

“Understanding financial literacy in public higher education: Examining the role of attitudes, behaviors, and knowledge of students of a state university in the Philippines”

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UNDERSTANDING FINANCIAL LITERACY IN PUBLIC HIGHER EDUCATION: EXAMINING THE ROLE OF ATTITUDES, BEHAVIORS, AND KNOWLEDGE OF STUDENTS OF A STATE UNIVERSITY IN THE PHILIPPINES

Abstract

College students' financial decisions can significantly impact their future, making financial literacy essential. This study evaluates the financial literacy of college students at Benguet State University, Philippines, focusing on its three dimensions, namely financial behavior, financial attitude, and financial knowledge. It also analyzes the relationships among these dimensions and investigates whether financial literacy levels differ based on selected demographic and financial profile variables. Using a descriptive-comparative and explanatory design, data were collected through a survey questionnaire administered to 464 college students selected through stratified random sampling. The data were analyzed using descriptive statistics, Welch's t-test, ANOVA, Tukey-Kramer post hoc tests, and Partial Least Squares Structural Equation Modeling (PLS-SEM). Findings revealed that students had a moderate level of overall financial literacy. They demonstrated positive financial attitudes and frequently practiced sound financial behaviors, but their financial knowledge remained limited. No significant differences were found across demographic variables, while debt status and weekly allowance produced significant differences in selected financial literacy dimensions. The study concludes that students' financial behavior is influenced more strongly by their financial attitudes and financial circumstances than by objective financial knowledge. The results show that weekly allowance predicts financial attitude and financial knowledge, while debt negatively affects financial attitude. Financial attitude emerged as the strongest predictor of financial behavior, suggesting that financial literacy interventions should go beyond knowledge-building and address students' attitudes, habits, motivations, and financial realities.

Keywords

financial attitude, financial behavior, financial knowledge, Philippines, college students

JEL Classification

G53, D14, I22, G41

INTRODUCTION

Scholarly research indicates a strong consensus that the financial landscape has become increasingly intricate, with individuals making complex financial choices as a routine part of their daily lives. Evolving pension systems, the growing complexity of financial products, including emerging options such as crypto assets, rising inflation, and heightened global risks ranging from the war in Ukraine to climate change all contribute to the pressing need for individuals to develop the knowledge and skills necessary to strengthen their financial resilience and overall well-being (Lusardi & Messy, 2023). As a result, individuals must have the appropriate financial knowledge and awareness to make the utmost use of their financial resources (Banthia & Dey, 2022).



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Financial literacy is essential because financial decisions are part of everyday life. Like physical and mental well-being, financial well-being requires knowledge, awareness, and practical skills that help individuals manage resources, meet obligations, and plan for the future. Akakpo et al. (2022) noted that individuals with financial education are generally better equipped to make sound financial decisions, while Lusardi (2019) mentioned that “financial literacy is like a global passport that enables individuals to make the most of the plethora of financial products available in the market, and to make sound financial decisions.”

Increasing attention is being given to the lack of financial skills among many young consumers, particularly college students. Widener (2017) noted that young adulthood is a critical stage during which many individuals develop lasting habits and behaviors. This phase is especially significant because the way students handle their finances can shape their long-term well-being (Nuris et al., 2023). Without a strong financial foundation, young people are more vulnerable to exploitative lending practices and costly mistakes in handling debt and expenses, which may result in long-term financial disadvantage (United Way of the National Capital Area, 2023).

Financial literacy remains a persistent concern across the globe. Lusardi (2019) noted that financial literacy levels continue to be inadequate even in high-income countries, suggesting that economic development does not automatically translate into stronger financial capability. A similar concern is evident in the Philippines, where studies have reported low levels of financial literacy among Filipinos (Montalbo et al., 2017).

1. LITERATURE REVIEW AND HYPOTHESES

Financial literacy is a multifaceted concept with definitions varying across disciplines and contexts. The Jump\$Start Coalition for Personal Financial Literacy (2021) defines it as the ability to apply knowledge and skills in managing financial resources to achieve long-term financial security. Similarly, the OECD (2017) emphasizes not only financial knowledge but also the skills, motivation, and confidence necessary to make informed financial decisions and improve financial well-being. Yushita (2017) likewise describes financial literacy as the knowledge and skills required to manage personal finances effectively and avoid financial problems. Collectively, these definitions view financial literacy as the integration of knowledge, skills, and decision-making capabilities that enable individuals to achieve financial well-being.

Despite its importance, financial literacy remains low worldwide. In the United States, students frequently face financial difficulties due to limited financial literacy, low income, and debt burdens (Widener, 2017), while Wood (2019) reported that only 53% of young adults felt prepared to manage their finances. Similar trends have been observed

in Asia. Students in Nepal demonstrated limited knowledge of credit, taxation, insurance, and financial markets (Thapa & Nepal, 2015). Studies in Indonesia found only fair levels of financial literacy and weak financial knowledge among university students (Dewi et al., 2020; Qisthi & Damayanti, 2022). Likewise, Malaysian students generally exhibited moderate financial literacy but showed gaps in financial management skills and knowledge, while financial attitudes and behaviors were often categorized as poor (Wong et al., 2022; Khalisharani et al., 2022). These findings indicate that financial literacy remains a persistent concern across both developed and developing countries.

The Philippine context reflects similar challenges. Klapper et al. (2015) ranked the Philippines among the lowest 30 countries in financial literacy worldwide. The Bangko Sentral ng Pilipinas (2018) further found that only 1% of surveyed Filipino adults correctly answered financial literacy questions. Among college students, Lalosa (2020) observed limited financial literacy and difficulties in applying financial concepts in daily life. Similarly, Pagaduan (2020) found that although students generally demonstrate moderate financial literacy, attitudes, and practices, many remain financially

illiterate. These findings highlight the continuing need to strengthen financial literacy among Filipino youth.

Financial literacy is commonly assessed through three interrelated dimensions: financial behavior, financial attitude, and financial knowledge (Rai et al., 2019; Kadoya & Khan, 2020; Banthia & Dey, 2022). Financial behavior refers to how individuals apply financial knowledge in managing resources and making financial decisions (Kadoya & Khan, 2020; Prasad, 2020). Financial attitude reflects an individual's psychological orientation toward money, including budgeting, saving, and planning for future financial needs (Herdinata & Pranatasari, 2020; Rai et al., 2019). Financial knowledge, meanwhile, pertains to understanding fundamental financial concepts such as income, expenses, assets, liabilities, and investments, which support informed financial decision-making and improved economic outcomes (Hira, 2012; Herdinata & Pranatasari, 2020). Amonhaemanon (2022) further noted that financial knowledge may be assessed objectively through actual knowledge tests or subjectively through individuals' perceived understanding of financial matters.

Research literature presents mixed evidence on the role of financial knowledge in shaping financial behavior. Several studies report a positive and significant effect, suggesting that individuals with stronger financial knowledge are better able to manage and control their finances (Banthia & Dey, 2022; Qisthi & Damayanti, 2022; Anggraini et al., 2022; Anisah et al., 2023). However, other studies found no significant effect, indicating that knowledge alone may not necessarily translate into sound financial practices (Dewi et al., 2020; Moko et al., 2022; Jufrizen & Ariza, 2022). Similarly, financial knowledge has been found to positively influence financial attitude in some studies (Bangco et al., 2022; Banthia & Dey, 2022; Anisah et al., 2023), although Qisthi and Damayanti (2022) reported no significant relationship. In contrast, financial attitude consistently emerges as a significant predictor of financial behavior among students (Ameliawati & Setiyani, 2018; Khalisharani et al., 2022; Anisah et al., 2023). Moreover, recent findings suggest that financial attitude mediates the relationship between financial knowledge and financial behavior, strengthening the indirect ef-

fect of knowledge on behavior (Çoşkun & Dalziel, 2020; Anisah et al., 2023).

Students' demographic and financial profiles have also been examined as possible determinants of financial literacy and its dimensions, although findings remain inconsistent. Some studies identify family and socioeconomic background as influential, with parents' income affecting students' financial behavior (Nuris et al., 2023), and family financial background and part-time work experience emerging as key predictors of financial literacy (Böhm et al., 2023). Other studies found that age, gender, level of study, work experience, income, and marital status are significantly associated with financial literacy or financial knowledge (Bangco et al., 2022; Thapa & Nepal, 2015; Kolade et al., 2022). Financial behavior has likewise been linked to gender and parents' income level (Anggraini et al., 2022). However, other studies report non-significant effects for several demographic and financial variables, including gender, age, marital status, family income, residence, allowance, and household income (Reswari et al., 2018; Ayuwandira & Harsono, 2021; Qisthi & Damayanti, 2022; Wong et al., 2022). In addition, Isaga (2025) found that financial literacy significantly predicted financial behavior and that income source moderated this relationship, with stronger effects among students with earned income. The study distinguished earned income from unearned income, which includes student loans, scholarships, grants, and family allowances. Overall, these mixed findings suggest that demographic and financial characteristics may shape financial literacy and behavior, but their influence varies across contexts, populations, and measured dimensions.

The scientific problem addressed in this study centers on understanding the financial literacy of college students at Benguet State University, Philippines, by assessing their financial attitude, financial behavior, and financial knowledge, determining differences across selected demographic and financial profile variables, and developing an explanatory model of factors influencing financial behavior. Although extensive literature on financial literacy exists, limited research has examined these relationships among students in Philippine public universities using an explanatory modeling approach.

This study seeks to address this gap by investigating not only the levels of financial literacy but also the pathways through which financial circumstances and financial literacy dimensions influence students' financial behavior. Examining these relationships is important in developing students' capacity to make informed financial decisions and in promoting long-term financial well-being at both the individual and societal levels.

The hypotheses of the study are as follows:

- H1: *There are significant differences in the financial literacy dimension mean ratings/scores among the students of different demographic profiles.*
- H2: *There are significant differences in the financial literacy dimension mean ratings/scores among the students of different financial profiles.*
- H3: *Weekly allowance and debt significantly influence selected dimensions of financial literacy.*
- H4: *Financial knowledge significantly influences financial attitude and financial behavior.*
- H5: *Financial attitude significantly influences financial behavior.*
- H6: *Financial attitude mediates the relationship between financial knowledge and financial behavior.*

2. METHOD

The study employed the descriptive-comparative and explanatory research design. The descriptive component was used to assess students' levels of financial attitude, financial behavior, financial knowledge, and overall financial literacy. The comparative component examined whether significant differences existed in the dimensions of financial literacy when respondents were grouped according to selected demographic and financial profile variables. The explanatory component investigated the relationships among the dimensions of financial literacy and developed a structural model explaining financial behavior.

The population of the study comprised the undergraduate students of Benguet State University, the lone state university in the Province of Benguet, Philippines, with an undergraduate population of 12,886 in 2024. The sample size was derived by employing the Yamane (1967) formula using a 5% margin of error. The computation yielded a minimum sample size of 388; however, the actual number of respondents was 464. Stratified random sampling was used to select respondents.

The survey instrument was adapted from Thapa and Nepal (2015) and Potrich et al. (2018) and contextualized for the Philippine setting. Prior to administration, the instrument underwent expert validation by three subject specialists and pilot testing to assess clarity and suitability. Internal consistency reliability was evaluated using Cronbach's alpha for the Financial Attitude and Financial Behavior scales, yielding coefficients of 0.74 and 0.85, respectively. The Financial Knowledge section was assessed using the Kuder-Richardson Formula 20 (KR-20), which produced a reliability coefficient of 0.65, indicating acceptable reliability for objective knowledge items based on Guilford's (1956) reliability coefficient classification.

Financial attitude was assessed using 11 financial belief statements rated on a four-point Likert scale. Items 3, 4, and 7 were negatively worded and reverse-coded so that higher scores indicated a more positive financial attitude. The beliefs can predict actual behavior, with higher ratings indicating a more positive financial attitude. Financial behavior was assessed using 15 sound financial practices, which respondents rated their engagement on a four-point Likert scale. High scores on the scale indicate positive financial behavior. Item number 1 combines the financial practice of settling debts on time and not incurring debts. Not incurring debt may also reflect positive financial behavior when it indicates that students can live within their means and meet their needs without borrowing. This is comparable to another form of responsible financial behavior in which individuals use credit but meet their repayment obligations on time. Financial behavior frameworks commonly include both spending control and timely bill or debt payment as indicators of sound financial management (Dew & Xiao, 2011; OECD/INFE, 2022). Financial knowledge was

measured using a test containing eight basic and two advanced questions. The Objective Financial Knowledge (OFK), assessed through quiz-type questions with definite correct answers, was used. Higher scores indicate greater levels of financial knowledge. Following Chen and Volpe (1998), the scores were categorized as follows: 5 and below as low, 6-8 as medium, and 9-10 as high. Avard et al. (2005) set the passing score at 60% on the financial knowledge test. The complete version of the survey questionnaire is included in Appendix A1, or it can be accessed through the link: <https://doi.org/10.5281/zenodo.19337547>

To determine the overall financial literacy level, the overall mean is computed using a composite mean with equal weights assigned to the three dimensions of financial literacy. The grand means of financial attitude and financial behavior are rescaled to align with the financial knowledge scores. The criteria for interpreting the results were based on the work of Chen and Volpe (1998), in which an overall score of more than 80%, 60 to 80%, and below 60% is described as literate, slightly literate, and not literate, respectively.

To determine significant differences in the financial literacy dimensions of the respondents when grouped by variables with two attributes (e.g., sex), the Welch's t-test version of the two-sample t-test was used. The Single-factor Analysis of Variance (ANOVA), on the other hand, was utilized to determine significant differences for variables with more than two attributes. When the analysis yielded significant results, a post-hoc test, specifically the Tukey-Kramer test, a variation of Tukey's Honest Significant Difference (HSD), was used to identify the contribution of the attribute to the significance.

To provide a more comprehensive understanding of the factors influencing financial literacy, the study utilized Partial Least Squares Structural Equation Modeling (PLS-SEM). PLS-SEM is a variance-based structural equation modeling technique that is particularly appropriate for prediction-oriented research and theory development. It enables the simultaneous examination of multiple direct and indirect relationships among variables and is suitable for models involving latent constructs measured through multiple indi-

cators (Hair et al., 2022). Financial Attitude and Financial Behavior were modeled as reflective latent constructs, while Financial Knowledge was treated as an observed composite variable based on the respondents' objective financial knowledge scores.

The study was conducted in accordance with established ethical standards to protect respondents' dignity, rights, privacy, and welfare. Prior to data collection, the study underwent ethics review and was granted ethics clearance under UBRDC-RCR Form No. 22. Informed consent was obtained from all respondents to ensure that their participation was voluntary and based on a clear understanding of the study's purpose, procedures, and the nature of their involvement. To maintain anonymity, respondents were not required to provide their names or any identifying information in the survey questionnaire. All collected data were treated with strict confidentiality and stored in a password-protected computer accessible only to the researcher.

3. RESULTS

The results are presented in three parts: first, the descriptive levels of financial attitude, financial behavior, and financial knowledge; second, the group differences based on demographic and financial profile variables; and third, the PLS-SEM results examining the explanatory relationships among weekly allowance, debt, financial knowledge, financial attitude, and financial behavior.

The results for the first dimension of financial literacy, financial attitude, are presented in Appendix B1. The overall financial attitude mean rating is interpreted as "positive attitude," which means that the students have a good financial disposition and are likely to make sound financial decisions. The respondents, however, expressed agreement with statements 3, 4, and 7, all of which reflect negative financial beliefs.

Results for the second dimension, financial behavior, are presented in Appendix B2, revealing an overall mean of 2.99, which denotes that respondents frequently engage in positive financial behavior practices. The respondents exhibited high

engagement in four practices, specifically items 1, 6, 8, and 10. The respondents reported lower engagement in two practices, specifically items 11 and 12. These findings are understandable given that many respondents do not yet have a steady source of income for such purposes, as most still rely on their parents; the decision to obtain insurance coverage typically rests with their parents or guardians.

Respondents' scores for the third dimension, financial knowledge, are presented in Appendix B3. The respondents obtained a mean financial knowledge score of 56.25%, indicating a low level of financial knowledge. This means that they have a basic understanding of financial concepts but lack comprehensive knowledge. They may encounter difficulty with more complex financial transactions or situations. Of the 10 items, students obtained average scores on three items (1, 4, and 8). They did not score high on any question.

The overall financial literacy score was computed at 6.59, or 65.90%, which falls within the slightly literate category.

H1: There are significant differences in the financial literacy dimension mean ratings or scores among the students of different demographic profiles.

Table 1 presents the results of the t-test and ANOVA comparing financial literacy dimension

ratings and scores across demographic profile variables. The table reveals no significant differences in mean ratings/scores across the three financial literacy dimensions when compared according to the demographic variables, namely sex, year level, marital status, and residence while studying of the respondents, thus the hypothesis is not supported.

H2: There are significant differences in the financial literacy dimension mean ratings or scores among the students of different financial profiles.

Table 2 presents the results of the t-test and ANOVA comparing financial literacy dimension ratings and scores across financial profile variables. It shows that most financial profile variables did not produce significant differences in the financial literacy dimensions. However, debt status significantly differed in terms of financial attitude and financial behavior, while weekly allowance significantly differed in terms of financial behavior and financial knowledge. This, therefore, indicates that H2 is partially supported, specifically with respect to three variables: the presence or absence of scholarships or financial assistance, income from part-time work, and parents' or guardians' income. Due to small sample sizes in several debt categories, debt status was recoded into two groups, without debt and with debt, to allow a more stable comparison of mean financial literacy dimension scores. The Tukey-Kramer post hoc

Table 1. Differences in financial literacy dimensions according to demographic profile variable

Variable	Financial attitude	Financial behavior	Financial knowledge
Sex	t = -0.68, p = 0.50	t = -0.62, p = 0.53	t = 0.78, p = 0.44
Year Level	F = 1.37, p = 0.25	F = 0.41, p = 0.74	F = 0.25, p = 0.86
Marital Status	F = 0.49, p = 0.67	F = 2.31, p = 0.10	F = 2.00, p = 0.14
Residence while Studying	F = 1.66, p = 0.19	F = 0.89, p = 0.41	F = 0.90, p = 0.41

Note: Welch's t-test was used for variables with two categories, while one-way ANOVA was used for variables with more than two categories. p < 0.05; p < 0.01.

Table 2. Differences in financial literacy dimensions according to financial profile variable

Variable	Financial attitude	Financial behavior	Financial knowledge
Scholarship/financial assistance	t = -0.74, p = 0.46	t = -0.26, p = 0.80	t = 0.36, p = 0.73
Debt status	t = 2.72, p = 0.01*	t = 2.33, p = 0.02*	t = 0.29, p = 0.77
Income from part-time work	F = 1.51, p = 0.19	F = 0.52, p = 0.76	F = 0.36, p = 0.87
Parents'/guardians' income	F = 0.64, p = 0.67	F = 1.02, p = 0.41	F = 2.13, p = 0.06
Weekly allowance	F = 1.82, p = 0.12	F = 3.79, p = 0.0048**	F = 3.24, p = 0.0122*

Note: Welch's t-test was used for variables with two categories, while one-way ANOVA was used for variables with more than two categories. * p < 0.05; ** p < 0.01.

