ISSN (Print): 1060-6076
ISSN (Online): Applied

The Journal of African Development
2026; Vol 7: Issue 1
https://www.afea-jad.com/

Financial Literacy and Budgeting Behavior among First-Year University Students in Algeria: An Empirical Analysis

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Received: 07/08/2026 **Accepted**: 23/10/2026 **Published**: 19/11/2026

Cite This Paper as: Faouzi Loualbia, Ahmed Seddiki, Belkacem Korichi Financial Literacy and Budgeting Behavior among First-Year University Students in Algeria: An Empirical Analysis The Journal Of African Development L, Vol.7, No.1, 268-280

KEYWORDS

financial literacy; budgeting behavior; financial attitude; family financial socialization; first-year university students; Algeria..

ABSTRACT

Financial decisions made at the start of university can shape lifelong money habits, yet evidence on how first-year students in Algeria manage their finances remains scarce. This study examines how financial literacy, family financial socialization, and demographic characteristics relate to personal budgeting behavior. Drawing on the Theory of Planned Behavior, financial socialization theory, and the Life-Cycle Hypothesis, a structured questionnaire was administered to first-year students at the Faculty of Economics, Commerce, and Management Sciences, University of Djelfa (N = 148). Reliability was acceptable for the overall instrument (α = .824) but modest for several subscales. Multiple regression showed that basic financial knowledge, financial attitude, and family financial socialization jointly explained 26.1% of the variance in budgeting behavior, $F(3, 144) = 16.978$, $p < .001$. Financial attitude ($\beta = .283$, $p = .001$) and family financial socialization ($\beta = .228$, $p = .003$) were significant predictors, whereas basic financial knowledge did not reach conventional significance ($\beta = .160$, $p = .051$). Female students reported higher budgeting scores than male students ($d = 0.45$), although this difference would not survive Bonferroni correction; no significant differences were found by high school stream, residence type, or scholarship status. The findings suggest that attitudes and family influences are more closely associated with budgeting behavior than knowledge alone, with implications for financial education in universities. The cross-sectional design, self-reported data, small subgroups, and modest scale reliability call for cautious interpretation

1. INTRODUCTION

1.1 Background

Managing money has become a core life skill for young adults, who increasingly assume responsibility for spending, saving, and borrowing decisions early in life. Financial literacy, defined as the combination of financial awareness, knowledge, skills, attitudes, and behaviors needed to make sound financial decisions (OECD/INFE, 2016), has therefore attracted growing attention from researchers and policymakers. International evidence shows that financial illiteracy is widespread and that young people often have a limited understanding of basic financial concepts (Klapper et al., 2015; Lusardi et al., 2010; Lusardi & Mitchell, 2014).

The transition to university is a particularly important moment. For many first-year students, it is the first experience of managing money independently, whether from family allowances, scholarships, or part-time earnings (Shim et al., 2010). Budgeting, understood as planning, monitoring, and controlling income and expenditure, is a foundational financial management practice (Xiao, 2008), and the habits formed at this stage may persist into adulthood.

1.2 Problem Statement

Although international research on student financial literacy is extensive, evidence on first-year university students in Algeria remains scarce, and few studies examine budgeting behavior specifically rather than general financial knowledge. Existing studies of Algerian university students have focused mainly on overall financial literacy and its demographic determinants (Yahiaoui, 2023). Moreover, previous work suggests that financial knowledge alone

does not necessarily lead to sound financial behavior (Mandell & Klein, 2009), which raises the question of which factors, such as attitudes and family socialization, are most closely associated with students' budgeting practices. This study addresses these gaps.

1.3 Research Objectives and Questions

The study pursues the following objectives:
to describe the levels of financial knowledge, financial attitude, family financial socialization, and budgeting behavior among first-year university students;
to examine the association of basic financial knowledge and financial attitude with personal budgeting behavior;
to examine the association of family financial socialization with personal budgeting behavior; and
to test whether budgeting behavior differs by gender, high school stream, residence type, and scholarship status.
Accordingly, three research questions are addressed:
RQ1: To what extent are basic financial knowledge and financial attitude associated with personal budgeting behavior?
RQ2: Does personal budgeting behavior differ across students' demographic characteristics?
RQ3: Is family financial socialization associated with personal budgeting behavior?
1.4 Significance of the Study
Theoretically, the study examines the Theory of Planned Behavior and financial socialization theory in an under-researched context and tests whether financial knowledge remains associated with budgeting behavior once attitudes and family socialization are taken into account. Practically, the findings can inform universities that design orientation and financial education programs for first-year students, as well as parents and policymakers concerned with young people's financial well-being.
1.5 Structure of the Paper
The remainder of the paper is organized as follows. Section 2 presents the theoretical framework and the hypotheses; Section 3 reviews the literature; Section 4 describes the methodology; Section 5 reports the results; Section 6 discusses the findings; and Section 7 concludes with recommendations, limitations, and directions for future research

2. THEORETICAL FRAMEWORK

2.1 Conceptualizing Financial Literacy

Financial literacy is broadly defined as the combination of financial awareness, knowledge, skills, attitudes, and behaviors necessary to make sound financial decisions and ultimately achieve individual financial well-being (OECD/INFE, 2016). Scholars generally agree that the construct is multidimensional. It encompasses (a) financial knowledge, such as understanding of interest, inflation, and risk diversification (Lusardi & Mitchell, 2014); (b) financial attitudes, which reflect dispositions toward money, saving, and planning; and (c) financial behavior, which refers to observable practices such as budgeting, saving, and managing debt (Atkinson & Messy, 2012). This study adopts this tripartite conceptualization, focusing in particular on financial knowledge and financial attitude as predictors of budgeting behavior among first-year university students.

2.2 Budgeting Behavior as a Financial Management Practice

Budgeting behavior refers to the extent to which individuals plan, monitor, and control their income and expenditures within a defined period. It is regarded as a foundational component of personal financial management and a key indicator of responsible financial conduct (Xiao, 2008). For first-year students, the transition to university often entails a first experience of managing money independently, whether from family allowances, scholarships, or part-time earnings. This makes budgeting a particularly salient behavior in this life stage.

