



From mobile FinTech utilization to future financial security: The mediating role of goal-oriented saving behaviour among emerging-adult mobile FinTech users in China

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ABSTRACT

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Newly emerged mobile users of FinTech expect to use mobile tools for payments, transfers, and money management, but it is not clear whether such use contributes to their anticipated future financial security or is primarily to enable consumption. Based on Social Cognitive Theory, this study explores the relationship between financial self-efficacy, mobile FinTech usage, and expected future financial security via goal-oriented saving behaviour. A cross-sectional survey of 421 emerging-adult mobile FinTech users in China was analysed using PLS-SEM. Results indicate that financial self-efficacy is a positive predictor of goal-oriented saving behaviour and expected future financial security. Mobile FinTech utilization positively predicts goal-oriented saving behaviour, and its effect on expected future financial security is indirect via planned saving routines. Goal-oriented saving behaviour also positively predicts expected future financial security and mediates the effects of financial self-efficacy and mobile FinTech utilization. These findings contribute to Social Cognitive Theory by revealing that future financial security is contingent upon the interplay between personal capability, digital financial affordance, and enacted saving behaviour. The study indicates that mobile financial tools will be most effective at helping young users become more secure in the future if they are used to budget and save, as well as for convenient transactions, saving goals, and disciplined financial preparation.

Contribution/Originality: This study contributes to the existing literature by integrating mobile FinTech utilization and financial self-efficacy within Social Cognitive Theory and identifying goal-oriented saving behaviour as the behavioural mechanism through which technological resources and psychological capability jointly shape expected future financial security among emerging-adult users in China.

1. INTRODUCTION

Emerging adulthood is a period of life when more and more of these young people are making their own decisions about how, when, and where to spend money, how to pay online, and how to save and plan their finances for longer-term goals. Mobile banking, mobile payment, mobile transfer, and money-management apps are all widely used tools for managing money in China. These tools can help lower friction in transactions, facilitate more frequent monitoring of balances, and also help expand access to financial services. But they can also help you consume more easily. Hence, the question is not just whether emerging adults use mobile FinTech, but whether they use it to enable goal-oriented saving and anticipated future financial security.

Financial self-efficacy is also a key part of this process, as young consumers must have the confidence to take disciplined financial action based on their digital access. Those who feel they can manage their spending are more likely to track expenses and save for intended needs, which helps address financial issues and build financial goals. Mobile FinTech use is considered an environmental affordance, financial self-efficacy a personal cognitive resource, goal-oriented saving behaviour enacted behaviour, and expected future financial security a forward-looking outcome in this study.

Geosite tourism is kept as a conceptual extension and not sampled as a “setting” for student geosite tourism. Students must arrange transport, accommodation, food, entry fees, and cost reserves for field courses and educational travel, as well as geopark visits. UNESCO Global Geoparks can be applied to this context and serve as examples of geotourism, education, conservation, sustainable tourism, and local development, adding importance to this for showing how to prepare for sustainable tourism responsibly on a financial basis. Geosite tourism is therefore introduced to highlight the significance of the tested financial behaviour mechanism to educational mobility and sustainable tourism, and the empirical evidence is still presented in the context of emerging-adult mobile FinTech users in China.

Mobile finance, saving behaviour, and financial well-being have received more and more attention among scholars, but there are three gaps yet to be filled. First, many studies on mobile FinTech tend to focus on adoption, intention to use, or payment convenience, with little emphasis on how the use of digital financial services becomes future-oriented saving routines and perceived future security (Gafoor & Amilan, 2024; Zhang & Fan, 2024). Second, research on students' financial well-being has been limited and has never been linked to the educational tourism context, specifically geopark visits, field courses, and geosite travel, which involve students' budgeting, planning, paying for the activity, and having emergency savings funds (Arrage, 2024; Larbi et al., 2022; Oduwaye, Kiraz, & Sorakin, 2023). Third, many of the financial well-being models discussed have considered external affordances and personal beliefs to be separate predictors of outcomes, whereas Social Cognitive Theory assumes that external affordances and personal beliefs should affect outcomes via enacted behaviour (Bandura, 1986). To fill these gaps, in this study, the behavioural mechanism between mobile FinTech utilization, financial self-efficacy, and expected future financial security is tested by examining goal-oriented saving behaviour.

The study has three research questions. First, is there a relationship between financial self-efficacy and the utilization of mobile FinTech and saving goals? Second, does saving behavior for the sake of a goal improve future financial security? Third, does goal-oriented saving behavior serve as a mediator between financial self-efficacy, mobile FinTech use, and anticipated financial security? The manuscript contributes to the literature on three levels by answering these questions. It combines psychological capability and the utilization of digital finance into one, and it sees saving behavior with a future goal as the behavioral mechanism between access and capability, and the integration of budgeting, mobile payment, and long-term security under an international-student geosite tourism context (An, Xiao, Porto, & Cruz, 2025; Hii, Ho, Zhong, & Li, 2025; Qin & Liu, 2025; Zhang & Fan, 2024).

The novelty of this study lies in specifying goal-oriented saving behaviour as the behavioural pathway through which mobile FinTech utilization and financial self-efficacy contribute to expected future financial security. This enables the study to explain why digital financial access may support future security for some young users but remain mainly transactional for others.

2. LITERATURE REVIEW

2.1. Management Theory Foundation: Social Cognitive Theory

The management theory foundation of the proposed model is based on Social Cognitive Theory, which states that human behaviour is the result of a reciprocal relationship between personal cognition, the environment, and enacted behaviour (Bandura, 1986). The construct of financial self-efficacy is used in this study as an example of a personal cognitive resource, as it reflects users' perceptions of their ability to manage finances, spending, and achieve

financial goals. Environmental affordance is the utilization of mobile FinTech, as these tools provide accessible conditions for monitoring, transferring, budgeting, and saving. Goal-oriented saving behaviour is the enacted behaviour that converts capability and access into financial preparation. The subjective outcome is expected future financial security, which is the individual's perceived financial security and achievement of financial goals in the future.

This study contributes to the extension of management theory in two ways: firstly, by using Social Cognitive Theory as a basis for mobile finance; secondly, by applying the three components of Social Cognitive Theory to mobile finance. Firstly, it is a conceptualization of digital financial technology as an environment, and not a use of technology as a direct source of well-being. Second, it defines goal-oriented saving behaviour as the behavioural assimilation process of internal confidence and external digital accessibility as meaningful for future financial security. This specification aligns with financial behaviour studies that find financial self-efficacy and financial access via digital means are best linked to improved well-being when tied to positive financial behaviour (Dare et al., 2023; Gafoor & Amilan, 2024; Zhang & Fan, 2024).

