

Review Article

Reframing Housing Policy Through Behavioral Public Law: Nudges, Ethics, and Regulatory Design

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This article examines how behavioral public law, an interdisciplinary approach that combines legal analysis with insights from behavioral economics, can contribute to the design of more effective, affordable, and sustainable housing policies. It explores the potential of *nudging* strategies such as choice architecture, default options, and social norm activation to influence housing-related decisions without limiting individual autonomy. Through a critical review of the theoretical literature and empirical case studies, this study identifies five key dimensions for integrating behavioral insights into housing governance: type of nudge, level of intervention, stakeholder involvement, contextual conditions, and legal-ethical safeguards.

The analysis reveals that while nudges can enhance policy effectiveness in areas such as energy efficiency, rent compliance, and equitable access, their success is highly context-dependent and contingent on adequate legal regulations and transparency. This study argues for a balanced approach that embeds behavioral tools within broader regulatory and participatory frameworks to ensure ethical legitimacy, inclusiveness, and long-term impact. It aims to contribute to advancing behavioral public law as a robust methodology for addressing complex housing challenges by offering a structured analytical framework and highlighting the promises and limitations of behavioral interventions.

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1. Introduction and Research Question

Traditionally, public policies have been designed under the assumption that individuals behave as *rational agents* and consistently make decisions to maximize their well-being, following the neoclassical economic paradigm^{[1][2]}. However, research in behavioral economics and psychology has demonstrated that human decision-making is systematically influenced by *cognitive biases*, *heuristics*, and *social norms*^{[3][4][5][6]}. These insights underpin the emergence of *behavioral public law*, an interdisciplinary approach that integrates behavioral science into legal frameworks and public policy design. This approach acknowledges that individuals do not always act in their best interests because of limited rationality, constrained willpower, and social influence. Properly leveraging behavioral insights can be highly beneficial for policymakers, enabling them to design interventions that guide decision-making in the desired direction without coercion, thereby optimizing public policy outcomes.

One of the most significant applications of behavioral public law is housing policy, in which affordability, accessibility, and sustainability present persistent global challenges. Traditional housing policies primarily rely on financial and regulatory constraints to influence market behavior. However, these interventions often fail to account for the behavioral and psychological factors that shape housing environments. As a key instrument of behavioral interventions, nudging offers a complementary approach by subtly altering the choice architecture to encourage desirable behaviors without restricting the freedom of choice. For instance, setting default options for energy-efficient housing, strategically framing information about mortgage options, or using social norms to encourage timely rent payments can significantly impact decision-making. These behavioral interventions have been increasingly explored in public policy, yet their full potential in the housing sector remains insufficiently examined.

Despite the promise of nudging and other behavioral strategies, their implementation raises several challenges and ethical concerns. Ewert^[7] criticizes nudging strategies for their limited structural impact and context dependence. Another criticism is presented by Hausman and Welch^[8], who argue that while nudges are non-coercive, they can manipulate individuals' choices in ways that compromise autonomy and informed decision-making. Additionally, the effectiveness of behavioral interventions is highly context-dependent, meaning that successful strategies in one region may not be replicable in another because of cultural, economic, and social differences. Another key limitation is that nudges alone cannot resolve structural housing issues such as socioeconomic disparities and market inefficiencies. This makes it

necessary to adopt a more integrated approach that combines behavioral insights with traditional economic and regulatory tools to achieve long-term policy success.

This study aims to analyze the role of behavioral public law and nudges in housing policy and explore their effectiveness in addressing challenges related to affordability, sustainability, and social equity. By examining empirical studies and theoretical frameworks, I assess how behavioral strategies can enhance policy design and implementation. Additionally, this study discusses ethical and legal considerations for applying behavioral interventions in public governance, emphasizing the need for transparency, accountability, and continuous evaluation.

The paper is organized as follows. First, I provide a theoretical foundation for behavioral public law and its application to housing policy. Second, I analyze specific behavioral interventions, such as choice architecture and nudges, and their implications for housing markets. Third, I explore the economic, environmental, and social sustainability dimensions within housing policy, considering how behavioral insights can address these multifaceted issues. Finally, I discuss legal and ethical considerations and identify challenges.

By critically assessing the role of behavioral public law in housing policy, this study seeks to contribute to a more effective and ethically grounded approach to addressing housing challenges. The interactions between legal frameworks, economic incentives, and behavioral interventions hold great potential for designing policies that not only influence individual choices but also foster systemic improvements in housing markets worldwide. This study proposes a structured, critical review of the integration of behavioral insights, particularly nudging, into housing policy through the lens of behavioral public law. This study addresses the following research question:

- How can nudging strategies be effectively and ethically integrated into housing policy design and implementation to improve affordability, sustainability, and social equity?

To answer this question, I examine the theoretical and empirical literature on behavioral interventions and propose an analytical framework that identifies the key mechanisms, actors, and regulatory conditions for the successful application of nudging strategies in the housing sector.

1.1. Note on the Review Methodology

Although this article is not a systematic review in the PRISMA sense, key principles of transparency and structured literature identification were adopted. The literature discussed in this paper was identified through searches in Scopus, Web of Science, Google Scholar, Dialnet, and SSRN using terms such as “behavioral public law,” “nudging,” “housing policy,” and “choice architecture.” Sources were included if they addressed behavioral mechanisms or regulatory design in the housing sector or in related policy fields with transferable insights. Works without a behavioral or legal component were excluded. This provides a transparent and structured foundation for the critical synthesis presented in the following sections.

2. Theoretical Foundations and Conceptual Framework

Behavioral approaches to law and policy are inherently interdisciplinary, drawing not only from economics and psychology but also from sociology, public health, systems science, and design studies^{[9][10]}. While this section focuses on the legal-economic foundations of behavioral public law, it is important to situate the field within these broader perspectives.

The behavioral approach has emerged as a significant innovation in the intersection of economics, psychology, and legal studies. However, in both scholarly and policy discourse, key terms, such as *behavioral law and economics*, *behavioral public law*, and *nudging*, are often used interchangeably, blurring their specific meanings and interrelationships. This section establishes a conceptual hierarchy to distinguish between these terms and provides a theoretical basis for analysis in the following sections.

- **Behavioral law and economics (BLE)** is a foundational field that integrates psychological and cognitive insights into the economic analysis of legal systems.
- **Behavioral public law (BPL)** extends BLE by focusing on the design and implementation of public regulations and governance.
- **Nudging** refers to a specific set of tools or techniques, particularly *choice architecture*, used within BPL to influence decision-making without restricting freedom of choice.

The following three sections describe these concepts in detail. This visual representation can be presented as follows:

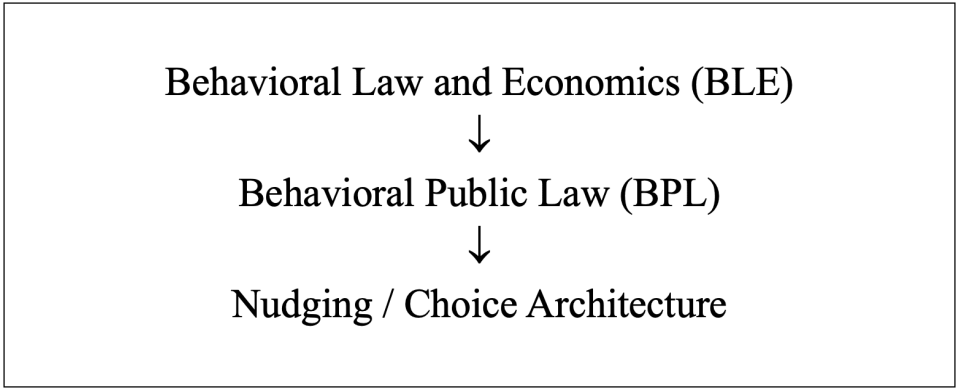


Figure 1. Hierarchical relationship of behavioral approaches in public governance. Source: Author's elaboration based on Jolls et al.^[4], Thaler and Sunstein^{[11][12]}, Mitchell^[13], and Oliver^[14]. Note that often “nudging” and “choice architecture” are used interchangeably, while sometimes authors distinguish between them; I am adopting the former for clarity.

2.1. Behavioral Law and Economics (BLE)

Behavioral law and economics has emerged as a critical response to the classical rational actor model, which dominates the standard economic analysis of law. Rather than assuming that individuals behave consistently and rationally to maximize utility, BLE incorporates empirical findings from psychology and cognitive science to demonstrate that individuals often make systematically biased, inconsistent, and suboptimal decisions.

One seminal contribution to this field is the work of Jolls et al.^[4], who argued that legal rules must account for bounded rationality, lack of self-control, and the influence of social norms. Similarly, Mitchell^[13] emphasizes that ignoring the behavioral characteristics of real-world decision-makers is not only normatively problematic but also empirically flawed. BLE has influenced many areas of law, including consumer protection, contract law, and criminal law. However, its application is particularly significant in public law, where legal norms affect large populations and regulatory success depends on how ordinary individuals perceive and respond to legal rules.

2.2. Behavioral Public Law (BPL)

Behavioral public law can be understood as a specialization within BLE that extends it by focusing on public regulation, policymaking, and administrative law through a behavioral lens. While BLE is a general analytical framework, BPL is concerned with how behavioral insights can improve the design, implementation, and legitimacy of public governance.

Rather than viewing public law as a domain of commands and sanctions directed at rational actors, BPL recognizes that public regulation should account for the behavioral tendencies of real people and use institutional tools to structure decision-making environments. This transforms the role of public law into one that actively shapes the conditions under which choices are made, helping people make better decisions—this always under the assumed biases of the policymaker—without eliminating the freedom of choice. Authors such as Engel^[15] and Pi, Parisi, and Luppi^[16] highlight the need to align public regulations with actual behavior. Thus, BPL contributes to improving regulatory effectiveness while reinforcing democratic legitimacy, particularly when combined with the principles of transparency, participation, and proportionality.

2.3. Nudging as a Behavioral Tool within Public Law

Nudging is a specific class of tools within the broader framework of behavioral public law. This concept, as introduced by Thaler and Sunstein^{[11][12]}, refers to *subtle modifications in the choice architecture* that predictably influence behavior without forbidding options or significantly changing economic incentives. Canonical examples include the automatic enrollment of employees into pension plans (default options), cafeteria food placement to encourage healthy choices, and organ donation defaults^[17]. By contrast, taxes, subsidies, or legal mandates alter the economic payoff of choices and therefore fall outside the definition of nudges^[18]. In this paper, such incentive-based measures will be treated as complementary but distinct from nudges.

Nudges rely on evidence that decisions in domains such as housing—for example, selecting a mortgage, adopting energy-efficient technologies, or engaging in local governance—are affected by behavioral biases such as status quo bias, loss aversion, or present bias. By redesigning the decision context, for instance, through defaults, framing effects, or social norms, nudges aim to steer individuals toward better outcomes.

Several typologies of nudges have been proposed:

- **Ex ante nudges**, which prevent suboptimal decisions (e.g., preselected options);
- **Ex post nudges**, which guide behavior after the decision point (e.g., reminders, feedback mechanisms);
- **Educative nudges and nudge plus**, which incorporate reflective or learning components into behavioral design^[19].

Despite their potential, nudges have raised ethical and legal concerns. Are they persuasive or manipulative? Should all nudges be regulated, or only those with substantial impacts? While these questions are explored in depth in Section 4, it is essential to emphasize that nudges are not substitutes for regulation but rather complementary instruments suited for situations where traditional policies prove insufficient or ineffective.

2.4. Analytical framework for integrating nudging into housing policy

To move beyond a descriptive overview of nudging strategies, this section outlines an analytical framework for understanding how behavioral public law can shape housing policies through the effective integration of nudging mechanisms. This framework is designed to support both the theoretical grounding and the policy design of behaviorally informed interventions.

While contextual conditions refer to the external environment shaping feasibility (e.g., centralized vs. decentralized housing markets, cultural acceptance of defaults, digital literacy levels), legal and ethical safeguards pertain to normative constraints on design and implementation (e.g., transparency obligations, informed consent, oversight bodies). Distinguishing between these two dimensions is important: the first addresses *opportunity structures*, and the second addresses *legitimacy and rights protection*.

I conceptualize this framework along five analytical dimensions, along with a design model for its implementation. I outline these dimensions in Table 1 to serve as a heuristic, but their application and refinement will follow in section 3, once empirical cases have been discussed.

1. **Type of nudging intervention:** distinguishes between *ex ante* nudges (which anticipate behavior) and *ex post* nudges (which correct behavior).
2. **Level of intervention:** identifies whether the nudge targets individuals, communities, or structural systems.
3. **Stakeholders involved:** maps out the actors responsible for the design, implementation, and evaluation (e.g., local authorities, landlords, tenants, and NGOs).
4. **Contextual conditions:** specify the political, legal, cultural, and technological settings that shape the feasibility and impact of nudging (e.g., market structures, cultural norms, technological capacities).
5. **Legal and ethical requirements:** outline the regulatory design necessary to ensure legitimacy, transparency, and rights protection (transparency, accountability, rights protection).

Dimension	Description	Example
Type of nudging	Preventive (<i>ex ante</i>) vs. corrective (<i>ex post</i>) nudges	Default options for green mortgages (<i>ex ante</i>); reminders for rent payments (<i>ex post</i>)
Level of intervention	Individual, community, or systemic level interventions	Community norms to encourage recycling in housing complexes
Stakeholders involved	Public authorities, tenants, landlords, developers, NGOs, behavioral scientists	Municipal planners + behavioral teams + tenant associations
Contextual conditions	Legal system, housing market structure, cultural values, technological infrastructure	Implementation varies between centralized vs. decentralized housing systems
Legal-ethical safeguards	Regulatory legitimacy, transparency, oversight, protection of vulnerable groups	Mandatory disclosure of nudges; participatory design processes

Table 1. Analytical dimensions in a proposed design for nudging-based housing interventions

3. Behavioral Strategies in Public Housing Policy

Housing interventions through behavioral strategies require a multifaceted approach that combines the three dimensions of sustainability—economic, environmental, and social^[20]—with behavioral insights as a

transversal axis¹. Nudging is also considered to be a tool for sustainability in a general sense^[21]. While most housing nudges operate at the level of individuals or households, systemic-level interventions are also possible. These target actors such as regulators, housing authorities, or landlords; for example, requiring landlords to disclose standardized energy ratings when advertising rental properties nudges them to internalize sustainability information. Similarly, default “green options” in public procurement of housing retrofits can steer entire markets toward more sustainable practices. These types of interventions illustrate that nudges can be designed not only for private decision-makers but also for institutional actors who structure housing markets. For successful intervention, it is necessary to provide financial incentives, combine them with behavioral insights, and develop a deep understanding of the social and economic context, adapting to the reality of each community to ensure its effectiveness and long-term sustainability^{[22][23][24][25]}.

The application of behavioral insights to influence individual decision-making and the implementation of housing policies is not new and has been used in initiatives such as rezoning, land consolidation, and the streamlining of permits to encourage the construction of affordable housing^[26]. Strategies such as presenting options in more comprehensible formats or modifying the environment can facilitate choices that result in long-term benefits for citizens^[27], in this case referring to criminal law. In any case, the selection of strategies must consider the relationship between the stimulus and behavioral response, avoiding interventions that lack impact due to poor design^[28].

Perhaps the most important aspect to consider regarding nudges is their medium- and long-term impact. The effects of these interventions are not usually immediate, as they depend on how people process information and adjust their behavior over time^[29]. Policymakers must continuously monitor the effectiveness of these strategies to adjust them as needed. Moreover, the success of such a stimulus is not universal. For instance, some studies have shown that small financial incentives do not generate significant changes in tenants’ relocation decisions, suggesting the need for more comprehensive approaches^[30]. Policymakers must flexibly assess the effectiveness of nudges and consider complementary strategies to address structural housing issues^[7]. Therefore, it is important to adopt a systemic approach that includes all stakeholders, including policymakers, public officials, and community organizations^[24]. Fluid collaboration ensures that behavioral insights are incorporated from policy design to implementation and evaluation, thereby improving the coherence and effectiveness of the adopted measures^{[7][30]}.

The selection of appropriate nudging tools requires the use of design frameworks that minimize the possibility of mismatches between the stimulus and the expected response. The effectiveness of the behavioral approach depends on its design and implementation, as well as knowledge of the socioeconomic context in which it is applied^[31]. Designing multiple versions of a nudge and evaluating them before implementation can enhance its impact^[28]. However, the lack of experience in applying behavioral theories among urban authorities can also limit the effectiveness of these strategies. Training public officials and developing capacities among government decision-makers are essential to overcoming these challenges and ensuring the proper application of nudges^[32].

3.1. On Economic Sustainability

Affordability issues arise when a significant portion of the population cannot obtain adequate housing without experiencing financial hardship. This problem is exacerbated by rising property prices and rents, which outpace income growth, leading to a greater financial burden on households^{[33][23][24]}.

The decision-making processes of individuals, as well as those of policymakers, can be influenced by cognitive biases and social norms, which may lead to inefficient housing outcomes^[16]. For example, reluctance to invest in energy-efficient housing owing to high perceived costs and an undervaluation of long-term benefits are behavioral issues that hinder the adoption of sustainable housing solutions^{[22][25]}. Additionally, the implementation of housing policies can be affected by stakeholder preferences and biases, leading to inconsistencies and inefficiencies in addressing housing needs^[34]. For instance, inclusionary housing policies requiring the allocation of a percentage of new developments to affordable housing can significantly alter the economics of housing projects. These allocations can be considered additional development costs, similar to construction expenses, and must be carefully accounted for in policy designs aimed at affordability^[35].

For example, Chareyron et al.^[36] tested simplified information sheets and default “green mortgage” options in France. Uptake increased among younger, higher-income buyers but remained low for more vulnerable groups, underscoring the need for complementary economic support. In China, Wu et al.^[37] found that reframing mortgage products as “eco-smart” led to a 12% higher adoption rate, though only in urban areas where environmental awareness was already widespread. These findings illustrate that “better outcomes” may benefit specific groups or market segments, raising questions about how the public interest should be defined and protected in housing policy.

Other strategies have also been proposed, such as inclusive zoning and shared-ownership schemes. These policies target specific population groups and aim to increase the availability of affordable housing. For example, an inclusionary zoning program may initially restrict housing to certain groups before allowing it to enter a broader market after a specific period^[38]. These strategies can be combined with behavioral incentives to enhance their effectiveness further. Regarding public housing, Das^[39] argues that behavioral interventions to promote housing affordability should be supported by demand-oriented economic policies aimed at helping tenants and homeowners improve their financial capacity. For instance, subsidized rent and homeownership can be integral components of the public housing system to enhance housing affordability.

Behavioral economics also plays a crucial role in understanding the economic consequences of housing policies. For example, the endowment effect, whereby original property owners are reluctant to participate, can hinder efficient exchanges in the market^[40]. This effect can reduce the size of the housing market, making it difficult to achieve optimal housing distribution^[41]. Additionally, the present bias, in which individuals place excessive importance on immediate benefits over long-term consequences, can result in insufficient savings for future housing needs.

Regulatory measures are essential to address the economic challenges of housing access^[42], but it has also been suggested that specific behavioral interventions in particular segments of the real estate market can effectively address availability issues without causing unwanted price increases^[36]. Furthermore, it has been argued that government interventions based on nudges are efficient and effective alternatives that can improve housing affordability while protecting the public interest^[37]. Likewise, the limited impact of financial incentives on housing consumption suggests that these should be complemented by strategies tailored to broader social and economic factors^[43]. The diversity, even the contradictions among the recommendations from the studies cited in this paragraph (conducted in France, China, and the United Kingdom), further highlights the necessity of considering behavioral approaches to housing issues in a territory-specific manner, based on customized multidisciplinary studies.

3.2. On Environmental Sustainability

A notable example of housing intervention is the application of nudges to improve energy efficiency in the social housing sector. Conflicting economic interests and behavioral issues can hinder investment in energy efficiency^[44]. By studying the split incentive paradox in a comparative behavioral context, policymakers can better address these issues and promote more effective energy efficiency measures^[25]. The “split incentive paradox” illustrates how behavioral contexts matter. In Eastern European markets, landlords’ reluctance to retrofit is reinforced by present bias, short-term credit constraints, and weak tenant bargaining power. By contrast, in Northern Europe, where tenant associations are stronger and regulatory traditions more robust, disclosure obligations and default retrofit packages are more effective. Comparative behavioral analysis helps to identify which nudges, such as mandatory disclosure of energy ratings or opt-out retrofit schemes, work best under specific institutional arrangements.

Quality is a critical aspect of housing-related environmental issues. In many urban areas, there is a shortage of affordable housing, forcing low- and middle-income families to live in poor conditions or overcrowded spaces. This shortage may result from restrictive land-use regulations and insufficient investment in housing quality during development^[24]. Additionally, the quality of available housing can be compromised by regulatory standards, poor construction regulations, lack of maintenance, and inadequate infrastructure, affecting both residents’ well-being and environmental sustainability^{[23][24]}. However, even the mere fact of planting trees in urban streets has resulted in higher housing values, with little effect on the possible gentrification of the neighborhood^[45].

Rehabilitation and renovation strategies are essential to address these deficits as they mobilize public resources to transform the housing stock in terms of quality and physical condition. These strategies also use nudges to improve residents’ environmental and living conditions by addressing structural deficiencies, enhancing energy efficiency, and modernizing facilities^[46]. By “structural deficiencies,” I refer to poor insulation, inadequate ventilation, dampness and mold, outdated heating systems, and unsafe electrical installations; these deficiencies not only undermine energy efficiency but also exacerbate health risks for tenants^{[47][48]}. Nudges can complement regulatory and financial instruments by encouraging behavioral compliance (e.g., framing ventilation as a health benefit) and landlord uptake (e.g., default retrofit offers embedded in renovation contracts).

The strategic activation of territorial policy instruments can help balance the interests of different groups and promote equitable access to quality housing^[49]. It has also been emphasized that environmental sustainability, policy interventions, and market forces are interconnected; without comprehensive environmental governance, market dynamics can exacerbate environmental inequalities, particularly in highly polluted cities^[50].

3.3. On Social Sustainability

Housing exacerbates social inequalities and can lead to adverse outcomes for individuals and communities. One significant consequence is the perpetuation of economic disparities^[51]. When housing is unaffordable, low-income families are often forced to allocate a disproportionate share of their income to rent, leaving them with less for other essential needs such as food, healthcare, and education. This financial strain can hinder social mobility and perpetuate cycles of poverty^[35].

Housing issues also negatively affect social cohesion. High levels of residential instability, often resulting from insecure or unaffordable housing, can disrupt community networks and weaken social bonds^[35]. This instability can lead to increased social isolation and reduced community participation, both of which are fundamental components of a healthy and supportive social environment^[25].

Behavioral public law and nudge-based strategies offer promising approaches to mitigating these social consequences. These strategies can promote socially equitable housing outcomes^[52]. For example, nudges that encourage investment in energy efficiency in social housing can generate cost savings for tenants, thereby improving their financial stability and overall quality of life. Additionally, policies that involve tenants in decision-making processes and allow them to transfer benefits when they move can enhance their sense of agency and investment in their communities^[25].

Nudges have also been used to improve the quality of public spaces, combat crime and antisocial behavior, and enhance road safety. Professionals' familiarity with behavioral theories varied, influencing their preconceptions about the utility of such theories. Some believe that applying behavioral theories is not worthwhile, highlighting the need for better training and understanding of these concepts among policymakers^[28].

Regarding health, inadequate housing can expose residents to environmental hazards such as mold, dampness, and poor ventilation, which can cause or worsen respiratory conditions such as asthma and bronchitis^[48]. These issues are particularly common in older, poorly maintained buildings, where structural deficiencies allow moisture accumulation and mold growth. Such environmental hazards can lead to increased hospital visits and place a greater burden on healthcare systems^[47].

Mental health is also profoundly affected by housing conditions. Overcrowding, lack of privacy, and noise pollution can contribute to stress, anxiety, and depression^[53]. The psychological strain of living in precarious housing can be exacerbated by the fear of eviction or homelessness, creating a persistent state of insecurity and instability. