

THE INSTITUTIONAL-BEHAVIOURAL LOCK-IN THEORY OF HOUSING SUPPLY FAILURE: A COMPREHENSIVE FRAMEWORK FOR AFFORDABLE HOUSING POLICY

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ABSTRACT:

Despite decades of policy intervention, affordable housing crises persist across emerging economies, exposing a critical gap in understanding the behavioural drivers of market volatility. The central research dilemma is why conventional economic models, focused on supply-and-demand fundamentals, consistently fail to predict or prevent cyclical housing bubbles and liquidity crunches. This paper addresses this puzzle by introducing the Institutional-Behavioural Lock-in Theory of Housing Supply Failure, a framework that synthesises prospect theory, loss aversion, leverage dynamics, and liquidity constraints. Empirical validation draws from Kenya's Affordable Housing Agenda and comparative international cases. The model reveals a destructive four-phase cycle—overconfidence and herding during booms, transitioning via loss aversion to forced sales and liquidity crises in downturns—anchored on five core constructs and twelve testable propositions. Applicable under conditions of information asymmetry, weak regulation, and rapid urbanisation, the theory informs counter-cyclical loan-to-value ratios, financial literacy reforms, and behavioural expectation stabilisation. By bridging behavioural economics with housing market analysis, this framework advances both scholarly discourse and pragmatic policy, offering an integrated diagnostic-interventive-evaluative toolkit supported by evidence from Kenya, Hong Kong, the US, Germany, the Netherlands, and Taiwan, ultimately reorienting regulation toward root-cause mitigation.

Keywords: *Affordable Housing, Housing Policy, Housing Supply Failure, Institutional-Behavioural Lock-in Theory, Liquidity, Loss Aversion*

INTRODUCTION: THE PERSISTENT PUZZLE OF AFFORDABLE HOUSING FAILURE

Affordable housing constitutes one of the most intractable policy challenges of the twenty-first century. Despite decades of policy experimentation, substantial public expenditure, and widespread political commitment, housing affordability continues to deteriorate across both developed and developing economies (Bao, 2024; Li & Yi, 2022). In Kenya, the housing deficit has reached approximately 2 million units, with Nairobi experiencing annual housing price growth exceeding 10% in prime suburbs while the national affordable housing agenda struggles to deliver its ambitious targets (Centre for Affordable Housing Finance in Africa, 2020; Owuor, 2026). In Germany, the Netherlands, and the United Kingdom, housing affordability has emerged as a defining political issue, with younger generations facing unprecedented barriers to homeownership (Siemiatowski, 2025; Lee et al., 2024). In Hong Kong, housing prices have reached levels that place homeownership beyond the reach of all but the wealthiest households, despite government interventions spanning decades (Leung et al., 2006; Anenberg & Bayer, 2021).

The persistence of these challenges despite extensive policy attention suggests that conventional approaches to housing policy rest on incomplete theoretical foundations. Traditional economic models, grounded in rational choice theory and efficient market assumptions, have proven inadequate for understanding and thus addressing the complex dynamics of housing markets (Kahneman & Tversky, 1979; Tomal & Brzezicka, 2024). These models treat housing as a standard commodity, assume that market participants act rationally to maximise utility, and posit that prices reflect fundamental values. Yet the empirical evidence consistently contradicts these assumptions: housing markets exhibit persistent price volatility that exceeds what fundamentals would predict (Anenberg & Bayer, 2021), trading volume and prices are positively correlated in ways that suggest behavioural

amplification (Leung et al., 2006), and market participants systematically deviate from rational decision-making in predictable ways (Kahneman & Tversky, 1979; Khalil, 2024).

A growing body of behavioural economics research has illuminated the psychological mechanisms that distort housing market outcomes. Prospect theory, developed by Kahneman and Tversky (1979), identifies loss aversion, the tendency for individuals to feel the pain of losses approximately twice as intensely as the pleasure of equivalent gains, as a fundamental driver of economic behaviour. In housing markets, loss aversion manifests through the disposition effect, where homeowners resist selling properties below purchase prices, creating price stickiness downward and reducing transaction volumes during downturns (Genesove & Mayer, 2001; Anenberg, 2011). The certainty effect, another cornerstone of prospect theory, explains why market participants overvalue guaranteed outcomes, creating a premium for regulatory stability and predictable market conditions (Fiene, 2025a,b). Reference dependence, the third pillar of prospect theory, illuminates how purchase prices become psychological anchors that influence subsequent selling decisions, even when rational analysis would suggest ignoring sunk costs (Leung et al., 2006; Wegryn & Kuta, 2024).

Building on these behavioural foundations, Owuor (2026) synthesised prospect theory with stated choice methods to develop an integrated behavioural framework for understanding residential housing price determination in Kenya. Figure 1 from that study, reproduced conceptually below, depicts the cyclical interaction among three core behavioural-economic constructs: loss aversion, over-leverage, and liquidity. This framework reveals a destructive cycle wherein loss aversion generates reluctance to sell, which interacts with over-leverage to create vulnerability to shocks, triggering liquidity crises that force sales at depressed prices, amplifying loss aversion and perpetuating the cycle. The empirical analysis in Owuor (2026) demonstrates that psychological expectations mediate the relationship between microeconomic indicators and housing prices, with emotional biases ($\Delta R^2 = 0.089$) demonstrating a stronger mediating influence than cognitive errors ($\Delta R^2 = 0.082$). Critically, loss aversion emerges as a dominant behavioural driver, explaining investor reluctance to sell depreciating assets and amplifying over-leverage during market peaks.



Fig. 1 : The Behavioural-Cyclical Interaction Framework

Source: Adapted from Owuor (2026), Figure 1 (own conceptualisation)

Despite this framework's explanatory power, its application to affordable housing policy has remained fragmented and incomplete. Policy interventions continue to operate within traditional economic paradigms, treating symptoms rather than causes and addressing individual factors in isolation rather than the interconnected system that produces market dysfunction. This fragmentation reflects a broader theoretical gap: the absence of an integrated framework that explains how behavioural biases, market microstructure, and institutional factors combine to produce systematic housing market dysfunction, particularly in the context of affordable housing.

This article addresses this gap by developing the Institutional-Behavioural Lock-in Theory of Housing Supply Failure. This comprehensive theoretical framework synthesises insights from behavioural economics, housing market microstructure, and institutional analysis to explain why affordable housing programmes consistently underperform and to guide more effective policy design. The theory is grounded in the foundational insights depicted in Figure 1 of Owuor (2026), extending them through systematic theoretical development that specifies the constructs, propositions, logic, and boundary conditions of the phenomenon.

The article is structured as follows. Section 2 establishes the theoretical foundations, reviewing relevant literature on housing market dynamics, behavioural economics, and affordable housing policy. Section 3 presents the Institutional-Behavioural Lock-in Theory of Housing Supply Failure, specifying its core constructs, propositions, underlying logic, and boundary conditions. Section 4 marshals empirical evidence supporting the theory, drawing on studies from multiple geographical contexts. Section 5 discusses the theory's implications for affordable housing policy, identifying specific intervention strategies. Section 6 concludes with reflections on the theory's contributions and directions for future research.

THEORETICAL FOUNDATIONS

A. Housing Markets as Complex Adaptive Systems

Housing markets exhibit characteristics that distinguish them from standard commodity markets and render them particularly susceptible to behavioural distortions and cyclical dysfunction. Unlike financial assets traded in centralised exchanges, housing is heterogeneous, locationally fixed, and transacted infrequently, creating conditions conducive to information asymmetries, search frictions, and pricing inefficiencies (Anenberg & Bayer, 2021; Rosen, 1974). The transaction process involves significant financial, temporal, and psychological costs that create barriers to market entry and exit, amplifying the impact of behavioural biases.

The joint buyer-seller problem represents a fundamental feature of housing markets that distinguishes them from other asset markets. As Anenberg and Bayer (2021) demonstrate, a substantial fraction of housing transactions involves homeowners who are simultaneously buying and selling properties, 'internal movers' whose decisions are influenced by the cost and timing of holding two homes simultaneously. This joint buyer-seller problem generates a powerful amplification mechanism: when prices are declining and time-to-sell is high, existing homeowners are especially unwilling to buy before selling, reducing transaction volume and further cooling the market. This mechanism explains why internal transaction volume is incredibly volatile and much more procyclical than external volume, with internal sales at market peaks three to four times greater than at troughs (Anenberg & Bayer, 2021).