2.3 Underpinning Theories

Life-Cycle Hypothesis. The Life-Cycle Hypothesis (Modigliani & Brumberg, 1954) posits that individuals plan consumption and saving over their lifetime in order to smooth consumption across periods. Financial literacy is therefore a prerequisite for rational intertemporal planning, since individuals with greater financial knowledge are better equipped to forecast needs and allocate resources accordingly (Lusardi & Mitchell, 2014). Although students are at an early stage of the life cycle, the foundations of lifelong financial habits are typically established during this period.
Theory of Planned Behavior. The Theory of Planned Behavior (TPB; Ajzen, 1991) explains behavior through intention, which is shaped by attitudes toward the behavior, subjective norms, and perceived behavioral control. Applied to this context, a student's budgeting behavior depends on their attitude toward budgeting, the social expectations of family and peers, and their confidence in their ability to manage money. Financial knowledge may strengthen perceived behavioral control and thereby increase the likelihood of adopting budgeting practices. Intention and perceived behavioral control were not measured directly in this study; the theory is used to interpret the roles of attitudes and knowledge.

Financial Socialization Theory. Rooted in social learning theory (Bandura, 1977b), financial socialization theory holds that financial values, attitudes, and behaviors are acquired through interaction with socialization agents, principally parents, but also peers, educational institutions, and the media (Gudmunson & Danes, 2011; Shim et al., 2010). In the Algerian context, where family financial support and communal norms of consumption and saving are influential, this perspective is especially relevant to understanding differences in students' budgeting behavior.

Self-Efficacy Theory. Bandura's (1977a) concept of self-efficacy suggests that individuals who believe in their capacity to perform a task are more likely to initiate and sustain it. Financial self-efficacy has been examined alongside financial knowledge, attitudes, and behavior in student samples (Amagir et al., 2020) and may represent a latent psychological mechanism linking knowledge to budgeting behavior. It was not measured in this study and is therefore used only as a possible explanatory mechanism in the discussion (Section 6.1), not as a tested construct.

2.4 Integrated Conceptual Model and Hypotheses

Drawing on the foregoing theories, this study proposes that students' financial literacy and family financial socialization are associated with their budgeting behavior, with demographic characteristics (gender, high school stream, residence, and scholarship status) acting as potential differentiating variables. Accordingly, the following hypotheses are formulated:

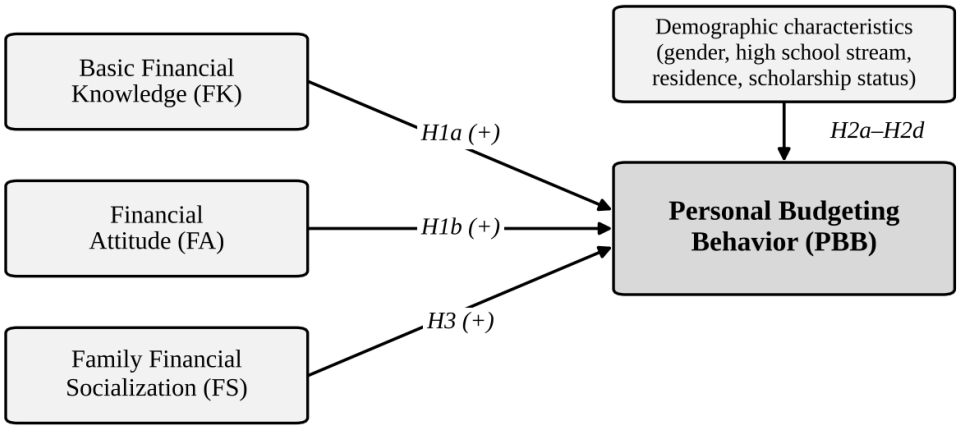
H1: Financial literacy, comprising basic financial knowledge (H1a) and financial attitude (H1b), is positively associated with personal budgeting behavior among first-year university students.

H2: Personal budgeting behavior differs significantly across students' demographic characteristics, namely gender (H2a), high school stream (H2b), residence (H2c), and scholarship status (H2d).

H3: Family financial socialization is positively associated with personal budgeting behavior among first-year university students.

Figure 1 summarizes the conceptual model that guides the study.

Figure 1: Conceptual model of the study



Note. Arrows from FK, FA, and FS (H1a, H1b, H3) represent paths tested in the multiple regression model. The arrow from the demographic characteristics (H2a–H2d) represents tests of group differences (independent-samples t-tests and one-way ANOVA), not predictors entered in the regression model.

3. LITERATURE REVIEW

3.1 Financial Literacy Among University Students

A substantial body of research shows that young adults, including university students, tend to display low to moderate levels of financial literacy. Using a national sample of college students, Chen and Volpe (1998) found that a considerable proportion lacked adequate knowledge of basic financial concepts. Their results also showed that literacy varied by gender, class standing, and academic major. Similarly, Lusardi, Mitchell, and Curto (2010) reported that young Americans had limited understanding of fundamental concepts such as interest compounding, inflation, and risk diversification, and that this was linked to their socioeconomic background and family environment. Cross-national evidence from the S&P Global FinLit Survey (Klapper, Lusardi, & van Oudheusden, 2015) confirms that financial illiteracy is a global phenomenon, with particularly low scores in many developing and Middle Eastern and North African economies.

Evidence from Arab countries and other developing economies is more limited but growing. In Algeria, Yahiaoui (2023) found that university students' multidimensional financial literacy was significantly related to gender, field of study, and

bank account ownership, with female students less likely to be financially literate. In Saudi Arabia, Hoda (2022) reported that the financial knowledge of business students was related to grade point average and specialization but not to gender or financial socialization, and noted that few studies have examined financial literacy in Arab countries. Douissa (2020) examined the factors affecting college students' multidimensional financial literacy in the Middle East.

3.2 Financial Literacy and Budgeting Behavior

The relationship between financial knowledge and financial behavior has been examined extensively. Hilgert, Hogarth, and Beverly (2003) documented a positive association between financial knowledge and everyday money management practices such as budgeting, saving, and bill payment. Xiao (2008) argued that behavior is central to financial well-being and that knowledge influences outcomes primarily through behavioral channels. Likewise, Lusardi and Mitchell (2014) concluded that financial literacy is positively associated with planning, saving, and sound portfolio decisions. Nevertheless, some studies caution that knowledge alone does not guarantee responsible behavior. Mandell and Klein (2009), for example, found that financial education did not always translate into improved financial behavior, which suggests that attitudes, motivation, and self-efficacy may play mediating roles.

