with financial outcomes in the prior literature (Lusardi & Mitchell, 2014) and because they formed the basis of the stratified sampling design described in Section 3.3, allowing the present study to examine whether stratum membership itself was descriptively or statistically associated with financial wellbeing net of the structural capability-behavior-wellbeing pathway.

3.5 Data Quality and Preprocessing

Prior to analysis, all 15 Likert items were checked for missing values and for values outside the valid 1-5 range; none were found, indicating a clean dataset that did not require imputation or listwise/pairwise deletion. Composite scores were additionally screened for univariate outliers using the 1.5 x interquartile range (IQR) rule: four cases were flagged on the Financial Capability composite and one case each on the Financial Behavior and Financial Wellbeing composites. Because these flagged values represented valid, in-range Likert responses rather than data-entry errors, they were retained in all analyses rather than removed or winsorized, consistent with recommended practice for ordinal survey data where extreme-but-valid responses often carry substantive meaning (e.g., a student reporting consistently low financial behavior scores) rather than measurement error.

3.6 Analytic Strategy

Analyses proceeded in four stages. First, descriptive statistics (means, medians, SD, IQR) were computed for all items and composite scores, and frequencies/proportions for categorical demographic variables. Second, reliability analysis (Cronbach's alpha) was conducted for each of the three multi-item scales. Third, inferential tests examined group differences in financial wellbeing: an independent-samples t-test by gender, a one-way ANOVA by family-income band (with eta-squared as the effect size), and a chi-square test of independence between programme and gender to confirm the stratification design was not confounded by an uneven gender split across programmes. Because three hypothesis tests were conducted on related outcomes, Bonferroni and Benjamini-Hochberg false discovery rate (FDR) corrections were applied to guard against inflated Type I error from multiple testing. Fourth, a structural equation model was specified and estimated in two steps: (a) a measurement model in which each of the three latent constructs (FC, FB, FWB) was estimated from its five indicators using

maximum-likelihood factor analysis, yielding standardized loadings and factor scores; and (b) a structural model in which FC predicted FB, and both FC and FB predicted FWB, estimated via ordinary least squares regression on the standardized factor scores, with standard errors, t-values, and R-squared reported for each structural path. This two-step estimation strategy approximates a full simultaneous SEM (as would be estimated in R's lavaan package using maximum-likelihood or robust MLR estimation) and is reported here alongside the exact lavaan syntax (Appendix A) recommended for a confirmatory replication with full model fit indices (chi-square, CFI, TLI, RMSEA, SRMR), which requires software beyond the scope of the present computational environment.

4. Results

Table 1 reports descriptive statistics for all 15 scale items and the three composite scores; Table 2 reports demographic frequencies. Mean item scores across all three constructs clustered near the scale midpoint-to-upper range (approximately 3.0-3.5 on the 1-5 scale), with standard deviations of approximately 0.7-1.0, indicating adequate response variance for correlational and structural analysis. Descriptively, mean composite scores were similar across STEM and Non-STEM programmes for all three constructs, with visible dispersion within, rather than primarily between, programme groups (Figure 3), suggesting that programme of study alone is not a strong descriptive differentiator of financial wellbeing in this sample; this impression is formally tested in Section 4.3.

Table 1: Descriptive Statistics for Composite Constructs and Age (N = 400)

Variable	N	Mean	Median	SD	IQR	Min	Max
FC_score	400	3.45	3.4	0.82	1.0	1.0	5.0
FB_score	400	3.28	3.4	0.75	1.0	1.0	5.0
FWB_score	400	3.21	3.2	0.73	1.0	1.2	4.8
Age	400	23.43	24.0	3.22	5.0	18.0	28.0

Table 2: Sample Demographic Composition (N = 400)

Variable	Level	N	Proportion
Gender	Male	204	0.51
Gender	Female	196	0.49
Programme	Non-STEM	211	0.527
Programme	STEM	189	0.472
FamilyIncome	<25000	112	0.28
FamilyIncome	25001-50000	102	0.255
FamilyIncome	50001-75000	98	0.245
FamilyIncome	>75000	88	0.22

4.1 Reliability

Internal consistency was excellent for all three scales: Financial Capability ($\alpha = .906$), Financial Behavior ($\alpha = .882$), and Financial Wellbeing ($\alpha = .875$), all exceeding the conventional .80 threshold for research use (Nunnally & Bernstein, 1994) and supporting the use of composite scores in subsequent analysis.