Table 3. Tukey-Kramer post-hoc test on allowance for financial behavior

Weekly allowance amount range	₱ 500 & below	₱ 501-750	₱ 751-1,000	₱ 1,001-1,250
₱ 501-750	0.0800			
₱ 751-1,000	0.1681*	0.2481*		
₱ 1,001-1,250	0.0047	0.0847	0.1633*	
₱ 1,251 & above	0.2606*	0.3407*	0.0925	0.2559*

Note: * Significant mean difference; Critical Range = 0.1187. * $p < 0.05$.

Table 4. Tukey-Kramer post-hoc test on allowance for financial knowledge

Weekly allowance amount range	₱ 500 & below	₱ 501-750	₱ 751-1,000	₱ 1 001-1,250
₱ 501-750	0.6504*			
₱ 751-1,000	0.7147*	0.0643		
₱ 1,001-1,250	0.0899	0.5604*	0.6247*	
₱ 1,251 & above	1.0989*	0.4484	0.3841	1.0089*

Note: * Significant mean difference, Critical Range = 0.5172. * $p < 0.05$.

test was conducted for the ANOVA results that showed significant differences. The results are presented in Table 3 for financial behavior and Table 4 for financial knowledge.

Table 3 shows that six pairwise comparisons exceeded the Tukey-Kramer critical range of 0.1187. The post hoc results indicate that students in selected higher allowance groups generally reported more favorable financial behavior than those in lower allowance groups, although the pattern was not strictly linear across all allowance categories. These findings suggest that higher weekly allowances are associated with more favorable financial behavior.

Table 4 shows that six pairwise comparisons exceeded the Tukey-Kramer critical range of 0.5172. The results indicate significant differences in financial knowledge across selected allowance groups, with the largest difference observed between the ₱1,251 and above group and the ₱500 and below group. Overall, students receiving higher allowances tended to demonstrate higher financial knowledge, although the pattern was not strictly linear across all allowance categories.

The PLS-SEM analysis was conducted in two stages. In the first stage, the measurement model was assessed for the reflective latent constructs, namely Financial Attitude and Financial Behavior. Indicator reliability was evaluated through outer loadings, while internal consistency reliability was

examined using Cronbach's alpha and Composite Reliability (CR). Convergent validity was assessed using the Average Variance Extracted (AVE), and discriminant validity was evaluated through the Heterotrait-Monotrait Ratio (HTMT). Financial Knowledge was treated as an observed composite variable based on respondents' objective financial knowledge scores; therefore, CR, AVE, and HTMT were not computed for this construct in the PLS-SEM measurement model. Its internal consistency was assessed separately using the Kuder-Richardson Formula 20 (KR-20) during instrument validation.

In the second stage, the structural model was evaluated to examine the relationships among weekly allowance, debt, financial knowledge, financial attitude, and financial behavior. Weekly allowance and debt were included as observed contextual financial predictors, while Financial Knowledge was included as an observed composite variable. Path coefficients were estimated to determine the direction and magnitude of the relationships, and their significance was assessed through bootstrapping with 5,000 resamples. The model's explanatory power was evaluated using the coefficient of determination (R^2), while mediation analysis was conducted to determine whether financial attitude mediated the relationship between financial knowledge and financial behavior.

Table 5 presents the reliability and convergent validity results, while Table 6 reports the discrimi-

nant validity assessment. Figure 1 presents the structural model, and Table 7 summarizes the path coefficients and coefficients of determination.

Table 5. Reliability and convergent validity

Construct	α	CR	AVE
Financial Attitude	0.74	0.81	0.52
Financial Behavior	0.85	0.88	0.56

Table 5 presents the reliability and convergent validity assessment for the reflective constructs in the model. Financial Attitude and Financial Behavior exceeded the recommended thresholds for internal consistency reliability and convergent validity, with Composite Reliability values above 0.70 and AVE values above 0.50. Financial Knowledge was not included in the reflective measurement model assessment because it was treated as an observed composite variable derived from the respondents' objective financial knowledge scores. Its reliability was assessed separately using KR-20 during instrument validation.

Table 6. Discriminant validity (HTMT)

Constructs	Financial Attitude	Financial Behavior
Financial Attitude		0.61
Financial Behavior	0.61	

Table 6 reports the HTMT value for the reflective latent constructs. The HTMT value between Financial Attitude and Financial Behavior was below the rec-

ommended threshold of 0.85, indicating satisfactory discriminant validity. Financial Knowledge was excluded from the HTMT assessment because it was modeled as an observed composite variable rather than a reflective latent construct.

Figure 1 presents the structural model examined in the study. The model includes weekly allowance and debt as contextual financial predictors, Financial Knowledge as an observed composite variable, and Financial Attitude and Financial Behavior as reflective constructs. The figure illustrates how students' financial circumstances and financial literacy dimensions relate to financial behavior. Solid arrows indicate significant paths, while dashed arrows indicate non-significant paths. Path coefficients show the direction and strength of the relationships, while the R^2 values indicate the explanatory power of the model for each endogenous variable. The results show that weekly allowance significantly predicts Financial Knowledge and Financial Attitude, while debt significantly predicts Financial Attitude. Financial Attitude exhibited the strongest direct effect on Financial Behavior. In contrast, Financial Knowledge did not significantly predict either Financial Attitude or Financial Behavior, and the direct effects of weekly allowance and debt on Financial Behavior were not significant. Overall, the model indicates that students' financial behavior is more strongly explained by their financial attitude than by objective financial knowledge.

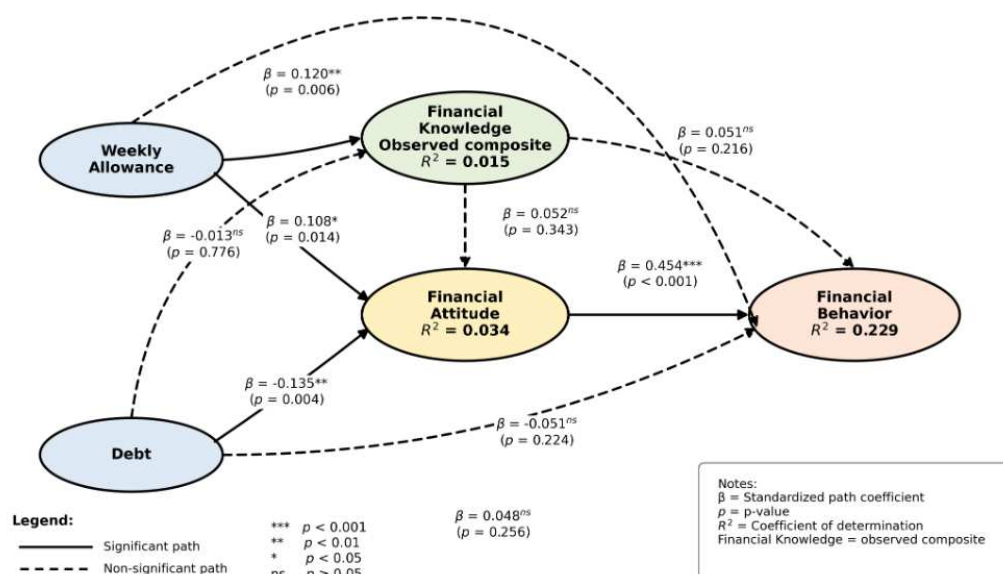


Figure 1. Financial model path diagram

Table 7. Structural model results

Path/Endogenous construct	β	t-value	p-value	Decision
Allowance $\rightarrow$ Financial Attitude	0.108	2.46	0.014	Supported
Allowance $\rightarrow$ Financial Knowledge	0.120	2.73	0.006	Supported
Allowance $\rightarrow$ Financial Behavior	0.048	1.14	0.256	Not Supported
Debt $\rightarrow$ Financial Attitude	-0.135	2.90	0.004	Supported
Debt $\rightarrow$ Financial Behavior	-0.051	1.22	0.224	Not Supported
Debt $\rightarrow$ Financial Knowledge	-0.013	0.28	0.776	Not Supported
Financial Knowledge $\rightarrow$ Financial Attitude	0.052	0.95	0.343	Not Supported
Financial Knowledge $\rightarrow$ Financial Behavior	0.051	1.24	0.216	Not Supported
Financial Attitude $\rightarrow$ Financial Behavior	0.454	10.49	< 0.001	Supported

Coefficient of determination (R^2) values and interpretation			
Endogenous Variable	R^2	Interpretation	
Financial Knowledge	0.015	Weak	
Financial Attitude	0.034	Weak	
Financial Behavior	0.229	Moderate	

H3: *Weekly allowance and debt significantly influence selected dimensions of financial literacy.*

Based on the results of the second hypothesis test, weekly allowance and debt were incorporated into the PLS-SEM model as contextual financial predictors. Following the confirmation of the measurement model (Tables 5 and 6), the structural model was assessed by examining the path coefficients and coefficients of determination presented in Table 7. The results indicate that weekly allowance significantly and positively influences Financial Knowledge ($\beta = 0.120$, $t = 2.73$, $p = 0.006$) and Financial Attitude ($\beta = 0.108$, $t = 2.46$, $p = 0.014$) but not Financial Behavior ($\beta = 0.048$, $t = 1.14$, $p = 0.256$).

Debt negatively influences Financial Attitude ($\beta = -0.135$, $t = 2.90$, $p = 0.004$), indicating that financial obligations may adversely affect students' confidence. However, it does not significantly influence Financial Knowledge ($\beta = -0.013$, $t = 0.28$, $p = 0.776$) and Financial Behavior ($\beta = -0.051$, $t = 1.22$, $p = 0.224$).

The results partially support H3. The results suggest that students' financial circumstances are associated with selected dimensions of financial literacy, particularly financial attitude and knowledge, but their direct effects on financial behavior are limited once financial attitude and financial knowledge are included in the model.

H4: *Financial knowledge significantly influences financial attitude and financial behavior.*

The structural model presented in Table 7 revealed that Financial Knowledge does not significantly predict either Financial Attitude ($\beta = 0.052$, $t = 0.95$, $p = 0.343$) or Financial Behavior ($\beta = 0.051$, $t = 1.24$, $p = 0.216$); thus, the hypothesis is not supported. Financial Attitude ($R^2 = 0.034$) and Financial Knowledge ($R^2 = 0.015$) exhibited relatively weak explanatory power.

H5: *Financial attitude significantly influences financial behavior.*

Table 7 shows that Financial Attitude exerts a significant positive effect on Financial Behavior ($\beta = 0.454$, $t = 10.49$, $p < 0.001$), making it the strongest predictor in the model. Financial Behavior obtained an R^2 value of 0.229, indicating moderate explanatory power. The model explains approximately 22.9% of the variance in Financial Behavior, suggesting that students' financial behavior is influenced by their financial attitudes, thus the hypothesis is supported.

H6: *Financial attitude mediates the relationship between financial knowledge and financial behavior.*

Table 8. Indirect effects

Indirect Path	β	p-value	Decision
Financial Knowledge $\rightarrow$ Financial Attitude $\rightarrow$ Financial Behavior	0.024	> 0.05	Not Supported

Table 8 presents the mediation analysis examining whether Financial Attitude mediates the relation-

ship between Financial Knowledge and Financial Behavior. The indirect effect was not statistically significant ($\beta = 0.024$, $p > 0.05$), indicating that Financial Attitude does not mediate the relationship between Financial Knowledge and Financial Behavior, thus the hypothesis is not supported.

The absence of a significant mediation effect suggests that greater financial knowledge does not necessarily translate into improved financial behavior through more positive financial attitudes. Although Financial Attitude significantly influences Financial Behavior, Financial Knowledge was not found to significantly affect Financial Attitude. Consequently, the indirect pathway linking Financial Knowledge to Financial Behavior through Financial Attitude was not supported. These findings indicate that knowledge alone may be insufficient to influence financial behavior unless accompanied by other psychological, social, or contextual factors.

4. DISCUSSION

The study found that students demonstrated a moderate level of financial literacy, indicating an intermediate capacity to understand and apply financial concepts in everyday situations. This suggests that while students are not financially illiterate, further interventions are needed to strengthen their financial competence. The finding is consistent with Cipriano and Delgado (2023) and Pagaduan (2020), who likewise reported moderate financial literacy among Filipino college students.

For *H1*, no significant differences were found in financial attitude, financial behavior, and financial knowledge when respondents were grouped according to sex, year level, marital status, and residence while studying. This suggests that demographic characteristics alone may not sufficiently explain variations in students' financial literacy. The non-significant result for sex is consistent with Cainglet et al. (2022), Ayuwandira and Harsono (2021), and Saputra and Riadi (2023), although it contrasts with Böhm et al. (2023) and Erden (2024), who found gender to be a determinant of financial literacy. Similarly, the absence of significant differences by year level supports Encio et al. (2022) but differs from Silta and Miharti (2020)

and Gok and Ozkale (2019), who found that senior students tend to have higher financial literacy. For marital status, the findings support Reswari et al. (2018), who found no significant effect, but differ from Bangco et al. (2022). The non-significant result for residence is consistent with Ayuwandira and Harsono (2021), although Singh et al. (2020) noted that students living away from home may face additional expenses such as rent and utilities. Overall, these results imply that demographic differences may be less influential than students' financial experiences and resources.

