Research on Factors Affecting Undergraduates' Financial Management Skills: the Moderating Role of Financial Education

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Abstract

1) *Introduction:* Individual financial management is crucial for achieving economic and social stability and development. This study aims to identify factors influencing the financial management skills of students, addressing a gap in existing research. This research expands on previous studies by examining the mediating role of financial education in the relationship between financial attitudes and individual financial management. 2) *Objectives:* Factors influencing undergraduates' financial management skills are examined. Filling the existing knowledge gap has practical, scientific, theoretical, and policy implications. Including financial education as a mediating variable enhances understanding of the relationship between financial attitudes and individual financial management. 3) *Methodology:* A quantitative method was employed to collect data from 258 students currently studying in Vietnam. Exploratory factor analysis (EFA), confirmatory factor analysis (CFA), and structural equation modeling (SEM) were utilized to assess measurement scale reliability and test the theoretical model. 4) *Result and Discussion:* Three influential factors affect students' financial management skills: financial attitude, parental financial socialization, and financial literacy. These factors significantly shape students' financial behavior. Furthermore, financial education moderates the relationship between financial attitude and individual financial management, indicating its potential to enhance financial skills. 5) *Conclusions:* The findings have broader implications beyond their immediate scope. By identifying key factors influencing students' financial management skills, this study proposes policy implications to enhance these skills. Policymakers, educators, and stakeholders can utilize these insights to design targeted financial education programs tailored to students' needs. Strengthening students' financial management skills contribute to their long-term financial well-being and society's economic development.

Keywords: *individual financial management, financial attitude, financial literacy, parental financial socialization, financial education*

1. Introduction

Individual financial management is a crucial skill to achieve life balance and plays a significant role in the stability and development of the economy. It enables individuals to easily identify goals, control spending, limit debts, create a comfortable life, and ensure a secure and stable financial future (Prihartono & Asandimitra, 2018). This is equally important for businesses and individuals, regardless of their financial capabilities, to learn and explore financial management practices to improve their lives. By doing so, they can avoid irresponsible spending, bad debts, missed investment opportunities, and unstable living conditions. Engaging in financial management contributes to the success of each individual (Pandye, 2016). Therefore, knowledge about financial management becomes a key factor in ensuring individual success.

Financial education is no longer unfamiliar in many countries worldwide. The importance of financial education is recognized through its adoption as a national strategy (Greenspan, 2005). However, in Vietnam, financial education is relatively new, and many people are still unaware of the necessity of financial literacy, both in general and in terms of comprehensive financial education, for their personal lives, the overall economy, and comprehensive finance (Nguyen, 2021). Lack of knowledge about the characteristics and conditions of using different financial products/services leads to a lack of confidence, reluctance to access, and a lack of trust. With enhanced financial literacy, individuals have the ability to compare and evaluate the quality of various financial products to choose the most suitable ones for their financial situation (Murugiah, 2016).

Therefore, researching and examining the factors influencing individual financial management skills and exploring the impact of financial education on the relationship between financial attitudes and individual financial management is necessary both in theory and in practice. Based on the arguments above, this study was conducted with the aim of identifying factors that affect individual financial management skills and related implementation to enhance this skill among undergraduates.

The primary objective of this research is to investigate the factors that influence students' individual financial management skills. By conducting empirical tests, the study aims to identify and analyze the key determinants that shape students' financial management abilities. Additionally, this research seeks to explore the regulatory impact of financial education on the relationship between individuals' financial attitudes and their financial management practices. By examining the influence of financial education, the study aims to assess whether educational interventions can effectively enhance individuals' financial management skills and bridge the gap between financial attitudes and behaviors. Ultimately, this research aims to provide evidence-based and scientifically grounded measures to improve students' financial management skills. The findings of this study will contribute to the development of targeted interventions and strategies to enhance financial literacy among students, thereby empowering them to make informed financial decisions and achieve financial well-being.

2. Conceptual framework

2.1. Definitions of factors influencing individual financial management skills

Personal finance (PF)

PF relates to the methods individuals, households, consumers, and families purchase, develop, and allocate financial resources to achieve current and future financial goals (Hira & Mugenda, 1999).

Financial attitude (FA)

According to Paluri and Mehra (2016), FA is conceptualized as an individual's inclination toward financial matters (2016). Additionally, financial attitude can be considered as a combination of emotional concepts and information relevant to learning that significantly influences an individual's positive response.