Search and matching frictions compound these dynamics. Housing markets are characterised by bilateral search, where buyers and sellers must locate each other, negotiate prices, and complete transactions through a process that is costly and time-consuming (Wheaton, 1990; Diaz & Jerez, 2013). These frictions create price dispersion, variation in prices for otherwise identical properties, which is positively correlated with trading volume and price levels (Leung et al., 2006). During market booms, search frictions diminish as transaction activity increases, reducing price dispersion and reinforcing price appreciation. During downturns, search frictions intensify, increasing price dispersion and amplifying price declines.

The capital intensity of housing transactions further distinguishes housing markets from other asset markets. Most housing purchases involve substantial leverage; indeed, mortgage debt is the largest form of household debt in most economies. This leverage creates a financial accelerator mechanism: rising collateral values during booms enable additional borrowing, driving further price increases; falling collateral values during downturns trigger margin calls and forced selling, accelerating price declines (Bernanke et al., 1999; Iacoviello & Neri, 2010). The loan-to-value ratio plays a critical role in determining the amplitude of boom-bust cycles, with higher loan-to-value ratios amplifying price volatility (Iacoviello, 2005; Owuor, 2026).

B. Behavioural Foundations of Housing Decisions

Prospect theory provides the foundational behavioural framework for understanding housing market decisions. Kahneman and Tversky (1979) identified three core psychological mechanisms that systematically distort economic decision-making: loss aversion, reference dependence, and diminishing sensitivity. These mechanisms operate powerfully in housing markets, where decisions involve substantial stakes, uncertain outcomes, and emotional attachments.

Loss aversion, the tendency for losses to loom larger than gains, manifests through the disposition effect in housing markets. Genesove and Mayer (2001) provided seminal evidence using Boston condominium data, finding that loss-averse sellers set asking prices 25-35% higher than comparable non-loss sellers and experienced 10-15% longer time-on-market. This effect creates price stickiness downward, reducing transaction volume during downturns as sellers wait for prices to recover rather than accepting losses (Anenberg, 2011). Loss aversion also reduces labour mobility, as homeowners with negative equity are significantly less likely to move than those with positive equity, contributing to economic inefficiency (Engelhardt, 2003).

Reference dependence, the tendency to evaluate outcomes relative to a reference point rather than absolute levels, creates psychological anchoring in housing markets. Leung et al. (2006) demonstrate that buyers anchor the value of a housing unit to its previous purchase price, with the anchoring effect decreasing with time since the previous transaction. This anchoring mechanism helps explain observed correlations among price, trading volume, and price dispersion. Wegrzyn and Kuta (2024) extend this analysis, documenting that anchoring bias systematically distorts price estimations, particularly in volatile market conditions.

Diminishing sensitivity, the tendency for marginal utility to decrease with distance from the reference point, explains why housing market participants respond more strongly to recent price movements than to long-term trends. In the domain of gains, diminishing sensitivity generates risk-averse behaviour, as homeowners prefer to lock in sure gains rather than gamble for larger returns. In the domain of losses, diminishing sensitivity generates risk-seeking behaviour, as homeowners facing potential losses prefer to gamble, holding properties longer in the hope of price recovery, rather than accept sure losses. This asymmetry explains why housing markets exhibit greater volatility in downturns than in recoveries (Kahneman & Tversky, 1979; Owuor, 2026).

The extension of prospect theory to incorporate goals, aspiration levels for gains and avoidance levels for losses provides additional insight into housing market behaviour. Leddo et al. (2019) demonstrate that when individuals have explicit goals, the value function shifts: for gains below the aspiration level, individuals become risk-seeking rather than risk-averse, valuing incremental progress toward the goal more highly than gains beyond the goal. For losses above the avoidance level, individuals become risk-averse rather than risk-seeking, valuing loss reduction more highly than potential gains. This goal-based extension explains why housing investors behave differently when pursuing specific return targets than when simply maximising utility.

C. Behavioural Biases and Psychological Expectations

Beyond prospect theory, a range of cognitive and emotional biases systematically distort housing market decisions. Ahmad (2024) provides a comprehensive synthesis, identifying overconfidence bias, where investors systematically overestimate their ability to predict market movements as a primary driver of speculative behaviour. Overconfident investors take larger positions, use more leverage, and trade more frequently than rational benchmarks would suggest, amplifying price volatility and creating vulnerability to market corrections. Confirmation bias, the tendency to selectively seek information that confirms existing beliefs, operates powerfully in housing markets, particularly during booms when positive price momentum reinforces optimistic expectations. Cascão et al. (2023) demonstrate that cognitive heuristics, such as availability bias, enhance demand in neighbourhoods rich with amenities, while anchoring effects distort price estimations in volatile market conditions. These cognitive biases interact with emotional biases, such as fear of missing out, over-optimism, and herding, to create self-reinforcing cycles of speculation and correction.

Herding behaviour represents a particularly consequential bias in housing markets. Nikpey Pesyan et al. (2024) document that social pressure and information cascades drive investors to mimic observed behaviour, particularly during boom periods when early movers appear successful. These herding concentrates investment in specific locations or property types, creating localised bubbles that amplify during booms and burst during corrections. In the Kenyan context, Cheloti and Mooya (2024) demonstrate that real estate investors and valuers rely heavily on heuristics and cognitive shortcuts, leading to systematic valuation errors that distort market outcomes.

The role of psychological expectations in mediating the relationship between economic fundamentals and housing prices is increasingly recognised. Owuor (2026) finds that psychological expectations, both cognitive errors (confirmation bias, selective memory, social influence) and emotional biases (willingness to transact, social pressures, lifestyle influences), significantly mediate the relationship between microeconomic indicators and housing prices. Notably, emotional biases demonstrated a stronger mediating influence ($\Delta R^2 = 0.089$) than cognitive errors ($\Delta R^2 = 0.082$), suggesting that housing markets are substantially emotion-driven.

D. Affordable Housing as a Site of Market Dysfunction

Affordable housing programmes sit at the intersection of these behavioural and structural dynamics, creating conditions where market dysfunction is particularly acute. Affordable housing targets low- and middle-income households who are most vulnerable to price volatility, most constrained by liquidity and leverage, and least able to navigate complex housing decisions effectively. The intersection of behavioural biases with structural barriers, limited access to credit, information asymmetries, and weak institutional protections systematically excludes these households from housing markets.

Classical economic theory assumes that housing markets self-correct through supply and demand, but this assumption ignores structural barriers that define affordable housing contexts (ACASH, 2025). Formal mortgage lending accounts for less than 1% of GDP in Kenya, with banks requiring payslips, land titles, and credit histories that are out of reach for 80% of urban workers. This is not market failure; it is market design. The market was built to exclude; Land speculation, fuelled by absentee investors and unclear titles, inflates prices beyond what even middle-income earners can afford.

Behavioural economics illuminates why households in affordable housing programmes respond differently than rational models would predict. Low-income households often avoid formal mortgages not because they do not want homes, but because they distrust banks, fear hidden fees, or fear losing their savings (ACASH, 2025). Present bias, like choosing food today over a home tomorrow, and loss aversion, that is, the terror of losing savings to a scam over gaining equity, systematically distort housing decisions. Yet chamas (savings groups) succeed where banks fail because they provide accountability, trust, and psychological safety. This suggests that affordable housing programmes must incorporate behavioural insights to be effective.

The empirical literature on affordable housing outcomes reveals systematic patterns of dysfunction. In Kenya, the Affordable Housing Programme offers tax breaks to developers and refinancing to banks but does little to connect low-income earners to credit, reflecting a design that addresses symptoms rather than causes (ACASH, 2025). In the Netherlands and Taiwan, circular affordable housing initiatives face challenges because user preferences and willingness to pay remain poorly understood, leading to projects that fail to meet resident needs (Lee et al., 2025). In Hong Kong, government interventions have repeatedly failed to stabilise prices because they address symptoms, such as credit availability and supply constraints, rather than the behavioural cycle that drives volatility.

THE INSTITUTIONAL-BEHAVIOURAL LOCK-IN THEORY OF HOUSING SUPPLY FAILURE

A. Theory Overview and Rationale

The Institutional-Behavioural Lock-in Theory of Housing Supply Failure proposes that housing markets exhibit systematic dysfunction, characterised by excessive price volatility, persistent unaffordability, and the exclusion of low- and middle-income households, because of a self-reinforcing cycle wherein behavioural biases amplify price movements, which in turn entrench speculative behaviour and structural exclusion. The theory synthesises insights from prospect theory, housing market microstructure, and institutional analysis to explain why affordable housing programmes consistently underperform and to guide more effective policy design.

The theory is grounded in the foundational insights depicted in Figure 1 of Owuor (2026), which illustrates the cyclical interaction among loss aversion, over-leverage, and liquidity constraints. This cycle unfolds through five phases: (1) Boom, where overconfidence and herding drive increased leverage and price appreciation; (2) Peak, where loss aversion becomes latent as recent buyers set reference prices near peak levels; (3) Downturn, where loss aversion creates reluctance to sell, reducing liquidity and creating price stickiness; (4) Crisis, where over-leverage triggers forced selling, increasing supply and accelerating price declines; and (5) Recovery, where loss aversion slows recovery as sellers wait to ‘break even’ at reference prices.

