

Towards a Mental Accounting Architecture of Household Savings (MAAHS): Conceptualizing Savings Behaviour among Low-Income Urban Households

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DOI: <https://doi.org/10.47772/IJRISS.2026.100601267>

Received: 26 June 2026; Accepted: 01 July 2026; Published: 16 July 2026

ABSTRACT

Household savings among low-income urban populations remain persistently low despite substantial expansion in microfinance, digital banking and financial inclusion initiatives across the Global South. Conventional income-based explanations fail to explain why households with comparable financial resources often exhibit markedly different saving outcomes. This paper argues that these differences arise from a distinct cognitive architecture governing financial decision-making rather than from economic constraints alone. Building on Thaler's Mental Accounting Theory and insights from behavioural economics, the study develops the Mental Accounting Architecture of Household Savings (MAAHS), an integrative conceptual framework that explains household saving behaviour through five interacting mechanisms: categorical budgeting rigidity, psychological compartmentalisation of savings, present-biased temporal discounting, loss-averse consumption prioritisation, and social-normative expenditure pressures. The framework illustrates how these mechanisms interact across individual, household and institutional levels to shape saving decisions. It further proposes twelve testable propositions and outlines a structural equation modeling framework for future empirical validation. By integrating fragmented behavioural evidence into a unified and testable model, the paper provides a stronger theoretical foundation for designing savings products, financial literacy interventions and consumer protection policies aimed at improving household savings among low-income urban populations.

Keywords: mental accounting, household savings behaviour, behavioural economics, financial inclusion, MAAHS framework, developing economies.

INTRODUCTION

Savings behaviour sits at the centre of household financial resilience, intergenerational wealth formation and macroeconomic capital accumulation. Low-income urban households, whose numbers are projected to exceed two billion by 2030 (UN-Habitat, 2023), depend on the capacity to save not merely to build

wealth but to absorb income volatility, health shocks and livelihood disruption. Yet despite the proliferation of mobile banking, microfinance and financial-inclusion initiatives, savings rates among these households remain structurally and persistently low (Collins et al., 2009; Karlan & Zinman, 2008; Dupas & Robinson, 2013).

The dominant explanation in development finance treats low savings as a function of constrained income like households do not save because they cannot afford to (Friedman, 1957; Modigliani & Brumberg, 1954). Income is clearly necessary, but it is not sufficient. Collins et al.'s (2009) landmark Portfolios of the Poor found that households in Bangladesh, India and South Africa living on \$2 a day or less engaged in remarkably active and sophisticated financial management. What varied across households of comparable income was not the volume of financial activity but its direction and psychological organisation. Some households saved systematically while others of identical income did not.

This heterogeneity points toward behavioural rather than purely economic explanations. Mental accounting theory (Thaler, 1985, 1999) offers the most developed account of how individuals categorise, evaluate and manage money through a system of cognitive sub-accounts, explaining why nominally identical funds are treated differently depending on their source or designated use. Yet the application of mental accounting to household savings in low-income urban contexts remains partial. The foundational literature derives overwhelmingly from experimental studies of middle-class populations in the United States and Western Europe (Thaler, 1985, 1999; Kahneman & Tversky, 1979), and its extensions to developing-country household finance, while empirically productive, remain theoretically fragmented (Ashraf et al., 2006; Dupas & Robinson, 2013; Banerjee & Mullainathan, 2010). No existing framework systematically maps the mental accounting mechanisms operating in low-income urban savings behaviour, their interactions and the structural conditions of urban poverty that mediate them. This paper fills that gap.

The paper makes four contributions. First, it synthesises mental accounting theory with the empirical literature on low-income household finance into a unified account of the psychological mechanisms shaping savings behaviour under urban poverty. Second, it proposes the Mental Accounting Architecture of Household Savings (MAAHS), an integrative model mapping these mechanisms, their interactions, and the structural conditions that mediate them across individual, household and institutional levels. Third, it generates twelve theoretically grounded, falsifiable propositions and outlines a survey-based structural equation model for their empirical validation. Fourth, it derives specific implications for savings-product design, financial literacy interventions and financial-sector regulation aimed at improving savings outcomes for low-income urban households.

LITERATURE REVIEW

Conceptual Review

Mental accounting, introduced by Thaler (1985, 1999), describes how individuals cognitively organise, classify and evaluate financial resources into separate mental accounts based on source, intended purpose or spending category, rather than treating money as perfectly fungible. These classifications shape how people allocate, spend, save and invest, such that identical sums are treated differently depending on the account to which they are assigned. Savings behaviour denotes the frequency, consistency, amount and choice of instruments through which households set aside current income for future consumption, investment or precaution; it reflects economic factors such as income and access to

financial services as well as behavioural factors such as time preference, self-control and social norms. Low-income households, whose earnings are insufficient to cover more than essential consumption, are of particular interest because their financial decisions are shaped jointly by structural constraint and behavioural process, making them an especially informative population for testing mental accounting's explanatory power.

