

# Financial Management Behavior Scale: A Re-Conceptualization for Emerging Markets

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**Abstract:** Understanding financial management behavior (FMB) is critical for improving individual well-being. Guided by the psychological and cultural dimensions of economic behavior, this study adapts and validates a simple yet comprehensive FMB scale in the context of a developing economy. Specifically, the study adapts and validates the Financial Management Behavior Scale developed by Dew and Xiao (2011) for the Indian context. Using a sequential exploratory design, the qualitative phase culturally contextualizes and refines the scale items, while the quantitative phase reassesses the factor structure and establishes reliability, structural validity, and criterion validity. Data were collected using purposive maximum-variation sampling to ensure socio-demographic heterogeneity appropriate for scale validation. The scale comprises two distinct factors based on temporal and cultural orientations of human behavior: short-term and long-term FMB. The scale captures an exhaustive range of behavioral domains, including cash management, credit/debt management, comparison shopping/thrift, savings, retirement planning, emergency funds, and insurance/risk management, within a simplified two-factor structure. This simplified two-factor structure provides a context-sensitive yet empirically robust tool for advancing FMB research and informing FMB interventions in India and similar emerging economies.

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## I. INTRODUCTION

Financial management behavior (FMB) is a critical determinant of financial security, financial well-being, and life satisfaction (Huang et al., 2022), making it crucial for various stakeholders like individuals, policymakers and marketers of financial services. FMB encompasses behaviors related to saving, investing, borrowing, insuring, and other money management practices (Xiao & Kumar, 2023). The growing importance of FMB has translated into increased research on the construct, with studies investigating the antecedents, consequences, and methods for improving FMB (Goyal et al., 2021; Lučić et al., 2023). FMB has been conceptualized and measured in different ways, mainly depending on the sample and context. For example, examining the antecedents and consequences of individual FMB describe it as a set of behaviors like budgeting, cash flow, savings, investments, loans, and insurance management (Dew & Xiao, 2011). In contrast, studies focusing on household financial management describe FMB in terms of how household income is allocated, such as shared income, separate income, or household allowances (Van Raaij et al., 2020). These differing conceptualizations have resulted in heterogeneous measurement approaches, limiting comparability across studies and creating ambiguity for theory development and policy application. Despite increasing scholarly attention, there remains a paucity of validated and contextually robust FMB scales. Many studies rely on convenience-based or ad hoc behavioral indicators, often without comprehensive construct representation (Dew & Xiao, 2011).

Existing FMB scales exhibit two major limitations. First, most were developed in Western contexts and later applied to emerging economies with limited cultural adaptation or psychometric re-validation (Goyal et al., 2021). Second, they fragment FMB into multiple sub-dimensions, increasing measurement complexity. Although recent studies recommend examining FMB from a short-term and long-term perspective, existing measures lack strong theoretical grounding and empirical validation for such temporal structuring (Henager & Cude, 2019; Fan, 2021). Given the rapidly evolving financial landscape of developing economies, there is a clear need for a culturally contextualized, psychometrically validated, and temporally oriented framework that incorporates psychological and socio-institutional influences (Xiao & Kumar, 2023).

This study makes three contributions to the current literature. First, it adapts and validates the widely used FMBS scale (Dew & Xiao, 2011) in the Indian context. Rather than developing a new instrument, the study

undertakes a context-sensitive refinement process in which the original items are culturally contextualized and psychometrically reassessed to reflect the institutional and socio-economic realities of an emerging economy. Given that emerging markets account for more than four-fifths of the global population and represent a rapidly expanding market for financial products (UNCTAD, 2022), establishing a validated measure in this context addresses a significant gap in FMB research. Second, the study advances a theoretically grounded and empirically supported two-dimensional operationalization of FMB: long-term and short-term FMB, each measured using four items. This structure improves conceptual clarity and enhances measurement parsimony. Third, the proposed scale is psychometrically validated and demonstrates good internal consistency, reliability, structural validity, and generalizability across various demographic sub-groups, which earlier scales have not adequately demonstrated. The scale also significantly predicts financial well-being, thereby exhibiting criterion/predictive validity. This psychometrically validated and simplified FMB scale can help academicians, consumers, marketers, practitioners, and policymakers develop and test theories, design behavior-influencing communication strategies, and formulate suitable intervention policies to promote prudent FMB. The scale may also facilitate comparisons of FMB across different economic and socio-cultural contexts.

## II. REVIEW OF LITERATURE

### A. *FMB Measures and Issues*

FMB refers to the performance of financial practices related to an individual's financial interests (Xiao, 2008; Goyal et al., 2022). It is a multi-dimensional behavioral construct that entails planning, implementation, and evaluation of money management activities like managing earnings, cash flow, savings, investments, insurance, tax planning, retirement planning, and estate planning (Deacon & Firebaugh, 1988; Dew & Xiao, 2011). While robust financial practices enhance one's financial well-being and ultimate life satisfaction (Spuhler & Dew, 2019), undesirable financial practices can degrade one's financial well-being and quality of life (Joo & Grable, 2004; Bapat, 2020). Due to its importance in everyday life and its long-term consequences, FMB has been widely investigated in the literature.

However, the construct conceptualization differed significantly across these studies. Fitzsimmons et al. (1993) explicitly included financial management and its problems in their seminal work on measuring FMB,

thereby generating scholarly interest in the construct. Inspired by this work, several other measures of FMB were developed across sub-dimensions/ factors such as cash management, credit management, retirement planning, risk management, capital accumulation, and general financial management (Godwin & Koonce, 1992; Grable & Joo, 2001; Hibbert et al., 2004; O’Neill et al., 2005). Indian studies have also followed the global trend of treating FMB as a composite construct

consisting of several sub-constructs (Bapat, 2019; Sehrawat et al., 2021). Moreover, most Indian studies have adopted Western scales, sometimes with minor modifications, without adequate psychometric validation (Bapat, 2020; Goyal et al., 2022; Goyal et al., 2023). Table 1 presents some of the widely used measures of FMB and their subconstructs across different contexts.

TABLE 1  
EXISTING MEASURES OF FINANCIAL MANAGEMENT BEHAVIOR

Study	Scale Name	Dimensions / Factors
Fitzsimmons et al. (1993)	Frequency of Financial Management Scale Frequency of Financial Problems Scale	Planning, Budgeting, Evaluating regularly
Prochaska-Cue (1993)	Personal Financial Management Style Scale	Estate planning, Insurance, Financial record keeping, Budgeting, Saving, Investing
Perry and Morris (2005)	Responsible Financial Behavior Scale	Control spending, Paying bills on time, Planning for financial future, Saving, Providing for one's self and family
Jorgensen (2007)	College Student Financial Management Behavior Scale	Budgeting, Tracking spending, Savings, Borrowing, Insurance
Dew and Xiao (2011)	Financial Management Behavior Scale	Consumption, Cash management, Credit management, Savings and Investment, Insurance
Ksendzova et al. (2017)	Everyday Money Management Scale	Management of cash, Credit, Savings, and Insurance
Veiga et al. (2019)	Personal Financial Management Behavior Scale (Portuguese validation of FMB scale)	Cash management, Credit management, Savings and investment, Insurance
Amri et al. (2022)	Financial Management Behavior Scale — Indonesian postgraduate version	Consumption, Cash flow management, Savings and investment, Debt management

Note. FMB = Financial Management Behavior. Table presents a representative list of widely used FMB scales across the literature.