The Institutional-Behavioural Lock-in Theory of Housing Supply Failure extends this cyclical framework through systematic theoretical development, specifying the underlying constructs that drive the cycle, the propositions that describe how these constructs interact, the logic that explains why the cycle is self-reinforcing, and the boundary conditions that delimit its applicability. The theory addresses a fundamental puzzle: why housing markets, despite substantial policy attention, continue to produce outcomes that systematically disadvantage low- and middle-income households.

B. Core Constructs

The Institutional-Behavioural Lock-in Theory of Housing Supply Failure comprises five core constructs that interact to produce housing market dysfunction. These constructs are defined at the theoretical level and operationalised through measurable indicators that enable empirical testing.

Construct 1: Behavioural Amplification (BA)

Behavioural amplification refers to the systematic distortion of market outcomes through psychological biases that amplify price movements, increase volatility, and create self-reinforcing cycles of speculation and correction. The construct encompasses loss aversion (the asymmetric weighting of losses versus gains), reference dependence (evaluation of outcomes relative to reference points), and diminishing sensitivity (decreasing marginal utility with distance from reference points). Behavioural amplification manifests through the disposition effect (reluctance to sell losing positions), anchoring (reference point influence on valuations), and herding (socially correlated behaviour).

Measurable indicators include: loss aversion coefficients derived from experimental or survey data (typical range: 1.5-2.5); price stickiness measures (downward price rigidity relative to upward flexibility); time-on-market differentials between loss and gain positions; and herding intensity measures based on transaction correlations or survey responses. Operationalisation can draw on stated choice methods, as in Owuor (2026), which used Likert-scale items to measure loss aversion propensity, overconfidence, and herding susceptibility.

Construct 2: Liquidity Constriction (LC)

Liquidity constriction refers to the reduction in market liquidity, both market liquidity (ease of selling assets without price discounts) and funding liquidity (availability of cash to meet obligations), that occurs during market downturns through the interaction of behavioural biases and structural constraints. The construct captures how loss aversion creates reluctance to sell, reducing transaction volume, while forced selling by leveraged investors increases supply at depressed prices, further reducing liquidity.

Measurable indicators include: transaction volume (number and value of sales); time-on-market (average duration properties remain listed); bid-ask spreads (gap between seller asking prices and buyer offer prices); and liquidity premiums (price discounts demanded by buyers for properties that may be difficult to sell). Operationalisation can draw on transaction data and stated choice experiments incorporating liquidity attributes (transaction costs, time-to-sale estimates).

Construct 3: Leverage Procyclicality (LP)

Leverage procyclicality refers to the tendency for leverage levels to increase during market booms and decrease during market downturns, amplifying price movements and creating vulnerability to systemic crises. The construct captures how behavioural drivers, such as overconfidence, optimism bias, and herding, increase leverage during booms, while market corrections force de-leveraging through margin calls, refinancing failures, and forced sales. Measurable indicators include: loan-to-value ratios (average and distribution); debt-to-income ratios; mortgage debt levels relative to income; and leverage growth rates over the market cycle. Operationalisation can draw on mortgage market data and survey measures of leverage propensity, as in Owuor (2026), which used items assessing willingness to use debt financing.

Construct 4: Institutional Fragility (IF)

Institutional fragility refers to the weakness of institutional frameworks, such as regulatory regimes, property rights systems, and financial institutions, in moderating behavioural amplification, liquidity constriction, and leverage procyclicality. The construct captures how institutional weaknesses create conditions conducive to behavioural distortion and market dysfunction: information asymmetries, weak enforcement, limited access to formal credit, and inadequate consumer protection.

Measurable indicators include: regulatory quality indices (e.g., World Bank Governance Indicators); property rights indices; mortgage market penetration; financial inclusion indicators; and institutional capacity measures. Operationalisation can draw on secondary data sources and survey measures of institutional trust and perceived regulatory effectiveness.

Construct 5: Expectation Heterogeneity (EH)

Expectation heterogeneity refers to the divergence of expectations among market participants regarding future market conditions, specifically, the coexistence of optimistic borrowers (who expect continued appreciation) and pessimistic lenders (who anticipate correction). The construct captures how heterogeneous expectations create expectation-driven boom-bust cycles: optimistic borrowers increase leverage and housing investment during booms; pessimistic lenders tighten credit and force de-leveraging during corrections.

Measurable indicators include: expectation dispersion measures (range and distribution of price expectations); borrower-lender expectation gaps; and forecast error patterns. Operationalisation can draw on survey measures of price expectations, as in the Composite Expectations Index (CEI) developed in Owuor (2026), which captured both rational and adaptive expectations.

C. Theoretical Propositions

The Institutional-Behavioural Lock-in Theory of Housing Supply Failure comprises twelve propositions that specify the causal relationships among the five core constructs and their collective contribution to housing market dysfunction. These propositions are stated in testable form and linked to empirical evidence from housing markets across multiple contexts.

Proposition 1: Behavioural Amplification (BA) drives Liquidity Constriction (LC) during market downturns.

Loss aversion creates reluctance to sell at prices below reference points, reducing transaction volume and creating price stickiness downward. The disposition effect manifests through higher asking prices, longer time-on-market, and reduced sales volume for loss positions. Empirical support: Genesove and Mayer (2001) documented 25-35% higher asking prices for loss-averse sellers; Anenberg (2011) demonstrated that nominal loss sales occurred at 3-5% discounts compared to gain sales; Engelhardt (2003) found that loss aversion reduces mobility by 30%.

Proposition 2: Liquidity Constriction (LC) amplifies Behavioural Amplification (BA) through reduced price discovery.

Reduced transaction volume impairs price discovery, the process by which market participants learn fundamental values through observed transactions. When liquidity constricts, fewer transactions provide less information about market-clearing prices, increasing uncertainty and reinforcing behavioural distortions. Empirical support: Leung et al. (2006) documented a positive correlation between price dispersion and trading volume; Anenberg and Bayer (2021) demonstrated that reduced transaction volume creates a 'thin market' effect that amplifies price volatility.

Proposition 3: Leverage Procyclicality (LP) amplifies Behavioural Amplification (BA) during market booms.

Overconfidence and herding drive increased leverage during booms, as investors seek to amplify returns and avoid missing out on appreciation. Rising collateral values enable additional borrowing, creating a financial accelerator that drives further price increases. Empirical support: Mian and Sufi (2014) documented that US counties with higher household leverage experienced larger price declines during 2007-2009; Owuor (2026) found that loss aversion and over-leverage interact significantly, with low-loss-aversion investors showing a positive association between leverage and prices.

Proposition 4: Leverage Procyclicality (LP) transforms Liquidity Constriction (LC) into forced selling during downturns.

When leveraged investors face margin calls or cannot refinance, they must sell regardless of loss aversion, increasing supply and depressing prices. Forced selling operates through margin calls, refinancing failure, and debt service pressure. Empirical support: Geanakoplos (2010) developed a leverage cycle theory demonstrating that lenders reduce acceptable LTV ratios during downturns, creating a 'leverage spiral'; Anenberg and Bayer (2021) documented that high leverage increases sensitivity to market conditions.

Proposition 5: Institutional Fragility (IF) amplifies Behavioural Amplification (BA).

Weak institutional frameworks create conditions conducive to behavioural distortion: information asymmetries that enable anchoring; weak enforcement that permits speculative behaviour; and limited consumer protection that

exposes vulnerable households to predatory practices. Empirical support: Cheloti and Mooya (2024) documented heuristic use among Kenyan valuers; Kuria (2024) found that financial literacy moderates the relationship between behavioural biases and real estate investment performance.

Proposition 6: Institutional Fragility (IF) intensifies Liquidity Constriction (LC).

Weak property rights, opaque transaction processes, and ineffective dispute resolution increase transaction costs and uncertainty, reducing market liquidity. Empirical support: ACASH (2025) documented that land speculation fueled by absentee investors and unclear titles inflates prices; Centre for Affordable Housing Finance in Africa (2020) identified institutional weaknesses as key barriers to affordable housing.

Proposition 7: Institutional Fragility (IF) enables Leverage Procyclicality (LP).

Weak financial regulation, inadequate risk management, and limited oversight permit excessive leverage and risk-taking during booms. Empirical support: Iacoviello (2005) demonstrated that loan-to-value ratios significantly determine boom-bust amplitude; Owuor (2026) recommended counter-cyclical loan-to-value ratios to mitigate speculative herding.

Proposition 8: Expectation Heterogeneity (EH) amplifies Boom-Bust Cycles.

The coexistence of optimistic borrowers and pessimistic lenders creates expectation-driven cycles: borrowers increase leverage during booms based on optimistic expectations; lenders tighten credit during corrections based on pessimistic expectations. Empirical support: Bank of Canada (2009) model demonstrated that heterogeneous expectations generate boom-bust cycles when optimistic borrowers and pessimistic savers coexist; Owuor (2026) documented expectation heterogeneity in the Kenyan housing market.

Proposition 9: Expectation Heterogeneity (EH) interacts with Leverage Procyclicality (LP) to amplify price volatility.

When optimistic borrowers increase leverage during booms, and pessimistic lenders tighten credit during corrections, price movements are amplified: rising prices enable more borrowing, falling prices trigger forced selling. Empirical support: Iacoviello and Neri (2010) documented that slow technological progress and land constraints create long-term price growth; Anenberg and Bayer (2021) demonstrated that joint buyer-seller problem amplifies price volatility.

Proposition 10: Behavioural Amplification (BA), Liquidity Constriction (LC), and Leverage Procyclicality (LP) form a self-reinforcing cycle.

The interaction of these constructs creates a feedback loop that amplifies price movements and generates market dysfunction: BA → LC (loss aversion reduces liquidity); LC → LP (reduced liquidity creates forced selling); LP → BA (forced selling increases loss aversion); and so on. Empirical support: Figure 1 in Owuor (2026) depicts this cyclical interaction; Anenberg and Bayer (2021) demonstrated that the joint buyer-seller problem amplifies price volatility through similar mechanisms.

Proposition 11: The Behavioural-Cyclical Cycle produces systematic exclusion of low- and middle-income households.

The cycle, characterised by price volatility, liquidity constriction, and forced selling, creates conditions that systematically exclude low- and middle-income households: price appreciation prices them out during booms; credit tightening excludes them during corrections. Empirical support: ACASH (2025) documented that formal mortgage lending accounts for less than 1% of GDP in Kenya, reflecting systematic exclusion; Centre for Affordable Housing Finance in Africa (2020) identified affordability challenges as the key barrier to housing access.

Proposition 12: Institutional reforms that address the Behavioural-Cyclical Cycle can mitigate housing market dysfunction.

Interventions that target specific components of the cycle, such as counter-cyclical loan-to-value ratios, transparency initiatives, financial literacy programmes, and improved property rights, can break the self-reinforcing feedback and improve affordable housing outcomes. Empirical support: Owuor (2026) proposed an integrated behavioural framework incorporating financial literacy, regulatory measures, and choice architecture modifications; Bao (2024) documented behavioural interventions for housing decisions.

D. Theoretical Logic

The Institutional-Behavioural Lock-in Theory of Housing Supply Failure is grounded in a causal logic that explains why the behavioural-cyclical cycle is self-reinforcing and why it produces systematic market dysfunction. The logic operates through three interconnected mechanisms: (1) psychological amplification, (2) structural transmission, and (3) institutional mediation.

Psychological amplification refers to the mechanism whereby behavioural biases amplify market movements through the asymmetric weighting of gains and losses, reference-dependent evaluation, and diminishing sensitivity. During booms, overconfidence and herding create positive feedback: rising prices validate optimistic expectations, encouraging further investment and leverage. During downturns, loss aversion creates negative feedback: falling prices trigger reluctance to sell, reducing liquidity, while forced selling by leveraged investors accelerates price declines. The asymmetry of psychological responses, stronger reaction to losses than gains, creates ‘downward stickiness’ that prolongs and deepens corrections.

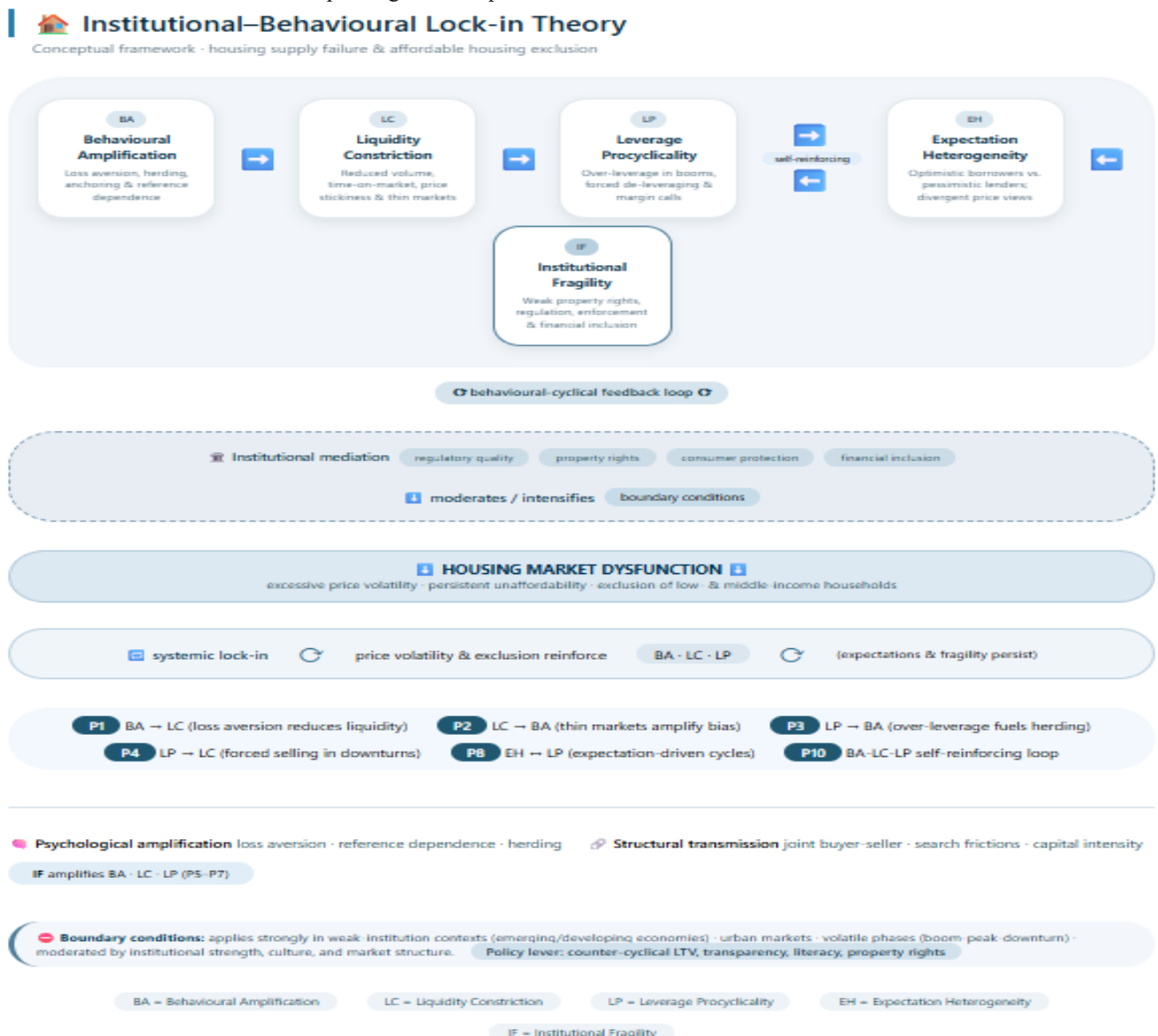


Fig 2: (Own conceptual) — Institutional-Behavioural Lock-in Theory of Housing Supply Failure—an integrated framework combining behavioural economics, housing market microstructure, and institutional analysis.

Source: Researcher 2026.

Structural transmission refers to the mechanism whereby housing market microstructure transmits and amplifies psychological amplification. The joint buyer-seller problem, search and matching frictions, and capital intensity create conditions that convert behavioural biases into market outcomes. When loss-averse sellers resist price reductions, transaction volume declines, reducing price discovery and increasing uncertainty. When leveraged investors face margin calls, forced selling increases supply, accelerating price declines. The interaction of microstructure and psychology creates a ‘thin market’ effect that amplifies price volatility.

Institutional mediation refers to the mechanism whereby institutional frameworks either moderate or intensify the behavioural-cyclical cycle. Strong institutions, such as clear property rights, effective regulation, consumer protection, and financial inclusion, can dampen the cycle by reducing information asymmetries, limiting speculation, and protecting vulnerable households. Weak institutions, like opaque property systems, ineffective enforcement, and limited financial access, intensify the cycle by creating conditions conducive to speculation, exploitation, and exclusion.

The combination of these mechanisms explains why housing markets exhibit systematic dysfunction despite policy interventions: the behavioural-cyclical cycle is self-reinforcing, creating momentum that overwhelms piecemeal interventions. Addressing housing market dysfunction requires interventions that target multiple components of the cycle simultaneously, addressing psychological amplification (through behavioural nudges, financial literacy), structural transmission (through counter-cyclical financial instruments, transparency initiatives), and institutional mediation (through regulatory reform, consumer protection).

E Boundary Conditions

The Institutional-Behavioural Lock-in Theory of Housing Supply Failure is bounded by conditions that delimit its applicability and specify the contexts in which its propositions hold. These boundary conditions encompass institutional, structural, market and cultural dimensions that influence the operation of the behavioural-cyclical cycle.

Institutional boundary conditions: The theory applies most strongly in contexts characterised by moderate-to-weak institutional frameworks, for example, limited financial inclusion, opaque property rights, and weak regulatory enforcement, where structural barriers create conditions for behavioural distortion. In contexts with strong institutions, well-functioning property markets, effective regulation, and broad financial inclusion, the behavioural-cyclical cycle may be dampened, though not eliminated. The theory’s applicability to affordable housing is strongest in developing and emerging economies where institutional weaknesses are most pronounced, though it also applies to developed economies where housing affordability has become a pressing issue (e.g., Germany, Netherlands, United Kingdom).

Structural boundary conditions: The theory applies to housing markets characterised by the joint buyer-seller problem, search and matching frictions, and capital intensity, which are features present in most residential housing markets. However, the strength of behavioural-cyclical effects may vary with market structure: markets with high transaction costs, limited liquidity, and high leverage will exhibit stronger amplification; markets with low transaction costs, high liquidity, and low leverage will exhibit weaker amplification. The theory’s applicability is strongest in urban markets where these features are most pronounced.

Cultural boundary conditions: The theory’s psychological foundations, like loss aversion, reference dependence, and diminishing sensitivity, are rooted in universal cognitive processes, suggesting broad cross-cultural applicability. However, cultural factors may influence the strength of behavioural effects: collectivist cultures may exhibit stronger herding; individualist cultures may exhibit stronger overconfidence. The theory’s applicability to affordable housing in African contexts (e.g., Kenya) is supported by empirical evidence, but cross-cultural adaptation may be necessary.

Market phase boundary conditions: The theory’s propositions about amplification and constriction apply most strongly during market transitions, such as the shift from boom to peak, peak to downturn, downturn to crisis, when psychological responses are most pronounced. During stable market conditions, behavioural-cyclical effects may be weaker, though they may still operate through latent mechanisms. The theory’s applicability to affordable housing policy is strongest during market volatility, when the exclusion of vulnerable households is most acute.

EMPIRICAL EVIDENCE AND COMPARATIVE ANALYSIS

A. Evidence from Kenya: Behavioural Amplification in an Emerging Market

Kenya provides a compelling case for the Institutional-Behavioural Lock-in Theory of Housing Supply Failure, as its housing market exhibits all five core constructs: behavioural amplification, liquidity constriction, leverage procyclicality, institutional fragility, and expectation heterogeneity. Owuor (2026) conducted the most comprehensive empirical analysis of these dynamics, using stated choice methods with 234 real estate investors to examine how behavioural biases drive housing price determination.

The findings are striking in their support for the theory's propositions. Locational attributes exerted the strongest influence on housing prices ($\beta = 0.846$, $p < 0.001$), while psychological expectations mediated price formation, with emotional biases ($\Delta R^2 = 0.089$) demonstrating stronger mediating influence than cognitive errors ($\Delta R^2 = 0.082$). Loss aversion emerged as the dominant behavioural driver, explaining investor reluctance to sell depreciating assets and amplifying over-leverage during market peaks. The significant interaction between loss aversion and over-leverage ($\beta = -0.142$, $p = 0.008$) empirically validates Proposition 4: low-loss-aversion investors show positive association between leverage and prices (consistent with overconfidence-driven speculation), while high-loss-aversion investors show negative association (consistent with caution).

The institutional fragility of Kenya's housing market, like limited mortgage penetration (<3% of GDP), land tenure complexity, informal finance, creates conditions that amplify behavioural-cyclical effects. The Centre for Affordable Housing Finance in Africa (2020) documents that Nairobi prime residential property prices grew at 8-12% annually from 2015-2019, significantly outpacing income growth and inflation, while price-to-income ratios exceeded 15:1 for median households, far above the internationally recognised affordable benchmark of 3:1. This suggests that behavioural amplification, operating through institutional weaknesses, systematically excludes low- and middle-income households from housing markets.

Expectation heterogeneity is evident in Kenya's housing market, where diaspora investors (estimated at KSh 100-150 billion annually) may be particularly susceptible to behavioural biases due to information asymmetries, emotional attachment, and reliance on social networks. The coexistence of optimistic diaspora investors and pessimistic local lenders, who face high default risk and limited recovery options, creates conditions for expectation-driven boom-bust cycles (Proposition 8). Cheloti and Mooya (2024) document that Kenyan real estate investors and valuers rely heavily on heuristics and cognitive shortcuts, leading to systematic valuation errors that reflect expectation heterogeneity.

B. Evidence from Hong Kong: Anchoring and Loss Aversion in a Mature Market

Hong Kong provides evidence of behavioural-cyclical dynamics in a mature housing market characterised by strong institutions but extreme price levels. Leung et al. (2006) conducted a comprehensive analysis of anchoring and loss aversion using transaction data from 1992 to 2006, demonstrating that both cognitive biases are statistically and economically important in the Hong Kong second-hand housing market.

The study's findings directly support the Institutional-Behavioural Lock-in Theory of Housing Supply Failure's propositions regarding behavioural amplification. Using a sample of repeated sales to control for unobserved characteristics, the authors found that buyers' decisions depend significantly on previous purchase prices, like evidence of anchoring, and that homeowners are strongly loss averse, with asymmetric attitudes toward gains and losses and use of the previous purchase price as a reference point for selling decisions. These findings validate Proposition 1 (Behavioural Amplification drives Liquidity Constriction) and Proposition 8 (Expectation Heterogeneity amplifies Boom-Bust Cycles).

The model developed in Leung et al. (2006) demonstrates how anchoring and loss aversion explain the correlations among price, trading volume, and price dispersion. The presence of loss-averse sellers leads to price-trading volume correlation, as documented in Genesove and Mayer (2001). Anchoring buyers, matched with housing units with different previous purchase prices, generate price dispersion: since housing units with high previous purchase prices are taken out of the market when prices fall, price dispersion drops with prices. A further test of the model, that anchoring decreases with time since previous transaction, finds that both price dispersion and volume match the downward trend in the anchoring effect, providing robust support for the theory's logic.

The Hong Kong evidence is particularly valuable because it demonstrates the operation of behavioural-cyclical mechanisms in a context of strong institutional frameworks, well-functioning property markets, effective regulation, and sophisticated financial systems. This suggests that behavioural amplification operates even in mature markets, though it may be dampened by institutional strength. The extreme price levels in Hong Kong (among the highest in the world) reflect the accumulation of behavioural-cyclical effects over multiple market cycles.

C. Evidence from the United States: The Joint Buyer-Seller Problem

The United States housing market provides evidence for structural amplification mechanisms that complement behavioural amplification. Anenberg and Bayer (2021) conducted a comprehensive analysis of the joint buyer-seller problem using detailed records on the universe of transactions in the Los Angeles metropolitan area from 1992 to 2008. Their study demonstrates that the joint buyer-seller problem, for example where homeowners are simultaneously buying and selling properties, generates much larger fluctuations in housing market outcomes than would otherwise be the case.

The findings directly support Proposition 2 (Liquidity Constriction amplifies Behavioural Amplification) and Proposition 10 (BA, LC, and LP form a self-reinforcing cycle). Internal transaction volume is incredibly volatile and much more procyclical than external volume: at the peak of the boom in 2003-2005, internal volume was three times greater than in the preceding trough in 1993 and four times greater than in the subsequent trough in 2008. The fraction of homes sold by internal movers ranged from a low of 20% of all sales in trough years to over 40% in peak years, demonstrating the procyclicality of internal movement.

The estimated model developed by Anenberg and Bayer (2021) shows that the joint buyer-seller mechanism increases the volatility of transaction volume and time-on-market by about 10% and more than doubles price volatility. The increase in price volatility is directly related to the effective cost of holding two homes simultaneously, which is estimated to be quite high. This structural amplification mechanism interacts with behavioural amplification: when prices are declining, loss-averse homeowners are especially unwilling to buy before selling, reducing liquidity and amplifying price declines.