For *H2*, most financial profile variables did not produce significant differences in the three dimensions of financial literacy, except debt and weekly allowance. Scholarship or financial assistance did not significantly differentiate students' financial literacy levels, suggesting that access to additional funds alone may not directly shape financial attitude, behavior, or knowledge. Similarly, income from part-time work was not significantly associated with financial literacy, supporting Qisthi and Damayanti (2022), Bangco et al. (2022), Kolade et al. (2022), and Erden (2024), but differing from Ninan and Kurian (2021), Böhm et al. (2023), and Annabi et al. (2018), who emphasized the role of income and work experience in enhancing financial knowledge. Parental income was likewise not significant, confirming Kolade et al. (2022) and suggesting that household income may not automatically translate into stronger financial literacy among students.

Debt status significantly differentiated financial attitude and financial behavior in the group-difference analysis, indicating that students with and without debt may experience financial management differently. Debt may create pressure that affects students' confidence, priorities, and financial practices, although its presence does not necessarily indicate poor financial management because credit can also serve as a tool for flexibility and access to goods and services. This differs from Smith (2021), who found no direct relationship between financial literacy programs and student loan debt. Weekly allowance also significantly differentiated financial behavior and financial knowledge. Students receiving higher allowances tended to demonstrate better financial behavior and higher financial knowledge, pos-

sibly because greater and more regular financial resources provide more opportunities to budget, save, spend, and make financial decisions. This finding contrasts with Ayuwandira and Harsono (2021), Saputra and Riadi (2023), and Encio et al. (2022), but supports Moneva and Tuñacao (2020), who linked financial support to satisfaction and well-being, and Fajriyah and Listiadi (2021), who found a direct relationship between allowance and financial literacy.

For *H3*, the results revealed that weekly allowance significantly influenced financial attitude and financial knowledge but did not significantly influence financial behavior. Students receiving higher allowances tended to exhibit more positive financial attitudes and higher levels of financial knowledge. This suggests that greater access to regular financial resources may provide students with more opportunities to make financial decisions, manage available funds, and become familiar with basic financial concepts. However, the non-significant effect on financial behavior indicates that having a higher allowance does not automatically translate into consistently better financial practices once other factors, such as financial attitude and financial knowledge, are considered.

These findings support the view that financial literacy may develop not only through formal education but also through financial experience. Students who manage larger amounts of money may encounter more situations involving planning, prioritization, and decision-making, which can strengthen their financial awareness and attitudes. However, actual financial behavior may require more than access to financial resources; it may also depend on discipline, habits, self-control, and motivation. This finding is partly consistent with Fajriyah and Listiadi (2021), who found that allowance contributes to financial literacy, and with Moneva and Tuñacao (2020), who reported that greater financial support is associated with improved financial confidence and well-being. At the same time, the non-significant direct effect on financial behavior suggests that financial resources alone may be insufficient to ensure responsible financial practices.

Debt was found to have a significant negative influence on financial attitude, but it did not signifi-

cantly affect financial knowledge or financial behavior. This suggests that students with debt may experience financial pressure that weakens their confidence, sense of control, or overall outlook toward money management. However, the non-significant effects on financial knowledge and financial behavior indicate that debt does not necessarily reduce students' understanding of financial concepts or directly determine their financial practices once other factors are considered.

These findings highlight the distinction between financial circumstances, financial understanding, and actual financial behavior. Students may possess financial knowledge regardless of their debt status, but financial obligations may still affect how they feel about managing money. Thus, debt appears to operate more strongly at the attitudinal level than at the cognitive or behavioral level. This suggests that financial literacy interventions should not only provide financial knowledge but also address students' financial stress, confidence, and coping strategies in managing financial obligations.

For *H4*, the structural model revealed that financial knowledge does not significantly influence either financial attitude or financial behavior. Although the relationships were positive, the effects were weak and statistically insignificant. Therefore, the hypothesis was not supported. The findings suggest that possessing knowledge of financial concepts such as inflation, diversification, interest rates, insurance, and liquidity does not automatically translate into positive financial attitudes or desirable financial practices. Students may understand financial concepts theoretically yet still fail to apply them consistently in their daily financial decisions. This finding reinforces the growing body of literature indicating that knowledge alone is insufficient to promote behavioral change.

One possible explanation is that financial attitudes are shaped not only by knowledge but also by personal experiences, cultural influences, family socialization, peer interactions, and individual values. Similarly, financial behavior is often influenced by psychological factors such as self-control, motivation, financial confidence, and emotional responses to financial situations. As a result, stu-

dents may possess adequate financial knowledge while still engaging in behaviors that are inconsistent with sound financial management. The findings support the conclusions of Dewi et al. (2020) and Jufrizen and Ariza (2022), who likewise reported that financial knowledge does not necessarily predict financial behavior. From a behavioral economics perspective, individuals do not always make decisions based solely on rational calculations. Instead, financial decisions are frequently shaped by emotions, habits, biases, and situational constraints that may override knowledge.

These results suggest that financial literacy interventions should move beyond information dissemination and focus on helping students develop practical skills, positive financial habits, and opportunities to apply financial concepts in real-world situations.

For *H5*, the results indicate that financial attitude exerts a significant positive influence on financial behavior and emerged as the strongest predictor in the structural model. Students who demonstrated more positive attitudes toward budgeting, saving, financial planning, and responsible money management were more likely to engage in desirable financial practices. This finding suggests that financial behavior is influenced more by students' disposition toward financial management than by their actual level of financial knowledge. Positive financial attitudes may encourage students to prioritize long-term goals, monitor their expenditures, save regularly, and make more deliberate financial decisions. In contrast, students with less favorable attitudes toward financial management may be less inclined to adopt such behaviors, regardless of their knowledge level.

The result is consistent with the Theory of Planned Behavior, which posits that attitudes influence behavioral intentions and subsequently actual behavior (Ajzen, 1991). Individuals who hold favorable evaluations of a particular behavior are generally more likely to engage in that behavior. The findings are likewise consistent with the studies of Ameliawati and Setiyani (2018), Dewi et al. (2020), Khalisharani et al. (2022), Jufrizen and Ariza (2022), and Qisthi and Damayanti (2022), all of which found that financial attitude significantly predicts financial behavior among students.

The relatively strong path coefficient observed in the model indicates that cultivating positive financial attitudes may be more effective in improving students' financial behavior than merely increasing their financial knowledge. Consequently, financial education programs should incorporate behavioral and attitudinal components, such as goal-setting, self-regulation, financial discipline, and habit formation, rather than focusing exclusively on knowledge acquisition.