Current measures of FMB demonstrate substantial conceptual and methodological inconsistencies. There is little agreement regarding the internal structure of FMB, as earlier researchers operationalized the construct as multidimensional, comprising subdomains such as cash management, credit management, savings, insurance, and retirement planning (Fitzsimmons et al., 1993; Grable & Joo, 2001; O’Neill et al., 2005). Most of these measures were originally developed in Western settings and subsequently applied in the developing economies, such as India, with limited cultural adaptation or psychometric re-evaluation (Bapat, 2020; Goyal et al., 2022). Consequently, existing scales often fail to adequately explain contextual variations in financial behavior arising from distinct socio-economic and cultural orientations. Furthermore, the proliferation of subdimensions has increased measurement complexity, making these scales less suitable for practical interventions and policy formulation. Addressing these

limitations, the present study reconceptualizes FMB into two fundamental temporal and cultural orientations, namely short-term and long-term FMB. These dimensions encompass major behavioral domains, including cash management, credit/debt management, thrift, savings, emergency funds, insurance, and retirement planning, within a parsimonious two-factor framework. This integrated framework not only simplifies the measurement of FMB but also provides a psychometrically sound and contextually relevant instrument for assessing and improving household financial behavior in emerging economies such as India.

*B. Two Dimensions/Factors of FMB*

The compartmentalization of FMB into two time-oriented factors emanates from the psychological and cultural foundations of behavior. Self-control theory (Thaler & Shefrin, 1981) posits that individuals have psychological traits that make them either long-term

planners or short-term doers of the present. The urge for instant gratification may cause individuals to prioritize short-term needs and desires over long-term goals, thereby indulging more in short-term financial management behavior (STFMB). In contrast, individuals with higher levels of self-control are more likely to be concerned with future financial stability and security and therefore exhibit long-term financial management behavior (LTFMB) (Van Raaij et al., 2023). Individuals often demonstrate present bias by overvaluing immediate rewards, and display hyperbolic discounting by inconsistently valuing future outcomes. This indicates that individuals may simultaneously engage in both STFMB and LTFMB, at times in contradictory ways. In addition, studies have shown that FMB follows a behavioral hierarchy, whereby higher-level behavior (investments) occur only after lower-level behavior (cash management) has been executed (Xiao & O'Neill, 2018).

Furthermore, the behavioral life-cycle theory (Shefrin & Thaler, 1988) suggests that individuals mentally categorize financial resources into different accounts: current income for immediate consumption needs, current assets for near-term needs, and future income for long-term financial security. This mental accounting framework aligns with the proposed two-factor structure of FMB and supports the need to measure STFMB and LTFMB as distinct constructs. The theory also proposes that individuals may prioritize STFMB during youth but gradually shift toward LTFMB as they age and approach retirement, thereby reinforcing the existence of these two dimensions of FMB (Xiao et al., 2015).

Despite variations in definitions and measurement approaches, FMB ultimately aims to address either short-term or long-term financial objectives. STFMB differs from LTFMB in terms of time orientation, goals,

investment decisions, and activities. STFMB typically focuses on managing finances over a relatively short period to ensure liquidity and cash flow. On the other hand, LTFMB focuses on activities regarding managing finances over a relatively long period with the primary goal of ensuring growth, wealth creation, and having a secure financial future (Wagner & Walstad, 2018; Henager & Cude, 2019; Fan, 2021). Moreover, unlike STFMB activities, which require immediate decision-making and frequent monitoring and adjusting of budgets, LTFMB activities demand planning for the future and investing in long-term assets to achieve one's long-term financial goals. This dichotomy is further formalized in the behavioral categorization framework proposed by Xiao and Kumar (2023), which classifies financial behaviors into short-term domains (e.g., money management and borrowing, including cash flow management and budgeting) and long-term domains (e.g., saving and investing).

These conceptual and functional distinctions underscore the importance of developing separate time-oriented measures to capture both dimensions/factors of FMB. Table 2 presents prior studies and the items/components used to measure STFMB and LTFMB. Although Henager and Cude (2019) and Fan (2021) measured STFMB and LTFMB as separate constructs, these studies relied on ad-hoc measures designed primarily to fit the notions of short-term and long-term orientation and to achieve broader research objectives. Moreover, the measures were not comprehensively validated for their psychometric properties. Henager and Cude (2019) also mixed up planning with behavior, which the present study considers to be conceptually distinct. Due to their ad hoc nature, these scales also omitted important behavioral domains such as thrift/comparison shopping, debt management, and insurance/risk-management behavior.

TABLE 2  
PRIOR STUDIES MEASURING SHORT-TERM AND LONG-TERM FINANCIAL MANAGEMENT BEHAVIOR

Items	Henager & Cude (2016)	Henager & Cude (2019)	Wagner & Walstad (2018)	Fan (2021)	Fan & Henager (2022)
<i>Short-term Financial Management Behavior</i>					
Paid bills on time			✓	✓	✓
Spent less than income	✓	✓		✓	✓
Proper management of checking account	✓	✓	✓	✓	
Maintained emergency fund	✓	✓			✓
Used a budget		✓			
Paid credit card bills on time			✓	✓	✓
No late mortgage payment			✓		

*Long-term Financial Management Behavior*

Figured out their retirement needs	✓	✓	✓	✓	✓
Maintained a retirement account	✓	✓			✓
Had investments or securities outside of retirement accounts	✓	✓	✓	✓	✓
Set any long-term goals		✓			
Maintained emergency fund			✓	✓	
Maintained savings account			✓	✓	✓

*Note:* Cells indicate whether the item was included in the respective study's measurement instrument. This table includes only studies that explicitly operationalize Short-term Financial Management Behavior and Long-term Financial Management Behavior as distinct dimensions

Complementing behavioral economics perspectives, Hofstede (2001) identified long-term and short-term orientation as a key cultural value dimension influencing how societies approach the gratification of material, emotional, and social needs. Time orientation refers to the culturally embedded tendency toward present-focused versus future-focused behavior, which systematically shapes short-term and long-term patterns of FMB. Short-term orientation prompts instant gratification and present focus, while long-term orientation promotes persistence, planning, and thrift (Hofstede, 1980; Hofstede & Bond, 1984). Cross-national evidence shows that long-term orientation is positively associated with financial capability (Bialowolski et al., 2023). Notable cultural differences exist between India and Western nations in this regard (Hofstede Insights, 2022). India scores relatively high on long-term orientation (61), reflecting societal norms that prioritize saving, delayed gratification, and long-term planning (Hofstede, 2011). In contrast, countries like the United States score lower (26), indicating a more short-term and normative outlook. These cultural distinctions reinforce the need for a context-specific and time-oriented FMB scale for India.

Given the psychological and cultural tendencies to categorize behavior according to short-term and long-term temporal orientations, there is a compelling need to re-examine the FMB construct from a two-factor temporal perspective (Hoffmann & McNair, 2019). A comprehensive review of personal finance scales conducted by Lavigueur and Xiao (2023) found that none of the 30 scales reviewed explicitly measured the temporal dimensions of FMB, including short-term and long-term orientation. Addressing this gap, the current study aims to develop and validate a psychometrically sound two-factor FMB scale grounded in the context of

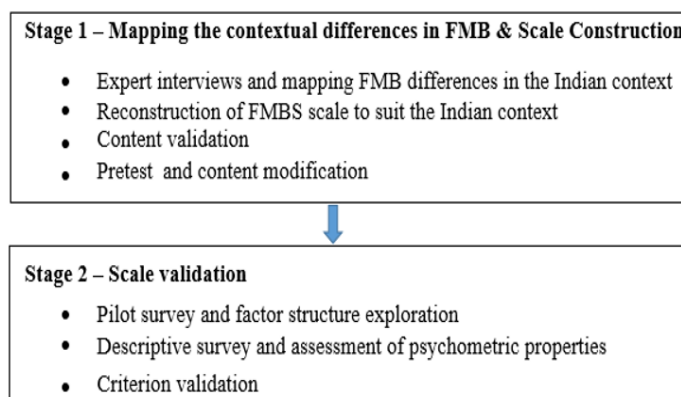
a developing economy. The proposed framework not only advances the theoretical understanding of FMB but also offers practical insights for researchers, educators, practitioners, and policymakers in designing interventions to foster financially prudent behavior.

