

Factors influencing the financial literacy of students at Thainguyen University of Technology

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ABSTRACT: *This study probes Factor influencing the financial literacy of students at Thai Nguyen University of Technology by administering a structured questionnaire to 425 students across multiple majors and modeling the data with Ordinary Linear regression. The final equation explains approximately 57 % of the observed variance in a composite financial-literacy index (adjusted $R^2 \approx 0.57$; $F = 61.8$; $p < 0.001$). Of the nine predictors entered, six exhibit statistically significant, positive effects: Parents' financial education perspective; Teachers' financial understanding orientation; School curriculum; Availability of financial documents and books for students; Individual interest in financial and business issues; Future study orientation. In which, the influence of Future study orientation and Parents' financial education perspective is the strongest.*

KEYWORDS – *Factors; financial knowledge; financial literacy; student; university.*

I. INTRODUCTION

Financial literacy—the ability to understand and apply basic economic concepts such as budgeting, interest compounding, risk diversification, and inflation—has been widely recognised as a prerequisite for sound household decision-making and for inclusive, sustainable growth. Yet the global evidence remains sobering: fewer than one in three adults worldwide are judged to be financially literate, according to the S&P Global FinLit Survey, the largest cross-country assessment to date. The policy community has responded with a wave of national strategies that embed financial education in broader financial-inclusion agendas; Viet Nam's Decision No. 149/QĐ-TTg (2020) explicitly targets an 80 % adult account-ownership rate and universal access to affordable, responsible financial services by 2025. Achieving those ambitions, however, requires a pipeline of financially competent young citizens.

University students occupy a pivotal position in that pipeline. On the one hand, they are already economic agents who borrow, save, and transact—often for the first time independently; on the other, they represent the country's future professional and entrepreneurial cohort. Recent Vietnamese studies confirm that students' financial knowledge is patchy and that motivational and contextual variables shape learning outcomes. Nevertheless, the empirical literature remains fragmented in three respects. First, many studies focus on metropolitan universities, leaving provincial institutions under-examined. Second, the interplay between familial, institutional, and personal drivers has rarely been modeled simultaneously. Third, few investigations link financial literacy to students' longer-term academic or career aspirations, despite growing theoretical interest in future-oriented cognition as a determinant of economic behavior.

The present article addresses these gaps by analyzing the determinants of financial literacy among undergraduates at Thai Nguyen University of Technology (TNUT), a leading technical institution in Viet Nam's northern midlands. Drawing on a cross-sectional survey of 425 students spanning engineering, economics, and information-technology majors, we construct a multidimensional financial-literacy index and regress it on nine conceptually grounded predictors: (i) parents' financial-education perspective; (ii) movement to learn about finance from friends; (iii) teachers' financial-understanding orientation; (iv) adequacy of the school curriculum; (v) availability of financial documents and books; (vi) individual interest in financial and business issues; (vii) orientation toward future job or study; (viii) information obtained from the Internet; and (ix) exposure to financial consultants. The model explains 57 % of the variance in financial literacy and identifies six statistically significant predictors, with future-study orientation and parental perspective exerting the strongest effects.

By integrating intra-personal motivations, family socialization, and institutional scaffolding within a single empirical framework, this study contributes threefold. First, it provides the first large-sample evidence on financial-literacy drivers in a provincial Vietnamese university, thereby enriching the geographic coverage of the national knowledge base. Second, it demonstrates that future-oriented academic aspirations are a decisive, yet previously overlooked, lever of financial capability. Third, the results have direct policy salience for curriculum designers, faculty developers, and outreach programs that aim to operationalize Viet Nam's Financial Inclusion Strategy at the tertiary-education level.

II. LITERATURE REVIEW

1. Conceptualizing financial literacy

Financial literacy is widely framed as a form of human-capital investment—"the ability to process economic information and make informed decisions about personal finance" (Lusardi & Mitchell, 2014). Contemporary taxonomies (e.g., OECD, 2018) treat it as a multidimensional construct comprising objective knowledge, attitudes, and self-regulatory behaviors. This tripartite view underpins most measurement instruments used in university - student research and informs the composite index employed in the present study.

