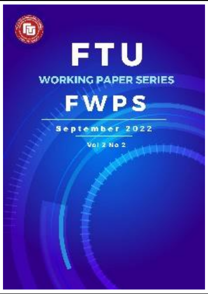

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TÁC ĐỘNG CỦA HIỂU BIẾT TÀI CHÍNH VÀ THÁI ĐỘ TÀI CHÍNH ĐỐI VỚI HÀNH VI TÀI CHÍNH CÁ NHÂN: TRƯỜNG HỢP CỦA SINH VIÊN ĐẠI HỌC TỪ CÁC CHUYÊN NGÀNH KHÁC NHAU TẠI HÀ NỘI

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Tóm tắt

Mục tiêu của nghiên cứu là xác định mối liên quan giữa hiểu biết và thái độ tài chính của sinh viên và hành vi tài chính cá nhân của họ, cũng như sự khác biệt về hiểu biết tài chính, thái độ và hành vi giữa các chuyên ngành đại học khác nhau. Nghiên cứu sử dụng kết hợp phân tích dữ liệu định tính và định lượng. Dữ liệu định tính được lấy từ bảng câu hỏi, trong đó 340 sinh viên ở nhiều chuyên ngành tại Hà Nội tham gia khảo sát, và phân tích dựa trên mô hình hồi quy và các mô hình khác để kiểm tra ảnh hưởng của hiểu biết và thái độ tài chính lên hành vi tài chính cá nhân. Nghiên cứu chỉ ra rằng cả hiểu biết về tài chính và thái độ tài chính đều có mối quan hệ tích cực với hành vi của sinh viên, giải thích 39,8% sự khác biệt về hành vi giữa những người được hỏi. Nghiên cứu cũng cho thấy sinh viên các chuyên ngành khác nhau ở Hà Nội có trình độ hiểu biết, thái độ và hành vi tài chính cá nhân khác nhau. Những kết quả này có thể gợi ý cho các cơ sở giáo dục, gia đình, và đặc biệt là sinh viên đại học tại Hà Nội về cách quản lý tài chính hiệu quả.

Từ khóa: hành vi tài chính cá nhân, hiểu biết về tài chính, thái độ tài chính, giáo dục tài chính.

THE IMPACT OF FINANCIAL LITERACY AND FINANCIAL ATTITUDE ON PERSONAL FINANCIAL BEHAVIOR: THE CASE OF COLLEGE STUDENTS FROM DIFFERENT MAJORS IN HANOI

Abstract

The main objective of this research is to determine the association between financial literacy and attitude among students and their personal finance behavior. We also looked into the differences in financial literacy, attitude, and behavior among different college majors. The research uses a combination of qualitative and quantitative data analysis. Qualitative data is

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derived from a questionnaire then a regression model and other structural models to test the influence of independent variables such as financial literacy and financial attitude on the dependent variable, personal financial behavior. The research model is explored using a survey approach on 340 students in Hanoi who came from diverse financial backgrounds and went on to pursue various university majors. The findings of the research indicate that both financial literacy and financial attitudes have a positive relationship with students' behavior, explaining 39.8% of the variance in behaviors among respondents. The findings also reveal that students of various majors in Hanoi have varying levels of financial literacy, financial attitude, and personal financial behavior. These findings could be useful for educational institutions and families in Hanoi who are working to improve young people's personal finance skills. More importantly, the findings have important implications for university attendees in Hanoi on how to effectively manage their finances in order to pursue their life goals.

Keywords: personal financial behavior, financial literacy, financial attitude, financial education.