A direct-effects-only model would imply that mobile FinTech use and financial self-efficacy directly impact expected future financial security, without the need for a behavioural mechanism. Such a model can be applied to determine if there is a relationship between digital access and personal confidence and subjective financial outcomes; however, it is conceptually incomplete for the present study, as Social Cognitive Theory emphasizes that personal and environmental resources lead to outcomes through enacted behaviour. Mobile FinTech can facilitate payments and transfers, and monitoring, but can also serve consumption or preparation. Likewise, financial self-efficacy can drive perceptions of control, but self-efficacy must be demonstrated in a tangible way through repeated behaviours in order to provide evidence of future readiness. Thus, the mediator of "goal-oriented saving behaviour" is used, as it reflects the behavioural shift from digital availability and self-efficacy to financial preparation. A mediated model is more suitable than a direct-effects-only model, as it better captures how using mobile FinTech is a convenient way to be more secure.

2.2. Financial Self-Efficacy and Goal-Oriented Saving Behaviour

Financial self-efficacy is assumed to be conducive to goal-based saving behaviour, as the more people perceive their ability to do something, the more they will do it. Financial self-efficacy is found to be associated with financial well-being via positive financial behaviours (Dare et al., 2023) and as a domain-specific capability influencing financial decisions (Gulati & Singh, 2024). In a student and emerging-adult context, the construct is particularly relevant, as financial responsibility, saving behaviours, and credit behaviour are in the process of being developed. Financial literacy and financial self-efficacy are important factors in risky credit behaviour among college students (Liu & Zhang, 2021) and mediate the relationship between financial literacy and financial well-being of college students (Lone & Bhat, 2024). If a student thinks that financial goals are within his or her control, he or she will also be more likely to keep track of spending, save for travel and emergencies, and bounce back from minor setbacks.

Financial self-efficacy can be useful in the geosite tourism context as a tool that can help students plan a trip that they would like to take into a savings plan. This can involve the costs of travelling, comparison of transport options, mobile budgeting tools, and contingency reserves. Financial self-efficacy should therefore lead to greater saving behaviour for achieving monetary goals, as it enhances the student's sense of the saving possibilities, usefulness, and personal control. The proposed H1 is presented below.

H₁: Financial self-efficacy has a positive effect on goal-oriented saving behaviour.

2.3. Mobile FinTech Utilization and Goal-Oriented Saving Behaviour

It is hoped that this utilization of Mobile FinTech will help achieve goal-oriented saving behaviour, as balance, transfer, payment history, and spending record information is readily available through the app. According to mobile banking research, account access and transaction monitoring are key operations of mobile financial services (Ashique

Ali & Subramanian, 2024). Research on mobile payments also reveals that payments via apps can lower transaction friction and time costs in consumer transactions (Lu & Pauwels, 2024). These functions can only help with saving if users take digital access as a planned financial action. The adoption of mobile FinTech has been linked to financial well-being through financial education and financial literacy pathways, as demonstrated by Başar, Keskin, Esen, Merter, and Balcioglu (2025) and Zhang and Fan (2024), who show a relationship between digital financial literacy, FinTech adoption, and savings behaviour. Goal-setting is particularly relevant, as goal-setting in a FinTech app boosts saving rates, as Gargano and Rossi (2024) show.

Mobile FinTech can be utilized as travel-budgeting infrastructure for students in geosite tourism contexts. A user can save a small portion of money to a dedicated wallet, define savings goals for a field trip, monitor expenses while on one of these trips, and review their spending later. Mobile transfers are also relevant if family or scholarship income is received at varying times and students need to redirect funds to tuition, accommodation, and travel. But mobile FinTech can make consumption simple, too. The positive impact is thus most likely when the dependent variable is not future financial security per se, but goal-oriented saving behavior. FinTech can create an environment conducive to saving, but the user is required to do so. H2 is proposed as follows.

H₂: Mobile FinTech utilization has a positive effect on goal-oriented saving behaviour.

2.4. Goal-Oriented Saving Behaviour and Expected Future Financial Security

Goal-directed saving behaviour would be expected to improve expected future financial security as it connects current action with future readiness. People who have saved for something have proof that they will have the money they need when they need it. It can decrease uncertainty, add perceived control, and provide a psychological cushion against financial stress (Meneau & Moorthy, 2022; Netemeyer, Warmath, Fernandes, & Lynch, 2018). This prior research on financial behaviour and financial well-being suggests that saving, budgeting, and disciplined money management are linked with greater subjective financial outcomes (Schomburgk & Hoffmann, 2023; Sharma, Kumar, & Sood, 2025). In the FinTech age, goal setting also offers a tangible way for users to boost their savings and stay motivated (Gargano & Rossi, 2024).

Goal-oriented saving helps ensure future financial security in a geosite tourism context in two ways. Initially, it provides students with opportunities to engage in field learning and tourism without compromising their financial resources for education and sustenance. Second, it establishes a habit of planning and looking toward the future, not just in relation to tourism but also to employment, moving to a different city or country, postgraduate study, and preparing for emergencies. Those who save regularly with a clear objective tend to think that future financial objectives can be achieved. Thus, it is expected that saving behaviour oriented toward a goal should have a positive impact on expected future financial security. The following is proposed for H3.

H₃: Goal-oriented saving behaviour has a positive effect on expected future financial security.

2.5. Financial Self-Efficacy and Expected Future Financial Security

Financial self-efficacy is also hypothesized to have a direct impact on financial security in the future. This is based on self-efficacy logic, according to which people who think they have the ability to deal with situations are more likely to perceive situations in the future as controllable. Dare et al. (2023) provide support that financial self-efficacy is a predictor of subjective financial well-being via positive financial behaviour, and Lone and Bhat (2024) demonstrate that financial self-efficacy enhances financial well-being in a financial literacy context. In addition, Sharma et al. (2025) demonstrate that financial self-efficacy and personal financial management behaviour play a crucial role as predictors of financial well-being. Together, these studies suggest that financial confidence can influence perceptions of security in the future even above and beyond specific financial behaviours.