III. METHODOLOGY

The current study employs a sequential exploratory design (Creswell, 2013). The first stage (qualitative stage) involves the development of an FMB scale that incorporates the contextual specificities of India. The second stage, which is descriptive in nature, uses two surveys to validate the proposed scale by establishing its psychometric properties. The overall study design and methodology are summarized in Figure 1.

FIGURE 1

RESEARCH DESIGN – SCALE DEVELOPMENT AND VALIDATION



*Note:* The figure illustrates the sequential process adopted for the development and validation of the scale.

A. Stage 1

The first stage of the study was qualitative in nature and employed in-depth interviews with a 14-member expert

panel. This panel included members from industry and academia with expertise relevant to FMB the Indian context. The expert panel was selected through a purposive sampling based on their expertise in financial decision-making and retirement planning in India. The panel consisted of six certified financial advisors actively engaged in financial planning and client advisory services, two finance academicians with research and teaching experience in household finance and FMB, and two chartered accountants with extensive experience in taxation, income management, and long-term financial planning. In addition, the panel included two senior working professionals and two retired professionals from the organized private sector who had independently planned and managed their post-retirement finances without statutory pension support. This combination of practitioner and academic perspectives, together with experience across different stages of financial planning and income management, ensured a comprehensive and contextually grounded evaluation of the FMB construct.

The interviews began with a clarification of the research objectives and the obtaining of informed consent for participation and audio recording. Participants were primed on FMB through a reading passage that briefly defined the construct and introduced them to the 15-item FMBS scale developed by Dew and Xiao (2011). This scale was selected because of its comprehensiveness and widespread use among Indian researchers. Following the reading, the interviewer clarified any doubts regarding FMB and the scale. Such priming helped participants become more receptive to the interview process and more thoughtful in their responses (Dawson et al., 2015). The interviews were semi-structured and guided by a discussion protocol to ensure coverage of all essential dimensions of FMB. The guide included questions related to financial planning, its influence on life satisfaction and happiness, time horizons in financial decision-making, and the importance of savings, investments, frugality, debt management, and insurance. The interviews ranged from 24 to 41 minutes, with an average duration of 34 minutes.

Based on the insights gained from the interviews, the original Financial Management Behavior Scale (FMBS) was reconstructed to incorporate culturally relevant factors. Modifications included revisions to item wording and the elimination of items with limited relevance in the Indian context. The same panel of experts then evaluated the revised scale for content validity. The Content Validity Ratio (CVR) was computed to assess the level of agreement among experts regarding the necessity of each item. After

content validation, the final eight-item instrument was pre-tested with fifteen respondents who met the sampling criteria to ensure clarity and make necessary modifications. This process ensured communicative validation (Kvale, 1994) and minimized potential confusion and response errors in the subsequent online survey. The scale used a five-point Likert scale in line with the original FMBS scale of Dew and Xiao (2011). The use of a Likert scale, rather than a dichotomous scale (as used by Fan & Henager, 2022), allowed for a broader range of analytical techniques for scale validation. A detailed report of the first stage is provided in the online annexure.

### B. Stage 2

Stage 2 adopted a quantitative approach involving two online self-administered surveys: a pilot survey and a main descriptive survey. While the pilot study was used to explore the factor structure, the descriptive survey was used for external and criterion validation. Purposive sampling using a maximum-variation strategy was employed to ensure that the scale was tested across diverse socio-demographic profiles relevant to FMB. Purposive sampling involves the deliberate selection of information-rich cases that are particularly relevant to the research objective (Patton, 2015). Maximum-variation sampling seeks heterogeneity in experiences and response patterns rather than statistical representativeness (Palinkas et al., 2015). Eligibility was restricted to individuals with an independent source of income (business, salaried employment, or pension) for at least two years and full-time engagement in the organized sector, thereby ensuring stable income flows necessary for a meaningful assessment of FMB (Xiao & Kumar, 2023). Given this eligibility criterion, all respondents were graduates or above (minimum 15 years of formal education); educational attainment was therefore treated as an implicit sample restriction rather than as a measured variable. Participants were drawn from diverse demographic groups, including different genders, income levels, age cohorts, and work sectors. The final sample represented a pan-India population, with respondents drawn from cities across North, South, East, and West India. Survey links were distributed via email in a staggered manner, with reminders sent at the end of the first, second, and fourth weeks.

A total of 1,268 participants were contacted, including 378 for the pilot survey and 890 for the main survey. Both survey instruments were programmed to accept only complete responses, thereby minimizing the possibility of nonresponse bias. Informed consent was obtained after explaining the academic purpose of the

study, the voluntary nature of participation, and assurances regarding confidentiality and anonymity. The pilot survey consisted of eight FMB items along with demographic questions, whereas the main survey additionally included five financial well-being items to facilitate criterion validation. Both surveys exceeded

standard sample-size recommendations, with the pilot sample being approximately three times and the descriptive sample approximately six times the typical minimum requirement. A demographic comparison of the two samples is presented in Table 3.

TABLE 3  
DEMOGRAPHIC PROFILE OF RESPONDENTS

Variable	Category	Pilot Survey (n = 250)		Final Survey (n = 566)	
		N	%	N	%
<b>Total respondents approached</b>		378		890	
<b>Responses included</b>		250		566	
<b>Response rate</b>		66%		64%	
<b>Gender</b>	Female	118	47.0	255	45.1
	Male	132	53.0	311	54.9
<b>Marital Status</b>	Married	218	87.0	446	78.8
	Single	32	13.0	120	21.2
<b>Age (years)</b>	< 35	116	47.0	85	15.0
	36–45	68	27.0	204	36.0
	46–55	23	9.0	183	32.3
	> 55	43	17.0	94	16.6
<b>Income ('000 ₹/month)</b>	< 40	72	29.0	106	18.7
	40–80	74	30.0	138	24.4
	> 80	104	41.0	322	56.9
<b>Employment Sector</b>	Services	98	39.0	206	36.4
	Engineering	52	21.0	167	29.5
	IT & ITES	40	16.0	113	20.0
	Others	60	24.0	80	14.1
<b>Region</b>	South	—	—	170	30.0
	North	—	—	181	32.0
	West	—	—	136	24.0
	East	—	—	79	14.0

Note: Eligibility criteria required full-time engagement in the organized sector with an independent income source (business, salaried employment, or pension) for a minimum of two years. Respondents were included only if they confirmed personal involvement in household money management decisions and independent use of their income (screening questions A6 and A7). Region was not measured in the pilot survey (—). All respondents were graduates or above (minimum 15 years of formal education); educational attainment was treated as an implicit sample restriction given the organized-sector eligibility criteria rather than as a measured variable. IT = Information Technology; ITES = Information Technology Enabled Services.

#### IV. ANALYSIS AND RESULTS

##### A. Stage 1 – Scale Construction

The first stage of analysis involved the qualitative evaluation and refinement of the initial FMBS scale

through in-depth interviews and content validation. Overall, the panel felt that the instrument covered all the essential aspects of FMB. However, participants felt that the instrument could be modified and shortened to better suit the current Indian context. “The scale has

*many items which look more apt for a Western context and may not apply to Indians*”, said a retired manager of a public sector bank. For instance, since credit card penetration remains relatively low in India, the two items related to credit-card usage were considered less relevant to a large proportion of the population, a concern also supported by reports from the Reserve Bank of India (RBI, 2022). Some experts also opined that the growth of financial technology and the introduction of mobile payment systems would further reduce credit card usage. *“Credit card usage in India has never been very high and would further reduce considering the introduction of new payment solutions enabled by fintech,”* observed a thirty-four-year-old marketing professional.