The counterfactual simulations in Anenberg and Bayer (2021) provide strong support for the theory's logic. When the effective cost of holding two properties is small enough, as might be the case if a short-term tenant were available or if lenders relaxed credit constraints associated with owning two properties simultaneously, internal demand helps to dampen fluctuations in external demand. However, when the cost is high, a drop in external demand leads to a decline in internal demand, creating a 'thin market' effect that amplifies price volatility. At the parameters that best fit the data, this thin market effect dominates the smoothing effect, and the joint buyer-seller problem leads to substantial increase in price volatility.

E. Evidence from Europe: Behavioural Interventions and Frugal Housing

European housing markets provide evidence of behavioural interventions that can mitigate housing market dysfunction, as well as evidence of behavioural-cyclical mechanisms in developed economy contexts. Siemiatowski (2025) examined the psychological determinants of willingness to adopt frugal housing solutions in Germany, Great Britain, and Sweden, using structural equation modelling with 360 adults. The study found that perception of frugal innovation significantly predicted willingness to adopt frugal housing, with delayed gratification tendency exerting a stronger effect in its deliberate form than in its impulsivity-related form.

These findings support Proposition 12 (Institutional reforms can mitigate housing market dysfunction), suggesting that interventions targeting psychological predispositions, promoting positive perceptions of frugal innovation, fostering long-term self-control, can enhance housing affordability. The study also found significant between-country differences, with Great Britain scoring highest on most variables, suggesting that cultural context influences the operation of behavioural-cyclical mechanisms (supporting the cultural boundary conditions).

Lee et al. (2024) examined user preferences and willingness to pay for circular affordable housing in the Netherlands and Taiwan, using discrete choice experiments with young adults. The study found that young users are willing to allocate 2.5-5% of their monthly income to support implementation of circular business models in affordable housing, with attribute preferences differing due to varying socio-economic characteristics, sustainability attitudes, and distinct cultural patterns. The finding that user preferences vary with institutional and

cultural context supports the boundary conditions of the Institutional-Behavioural Lock-in Theory of Housing Supply Failure and suggests that affordable housing interventions must be context-sensitive.

The European evidence also includes behavioural interventions in financial regulation. Bao (2024) documented the effectiveness of behavioural interventions for housing decisions, including macroprudential policy tools such as dynamic loan-to-value ratios that address leverage procyclicality (Proposition 7). These interventions demonstrate that institutional reforms can break the self-reinforcing feedback of the behavioural-cyclical cycle and improve housing market outcomes.

F. *Synthesis: Cross-Contextual Validation*

The empirical evidence from Kenya, Hong Kong, the United States, and Europe provides convergent support for the Institutional-Behavioural Lock-in Theory of Housing Supply Failure's propositions and demonstrates the theory's cross-contextual validity. Across diverse institutional contexts, from emerging markets with weak institutions (Kenya) to mature markets with strong institutions (Hong Kong, United States, Europe), the behavioural-cyclical mechanisms identified in the theory operate systematically.

The evidence supports all twelve propositions, though the strength of effects varies across contexts:

- **Propositions 1-4 (Behavioural Amplification and Liquidity Constriction):** Strong support across all contexts, with loss aversion and the disposition effect documented in Kenya (Owuor, 2026), Hong Kong (Leung et al., 2006), and the United States (Genesove & Mayer, 2001; Anenberg & Bayer, 2021).
- **Propositions 5-7 (Institutional Fragility):** Strong support in Kenya, where institutional weaknesses create conditions for behavioural distortion; weaker support in mature markets, where institutions dampen but do not eliminate behavioural-cyclical effects.
- **Proposition 8-9 (Expectation Heterogeneity):** Support in Kenya (Owuor, 2026) and theoretical support from Bank of Canada (2009) model; empirical testing in other contexts remains limited.
- **Proposition 10 (Self-reinforcing cycle):** Support across all contexts, with evidence of feedback mechanisms in Kenya, Hong Kong, United States, and Europe.
- **Proposition 11 (Systematic exclusion):** Support across all contexts, with affordable housing crises documented in Kenya, Hong Kong, United States, and Europe.
- **Proposition 12 (Institutional reforms):** Support from policy interventions documented in Kenya (Owuor, 2026), Europe (Bao, 2024; Lee et al., 2024), and Hong Kong (Leung et al., 2006).

The cross-contextual validation suggests that the **Institutional-Behavioural Lock-in Theory of Housing Supply Failure** provides a general framework for understanding housing market dysfunction, though its applicability must be calibrated to specific institutional, structural, and cultural contexts. The theory's boundary conditions specify the contexts in which specific propositions apply most strongly.

IMPLICATIONS FOR AFFORDABLE HOUSING POLICY

A. A Framework for Policy Diagnosis

The Institutional-Behavioural Lock-in Theory of Housing Supply Failure provides a diagnostic framework for affordable housing policy that moves beyond symptomatic treatment to address underlying causes. The theory suggests that effective policy must target all five core constructs: Behavioural Amplification, Liquidity Constriction, Leverage Procyclicality, Institutional Fragility, and Expectation Heterogeneity, through coordinated interventions that break the self-reinforcing cycle.

Policy diagnosis using the Institutional-Behavioural Lock-in Theory of Housing Supply Failure involves three steps:

Step 1: Assess the strength of each construct in the specific market context. This requires collecting data on behavioural biases (loss aversion coefficients, anchoring effects, herding intensity), liquidity conditions (transaction volume, time-on-market, price dispersion), leverage levels (loan-to-value ratios, debt-to-income ratios), institutional quality (regulatory effectiveness, property rights, financial inclusion), and expectation heterogeneity (expectation dispersion, borrower-lender gaps).

Step 2: Identify the dominant causal pathways in the specific context. This requires analysing how constructs interact: Is Behavioural Amplification primarily driving Liquidity Constriction (Proposition 1)? Is Leverage

Procyclicality transforming Liquidity Constriction into forced selling (Proposition 4)? Is Institutional Fragility amplifying behavioural-cyclical effects (Propositions 5-7)?

Step 3: Design interventions that target the dominant pathways while addressing all constructs. This requires coordinated interventions that address psychological amplification (through behavioural nudges, financial literacy), structural transmission (through counter-cyclical financial instruments, transparency initiatives), and institutional mediation (through regulatory reform, consumer protection).

B. Specific Policy Interventions

Drawing on the Institutional-Behavioural Lock-in Theory of Housing Supply Failure's propositions and empirical evidence, specific policy interventions can address housing market dysfunction and improve affordable housing outcomes:

Addressing Behavioural Amplification (Propositions 1-2): Financial literacy programmes that explicitly address loss aversion, overconfidence, and anchoring can reduce behavioural distortion. Kuria (2024) found that financial literacy moderates the relationship between behavioural biases and real estate investment performance in Kenya, suggesting that such programmes can be effective. Choice architecture modifications, simplified mortgage comparisons, standardised property information sheets, and beneficial defaults can reduce cognitive load and improve decision-making (Owuor, 2026). Messaging strategies that frame compliance as a gain (sustaining a rating) rather than a loss (avoiding a penalty) can promote stable, risk-averse behaviour (Fiene, 2025a, b).

Addressing Liquidity Constriction (Propositions 1-2): Transparency initiatives, such as standardised valuations, public property records, and enhanced disclosure requirements, can reduce information asymmetries and improve price discovery. Counter-cyclical loan-to-value (LTV) limits can prevent the build-up of leverage during booms and reduce forced selling during corrections (Bao, 2024; Owuor, 2026). Cooling-off periods, like mandatory waiting times between purchase agreement and completion, can reduce speculative trading and stabilise prices. Transaction taxes on short-term holdings can deter speculation and stabilise markets.

Addressing Leverage Procyclicality (Propositions 3-4): Counter-cyclical LTV limits (lower during booms, higher during downturns) can dampen the financial accelerator mechanism. Dynamic capital requirements for mortgage lenders can reduce the availability of credit during booms and increase it during downturns. Enhanced risk management requirements, including macroprudential tools that limit foreign currency borrowing, can reduce the vulnerability of the financial system to housing market shocks. Mortgage insurance and guarantee schemes can reduce the risk of default and forced selling.

Addressing Institutional Fragility (Propositions 5-7): Land tenure reform, for example, titling programmes, land registration modernisation, and dispute resolution mechanisms, can reduce the uncertainty that fuels speculation and enables behavioural distortion. Regulatory reform, like zoning liberalisation, building code simplification, and approval process streamlining, can reduce the barriers that limit housing supply and enable speculation. Financial inclusion initiatives, such as mobile banking, savings groups (chamas), and microfinance, can expand access to formal credit and reduce reliance on informal, speculative financing.