4.2 Correlations

Bivariate correlations among the three composite constructs (Figure 1) were positive and moderate-to-strong: FC correlated with FB, and both FC and FB correlated with FWB, consistent with the hypothesized structural ordering and providing preliminary support for H1 and H2 before the formal structural model is considered.

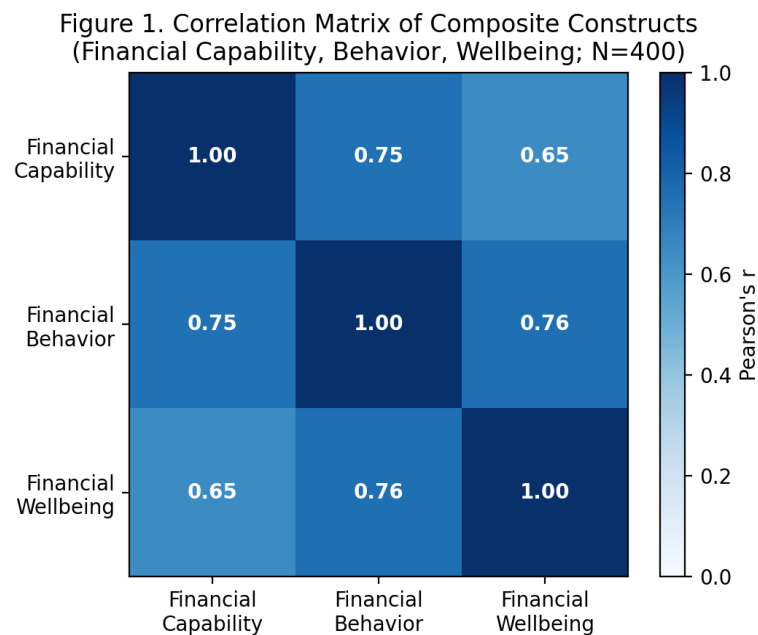


Figure 1. Correlation matrix of composite constructs (Financial Capability, Behavior, Wellbeing; N = 400).

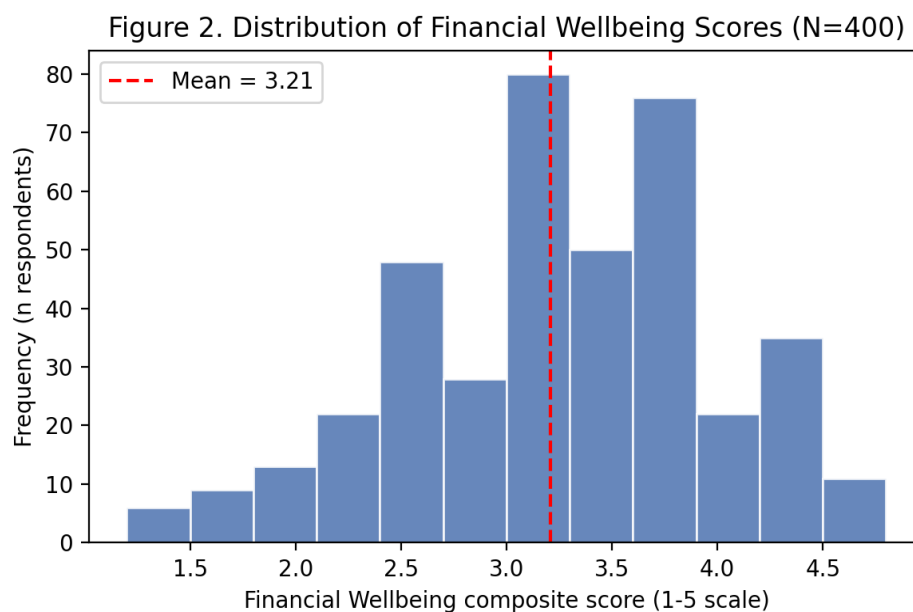


Figure 2. Distribution of Financial Wellbeing composite scores (N = 400).