Theoretical Review

Mental accounting theory rests on the claim that individuals violate the fungibility axiom of standard economic theory but instead organise resources into psychologically distinct accounts governed by implicit rules about acceptable sources, uses and evaluation frames (Thaler, 1985, 1999; Shefrin & Thaler, 1988). Three components of the theory are central to this paper. First, outcomes are evaluated through a value function, derived from Kahneman and Tversky's (1979) prospect theory, that is defined over changes relative to a reference point, concave for gains and convex for losses, and roughly twice as steep for losses as for equivalent gains (loss aversion). This value function generates the endowment effect, status quo bias and, of direct relevance, a structural bias against saving: because saving requires an immediate, certain reduction in consumption in exchange for an uncertain future gain, prospect-theoretic evaluation predicts systematic under-saving independent of income (Tversky & Kahneman, 1991; Köszegi & Rabin, 2006).

Second, activities and outcomes are assigned to specific accounts. Shefrin and Thaler's (1988) behavioural life-cycle hypothesis (BLCH) extends Modigliani and Brumberg's (1954) life-cycle model by replacing its single, fungible wealth account with a tripartite structure of current-income, current-asset and future-income accounts, each with a different marginal propensity to consume, highest for current income and lowest for future income. This account-level heterogeneity implies that the labelling of income, not merely its magnitude, determines how much is saved, and generates three testable predictions: households holding most resources in current-income accounts save structurally less; product designs that reclassify funds into future-income accounts increase saving; and irregular windfalls are saved at higher rates than regular income because they are mentally coded as assets rather than income (Thaler, 1990; Agarwal et al., 2007).

Third, mental accounting has a temporal dimension. Prelec and Loewenstein's (1998) double-entry model shows that transactions are recorded simultaneously in a hedonic ledger (consumption pleasure or pain) and a financial ledger (payment cost); because the pain of forgoing consumption to save is registered immediately while the pleasure of future consumption is temporally distant, this asymmetry creates a structural bias against saving that interacts with hyperbolic discounting (Laibson, 1997; O'Donoghue & Rabin, 1999). Hyperbolic, rather than exponential discounting generates present-biased preferences, formalised in the quasi-hyperbolic model of Phelps and Pollak (1968) in which the deferral of saving is renewed at every decision point, so that intended future saving perpetually fails to materialise (Thaler & Benartzi, 2004; Ashraf et al., 2006). In low-income urban settings, this bias is compounded, rather than purely distorted, by genuine income uncertainty: where future income is unreliable, the option value of current consumption flexibility is partly rational as well as psychological (Morduch, 1995; Banerjee & Duflo, 2007), a point the paper specifies as MAAHS's boundary conditions.

Taken together, these three components, reference-dependent loss-averse evaluation, differentiated mental accounts with heterogeneous consumption propensities and hyperbolic time-discounting, constitute the theoretical core from which the five mechanisms of household savings behaviour are

derived. It is worth stating explicitly what this theoretical core does, and does not, claim. It does not assert that low-income households are irrational; several of the mechanisms, particularly present bias under genuine income volatility are partly rational responses to real constraint rather than pure cognitive error. What the theory claims instead is that the psychological architecture through which households organise money, independently of its rationality, systematically shapes savings outcomes in ways that income-centric models cannot predict, and that this architecture is therefore a legitimate and necessary target of both explanation and intervention.

Empirical Review

The wider empirical literature converges on what Collins et al. (2009) term the ‘savings paradox’ which states that households considered too poor to cover basic needs nonetheless save actively, while somewhat better-off but still constrained households often save negligibly, a pattern income-centric models cannot resolve. The durability of informal savings institutions, Rotating and Accumulating Savings and Credit Associations (ROSCAs/ASCAs), village savings and loan associations and related indigenous forms, is itself evidence of mental accounting logic (Ardener, 1964; Anderson & Baland, 2002; Gugerty, 2007). Anderson and Baland (2002) show that ROSCA participation functions as a commitment device against within-household claims on income, converting funds into an external categorical obligation before they can be reallocated to consumption; Gugerty (2007) finds that Kenyan ROSCA members value this self-discipline function even when it delays their expected payout, evidence of sophisticated awareness of one's own present bias.

Financial Diaries research, tracking the complete financial flows of low-income households over extended periods, provides the most granular evidence for the framework. Collins et al. (2009) find that poor households in Bangladesh, India and South Africa manage eight to ten distinct financial instruments simultaneously, with total flows three to four times income, yet accumulate minimal net assets because flows are directed chiefly toward consumption smoothing. Subsequent studies in Uganda, Kenya, Mexico and Nigeria (Zollmann, 2014; Johnson et al., 2019; Guirkingner & Boucher, 2008; Babajide et al., 2015) replicate this pattern, showing that the inhibition of long-horizon saving is partly institutional (the absence of trustworthy vehicles) and partly behavioural.