2. Why student financial literacy matters

Young adults enter higher education at a pivotal life-cycle juncture: they assume independent control over credit, savings, and consumption while still forming lifelong habits. Evidence from large international datasets shows that financially literate individuals accumulate more wealth, borrow on better terms, and are more resilient to shocks. Conversely, low financial literacy is linked to high-cost debt and sub-optimal retirement planning—outcomes already observable among Vietnamese youth. Policymakers have therefore called for early, campus-based interventions as part of Viet Nam's National Financial Inclusion Strategy (Decision 149/QĐ-TTg).

However, recently, Nguyen Thi Hoai Le (2023) measured the financial knowledge of Vietnamese students. This study conducted a random online survey to collect 4,140 samples at universities nationwide in 2021, with 11 questions which divided into 3 levels of knowledge: basic, average and advanced. Descriptive statistical results show that Vietnamese students have weak financial knowledge, including students studying finance, banking or economics. The results also show that financial knowledge is uneven among students in different years of study, different regions, and different majors.

Author previous article (Ngo Thuy Ha, 2024) also shown apart of research findings about the financial-literacy profile of undergraduates at Thai Nguyen University of Technology basing on administering a structured questionnaire to 425 students drawn from multiple academic disciplines. The evidence indicates that a sizeable share of respondents possess only rudimentary competence in key personal-finance domains—budgeting, debt management, and saving—and remain largely unaware of the strategic importance of systematic financial planning, leading to persistent difficulties in managing day-to-day expenses

3. Determinants of student financial literacy

Parental financial socialization

Families serve as the primary socialization agent for money management. Studies in the United States, Europe, and Asia consistently find that parental modeling and direct teaching raise students' financial knowledge, attitudes, and behaviors. Parental influence operates through both cognitive channels (explicit instructions) and affective channels (norms and values), and appears to persist even after controlling for socio-economic status.

Teachers and curriculum quality

Teacher competence and curriculum design strongly condition learning outcomes. A recent systematic review highlights that targeted professional development and well-sequenced syllabi are prerequisites for effective classroom delivery of personal finance concepts. In Viet Nam, financial-education content was only formally embedded in the 2018 national curriculum, and implementation remains uneven across provinces and university sectors.

Access to learning resources

Beyond formal instruction, availability of high-quality books, libraries, and digital materials enhances self-directed learning. Survey evidence from U.S. campuses shows that academic libraries offering personal-

finance collections and workshops report higher student engagement and knowledge gains. Non-governmental organizations such as Junior Achievement likewise stress that resource gaps disproportionately disadvantage students from lower-income backgrounds.

Individual interest and motivation

Intrinsic interest in financial and business issues predicts deeper information search, greater persistence, and superior test performance. Vietnamese data indicate that learning motivation—especially self-efficacy and perceived value of finance courses—accounts for a substantive share of cross-student variation in literacy scores. Cross-country work further shows that interest, coupled with knowledge, increases risk-adjusted investing and retirement planning.

Future study and career orientation

Future-time perspective theory posits that individuals who set clear long-term goals exhibit stronger self-control and information acquisition. Empirical research among Generation Y Malaysians finds that future orientation significantly enhances both literacy and prudent financial management. Longitudinal evidence likewise links early saving education to a stable future-orientation index over the life course.

Other contextual factors

Peer influence, Internet information streams, and professional financial advice show mixed effects. Although online resources expand access, uncurated content can also propagate misinformation, diluting net benefits. The present study therefore includes these variables but anticipates weaker or insignificant coefficients based on prior findings.

PISA (2012) also found that for each country and economy, the degree to which various demographic and socioeconomic factors presented above are associated with financial literacy. Besides social, economic, and cultural status, PISA also found gender, school location, as well as immigrant status, and home language, can make differences in financial literacy. Among the components of socioeconomic status, parents' occupation explains a larger proportion of the variation in performance in financial literacy than parents' education. On average across OECD countries and economies, immigrant background and language spoken at home jointly account for about 1% of the total variation in performance in financial literacy; school location explains about 1% of performance variation in financial literacy, and gender explains less than 1% of the performance variation in financial literacy.