Financial self-efficacy for international students might directly relate to future security, as mobility is creating more uncertainty. Students might not be aware of future exchange rates, job opportunities, continuity of scholarships,

or visa costs. If someone is more financially self-confident, they are more likely to feel that they can deal with these uncertainties by planning, looking around, using a mobile tool, and keeping reserves. In this context, financial self-efficacy has a cognitive impact on future financial security, not just in terms of saving behaviour. H4 is proposed as follows.

H₄: Financial self-efficacy has a positive effect on expected future financial security.

2.6. The Mediating Role of Goal-Oriented Saving Behaviour

This study is based on Social Cognitive Theory, which suggests that between cognition and environment and outcome lies enacted behaviour, or, in this context, saving behaviour, which acts as a mediator (Bandura, 1986). Financial self-efficacy is said to be a cognition or a precondition for starting and sustaining a saving plan, while mobile FinTech utilization is a digital foundation for monitoring, transferring, budgeting, and saving. In line with this, positive financial behaviour has been demonstrated to be a mediator between financial self-efficacy and subjective financial well-being (Dare et al., 2023) and, in the research on digital finance, financial behaviour is also a mediator between FinTech adoption and financial well-being (Gafoor & Amilan, 2024; Zhang & Fan, 2024). Furthermore, the impacts of FinTech-based saving goals on saving rates are consistent with the idea that goal-oriented saving is a more likely mechanism than just an outcome, as saving rates can also be raised (Gargano & Rossi, 2024).

The initial mediation mechanism relates to financial self-efficacy. Students who think they have the ability to manage their money are likely to have savings goals and stick to them. Saving behaviour becomes more regular; students build evidence of preparedness and hence boost anticipated financial security. In the context of geosite tourism, this pathway is particularly relevant, as it enables confident students to turn field-trip dreams into action, rather than showing either a reluctance to take part in educational tourism or relying on short-term borrowing. The second mediation pathway is related to the use of mobile FinTech. Students with mobile financial tools are able to access goal-setting, tracking, and transferring functions. However, the effect on security occurs only if the students use the tool for saving with an objective. This is because mobile FinTech might have a more indirect impact on behaviour compared to having a direct impact on future security (Başar et al., 2025; Hii et al., 2025).

H₅: Goal-oriented saving behaviour mediates the relationship between financial self-efficacy and expected future financial security.

H₆: Goal-oriented saving behavior mediates the relationship between mobile FinTech utilization and expected future financial security.

2.7. Conceptual Framework and Hypothesized Relationships

The theoretical model positions financial self-efficacy and mobile FinTech utilization as two antecedents of goal-oriented saving behavior. Financial self-efficacy represents the internal cognitive capability of the student. Mobile FinTech utilization represents the external technological resource available for financial action. Goal-oriented saving behavior is the behavioral mediator that links both antecedents to expected future financial security. Expected future financial security represents the forward-looking subjective outcome. This configuration follows Social Cognitive Theory by showing that personal cognition and environmental affordances shape outcomes through behavior.

The model also reflects the specific financial dynamics of geosite tourism. Participation in geosite tourism requires students to make repeated small decisions that combine learning, mobility, and consumption. Mobile FinTech can make these decisions easier, but financial self-efficacy influences whether students use the available tools strategically. Goal-oriented saving behaviour is therefore the point where digital technology and psychological capability meet. When students use mobile tools to save toward a geopark trip, emergency reserve, or future academic goal, they enact a behaviour that can strengthen future security. Figure 1 presents the theoretical model.

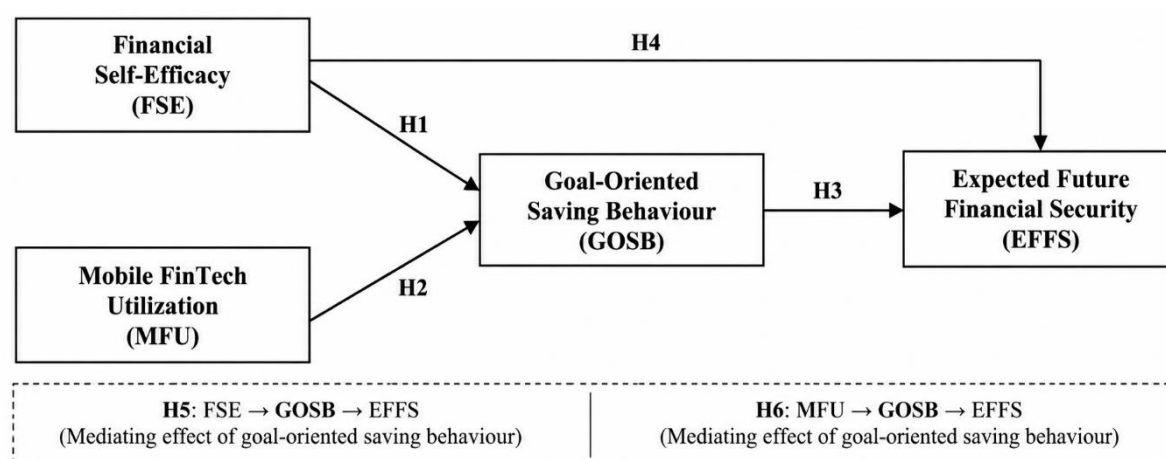


Figure 1. Theoretical Model.

3. METHODOLOGY

The study adopted a quantitative, cross-sectional survey method based on original data from 421 emerging adult mobile users of FinTech services in China (Table 1). The respondents were screened based on age and use of mobile FinTech services, such as mobile banking, mobile payments, mobile transfers, and money-management applications. The empirical sample was not limited to international students, and actual participation in geosite tourism was not measured. This means that the statistical results can be taken as evidence for the mechanism of financial behaviour among young mobile FinTech users in China. The geosite tourism discussion is preserved as a conceptual extension, as it can also be relevant to student mobility, field courses, and budgeting for educational travel.

Seven-point Likert-type response formats were used in the questionnaire. Financial self-efficacy and expected future financial security were assessed by means of agreement scales from 1 = strongly disagree to 7 = strongly agree. Frequency scales measuring the use of Mobile FinTech and goal-oriented saving behaviour ranged from 1 (never) to 7 (always). The measurement items were drawn from previous research on financial self-efficacy (Liu & Zhang, 2021), mobile FinTech use (Meneau & Moorthy, 2022), saving behaviour (Netemeyer et al., 2018), and perceived financial well-being (Zhang & Fan, 2024). The language was adapted to young mobile users and translated in the context of student travel and geosite-tourism financial decisions (Table 2). The detailed measurement items are given in Appendix 1, Table A1.