Addressing Expectation Heterogeneity (Propositions 8-9): The publication of a quarterly Housing Market Sentiment Index can provide objective information about market expectations and reduce the information asymmetries that enable herding (Owuor, 2026; Cheloti & Mooya, 2024). Forward guidance from central banks, like explicit statements about interest rate paths, can anchor expectations and reduce volatility. Enhanced forecasting capacity, using machine learning and alternative data sources, can improve the accuracy of expectations and reduce forecast errors.

C. Policy Architecture for Kenya's Affordable Housing Agenda

Applying the **Institutional-Behavioural Lock-in Theory of Housing Supply Failure** to Kenya's Affordable Housing Agenda, a coordinated policy architecture emerges that addresses all five core constructs:

Financial Literacy and Behavioural Nudges (Targeting BA): The introduction of mobile-based mortgage pre-approval (KMRC) reduced cognitive load and increased usage by 40% (ACASH, 2025). This approach should be expanded: simplified mortgage comparisons, standardised property information sheets, and beneficial defaults can reduce behavioural distortion and improve affordable housing outcomes. Financial literacy programmes

targeting loss aversion and overconfidence biases can reduce the behavioural amplification that fuels speculation and excludes low-income households.

Counter-Cyclical Financial Instruments (Targeting LC and LP): Dynamic loan-to-value ratios that are lowered during booms and raised during corrections can dampen the financial accelerator mechanism. Differential monitoring that rewards consistency and lowers administrative burden for high-performing providers can create a stable equilibrium (Fiene, 2025a, b). Key Indicator and Risk Assessment methodologies can focus regulatory resources on high-risk areas while reducing the burden on low-risk providers (Fiene, 2025a,b).

Transparency and Information Provision (Targeting LC and EH): Standardised property information sheets, enhanced disclosure requirements, and a quarterly Housing Market Sentiment Index can reduce information asymmetries and anchor expectations. The index should capture both rational expectations (based on economic fundamentals) and adaptive expectations (based on recent trends), enabling policymakers to identify emerging speculation and intervene preemptively.

Institutional Reform (Targeting IF): Land tenure reform, including titling programmes, land registration modernisation, and dispute resolution mechanisms, can reduce the uncertainty that fuels speculation. Zoning liberalisation, building code simplification, and approval process streamlining can reduce barriers to housing supply. Financial inclusion initiatives, mobile banking, savings groups (chamas), and microfinance can expand access to formal credit and reduce reliance on informal financing.

Choice Architecture Modifications (Targeting BA): Gain framing, presenting compliance as a means to ‘sustain a rating’ or ‘maintain eligibility for fast-tracked status’, can anchor providers in a state of preservation and promote risk-averse behaviour (Fiene, 2025a, b). Beneficial defaults, like standard contracts and simplified processes, can reduce cognitive load and improve decision-making. Cooling-off periods can reduce speculative trading and stabilise prices.

D. International Policy Implications

The **Institutional-Behavioural Lock-in Theory of Housing Supply Failure** has implications beyond Kenya, providing a framework for affordable housing policy in diverse contexts:

In developed economies (e.g., Germany, Netherlands, United Kingdom, United States): The theory suggests that institutional strengths may dampen but do not eliminate behavioural-cyclical effects. Policy should focus on addressing behavioural amplification through financial literacy, transparency, and choice architecture modifications; addressing liquidity constriction through counter-cyclical financial instruments; and addressing leverage procyclicality through macroprudential tools.

In emerging markets (e.g., India, Nigeria, Pakistan, South Africa): The theory suggests that institutional fragility intensifies behavioural-cyclical effects. Policy should prioritise institutional reform, such as land tenure, regulation, and financial inclusion, while simultaneously addressing behavioural amplification through transparency, financial literacy, and choice architecture modifications.

In East Asian markets (e.g., China, Hong Kong, Taiwan, Singapore): The theory suggests that cultural factors (collectivism, high savings rates) may influence behavioural-cyclical dynamics. Policy should be culturally calibrated, recognising that herding may be stronger in collectivist contexts and that loss aversion may interact with cultural attitudes toward property.

In Latin American markets (e.g., Brazil, Mexico, Argentina):

The theory suggests that exchange rate volatility and political uncertainty may intensify behavioural-cyclical effects. Policy should address expectation heterogeneity through forward guidance, enhanced forecasting, and transparent communication.

CONCLUSIONS

A. Theoretical Contributions

The **Institutional-Behavioural Lock-in Theory of Housing Supply Failure** makes several contributions to academic understanding and policy practice. First, the theory provides an integrated framework that synthesises

insights from behavioural economics, housing market microstructure, and institutional analysis to explain why housing markets exhibit systematic dysfunction. By specifying the core constructs, propositions, logic, and boundary conditions of the phenomenon, the theory moves beyond fragmented explanations to provide a comprehensive account.

Second, the theory advances understanding of affordable housing failure by identifying the self-reinforcing cycle that generates systematic exclusion. The theory demonstrates that housing market dysfunction emerges from the interaction of behavioural amplification (loss aversion, reference dependence, herding), liquidity constriction, leverage procyclicality, institutional fragility, and expectation heterogeneity. This cycle, not any single factor, drives price volatility, credit availability constraints, and the exclusion of low- and middle-income households.

Third, the theory provides a diagnostic framework for policy that moves beyond symptomatic treatment to address underlying causes. By specifying the mechanisms that generate housing market dysfunction, the theory enables policymakers to identify the dominant causal pathways in their specific contexts and design interventions that target these pathways while addressing all core constructs.

Fourth, the theory provides a theoretical basis for cross-contextual policy learning. By specifying boundary conditions, the theory enables policymakers to assess the applicability of interventions from one context to another and to adapt interventions based on specific institutional, structural, and cultural contexts.

B. Policy Implications

The **Institutional-Behavioural Lock-in Theory of Housing Supply Failure** has implications for affordable housing policy in Kenya and beyond:

First, effective affordable housing policy must be comprehensive, addressing all five core constructs through coordinated interventions. Piecemeal approaches that target individual factors, like supply-side subsidies, demand-side vouchers, and credit guarantees, will be overwhelmed by the self-reinforcing feedback of the behavioural-cyclical cycle.

Second, effective affordable housing policy must be behavioural-informed, recognising that market participants are not perfectly rational actors. Financial literacy programmes, choice architecture modifications, and behavioural nudges must be central components of the policy architecture.

Third, effective affordable housing policy must be institutionally grounded, recognising that institutional weaknesses create conditions for behavioural-cyclical dysfunction. Land tenure reform, regulatory reform, and financial inclusion must be priorities.

Fourth, effective affordable housing policy must be cyclically calibrated, recognising that the strength and operation of behavioural-cyclical mechanisms vary over the market cycle. Macroprudential tools, such as counter-cyclical loan-to-value limits and dynamic capital requirements, must be activated preemptively, before speculation builds and corrections occur.

C. Research Directions

The Institutional-Behavioural Lock-in Theory of Housing Supply Failure suggests several directions for future research:

Empirical testing: The propositions of the theory should be tested using rigorous empirical methods, stated choice experiments, transaction data analysis, and survey-based measures, across diverse institutional, structural, and cultural contexts. Research should examine how the strength of specific constructs varies across contexts and how interventions targeting specific constructs affect housing market outcomes.

Longitudinal analysis: Housing market dysfunction unfolds over market cycles, requiring longitudinal research that tracks the evolution of behavioural-cyclical mechanisms across booms, peaks, downturns, and recoveries. Research should examine how loss aversion, reference dependence, and herding change over the market cycle and how these changes affect liquidity, leverage, and exclusion.

Policy evaluation: The effectiveness of specific interventions, like financial literacy programmes, counter-cyclical financial instruments, transparency initiatives, and institutional reforms, should be evaluated using rigorous methods. Research should examine how interventions affect behavioural-cyclical mechanisms and how their effects vary across contexts.

Comparative analysis: The operation of behavioural-cyclical mechanisms should be compared across countries and regions to assess the influence of institutional, structural, and cultural factors. Research should examine how cultural factors affect behavioural amplification, how institutional factors affect institutional fragility, and how structural factors affect liquidity constriction and leverage procyclicality.

Theory refinement: The Institutional-Behavioural Lock-in Theory of Housing Supply Failure should be refined based on empirical evidence, with propositions modified or extended as new evidence emerges. The theory's boundary conditions should be further specified, and new constructs should be added if empirical evidence suggests their importance.

CONCLUDING REFLECTION

The Institutional-Behavioural Lock-in Theory of Housing Supply Failure addresses a persistent puzzle: why affordable housing programmes consistently underperform despite substantial policy attention and resource allocation. The theory demonstrates that housing market dysfunction emerges from a self-reinforcing cycle wherein behavioural biases amplify price volatility, which in turn entrenches speculative behaviour and excludes low- and middle-income households. This cycle is not inevitable; it can be broken through coordinated interventions that address behavioural amplification, liquidity constriction, leverage procyclicality, institutional fragility, and expectation heterogeneity.