For *H6*, the mediation analysis revealed that financial attitude does not significantly mediate the relationship between financial knowledge and financial behavior. Although financial attitude significantly predicts financial behavior, financial knowledge was not found to significantly influence financial attitude. Consequently, the indirect effect of financial knowledge on financial behavior through financial attitude was not statistically significant. Therefore, the hypothesis was not supported. The absence of a significant mediation effect suggests that financial knowledge does not contribute meaningfully to financial behavior either directly or indirectly through financial attitude. In other words, greater financial knowledge does not necessarily foster more positive financial attitudes that subsequently lead to improved financial behavior.

This finding reinforces the notion that financial knowledge alone may not be sufficient to generate behavioral change. While knowledge provides individuals with information and awareness, actual financial behavior may depend more heavily on psychological, social, and contextual factors. Students may understand financial concepts and recognize the importance of responsible financial management yet still fail to apply such knowledge because of financial constraints, competing priorities, social pressures, or insufficient motivation.

The findings therefore suggest that interventions aimed at improving financial behavior should adopt a holistic approach that integrates cognitive, affective, and behavioral dimensions of financial literacy. Financial education programs that focus solely on increasing knowledge may have limited effectiveness unless accompanied by strategies that cultivate positive financial attitudes and facilitate the practical application of financial concepts.

CONCLUSIONS

This study examined the relationships among the three components of financial literacy in explaining the financial decision-making of college students at Benguet State University, Philippines, and assessed their level of financial literacy. The findings reveal that their financial literacy level is generally moderate, underscoring the need for targeted improvement efforts. While students exhibit a positive attitude toward sound financial beliefs and frequently engage in responsible financial behaviors, they demonstrate limited understanding of many key financial concepts. This uneven performance suggests that although financial attitude and financial behavior are relatively strong, significant gaps in financial knowledge must be addressed to develop a more rounded financial competence.

The study concludes that financial literacy dimensions did not significantly differ according to demographic variables, namely sex, year level, marital status, and type of residence while studying. Similarly, financial profile variables such as the presence or absence of scholarships or financial assistance, income from part-time work, and parental income were also found to be unrelated to financial literacy. However, debt status and weekly allowance were the only financial profile variables associated with significant differences in selected financial literacy dimensions.

The study likewise concludes that students' financial behavior is more strongly predicted by financial attitude than by objective financial knowledge. Weekly allowance predicted financial attitude and financial knowledge, while debt negatively predicted financial attitude. Most importantly, financial attitude was identified as the strongest financial literacy-related predictor of financial behavior. These findings suggest that effective financial literacy interventions should extend beyond improving financial knowledge and should also address students' attitudes, habits, motivations, and financial realities to promote sustainable financial behavior.

Despite offering valuable insights, this study has several limitations. First, the population is confined to a single state university, which limits the generalizability of the findings. Second, although PLS-SEM provides explanatory and predictive insights into the relationships among variables, the cross-sectional design does not permit causal inference. Future research may consider a wider scope, a wider range of institutions, such as private universities, or conducting comparative studies across different types of higher education institutions. Other dimensions of financial literacy or additional demographic and financial profile variables may also be explored.

AUTHOR CONTRIBUTIONS

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APPENDIX A

Part 1. Survey questionnaire

Part 1.1. Demographic profile

1. Year level:

- ☐ 1st year
- ☐ 2nd year
- ☐ 3rd year
- ☐ 4th year and above

2. Sex:

- ☐ Male
- ☐ Female

3. Marital Status:

- ☐ Single
- ☐ Married/Cohabiting
- ☐ Single Parent

4. Residence while studying:

- ☐ Living with parents/guardians/family members/relatives
- ☐ In-campus residence (University dormitory/housing)
- ☐ Off-campus residence (Apartment, boarding house, bed space)

Part 1.2. Financial profile

1. Are you a scholar or recipient of any financial assistance for your studies? (This does not include the RA 10931 or Free Higher Education Act benefit)

- ☐ Yes
- ☐ No

2. How much do you earn from your full-time or part-time job per month (formal or informal) while studying?

- ☐ Zero. I am not a working student
- ☐ ₱ 3,000.00 and below
- ☐ ₱ 3,001-6,000
- ☐ ₱ 6,001-9,000
- ☐ ₱ 9,001-12,000
- ☐ ₱ 12,001 and above

3. On average, how much debt do you usually incur (or how much money do you usually borrow)?

- ☐ Zero. I have no outstanding debt as of today
- ☐ ₱ 5,000.00 and below
- ☐ ₱ 5,001-10,000
- ☐ ₱ 10,001-15,000
- ☐ ₱ 15,001-20,000
- ☐ ₱ 20,001 and above

4. How much is the COMBINED current actual or estimated GROSS MONTHLY income of your parents and/or guardians?

- ☐ Not applicable
- ☐ ₱ 20,000 and below
- ☐ ₱ 20,001-50,000
- ☐ ₱ 50,001-80,000
- ☐ ₱ 80,001-110,000
- ☐ ₱ 110,001 and above

5. How much is your average WEEKLY allowance?

- ☐ ₱ 500 and below
- ☐ ₱ 501-750
- ☐ ₱ 751-1,000
- ☐ ₱ 1,000-1,250
- ☐ ₱ 1,251 and above

Part 2. Financial attitude

Rate the following items on a scale of 1-4 (1 = strongly disagree, 2 = disagree, 3 = agree, 4 = strongly agree) based on YOUR AGREEMENT to the statements.

Financial Beliefs	1	2	3	4
1. I feel in control of my financial situation				
2. I feel capable of using my future income to achieve my financial goals				
3. I worry about how I manage my finances				
4. I am uncertain about where my money is spent				
5. I feel credit cards are safe and risk-free				
6. I feel capable of handling my financial future (e.g., buying insurance)				
7. I am afraid of loans				
8. I give importance to saving money from my monthly income				
9. I feel having life insurance is an important way to protect loved ones				
10. I enjoy thinking about and have interest in reading about money management				
11. I enjoy talking to my peers about money-related issues (i.e., taxes)				

Part 3. Financial behavior

Rate the following items on a scale of 1-4 (1 = not at all true of me and 4 = very true of me) based on HOW YOU PRACTICE the activities.

