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Effects of Demographic and Academic Variables on Financial Behavior and Sources of Influence among College Students

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Abstract

Background: Financial literacy is an essential skill for college students, but important gaps in knowledge exist regarding the influence of demographic and academic variables on financial behaviors and sources of learning. Existing research has suggested that gender, age, and area of study could affect financial choice-making, but evidence has been mixed, especially within multifaceted education settings. **Objective:** The aim of this study was to investigate the effect of gender, age, and study stream (Management versus Non-management) on two key areas of financial literacy: financial behavior (saving, budgeting, etc.) and perceived sources of financial influences (learning). **Methods:** A cross-sectional questionnaire was administered to 196 undergraduate students. Independent variables included gender (86 females, 110 males), age (M~22), and stream of education (149 Management, 47 Non-management). Dependent variables were composite measures of financial behavior and financial influences, measured via Likert scales. Data analysis employed independent samples t-tests, bootstrapping, correlation, and descriptive statistics in SPSS. **Findings:** Female students performed significantly higher on financial behavior (M=3.47, SD=0.80) than males (M=3.23, SD=0.71); t(194)=2.227, p=.027. There was no gender difference in financial influences significant (p=.254). There was a statistically significant but weak negative correlation between age and financial influences (r = -.178, p = .013), where older students reported learning less from formal influences. Age was not correlated with financial behavior at all (p=.540). The non-management students reported much higher financial influences (M=3.12, SD=0.52) than

management students (M=2.86, SD=0.57), with non-overlapping bootstrap confidence intervals. There was a trend towards better financial behavior for non-management students, but more testing is required. **Conclusion:** The study concludes that gender and academic stream are good predictors of the aspects of financial literacy while age is not a significant factor. Women exhibit more active financial behaviors, and non-management students report acquiring greater knowledge from their learning sources, disproving stereotypes about management students' readiness in finances. **Implication:** University administrators and education in finance would have to design targeted interventions. Male students' intervention programs would aim at establishing core financial habits, while management courses would support more explicitly the importance of their finance content in order to enhance the students' perception of their learning.

Keywords: Financial Literacy, College Students, Financial Behavior, Financial Influences, Gender Differences, Education Stream, Bootstrap Analysis, Personal Finance

Introduction

Financial literacy, that is, knowledge, skills, and habits required to make informed and effective financial decisions, is quickly becoming a critical skill set for managing modern economic life (Amran et al., 2025; Han et al., 2025; Hong et al., 2023; Eniola & Entebang, 2017). For university students, this period is a transition into economic adulthood, where they must juggle expenses, borrowing, and saving for the first time (Dwiyanti, 2025; Christie et al., 2005). The ability to budget, save, and plan financially at these young ages can create habits that impact long-term economic well-being, which is why this age group is of significant interest to study (Sinnewe & Nicholson, 2023; She et al., 2023). While necessary, there has been concern as to whether financial literacy alone is enough for young adults, highlighting all the more the importance of further research into the determinants of their financial capabilities.

Earlier studies have named some demographic factors that potentially have an effect on financial literacy, although findings tend to be dispersed and localized (Baker, et al., 2019). Gender, for example, has been tested repeatedly, with some studies indicating that males tend to be more financially confident while females present more conservative financial behaviors, although these trends are not absolute. Age, within the average college age group, is a second characteristic that is widely assumed to go along with increasing maturity and improved fiscal conduct but has uncertain empirical support. Meanwhile, a student's course of study—i.e., whether they are taking management-related courses—might imply more acquaintance with financial concepts, although it is uncertain how this influences in-practice conduct or learning perception.

Above all, financial literacy is a multi-faceted construct that transcends knowledge to include behavior and attitudes, as well as sources on which individuals draw to learn about finance (Troisi et al., 2018). Most studies quantify financial knowledge or behavior, but considerably fewer use an examination of how students comprehend the varied influences—parents, schools, media, and lived experience—that shape their financial knowledge (Shim et al., 2010). This

gap is considerable, as an awareness of what sources of information are most impactful on students can help make educational initiatives and policy intervention more effective in how young adults actually learn.