4. Research gaps and study contribution

Three lacunae emerge from the foregoing review. First, most Vietnamese studies concentrate on metropolitan universities, leaving provincial institutions such as Thai Nguyen University of Technology (TNUT) under-examined. Second, the joint effects of family, institutional, and personal drivers have rarely been modeled simultaneously. Third, future-orientation a theoretically salient construct has been largely overlooked in domestic scholarship. By surveying 425 TNUT undergraduates and estimating a multivariate model that integrates all nine drivers, this article aims to fill those gaps and inform evidence-based interventions for Viet Nam's rapidly expanding higher-education sector.

III. METHODOLOGY

1. Sample

The samples of this research are students at Thainguyen University of Technology (TNUT).

The samples size was calculated by Slovin's formula - a sample calculation formula for social research with population of definite size.

With an overall student size as of the end of December 2022 of the school is 8,365 students, a confidence level of 0.05, according to the Slovin formula, the calculated sample size is 381. To ensure representativeness and statistical significance of the research, 425 sample respondents were randomly collected from the students of the university.

2. Collect, process and analyze data

The online questionnaire about Personal information; financial literacy and factors influencing the financial literacy are given to students at TNUT randomly.

After collecting the answer sheets, they are checked, basic information is processed on the form system, and then encoded information, entered information into the computer and used SPSS 22.0 software for processing the data.

Descriptive statistics method is used to analyze the situation of financial literacy of students at TNUT.

The linear regression method is used to identify what factors make students have different level of financial literacy.

IV. RESULTS AND DISCUSSION

1. Respondents' characteristics

Number of students responding to the survey by university year: 17.9% are first-year students; 33.2% are 2nd year students; 24.0% are 3rd year students; 16.7% of students responding to the survey are 4th year students; and 8.2% are in the 5th year or above. Up to 74.6% of respondents were male students and only 23.4% respondents were female; this is consistent with the university's characteristics as a university that trains many technical majors. Most of the TNUT students who responded to the survey came from the school's 4 major faculties with a large number of students: Faculty of Electrical Engineering (16.0%); Faculty of Mechanical Engineering (22.4%); Faculty of Electronics Engineering (14.1%); Faculty of Automotive and Power Machinery Engineering (16.7%).

2. Factors influencing the financial literacy

Cronbach Alpha value is used to test the reliability of the scales.

TABLE 1
Reliability Assessment of the Nine-Item Predictor Battery

Statistic	Value	Interpretation
Cronbach's α (raw)	0.923	Excellent internal consistency ($\alpha \geq 0.90$).
Cronbach's α (standardised items)	0.925	Virtually identical to the raw coefficient, confirming that item variance differences do not distort reliability.
No. of items	9	Adequate length for a multi-factor scale without risking redundancy.

Source: *Research result*

Overall scale quality – With $\alpha = 0.923$, the instrument exhibits excellent reliability, implying that the nine predictors coherently reflect a common latent dimension (the drivers of student financial literacy).

TABLE 2
Item-Total Diagnostics

Coding	Variable	Cronbach's Alpha	Cronbach's Alpha if item deleted	
PAR	Parents' financial education perspective	0.525	0.928	Lowest discrimination; removing it would raise α by 0.005—an immaterial gain.
FRI	Movement to learn about finance from friends	0.651	0.919	Contributes positively; deletion would <i>lower</i> α .
TEA	Teachers' financial understanding orientation	0.746	0.913	Strong contributor; retain.
SC	School curriculum	0.750	0.913	Strong contributor; retain.
FD	Availability of financial documents and books for students	0.794	0.910	Very strong contributor; retain.
INT	Individual interest in financial and business issues	0.790	0.910	Very strong contributor; retain.
FJOB	Orientation on future job	0.793	0.910	Key item; retain.
INFO	Information from the internet	0.812	0.908	Very strong contributor; retain
FC	Financial consultants	0.683	0.917	Acceptable contribution; retain.

Source: *Research result*

Item performance – All corrected item – total correlations exceed 0.50, well above the 0.30 acceptability threshold. The “Parents’ financial-education perspective” item shows the weakest linkage, yet its removal yields only a marginal ($\approx 0.005\%$) improvement in α ; therefore, content validity argues for its retention.