Another suggestion, especially from the financial planners in the panel, concerned the insurance domain. They believed that insurance in India was primarily used as a savings instrument (e.g., endowment plans) rather than purely for risk coverage. *“Though equity linked investments are growing, endowment plans, especially from LIC, still are the most preferred savings and mostly called insurance. It would be better to clarify the objective of insurance – whether for savings or plain risk coverage, like in automotive insurance,”* explained a financial planner with more than twenty years of experience. However, considering specific legal insurance requirements (for example, in the case of automobile ownership) and the increasing penetration of insurance products (such as health, property, and crop insurance), some panelists recommended including a combined item for risk insurance. The insurance dimension/factor originally contained three separate items relating to health, property, and life insurance. The panel suggested combining these items and wording them as ‘maintained or purchased adequate insurance policies,’ while also clarifying the objective of risk coverage. Based on the findings from the in-depth interviews, 11 items were generated to measure the FMB construct in the Indian context.

This instrument was further validated by the same expert panel using the content validity ratio (CVR) method (Ayre & Scally, 2014) to ensure that the instrument adequately measured the intended construct and covered all relevant dimensions of FMB (DeVellis, 2017). Based on the CVR results, three items (Items 9, 10, and 11) were removed from the item pool (Table 4), resulting in a final scale comprising eight items (Table 5). A post-validation discussion with three panel members provided insights into why these items were excluded from the final instrument. It was observed that loan repayments in India are generally made on a pre-

agreed equated monthly instalment (EMI) basis, leaving little scope for underpayment and limited incentives for prepayment. Consequently, the item ‘Made only minimum payments on a loan’ was considered less relevant in the Indian context. *“You either pay or do not pay your loan, people generally default only when they cannot fully repay the loan,”* commented a financial planner with more than ten years of professional experience. Another concern raised by the panel was the impracticality of tracking all monthly expenses on a continuous basis. A common financial-planning practice in India involves first repaying loans and contributing toward savings plans, functioning as a form of commitment strategy to strengthen financial self-control (Thaler, 2016). Household expenses are then managed within the remaining available funds. Consequently, the items ‘Stayed within your budget or spending plan’ and ‘Kept track of monthly expenses’ were not favored by the subject-matter expert panel for inclusion in the proposed FMB scale. *“Keeping track of monthly expenses is almost impossible for anyone. What is generally done is to pre-commit a certain amount for each expense and then stay within that. Such a strategy is more effective when every family member has different expenses,”* explained a 52-year-old bank manager.

After content validation, the final instrument of 8 items was pre-tested to ensure comprehension among the respondents and to facilitate necessary modifications for improvement. This process ensured communicative validation (Kvale, 1994), as participants expressed their views regarding the instrument, which were subsequently incorporated into the scale before the survey stages. The pre-test also helped minimize respondent confusion and potential response errors during the online survey, where providing individual clarification would not have been feasible. The pre-test involved fifteen respondents who met the sampling criteria and were subsequently excluded from the later survey stages. Although the instrument was generally well comprehended, respondents suggested several modifications to the wording of specific items, which were incorporated following the pre-test. In total, four revisions were made to the item wording based on participant suggestions. The first suggestion involved clarifying the purpose of insurance in Question 8 as risk coverage for health, vehicle, or property, since insurance in India is widely perceived and used as a savings instrument, a concern also highlighted by one of the expert panel members. The second suggestion involved adding Equated Monthly Instalments (EMIs) to Question 1, as EMIs represent a recurring financial commitment similar to utility bills and other monthly expenses (e.g., electricity, telephone, and apartment

maintenance charges). The third suggestion focused on clarifying retirement plans in Question 6 by including examples such as provident fund, public provident fund, and national pension schemes, since many respondents may not be fully aware of the social-

security measures supporting post-retirement income. The final suggestion involved including insurance-based endowment plans in Question 7 to reflect their popularity as a savings instrument in the Indian context.

TABLE 4  
CONTENT VALIDITY RATIO FOR INITIAL ITEM POOL

S.No	Item	Expert Response			CVR
		Essential	Useful but Not Essential	Not Necessary	
1	Paid all your bills on time	11	2	1	0.571
2	Compared prices when you buy a product or service	11	0	3	0.571
3	Saved money from every paycheck	13	1	0	0.857
4	Began or maintained an emergency savings fund	11	1	2	0.571
5	Saved for a long-term goal such as a car, house, education, etc.	12	0	3	0.714
6	Contributed money to a retirement account	14	0	0	1.000
7	Bought bonds, stocks, or mutual funds	12	0	3	0.714
8	Maintained or purchased adequate insurance policy	11	2	1	0.571
9	<i>Stayed within your budget or spending plan</i>	4	8	2	-0.429
10	<i>Made only minimum payments on a loan</i>	4	3	7	-0.429
11	<i>Kept track of monthly expenses</i>	6	2	6	-0.143

Note: CVR = Content Validity Ratio [ $CVR = (n_e - N/2) / (N/2)$ ;  $n_e$  = number of experts rating item as ‘Essential’;  $N$  = total experts] (Lawshe, 1975). Panel of 14 subject matter experts in personal finance and scale development; items rated on a three-point scale: Essential / Useful but Not Essential / Not Necessary. Critical CVR = 0.51 for  $N = 14$  (Ayre & Scally, 2014). Items 9, 10, and 11 (italicized) fell below this threshold and were deleted. All retained items  $\geq 0.51$ . Scale-level CVI = 0.696.

TABLE 5  
FINAL EIGHT-ITEM INSTRUMENT FOR VALIDATION

Please indicate how often you have engaged in the following activities in the past six months:  
(1 = never; 2 = seldom; 3 = sometimes; 4 = often; 5 = always)

No.	Item	1	2	3	4	5
1	Paid all your bills and equated monthly instalments (EMIs) on time					
2	Compared prices when you buy a product or service					
3	Saved money from every salary					
4	Began or maintained an emergency savings fund					
5	Saved for a long-term goal such as a car, education, home, etc.					
6	Contributed money to a retirement savings like provident fund (PF), public provident fund (PPF), or national pension scheme (NPS)					
7	Bought long-term assets like bonds, stocks, insurance (endowment plans), or mutual funds					
8	Maintained or purchased adequate insurance policy for health, vehicle, or property					

Note: Eight items retained following content validity assessment (see Table 4). Item wording was refined based on pre-test feedback to improve contextual relevance and clarity for Indian respondents.

EMI = Equated Monthly Instalment; PF = Provident Fund; PPF = Public Provident Fund; NPS = National Pension Scheme. The qualitative phase contributed significantly to contextualizing the instrument content, particularly because financial practices and institutional realities in India differ substantially from those in developed economies (Paluri & Mehra, 2016; Rai, 2022; RBI, 2022). The panel's recommendation to remove credit-card-related items, include insurance within the long-term savings domain, and combine the separate risk-insurance items from the Dew and Xiao scale into a single item proved valuable during the scale-validation process. Another important suggestion concerned the impracticality of continuously tracking expenses, which resulted in the removal of two expense-planning items from the Dew and Xiao (2011) scale. This insight also supports prior findings on self-control in economic behavior, particularly the notion of individuals protecting themselves against future self-control failures through pre-commitment strategies (Thaler & Shefrin, 1981).

#### B. Stage 2 – Scale Validation

##### Pilot survey and factor exploration

Exploratory Factor Analysis (EFA) was conducted on a sample of 250 responses. Prior to conducting the EFA,

internal consistency was assessed using inter-item correlations, which ranged from 0.143 to 0.580, with an average of 0.323. All correlations remained below the recommended upper limit of 0.70, while item-total correlations exceeded the acceptable threshold of 0.30 (Bearden et al., 2011), thereby indicating adequate internal consistency. The scale demonstrated acceptable homogeneity, with a Cronbach's alpha value of 0.779. Since the deletion of any item reduced the overall alpha value, all items were retained for subsequent analysis. Subsequently, EFA was performed using Principal Component Analysis (PCA) with Varimax rotation to examine the underlying factor structure. This method was chosen based on prior studies that treated FMB as a formative construct (Dew & Xiao, 2011; Fan & Henager, 2022). The Kaiser-Meyer-Olkin (KMO) measure of sampling adequacy was 0.800, and Bartlett's test of sphericity was statistically significant ( $\chi^2 = 52.740$ ,  $df = 28$ ,  $p < 0.01$ ), confirming the suitability of the data for factor analysis (Kline, 2014). The analysis extracted two factors with eigenvalues greater than 1, collectively explaining 56.29% of the total variance. Based on the item loadings, the two factors were labelled *Short-Term Financial Management Behavior* (STFMB) and *Long-Term Financial Management Behavior* (LTFMB) (see Tables 6 and 7).