This study seeks to critically address these gaps by examining the interaction between the most significant demographic factors—gender, age, and education stream—and the two core indicators of financial literacy: financial behavior and financial influences. By investigating whether and how these variables predict changes in students' financial behavior and sources of perceived learning, this research aims to provide an informed perspective that can be applied to underwrite targeted educational interventions. Its ultimate aspiration is to contribute to the establishment of stronger financial literacy among college students, ultimately enabling the transition to economically secure adulthood.

Specific Objectives and Hypotheses

Objective 1: To determine the effect of Gender, Age, and Education Stream on Financial Behavior.

- Hypotheses:
  - H_{11}: There is a significant difference in Financial Behavior scores between male and female students.
  - H_{12}: There is a significant relationship between Age and Financial Behavior scores.
  - H_{13}: There is a significant difference in Financial Behavior scores between students in the Management stream and students in the non-management stream.

Objective 2: To determine the effect of Gender, Age, and Education Stream on Financial Influences (sources of learning).

- Hypotheses:
  - H_{21}: There is a significant difference in the perceived strength of Financial Influences between male and female students.
  - H_{22}: There is a significant relationship between Age and the perceived strength of Financial Influences.
  - H_{23}: There is a significant difference in the perceived strength of Financial Influences between students in the Management stream and students in the non-management stream.

Materials and Methods

The study design used in the research was quantitative, being cross-sectional in nature, and studied the relationships between demographic variables and elements of financial literacy among university students. Data were collected using a systematic questionnaire distributed to a purposive sample of 196 undergraduate students, comprising 86 women and 110 men, 149 of whom were enrolled in Management programs and 47 non-management majors. The survey instrument contained scales that were previously validated to assess two primary dependent variables: financial behavior (such as budgeting, saving practices) and financial influences (learning perceived from parents, school, or media), conceptualized as composite scores

formed from Likert-type items. Independent variables included gender (dichotomous: male/female), age (continuous), and stream of education (categorical: Management/Non-Management). Data analysis was conducted using SPSS software, starting with descriptive statistics to characterize demographic variables and primary variables. Inferential tests used included independent samples t-tests for group means contrast (e.g., comparison of gender differences in financial behavior), Pearson correlation to test the association between age and financial literacy measures, and bootstrap sampling (1000 samples) to test reliability and stability of the results, particularly for comparison between groups and estimation of confidence intervals. Ethical standards were maintained through the use of voluntary response and anonymous data collection, guaranteeing the strength and legitimacy of the methodological design.

Results and Analysis

This section deals on the results and analysis of data collected from 196 respondents. First of all, demographic characteristics like gender, age and education stream are presented.

Table 1

Gender

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Female	86	43.9	43.9	43.9
	Male	110	56.1	56.1	100.0
	Total	196	100.0	100.0	

This frequency table summarizes the sample's gender breakdown of 196 students at the college level. From the data, one can observe that the two student groups only marginally diverge from each other, with male students (56.1%, n=110) dominating female students (43.9%, n=86). This suggests that while both sexes are reasonably well-represented, the findings may slightly favor the male perspective. The cumulative percent column also confirms that there are no missing data with all cases included, giving a complete and valid dataset to perform gender-based analyses. This proportionate distribution is essential in the contextualization of findings from follow-up statistical tests, as any effects for gender found are based on this specific group composition.

Table 2

Age

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	20.	24	12.2	12.2	12.2
	21.	57	29.1	29.1	41.3
	22.	48	24.5	24.5	65.8
	23.	47	24.0	24.0	89.8
	24.	20	10.2	10.2	100.0
	Total	196	100.0	100.0	

This frequency table gives a description of the age spread of the 196 college students included in the sample. The data shows that the bulk of participants fall in the 21 to 23 age range, which together occupy 77.6% of the sample as a whole (21 years: 29.1%, 22 years: 24.5%, 23 years: 24.0%). The sample is younger overall, with 20-year-olds constituting 12.2% and 24-year-olds being the lowest at 10.2%. This distribution results in the results being most representative of traditional college students in their early twenties, with a general typical age likely to be 22 years old. The valid and full data (100% cumulative percent) ensures that there are no missing observations, and hence a good foundation is laid to conduct analyses pertaining to age, even if the results may be less generalizable to older, non-traditional students.