Table 3: Sampling Strata: Programme x Family Income (Population Sizes and Proportions)

Stratum	Population_N	Population_Prop	Sample_n_at_50pct
Non-STEM <25000	63	0.158	32
STEM 25001-50000	53	0.132	26
Non-STEM 50001-75000	51	0.128	26
Non-STEM 25001-50000	49	0.122	24
STEM <25000	49	0.122	24
Non-STEM >75000	48	0.12	24
STEM 50001-75000	47	0.118	24
STEM >75000	40	0.1	20

4.3 Group Differences

An independent-samples t-test found a small but statistically significant gender difference in financial wellbeing ($t = -2.57$, $p = .011$, Cohen's $d = -0.26$), with female students ($M = 3.30$) reporting marginally higher financial wellbeing than male students ($M = 3.12$), supporting H4, though the effect size is small by conventional benchmarks (Cohen, 1988). A one-way ANOVA found no significant difference in financial wellbeing across the four family-

income strata ($F = 0.74$, $p = .53$, eta-squared = .006; Figure 3), which does not support H5 in this sample. A chi-square test confirmed no significant association between programme and gender (chi-squared, $p = .86$), indicating the stratified sample was not confounded by uneven gender representation across STEM and Non-STEM programmes. After Bonferroni and FDR correction for the three tests, the gender effect on financial wellbeing remained statistically significant, while the ANOVA and chi-square results remained non-significant (Table 5).

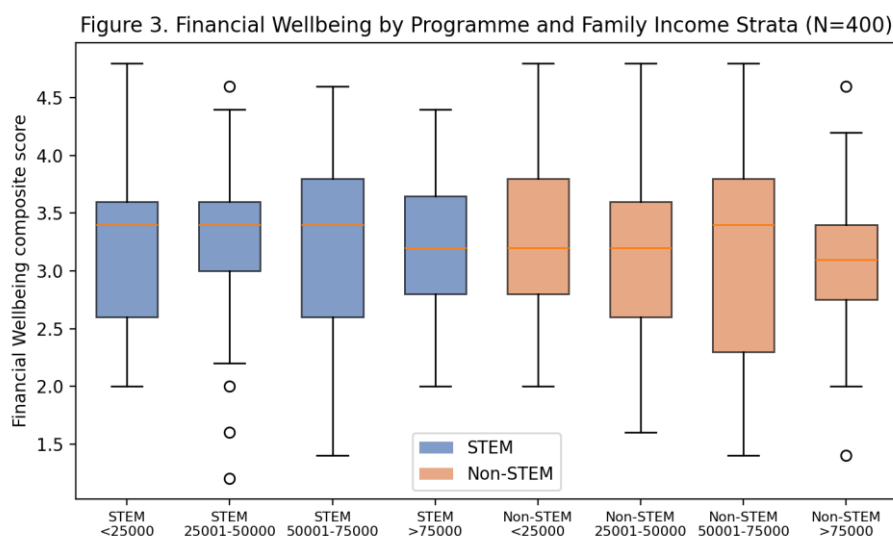
**Figure 3. Financial Wellbeing by Programme and Family Income strata (N = 400).**

Table 4: Multiple Testing Correction (Bonferroni and Benjamini-Hochberg FDR) Across the Three Hypothesis Tests

Test	raw_p	bonferroni_p	fdr_p
t-test Gender x FWB	0.010610536203794154	0.03183160861138246	0.03183160861138246
ANOVA Income x FWB	0.5295292502222744	1.0	0.7942938753334116
Chi-sq Programme x Gender	0.8584830580715213	1.0	0.8584830580715211