TABLE 6  
FACTOR EXTRACTION — EXPLORATORY FACTOR ANALYSIS

Component	Initial Solution			Rotated Solution		
	Eigenvalue	Variance (%)	Cumulative (%)	Eigenvalue	Variance (%)	Cumulative (%)
1	3.299	41.238	41.238	2.330	29.130	29.130
2	1.204	15.052	56.289	2.173	27.159	56.289

Note: Two factors extracted using Principal Component Analysis with Varimax rotation. Extraction criterion: eigenvalue > 1. Two factors collectively explain 56.29% of total variance. KMO = 0.800; Bartlett's test of sphericity:  $\chi^2 = 52.740$ ,  $df = 28$ ,  $p < .01$ .

TABLE 7  
FACTOR LOADINGS AND COMMUNALITIES

Item	Factor 1	Factor 2	Communality
Paid all your bills and equated monthly instalments (EMIs) on time	<b>.606</b>	.103	.378
Compared prices when you buy a product or service	<b>.768</b>	.109	.601
Saved money from every salary	<b>.812</b>	.184	.693
Began or maintained an emergency savings fund	<b>.662</b>	.282	.518
Saved for a long-term goal such as a car, education, home, etc.	.328	<b>.615</b>	.486
Contributed money to a retirement savings like provident fund (PF), public provident fund (PPF), or national pension scheme (NPS)	.359	<b>.713</b>	.637
Bought long-term assets like bonds, stocks, insurance (endowment plans) or mutual funds	.153	<b>.718</b>	.539
Maintained or purchased adequate insurance policy for health, vehicle, or property	-.019	<b>.798</b>	.638
<b>Factor label</b>	<b>STFMB</b>	<b>LTFMB</b>	
<b>Cronbach's Alpha (<math>\alpha</math>)</b>	0.725	0.724	

Note: Factor loadings obtained via PCA with Varimax rotation. Primary loadings ( $\geq .50$ ) are shown in bold. Communality reflects the proportion of item variance explained by the two factors. STFMB = Short-Term Financial Management Behavior; LTFMB = Long-Term Financial Management Behavior; EMI = Equated Monthly Instalment; PF = Provident Fund; PPF = Public Provident Fund; NPS = National Pension Scheme. Cronbach's Alpha ( $\alpha$ ) = measure of internal consistency reliability;  $\alpha \geq .70$  indicates acceptable reliability (Nunnally, 1978)

Each factor had four items with strong factor loadings and no significant cross-loadings, as the differences in item loadings across factors were all below  $\pm 0.200$ . All items loaded above 0.50 on their respective factors, indicating practical significance (Hair et al., 2010). Communality values ranged from 0.378 to 0.693, exceeding the recommended threshold of 0.32 for a sample size of 250 (Crocker & Algina, 1986). Based on the satisfactory factor loadings, acceptable communalities, and absence of problematic cross-loadings, all eight items were retained in the final scale (Henseler et al., 2015) (see Table 7). This factor structure empirically supports the conceptual distinction between short-term and long-term FMB noted in prior studies (Wagner & Walstad, 2018; Henager & Cude, 2019; Fan, 2021; Fan & Henager, 2022). More specifically, the extracted factors align with the behavioral categorization

framework proposed by Xiao and Kumar (2023), wherein STFMB emphasize immediate financial practices (e.g., paying bills on time, comparing prices, and maintaining emergency savings, as reflected in Factor 1), while LTFMB focus on future-oriented actions (e.g., saving for long-term goals, contributing to retirement funds, investing in assets, and purchasing insurance, as reflected in Factor 2).

### C. External Validation Using CFA

Given the cross-sectional design of the study and its reliance on self-reported data, the potential for common method bias (CMB) was assessed using Harman's single-factor test. The unrotated factor solution revealed that a single factor accounted for 41.54% of the total variance,

which was below the recommended threshold of 50%, suggesting that CMB was not a serious concern in the study (Podsakoff et al., 2003). To assess external validity, the scale was administered to a separate sample of 566 respondents through a descriptive survey. This sample size exceeded the minimum recommended sample size of 89 for a model comprising three latent variables and thirteen observed items, assuming a large effect size, statistical power of 0.99, and  $\alpha = 0.01$  (Soper, 2021). The survey measured three constructs: STFMB, LTFMB and

financial well-being. Confirmatory Factor Analysis (CFA) was conducted to validate the factor structure identified in the exploratory phase. As shown in Table 8, the two-factor solution explained 55.42% of the total variance, thereby supporting the dimensionality of the construct (Whitely, 1983). Structural Equation Modeling (SEM) was subsequently employed to assess the convergent, discriminant, and criterion validity of the constructs (Table 9).

TABLE 8  
CONFIRMATORY FACTOR ANALYSIS — EXTERNAL VALIDATION OF THE TWO-FACTOR FMB SCALE

Component	Initial Solution			Rotated Solution		
	Eigenvalue	Variance (%)	Cumulative (%)	Eigenvalue	Variance (%)	Cumulative (%)
1	3.324	41.544	41.544	2.236	27.964	27.964
2	1.110	13.874	55.418	2.198	27.473	55.418

Note: Two factors extracted via Principal Component Analysis with Varimax rotation using CFA validation sample. Eigenvalue = measure of variance explained by each factor; factors with eigenvalue > 1 were retained. Initial Solution = unrotated factor solution; Rotated Solution = factor solution after Varimax rotation, redistributing variance for interpretability. Cumulative (%) = total variance explained by all retained factors. Two factors collectively explain 55.42% of total variance.

#### *Reliability, Convergent and Discriminant Validity*

The psychometric properties of the scale are presented in Table 9. All items exhibited statistically significant standardized regression weights above 0.50, indicating strong internal consistency and the absence of significant cross-loadings (Hair et al., 2010). The overall scale demonstrated satisfactory internal consistency, with a Cronbach's alpha value of 0.747. The subscale reliabilities were  $\alpha = 0.656$  for STFMB and  $\alpha = 0.736$  for LTFMB, both of which are considered acceptable given that each construct was measured using only four items (Bagozzi & Yi, 1989). The scale satisfied all three criteria for convergent validity: composite reliability (CR) exceeded 0.70, CR values were greater than the

corresponding average variance extracted (AVE) values, and AVE values exceeded 0.50 (Fornell & Larcker, 1981; Hair et al., 2010). Discriminant validity was also established. Specifically, the square root of the AVE for both STFMB and LTFMB exceeded the inter-construct correlation between the two factors, and the Heterotrait–Monotrait (HTMT) ratio remained below the recommended threshold of 0.85 (Fornell & Larcker, 1981; Henseler et al., 2015) (Table 9). These findings confirm that FMB is best represented as a two-factor construct in the Indian context, with each factor being reliably measured through four items. In addition, all model-fit indices were found to be within acceptable ranges (Table 10).

TABLE 9  
SCALE PSYCHOMETRIC PROPERTIES

<b>Panel A: Convergent Validity</b>						
Item		Construct	Estimate	$\alpha$	CR	AVE
FWB1	←	FWB	0.754	0.762	0.840	0.514
FWB2	←	FWB	0.702			
FWB3	←	FWB	0.757			
FWB4	←	FWB	0.743			
FWB5	←	FWB	0.626			
FMB1	←	STFMB	0.814	0.656	0.796	0.496
FMB2	←	STFMB	0.742			
FMB3	←	STFMB	0.742			
FMB4	←	STFMB	0.509			
FMB5	←	LTFMB	0.638	0.736	0.835	0.560
FMB6	←	LTFMB	0.775			
FMB7	←	LTFMB	0.769			
FMB8	←	LTFMB	0.824			

<b>Panel B: Discriminant Validity (Fornell–Larcker Criterion and HTMT)</b>			
Construct	STFMB	LTFMB	FWB
STFMB	<b>0.705</b>		
LTFMB	0.528 (0.748)	<b>0.748</b>	
FWB	0.280 (0.408)	0.302 (0.398)	<b>0.717</b>

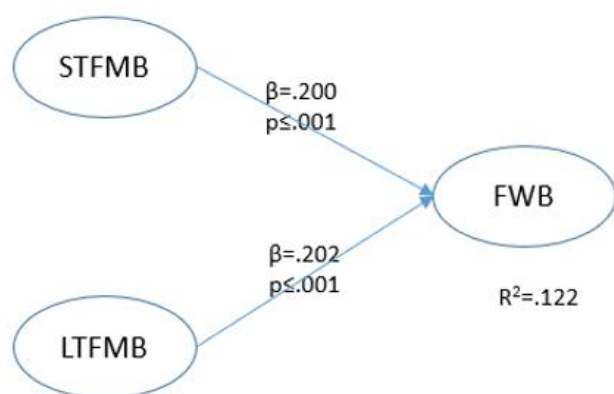
Note: Estimates are standardized factor loadings from CFA.  $\alpha$  = Cronbach's Alpha, a measure of internal consistency reliability;  $\alpha \geq .70$  is acceptable (Nunnally, 1978);  $\alpha \geq .60$  is acceptable for short sub-scales (Bagozzi & Yi, 1988). CR = Composite Reliability; CR > .70 indicates adequate reliability (Hair et al., 2010). AVE = Average Variance Extracted; AVE > .50 indicates convergent validity (Fornell & Larcker, 1981).  $\alpha$ , CR, and AVE are reported for each construct. Panel B: Diagonal bold values = square root of AVE (discriminant validity criterion:  $\sqrt{AVE} >$  inter-construct correlation). Off-diagonal values = inter-construct correlations; values in parentheses = HTMT ratios. HTMT < 0.85 confirms discriminant validity (Henseler et al., 2015). FMB = Financial Management Behavior; STFMB = Short-Term FMB; LTFMB = Long-Term FMB; FWB = Financial Well-Being.

TABLE 10  
MODEL FIT AND QUALITY INDICES

Model Fit / Quality Index	Value (Threshold)
Average path coefficient (APC)	0.201 ( $p < .001$ )
Average R-squared (ARS)	0.122 ( $p < .001$ )
Average adjusted R-squared (AARS)	0.119 ( $p < .001$ )
Average block VIF (AVIF)	1.337 (acceptable if $\leq 5$ )
Average full collinearity VIF (AFVIF)	1.326 (acceptable if $\leq 5$ )
Tenenhaus GoF (GoF)	0.252 (medium $\geq 0.25$ )

Note: Model estimated using PLS-SEM. AVIF = Average Block Variance Inflation Factor; AFVIF = Average Full Collinearity VIF; GoF = Goodness-of-Fit (Tenenhaus et al., 2005).  $VIF \leq 5$  indicates acceptable collinearity.  $GoF \geq 0.25$  indicates medium model fit. p-values indicate significance of the average path/R-squared values.

FIGURE 2  
CRITERION VALIDITY: PLS-SEM PATH MODEL



Note:  $\beta$  = standardized path coefficient estimated via PLS-SEM. Statistical significance: \*  $p < .05$ . \*\*  $p < .01$ . \*\*\*  $p < .001$ .  $R^2$  = proportion of variance in Financial Well-Being explained jointly by STFMB and LTFMB ( $R^2 = 0.122$ ).

#### D. Criterion Validity

Criterion validity assesses whether a scale predicts theoretically related outcomes (DeVellis, 2017). To establish criterion validity, the relationship between FMB and financial well-being was examined (Figure 2). Consistent with prior studies (Fan & Henager, 2022; Mathew & Kumar, 2022), both STFMB and LTFMB showed positive and statistically significant associations with financial well-being ( $\beta = 0.200$  and  $\beta = 0.202$ , respectively;  $p < 0.01$ ) (Table 11). Together, these constructs explained 12.2% of the variance in financial

well-being ( $R^2 = 0.122$ ,  $p < 0.01$ ), representing a moderate effect size (Chin, 1998), particularly given the relatively limited number of predictors included in the model. Previous studies incorporating multiple demographic and psychographic variables have reported  $R^2$  values ranging from 0.175 to 0.40 (Woodyard & Robb, 2016; Mathew et al., 2024), supporting the adequacy of the current model. Partial Least Squares Structural Equation Modelling (PLS-SEM) was employed for criterion validation, as it is appropriate for models with formative constructs (Hair et al., 2021).

TABLE 11  
CRITERION VALIDITY — PATH COEFFICIENTS  
(PLS-SEM)

Relationship	$\beta$ (Standardized)
STFMB $\rightarrow$ FWB	0.200***
LTFMB $\rightarrow$ FWB	0.202***

Note:  $\beta$  = standardized path coefficient estimated via PLS-SEM. STFMB = Short-Term Financial Management Behavior; LTFMB = Long-Term Financial Management Behavior; FWB = Financial Well-Being.  $R^2 = 0.122$ , indicating that STFMB and LTFMB together explain 12.2% of variance in FWB. \*\*\*  $p < .001$ .

#### E. Between-Group Analysis

To assess the generalizability of the FMB scale across demographic subgroups, a between-group factor analysis was conducted across six variables: age, gender, marital status, profession, income, and region. The results consistently supported the two-factor structure comprising STFMB and LTFMB across all groups,

thereby affirming the structural invariance and generalizability of the scale (Table 12).

TABLE 12  
INTER-GROUP ANALYSIS — FMB FACTOR STRUCTURE ACROSS DEMOGRAPHIC SUBGROUPS

Demographic	Group	Factor 1 Eigenvalue	Factor 2 Eigenvalue	Cumulative Variance (%)
<i>Gender</i>				
	<b>Male</b>	2.238	2.232	57.13
	<b>Female</b>	2.267	2.059	54.08
<i>Age (years)</i>				
	<b>&lt; 35</b>	3.350	1.894	65.54
	<b>35–45</b>	2.327	1.864	52.39
	<b>46–55</b>	2.709	2.097	60.07
	<b>&gt; 55</b>	2.763	1.631	54.92
<i>Marital Status</i>				
	<b>Married</b>	2.323	2.179	56.27
	<b>Single</b>	2.424	1.837	53.28
<i>Employment Sector</i>				
	<b>Services</b>	2.169	2.124	53.66
	<b>Engineering &amp; Allied</b>	2.245	1.814	50.74
	<b>Information Technology</b>	3.213	1.842	63.19
	<b>Others</b>	2.903	2.439	66.78
<i>Income ('000 ₹/month)</i>				
	<b>&lt; 40</b>	2.969	1.773	59.28
	<b>40–80</b>	2.592	1.709	53.77
	<b>&gt; 80</b>	2.232	2.094	54.08
<i>Region</i>				
	<b>South</b>	2.376	2.113	56.11
	<b>North</b>	2.262	2.102	54.54
	<b>West</b>	2.763	1.918	58.51
	<b>East</b>	2.655	1.899	56.93

Note: Factor structure examined separately for each demographic subgroup using PCA with Varimax rotation. Factor 1 = Short-Term FMB; Factor 2 = Long-Term FMB. Eigenvalue reflects variance explained by each factor within the subgroup sample. Cumulative variance (%) = total variance explained by the two-factor solution. A consistent two-factor structure across all subgroups supports the structural invariance and generalizability of the FMB scale.