However, the research objective is prediction-oriented, has multiple latent constructs, and includes hypotheses involving direct and mediating paths; therefore, PLS-SEM was used to test the proposed model. This choice was made based on PLS-SEM reporting guidance, which suggests using the method when a study focuses on prediction and theory development in complex models (Hair, Risher, Sarstedt, & Ringle, 2019). The analysis was conducted in two steps. Indicator reliability, internal consistency reliability, convergent validity, and discriminant validity of the measurement model were assessed using outer loadings, Cronbach's alpha, composite reliability, average variance extracted, and the heterotrait-monotrait ratio.

Second, standardized path coefficients, bootstrapped significance levels, effect sizes, explanatory power, and predictive relevance were used to evaluate the structural model. Direct and indirect effects were tested for significance by bootstrapping with 5,000 resamples. The structural model was tested using beta coefficients, standard deviations, t-values, p-values, Cohen's f-square values, R-square values, adjusted R-square values, and Q-square values. Furthermore, collinearity diagnostics were checked with the inner VIF values to make sure that multicollinearity did not bias the path estimates. This process enabled the measurement and structural explanatory quality of the study to be examined systematically.

Table 1. Demographic Characteristics.

Category	Items	Frequency	Percentage
Gender	Male	172	40.90%
	Female	249	59.10%
Background	Education / Research	53	12.60%
	Government / Public Affairs / Non-profit Organizations	23	5.50%
	Finance / Business / Consulting Services	48	11.40%
	Medical / Health / Social Services	48	11.40%
	Industry / Manufacturing / Construction	100	23.80%
	Technology / Information / Communication	67	15.90%
	Services / Media / Retail / Tourism	62	14.70%
	Others	20	4.70%
Education level	Associate Degree or Below (or Currently Enrolled)	52	12.40%
	Bachelor's Degree (or Currently Enrolled)	329	78.10%
	Postgraduate Degree or Above (or Currently Enrolled)	40	9.50%

Table 2. Questionnaire Profile.

Variables	Code	Items	Scale	Representative sources
Financial self-efficacy	FSE	5	Seven-point agreement	Gulati and Singh (2024); Liu and Zhang (2021) and Lone and Bhat (2024)
Mobile FinTech utilization	MFU	4	Seven-point frequency	Ratnawati, Durachman, and Saputra (2022); Vella, Pamungkas, and Surwanti (2024) and Zhang and Fan (2024)
Goal-oriented saving behaviour	GOSB	3	Seven-point frequency	Barrafrem, Tinghög, and Västfjäll (2024); Gargano and Rossi (2024) and Meneau and Moorthy (2022)
Expected future financial security	EFFS	4	Seven-point agreement	Chen, Lee, and Lee (2026); (Netemeyer et al., 2018) and Schomburgk and Hoffmann (2023)

Common method bias was taken into account in the interpretation of the results since the data were gathered from one self-administered survey. The questionnaire's method consistency was decreased by using varying response formats for the constructs. Both financial self-efficacy and expected future financial security were assessed using agreement scales, while mobile FinTech utilization and goal-oriented saving behaviour were assessed using frequency scales. Low values of inner VIF values were also obtained in the statistical diagnostics (1.106–1.521). These values are lower than the 3.3 value that is commonly employed as a conservative threshold value for indicating method-related issues in PLS-SEM (Kock, 2015). However, the study did not involve any marker variable, temporal separation, or multiple data sources. Distinctly, common method bias cannot be completely ruled out, and this is recognized as a limitation.

4. RESULTS

The measurement model was first tested for the reliability and validity of the constructs. All constructs had acceptable reliability. Cronbach's alpha ranged from 0.730 to 0.826, composite reliability ranged from 0.828 to 0.878, and the AVE ranged from 0.546 to 0.706. These values indicate that the internal consistency and convergent validity are satisfactory, as the reliability values are above 0.70 and the AVE values are above 0.50 (Table 3). Most of the item loadings were over 0.70, with the exception of the loadings of FSE-item2 and EFFS-item2, which were slightly less than 0.70 (Table 4). They were retained, as the PLS-SEM results showed that the construct-level reliability and validity statistics were still acceptable, as recommended by PLS-SEM literature when the theoretically meaningful items do not reduce the construct validity (Hair et al., 2019).

The reliability findings are substantively important. Financial self-efficacy, goal-oriented saving behaviour, expected future financial security, and mobile FinTech utilization are all measured as coherent constructs. This supports the interpretation that students' confidence, saving routines, mobile finance use, and future financial security

expectations are empirically distinct but connected dimensions of financial behaviour. In an applied geosite tourism setting, this means the model can differentiate between using a mobile payment app, saving toward a travel or education goal, and feeling secure about the future.

Table 3. Variables Reliability and Validity.

Construct	Cronbach's alpha	Composite reliability (CR)	AVE	Interpretation
Financial self-efficacy (FSE)	0.826	0.878	0.591	Reliable and convergent
Goal-oriented saving behaviour (GOSB)	0.793	0.878	0.706	Reliable and convergent
Expected future financial security (EFFS)	0.730	0.833	0.556	Reliable and convergent
Mobile FinTech utilization (MFU)	0.730	0.828	0.546	Reliable and convergent

Table 4. Measurement Item Fitness Statistics.

Construct	Indicator	Outer loading	Comment
FSE	FSE-item1	0.795	Acceptable
FSE	FSE-item2	0.667	Retained; construct statistics acceptable
FSE	FSE-item3	0.796	Acceptable
FSE	FSE-item4	0.805	Acceptable
FSE	FSE-item5	0.773	Acceptable
GOSB	GOSB-item1	0.837	Acceptable
GOSB	GOSB-item2	0.836	Acceptable
GOSB	GOSB-item3	0.848	Acceptable
EFFS	EFFS-item1	0.740	Acceptable
EFFS	EFFS-item2	0.647	Retained; construct statistics acceptable
EFFS	EFFS-item3	0.783	Acceptable
EFFS	EFFS-item4	0.802	Acceptable
MFU	MFU-item1	0.756	Acceptable
MFU	MFU-item2	0.752	Acceptable
MFU	MFU-item3	0.742	Acceptable
MFU	MFU-item4	0.705	Acceptable

The discriminant validity analysis also supports the model. All HTMT values were below the conservative threshold of 0.85. The highest HTMT value was between financial self-efficacy and expected future financial security at 0.823 (Table 5). This relatively high but acceptable value is theoretically reasonable because students who feel capable of managing money are also likely to feel more secure about future financial outcomes. However, the value remains below the recommended threshold, supporting construct distinction. The HTMT values involving mobile FinTech utilization were lower, showing that technology use is distinct from psychological confidence, saving behaviour, and future security.