Randomised trials isolate specific mechanisms with greater causal precision. Ashraf et al. (2006) find that access to a commitment savings product in the Philippines raised balances by 81 percent among those who opted in, with uptake concentrated among individuals exhibiting strong hyperbolic discounting at baseline. Dupas and Robinson (2013) find that a simple, non-interest-bearing Kenyan savings account raised investment in health and business by 16 percent, attributing the effect to the account's mental accounting function, a designated repository for earmarked funds, rather than to any financial return. Karlan et al.'s (2014) review of this experimental literature concludes that access alone is insufficient and that commitment features, goal labelling and social accountability mechanisms each independently improve savings outcomes, pointing consistently to mental accounting rather than pure financial constraint as the operative channel.

What this empirical landscape has lacked, however, is a single framework capable of holding these findings together. Financial Diaries evidence documents the compartmentalisation mechanism; ROSCA studies document present-bias-driven demand for commitment; and framing and labelling experiments document categorical budgeting and loss aversion, but each literature has largely developed in isolation, with limited cross-referencing of the underlying cognitive architecture common to all of them. The MAAHS framework developed in this paper is offered as that unifying structure.

METHODOLOGY

This paper adopts a conceptual, theory-building design; rather than collecting or analysing primary data, it synthesises theory and evidence from behavioural economics, household finance and development studies into an integrative framework, from which testable propositions and a proposed empirical validation strategy are derived. Its primary contribution therefore lies in theoretical integration and conceptual model development rather than in empirical estimation.

THE MAAHS FRAMEWORK

Overview and Multilevel Architecture

The Mental Accounting Architecture of Household Savings (MAAHS) is a theoretically grounded conceptual framework that integrates mental accounting principles with behavioural-economics insights to explain how interconnected cognitive, psychological and social mechanisms influence households saving decisions beyond income constraints. Five mechanisms of the MAAHS Architecture are:

Categorical Budgeting and Budget Rigidity

The most fundamental mechanism is categorical budgeting defined as the partitioning of income into designated expenditure categories, each a distinct mental account with its own rules and balance. Heath and Soll (1996) show experimentally that categorical budgets constrain spending within categories even where cross-category substitution would be economically rational. Applied to household finance, this implies that households whose income is fully pre-allocated across consumption categories have no residual ‘savings’ category and therefore save nothing regardless of transient opportunity, consistent with the frequently reported perception among low-income households that there is ‘nothing left to save’ even when income modestly exceeds recorded expenditure (Collins et al., 2009; Babajide et al., 2015). The mechanism is self-reinforcing through ‘just-in-time’ budgeting, whereby expenditure expands to absorb available income once savings is not a categorical priority (Thaler, 1999; Zollmann, 2014), and it generates a distinct budget-breach salience where withdrawals from savings accounts are experienced as more aversive than equivalent current-income expenditure. This helps to explain the well-documented pattern of households simultaneously saving and borrowing at high cost (Dupas & Robinson, 2013; Aryeetey & Steel, 1995). Critically, categorical rigidity is not simply a symptom of low income; it persists as an independent constraint even among households whose objective residual income analysis would support positive net saving, which is precisely what makes it a behavioural rather than purely structural phenomenon.

Psychological Compartmentalisation of Savings Vehicles

A second mechanism is the compartmentalisation of savings vehicles whereby households assign distinct purposes and evaluative rules to different instruments, such that balances are not perceived as interchangeable. Collins et al. (2009) and Rutherford (2000) document low-income households simultaneously holding formal accounts, ROSCA positions, mobile money balances, livestock and cash at home, each functionally dedicated to a specific use, daily liquidity, lump-sum obligations, emergencies, large infrequent expenditure and aspirational accumulation, respectively. Compartmentalisation allows households to protect balances in some instruments even amid apparent income shortfalls, but it also produces a well-documented inefficiency which make households

simultaneously under-utilise savings in one account while borrowing at high cost to meet needs that could, in principle, be met from another (Banerjee & Duflo, 2007). This pattern is economically irrational under fungibility but directly predicted by mental accounting. This apparent irrationality is, in fact, the mechanism's most diagnostic empirical signature and its persistence despite an obvious arbitrage opportunity is difficult to explain under any model that assumes money is fungible across mental accounts.

Present Bias and Temporal Discounting

Hyperbolic discounting generates a third mechanism which is defined as a systematic tendency to defer saving, since the immediate cost of foregone consumption outweighs, in present-biased calculus, a future benefit that is renewed at every decision point (Ashraf et al., 2006; Dupas & Robinson, 2013; Giné et al., 2018). In low-income urban settings, this psychological bias interacts with genuine income volatility, so that maintaining liquid consumption buffers is partly rational rather than purely cognitive (Morduch, 1995; Banerjee & Duflo, 2007). This creates a design challenge for savings products where commitment devices that restrict access, such as the SEED account studied by Ashraf et al. (2006) generate behavioural benefits for self-control-constrained savers but real welfare costs for households with genuine liquidity needs. This constitutes a tension the literature has not fully resolved (Karlan et al., 2014; Giné et al., 2018).