Further, multi-group analysis using the descriptive survey data (N = 566) was conducted to examine the criterion validity of the scale across different demographic subgroups. Overall, STFMB and LTFMB demonstrated comparable predictive strength for financial well-being across the various groups (Table 13), and no significant differences emerged across employment, age, income, or regional subgroups.

However, LTFMB emerged as a stronger predictor of FWB among women and married individuals, whereas STFMB demonstrated greater predictive strength among lower-income respondents (i.e., < ₹40,000 per month) compared to higher-income groups. These findings further support the criterion validity and applicability of the two-factor FMB model across diverse demographic segments.

TABLE 13  
MULTI-GROUP ANALYSIS FOR CRITERION VALIDITY

Demographic	Comparison	Difference in Path Coefficient ( $\Delta\beta$ )	
		STFMB	LTFMB
<b>Gender</b>	Male vs. Female	0.076	0.133*
<b>Marital Status</b>	Married vs. Unmarried	0.064	0.283***
<b>Employment Sector</b>	Services vs. Engineering	0.117	0.025
	Services vs. IT	0.063	0.104
	Services vs. Others	0.098	0.093
	Engineering vs. IT	0.054	0.079
	Engineering vs. Others	0.019	0.118
	IT vs. Others	0.035	0.197
<b>Age (years)</b>	< 35 vs. 35–45	0.087	0.086
	< 35 vs. 46–55	0.057	0.033
	< 35 vs. > 55	0.098	0.019
	35–45 vs. 46–55	0.030	0.053
	35–45 vs. > 55	0.010	0.067
	46–55 vs. > 55	0.040	0.014
<b>Income ('000 ₹/month)</b>	< 40 vs. 40–80	0.323**	0.062
	< 40 vs. > 80	0.272**	0.045
	40–80 vs. > 80	0.051	0.017
<b>Region</b>	North vs. South	0.149	0.020
	North vs. West	0.099	0.140
	North vs. East	0.092	0.211
	South vs. West	0.050	0.124
	South vs. East	0.056	0.231*
	West vs. East	0.006	0.107

Note:  $\Delta\beta$  = absolute difference in standardized PLS-SEM path coefficients between subgroups. STFMB = Short-Term Financial Management Behavior; LTFMB = Long-Term Financial Management Behavior. A significant  $\Delta\beta$  indicates that the predictive relationship between FMB and financial well-being differs across groups. \*  $p < .05$ . \*\*  $p < .01$ . \*\*\*  $p < .001$ .

## V. DISCUSSION

FMB is critical to human happiness and well-being and continues to attract significant scholarly interest (Huang et al., 2022). However, the conceptualization of FMB has varied substantially across studies, with prior research proposing between three and six dimensions of the construct (Fitzsimmons et al., 1993; Dew & Xiao, 2011). Drawing on psychological and cultural frameworks (Thaler & Shefrin, 1981; Hofstede & Bond, 1984), this study adapts and validates Dew and Xiao's (2011) FMBS scale for the Indian context, and reconceptualizes FMB into two time-oriented factors: STFMB and LTFMB. STFMB includes behaviors such as debt repayment, bill

payment, emergency saving, and comparison shopping, whereas LTFMB involves long-term goal setting, retirement planning, and risk management. This structure is consistent with recent studies that adopt temporal distinctions in FMB (Henager & Cude, 2019; Fan, 2021), but it differs from prior Indian studies that conceptualized FMB as a multidimensional construct comprising between one and six subconstructs (Bapat, 2019; Goyal et al., 2022). The proposed scale incorporates contextual differences and improves understanding of FMB from a developing country perspective. This contextual dimension was largely overlooked in earlier studies that

relied on Western FMB scales or their non-validated adaptations (Bapat, 2019; Goyal et al., 2022).

The two subconstructs, STFMB and LTFMB, exhibited satisfactory convergent and divergent/discriminant validity, thereby establishing their distinctiveness as independent constructs. The constructs also demonstrated criterion validity through their ability to predict financial well-being. Together, STFMB and LTFMB explained approximately 12% of the variance in financial well-being. This result is in accordance with an earlier Indian study by Sehrawat et al. (2021), where FMB positively correlated with financial well-being. However, the current study result contradicts the earlier research of Fan and Henager (2022) in the U.S. context, which returned a negative relationship between LTFMB and financial well-being. Such differences may be attributable to socio-cultural variations between the two countries. Indian society is relatively more long-term oriented, thereby making LTFMB stronger predictors of well-being (Hofstede Insights, 2022). Another important distinction lies in the nature of social-security systems. While social-security protections are comparatively stronger and more institutionalized in the United States, such guarantees are less extensive in India, thereby increasing the importance of long-term financial planning as a predictor of financial well-being and life satisfaction.

The scale also demonstrated generalizability across key demographic groups. The two-factor structure remained consistent across gender, age, marital status, profession, and income categories. Subgroup analysis indicated that LTFMB exhibited stronger predictive power for women and married individuals, which is consistent with prior findings suggesting that these groups tend to exhibit more responsible FMB (Long & Tue, 2024; Lee & Kelly, 2023). In contrast, STFMB emerged as a stronger predictor of well-being among lower-income individuals, likely reflecting the prioritization of immediate financial needs over long-term planning. Overall, the study offers a robust and culturally grounded framework for understanding and measuring FMB, with important implications for financial education, consumer policy, and behavioral interventions in emerging economies.

#### *A. Implications*

The proposed two-factor FMB model offers key theoretical, policy, and managerial implications. From a theoretical perspective, the simplified and time-oriented structure enhances conceptual clarity and supports future research in consumer finance, particularly for early-career researchers and scholars working in emerging economies. Grounded in psychological and cultural foundations, the model facilitates replication across

different contexts while also allowing for contextual adaptations where necessary. For example, additional items related to credit-card behavior may be incorporated in economies characterized by widespread credit-card usage, whereas retirement-related items may require modification to reflect country-specific pension systems, such as Brazil's General Social Security Regime (RGPS) or the Special/Own Social Security Regime (RPPS). Furthermore, the simplified structure of the instrument facilitates cross-country comparisons and intra-group analyses within emerging economies.

From a policy perspective, the simplified scale may be used by national agencies such as the National Sample Survey Office (NSSO) to track FMB and design targeted policy interventions. The scale also supports the integration of financial literacy into national educational curricula, thereby addressing widespread deficits in financial understanding (Jain, 2021). In addition, the instrument can inform the development of behavioral intervention tools such as educational games, awareness campaigns, and training modules aimed at promoting prudent financial behaviors (Bitrián et al., 2021). For instance, the STFMB subscale may be used to design interactive games or social media campaigns to address bill payment and emergency savings, whereas low scores on the LTFMB subscale may be used to trigger behavioral nudges encouraging participation in retirement-planning programs or investment seminars. Researchers and practitioners may also utilize item-level responses to customize the complexity and content of educational interventions, thereby improving consumer engagement, financial awareness, and program effectiveness (Bitrián et al., 2021; Wagner & Walstad, 2018).