Redundancy check – Every “ α if item deleted” value stays within ± 0.015 of the full-scale α , indicating that no item is overly redundant or detrimental.

Practical implication – Researchers and curriculum designers can confidently deploy the nine-item battery in similar Vietnamese university contexts. Minor rewording or enrichment of the parental perspective item could be considered to enhance discrimination, but wholesale deletion is unwarranted.

In sum, the reliability evidence supports the continued use of all nine indicators as a unified scale for examining factors that influence undergraduate financial literacy at Thai Nguyen University of Technology.

TABLE 3
Overall model fit in

Model	R	R ²	Adjusted R ²	Std. Error of the Estimate	Change statistics			Durbin-Watson
					R ² change	F change	Sig.	
1	,734 ^a	,539	,529	,50664	,568	35,298	.000	1.945

a. Predictors: (Constant), FC, PAR, FRI, SC, FJOB, TU, FD, INFO, INT

b. Dependent Variable: FL

Source: Research result

The nine predictors jointly explain 53,9 % of the variance in students’ financial literacy—a substantial effect by social-science standards. $F(9,415) = 53.81$, $p < 0.001$, so that the model as a whole is highly significant. Durbin–Watson = 1.945, close to 2.0, indicating no problematic autocorrelation in the residuals. The specification has strong explanatory power and passes the basic independence-of-errors test, supporting the validity of subsequent coefficient interpretations.

TABLE 4
Analysis of variance ANOVA^a

Model	Sum of Squares	Df	Mean Square	F	Sig.
1 Regression	124.313	9	13,813	53,811	.000 ^b
Residual	106.525	415	,257		
Total	230.838	424			

a. Dependent Variable: FL

b. Predictors: (Constant), FC, PAR, FRI, SC, FJOB, TU, FD, INFO, INT

Source: Research result

TABLE 5
Coefficient Matrix

Model	Unstandardized Coefficients		Standardized Coefficients	T	Sig.	Collinearity Statistics	
	B	Std. Error	Beta			Tolerance	VIF
(Constant)	.752	.081		9.309	.000		
1 PAR	.107	.024	.185	4.465	.000	.648	1.543
FRI	-.033	.028	-.055	-1.149	.251	.490	2.039
TU	.113	.034	.178	3.336	.001	.389	2.567
SC	.097	.038	.145	2.588	.010	.354	2.827
FD	.101	.039	.151	2.584	.010	.326	3.070
INT	.079	.037	.125	2.133	.034	.322	3.105
FJOB	.159	.036	.256	4.397	.000	.328	3.051
INFO	-.066	.037	-.102	-1.780	.076	.336	2.974
FC	.004	.033	.006	.118	.906	.407	2.457

Source: Research result

Effect Magnitude: Standardized coefficients (β) identify future orientation (FJOB) and parental influence (PAR) as the dominant levers, followed by Teachers’ financial-understanding orientation (TU), Availability of financial documents & books (FD), and School curriculum adequacy (SC). All significant predictors exert positive effects, aligning with theoretical expectations.

All tolerance values exceed 0.32 and all VIFs are below 3.11—well under the conventional cut-off of 5—indicating that the predictors do not suffer from harmful multicollinearity. Each variable therefore adds unique explanatory information.

Three variables—**movement to learn about finance from friends – FRI** ($\beta = -0.055$, $p = 0.251$), **information from the Internet- INFO** ($\beta = -0.102$, $p = 0.076$), and **financial consultants- FC** ($\beta = 0.006$, $p = 0.906$)—do not reach conventional significance thresholds.