Loss Aversion and Consumption-Smoothing Priority

Loss aversion, the asymmetric weighting of losses relative to equivalent gains, generates a fourth mechanism (Kahneman & Tversky, 1979; Tversky & Kahneman, 1991). Because the consumption reduction required by households to save is experienced as a loss against the reference point of current consumption while future wealth gains are comparatively discounted, low-income households, whose reference points are frequently set near subsistence, exhibit a strong preference for consumption smoothing over accumulation. Morduch (1995) and Townsend (1994) document households liquidating productive assets, incurring high-cost debt and reducing food quality rather than food quantity to preserve consumption stability in the face of economic disruptions. Köszegi and Rabin's (2006) reference-dependent framework further predicts that households with volatile income hold minimal savings buffers, since drawing down savings itself constitutes a loss against an expected reference point, disincentivising the accumulation of balances that might later need to be spent.

Social-Normative Expenditure Commitments

A fifth mechanism operates at the intersection of financial psychology and social anthropology where social-normative obligations such as funeral contributions, wedding gifts, school-fee pooling, religious dues and remittances to rural kin function as near-mandatory prior claims on income (Platteau, 2000; Di Falco & Bulte, 2011; Squires, 2021). Because violating such obligations carries reputational sanctions experienced as losses, loss aversion reinforces their categorical priority over discretionary savings. Di Falco and Bulte (2011) find that Ethiopian households in stronger social-network positions save significantly less, controlling for income, while Squires (2021) shows experimentally in Malawi that households receiving socially unobservable transfers save more than those receiving observable transfers, consistent with social visibility activating this claims mechanism.

The five mechanisms do not operate in isolation. They interact in mutually reinforcing ways that this paper terms the Mental Accounting Architecture of Household Savings (MAAHS) (see Figure 1, Table 1). MAAHS models this architecture across three levels depicted in the schema below:

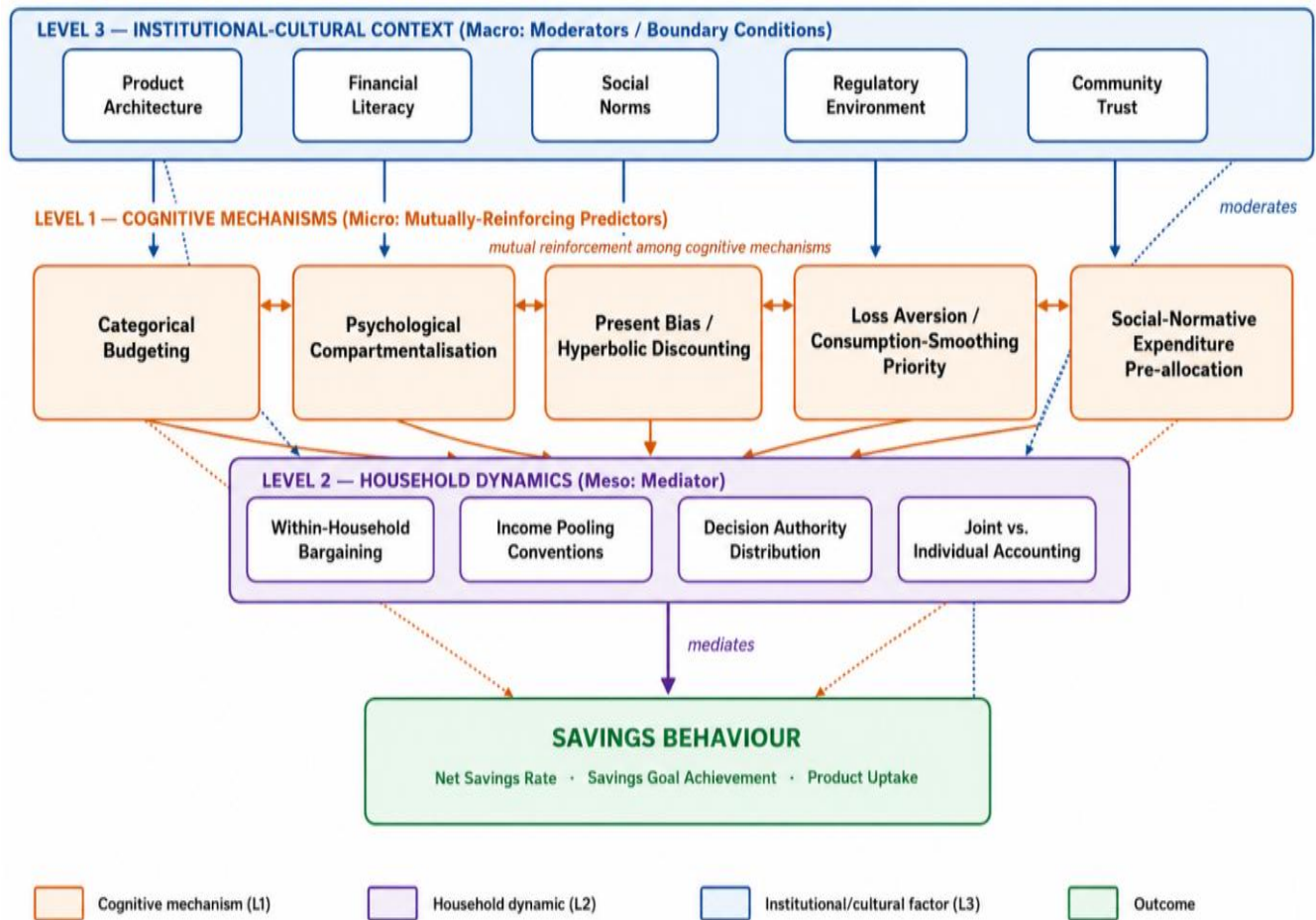


Figure 1: The MAAHS Conceptual Model: Nexus of Variables

Mental Accounting Architecture of Household Savings – Micro, Meso and Macro Linkages

At the micro-level, the five cognitive mechanisms are mutually reinforcing: categorical budgeting reduces the residual available for saving, which activates present-bias dynamics around that residual; loss aversion amplifies the reputational cost of violating social-normative claims, reinforcing their categorical priority; and compartmentalisation supplies the cognitive infrastructure through which the other mechanisms are expressed. The net effect is an architecture structurally biased against long-horizon accumulation, independently of income.

At the meso-level, household decision-making mediates how these mechanisms are expressed. Resource allocation within households is not a unitary process but reflects bargaining among members, with outcomes shaped by relative bargaining power (Duflo & Udry, 2004). This bargaining is gendered such that women in low-income urban households maintain more rigid categorical budgets, participate more heavily in ROSCAs and commitment savings, and exhibit stronger present bias under income insecurity than men in the same households (Collins et al., 2009; Gugerty, 2007; Ashraf et al., 2006).

At the macro-level, institutional design and cultural context condition the environment within which micro- and meso-level dynamics operate. The availability and design of formal savings products determine whether cognitively frustrated savings intentions can be institutionally realised; regulation sets the terms on which products are offered; community norms around saving and conspicuous consumption condition the social-normative claims mechanism; and financial literacy shapes households' awareness of their own biases and their capacity to seek out debiasing products (Lusardi & Mitchell, 2014).

Table 1 MAAHS Framework – Core Architecture

Level	Components
Level 1 — Cognitive Mechanisms	Categorical budgeting • Compartmentalisation • Present bias • Loss aversion • Social-normative pre-allocation
Level 2 — Household Dynamics	Within-household bargaining • Income pooling conventions • Decision-authority distribution • Joint vs. individual accounting
Level 3 — Institutional-Cultural Context	Product architecture • Financial literacy • Social norms • Regulatory environment • Community trust
Cross-Level Interactions	Cognitive biases amplified/attenuated by household structure ↔ household dynamics shaped by institutional context ↔ institutional design targets cognitive mechanisms

Source: Authors' conception, 2026.

MAAHS Propositions

The framework generates twelve falsifiable propositions, organised around its three mechanism clusters, intended to guide the empirical research agenda set out in this paper.

P1–P4: Categorical Budgeting and Compartmentalisation

P1: Households with more rigid categorical mental budgets, measured by the proportion of income pre-allocated to named expenditure categories, will exhibit lower net savings rates, controlling for income, household size and financial access.

P2: The degree of psychological compartmentalisation across savings instruments will be positively associated with the incidence of simultaneous borrowing and saving within the same household.

P3: Savings products that create a new, labelled mental-account category, rather than directing savings to general-purpose accounts, will generate higher savings accumulation through the categorical budgeting mechanism.

P4: Households exposed to automatic salary-deduction savings mechanisms, which remove funds from the current-income account before categorical allocation occurs, will exhibit higher net savings rates than those relying on voluntary saving from residual income.

P5–P8: Present Bias and Loss Aversion

P5: Households exhibiting stronger present bias on incentivised intertemporal choice tasks will report lower long-horizon savings rates and goal achievement, controlling for income and financial literacy.

P6: The positive effect of commitment savings products on savings accumulation will be larger for households with stronger present bias.

P7: Framing savings contributions as loss-preventing (e.g., ‘protect your household from emergencies’) rather than gain-achieving (e.g., ‘build your household wealth’) will generate higher savings-product uptake through the loss-aversion mechanism.

P8: Households with more volatile income will prioritise consumption smoothing over wealth accumulation to a greater degree than those with stable incomes, both because of rational liquidity preference and because income volatility amplifies present-biased discounting.

P9–P12: Social-Normative Mechanisms and Household Dynamics

P9: The intensity of social-normative expenditure obligations faced by a household will be negatively associated with net savings rates, independently of income and household size.

P10: Households whose savings are socially observable to community members will save at lower rates than those with access to private, unobservable savings mechanisms.

P11: Within-household savings rates will be higher when the primary savings decision-maker is female, reflecting women's stronger categorical budgeting tendencies and higher ROSCA participation, independently of income-earning patterns.

P12: Financial literacy programmes that specifically address mental accounting biases, rather than providing general financial knowledge, will generate larger improvements in savings outcomes than standard programming.

Moderating and Boundary Conditions

Three factors condition the strength of MAAHS's core mechanisms without altering its basic architecture. Financial literacy functions primarily as a moderator rather than a direct driver of savings outcomes: it attenuates the effect of cognitive biases by enabling households to identify and counteract them. Lusardi and Mitchell's (2014) synthesis of more than 150 studies finds a robust positive financial-literacy-savings relationship that weakens substantially among low-income populations facing structural barriers to saving. Carpena et al. (2013) find that attitudinal literacy, awareness of one's own biases and motivational commitment to savings goals, generates larger improvements than numeracy or product knowledge alone, directly supporting MAAHS's emphasis on meta-cognitive awareness (P12) as the operative moderating channel.

Product architecture determines the institutional infrastructure through which mental accounting mechanisms are expressed or suppressed. Bernheim et al. (2001) and Thaler and Benartzi (2004) show that automatic-enrolment and pre-commitment features, as in the Save More Tomorrow programme, raise savings rates primarily through default and commitment mechanisms rather than financial incentives. Equivalent low-income-context mechanisms include mobile money lock-in features (Mazer et al., 2014), goal-labelled accounts (Karlan et al., 2016), ROSCA-mimicking commitment deposits, and community-based collection agents (susu and ajo collectors in Ghana and Nigeria respectively), each targeting a specific MAAHS mechanism: commitment features counteract present bias, labelling targets categorical budgeting, and community collection provides social accountability against both present bias and social-normative claims.

Urban livelihood precarity mediates all five mechanisms simultaneously. Banerjee and Duflo (2007) document that low-income urban households typically combine multiple income sources, casual wage labour, petty trade, remittances and informal services, each with distinct timing, reliability and social expectations, creating a complex mental-account environment in which reference points and categorical rules vary across income streams. The informal-sector income uncertainty that characterises most such livelihoods amplifies both present bias (rational liquidity preference) and loss aversion (consumption-smoothing priority), while simultaneously undermining the feasibility of fixed-commitment savings products and heightening reliance on social-network support that activates the social-normative claims mechanism (Morduch, 1995; Townsend, 1994).

These three boundary conditions are not peripheral qualifications to MAAHS; they specify the conditions under which its core mechanisms are amplified or attenuated, and therefore where the twelve propositions are expected to hold most strongly. Financial literacy and product architecture are, in principle, policy-tractable moderators, which are precisely what gives the framework its practical purchase; urban livelihood precarity is comparatively less tractable in the short run but is essential for correctly specifying and not over-generalising, the structural conditions under which the framework's predictions are expected to apply.

Towards Empirical Validation

The propositions developed in in this paper are, by design, intended to be empirically testable. This section outlines a survey-based structural equation modelling (SEM) design through which the core MAAHS mechanisms could be tested using cross-sectional data from low-income urban households. The design is proposed rather than executed: no primary data have been collected or modelled for this

paper; the contribution here is methodological specification intended to make the framework directly implementable by future researchers.

SEM is the appropriate technique because each of the five mechanisms, categorical budgeting rigidity, compartmentalisation, present bias, loss aversion and social-normative claims intensity, is a latent construct inferred from multiple indicators rather than observed directly, and because the framework explicitly hypothesises that the mechanisms interact rather than operate independently, a structure that a series of separate regressions cannot adequately represent. A two-step estimation strategy is proposed (Anderson & Gerbing, 1988): a confirmatory factor analysis to establish measurement-model validity (convergent validity via average variance extracted $\geq .50$; discriminant validity via the Fornell and Larcker, 1981, criterion), followed by structural-path estimation using an estimator appropriate to ordinal Likert indicators (e.g., WLSMV), with model fit assessed against conventional thresholds (CFI/TLI $\geq .90$; RMSEA and SRMR $\leq .08$; Hair et al., 2019; Kline, 2015).

Table 2 sets out a proposed operationalisation of the five mechanisms, the savings-rate outcome, and two moderators (financial literacy and income volatility), drawing on validated instruments referenced throughout the paper. The target population would be primary household financial decision-makers in low-income urban neighbourhoods, sampled through multistage stratified random sampling (city, then ward, then household) with a minimum target of 400–500 completed responses, consistent with conventional SEM power requirements (Hair et al., 2019). Because the loss-framing proposition (P7) concerns a manipulated response rather than a stable trait, the survey would be supplemented with a brief embedded vignette experiment (randomised loss- versus gain-framed product description), analysed separately and reported alongside the structural model. Common method bias, an acknowledged risk given the fully self-reported design, would be addressed through Podsakoff et al.'s (2003) recommended procedural and statistical remedies.

This design is best suited to testing MAAHS's structural and dispositional propositions; it cannot, on its own, establish the causal treatment effects tested more directly by the randomised commitment-device and labelling experiments as reviewed, nor fully capture the within-household bargaining dynamics underlying P11, which would benefit from complementary ethnographic methods. Subject to these limitations, the design offers a concrete, implementable pathway from the conceptual MAAHS framework to empirical validation.

Table 2 Proposed Operationalisation of the MAAHS Constructs

Construct	Definition (Section reference)	Illustrative Indicators	Measurement Basis
Categorical Budgeting Rigidity	Proportion of income pre-allocated to named expenditure categories (P1)	4 items on rigidity of category-specific allocation rules and resistance to cross-category reallocation	Adapted from Heath & Soll (1996)
Compartmentalisation	Reported non-	4 items on	Money Management

Construct	Definition (Section reference)	Illustrative Indicators	Measurement Basis
	substitutability of funds across savings instruments (P2, P3)	willingness/reluctance to transfer funds across labelled accounts; number of distinct instruments held	Rigidity Scale (Müller & Schwarz, 2022)
Present Bias	Disproportionate weighting of immediate over deferred outcomes (P5, P6, P8)	Incentivised intertemporal choice tasks plus 3 self-report impatience items	Convex budget protocol (Andreoni & Sprenger, 2012)
Loss Aversion	Asymmetric psychological weighting of losses relative to gains (P7)	4 items eliciting relative disutility of consumption reduction vs. equivalent foregone gain; embedded gain/loss framing vignette	Adapted from Tversky & Kahneman (1991)
Social-Normative Claims	Intensity of obligatory social expenditure commitments (P9, P10)	Number/average size of monthly obligatory social contributions; perceived social observability of savings	Adapted from Squires (2021); Di Falco & Bulte (2011)
Financial Literacy (moderator)	Numeracy, product knowledge and bias awareness (P12)	Basic numeracy/interest-rate items plus attitudinal bias-awareness items	Lusardi & Mitchell (2014); Carpena et al. (2013)
Net Savings Rate (outcome)	Proportion of monthly income net-saved across formal and informal instruments	Self-reported flow measure, triangulated with a 30-day recall financial diary module	Adapted from Collins et al. (2009) Financial Diaries protocol

Source: Authors' compilation, 2026.

POLICY AND PRACTICE IMPLICATIONS

The MAAHS framework's practical value lies in translating each of its five mechanisms into a specific, actionable lever for product designers, financial literacy practitioners and regulators. Across the three domains below, the recurring implication is that intervention should target the architecture of the decision environment rather than relying solely on improving households' financial information.

Product Design Implications

MAAHS generates four specific implications for savings-product design. First, the categorical budgeting mechanism implies that products should be positioned as a distinct, labelled budgetary category with the same pre-allocation status as rent or school fees, not as a residual destination for leftover income; Karlan et al. (2016) find that goal-labelled accounts substantially outperform functionally equivalent unlabelled accounts among low-income African households. Second, the present-bias mechanism implies that commitment features, which shift the savings decision from the present to the past, should be standard but opt-in rather than mandatory, since mandated illiquidity imposes welfare costs on households with genuine liquidity needs (Giné et al., 2018); flexible designs permitting withdrawal under defined qualifying emergencies may best balance commitment benefit against liquidity cost. Third, the social-normative claims mechanism implies that products should incorporate privacy features reducing the social observability of balances: Mazer et al. (2014) attribute the rapid uptake of Kenya's M-Shwari partly to its privacy advantage over community-based savings mechanisms. Fourth, the compartmentalisation mechanism implies that products should specify intended use, access conditions and withdrawal consequences explicitly, creating the mental-account rules that make balances feel protected from consumption appropriation, a function the best formal products share with ROSCAs and other informal commitment mechanisms. Taken together, these four implications suggest that the most effective low-income savings products will be those that deliberately imitate the mental-accounting logic of the informal instruments, ROSCAs, susu and ajo collection, livestock, that households already trust, rather than products designed around the fungibility assumptions of conventional formal banking.