1. Introduction

According to Dr. Dinh Thi Thanh Van, Acting Dean of Faculty of Finance and Banking, University of Economics and Business (Vietnam National University, Hanoi), even though educational institutions have taught a lot about corporate finance and public finance, they have not paid much attention to educating students about personal finance. Moreover, for other majors, having access to finance knowledge is even more difficult because financial education has not been disseminated nation-wide. In understanding the determinants of personal financial behavior, a series of factors are investigated. One of the most important factors in determining an individual’s financial behavior is their financial literacy. Another factor that remarkably affects an individual’s financial behavior is financial attitude. Domestic researchers’ efforts to look into financial literacy, financial attitude and personal financial behavior are reflected by the following works: “Factors affecting personal financial management behaviors: Evidence from Vietnam” by Nguyen and Tran (2015), “Mối quan hệ giữa hiểu biết tài chính và tiết kiệm cá nhân: Trường hợp Việt Nam” by Le (2017), and “Nhân tố ảnh hưởng đến mức độ hiểu biết tài chính cá nhân của sinh viên Việt Nam” by Le et al. (2018).

On a global scale, financial literacy, attitude, and behavior receive much attention from academics. Some of the most noticeable works are: “Financial literacy and family & consumer sciences” by Hogarth (2002), “Financial knowledge, experience and learning preferences: Preliminary results from a new survey on financial literacy” by Hogarth & Hilgert (2002), and “Household financial management: The connection between knowledge and behavior” by Hilgert, Hogarth, & Beverly (2003). In addition, other research such as: “Financial literacy, personal financial attitude, and forms of personal debt among residents of the UAE” by Ibrahim & Alqaydi (2013) and “The effect of financial attitude, financial knowledge, and income on financial management behavior” by Adiputra & Patricia (2020). Despite the abundance of studies on the topic, the researchers found an important research gap. That is no studies in Vietnam have tried to look into the cumulative effect of both financial literacy and attitude on personal finance management practices corresponding to the different majors of college students.

Understanding the importance of financial literacy, as well as financial attitude and the right financial behavior, especially its substantial impact on the future financial well-being of students, as well as the wide research gap on this topic, the authors have decided to conduct this study.

The main objective of this research is to determine the effect of students' financial literacy and attitude towards their personal finance behaviors. The authors also discover the difference between different college majors regarding financial literacy, attitude, and behavior. The first research subject is the relationship between financial literacy and attitude toward behaviors regarding finance among college students in Hanoi. The second research subject is the difference that college majors have in the level of financial literacy, attitude, and behavior of those students. The scope of this research is college students in six (06) different majors in Hanoi, specifically Economics – Business - Logistics; Finance – Banking - Accounting/Auditing; Linguistics; Pedagogics; Technology - Engineering, and Medical - Pharmacy. The data used in this paper was collected in March 2022.

2. Literature review and hypothesis development

2.1. Terminology and definitions

Financial literacy, according to Hogarth (2002), is the way people manage money in terms of personal provisions, investments, savings, and personal budgeting; financial literacy is determined by experience, expertise, and individual needs; and has a positive effect on individual participation in the financial services market. The Organisation for Economic Co-operation and Development, on the basis of its definition of "financial education" has incorporated questions about behavior, attitudes, and knowledge to measure financial literacy. Although there is no universally accepted term, the OECD has piloted this concept alongside the global term "financial literacy".

Regarding personal financial attitude, according to Pankow (2003), it is a state of mind, opinion, and judgment of a person with regard to personal finance practices. They are far more flexible than values and indicate a stance you have made with your values. One family, for example, may place a great importance on children and have a very positive attitude about raising them and providing them with possibilities. The statement is in accordance with the opinion expressed by Robbins & Judges (2008) stating that attitude is a statement that is evaluative of objects, individuals, and events experienced. Therefore, financial attitudes can be defined as a condition experienced by individuals regarding finance which is then applied in their attitudes.

Financial behavior, or financial management behavior, is given various definitions. For example, Horne & Wachowicz (2002) propose financial management behavior as the determination, acquisition, allocation, and utilization of financial resources, usually with an overall goal in mind while Weston & Brigham (1981) describe financial management behavior as an area of financial decision-making, harmonizing individual motives and enterprise goals. Adiputra & Patricia (2019) concluded that financial management behavior is a combination of several sources of behavior that become the basis of a person's personal decision-making in terms of financial planning, managing, saving, and taking a position in conducting financial transactions in a timely manner to create financial prosperity.

2.2. Factors affecting personal financial behavior

Financial literacy

In general, increased financial literacy will result in more effective financial decision-making. According to Danes (2007), Laily (2014), and Susantii (2013), financial literacy has a significant effect on financial behavior. Other research findings, Robb & Woodyard (2011) indicate that subjective and objective financial knowledge affect financial behavior significantly. Kholilah (2013) reinforces that financial knowledge is a major predictor in shaping financial behavior.

Several studies have shown that financial literacy is positively related to self-beneficial financial behavior. Based on the results of Humaira & Sagoro (2018) and Arifin (2017), financial knowledge has a positive effect on financial management behavior. This research is in line with the results of Perry & Morris (2005) and Grable, Park & Joo (2009), which suggest that financial knowledge has a significant and positive effect on financial management behavior. The results of Chen (1998) showed that students with low literacy rates prefer more false financial decisions than students with higher levels of financial literacy. Hilgert, Hogarth, & Beverly (2003) added financial behavior and financial literacy questions to the nationwide Survey of Consumer Finances. They formed a Financial Practices Index based upon behavior in four variables: cash-flow management, credit management, savings, and investment practices. Comparing the results of this index with scores on the financial literacy quiz, they found that those who were more financially literate had higher Financial Practices Index scores, indicating that financial knowledge is related to financial behavior. Nguyen & Tran (2015) suggested that an increase in financial knowledge would lead to an increase in responsibility for personal financial management behavior and that financial knowledge had an indirect impact on financial management behavior through the locus of control.

Financial attitude

There is evidence from previous studies that suggested the development of behavior toward finance is preceded by attitudes and has a contribution to predicting financial practices. The results of research on financial issues showed that attitudes toward money are important aspects that determine individual financial behavior, and Ajzen's theory of reasoned action in 1991 provides a theoretical basis for understanding attitudes' role in determining behavior. The research results by Lianto & Elizabeth indicate that the value of the financial attitude coefficient is positive. This shows that if financial attitude increases, financial behavior also increases. Hayhoe et al (1999) in Herdjiono & Darmanik (2016) stated that there is a significant relationship between financial attitudes and the level of financial problems. Thus, it can be said that a person's financial attitude also affects the way a person regulates his financial behavior. Lim (1997) and Madern (2012) stated that a number of financial attitudes are also related to the financial difficulties often faced by young people. Ameliawati & Setiyani (2018) surveyed a sample of 278 university students and argued that financial attitude is positively related to both financial knowledge and financial behavior. Nguyen & Tran (2015) also suggested the same results that financial attitude is positively correlated with personal financial behavior. However, Amanah, Rahadian & Iradianty (2016) found that financial attitude only partially influences financial behavior.

2.3. Other factors affecting personal financial behavior

Major

Higher financial literacy is associated with a certain sector of study. Students' financial literacy is improved by taking personal finance classes or majoring in business. According to the findings, business students do better than other students (Chen & Volpe, 1998; Bernheim et al., 2001; Beal & Delpachitra, 2003; Mandell, 2008; Chinen & Endo, 2012). Chinen & Endo (2012) discovered that the concentration of numeracy topics among business majors had an impact on financial literacy: students enrolled in numerically oriented business majors (such as finance) scored higher than students enrolled in less numerically oriented business majors (such as marketing or human resources). Nonetheless, the data is mixed: Cull & Whitton (2011) discovered that business students fared no better than average on a compound interest issue.

Gender

Financial literacy is universal, but it is more prevalent among women. Lusardi & Mitchell (2011) found substantially comparable trends by gender in an investigation of financial literacy in eight countries. Data on financial literacy from more than 140 nations has lately revealed that gender inequalities exist in all economies, from emerging to advanced (Klapper, Lusardi, & van Oudheusden, 2015). In addition, Bucher-Koenen, Lusardi, Alessie, & Van Rooij (2014) investigate a number of factors that contribute to gender variations in financial literacy and conclude that no single theory can adequately explain these disparities.

Year of study

As individuals gain more information and their attitudes and actions change, it's natural to anticipate financial literacy to rise as they get older. The academic year is divided into four parts: first, second, third, and fourth year students. Students in their third year are thought to show markers of financial literacy, attitudes, and conduct. Because this is the perfect age to keep up with the quick speed of change in the financial marketplace, including the introduction of new technology, amended laws and regulations, and newly produced financial products, students this year are financially better off than students in previous years.

2.4. Derivation of hypotheses

Drawing on existing literature, we expected that an increase in financial knowledge and financial attitude would lead to an increase in responsibility for personal financial management behavior. Hence, we state the following hypotheses:

Hypothesis 1 (H1): Personal financial literacy has a positive relationship with the personal financial behavior of university students.

Hypothesis 2 (H2): Personal financial attitudes have a positive relationship with the personal financial behavior of college students.

Moreover, existing literatures suggest that demographic traits can also have certain effects on personal financial literacy. Firstly, higher financial literacy is associated with a certain sector of study. Findings have proven that business students do better than other students (Chen & Volpe, 1998; Bernheim et al., 2001; Beal & Delpachitra, 2003; Mandell, 2008; Chinen & Endo, 2012). Secondly, financial literacy is more prevalent among women. And finally, as individuals gain more information and their attitudes and actions change, it's natural to anticipate financial literacy to rise as they get older. However, these traits have not been previously examined in relation to financial attitude and financial behavior. Therefore, with the above literature review about the relationship between financial attitude, financial literacy, and personal financial behaviors, we have inspired to consider other new issues. Hence, in line with the existing literature, we hypothesised that:

Hypothesis 3 (H3): The differences in majors of college students will lead to the dissimilarity in financial literacy, financial attitude and financial behaviors.

Hypothesis 4 (H4): Gender differences in college students will lead to variations in financial literacy, financial attitude and financial behaviors.

Hypothesis 5 (H5): The difference in years of study of college students will lead to variations in financial literacy, financial attitude and financial behaviors.

2.5. Conceptual framework

A conceptual model is proposed based on the above studies. Details about the conceptual model and its hypotheses are as follows:

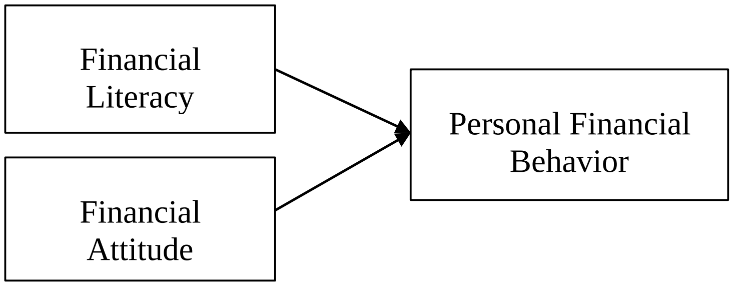

Figure 1: Conceptual model

Source: Authors synthesis

From the above literature review, it can be hypothesized that there has been a significant positive correlation between financial literacy, financial attitude, and personal financial behavior. Therefore, the authors may infer that financial literacy and financial attitude are independent factors, whereas behavior in personal finance is the dependent variable.

3. Research methodology

3.1. Research method

This study was conducted by using the qualitative and quantitative methodology.

The data for this study were obtained using the convenience sample method with a structured, researcher-developed questionnaire, namely "Research on financial literacy, financial attitude and personal financial behavior of college students of different majors in Hanoi". This questionnaire is based on a research question by Nguyen (2021) on the topic "Improving personal financial understanding of Vietnamese students: Situation and solutions", the doctoral dissertation of Shockey (2002), the research of OECD (2013), and the Financial Management Behavior Scale (FMBS) of Dew & Xiao (2011). The sample size is students from universities in Hanoi, ranging across six majors: Economics - Business - Logistics; Finance - Banking - Accounting/Auditing; Technology - Engineering; Pedagogics; Linguistics; and Medical – Pharmacy.

The survey method was selected based on the advantages of sample size, question type, the topic of the question, time, and response rate. The authors used a 5-point Likert scale to assess factors related to financial literacy, financial attitude, and personal financial behavior of college students.

3.2. Data collection

In the present study, the researchers drew a sample of 340 students distributed across 6 main majors. However, only 330 out of 340 sets of student data were received that were eligible for analysis. The ineligible samples are the ones that picked the same options for every question or the ones that picked the options in a zig-zag pattern. 330 eligible samples are numbered via Excel 2010 and are imported to SPSS 20 software to clean the data by removing missing samples. The cleaning results showed that no samples were missing and they were eligible to perform the analysis steps.

For data processing, the research team used statistical software SPSS 26 and AMOS 20 with implementation steps including descriptive statistics analysis, Cronbach's alpha reliability test, exploratory factor analysis (EFA), Person correlation analysis, one-way analysis of variance (ANOVA), confirmatory factor analysis (CFA), and the structural equation modeling (SEM).

4. Research result

4.1. Descriptive statistics

Table 1. Descriptive statistics of other control variables

	Sample size (n = 330)	
Year of study	Freshman, n%	75(22.7)
	Sophomore, n%	73(22.1)
	Junior, n%	98(29.7)
	Senior, n%	84(25.5)
Gender	Female, n%	168(50.9)
	Male, n%	162(49.1)
Major	Economics – Business - Logistics, n%	76(23.0)
	Finance - Banking - Accounting/Auditing, n%	71(21.5)
	Technology - Engineering, n%	54(16.4)
	Pedagogics, n%	39(11.8)
	Medical - Pharmacy, n%	38(11.5)
	Linguistics, n%	40(12.1)
	Other majors (e.g., Marketing, Journalism, Law, ...)	12(3.6)

Source: Authors synthesis

The authors have collected information through 330 questionnaires, in which, 168 answers were obtained from women, 162 answers from men. There is a fairly evenly distributed number of samples among the four studying years. 44.5% of the surveyed students are financial-related majors (including Economics – Business - Logistics and Finance – Banking - Accounting/Auditing), and the rest 55.5% are non-financial related majors. Students participating in financial-related majors will have a more multi-dimensional view of finance from which to have appropriate financial behaviors, rational thinking. In contrast, for individuals who have not attended any major in finance, there will be opposite financial behaviors, favoring irrationally. The results obtained after the descriptive statistics show a balance between the control variables and there is no sign that the survey sample is more inclined toward any variable, so it can be concluded that the study is valid and objective.

4.2. Cronbach's alpha reliability testing

The Cronbach's alpha value of the "Financial attitude" variable is 0.899, larger than the acceptable level of 0.7. The Corrected Item - Total Correlation values of items from AT1 to AT11 are greater than 0.3. Therefore, the researcher does not eliminate any measured variables, and all measured variables from AT1 to AT11 are appropriate to demonstrate the latent variable "Financial attitude".

For "Personal financial behavior", the Cronbach's alpha value is 0.870, larger than the acceptable level of 0.7, indicating that the scale passes the test's requirements. Except for three items (BE5: Spending more than earning, BE13: Borrowing from friends to spend, BE14: Unable to repay debt), the Corrected Item - Total Correlation value of items from BE1 to BE18 is greater than or equal to 0.3. However, these items are necessary measured variables that describe aspects of financial behavior (BE5 demonstrated spending behavior, whereas BE13 and BE14 demonstrated loan behavior), thus they were yet to be removed from the scale of measurement.

4.3. Exploratory factor analysis

Table 2. Kaiser-Meyer-Olkin and Bartlett's Test of Sphericity

Kaiser-Meyer-Olkin Measure of Sampling Adequacy.		.907
Bartlett's Test of Sphericity	Approx. Chi-Square	5513.357
	df	378
	Sig.	.000

Source: Authors synthesis

The results show that the KMO score (0.907) exceeds 0.5, indicating that the data set is likely to factor well. Furthermore, Bartlett's test revealed that the significant value equals zero, indicating that the correlation matrix differs significantly from an identity matrix. As a result, both diagnostic test acceptances confirm that the data is eligible for factor analysis. After excluding the measured variable AT1 due to reassessment, the researchers extracted the pattern matrix that arranges the measured variables into specific groups below:

Table 3. Summary of variables after exploratory factor analysis

Factor	Measured variables	Content	Name of factor
1	AT7	Attaching much importance to investing and achieving long-term financial goals	Financial attitude

Factor	Measured variables	Content	Name of factor
	AT5	Attaching much importance to retirement plan	
	AT8	Attaching much importance to the practice of financial management habits	
	AT4	Attaching much importance to mid-term financial goals (3-5 years)	
	AT6	Attaching much importance to paying credit card/monthly bills in full and on time	
	AT11	Spending more time to improve personal financial literacy	
	AT3	Controlling spending every month	
	AT2	Spending part of recent income to invest for increasing future income	
	AT9	Attaching much importance to saving every month	
	AT10	Considering different options when buying (e.g clothes, gadgets, laptops, phones...)	
	BE6	Saving every month	
	BE1	Recording and controlling personal spending	
	BE3	Establishing long-term financial goals for the years after graduate that affect how current expenses are managed	
2	BE15	Putting the saving in the bank	Saving and Consuming
	BE10	Saving to buy big-ticket items	
	BE8	Having a financial reserve for emergency	
	BE9	Setting goals and saving to pay for tuition fee	

Factor	Measured variables	Content	Name of factor
3	BE12	Repaying debts on time	Credit
	BE11	Knowing how much to pay when taking out a loan	
	BE4	Paying bills when they are due (e.g rent, electricity, water, internet, ...)	
	BE2	Comparing different options when shopping	
3	BE13	Borrowing from friends to spend	Loan
	BE14	Unable to repay the debt	
	BE5	Spend more than earning (money deficit)	
4	BE16	Investing in risky assets (e.g stocks, cryptocurrency, forex....)	Invest
	BE17	Depositing money in financial investment apps (e.g finhay,...)	
	BE18	Investing in investment-integrated insurance	
	BE7	Preferring to buy financial products rather than keep cash for saving	

Source: Authors synthesis

4.4. One-way analysis of variance

Table 4. ANOVA results on year of study

	Sig Levene's test	Sig F of ANOVA
Financial knowledge	0.240	0.217
Behavior	0.472	0.494
Attitude	0.315	0.448

Source: Authors synthesized from SPSS

Both the significance of Levene's test and ANOVA are more than 0.05 which indicates that the number of studying years did not differ with respect to their financial literacy, financial attitude as well as financial behaviors.

Table 5. ANOVA results on gender of students

	Sig Levene's test	Sig F of ANOVA	Sig Welch of Robust test
Financial knowledge	0.042		0.042
Behavior	0.213	0.378	
Attitude	0.574	0.029	

Source: Authors synthesized from SPSS

A significant Levene's test and a significant robust test of financial literacy and gender reveals that different genders propose different financial knowledge. This result complies in some aspects with previous research by Lusardi & Mitchell (2011). The descriptive statistics show that the mean financial literacy score of females is higher than males, which reveals a new contrast fact that differs from previous researches. Similarly, significant differences were found in the area of personal finance attitude. Specifically, female students (M = 3.59, SD = .76) reported significantly greater attitude than male students (M =3.40, SD = .75).

Table 6. ANOVA results on majors of students

	Sig Levene's test	Sig F of ANOVA	Sig Welch of Robust test
Financial knowledge	0.017		0.000
Behavior	0.900	0.000	
Attitude	0.021		0.000

Source: Authors synthesized from SPSS

The one-way ANOVA results indicated significant differences in financial literacy, financial attitude, personal financial behavior among different academic majors. Students from finance-related majors, especially the ones who study Finance - Banking - Accounting/Auditing majors show higher financial literacy. This can be explained by the lack of a formal national strategy for financial education or having assessed the financial literacy of the Vietnam population.

4.5. Confirmatory factor analysis

Table 7. Result on the model fit statistics

Fitness Criterion	Perfect Fitness	Acceptable Fitness	Model result
CMIN/df	CMIN/df ≤ 3	CMIN/df ≤ 5	3.119
CFI	CFI ≥ 0.9	CFI ≥ 0.8	0.881
GFI	GFI ≥ 0.95	GFI ≥ 0.9 (*)	0.827
TLI	TLI ≥ 0.9	TLI ≥ 0.8	0.863
RMSEA	RMSEA ≤ 0.06	RMSEA ≤ 0.08	0.080

Source: Authors synthesis

According to Baumgartner and Homburg (1996), and Doll, Xia, & Torkzadeh (1994), it is acceptable that 0.8 ≤ GFI ≤ 0.9. The remaining statistics also show that the model is statistically significant and that the model has an acceptable level of fitness. The value of Chi-square/df is obtained as 3.119 (less than 5), meaning that there is an acceptable fit (Hu & Bentler, 1999), and the model is statistically significant.

4.6. Structural equation modeling

After running multiple linear regressions on SPSS, this study will go deeply into the interrelationship between financial literacy, financial attitude and four component activities of personal financial behavior including (1) saving-consuming, (2) credit, (3) loan and (4) investing through structural equation modeling.

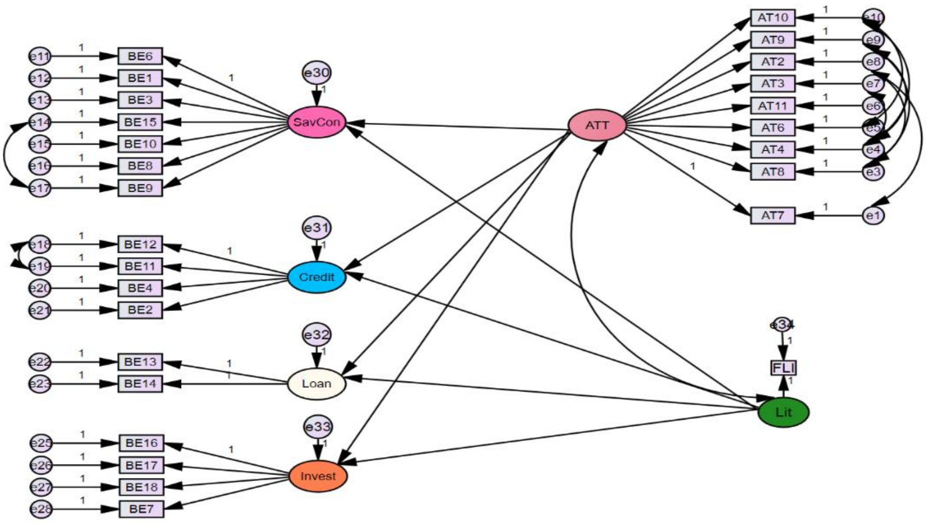

Figure 2. Structural equation modeling

Source: Authors synthesis from SPSS

Table 8. Structural equation modeling results

			Estimate	S.E.	C.R.	P
SavCon	<---	AT	-.243	.262	-.928	.353
Credit	<---	AT	1.394	.192	7.259	***
Loan	<---	AT	-1.279	.267	-4.789	***
Invest	<---	AT	-12.626	11.354	-1.112	.266
SavCon	<---	FLI	1.073	.227	4.729	***
Credit	<---	FLI	-.474	.142	-3.342	***
Loan	<---	FLI	1.024	.222	4.612	***
Invest	<---	FLI	12.811	10.910	1.174	.240

Source: Authors synthesis

The table above shows that financial attitude has a significant effect on credit and loan behaviors. In reality, this is reasonable as students who exhibit a better financial attitude will better acknowledge their financial responsibilities, thus not allowing themselves to become piled up in debt. The result is consistent with previous studies by Nguyen et al. (2019) who concluded that both attitudes towards credit borrowing and subjective norms affect the intentions of borrowing consumer credit, but the most significant factor is the attitude.