Recent evidence from Indonesia points to two complementary findings. Suyanto et al. (2021) found that financial socialization and financial literacy were both positively related to college students' financial behavior. Johan et al. (2021) reported that a personal finance course improved students' financial knowledge but had no significant effect on their financial attitudes or behavior, while family financial socialization was an important driver of knowledge, attitudes, and behavior.

3.3 Demographic and Socialization Determinants

Prior studies identify several factors that differentiate students' financial literacy and behavior.

Gender. Female students frequently show lower measured financial knowledge, yet some studies report more cautious and disciplined spending behavior (Chen & Volpe, 1998; Lusardi & Mitchell, 2014).

Academic major. Students in business and economics typically score higher on financial knowledge than their peers in other fields, although the evidence on budgeting behavior specifically is less consistent (Chen & Volpe, 1998).

Family financial socialization. Parents are widely regarded as the primary socialization agents, and parental communication about money is positively associated with children's financial attitudes and behaviors (Shim et al., 2010; Gudmunson & Danes, 2011).

3.4 Research Gap

Although international research on financial literacy among students is extensive, evidence on first-year students in Algeria remains scarce. The first year is a critical transition during which many students manage their own finances for the first time. Moreover, few studies examine budgeting behavior specifically, as opposed to general financial knowledge, or test its variation across demographic and socialization characteristics. This study addresses these gaps by providing empirical evidence on the level of financial literacy and budgeting behavior among Algerian first-year university students.

4. METHODOLOGY

4.1 Research Design

This study adopts a quantitative, cross-sectional, descriptive-analytical design. A structured questionnaire was used to measure students' financial literacy and budgeting behavior and to test the hypothesized relationships and group differences.

4.2 Population and Sample

The target population comprises first-year undergraduate students enrolled in the Faculty of Economics, Commerce, and Management Sciences at the University of Djelfa, Algeria, during the 2026/2027 academic year. The questionnaire was distributed to 250 students, of whom 148 returned completed responses, yielding a response rate of 59.2%. All 148 responses were found to be valid and were retained for analysis (N = 148).

4.3 Data Collection Instrument

Primary data were collected through a structured, self-administered questionnaire designed to measure first-year students' financial literacy and budgeting behavior. The instrument consists of five sections:

Section 1: General Information. This section collects respondents' demographic and background characteristics, namely gender (male/female), high school stream (Economics and Management, Mathematics, Experimental Sciences, Literature and Foreign Languages, or Others), place of residence (university dormitory / family home), and scholarship status (recipient/non-recipient).

Section 2: Basic Financial Knowledge (FK). This section comprises 4 items assessing students' self-perceived understanding of fundamental financial concepts, such as interest, inflation, risk diversification, and basic money

management. Responses were coded on a five-point Likert scale (1 = strongly disagree to 5 = strongly agree). Because the items are self-rated statements rather than a test with correct and incorrect answers, this scale measures perceived (self-assessed) financial knowledge rather than objectively tested knowledge. The 14 items of the instrument are listed in Appendix A (English translation).

Section 3: Financial Attitude (FA). This section includes 3 items measuring students' dispositions toward money, saving, planning, and spending, rated on a five-point Likert scale (1 = strongly disagree to 5 = strongly agree).

Section 4: Family Financial Socialization (FS). This section contains 3 items capturing the extent to which the family (primarily parents) communicates about money, models financial practices, and guides students' financial decisions, rated on the same five-point Likert scale.

Section 5: Personal Budgeting Behavior (PBB). This section comprises 4 items assessing the extent to which students plan, record, monitor, and control their income and expenditures, rated on the same five-point Likert scale.

The scales were adapted to fit the Algerian university context. The instrument was prepared in Arabic.

4.4 Data Analysis Procedures

Data were analyzed using IBM SPSS Statistics, Version 25. Cronbach's alpha and mean inter-item correlations were used to assess the internal consistency of each construct, and composite scores were computed as the mean of the items of each scale. Descriptive statistics were used to describe the sample and the study variables, and univariate normality was examined through skewness, kurtosis, and the difference between the mean and the 5% trimmed mean.

H1 and H3 were tested through multiple linear regression with personal budgeting behavior (PBB) as the dependent variable and basic financial knowledge (FK), financial attitude (FA), and family financial socialization (FS) as predictors, supplemented by Pearson correlations. Regression assumptions were checked through collinearity diagnostics (tolerance, VIF, and condition index), the Durbin–Watson statistic, and standardized residuals. H2 was tested through independent-samples t-tests (gender, residence, and scholarship status) and one-way ANOVA (high school stream). Levene's test was used to check the homogeneity of variances, and Welch-corrected statistics were reported when this assumption was violated. Effect sizes were reported as Cohen's d, η^2, and f^2 (Cohen, 1988). The significance level was set at $\alpha = .05$ (two-tailed); because several group comparisons were conducted, Bonferroni-adjusted thresholds were also considered when interpreting significant differences.

5. RESULTS

5.1 Sample Profile

Table 1 presents the demographic characteristics of the 148 respondents. Females constituted the majority of the sample (73.6%, n = 109), while males accounted for 26.4% (n = 39). Regarding high school stream, the largest groups were Experimental Sciences (40.5%) and Economics and Management (33.1%), followed by Literature and Foreign Languages (18.2%), Mathematics (5.4%), and other streams (2.7%). With respect to residence, 66.2% of students lived in the family home, whereas 33.8% lived in university dormitories. Finally, the vast majority of respondents (89.2%) were university scholarship recipients, while only 10.8% were not.

Table 1: Demographic characteristics of respondents

Variable	Category	Frequency	%
Gender	Male	39	26.4
	Female	109	73.6
High School Stream	Economics & Management	49	33.1
	Mathematics	8	5.4
	Experimental Sciences	60	40.5
	Literature & Foreign Languages	27	18.2
	Others	4	2.7
Residence Type	University Dormitory	50	33.8
	Family Home	98	66.2
University Scholarship	YES	132	89.2
	NO	16	10.8

Note. Results generated from the survey data using IBM SPSS Statistics, Version 25.