This study has managerial implications for consumers and marketers of the financial services industry. For consumers, it fosters financial awareness and empowers informed decision-making across short- and long-term needs. In particular, by taking the eight-item scale, consumers can assess whether their behavioral gaps are related to short-term financial management (e.g., not paying bills on time, not having sufficient emergency savings) or long-term financial planning (e.g., not having retirement contributions, insurance coverage). This diagnostic capability can encourage consumers to seek appropriate financial advice or educational materials, allowing them to make more goal-congruent financial decisions (Xiao & Kumar, 2023; Lavigueur & Xiao, 2023). For marketers, it improves customer targeting and reduces dropouts from long-term instruments such as endowment and unit-linked insurance plans (Shetty, 2018). The scale can also be used by financial planning professionals and educators. For financial planners and

counsellors, the two-factor structure offers a diagnostic tool: client responses can be used to quickly identify whether the behavioral deficit is short-term or long-term focused, allowing practitioners to prioritise advice and develop action plans tailored to the individual (Grable & Joo, 2001; O'Neill et al., 2005). For teachers, the scale can be used as a diagnostic tool and an outcome measure in personal finance classes, allowing the measurement of change in behavior resulting from instruction (Wagner & Walstad, 2018; Henager & Cude, 2019). Teachers can interpret STFMB and LTFMB subscale scores to discern which areas of behavior are most deficient among students and adjust the curriculum to address these areas. The scale's compact nature (eight items, two subscales) is well suited for classroom use with minimal disruption to teaching. These uses demonstrate the scale's value as an evidence-based, multifunctional tool for professional practice and financial education delivery, beyond its use in research.

## VI. CONCLUSION, LIMITATIONS, AND FUTURE RESEARCH

As FMB continues to gain prominence in both academic discourse and societal relevance, this study makes three key contributions to this field. First, it develops a context-specific scale for measuring FMB that is specifically tailored to India and similar emerging economies, which represents over 80% of the global population and constitute increasingly important markets for financial products and services. The adaptability of the scale across different socio-economic contexts further enhances its relevance and utility for comparative research. Second, the study introduces a simplified two-factor model of FMB that distinguishes between STFMB and LTFMB, with each dimension measured using four items. This simplified structure improves conceptual clarity and theoretical precision while also offering practical applicability. Policymakers, educators, and financial institutions may use the scale to design targeted interventions, improve financial literacy, and promote informed decision-making. For example, policy makers can incorporate the scale into national financial literacy surveys to track population-level behavioral patterns and target under-represented segments in need of outreach. Teachers can use it as a pre- and post-test tool to determine whether financial education interventions result in changes in STFMB or LTFMB, thus informing evidence-based curriculum development. Banks can administer the scale at account opening to classify customers based on their behavioral profile and offer tailored financial products and communications to each segment based on their behavioral strengths and weaknesses (Lučić et al., 2023; Bialowolski et al., 2023). Third, the scale demonstrates strong psychometric

properties, including internal consistency, validity, reliability, and generalizability. Its ability to predict financial well-being adds significant value, positioning it as a powerful tool for academics aiming to develop and refine theoretical frameworks in consumer finance. Institutions and researchers can adopt this scale to evaluate the effectiveness of financial literacy programs and interventions, thereby advancing evidence-based policymaking and improving financial outcomes for individuals across socio-economic backgrounds.

Despite its strengths, the study has limitations that suggest opportunities for further research. The methodological limitation emanates from treating STFMB and LTFMB as first-order constructs, with each behavioral component (e.g., bill payment, savings, retirement planning) measured by a single item. Future studies could employ multi-item composites to capture each dimension in greater depth, necessitating a hierarchical model with second-order constructs. Another limitation is that the revised scale was not directly compared with the original instrument developed by Dew and Xiao (2011) or other established FMB measures using concurrent or incremental validity designs. Future research should undertake such comparative assessments to evaluate the relative explanatory power and predictive performance of the adapted scale. Another limitation is the use of self-reports. Responses to the FMB items may be influenced by social desirability, recall biases and acquiescence bias, which can lead to inflated scale scores and underestimations of the true associations with criterion measures (Podsakoff et al., 2003; Lavigueur & Xiao, 2023). While the Harman's single factor test did not reveal severe common method bias, self-report measures of financial behavior are not immune to these biases. To enhance validity, future studies should combine self-reported measures of FMB with objective financial information (e.g., bank statements, credit card statements) (Perry & Morris, 2005). Further, the current study did not include measures of financial knowledge or financial education. This is a significant gap, as financial knowledge is considered a core precursor of financial behavior and the lack of controls makes it difficult to determine the incremental validity of the scale beyond cognitive financial capability (Jain, 2021; Goyal et al., 2021; Long & Tue, 2024). Future research should incorporate measures of objective and subjective financial knowledge to better understand the nomological network of the FMB scale. Finally, although the scale was shown to have criterion validity through its association with financial well-being, the study did not examine its association with other criterion variables such as financial satisfaction (Joo & Grable, 2004) or more general measures of life satisfaction and subjective

well-being (Sehrawat et al., 2021; Van Raaij et al., 2023). This would provide further evidence of the scale's predictive validity and utility. We encourage future studies to explore these other criterion variables to build on the evidence for the scale's predictive and practical value.

The contextual limitation of this study has three dimensions. First, the sample includes only organized-sector employees, who comprise roughly ten percent of India's workforce. While this ensures data consistency, it limits generalizability. In addition, because the sample was drawn exclusively from the organized sector, it was relatively homogeneous in terms of educational attainment, which may further limit the applicability of the findings to less-educated or informal-sector populations. Future research should therefore extend the investigation to the unorganized sector, which accounts for the remaining 90% of India's labour force. Second, intergenerational differences in FMB were not explored. With Gen-X retiring and Gen-Z entering the workforce, evolving digital behaviors and value orientations such as prioritizing access over ownership, may significantly shape FMB patterns (Francis & Hoefel, 2018; Sanjeev et al., 2022; Xiao et al., 2015). These generational shifts warrant closer examination. Third, the scale was developed within the Indian socio-cultural context. While it may apply to similar emerging economies, further adaptation and validation are necessary before applying it to developed markets with different institutional and behavioral norms (Xiao & Kumar, 2023). To conclude, this study lays a strong foundation for advancing FMB research in emerging markets, by offering an adaptable tool for academic, policy, and practitioner use. Future studies can build upon this framework to explore broader demographic, generational, and contextual determinants of FMB.

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APPENDIX  
QUESTIONNAIRE ITEMS

**Section A: Demographic Profile**

Please put a tick mark in the appropriate option.

**A1. Gender:**

- Male       Female

**A2. Age:**

- Below 25  
 25–35  
 36–45  
 46–55  
 56–65  
 Above 65

**A3. Marital Status:**

- Single  
 Married  
 Divorced  
 Widowed  
 Other

**A4. Which sector do you work in?**

- IT & ITES  
 Banking & Insurance  
 Healthcare  
 Academics  
 Tourism & Hospitality  
 Engineering  
 Media & Entertainment  
 Others

**A5. Monthly Income (in Rupees):**

- Less than 20,000  
 20,000 – 40,000  
 40,001 – 60,000  
 60,001 – 80,000  
 80,001 – 1,00,000  
 Above 1,00,000

**A6. Are you personally involved in the money management decisions in your household?**

- Yes       No, I have no interest       No, but I plan to

**A7. Do you make independent decisions regarding the use of your income?**

- Yes       No, I have no interest       No, but I plan to

**Section B: Financial Management Behavior & Well-Being**

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**Please indicate how often you have engaged in the following activities in the past six months:**  
(1 = never; 2 = seldom; 3 = sometimes; 4 = often; 5 = always)

No.	Item	1	2	3	4	5
1	Paid all your bills and EMIs on time					
2	Compared prices when you buy a product or service					
3	Saved money from every salary					
4	Began or maintained an emergency savings fund					
5	Saved for a long-term goal such as a car, education, home, etc.					
6	Contributed money to a retirement savings like PF, PPF, NPS...					

- 7 Bought long-term assets like bonds, stocks, insurance (endowment plans), or mutual funds
  - 8 Maintained or purchased an adequate insurance policy for health, vehicle, or property.
- 

**How well does this statement describe you or your financial situation?**  
 (1 = Not at all; 2 = Very Little; 3 = Somewhat; 4 = Very Well; 5 = Completely)

No.	Item	1	2	3	4	5
1	Because of my money situation, I feel like I will never have the things I want in life.					
2	I am just getting by financially.					
3	I am concerned that the money I have or will save will not last.					
4	I have money left over at the end of the month.					
5	My finances control my life.					

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