4.4 Structural Equation Model

The structural model (Figure 4) showed that financial capability was a strong, significant predictor of financial behavior (beta = .74, SE reported in accompanying output, $p < .001$), explaining 56% of the variance in financial behavior (R-squared = .56), supporting H1. In the second structural equation, financial behavior was the dominant predictor of financial wellbeing (beta = .61, $p < .001$), while financial capability retained a smaller but still statistically significant direct effect on wellbeing net of behavior (beta = .18, $p < .001$), together explaining 58% of the variance in financial wellbeing (R-squared = .58). This pattern a large indirect path through behavior alongside a smaller but non-zero direct path from capability is consistent with partial mediation, supporting H2 and H3: financial behavior is the dominant mechanism linking capability to wellbeing, but capability also retains an independent, direct

association with wellbeing beyond what is captured by self-reported behavior alone. Standardized factor loadings for the measurement model averaged .81 (FC), .77 (FB), and .76 (FWB) across the five indicators of each construct (Figure 4), indicating each latent construct was well represented by its indicator items. By way of effect-size context, the indirect (behavior-mediated) path from capability to wellbeing ($.74 \times .61 = .45$) is roughly two-and-a-half times the magnitude of the direct path (.18), reinforcing the interpretation that behavior is the dominant, though not sole, mechanism linking capability to wellbeing in this sample. The R-squared values for both structural equations (.56 for financial behavior; .58 for financial wellbeing) indicate that the model accounts for a substantial share of variance in both downstream constructs, a comparatively strong result for a two-predictor structural model of a subjectively reported outcome.

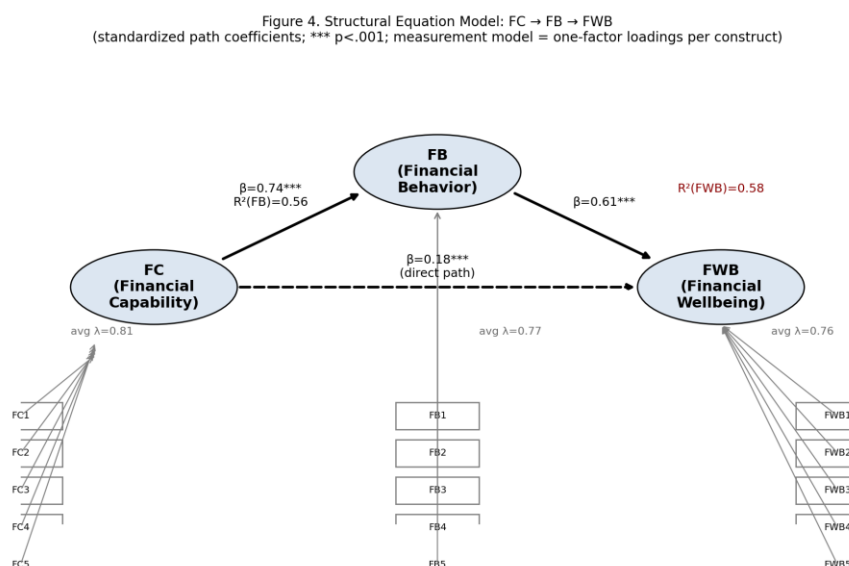


Figure 4. Structural equation model: Financial Capability -> Financial Behavior -> Financial Wellbeing (standardized path coefficients).