Financial Literacy Programme Design

Standard financial literacy programming, focused on numeracy and product knowledge, is insufficient to address the mechanisms MAAHS identifies. Effective programming for low-income urban communities should instead incorporate mental-accounting-bias awareness, explicit instruction in present bias, loss aversion and compartmentalisation and their behavioural consequences; Drexler et al. (2014) find that simplified rule-of-thumb guidance ('pay yourself first') outperforms standard accounting-based financial education among low-income populations in the Dominican Republic. It should also train households to recognise and deploy commitment mechanisms, including informal ones such as ROSCA participation, as tools for managing their own present bias, treating the household as a strategic agent managing its own cognitive limitations rather than as a passive recipient of information. Finally, programming should incorporate social-norm reframing that helps households construct socially legitimate narratives for prioritising savings over discretionary social expenditure; evidence from Kenya and Uganda suggests that shifting community norms toward visible saving, rather than visible consumption, can partially counteract the social-normative crowding-out mechanism (Dupas & Robinson, 2013; Zollmann, 2014).

Regulatory Implications

Three regulatory implications follow. Disclosure requirements should move beyond standard written formats, which are insufficient to counteract the biases through which future costs are underweighted, toward behaviourally informed design using visual aids, simplified summaries and salience manipulation. Regulators should also incentivise flexible commitment products that offer commitment features without full illiquidity, providing a legal basis for semi-flexible accounts given the welfare costs of fully illiquid commitment documented by Giné et al. (2018). Finally, consumer-protection regulation should treat the exploitation of mental accounting biases, such as framing high-cost credit as equivalent to saving, or fee structures that exploit present-biased underweighting of future costs, with the same scrutiny applied to misleading advertising, consistent with Akerlof's (1970) logic that information asymmetry and cognitive bias jointly justify regulatory intervention to protect consumers.

Directions for Future Research

The framework and its twelve propositions constitute a research agenda spanning three complementary methods. Financial Diaries methodology remains the appropriate tool for testing the categorical-budgeting and compartmentalisation propositions (P1–P4) at the granularity mental accounting requires, ideally incorporating validated instruments such as the Money Management Rigidity Scale (Müller & Schwarz, 2022) and the intertemporal-choice protocols of Andreoni and Sprenger (2012). Randomised controlled trials remain the standard for causally identifying the effects of commitment devices (P6), loss-framing (P7), labelled accounts (P3) and social observability (P10), and should be extended across Sub-Saharan Africa, South Asia and Latin America to test generalisability, with particular attention to heterogeneous effects by gender (P11), literacy (P12) and income volatility (P8). Qualitative and ethnographic methods remain necessary for the social-normative claims and within-household bargaining propositions (P9–P11), which experimental and survey methods alone cannot adequately capture. Finally, cross-national comparative work, potentially anchored in the World Bank's Financial Capability and Consumer Protection surveys, is needed to establish which MAAHS mechanisms are universal and which, particularly the social-normative claims mechanism, are culturally bounded.

CONCLUSION

This paper has developed a systematic conceptual account of how mental accounting mechanisms shape savings behaviour among low-income urban households, and has proposed the Mental Accounting Architecture of Household Savings (MAAHS) as an integrative model mapping these mechanisms, their interactions, and the structural contexts that condition them. The analysis shows that persistently low savings rates cannot be adequately explained by income constraint alone: categorical budgeting rigidity, psychological compartmentalisation, present-biased discounting, loss-averse consumption-smoothing priority and social-normative expenditure pre-allocation interact to produce a cognitive architecture structurally biased against long-horizon accumulation, independently of and in addition to income effects.

The framework's central contribution is integrative rather than additive: existing behavioural-economics and household-finance literatures had identified each of these five mechanisms individually, but no prior account had modelled their joint operation across the micro, meso and macro levels at which savings decisions are actually made, nor derived from that joint model a coherent, falsifiable set of propositions. The twelve propositions developed here, together with the outlined structural equation model, translate MAAHS from a descriptive synthesis into a testable research programme, and the policy implications

derived from each mechanism are directly actionable by product designers, financial literacy practitioners and regulators.

Across each of these domains, the framework's central prescription is a shift from information-centric to architecture-centric intervention: rather than simply expanding households' access to financial information and products, effective intervention requires designing the decision environment, product structure, disclosure format, community savings norms and regulatory safeguard, to work with the grain of mental accounting logic rather than against it. This reframing matters because it identifies a class of intervention, architectural rather than informational, that has been comparatively neglected in financial-inclusion policy relative to its apparent effectiveness in the experimental literature.

As with any conceptual framework, MAAHS's propositions remain, at this stage, theoretically derived rather than empirically confirmed; the paper's claim is to have specified a coherent, falsifiable structure, not to have tested it. The empirical validation strategy together with the complementary Financial Diaries, experimental and ethnographic approaches set out the pathway by which that gap is to be closed. Improving savings outcomes among low-income urban households is not merely a financial-sector development objective; it is a foundational prerequisite for household resilience, poverty reduction and the inclusive-growth aspirations that animate much of contemporary development policy. By revealing the cognitive architecture through which income translates, or fails to translate, into accumulated wealth, mental accounting theory, systematised here as MAAHS, provides the theoretical foundation needed to design interventions that are not merely well intentioned but behaviourally effective.

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