Financial practices	1	2	3	4
1. I pay my debts on time to avoid interest or penalties (choose 4 if you don't have any debt)				
2. I maintain adequate financial records				
3. I check the receipts, invoices, or statements of account of the things I purchase or pay for				
4. I establish long-term financial goals to guide me				
5. I prepare a budget				
6. I track my spending to know how much money I have left				
7. I pay my bills (utilities, rent, communications, etc.) on time				
8. I analyze my financial situation before I purchase or pay for something				
9. I save regularly (for emergency purposes or to purchase something expensive like gadgets, etc.)				
10. I compare prices offered by establishments when shopping or buying things				
11. I contribute to an investment account (high-interest savings accounts, cryptocurrencies, stocks, bonds, crowdfunding investments, etc.) EXCEPT regular savings accounts				
12. I am continuously covered by an insurance policy (e.g., PhilHealth or other health or life insurance policies)				
13. I find ways to increase my financial knowledge by reading or attending seminars or discussing with other people				
14. I read and understand agreements with financial implications before I sign them (e.g. lease contracts, scholarship contracts, etc.)				
15. I am satisfied with the way I control my finances				

Part 4. Financial knowledge

Choose from among the options the best answer for each question:

- Imagine you have ₱ 1,000.00 in your savings account and the interest rate is 2% a year. After 5 years, how much money will you have in this account?
 - ☐ More than ₱ 1,020.00
 - ☐ Exactly ₱ 1,020.00
 - ☐ Less than ₱ 1,020.00
 - ☐ Do not know
- Imagine the interest rate applied to your savings account is 5% a year and the inflation tax is 10% a year. After one year, how much will you be able to buy with the money from this account?
 - ☐ More than today
 - ☐ Exactly the same
 - ☐ Less than today
 - ☐ Do not know
- Imagine Joseph inherits ₱ 1,000,000.00 today and Peter inherits ₱ 1,000,000.00 three years later. According to the time value of money, who is wealthier because of the inheritance?
 - ☐ Joseph
 - ☐ Peter
 - ☐ They are equally as wealthy
 - ☐ Do not know

4. Which of the options below best describes the stock market's functions?
- ☐ Facilitates transactions of those who want to buy and sell shares of stocks
 - ☐ Predicts gains of shares
 - ☐ Increases the prices of shares
 - ☐ Do not know
5. Considering a long time period (e.g., 10 years), which asset described below normally gives the highest rate of return?
- ☐ Savings Account
 - ☐ Bond
 - ☐ Stocks
 - ☐ Do not know
6. Many people put aside money to take care of unexpected expenses. If Susan and Joe have money put aside for emergencies, in which of the following forms would it be of LEAST benefit to them if they needed it right away?
- ☐ Savings account
 - ☐ A house
 - ☐ Stocks
 - ☐ Checking account
7. Net worth is:
- ☐ The difference between expenditures and income
 - ☐ The difference between liabilities and assets
 - ☐ The difference between cash inflow and outflow
 - ☐ The difference between borrowings and savings
 - ☐ None of the above
8. The MOST important factors that lenders use when deciding whether to approve a loan are:
- ☐ Marital status and number of children
 - ☐ Education and occupation
 - ☐ Age and gender
 - ☐ Bill-paying record and income
9. When an investor diversifies, his investments are divided among different assets or investment ventures. In doing this, the risk of losing money:
- ☐ Increases
 - ☐ Decreases
 - ☐ Remains the same
 - ☐ Do not know
10. The main reason to purchase insurance is to:
- ☐ Protect you from a loss recently incurred
 - ☐ Provide you with excellent investment returns
 - ☐ Protect you from sustaining a severe loss in the future
 - ☐ Protect you from small incidental losses
 - ☐ Improve your standard of living by filing fraudulent claims

APPENDIX B

Table B1. Financial attitude dimension overall ratings

Financial beliefs	Mean rating	Descriptors
1. I feel in control of my financial situation	2.84	Agree
2. I feel capable of using my future income to achieve my financial goals	2.98	Agree
3. I worry about how I manage my finances	1.91*	Agree*
4. I am uncertain about where my money is spent	2.31*	Agree*
5. I feel credit cards are safe and risk-free	2.59	Agree
6. I feel capable of handling my financial future	2.76	Agree
7. I am afraid of loans	1.89*	Agree*
8. I give importance to saving money from my monthly income	3.19	Agree
9. I feel having life insurance is an important way to protect loved ones	3.31	Strongly agree
10. I enjoy thinking about and have an interest in reading about money management	2.94	Agree
11. I enjoy talking to my peers about money-related issues	2.65	Agree
Grand mean	2.67	Agree

Note: Legend: 1.00-1.75 = strongly disagree; 1.76-2.50 = disagree; 2.51-3.25 = agree; 3.26-4.00 = strongly agree. * – Mean ratings and descriptors are reversed (questions are stated negatively).

Table B2. Financial behavior dimension overall ratings

Financial practices	Mean rating	Descriptors
1. I pay my debts on time to avoid interest or penalties	3.53	Very true of me
2. I maintain adequate financial records	2.84	Mostly true of me
3. I check the receipts, invoices, or statements of account of the things I purchase or pay for	3.23	Mostly true of me
4. I establish long-term financial goals to guide me	2.88	Mostly true of me
5. I prepare a budget	3.16	Mostly true of me
6. I track my spending to know how much money I have left	3.31	Very true of me
7. I pay my bills on time	3.13	Mostly true of me
8. I analyze my financial situation before I purchase or pay for something	3.32	Very true of me
9. I save regularly	3.01	Mostly true of me
10. I compare prices offered by establishments when shopping or buying things	3.52	Very true of me
11. I contribute to an investment account, except regular savings accounts	1.99	Sometimes true of me
12. I am continuously covered by an insurance policy	2.23	Sometimes true of me
13. I find ways to increase my financial knowledge by reading or attending seminars or discussing with other people	2.65	Mostly true of me
14. I read and understand agreements with financial implications before I sign them	3.12	Mostly true of me
15. I am satisfied with the way I control my finances	2.85	Mostly true of me
Grand mean	2.99	Mostly true of me

Note: Legend: 1.00-1.75 (not at all true of me); 1.76-2.50 (sometimes true of me); 2.51-3.25 (mostly true of me); 3.26-4.00 (very true of me).

Table B3. Financial knowledge dimension overall results

Questions	% of correct response	Level of financial knowledge
1. Question on interest.	73.06%	Average
2. Question on inflation.	45.47%	Low
3. Question on time value of money.	51.72%	Low
4. Question on stocks.	76.51%	Average
5. Question on investment.	51.08%	Low
6. Question on liquidity.	23.28%	Low
7. Question on net worth.	53.45%	Low
8. Question on debt.	79.74%	Average
9. Question on investment diversification.	51.29%	Low
10. Question on insurance.	56.90%	Low
Average Correct Response	56.25%	Low

Note: Legend: Below 60% (1.00-2.39) – low; 60 to 80% (2.40-3.20) – average; More than 80% (3.21-4.00) – high.