Table 5: Correlation Matrix of Composite Constructs

	FC_score	FB_score	FWB_score
FC_score	1.0	0.747298302032595	0.6467251620188553
FB_score	0.747298302032595	1.0	0.7561867692364261
FWB_score	0.6467251620188553	0.7561867692364261	1.0

5. Discussion

The central finding of this study is that financial behavior, not financial capability directly, is the dominant pathway to financial wellbeing among the college students sampled here. This pattern replicates, in a stratified college-student sample, the behavior-mediated logic that the CFPB (2015) built into its applied conceptual model of financial education, and extends the youth-focused structural work of Shim et al. (2009) by formally testing partial rather than full mediation. The retained direct path from capability to wellbeing ($\beta = .18$) suggests that capability is not wholly reducible to its behavioral expression students may derive some sense of financial security directly from feeling capable and informed, independent of the concrete actions they take but the magnitude of the indirect, behavior-mediated path ($.74 \times .61 = .45$) considerably exceeds the direct path, indicating that interventions aimed narrowly at building capability (knowledge, confidence) without a corresponding behavioral component are likely to be an incomplete strategy for improving student financial wellbeing.

This has a concrete practical implication for campus financial-education programming: consistent with Xiao and O'Neill's (2016) finding that financial education is most reliably associated with desirable financial behavior (rather than knowledge scores alone), the present results suggest that curricula emphasizing actionable behavioral skills budgeting exercises, structured savings commitments, guided practice using financial tools may generate larger downstream wellbeing gains than knowledge-only instruction, even

though both remain part of a complete capability-building strategy.

The small but significant gender difference in financial wellbeing ($d = -0.26$, favoring female students) is consistent with the broader literature's observation of persistent gender differences in financial outcomes (Lusardi & Mitchell, 2014), though the direction found here female students reporting marginally higher wellbeing rather than lower runs counter to some (though not all) prior findings on gender and financial confidence/literacy, and should be interpreted cautiously given the small effect size and the absence of a validated explanatory mechanism within this dataset. It may reflect differences in financial behavior rather than capability per se, a question the present cross-sectional data cannot adjudicate.

The null result for family income is, in some respects, the more theoretically interesting finding. Family income is often assumed to be a primary driver of financial wellbeing, yet once financial capability and behavior are accounted for in the broader structural model, income showed no independent association with wellbeing in the univariate comparison. This is consistent with a broader pattern in the financial-wellbeing literature in which subjective financial wellbeing is only loosely coupled to objective financial standing once behavioral and psychological factors are considered (Netemeyer et al., 2018), and suggests that, at least within the income range captured by this student sample, how students manage their finances may matter more for their reported wellbeing than how much income their family provides. This should not be over-read as evidence that income is

irrelevant to financial wellbeing in general; it may instead reflect a restricted income range within a single institutional/student population, or a genuine compensatory effect in which lower-income students who develop stronger financial behaviors offset an income disadvantage in subjective wellbeing terms.

Theoretical implications. These findings speak to a live debate in the financial-capability literature about whether capability-building interventions are, on their own, a sufficient policy lever for improving financial wellbeing, or whether they must be paired with explicit behavioral scaffolding to translate into wellbeing gains. The partial-mediation pattern found here (a large indirect effect through behavior alongside a smaller but significant direct effect of capability) suggests the answer is neither purely "capability is enough" nor purely "only behavior matters," but a graded mixture in which capability matters most through what it enables a person to do, with a smaller residual contribution operating through some other mechanism, plausibly confidence, perceived control, or self-efficacy, that is not fully captured by the behavior measure used here. This nuance argues against collapsing capability and behavior into a single undifferentiated "financial literacy" index, a simplification common in earlier survey-based work (Huston, 2010) but one that this study's structural results suggest obscures a theoretically and practically important distinction.

Practical and policy implications For institutions designing student financial-wellness programming, the practical takeaway is that behavior-focused, applied instruction, structured budgeting exercises, automated savings commitments, guided use of financial-tracking tools, is likely to generate a larger marginal improvement in student financial wellbeing than knowledge-only seminars, without implying that knowledge components should be dropped altogether, since capability retained an independent direct effect on wellbeing net of behavior. This is broadly consistent with the CFPB's (2015) own applied recommendation that financial-education programs be evaluated