In contrast, the insignificant p-value of 0.353 reveals an insignificant relationship between financial attitude and saving - consuming behavior. It could be due to the fact that whether students have high or low financial attitudes, these activities still happen daily and can be affected more by other factors such as accommodation, income, and financial literacy. According to the research of Tran (2014), income and accommodation affect spending activities, which has proved the uncorrelated relationship between attitude and consumption.

The insignificant p-value of financial literacy and financial attitude toward investing behavior disclose the practice of investing without background and awareness about finance. Without understanding deeply and accumulating financial knowledge, many students have lost their time and money without gaining any benefits.

The financial literacy of college students significantly affects three financial behaviors including saving-consuming, credit, and loan. According to Le (2017), an individual's level of financial literacy has a positive effect on personal savings. Hence, this shows a consistent result of our study with others about the relationship between financial literacy and saving activities.

The standardized coefficient showed that financial attitude had the strongest effect on credit personal financial behavior; and the financial literacy influenced loan activities the most.

Table 9. Squared Multiple Correlations results

	Estimate
Loan	.085
Credit	.597
SavCon	.555
FLI	.313

Source: Authors synthesized from SPSS

The R-squared value of financial literacy is 0.313 equals 31.3% thus, the independent variables affect 30.9% of the variation of financial literacy. Likewise, the independent variables influence 8.5%, 59.7%, and 55.5% of the variation of loan, credit, and saving-consuming behavior respectively.

Table 10. The correlation between financial literacy and financial attitude

			Estimate
AT	<-->	FLI	.981

Source: Authors synthesized from SPSS

The correlation estimate of financial attitude and financial literacy equals .981, which is considered extreme and approximately 1. However, due to the test for multicollinearity between two variables, there is no perfect collinearity, so this result could be acceptable.

According to the Ameliawati & Setiyani (2018) survey of a sample of 278 university students, financial attitude is positively related to both financial knowledge and financial behavior. The financial attitude and financial knowledge not only influence behavior in one-way, but two variables also have impacts on each. Financial literacy gives individuals the ability to shape their expectations. From talking down interest rates on the borrowed money to bringing up the goals for the invested money, the attitude to negotiate the best option will dramatically improve when you have more knowledge about finance. Likewise, the better the attitude toward financial problems, the more eager students want to improve their financial knowledge.

5. Conclusion and recommendations

The results determine that students' financial literacy and attitude both have a positive relationship with their financial behavior. The results are consistent with several studies (Danes, 2007; Laily, 2014; Susanti, 2013; Kholila, 2013; Nguyen & Tran, 2015; Ameliawati & Setiyani, 2018). In addition, the findings suggest that students from different college majors have different levels of financial understanding and attitudes, and consequently behavior. Specifically, those who major in Economics – Business – Logistics; and Finance – Banking – Accounting/Auditing exhibit better financial literacy, attitudes, and behaviors than others. This finding is reasonable given that general principles of finance and personal finance are not common in the curriculum of non-economics universities. In addition, personal finance practices including saving and investing are not widely adopted among those universities, while being highly ubiquitous in economics-based ones.

From the conclusion, the authors offer 3 strategies that have been widely recognized as effective in lifting financial literacy, which include (1) the development of a national strategy for financial literacy, (2) a website supported by ongoing promotion as a fundamental tool for lifting financial literacy, and (3) the integration of financial education into tertiary training.

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