Parental financial socialization (PFS)

Legenzova et al. in their study in 2019 stated that: Parents are regarded as the primary agents and exert the greatest influence on the process of financial socialization (2019). Parents provide an informal environment to teach skills and enhance children's awareness of appropriate behavior, and through this interaction, children acquire information about financial procedures.

Financial literacy (FL)

FL encompasses all the profound knowledge of an individual regarding finance that is utilized to manage their finances (Asandimitra & Kautsar, 2017).

Financial education (FE)

Individuals who receive adequate FE will acquire the knowledge necessary to plan and manage their finances effectively (Zulfaris et al., 2020). Potrich et al. (2016) define FE as a developmental process that enables individuals to make informed decisions and efficiently manage their personal finances.

Individual financial management (IFM)

IMF is defined as a skill that individuals acquire through the process of managing, planning, budgeting, controlling, and seeking daily financial resources (Qamar et al., 2016). IFM is an essential component in making our money work for us, which requires careful planning (Mien & Thao, 2015). Planning involves developing an appropriate process to accomplish everything and adhering to it to achieve desired goals or objectives.

As stated by Waliszewski and Warchlewska (2020) one of the efforts in shaping the characteristics of financial practices is developing IFM behavior through financial planning and self-control of money. It is necessary for individuals, including students, to manage debt, accumulate savings, and ensure financial security in retirement by developing personal financial skills (Falahati & Hj. Paim, 2012). Good financial practices include organizing financial records, timely bill payments, creating spending plans, tracking expenses, reducing expenditures, initiating savings, and engaging in personal financial discussions with family members. Financial practices encompass four key aspects: cost control, timely bill payments, future budgeting, and savings (Perry & Morris, 2005). Within the scope of this study, the terms financial practices, financial management, and individual financial management (IFM) are used interchangeably.

2.2. The relationships of factors affecting individual financial management skills

The relationship between financial attitude and individual financial management

Previous studies indicated that FA has a positive impact on IMF, if an individual lacks a positive attitude and good financial literacy, it may have adverse effects on their financial practices (Parrotta & Johnson, 1998). The attitude is crucial as it influences the behavioral intentions of individuals across various aspects of financial matters, including saving, borrowing, risk acceptance, and handling adverse financial events (Skagerlund et al., 2018).

The relationship between parental financial socialization and individual financial management

PFS has a positive impact on money management behavior because family plays a crucial role in shaping adolescents' awareness of investment, saving, and spending (Gudmunson & Danes, 2011). How parents discuss and guide financial matters influences their children's financial practices as they mature. According to the Theory of Planned Behavior (TPB), parental income is a factor that influences financial practices (Ajzen, 2005). PFS is considered an ongoing process throughout individuals' lives, as they regularly observe and are exposed to financial behaviors in their parents' daily lives. The majority of studies emphasize that parents are the most influential factors (Mikeska et al., 2017).

The relationship between financial literacy and individual financial management

Individuals with low FL may face adverse consequences from their financial decisions. Ultimately, they may find themselves trapped in overwhelming debt and suffer significant financial losses. Therefore, FL is a crucial factor that greatly influences the decision-making and financial behavior of individuals (Grohmann et al., 2015). Individuals who possess FL and understanding are better equipped to make sound financial decisions, as they have the ability to manage their money and apply learned principles to real-life financial situations. Previous study by Prihartono and Asandimitra demonstrated the significant impact of FL on IFM (2018). Insufficient FL can lead individuals and society as a whole into financial hardships, as it may result in erroneous financial decisions.

The relationship between financial attitudes and individual financial education

FE also tends to influence the differences in knowledge and skills between individuals with positive attitudes and those with negative attitudes (Foong & Khoo, 2015). Similarly, a research with global database also demonstrates that FE has a positive impact on the financial attitudes and behaviors of many consumers (Demirguc-Kunt et al., 2018). FE also helps learners understand the role of economic and social development, particularly in relation to preventing excessive debt. Other assumptions suggest that enrolling in financial education brings tremendous benefits to individuals in terms of understanding financial concepts, budgeting, avoiding compulsory purchasing or spending decisions, while also developing a more positive financial attitude and better engagement in financial practices.