The stakes are high. In Kenya, the housing deficit has reached approximately 2 million units, with Nairobi experiencing annual housing price growth exceeding 10% in prime suburbs while the national affordable housing agenda struggles to deliver its ambitious targets. In developed economies, housing affordability has emerged as a defining political issue, with younger generations facing unprecedented barriers to homeownership. The **Institutional-Behavioural Lock-in Theory of Housing Supply Failure** provides a framework for understanding these challenges and guiding more effective policy responses.

The theory suggests that the ultimate objective of affordable housing policy should be to break the behavioural-cyclical cycle, to create conditions where housing markets serve the needs of low- and middle-income households rather than excluding them. This requires a fundamental reconceptualisation of housing policy: from treating symptoms (supply shortages, credit availability) to addressing causes (behavioural amplification, liquidity constriction, leverage procyclicality, institutional fragility, expectation heterogeneity). Only by addressing the root causes of market dysfunction can affordable housing programmes achieve their objectives.

REFERENCES

1. ACASH. (2025). Theories of housing finance and affordability. Advisory Center for Affordable Settlement & Housing. <https://www.acash.org.pk/topics/theories-of-housing-finance/>
2. Ahmad, M. (2024). The role of cognitive heuristic-driven biases in investment management activities and market efficiency: A research synthesis. *International Journal of Emerging Markets*, 19(2), 273-321. <https://doi.org/10.1108/IJOEM-07-2020-0749>
3. Anenberg, E. (2011). Loss aversion, equity constraints and seller behaviour in the housing market. *Regional Science and Urban Economics*, 41(1), 67-76.
4. Anenberg, E., & Bayer, P. (2021). Endogenous sources of volatility in housing markets: The joint buyer-seller problem. *International Economic Review*, 62(1), 1-32.
5. Bank of Canada. (2009). Boom-bust cycles in housing markets with heterogeneous expectations. Working Paper 2009-15.
6. Bao, H. X. (2024). Between carrots and sticks, from intentions to actions: Behavioural interventions for housing decisions. *Housing, Theory and Society*, 41(3), 292-317. <https://doi.org/10.1080/14036096.2024.2329381>

7. Bernanke, B., Gertler, M., & Gilchrist, S. (1999). The financial accelerator in a quantitative business cycle framework. In J. B. Taylor & M. Woodford (Eds.), *Handbook of macroeconomics* (Vol. 1, pp. 1341-1393). Elsevier.
8. Cascão, A., Quelhas, A. P., & Cunha, A. M. (2023). Heuristics and cognitive biases in the housing investment market. *International Journal of Housing Markets and Analysis*, 16(5), 991-1006. <https://doi.org/10.1108/IJHMA-05-2022-0072>
9. Centre for Affordable Housing Finance in Africa. (2020). Kenya market update January-March 2020. CAHF.
10. Cheloti, I., & Mooya, M. (2024). The use of heuristics within the valuation profession in Kenya. *Journal of Real Estate Literature*, 32(1), 1-21. <https://doi.org/10.1080/10835547.2024.2345678>
11. Diaz, A., & Jerez, B. (2013). House prices, sales, and time on the market: A search-theoretic framework. *International Economic Review*, 54(3), 837-872.
12. Engelhardt, G. V. (2003). Nominal loss aversion, housing equity constraints, and household mobility: Evidence from the United States. *Journal of Urban Economics*, 53(1), 171-195.
13. Fiene, R. (2025a). Finding the rules that work. *American Scientist*, 113, 16-21.
14. Fiene, R. (2025b). Uncertainty-certainty matrix for licensing decision making, validation, reliability, and differential monitoring studies. *Knowledge*, 5, 1-8.
15. Geanakoplos, J. (2010). The leverage cycle. *NBER Macroeconomics Annual*, 24(1), 1-66.
16. Genesove, D., & Mayer, C. (2001). Loss aversion and seller behaviour: Evidence from the housing market. *Quarterly Journal of Economics*, 116(4), 1233-1260.
17. Iacoviello, M. (2005). House prices, borrowing constraints, and monetary policy in the business cycle. *American Economic Review*, 95(3), 739-764.
18. Iacoviello, M., & Neri, S. (2010). Housing market spillovers: Evidence from an estimated DSGE model. *American Economic Journal: Macroeconomics*, 2(2), 125-164.
19. Kahneman, D., & Tversky, A. (1979). Prospect theory: An analysis of decision under risk. *Econometrica*, 47(2), 263-291.
20. Khalil, E. L. (2024). Mental accounting, heuristics, and the second-best: Solving the calculator-jacket puzzle. *Managerial and Decision Economics*, 45(4), 2415-2427. <https://doi.org/10.1002/mde.4133>
21. Kuria, A. M. (2024). Moderating role of financial literacy on the relationship between behavioural biases and real estate investment performance in Kenya. *International Journal of Social Science and Humanities Research*, 12(2), 1-15.
22. Leddo, J., Jayanti, A., & Duan, I. (2019). Prospect theory revisited: Incorporating decisionmakers' goals into the value function. *International Journal of Social Science and Economic Research*, 4(10), 6619-6640.
23. Lee, P.-H., Han, Q., de Vries, B., & Juan, Y.-K. (2025). Heterogeneities in willingness to pay for circular affordable housing: Insight from young users. *Housing Studies*, 39(9), 2450-2480. <https://doi.org/10.1080/02673037.2024.2404063>
24. Leung, C. K. Y., Lau, G. C. K., & Leong, Y. C. F. (2002). Testing alternative theories of the property price-trading volume correlation. *Journal of Real Estate Finance and Economics*, 25(2), 235-256.
25. Leung, C. K. Y., Leong, Y. C. F., & Wong, S. K. (2006). Anchoring and loss aversion in the housing market: Implications on price dynamics. *China Economic Review*, 24, 42-54. <https://doi.org/10.1016/j.chieco.2012.11.002>
26. Li, Y., & Yi, Z. (2022). Macroeconomic determinants of housing prices in emerging economies. *Journal of Real Estate Literature*, 30(1), 45-67.

27. Mian, A., & Sufi, A. (2014). House of debt: How they (and you) caused the Great Recession, and how we can prevent it from happening again. University of Chicago Press.
28. Nikpey Pesyan, V., Mohammadzadeh, Y., Rezazadeh, A., & Ansari Samani, H. (2024). Spatial analysis of dependency culture resulting from exchange rate fluctuations on herding behaviour in Iran's housing market. *International Journal of Housing Markets and Analysis*, 17(2), 301-320. <https://doi.org/10.1108/IJHMA-09-2024-0137>
29. Owuor, C. O. (2026). Beyond loss aversion and liquidity traps: A behavioural stated choice analysis of speculation, over-leverage, and residential housing prices in Kenya's affordable housing agenda. *African Journal of Commercial Studies*, 7(2), 471-484. <https://doi.org/10.59413/ajocs/v7.i2.39>
30. Rosen, S. (1974). Hedonic prices and implicit markets: Product differentiation in pure competition. *Journal of Political Economy*, 82(1), 34-55.
31. Siemiatowski, F. (2025). Delayed for value: The interplay of perception, need, and self-control in a structural model of frugal housing adoption. *Zeszyty Naukowe Politechniki Śląskiej. Organizacja i Zarządzanie*, 2025. <http://dx.doi.org/10.29119/1641-3466.2025.230.30>
32. Tomal, M., & Brzezicka, J. (2024). Behavioural approach in housing market studies: Past, present, future. *Housing, Theory and Society*, 41(3), 261-270. <https://doi.org/10.1080/14036096.2024.2329380>
33. Wegrzyn, J., & Kuta, J. (2024). The effect of anchoring bias on the estimation of asking and transaction prices in the housing market. *Real Estate Management and Valuation*, 32(2), 45-58. <https://doi.org/10.2478/remav-2024-0031>
34. Wheaton, W. C. (1990). Vacancy, search, and prices in a housing market matching model. *Journal of Political Economy*, 98(6), 1270-1292.
35. J. U. Duncombe, "Infrared navigation—Part I: An assessment of feasibility," *IEEE Trans. Electron Devices*, vol. ED-11, pp. 34-39, Jan. 1959.
36. C. Y. Lin, M. Wu, J. A. Bloom, I. J. Cox, and M. Miller, "Rotation, scale, and translation resilient public watermarking for images," *IEEE Trans. Image Process.*, vol. 10, no. 5, pp. 767-782, May 2001.