5.2 Reliability Analysis

Table 2: Reliability statistics of the study instrument

Dimension / Construct	Items (k)	Cronbach's Alpha (α)	Mean Inter-Item Correlation ($\bar{r}$)	Min – Max Correlation	Status / Assessment
Basic Financial Knowledge (FK)	4	0.658	0.318	0.206 – 0.549	Modest
Financial Attitude (FA)	3	0.609	0.363	0.321 – 0.425	Modest (borderline)
Family Financial Socialization (FS)	3	0.546	0.283	0.190 – 0.407	Low
Personal Budgeting Behavior (PBB)	4	0.749	0.428	0.206 – 0.557	Acceptable
Overall Instrument (Total Scale)	14	0.824	0.250	-0.167 – 0.577	Good

Note. Results generated from the survey data using IBM SPSS Statistics, Version 25.
The reliability analysis indicated that the instrument displays acceptable internal consistency overall (α = .824), with personal budgeting behavior, the study's main outcome, reaching an acceptable level (α = .749). The financial knowledge (α = .658) and financial attitude (α = .609) scales fall below the commonly cited .70 benchmark (Nunnally & Bernstein, 1994) but within the range generally tolerated in exploratory research, whereas the family financial socialization scale (α = .546) remains low. Because alpha is sensitive to the number of items (Cortina, 1993) and the mean inter-item correlations for all constructs (.283–.428) lie within or close to the recommended range of .15–.50 (Clark & Watson, 1995; see also Briggs & Cheek, 1986), the modest alpha values likely reflect the small number of items per construct rather than weak item coherence. The overall alpha should also be read with caution because the instrument is multidimensional, as reflected in the negative minimum inter-item correlation of the total scale (−.167). Consequently, findings related to financial knowledge, financial attitude, and particularly family financial socialization should be interpreted cautiously.
5.3 Descriptive Statistics

Table 3: Descriptive statistics of the study variables (N = 148)

Variable	Items (k)	Min	Max	M	SD	Level
Basic Financial Knowledge (FK)	4	2.00	5.00	3.84	0.66	High
Financial Attitude (FA)	3	2.67	5.00	4.12	0.66	High
Family Financial Socialization (FS)	3	2.00	4.67	3.63	0.69	High
Personal Budgeting Behavior (PBB)	4	2.00	5.00	3.61	0.76	High

Note. Levels were classified using equal-interval cut-offs of 0.80 on the five-point scale (1.00–1.80 = very low; 1.81–2.60 = low; 2.61–3.40 = moderate; 3.41–4.20 = high; 4.21–5.00 = very high).
Results generated using IBM SPSS Statistics, Version 25.
Table 3 presents the descriptive statistics of the study variables. Students reported high levels of financial attitude (M = 4.12, SD = 0.66), perceived financial knowledge (M = 3.84, SD = 0.66), family financial socialization (M = 3.63, SD = 0.69), and personal budgeting behavior (M = 3.61, SD = 0.76). Financial attitude obtained the highest mean, whereas budgeting behavior obtained the lowest, although it remained within the high range. This pattern suggests a gap between favorable dispositions toward financial planning and their actual enactment, consistent with the intention–behavior gap discussed in the Theory of Planned Behavior (Ajzen, 1991). Because financial knowledge was measured through self-reported Likert items, these scores should be understood as perceived rather than objectively tested knowledge, and may be influenced by social desirability and by participants' economics training.

5.4 Normality Assessment
Table 4 presents the descriptive statistics and univariate normality diagnostics. Mean scores ranged from 3.61 (Personal Budgeting Behavior) to 4.12 (Financial Attitude), indicating moderate-to-high levels across constructs, with the most favorable responses on financial attitude. Skewness values ranged from −0.361 to 0.116, indicating approximately

symmetric distributions, while kurtosis values were all negative (−0.061 to −0.800), suggesting slightly flatter-than-normal distributions, most notably for Family Financial Socialization. All coefficients fell within ±1.00 (George & Mallery, 2010) and within the more lenient ±2.00 and ±7.00 thresholds (Byrne, 2010; Hair et al., 2010); z-values were also within the ±3.29 criterion for medium-sized samples (Kim, 2013). Differences between means and 5% trimmed means did not exceed 0.03, indicating no influential outliers. Accordingly, the assumption of univariate normality was considered reasonably satisfied, supporting the use of parametric analyses.

Table 4: Descriptive Statistics and Univariate Normality of the Study Constructs

Study Variables / Constructs	N	Mean (M)	5% Trimmed Mean	Skewness (SE=0.199)	Kurtosis (SE=0.396)	Assessment
Basic Financial Knowledge (FK)	148	3.84	3.84	-0.035	-0.061	Approx. normal
Financial Attitude (FA)	148	4.12	4.15	-0.361	-0.649	Approx. normal
Family Financial Socialization (FS)	148	3.63	3.64	-0.166	-0.800	Approx. normal
Personal Budgeting Behavior (PBB)	148	3.61	3.61	0.116	-0.614	Approx. normal

Note. N = 148. SE = standard error. Skewness and kurtosis values for all constructs fell within ±1.00 (George & Mallery, 2010) and well within the more lenient ±2.00 and ±7.00 thresholds (Byrne, 2010; Hair et al., 2010). Z-values of skewness and kurtosis were also examined against the ±3.29 criterion recommended for medium-sized samples (Kim, 2013). Differences between the means and 5% trimmed means were ≤ 0.03, suggesting no influential univariate outliers. Results generated using IBM SPSS Statistics, Version 25

5.5 Hypothesis Testing

Hypotheses were tested at $\alpha = .05$ (two-tailed) using multiple linear regression (H1 and H3), independent-samples t-tests and one-way ANOVA (H2), and Pearson correlations as bivariate support. Where Levene's test indicated unequal variances, Welch-corrected statistics are reported. Effect sizes are reported as Cohen's d, η^2, and f^2 (Cohen, 1988).