3. Methodology

In this study, the quantitative method using a questionnaire will be employed for collecting data to be analyzed. In this study, the target audience is students studying in Vietnamese. The topic uses convenient sampling method and direct interview such as sampling study near home, around the author and factor analysis including 26 observed variables. The questions are inherited from previous studies and are considered to have acceptable reliability. The questionnaire was adjusted based on expert opinions used for the formal study with 29 items, demographics (3 items), financial attitude scale (FA) consisting of 5 items (Halim & Setyawan, 2021), the parental financial socialization (PFS) consists of 4 items (Shim et al., 2010), the financial literacy scale (FL) includes 5 items (Halim & Setyawan, 2021), the individual financial management scale (IFM) consists of 7 items (Cazilia et al., 2006) and the financial education scale (FE) includes 5 items (Ida & Dwinta, 2010). All of these variables were measured based on a five-point Likert scale (from 1 for “strongly disagree” to 5 for “strongly agree”).

Based on the overall findings of previous studies, two models were proposed to identify the best fit one. In **Figure 1**, Model 1 consists of three factors influencing IFM: FA, PFS, and FL. Drawing on psychological literature, some authors have suggested that the significance of the attitude-behavior relationship may be moderated not only by attitude accessibility but also by other correlated factors such as certainty, knowledge, or attitude stability over time (Falahati & Hj. Paim, 2012). FA can be shaped through the intervention of FE, as it has the potential to regulate attitudes and behaviors and have a cumulative impact on IFM outcomes (Foong & Khoo, 2015). Therefore, **Figure 2** shows Model 2 with the relationship between

FA, FE, and IFM and the mediating role of FE on the relationship between FA and IFM. All variables and their relationships are depicted in the following two models:

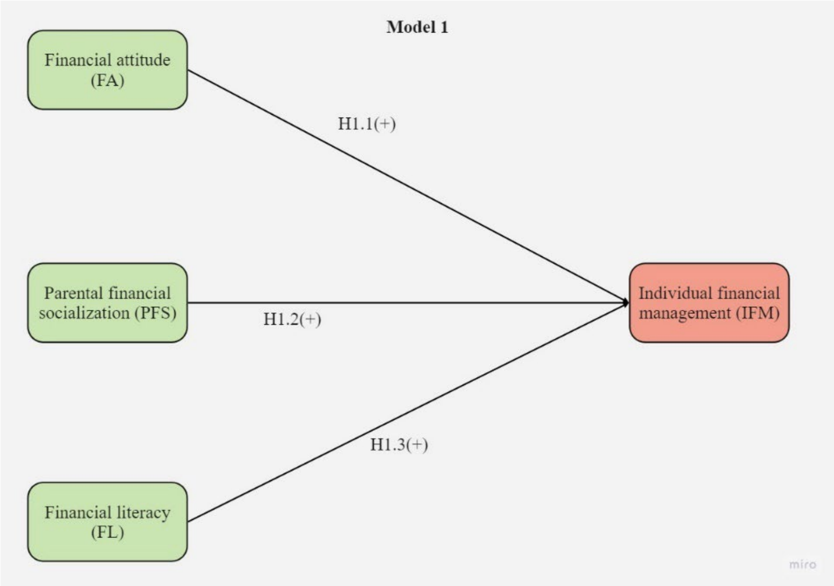

Figure 1 Theoretical model of the influencing factors on Individual financial management

The research hypotheses include:
H1.1: Financial attitude has a positive impact on individual financial management.
H1.2: Parental financial socialization has a positive impact on individual financial management.
H1.3: Financial literacy has a positive impact on individual financial management.