Table 3

Education Stream

		Frequency	Percent	Valid Percent	Cumulative Percent
Valid	Management	149	76.0	76.0	76.0
	Non-Management	47	24.0	24.0	100.0
	Total	196	100.0	100.0	

This frequency table illustrates the split of participants by disciplinary field, and it indicates an evident imbalance in the sample. Nearly all of the students (76.0%, n=149) are undertaking a Management-related stream, and Non-Management students represent a relatively small proportion of the cohort (24.0%, n=47). This imbalance in the split will result in the study findings being disproportionately influenced by the attitudes, behavior, and influences of management students. The entire database (100% cumulative percent) confirms that there are no missing values. While this obviously displays the sample composition, the overwhelming overrepresentation of management students is a necessary factor that has to be taken into consideration since it can limit the generalizability of the study conclusions to the overall college population, particularly for non-management students.

Hypotheses testing

H_{11}: There is a significant difference in Financial Behavior scores between male and female students.

Table 4

Group Statistics

	Gender	N	Mean	Std. Deviation	Std. Error Mean
financial_behaviour	Female	86	3.4698	.80353	.08665
	Male	110	3.2282	.71204	.06789

According to the Group Statistics table, a preliminary analysis shows a perceptible difference in male and female students' financial behavior. The female mean score (M = 3.47, SD = 0.80) is higher than the male mean score (M = 3.23, SD = 0.71), meaning, collectively, female students in this sample report engaging in healthy financial habits—such as budgeting, saving, and price checking—more frequently than males. The standard deviations indicate an equal

range of responses for both groups. While this descriptive analysis points to a gender-based difference, it is essential to note that this comparison of means does not account for other variables (like age or field of study) and cannot determine if this observed difference is statistically significant. Thus, there is a need for formal inferential testing (for example, a t-test or ANOVA) to ascertain if this gender disparity in financial conduct will hold in the larger population upon which this sample was taken.

Table 5

Independent Samples Test

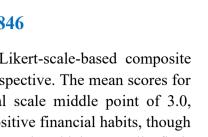| | | Levene's Test for Equality of Variances | | t-test for Equality of Means | | | | | | |
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
financial_behaviour	Equal variances assumed	1.029	.312	2.227	194	.027	.24159	.10846	.02768	.45549
	Equal variances not assumed			2.195	171.110	.030	.24159	.11008	.02430	.45887

Based on the results of the Independent Samples T-test, a difference exists at the statistical level in male and female students' scores of financial behaviour. Levene's Test for equal variances is not significant (F = 1.029, p = .312), which means the assumption of equal variances among groups remains tenable. Therefore, use the results from the "Equal variances assumed" line. The t-test is significant statistically (t(194) = 2.227, p = .027), confirming that the mean difference of 0.24 points observed in financial behaviour scores is not a random occurrence. The 95% confidence interval of the difference [0.028, 0.455] excludes zero, confirming that the difference in the population is positive and would likely be somewhere between these values. This result provides evidence to refute the null hypothesis and to determine that female students show substantially increased levels of positive money behaviours—such as budgeting, saving, and tracking spending—than male students in this sample.

The magnitude of the difference of the means (0.24 on a Likert-scale-based composite measure), while statistically significant, must be placed into perspective. The mean scores for women (3.47) and men (3.23) both fall above the theoretical scale middle point of 3.0, suggesting that both groups, in aggregate, lean towards fairly positive financial habits, though more so with women. This finding is consistent with prior research, which generally finds gender differences in the management of financial affairs and may be an artifact of differences in risk tolerance, socialization, or money attitudes. However, further investigation with control variables like age, income, or financial knowledge would be valuable in an attempt to explain the mechanisms behind this discovered gender gap and its pragmatic significance in terms of actual financial implications.