5.5.1 Hypothesis 1: Financial Literacy and Personal Budgeting Behavior

H1 proposed that financial literacy, comprising basic financial knowledge (H1a) and financial attitude (H1b), is positively associated with personal budgeting behavior. Table 5 presents the means, standard deviations, and bivariate correlations among the study variables, and Table 6 presents the multiple regression results. Personal budgeting behavior (PBB) was regressed on basic financial knowledge (FK), financial attitude (FA), and family financial socialization (FS), the last of which is interpreted under H3.

Table 5: Descriptive statistics and bivariate correlations (N = 148)

Variable	M	SD	1	2	3	4
1. Basic Financial Knowledge (FK)	3.84	0.66	—			
2. Financial Attitude (FA)	4.12	0.66	.454**	—		
3. Family Financial Socialization (FS)	3.63	0.69	.269**	.333**	—	
4. Personal Budgeting Behavior (PBB)	3.61	0.76	.350**	.431**	.365**	—

Note. Pearson correlations (two-tailed). Means and standard deviations are on the five-point scale. ** $p < .01$. Results generated using IBM SPSS Statistics, Version 25.

All four variables were positively and significantly intercorrelated (Table 5). FK, FA, and FS each correlated with PBB (r

= .350, .431, and .365, respectively; all $p < .001$), and the predictors were moderately correlated with one another ($r = .269$ to .454). In particular, FK shared substantial variance with FA ($r = .454$), which helps explain why its unique contribution to PBB weakened when FA and FS were entered together in the regression (Table 6).

Table 6: Multiple linear regression predicting personal budgeting behavior (N = 148)

Predictor	B	SE	β	t	p	95% CI for B	Tolerance	VIF
(Constant)	.627	.424	—	1.478	.142	[−0.21, 1.47]	—	—
Basic Financial Knowledge (FK)	.186	.094	.160	1.971	.051	[0.00, 0.37]	.778	1.285
Financial Attitude (FA)	.328	.096	.283	3.412	.001	[0.14, 0.52]	.746	1.341
Family Financial Socialization (FS)	.254	.085	.228	2.971	.003	[0.09, 0.42]	.872	1.147

Note. Dependent variable: PBB. $R = .511$, $R^2 = .261$, adjusted $R^2 = .246$, SE of the estimate = .663, $F(3, 144) = 16.978$, $p < .001$, $f^2 = .35$, Durbin–Watson = 1.811. CI = confidence interval, computed as $B \pm t(144) \times SE$. Results generated using IBM SPSS Statistics, Version 25.

The regression model was statistically significant, $F(3, 144) = 16.978$, $p < .001$, and explained 26.1% of the variance in PBB (adjusted $R^2 = .246$), a large effect by Cohen's (1988) benchmark ($f^2 = .35$). Financial attitude was a significant positive predictor ($B = 0.33$, $\beta = .283$, $t = 3.412$, $p = .001$), supporting H1b. Basic financial knowledge, despite its significant bivariate correlation with PBB ($r = .350$, $p < .001$), did not reach conventional significance in the multivariate model ($B = 0.19$, 95% CI [0.00, 0.37], $\beta = .160$, $t = 1.971$, $p = .051$); therefore, H1a was not supported at the .05 level, and H1 was partially supported. The attenuation of the knowledge effect suggests shared variance among the predictors.

Regression assumptions were examined. Multicollinearity was not a concern (tolerance = .75–.87; VIF = 1.15–1.34; maximum condition index = 18.0). Independence of errors was supported (Durbin–Watson = 1.811), and standardized residuals ranged from −2.55 to 2.44, indicating no outliers beyond ±3.

5.5.2 Hypothesis 2: Demographic Differences

H2 proposed that personal budgeting behavior differs across gender (H2a), high school stream (H2b), residence type (H2c), and scholarship status (H2d). Decisions on H2 are based on PBB; for completeness, FK and FA were compared across the same groups in supplementary analyses. Table 7 reports the t-test results and Table 8 the results by high school stream.

Table 7: Differences in study variables by gender, residence, and scholarship status

Grouping	Variable	Group 1 M (SD)	Group 2 M (SD)	t (df)	p	Mean diff.	95% CI of diff.	d
Gender (male, n = 39 / female, n = 109)	FK (Welch)	3.71 (0.45)	3.89 (0.71)	−1.81 (105.43)	.074	−0.18	[−0.38, 0.02]	0.28
	FA	4.10 (0.64)	4.12 (0.67)	−0.16 (146)	.873	−0.02	[−0.26, 0.22]	0.03
	PBB	3.36 (0.62)	3.70 (0.79)	−2.41 (146)	.017	−0.34	[−0.62, −0.06]	0.45
Residence (dormitory, n = 50 / family home, n = 98)	FK	3.82 (0.66)	3.85 (0.66)	−0.24 (146)	.815	−0.03	[−0.25, 0.20]	0.04
	FA	4.09 (0.65)	4.13 (0.67)	−0.40 (146)	.690	−0.05	[−0.27, 0.18]	0.07
	PBB	3.48 (0.74)	3.67 (0.77)	−1.46 (146)	.146	−0.19	[−0.45, 0.07]	0.25
Scholarship (yes, n = 132 / no, n = 16)	FK (Welch)	3.84 (0.68)	3.78 (0.41)	0.54 (26.63)	.595	0.06	[−0.18, 0.31]	0.10
	FA	4.14 (0.67)	3.90 (0.55)	1.43 (146)	.156	0.25	[−0.10, 0.59]	0.38
	PBB	3.63 (0.77)	3.47 (0.74)	0.77 (146)	.442	0.16	[−0.24, 0.56]	0.20

Note. Mean difference = Group 1 − Group 2. Welch's correction was applied where Levene's test was significant (FK by gender, $p = .005$; FK by scholarship, $p = .028$). Cohen's d was computed from the group means and standard deviations (pooled SD) and is reported in absolute value. Results generated using IBM SPSS Statistics, Version 25.