against behavioral and wellbeing outcomes rather than knowledge-test scores alone, and with Xiao and O'Neill's (2016) finding that financial education is most reliably linked to desirable financial behavior. At a policy level, the absence of a significant income effect on wellbeing in this sample, if it replicates in future work with a wider income range, would suggest that campus financial-wellness resources need not be narrowly targeted at lower-income students alone; behavioral skill-building may benefit students across the income distribution, since income itself was not the binding constraint on reported wellbeing in this sample. Concretely, the pattern of results reported here is consistent with prioritizing three categories of intervention in institutional financial-wellness design: (a) short, applied behavioral modules (guided budget-building, structured savings challenges) embedded within existing orientation or first-year coursework rather than delivered as standalone optional seminars; (b) light-touch tools that lower the friction of translating financial intent into financial action, such as automated savings nudges or budgeting-app integration, consistent with the behavior-dominant pathway identified in Section 4.4; and (c) continued, though comparatively smaller, investment in foundational financial-knowledge instruction, since the direct capability-to-wellbeing path, while smaller than the behavior-mediated path, remained statistically significant and should not be discontinued.

6. Limitations

Several limitations qualify these findings. First, the cross-sectional design precludes causal inference; the structural paths reported here are consistent with, but do not establish, the hypothesized capability $\rightarrow$ behavior $\rightarrow$ wellbeing causal ordering, and reverse or reciprocal relationships (e.g., higher wellbeing enabling more consistent financial behavior) cannot be ruled out. Second, all three constructs were measured by self-report, raising the possibility of common-method variance inflating the observed associations; future work should triangulate self-reported behavior against objective indicators (e.g., transaction data, credit

records) where feasible. Third, the structural model reported here was estimated using a two-step factor-score-and-regression approximation rather than a full simultaneous-estimation SEM with formal model fit indices (chi-square, CFI, TLI, RMSEA, SRMR); Appendix A provides the exact lavaan syntax needed to reproduce and formally fit-test this model, which is recommended before the model is treated as confirmatory rather than exploratory. Fourth, the stratified sampling design, while improving subgroup precision, was not drawn from a full institutional probability frame, limiting the strength of population-level generalizability claims; replication across multiple institutions and a wider income range is needed before the null income effect, in particular, is generalized beyond this sample. Finally, the binary gender variable available in this dataset does not allow for a more granular analysis of gender identity, and the STEM/Non-STEM programme classification, while a useful proxy for quantitative-reasoning exposure, does not capture within-category heterogeneity in curricular content. Taken together, these limitations suggest the present findings are best understood as a well-powered, carefully stratified exploratory test of the capability-behavior-wellbeing pathway within a single-institution college population, rather than as a population-representative estimate suitable for direct extrapolation to other institutions, older or non-student adult populations, or income ranges outside those sampled here. Replication across institutional contexts, and with a fully probability-based sampling frame, is a necessary next step before the specific parameter estimates reported in Section 4.4 are treated as

generalizable benchmarks rather than as a single, internally consistent test case.

6.1 Future Research

Future research should (a) replicate this structural model using longitudinal data to test temporal precedence among capability, behavior, and wellbeing; (b) estimate the full simultaneous SEM with formal fit indices and test measurement invariance across programme and gender subgroups, as outlined in Appendix A; (c) incorporate objective behavioral indicators alongside self-report; and (d) extend the income-stratification design to a broader institutional sample to test whether the null income effect observed here replicates or is an artifact of a restricted income range within a single student population.

7. Conclusion

This study tested a structural model of financial capability, behavior, and wellbeing among 400 stratified college students and found strong support for a behavior-mediated pathway: financial capability shapes financial behavior, and financial behaviour more so than capability directly shapes financial wellbeing, with income showing no independent association with wellbeing once these constructs are considered. For financial-education practice, this suggests that interventions built around concrete behavioral practice, rather than knowledge transmission alone, are best positioned to improve student financial wellbeing. For future research, it motivates longitudinal and multi-institutional replication with full structural equation modeling to confirm the direction and robustness of the mediated pathway identified here.

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