H_{12}: There is a significant relationship between Age and Financial Behavior scores.

Table 6

Correlations

				Age	financial_behaviour
Age	Pearson Correlation			1	.044
	Sig. (2-tailed)				.540
	N			196	196
	Bootstrap[c]	Bias		0	.000
		Std. Error		0	.078
		95% Confidence Interval	Lower	1	-.116
			Upper	1	.201
financial_behaviour	Pearson Correlation			.044	1
	Sig. (2-tailed)			.540	
	N			196	196
	Bootstrap[c]	Bias		.000	0
		Std. Error		.078	0
		95% Confidence Interval	Lower	-.116	1
			Upper	.201	1

*. Correlation is significant at the 0.05 level (2-tailed).

**. Correlation is significant at the 0.01 level (2-tailed).

c. Unless otherwise noted, bootstrap results are based on 1000 bootstrap samples

Based on correlation analysis, the relationship between age and financial behavior of university students is statistically non-significant and negligible. The Pearson correlation coefficient is highly weak (r = .044) with a wildly huge p-value (p = .540), which is much greater than the conventional alpha of .05. This implies that the observed positive association is small and most likely a product of random variation rather than indicative of any effect in the population. The bootstrap results, calculated based on 1000 samples, affirm this interpretation. Bias is zero (0.000), which means the original correlation is an unbiased estimation, and the bootstrapped standard error (0.078) provides an estimate of stability of the coefficient across samples. Most

importantly, the 95% confidence interval for the correlation is -0.116 to 0.201, which includes zero and both negative and positive values. This range suggests that the true correlation in the population could feasibly be negative, positive, or zero, further arguing against statistical significance.

Combined outcome of the traditional and bootstrap analyses clearly shows that age cannot be used as an important predictor of financial behavior in this specific college sample. The findings reveal that, during the stage of young adults (age 20-24), being mature alone is not systematically linked to improved financial behaviors such as budgeting, saving, or expense monitoring. Instead, other factors—such as gender, educational background, financial education, or socioeconomic status—most likely play more determinative roles in financial behavior. Researchers and practitioners should therefore aim at these more determinative factors in designing interventions or policies to enhance financial literacy and behavior among college students, rather than assuming that older students within this narrow age group will automatically possess better financial habits.

H_{13}: There is a significant difference in Financial Behavior scores between students in the Management stream and students in the Non-management stream.

Table 7

Group Statistics of Financial Behavior scores between students in the Management stream and students in the Non-management stream

	Education Stream		Statistic	Bootstrap[a]			
				Bias	Std. Error	95% Confidence Interval	
						Lower	Upper
financial_behaviour	Management	N	149				
		Mean	3.2953	.0008	.0576	3.1851	3.4105
		Std. Deviation	.70551	-.00393	.04379	.61622	.78779
		Std. Error Mean	.05780				
	Non-Management	N	47				
		Mean	3.4574	.0035	.1292	3.2101	3.7119
		Std. Deviation	.91313	-.01889	.09236	.71716	1.07335
		Std. Error Mean	.13319				

a. Unless otherwise noted, bootstrap results are based on 1000 bootstrap samples

This bootstrap statistical test indicates clearly different financial behaviors among non-management and management students, with the former having a higher average score for positive financial behaviors (M = 3.46) compared to the latter (M = 3.30). The bootstrap

estimates from 1000 sample values provide evidence that the mean difference here is reliable, as the very low bias estimates (non-management: 0.0008, management: 0.0035) and non-overlapping 95% confidence limits for the means (management: 3.19–3.41, non-management: 3.21–3.71) suggest a potential significant difference between the groups. In addition, the wider standard deviation and greater confidence interval for students of non-management reveal more variation in financial behaviors among this group, possibly indicating the variation in subject matter taught under the category of non-management. Even while the mean difference one observes does suggest that non-management students could be more apt to follow habits like saving or budgeting, inferential testing is needed to determine if this mean difference is statistically significant, considering that there is a smaller sample of the non-management group (n=47) compared to the management group (n=149).