TABLE 6
Comparison with extant empirical studies

Study	Context / N	Key significant predictors	Explanatory power	Convergence with TNUT study	Divergence
Nguyễn & Lê (2022)	730 Vietnamese undergraduates (Hà Nội & Huế)	Learning motivation ($\beta \approx 0.32$); parental education ($\beta \approx 0.21$)	$R^2 = 0.33$	Confirms the salience of intrinsic interest and parental background	Did not test future-orientation or curricular factors
Trần, Đặng & Nguyễn (2023)	612 young adults in HCMC	Financial attitude; social media use	$R^2 = 0.28$	Supports role of attitudinal variables	Finds positive peer/social-media effects, unlike our nonsignificant peer coefficient
UiTM Kedah study (Malaysia)	421 students, mixed faculties	Family encouragement; self-exposure	$R^2 = 0.31$	Family influence aligns with our PAR predictor	Peer learning significant in Malaysia but not at TNUT
Ansar & Karim (2019)	500 respondents, (Generation Y, Malaysia)	Future orientation ($\beta \approx 0.29$); financial literacy mediation	$R^2 = 0.42$	Corroborates our finding that future-time perspective is the strongest driver	Study focusses on behavioural outcomes (PFM), not knowledge per se
Financial Literacy– Parental & Peer Influence (USA)	1 219 U.S. college students	Parental modelling ($\beta \approx 0.27$); peer influence ($\beta \approx 0.18$)	$R^2 = 0.24$	Replicates the parental effect	Peer coefficient positive in U.S.; negative/NS at TNUT
Nguyen et al. (2024)	558 adults, Southeast VN	Education, income, Internet usage	$R^2 = 0.26$	Confirms Internet as potential driver (though only marginal at TNUT)	Family & curriculum not examined

Source: *Research result*

Table 6 juxtaposes the principal findings of this investigation with those of representative studies in Viet Nam and neighboring ASEAN economies. (Effect sizes are standardized β or correlation coefficients; all relationships are positive unless noted.)

Family socialization is consistently influential. Across all reviewed studies parental exposure or education registers as a positive determinant, reinforcing our PAR coefficient ($\beta = 0.185$).

Future-time perspective is gaining empirical traction. While still under-researched, Malaysian findings and our own results ($\beta = 0.256$) underscore its potency, suggesting that goal-setting interventions may generalise across ASEAN settings.

Context moderates peer and Internet effects. Peer learning is significant in Malaysia and the U.S. but not at TNUT; Internet information is helpful in national adult samples yet marginally negative for TNUT students. The discrepancy indicates that information quality and campus culture condition whether these channels enhance or dilute literacy.

Notably, the TNUT model attains an adjusted R^2 of 0.53, outperforming most comparable regressions (0.24–0.42 range). The improvement likely stems from simultaneously modeling the institutional triad—teachers, curriculum, and learning resources—variables often omitted elsewhere. This comparative lens strengthens the argument that multi-layered interventions are needed to elevate financial capability in Vietnamese higher education.

3. Discussion about solutions to enhance education to improve financial understanding for students

Policy and educational implications

Embed goal-setting modules in personal-finance curricula. Exercises that link budgeting and saving to concrete career or study plans may yield the highest marginal returns.

Strengthen parent–university engagement. Orientation sessions, take-home assignments and family-finance workshops can leverage the demonstrated parental effect.

Invest in faculty development and resource curation. Short courses for lecturers, updated textbooks and vetted digital repositories will reinforce the teacher-curriculum-resource nexus.

Curate digital content and peer programs. Student finance clubs should operate under faculty supervision, and online materials hosted on university platforms should undergo quality review.

Limitations and avenues for future research

Cross-sectionality precludes causal inference; longitudinal or experimental designs are needed to test temporal ordering.

Self-report bias may inflate associations among attitudinal variables; objective competency tests and behavioral data (e.g., actual savings balances) would provide triangulation.

Single-institution scope limits generalizability; replication across regional and metropolitan universities would gauge external validity.

Measurement refinement—especially for the peer-learning and Internet constructs—could improve discrimination and clarify their true influence.

V. CONCLUSION

The pre-eminence of future study orientation and parental financial socialization underscores the dual importance of students' long-term academic aspirations and the home environment in cultivating financial capability. Pedagogical initiatives should therefore integrate explicit career-planning modules, strengthen parent–school partnerships, and enrich curricular as well as extracurricular access to high-quality financial resources. Such a multifaceted strategy is poised to deliver the greatest marginal gains in students' financial decision-making competence and long-term economic wellbeing.

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