Table 8: Descriptive statistics and group comparisons by high school stream

High school stream	n	FK M (SD)	FA M (SD)	PBB M (SD)
Economics & Management	49	3.68 (0.73)	3.99 (0.66)	3.50 (0.87)
Mathematics	8	4.00 (0.38)	4.25 (0.53)	3.38 (0.23)
Experimental Sciences	60	3.85 (0.63)	4.13 (0.63)	3.58 (0.65)
Literature & Foreign Languages	27	4.06 (0.64)	4.36 (0.73)	3.94 (0.86)
Others	4	3.75 (0.29)	3.67 (0.38)	3.50 (0.58)
Levene's test (p)		.051	.718	.005
ANOVA F(4, 143)		1.581 (p = .182)	1.984 (p = .100)	1.816 (p = .129)
η^2		.042	.053	.048
Welch F (df_1, df_2)		1.592 (4, 19.33), p = .216	2.392 (4, 17.68), p = .090	2.337 (4, 18.83), p = .093

Note. Welch's robust test is reported alongside the standard ANOVA because of unequal variances and unequal group sizes. η^2 was computed from the ANOVA sums of squares. Results generated using IBM SPSS Statistics, Version 25.

H2a (Gender). Female students (M = 3.70, SD = 0.79) reported higher budgeting behavior than male students (M = 3.36, SD = 0.62), t(146) = −2.412, p = .017, d = 0.45, 95% CI of the difference [−0.62, −0.06]; Welch's test was consistent (t(85.70) = −2.713, p = .008). Because several comparisons were conducted, the difference would not survive a Bonferroni correction for the four PBB comparisons (α = .05/4 = .0125) under the standard test and is therefore treated as exploratory. In the supplementary analyses, gender differences were not significant for FK, t(105.43) = −1.806, p = .074 (Welch), or FA, t(146) = −0.160, p = .873.

H2b (High school stream). Levene's test indicated unequal variances for PBB (p = .005) and borderline heterogeneity for FK (p = .051); therefore, Welch's robust test was used alongside the standard ANOVA. No significant differences were found for PBB (Welch F(4, 18.83) = 2.337, p = .093; ANOVA F(4, 143) = 1.816, p = .129, η^2 = .048), FK (Welch F(4, 19.33) = 1.592, p = .216; ANOVA F(4, 143) = 1.581, p = .182, η^2 = .042), or FA (Welch F(4, 17.68) = 2.392, p = .090; ANOVA F(4, 143) = 1.984, p = .100, η^2 = .053). Descriptively, students from the Literature & Foreign Languages stream reported the highest budgeting behavior (M = 3.94), but the very small groups (Mathematics, n = 8; Others, n = 4) warrant caution.

H2c (Residence). Budgeting behavior did not differ significantly between students living in university dormitories and those living in the family home (t(146) = −1.463, p = .146, d = 0.25); nor did FK (p = .815) or FA (p = .690).

H2d (Scholarship). Budgeting behavior did not differ significantly between students with and without a university scholarship (t(146) = 0.772, p = .442, d = 0.20); nor did FK (Welch t(26.63) = 0.538, p = .595) or FA (t(146) = 1.426, p = .156, d = 0.38). Given the small group without a scholarship (n = 16), these results are inconclusive rather than evidence of equivalence.

Accordingly, H2 was partially supported: only the gender difference in PBB (H2a) reached significance and is considered exploratory, whereas H2b, H2c, and H2d were not supported.

5.5.3 Hypothesis 3: Family Financial Socialization and Personal Budgeting Behavior

H3 proposed that family financial socialization is positively associated with personal budgeting behavior. Family financial socialization was positively correlated with PBB (r = .365, p < .001) and remained a significant predictor in the multivariate model (B = 0.25, 95% CI [0.09, 0.42], β = .228, t = 2.971, p = .003; Table 6). H3 was therefore supported. Given the modest reliability of the FS scale (α = .546), this result should be interpreted with caution.

5.5.4 Summary of Hypothesis Testing

Table 9 consolidates the empirical outcomes across all hypotheses: H1 was partially supported (H1b supported, H1a not supported), H2 was partially supported (gender difference in PBB only), and H3 was supported.

Table 9: Summary of hypothesis testing decisions (N = 148)

Hypothesis	Statement / Path	Statistical Test	Key Empirical Findings	Decision
H1a	FK → PBB	Multiple regression	β = .160, t = 1.971, p = .051	Not supported
H1b	FA → PBB	Multiple regression	β = .283, t = 3.412, p = .001	Supported
H2a	Gender differences in PBB	Independent t-test	t(146) = −2.412, p = .017, d = 0.45 (Welch p = .008); FK and FA: p = .074 (Welch) and .873	Supported (exploratory)
H2b	High school stream differences in PBB	One-way ANOVA; Welch	F(4, 143) = 1.816, p = .129; Welch p = .093; FK and FA: p = .216 and .090 (Welch)	Not supported
H2c	Residence differences in PBB	Independent t-test	t(146) = −1.463, p = .146, d = 0.25; FK and FA: p = .815 and .690	Not supported
H2d	Scholarship differences in PBB	Independent t-test	t(146) = 0.772, p = .442, d = 0.20; FK and FA: p = .595 (Welch) and .156	Not supported
H3	FS → PBB	Pearson correlation; multiple regression	r = .365, p < .001; β = .228, t = 2.971, p = .003	Supported

Note. H1 and H2 were partially supported; H3 was supported. PBB = personal budgeting behavior; FK = basic financial knowledge; FA = financial attitude; FS = family financial socialization. 'Exploratory' indicates that the result did not survive Bonferroni correction.

6. DISCUSSION

6.1 Financial Literacy, Attitude, and the Knowledge–Behavior Gap (H1)

The regression model explained 26.1% of the variance in personal budgeting behavior. Financial attitude showed the largest standardized coefficient (β = .283, p = .001), whereas basic financial knowledge did not reach conventional significance (β = .160, p = .051) despite its significant bivariate correlation with budgeting behavior (r = .350, p < .001). This attenuation suggests that knowledge shares variance with attitude and family socialization and that its unique contribution is smaller once these are controlled. The pattern is consistent with prior research indicating that financial knowledge and education alone often show limited effects on financial behavior (Fernandes et al., 2014; Johan et al., 2021; Mandell & Klein, 2009). It also fits the Theory of Planned Behavior (Ajzen, 1991), in which attitudes toward planning and spending are proximal determinants of behavioral intention, whereas knowledge may act as a more distal factor. Financial self-efficacy, which was not measured here, may be one psychological mechanism linking knowledge to behavior (Amagir et al., 2020; Bandura, 1977a), but this remains an interpretive possibility rather than a tested pathway.