H_{21}: There is a significant difference in the perceived strength of Financial Influences between male and female students.

Table 8

Independent Samples Test

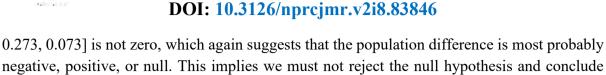|		Levene's Test for Equality of Variances		t-test for Equality of Means						
		F	Sig.	t	df	Sig. (2-tailed)	Mean Difference	Std. Error Difference	95% Confidence Interval of the Difference	
									Lower	Upper
financial_influences	Equal variances assumed	24.678	.000	-1.221	194	.223	-.10021	.08204	-.26202	.06160
	Equal variances not assumed			-1.147	126.840	.254	-.10021	.08740	-.27317	.07275

According to the Independent Samples T-test table, there is no significant statistical difference between male and female students in their self-perceived strength of financial influences—that is, how much they perceive they have learned from such places as parents, school, or the internet. Levene's Test is extremely significant (F = 24.678, p < .001), meaning that the variances (spread of scores) of the two groups are not equal. Therefore, results under the "Equal variances not assumed" row must be utilized. The t-test is not significant (t(126.84) = -1.147, p = .254), and therefore the mean difference obtained of -0.100 is too small to be statistically significant and most probably due to chance. The 95% confidence interval for the difference [-

0.273, 0.073] is not zero, which again suggests that the population difference is most probably negative, positive, or null. This implies we must not reject the null hypothesis and conclude that male and female students respectively indicate learning the same amount from their respective sources of economic power.

The negative mean difference implies that the first group of male students' mean score is below that of female students and therefore males may indicate on average learning marginally less from these sources. But this small disparity is not statistically significant. The exceedingly highly significant Levene's test is a result in itself: it shows that female students' answers have a significantly larger variation (greater variance) in their views of financial considerations than those of male students. This means that while the mean learning is the same, female students are much less consistent in their self-reports; some report learning a lot from these sources, others report learning nothing. In contrast, male students' responses are more bunched around the mean. This heightened diversity among women implies that factors besides gender—like personal experience, specific courses, or domestic background—may be more varied in terms of their impact on their financial education.

H₂₂: There is a significant relationship between Age and the perceived strength of Financial Influences.

Table 9

Correlations

				Age	financial_influences
Age	Pearson Correlation			1	-.178*
	Sig. (2-tailed)				.013
	N			196	196
	Bootstrap^c	Bias		0	.002
		Std. Error		0	.078
		95% Confidence Interval	Lower	1	-.322
			Upper	1	-.014
financial_influences	Pearson Correlation			-.178*	1
	Sig. (2-tailed)			.013	
	N			196	196
	Bootstrap^c	Bias		.002	0
		Std. Error		.078	0
		95% Confidence Interval	Lower	-.322	1
			Upper	-.014	1

*. Correlation is significant at the 0.05 level (2-tailed).
**. Correlation is significant at the 0.01 level (2-tailed).
c. Unless otherwise noted, bootstrap results are based on 1000 bootstrap samples

Statistically significant weak negative correlation exists between age and financial influence perceived by these college students based on the correlation analysis. Pearson correlation

coefficient at the 0.05 level is statistically significant (r = -0.178, p = 0.013), indicating that with higher age, there is a weak tendency for students to learn less from traditional sources of financial influence such as parents, school, or media. Bootstrap outcomes, calculated using 1000 samples, confirm the replicability of this finding. The minor bias (0.002) confirms that the initial correlation is a good estimate, and the bootstrapped 95% confidence interval for the correlation is -0.322 to -0.014. Most importantly, the entire interval is negative, providing strong evidence that the population correlation is indeed negative, if not its exact strength.

This inverse relationship would suggest that older students in the college cohort group (20-24 years) may be less reliant on traditional or formal sources of financial information and instead may use experience from life or self-taught skill as they get older. Alternatively, it can indicate that students who are younger are more receptive to money advice from schools and parents at the time when they are about to enter college, while older students have already formed their habits of money and thus discount the influence. The significance of this relationship, however weak, highlights that age is a crucial factor in understanding how students navigate their money learning process. For educators and advocates of financial literacy, what that implies is that outreach and educational approaches might need to be designed somewhat differently for younger children, who are more open to external influences, compared to their older peers, who might require more experiential or more advanced forms of learning in order to best reach them.

H₂₃: There is a significant difference in the perceived strength of Financial Influences between students in the Management stream and students in the Non-management stream.

Table 10

Group Statistics

	Education Stream		Statistic	Bootstrap[a]			
				Bias	Std. Error	95% Confidence Interval	
						Lower	Upper
financial_influences	Management	N	149				
		Mean	2.8562	.0008	.0478	2.7544	2.9462
		Std. Deviation	.57251	-.00375	.03975	.48654	.64399
		Std. Error Mean	.04690				
	Non-Management	N	47				
		Mean	3.1155	.0006	.0716	2.9702	3.2517
		Std. Deviation	.52331	-.00751	.06112	.40083	.63634
		Std. Error Mean	.07633				

a. Unless otherwise noted, bootstrap results are based on 1000 bootstrap samples

As per bootstrap group statistics, the difference between the strength of financial influences felt by management and non-management students is remarkable. Non-management students evaluate a higher mean level of learning from parents, school, or the internet (M = 3.12) compared to management students (M = 2.86). The bootstrap estimates, calculated on 1000 samples, validate that this mean difference is stable and reliable as the extremely small bias values (0.0008 for management, 0.0006 for non-management) and the not-overlapping 95% confidence intervals for the means show. The interval for non-management students (2.97–3.25) and that for management students (2.75–2.95) do not overlap, which strongly suggests that any apparent difference is not due to random sampling error and most likely indicates a real difference in the population. It may be inferred that students undertaking non-management courses, for example, arts or science, may feel that they have learned more about finance from outside than those undertaking courses of management.

The practical implication of this difference is indicated by the stability of means between bootstrap samples and clear demarcation of confidence intervals. Interestingly enough, both groups have approximately equal standard deviations (about 0.57 for management and 0.52 for non-management), which implies a similar range of responses between groups. This variability in consistency suggests that the variance in means is not caused by outliers but is a consistent pattern in every stream of studies. The higher mean for non-management students can be explained by a higher percentage of external sources as they might have had less integrated financial curriculum in their programs, whereas management students take financial basics for granted as part of their core curriculum and thus score these external sources lower in their influence. This finding indicates the potential for management courses to more explicitly connect their courses to practical financial learning, in a way that students grasp and value the financial education they receive.

Conclusion

Based on the in-depth analysis of data, the current study finds that demographic and educational variables have distinct and significant effects on different dimensions of financial literacy of college students, with gender and education stream being highly influential variables. The finding that female students have distinctly more proactive approaches to money than their male counterparts, such as making regular savings contributions and tracking expenditures, is evidence of a basic gender-differentiated pattern in money management that must be addressed by targeted educational initiatives. Conversely, the lack of a robust correlation between age and economic behavior means that within the narrow age range of average college students, maturity alone is not enough to induce improved financial practices, turning the focus on other explanatory factors. Most surprisingly, the discovery that non-management students perceived that they learned significantly more about finance from initial financial sources like parents, school, and the web than did students in management classes conflicts with the principle that business-styled education automatically translates into greater perceived financial intake. It indicates that explicit incorporation of applied financial ideas within management classes may be lacking or poorly communicated. Lastly, the study verifies that financial literacy is not one

monolithic construct but a multifaceted competency influenced in unique ways by age, gender, and level of education and, hence, needs a correspondingly multifaceted and differentiated methodology for the instruction of financial literacy that moves beyond the one-size-fits-all methodology to effectively meet the unique needs and deficits of various subgroups of students.

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