Table 5. Discriminant Validity: HTMT Matrix.

Constructs	EFFS	FSE	GOSB	MFU
EFFS	—			
FSE	0.823	—		
GOSB	0.667	0.719	—	
MFU	0.362	0.370	0.425	—

Table 6. Collinearity Assessment (Inner VIF Values).

Structural Relationship	Inner VIF
FSE → GOSB	1.106
MFU → GOSB	1.106
FSE → EFFS	1.521
GOSB → EFFS	1.521

In addition to reliability and discriminant validity assessment, collinearity diagnostics were examined to ensure that multicollinearity did not bias the structural estimates. The inner VIF values ranged from 1.106 to 1.521, which are substantially below the conservative threshold of 3.3 (Table 6). These results indicate that collinearity is unlikely to bias the structural path estimates.

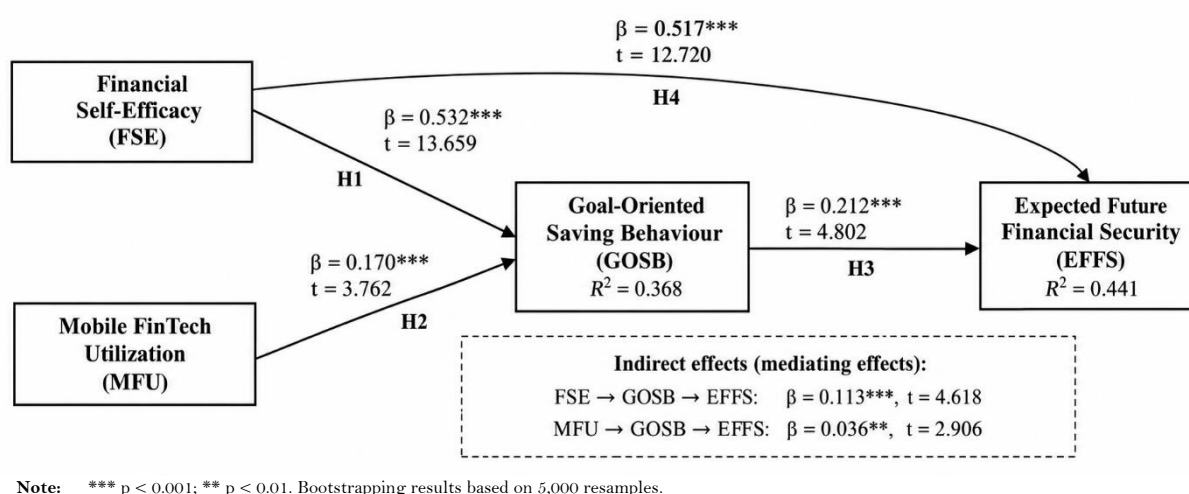


Figure 2. Estimated Structural Model Based on Bootstrapping Results.

Figure 2 presents the estimated structural model and summarizes the significant standardized relationships among the constructs. Financial self-efficacy showed the strongest positive effects, predicting both goal-oriented saving behaviour and expected future financial security. Mobile FinTech utilization also positively predicted goal-oriented saving behaviour, although the effect was comparatively smaller, suggesting that mobile FinTech functions mainly as an enabling resource rather than a dominant behavioural determinant. Goal-oriented saving behaviour positively predicted expected future financial security and mediated the effects of both financial self-efficacy and mobile FinTech utilization (Table 7).

Table 7. Variables Effects Overview.

Effect	Direct beta	Indirect effect	Total effect	Cohen's f^2	Interpretation
FSE → GOSB	0.532	—	0.532	0.406	Large effect
MFU → GOSB	0.170	—	0.170	0.041	Small effect
GOSB → EFFS	0.212	—	0.212	0.053	Small effect
FSE → EFFS	0.517	0.113	0.630	0.315	Medium direct effect plus significant mediation
MFU → EFFS	Not hypothesized as a direct path	0.036	0.036	-	Significant indirect effect through GOSB

Results of bootstrapping confirmed the proposed theoretical structure. Financial self-efficacy significantly and positively influenced goal-oriented saving behaviour and financial security expectations in the future. The use of mobile FinTech had a significant positive impact on goal-oriented saving behaviour. Goal-oriented saving behaviour positively and significantly affected expected future financial security and significantly mediated the relationship between financial self-efficacy and expected future financial security and between mobile FinTech utilization and expected future financial security. These findings suggest that these four variables—personal financial capability and digital financial utilization—have a behavioural pathway to achieving financial security in the future, which is through goal-oriented saving behaviour. In Table 8, full estimates are reported.

Table 8. Path Analysis and Hypothesis Testing.

Hypothesis	Relationship	β	SD	t-value	p-value	Decision
H1	FSE $\rightarrow$ GOSB	0.532	0.039	13.659	< 0.001	Supported
H2	MFU $\rightarrow$ GOSB	0.170	0.045	3.762	< 0.001	Supported
H3	GOSB $\rightarrow$ EFFS	0.212	0.044	4.802	< 0.001	Supported
H4	FSE $\rightarrow$ EFFS	0.517	0.041	12.720	< 0.001	Supported
H5	FSE $\rightarrow$ GOSB $\rightarrow$ EFFS	0.113	0.024	4.618	< 0.001	Supported
H6	MFU $\rightarrow$ GOSB $\rightarrow$ EFFS	0.036	0.012	2.906	0.004	Supported

Once the importance of the structural paths was determined, the explanatory power and predictive relevance of the model were evaluated. Financial self-efficacy and mobile utilization of FinTech accounted for 36.8% of the variance in goal-oriented saving behaviour, and financial self-efficacy and goal-oriented saving behaviour accounted for 44.1% of the variance in expected future financial security (Table 9). Predictive relevance was reflected by Q-square values of both endogenous constructs that were greater than 0. The present findings indicate that the model is moderately explanatory and has acceptable predictive relevance for both endogenous constructs.

Table 9. R-square Statistics and Predictive Relevance.

Construct	R ²	Adjusted R ²	Q ²	Interpretation
Goal-oriented saving behaviour (GOSB)	0.368	0.365	0.250	Moderate explanatory power and predictive relevance
Expected future financial security (EFFS)	0.441	0.436	0.233	Moderate explanatory power and predictive relevance

5. DISCUSSION

Overall, the results indicate that the use of mobile FinTech can serve as a catalyst for future financial security, but only if it facilitates saving that is oriented towards a goal. Just because consumers are using mobile payment systems frequently doesn't necessarily mean they are more secure. If a mobile payment tool is used for spending purposes during a geosite visit by a young user, he or she may not become more financially secure. The security implication comes in when a mobile financial functionality is used to set budgets, transfer funds intentionally, monitor balances, and secure funds for future use. This aligns with Zhang and Fan (2024), who tie mobile FinTech to financial well-being via capability pathways, and Gafoor and Amilan (2024), who demonstrate that financial well-being in relation to FinTech is not just direct but also through mediating pathways.

The strongest antecedent in the model was financial self-efficacy. This finding aligns with Dare et al. (2023), as they demonstrate a positive relationship between financial self-efficacy and subjective financial well-being via positive financial behaviour, and with Sharma et al. (2025), as they show that financial self-efficacy and financial management behaviour influence financial well-being. In the current model, self-efficacy is directly associated with the expectation of financial security in the future, but it is also indirectly associated with goal-oriented saving behaviour. This strengthens their understanding that being good with money is useful if they are also regularly saving.

The strong influence of saving for future goals on expected future financial security is also in line with previous research on financial well-being. Future financial security is a forward-looking facet of perceived financial well-being (Netemeyer et al., 2018), and responsible financial behaviours are associated with positive financial outcomes (Meneau & Moorthy, 2022). The mediation findings also support (Gargano & Rossi, 2024), who find that FinTech-based saving goals can boost saving rates, and Hii et al. (2025) who show that digital wealth management services can improve savings among Chinese Gen Z. The current results add to this evidence by revealing that saving behaviour is a link between financial self-efficacy (and mobile FinTech use) and future security expectations.

The mobile FinTech path was less robust than the financial self-efficacy path and was nevertheless statistically significant. A small effect does not mean that the practical effect is negligible. Mobile FinTech is integrated into

financial routines on a daily basis, and even small improvements in positive, goal-oriented saving can result in significant financial preparation over time. Expanding future-oriented behaviour with mobile apps can be facilitated with features like goal wallets, automatic micro-saving, travel-budget dashboards, and expense categorization. This is particularly germane in the field of geosite tourism, as students might have to plan several trips in a semester. Mobile tools can help sustainable participation in educational tourism if they offer visible progress and spending feedback.

The results were in line with Social Cognitive Theory, as it was shown that the environment, cognition, and action are all working together. Mobile FinTech serves as an environmental resource, financial self-efficacy as a cognitive resource, goal-oriented saving behaviour as enacted behaviour, and subjective outcome (expected future financial security). The results show that the effects of cognition are direct and behavioural, whereas the effects of technology are mainly behavioural. This distinction adds fine-grained insights to the implementation of Social Cognitive Theory in digital finance, revealing that digital affordances must be behaviourally internalized to lead to security-related consequences.

The geosite tourism framing contributes applied value. The literature related to geological heritage, visitor interpretation, sustainability, and local development comprises the major themes of geosite tourism studied so far (Arrage, 2024; Cvetanović, Gajić, Kovjanić, Krstić, & Sedlak, 2024; Petrović et al., 2025). The financial habits and practices of young visitors and international students have received less attention. However, student participation in geopark field trips and educational tourism depends on affordability, planning, and financial confidence. According to the results, the use of financial technology could help students take part in geosite tourism in an easier and better-prepared manner if they could set budgets, monitor spending, and save money for specific educational trips using financial technology. This information can be utilized by universities, geopark management, and student-service offices to create financial preparation programs for field courses and travel-based learning.

5.1. Implications of the Study

The theoretical implications are mainly related to the extension of Social Cognitive Theory to mobile financial behaviour. Environmental affordance: mobile FinTech utilization; personal cognitive resource: financial self-efficacy; enacted behaviour: goal-oriented saving behaviour; subjective financial outcome: expected financial security. This adds to Social Cognitive Theory, as it demonstrates that the affordances of the technology can impact future financial security beyond just access to the technology, but through behavioural assimilation. The study also contributes to a better understanding of financial well-being theory by distinguishing between a cognitive route (financial self-efficacy) and a behavioural route (goal-directed saving behaviour). In this way, the findings explain why confidence and digital access are not equal mechanisms, although, in and of themselves, they can help contribute to future financial security.

Practical implications can be turned into actions. A small financial preparation module can be made part of the university and field-course organisers' programme before geosite trips. The module could prompt students to consider the costs of transport, accommodation, food, tickets, insurance, and emergency funds, set up a savings plan inside a mobile application for this trip, and keep emergency funds at a minimum until departure. International student offices can offer multilingual templates for geosite travel budgets and remittance timing plans to students to help them coordinate family transfers/scholarships with travelling and living costs.

The results indicate that, for FinTech providers, student-facing mobile applications must go beyond the convenience of payments. Goal wallets, automatic micro-saving, expense categories for travel and field learning, low-balance alerts, post-trip spending summaries, and opt-in reminders can help users make digital transactions and plan savings. These functions should be designed to disclose fees, protect privacy, and have clear and simple interfaces, as international and youthful customers may not be familiar with local payment methods.

Practical support can be provided to geopark managers and tourism providers by transparent student pricing, bundled information on field trip costs, provision of a digital receipt, clear refund rules, and lower-cost transport information. Geoparks can work with universities to give upfront estimates of field course costs, where possible, to allow students to save up for them in advance instead of committing to big upfront payments around the time of travel.

The policy implications are similar. Digital financial inclusion policy should integrate access and financial capability. There is a need for student-focused financial education programmes on digital financial services, covering issues such as the safety of mobile payments, budgeting, saving objectives, exchange rate awareness, remittance planning, and consumer protection, which can be encouraged by education authorities, universities, and financial regulators. These programs would contribute to SDG 4 by enhancing participation in education, SDG 8 by fostering financial capability and sustainable tourism participation, SDG 10 by decreasing financial constraints on mobility, and SDG 12 by promoting responsible consumption while travelling for education.

5.2. Limitations and Future Research Directions

There are several limitations that need to be taken into account. First, the data are cross-sectional, and thus conclusions regarding causality should be made with caution. While the structural model theorizes expected pathways, further longitudinal research is necessary to understand changes in the utilization of mobile FinTech, saving behaviour, and financial security over time. Secondly, the data are based on self-report instruments and are therefore susceptible to recall bias or social desirability bias. Future studies might further improve the validity of the results by incorporating geosite spending data from apps, saving-goal data, or an actual diary during the geosite trips.

Third, the empirical sample consisted of emerging-adult mobile FinTech users in China. No screening was conducted for international-student status, nationality, or actual geosite-tourism participation. This means that the results are not to be understood as a direct result from international students or tourists to the geosite. The geosite-tourism discussion is rather an extension of the model to an educational-mobility context, where pupils have to deal with aspects of paying, travelling, and emergency savings. Future research will be necessary to test the model using data gathered from international students before and after geopark visits, field courses, and educational-tourism programs.

Fourth, the model accounts for financial self-efficacy and mobile FinTech utilization but does not account for other factors that may be relevant, including financial literacy, social support, income volatility, exchange-rate risk, remittance frequency, family expectations, and personality traits. These variables can influence saving behaviour and future security. Future research will be able to expand the model by examining moderating variables like financial literacy, country of origin, study length, scholarship, or previous travel experience. Lastly, a qualitative interview should be conducted to further clarify the meaning of expected financial security for international students; cross-cultural research indicates that the meaning of financial security items could differ between cultures (Chen et al., 2026).

Fifth, the study employed the available design and collinearity diagnostics but lacked a marker variable, temporal separation, and multisource data to evaluate common method bias. In the future, one should try to combine survey answers with transaction data from the app and data from saving goals or diary measures to minimize common method concerns.

6. CONCLUSION

This study aimed to examine the relationship between mobile FinTech utilization and expected future financial security with the mediating role of goal-oriented saving behaviour and financial self-efficacy as psychological factors. Based on the original survey data gathered from 421 emerging adult mobile FinTech users and using PLS-SEM, the study supported all of the proposed hypotheses. Financial self-efficacy was a predictor of goal-oriented saving

behaviour as well as expected future financial security. Goal-oriented saving behaviour was predicted by mobile FinTech utilization. Goal-oriented saving behaviour was found to be a mediator between financial self-efficacy and mobile FinTech utilization and to predict financial security in the future. The overall findings are that mobile FinTech can be a positive influence on future financial security of the future if it is translated into goal-oriented saving behaviour with a goal. Access to technology is no guarantee. Emerging-adult users must have confidence, planning routines, and app-supported saving practices that align digital financial use with future aspirations. From a student geosite tourism perspective, these findings suggest that mobile payment and mobile banking tools should be understood not only as payment systems but also as travel budgeting, emergency planning, and mobility preparation tools. This interpretation remains a conceptual extension because the empirical sample was not restricted to geosite tourists. Another conclusion of the study is that financial self-efficacy plays a pivotal role in future financial security. Students with self-efficacy in money management are more likely to save towards goals and more likely to have a positive outlook about their financial future. This finding indicates that financial education cannot only be aimed at information transfer. It should also help to develop confidence through practice, feedback, and realistic saving targets. Confidence turns into productivity when it is connected to actions.

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Informed Consent Statement: All participants were informed of the study's purpose, procedures, data use, voluntary nature of participation, and right to withdraw without adverse consequences. Informed consent was obtained before questionnaire completion. Data were collected anonymously, and no personally identifiable information was collected.

Transparency: The authors state that the manuscript is honest, truthful, and transparent, that no key aspects of the investigation have been omitted, and that any differences from the study as planned have been clarified. This study followed all writing ethics.

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REFERENCES

- An, T., Xiao, J. J., Porto, N., & Cruz, L. (2025). Mobile payment, financial behavior and financial anxiety: A multi-group structural equation modeling study. *International Journal of Bank Marketing*, 43(3), 549-568. <https://doi.org/10.1108/IJBM-07-2024-0402>
- Arrage, J. A. (2024). *Geotourism for UNESCO global geoparks: A toolkit for developing and managing tourism*. Paris, France: UNESCO.
- Ashique Ali, K. A., & Subramanian, R. (2024). Current status of research on mobile banking: An analysis of literature. *Vision: The Journal of Business Perspective*, 28(1), 7-18. <https://doi.org/10.1177/09722629211073268>
- Bandura, A. (1986). *Social foundations of thought and action: A social cognitive theory*. Englewood Cliffs, NJ: Prentice-Hall.
- Barrafrem, K., Tinghög, G., & Västfjäll, D. (2024). Behavioral and contextual determinants of different stages of saving behavior. *Frontiers in Behavioral Economics*, 3, 1381080. <https://doi.org/10.3389/frbhe.2024.1381080>
- Başar, D., Keskin, H., Esen, E., Merter, A. K., & Balcioğlu, Y. S. (2025). Digital financial literacy and savings behavior: A comprehensive cross-country analysis of FinTech adoption patterns and economic outcomes across 12 nations. *Borsa Istanbul Review*, 25, 59-72. <https://doi.org/10.1016/j.bir.2025.09.004>
- Chen, P.-J., Lee, H., & Lee, J. (2026). Validating financial well-being scales across cultures: Evidence from Eastern cultural contexts. *Journal of Family and Economic Issues*, 47, 384-396. <https://doi.org/10.1007/s10834-026-10080-0>
- Cvetanović, M., Gajić, M., Kovjanić, A., Krstić, F., & Sedlak, M. (2024). Geosite assessment as a contribution to the sustainable development of Babušnica, Serbia. *Open Geosciences*, 16(1), 20220644. <https://doi.org/10.1515/geo-2022-0644>

- Dare, S. E., van Dijk, W. W., van Dijk, E., van Dillen, L. F., Gallucci, M., & Simonse, O. (2023). How executive functioning and financial self-efficacy predict subjective financial well-being via positive financial behaviors. *Journal of Family and Economic Issues*, 44(2), 232-248. <https://doi.org/10.1007/s10834-022-09845-0>
- Gafoor, A., & Amilan, S. (2024). Fintech adoption and financial well-being of persons with disabilities: The mediating role of financial access, financial knowledge and financial behaviour. *International Journal of Social Economics*, 51(11), 1388-1401. <https://doi.org/10.1108/IJSE-08-2023-0596>
- Gargano, A., & Rossi, A. G. (2024). Goal setting and saving in the fintech era. *The Journal of Finance*, 79(3), 1931-1976. <https://doi.org/10.1111/jofi.13339>
- Gulati, A., & Singh, S. (2024). Financial self-efficacy of consumers: A review and research agenda. *International Journal of Consumer Studies*, 48(2), e13024. <https://doi.org/10.1111/ijcs.13024>
- Hair, J. F., Risher, J. J., Sarstedt, M., & Ringle, C. M. (2019). When to use and how to report the results of PLS-SEM. *European Business Review*, 31(1), 2-24. <https://doi.org/10.1108/EBR-11-2018-0203>
- Hii, I. S. H., Ho, J. M., Zhong, Y., & Li, X. (2025). Savings in the digital age: Can Internet wealth management services enhance savings behaviour among Chinese Gen Z? *Managerial Finance*, 51(4), 631-646. <https://doi.org/10.1108/MF-03-2024-0231>
- Kock, N. (2015). Common method bias in PLS-SEM: A full collinearity assessment approach. *International Journal of e-Collaboration*, 11(4), 1-10.
- Larbi, F. O., Ma, Z., Fang, Z., Viranuta, F. O., Bărbuță-Mișu, N., & Deniz, G. (2022). Financial anxiety among international students in higher education: A comparative analysis between international students in the United States of America and China. *Sustainability*, 14(7), 3743. <https://doi.org/10.3390/su14073743>
- Liu, L., & Zhang, H. (2021). Financial literacy, self-efficacy and risky credit behavior among college students: Evidence from online consumer credit. *Journal of Behavioral and Experimental Finance*, 32, 100569. <https://doi.org/10.1016/j.jbef.2021.100569>
- Lone, U. M., & Bhat, S. A. (2024). Impact of financial literacy on financial well-being: A mediational role of financial self-efficacy. *Journal of Financial Services Marketing*, 29(1), 122-137. <https://doi.org/10.1057/s41264-022-00183-8>
- Lu, S. Q., & Pauwels, K. (2024). More transactions but a lower average transaction value: How mobile payment apps influence consumer purchases through time-savings. *International Journal of Research in Marketing*, 41(4), 761-776. <https://doi.org/10.1016/j.ijresmar.2024.08.004>
- Meneau, L. K., & Moorthy, J. (2022). Struggling to make ends meet: Can consumer financial behaviors improve? *International Journal of Bank Marketing*, 40(2), 263-296. <https://doi.org/10.1108/IJBM-12-2020-0595>
- Netemeyer, R. G., Warmath, D., Fernandes, D., & Lynch, J. J. G. (2018). How am I doing? Perceived financial well-being, its potential antecedents, and its relation to overall well-being. *Journal of Consumer Research*, 45(1), 68-89. <https://doi.org/10.1093/jcr/ucx109>
- Oduwaye, O., Kiraz, A., & Sorakin, Y. (2023). A trend analysis of the challenges of international students over 21 years. *Sage Open*, 13(4), 21582440231210387. <https://doi.org/10.1177/21582440231210387>
- Petrović, A. S., Carević, I., Trnavac Bogdanović, D., Langović, M., Batočanin, N., & Petronijević, J. (2025). Geotourism based on geoheritage as a basis for the sustainable development of the Golija Nature Park, Southwest Serbia. *Land*, 14(4), 835. <https://doi.org/10.3390/land14040835>
- Qin, Y., & Liu, W. (2025). Digital payment penetration and regional consumption ineq. *Finance Research Letters*, 85, 108097. <https://doi.org/10.1016/j.frl.2025.108097>
- Ratnawati, S., Durachman, Y., & Saputra, A. (2022). *Analyzing factors influencing intention to use and actual use of mobile fintech applications free interbank money transfer flip using UTAUT 2 model with trust and perceived security*. Paper presented at the 2022 10th International Conference on Cyber and IT Service Management (CITSM), IEEE.
- Schomburgk, L., & Hoffmann, A. (2023). How mindfulness reduces BNPL usage and how that relates to overall well-being. *European Journal of Marketing*, 57(2), 325-359. <https://doi.org/10.1108/EJM-11-2021-0923>

- Sharma, V., Kumar, R., & Sood, K. (2025). The influence of financial socialization, financial self-efficacy, and self-control on financial well-being: Does personal financial management behavior mediates the relationship? *Journal of the Knowledge Economy*, 16, 18206–18236. <https://doi.org/10.1007/s13132-025-02623-x>
- Vella, A., Pamungkas, W. S., & Surwanti, A. (2024). A systematic review and bibliometric analysis of mobile payment services in fintech and business. *Multidisciplinary Reviews*, 7(2), 2024029. <https://doi.org/10.31893/multirev.2024029>
- Zhang, Y., & Fan, L. (2024). The nexus of financial education, literacy and mobile fintech: Unraveling pathways to financial well-being. *International Journal of Bank Marketing*, 42(7), 1789–1812. <https://doi.org/10.1108/IJBM-09-2023-0531>

Appendix 1. Contextualized Measurement Items.

The following measurement items reflect the constructs used in the model and are contextualized for international students in geosite tourism settings. The empirical statistics reported in the results are based on the collected dataset and the item codes shown in the measurement tables.

Table A1. Measurement Items.

Code	Measurement item
FSE1	I am confident that I can manage my financial responsibilities effectively.
FSE2	I can solve financial problems that arise during study, travel, or daily life.
FSE3	I can make good financial decisions even when I face uncertainty.
FSE4	I can control my spending and stay within a budget.
FSE5	I can achieve the financial goals that I set for myself.
MFU1	I use mobile payment tools for daily purchases or travel-related expenses.
MFU2	I use mobile banking to check balances, transactions, or account information.
MFU3	I use mobile transfer services to send or receive money.
MFU4	I use mobile money-management tools to record, budget, or monitor expenses.
GOSB1	I regularly save money for specific future goals.
GOSB2	I set aside money for planned expenses such as education, travel, or emergencies.
GOSB3	I monitor my progress toward savings goals.
EFFS1	I am becoming financially secure.
EFFS2	I am securing my financial future.
EFFS3	I will achieve the financial goals that I have set for myself.
EFFS4	I expect to have enough financial resources for my future needs.

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