The descriptive results point in the same direction: students reported their most favorable scores on financial attitude (M = 4.12) and their lowest on budgeting behavior (M = 3.61), which suggests a gap between favorable dispositions and their actual enactment. For first-year students facing new financial autonomy, knowing how money works may therefore be insufficient without a supportive attitude toward financial self-regulation. Because the design is cross-sectional, these associations should not be interpreted causally, and the borderline result for knowledge (p = .051) should be replicated before firm conclusions are drawn.

6.2 The Role of Family Financial Socialization (H3)

Family financial socialization was positively associated with budgeting behavior (β = .228, p = .003; r = .365, p < .001) and retained independent predictive value alongside financial attitude, which supports H3. This is in line with Family Financial Socialization Theory (Gudmunson & Danes, 2011) and with evidence that parents are primary socialization agents for first-year students (Shim et al., 2010), and it suggests that parental guidance may foster budgeting routines that extend into early adulthood. In the present sample, most students lived in the family home (66.2%) and received a university scholarship (89.2%), so family mentoring may be an especially influential source of financial learning in this context. Similar associations have been reported in Indonesia, where family financial socialization was an important driver of students' financial knowledge, attitudes, and behavior (Johan et al., 2021) and financial socialization was positively related to financial behavior (Suyanto et al., 2021). By contrast, Hoda (2022) found no significant relationship between financial socialization and financial knowledge among Saudi business students, although that study examined knowledge rather than

budgeting behavior. Nevertheless, the modest reliability of the FS scale (α = .546) and the fact that its items may not capture specific parental practices call for cautious interpretation.

6.3 Demographic Differences (H2)

Among the demographic characteristics examined, only gender was associated with budgeting behavior: female students reported higher scores than male students (d = 0.45). Earlier studies report that female students often show lower measured financial knowledge but more cautious and disciplined spending behavior (Chen & Volpe, 1998; Lusardi & Mitchell, 2014); the present result is consistent with the second part of this pattern, whereas no significant gender difference emerged for knowledge. In contrast, Yahiaoui (2023) reported that female Algerian university students were less financially literate than their male peers; that study measured multidimensional financial literacy rather than budgeting behavior, so the two findings are not directly comparable. However, the gender difference did not survive Bonferroni correction and the sample was unbalanced (39 males vs. 109 females), so it should be treated as exploratory.

High school stream, residence type, and scholarship status were not significantly related to budgeting behavior or to the other study variables. These null results should be read with caution: several groups were very small (Mathematics, n = 8; Others, n = 4; no scholarship, n = 16), which limits statistical power and widens confidence intervals. In addition, because all respondents were enrolled in the same faculty, high school stream is not directly comparable with the academic major examined in earlier studies (Chen & Volpe, 1998).

7. CONCLUSION AND RECOMMENDATIONS

7.1 Conclusion

This study examined how financial literacy, family financial socialization, and demographic characteristics relate to personal budgeting behavior among first-year university students in Algeria (N = 148). Three main conclusions emerge. First, students reported high levels of financial attitude, perceived financial knowledge, family financial socialization, and budgeting behavior, but budgeting behavior was the lowest of the four, which indicates a gap between dispositions and practice. Second, financial attitude and family financial socialization were significant predictors of budgeting behavior, whereas basic financial knowledge did not reach conventional significance once the other predictors were controlled; H1 was therefore partially supported and H3 supported. Third, apart from a gender difference that should be treated as exploratory, budgeting behavior did not differ by high school stream, residence type, or scholarship status, so H2 was partially supported. Overall, the findings indicate that fostering favorable attitudes and supportive family involvement may be as important as imparting financial knowledge.

7.2 Practical Implications and Recommendations

Based on the findings, and bearing in mind the limitations discussed below, the following recommendations are proposed:

Go beyond knowledge transmission. Orientation and financial education programs for first-year students should combine concepts with attitude-building and practice, such as goal setting, budget planning exercises, and expenditure tracking, since attitude was the strongest predictor and budgeting behavior the lowest mean score.

Intervene early. Short budgeting workshops and simple planning tools should be offered in the first semester, when many students manage money independently for the first time.

Involve families. Universities can provide parents with brief guidance on money conversations and on supporting students' budgeting, since family financial socialization was associated with better budgeting behavior.

Use natural touchpoints. Because most respondents received a university scholarship (89.2%), scholarship disbursement and enrollment procedures are practical moments to deliver budgeting guidance.

Monitor and tailor support. Universities may track budgeting behavior through brief diagnostic surveys and, if the gender difference is replicated, consider targeted support for male students, who reported lower scores.

Embed financial education earlier. Policymakers and education authorities could consider integrating practical personal finance content in secondary education so that students arrive at university with stronger foundations.

7.3 Limitations

Several limitations should be considered when interpreting the findings.

Design. The cross-sectional design precludes causal inference; the observed associations may be bidirectional or influenced by unmeasured variables.

Measurement. All variables were self-reported, so responses may be affected by social desirability and recall bias. Financial knowledge was measured through Likert items and therefore reflects perceived rather than objectively tested knowledge.

Sample. The sample was drawn from a single faculty at one university, which limits generalizability. It was also unbalanced by gender (39 males vs. 109 females), high school stream (n = 8 and n = 4 in the smallest groups), and scholarship status (n = 16 without a scholarship); these small groups reduced statistical power, so the non-significant group differences are inconclusive.

Reliability. Some scales had modest internal consistency, particularly family financial socialization (α = .546), financial attitude (α = .609), and basic financial knowledge (α = .658). Findings related to these constructs should be treated with

caution.

Multiple comparisons. The significant gender difference in budgeting behavior ($p = .017$) did not survive Bonferroni correction and should be regarded as exploratory; the borderline effect of financial knowledge ($p = .051$) rests on a single sample.

Unexplained variance. The model explained 26.1% of the variance in budgeting behavior, so other factors, such as income and allowance level, peer influence, or self-control, may also play a role.

7.4 Directions for Future Research

Longitudinal or experimental designs could clarify how attitudes, family socialization, and budgeting behavior develop and influence each other during the first year of university.

Objective knowledge tests and behavioral indicators, such as spending records, could complement self-reports.

Mediation and moderation analyses could test whether financial attitude or financial self-efficacy mediates the link between knowledge and behavior, which was not examined here.

Larger, probability-based, multi-institution samples would allow more reliable group comparisons and generalization to other Algerian universities.

Improved measures with more items per construct, validated in the Algerian context, would strengthen reliability, particularly for family financial socialization.

Mixed-methods work could explore how students and parents experience financial communication and budgeting.

REFERENCE

1. Ajzen, I. (1991). The theory of planned behavior. Organizational Behavior and Human Decision Processes, 50(2), 179–211.
2. Amagir, A., Groot, W., van den Brink, H. M., & Wilschut, A. (2020). Financial literacy of high school students in the Netherlands: Knowledge, attitudes, self-efficacy, and behavior. International Review of Economics Education, 34, Article 100185. https://doi.org/10.1016/j.iree.2020.100185
3. Atkinson, A., & Messy, F.-A. (2012). Measuring financial literacy: Results of the OECD/International Network on Financial Education (INFE) pilot study (OECD Working Papers on Finance, Insurance and Private Pensions, No. 15). OECD Publishing.
4. Bandura, A. (1977a). Self-efficacy: Toward a unifying theory of behavioral change. Psychological Review, 84(2), 191–215.
5. Bandura, A. (1977b). Social learning theory. Prentice Hall.
6. Briggs, S. R., & Cheek, J. M. (1986). The role of factor analysis in the development and evaluation of personality scales. Journal of Personality, 54(1), 106–148.
7. Byrne, B. M. (2010). Structural equation modeling with AMOS: Basic concepts, applications, and programming (2nd ed.). Routledge.
8. Chen, H., & Volpe, R. P. (1998). An analysis of personal financial literacy among college students. Financial Services Review, 7(2), 107–128.
9. Clark, L. A., & Watson, D. (1995). Constructing validity: Basic issues in objective scale development. Psychological Assessment, 7(3), 309–319.
10. Cohen, J. (1988). Statistical power analysis for the behavioral sciences (2nd ed.). Lawrence Erlbaum Associates.
11. Cortina, J. M. (1993). What is coefficient alpha? An examination of theory and applications. Journal of Applied Psychology, 78(1), 98–104.
12. Douissa, I. B. (2020). Factors affecting college students' multidimensional financial literacy in the Middle East. International Review of Economics Education, 35, Article 100173. https://doi.org/10.1016/j.iree.2019.100173
13. Fernandes, D., Lynch, J. G., Jr., & Netemeyer, R. G. (2014). Financial literacy, financial education, and downstream financial behaviors. Management Science, 60(8), 1861–1883.
14. George, D., & Mallery, P. (2010). SPSS for Windows step by step: A simple guide and reference, 17.0 update (10th ed.). Pearson.
15. Gudmunson, C. G., & Danes, S. M. (2011). Family financial socialization: Theory and critical review. Journal of Family and Economic Issues, 32(4), 644–667.
16. Hair, J. F., Black, W. C., Babin, B. J., & Anderson, R. E. (2010). Multivariate data analysis (7th ed.). Pearson.
17. Hilgert, M. A., Hogarth, J. M., & Beverly, S. G. (2003). Household financial management: The connection between knowledge and behavior. Federal Reserve Bulletin, 89(7), 309–322.
18. Hoda, N. (2022). Gender, education, and financial socialization as determinants of financial knowledge: An empirical study. Journal of Asian Finance, Economics and Business, 9(10), 169–177. https://doi.org/10.13106/jafeb.2022.vol9.no10.0169
19. Johan, I., Rowlingson, K., & Appleyard, L. (2021). The effect of personal finance education on the financial knowledge, attitudes and behaviour of university students in Indonesia. Journal of Family and Economic Issues, 42(2), 351–367. https://doi.org/10.1007/s10834-020-09721-9
20. Kim, H.-Y. (2013). Statistical notes for clinical researchers: Assessing normal distribution (2) using skewness and

kurtosis. Restorative Dentistry & Endodontics, 38(1), 52–54.

21. Klapper, L., Lusardi, A., & van Oudheusden, P. (2015). Financial literacy around the world: Insights from the Standard & Poor's Ratings Services Global Financial Literacy Survey. Standard & Poor's Ratings Services.

22. Lusardi, A., & Mitchell, O. S. (2014). The economic importance of financial literacy: Theory and evidence. Journal of Economic Literature, 52(1), 5–44.

23. Lusardi, A., Mitchell, O. S., & Curto, V. (2010). Financial literacy among the young. Journal of Consumer Affairs, 44(2), 358–380.

24. Mandell, L., & Klein, L. S. (2009). The impact of financial literacy education on subsequent financial behavior. Financial Counseling and Planning, 20(1), 15–24.

25. Modigliani, F., & Brumberg, R. (1954). Utility analysis and the consumption function: An interpretation of cross-section data. In K. K. Kurihara (Ed.), Post-Keynesian economics (pp. 388–436). Rutgers University Press.

26. Nunnally, J. C., & Bernstein, I. H. (1994). Psychometric theory (3rd ed.). McGraw-Hill.

27. OECD/INFE. (2016). OECD/INFE international survey of adult financial literacy competencies. OECD Publishing.

28. Shim, S., Barber, B. L., Card, N. A., Xiao, J. J., & Serido, J. (2010). Financial socialization of first-year college students: The roles of parents, work, and education. Journal of Youth and Adolescence, 39(12), 1457–1470.

29. Suyanto, S., Setiawan, D., Rahmawati, R., & Winarna, J. (2021). The impact of financial socialization and financial literacy on financial behaviors: An empirical study in Indonesia. Journal of Asian Finance, Economics and Business, 8(7), 169–180. https://doi.org/10.13106/jafeb.2021.vol8.no7.0169

30. Xiao, J. J. (2008). Applying behavior theories to financial behavior. In J. J. Xiao (Ed.), Handbook of consumer finance research (pp. 69–81). Springer.

31. Yahiaoui, N. E. H. (2023). Demographic and socio-economic determinants of multidimensional financial literacy among young Algerian university students. Journal of Management and Business Education, 6(2). https://doi.org/10.35564/jmbe.2023.0010