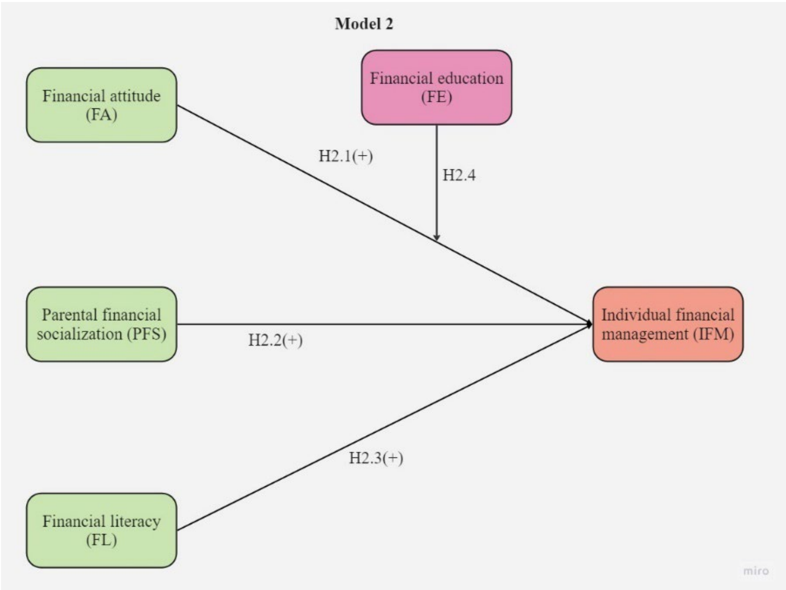

Figure 2 Theoretical model of the influencing factors on Individual financial management with Financial education as a moderator

The research hypotheses include:
H2.1: Financial attitude has a positive impact on individual financial management.
H2.2: Parental financial socialization has a positive impact on individual financial management.
H2.3: Financial literacy has a positive impact on individual financial management.
H2.4: Financial education moderates the relationship between financial attitude and individual financial management.

4. Results and Discussion

4.1. Results

Demographic information analysis

According to the result shown in **Table 1**, females accounted for 65.12% and males accounted for 34.88%. The majority of respondents, 220 participants (85.27%), resided in urban areas/cities/towns, while 38 participants (14.73%) were from rural/mountainous/island regions. Among the interview participants, 60.08% lived in rented houses/dormitories, while 39.92% lived in rented accommodation.

Table 1 Demographic and socioeconomic statistics

Statistical indicators		**Frequency (n=258)**	**Ratio (%)**
Gender	Male	90	34.88%
	Female	168	65.12%
Living area	City/Town/Urban area	220	85.27%
	Rural/Mountain/Island	38	14.73%
Current accommodation	Home	103	39.92%
	Rental house/dormitory	155	60.08%

Exploratory factor analysis and confirmatory factor analysis

In **Table 2**, the results of the EFA analysis yielded a Kaiser-Meyer-Olkin (KMO) measure of 0.8817 ($0.5 \leqslant$ KMO $\leqslant 1$), indicating an adequate sample size for factor analysis. Cronbach's Alpha value of all constructs is higher than 0.7 and indicates a high reliability of the scale.

The results from the table above indicate that the average variance extracted (AVE) values of all variables range from 0.5282 to 0.7956, all of which are greater than 0.5. Therefore, the AVE values of these variables demonstrate good convergence.

The composite reliability (CR) values of all variables range from 0.7694 to 0.9433, all of which are above 0.7. This implies that the convergence of these variables is assured, with a high level of internal consistency and reliability.

Table 2 Results of EFA and CFA

Construct	Items	Cronbach's Alpha	Factor Loadings	AVE	CR
Financial attitude (FA)	FA1	0.7838	0.6246	0.6501	0.7873
	FA2		0.6302		
Parental financial socialization (PFS)	PFS1	0.7648	0.5877	0.5282	0.7694
	PFS3		0.6875		
	PFS4		0.523		
Financial literacy (FL)	FL2	0.881	0.8095	0.7956	0.8859
	FL5		0.7821		
Individual financial management (IFM)	IFM2	0.8525	0.4096	0.5527	0.8584
	IFM3		0.6655		
	IFM4		0.6999		
	IFM5		0.7546		
	IFM7		0.6844		
Financial education (FE)	FE1	0.9428	0.8357	0.7691	0.9433
	FE2		0.8669		
	FE3		0.8301		
	FE4		0.8389		
	FE5		0.8295		
KMO			**0.8817**		

AVE: Average variance extracted, CR: Composite reliability

Good of fitness

The results of the CFA for each component in both models indicate that Model 2 are deemed appropriate because the chi-square to degrees of freedom ratio (chi2/df) is less than or equal to 3, the Tucker-Lewis Index (TLI) is greater than or equal to 0.9, the Comparative Fit Index (CFI) is greater than or equal to 0.9, and the Root Mean Square Error of Approximation (RMSEA) is less than or equal to 0.08, all of which meet the required criteria.

Test theoretical model and research hypothesis by SEM

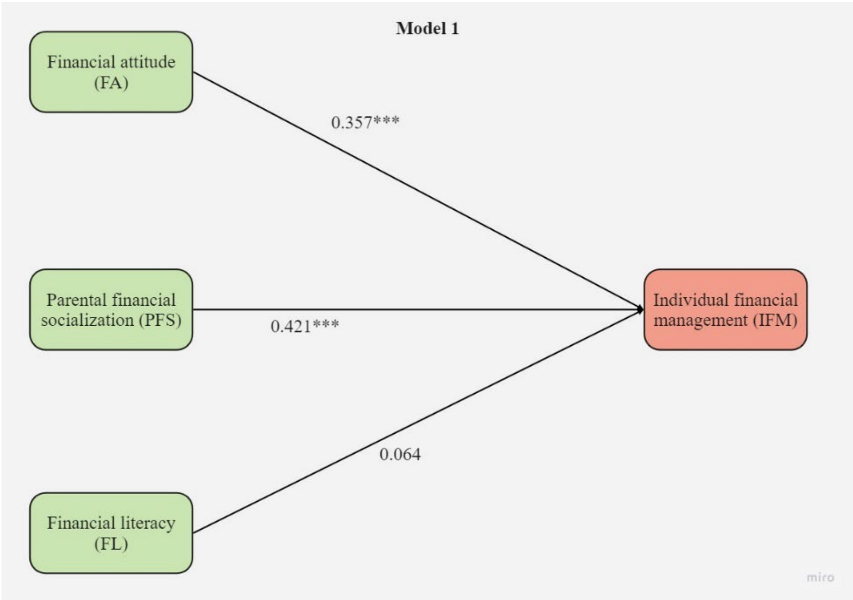

Figure 3 Variance test results of Model 1

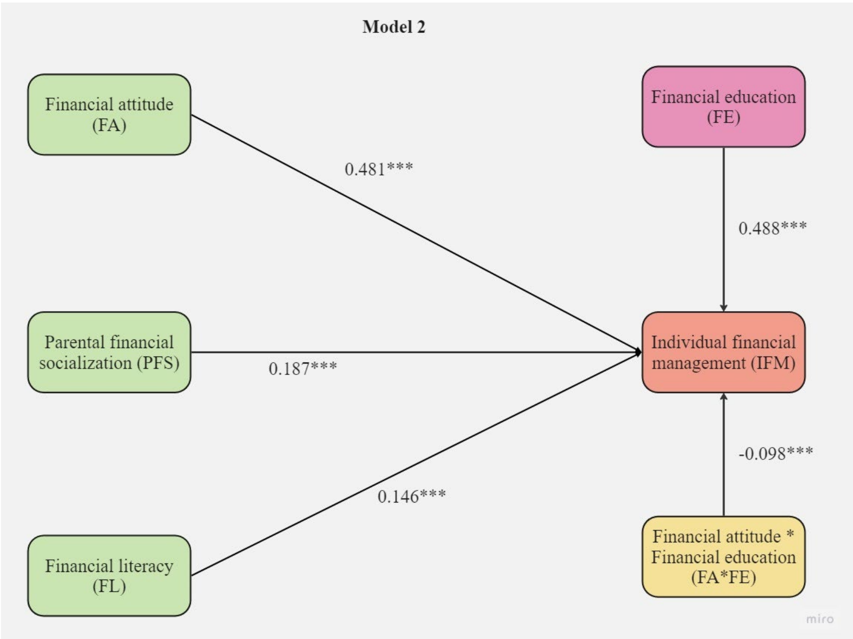

Figure 4 Variance test results of Model 2

Table 3 illustrates that all hypotheses of Model 2 were accepted with correlation's significancy at the 0.01 level while there was one hypothesis in Model 1 was rejected. That means that the Model 2 was appropriate with the sample, indicates the role of FE as a moderator.

Table 3 Hypotheses testing results

Pathway	Model 1				Decision on hypothesis	Model 2				Decision on hypothesis
	Coef.	S.E.	p-value	95% CI		Coef.	S.E.	p-value	95% CI	
FA→IFM	0.357	0.083	***	(0.194; 0.519)	Accepted	0.481	0.097	***	(0.290; 0.672)	Accepted
PFS→IFM	0.421	0.077	***	(0.270; 0.572)	Accepted	0.187	0.053	***	(0.084; 0.290)	Accepted
FL→IFM	0.064	0.084	0.448	(-0.101; 0.228)	Rejected	0.146	0.047	***	(0.054; 0.237)	Accepted
FE→IFM						0.488	0.129	***	(0.235; 0.740)	Accepted
*FA*FE→IFM*						-0.098	0.033	***	(-0.161; -0.034)	Accepted

$*p\text{–}value \leq 0.1,\ **\ p\text{–}\ value \leq 0.5,\ ***\ p\text{–}value \leq 0.01$

4.2. Discussion

Based on the theoretical foundations and findings of previous research models, three factors were found to influence students' IFM skills: FA with two observed variables, PFS with three observed variables, and FL with two observed variables. Furthermore, FE, consisting of five observed variables, was evaluated as the factor with the greatest impact on the relationship between FA and IFM as a moderator. Students' financial attitude towards IFM significantly affects their actual financial management, including their confidence in managing finances effectively and their satisfaction after making purchases. PFS and FL were found to have decreasing correlation coefficients. FE has the strongest level of influence on IFM. The subsequent factors in order of influence are FA, PFS, and FL.

Currently, in Vietnam, knowledge and skills related to personal finance are not officially taught in any subjects or educational levels, despite their importance. Therefore, the Ministry of Education and Training, as well as primary, secondary, and tertiary institutions, should have plans for teaching financial literacy to students. Regardless of how well-designed financial education programs for students are, their success heavily relies on the quality of instruction that students actually receive. Therefore, lecturers and educators also need to be equipped with the necessary knowledge by participating in online seminars, short courses, and adopting new teaching methods (Campbell & Carayannis, 2012).

Furthermore, colleges and universities should develop additional courses on interest rates, financial costs, investment credits to help students understand fundamental principles of investment such as stocks, savings interest rates, loan interest rates, investment funds, etc. (Barua et al., 2018). Consequently, students will learn how to analyze and evaluate investment opportunities, gain a deeper understanding of factors affecting financial costs. However, to achieve the highest effectiveness, teachers need to build and provide educational materials on financial literacy. Additionally, they should provide practical examples to facilitate students' quick understanding and engagement with the subject matter. Educational institutions should proactively collaborate with financial organizations to provide information on interest rates, credit, loans, and organize meetings between students and financial experts to exchange information or offer free personal financial planning services to students. Other financial education methods such as organizing field trips, extracurricular activities, financial simulations involving money or investments can help students recognize the significance of financial decision-making and goals (Gudmunson et al., 2015). The objectives of these personal financial education methods are to make the learning process more interesting for students while being applicable to their lives and future choices.

In addition to teaching knowledge and skills in financial management, organizing financial education clubs within educational institutions is also a good way to enhance individuals' financial knowledge and skills. Each person can learn from teachers, friends, or financial experts, share their knowledge, and learn from their answers (Goetz et al., 2005). Moreover, participating in financial education clubs helps individuals build good relationships and connect with people who share the same interests, goals, and desires to learn about personal finance. As a result, individuals can expand their network and seek new opportunities in the future.

The connection between businesses and educational institutions is crucial to effectively enhance knowledge of personal financial education. During the collaboration process, businesses can support students by providing courses on personal finance or internship programs, allowing students to learn from experts in the financial field and apply their knowledge to real-life situations (Lam & Ching, 2007). Furthermore, businesses can collaborate with educational institutions to organize regular lectures or events related to personal finance, enabling students to stay updated with the latest information and apply their knowledge to everyday life. Similarly, non-profit organizations can collaborate with teacher training programs to provide courses on teaching skills, equipping educators with the necessary knowledge and skills for more effective instruction. Additionally, there should be collaboration among multiple institutions to establish a coherent and unified framework for teaching this subject.

In terms of financial attitude, individuals, especially students, should take a proactive approach to learning and understanding economic knowledge to improve and enhance individual financial management skills. In order to master and understand the knowledge taught in classrooms, students should also seek practical knowledge and stay updated on financial markets worldwide. Furthermore, students should create their own budget and monitor it to improve their financial situation. They can start by recording all their income and expenses for a month using the support of technology (Abad-Segura et al., 2020). Then, they can review their expenses and identify any potential areas for reduction or elimination. Additionally, setting specific and clear financial goals is important in order to have a well-planned expenditure. To leverage the advantages of students' age and adaptability to technology, students should actively participate in financial competitions or experience financial products and services.

The third factor influencing students' financial management skills is the parental financial socialization. Educating children about financial management is an intelligent approach that parents should implement and apply early on. This helps children understand the value of money, develop a sense of savings, and appreciate money, thereby avoiding wasteful spending in the future. Similar to other academic fields, knowledge and skills in personal finance are more likely to succeed when parents actively participate. Parents are encouraged to engage in activities that promote financial knowledge and skills in financial management or encourage students and parents to develop these skills at home. The positive impacts of financial education can be enhanced by making parents aware of their role, importance, and attracting their support and involvement in their children's financial management. A more in-depth way to engage parents in educating their children about finance is through parent workshops. This approach can be particularly effective for target groups from socioeconomically disadvantaged families, where parents may have lower financial literacy. It also enhances parents' confidence and concern for financial management while increasing their ability to interact with their children on personal finance topics.

Parents can be valuable allies in educational programs and teachers, providing real-world context and reinforcing what their children learn in the classroom. When it comes to teaching children about financial management, many parents believe that young children do not know anything, so it is not necessary to focus on financial education. Financial habits in children begin to form at the age of 7, which serves as a reminder for parents to build and nurture their children's financial intelligence from this early stage. Therefore, parents should value and provide early financial education to help children develop a proper understanding of the role and value of money, especially in managing finances from the moment they start using money for spending. The final factor influencing students' financial management skills, according to the research findings, is financial literacy. When individuals possess financial literacy, they are better equipped to make informed financial decisions, minimizing poor financial choices that can have negative consequences on their financial well-being. To establish a foundation of knowledge and understanding of personal finance, individuals need to proactively learn and practice various skills related to budgeting, debt management and repayment, as well as understanding credit products and investments. The following are practical strategies that students can implement:

1) Taking advantage of their age and adaptability, students are a group that can easily embrace technology. Therefore, students should explore and utilize expense management software and applications that assist in budgeting, expense tracking, and allocation to ensure scientific individual financial management and avoid unnecessary risks.

2) Learning to set aside savings by allocating a portion of their income before dividing the remaining amount into monthly expenses.

3) Prompt and timely bill payments to avoid unnecessary late payment fees.

4) Checking credit scores to secure the best interest rates for loans and credit cards.

5) Participating in financial clubs, study groups at school, or other community organizations, as well as taking advantage of free online financial courses to enhance their financial knowledge.

Furthermore, combining theoretical learning with practical application provides opportunities for students to engage in financial decision-making, allowing them to learn through trial and error in controlled environments. This type of exposure is particularly crucial for students from low-income families and those with limited access to savings accounts, investments, and credit. Additionally, combining theoretical learning with practical application enhances students' interest in their instructors and helps them understand how what they learn translates into real-world behavior, while traditional lecture-style instruction may only provide knowledge and skills that are challenging to achieve solely through theoretical learning.

Finally, based on the research model's results, financial institutions gain insights into the factors influencing individual financial management. Consequently, financial institutions can adjust their strategies, plans, loan products, or credit scoring promptly. Moreover, in collaboration with educational institutions, appropriate counseling measures can be implemented, and products suitable for students can be developed and offered.

This study reveals several minor limitations. Firstly, this is a cross-sectional study and therefore cannot establish causal relationships between variables. However, due to time constraints, this study design is appropriate for the topic. Consequently, the research findings may not be representative of all age groups and genders. Nonetheless, these study samples partly reflect the impacts of factors influencing students' financial management skills. Thirdly, the study only examines the effects of five factors: financial attitudes, financial influences from parents, financial knowledge, and financial education on individual financial management skills. In reality, individual financial management skills may also be influenced by various other factors such as peers and public figures. Hence, it is recommended to extend the research period to further analyze the relationships between variables in more depth. Furthermore, enhancing the survey sample size and expanding the scope of the study to diversify the sample in terms of demographics is advised. Lastly, future studies can consider incorporating additional factors that have not been emphasized in this study (or may emerge in the future) that may have an impact on students' financial management skills.

5. Conclusion

IFM is influenced by FA, PSF, and FL, in which FE plays a moderating role in the relationship between FA and IFM. Through the impacts to enhance FE, students' IFM is significantly improved. Practical proposals related to diversifying financial knowledge acquisition methods and financial practice are put forward to help students enhance their FE, thereby improving their IFM, which is one of the essential skills for students when they no longer receive financial support from their families.

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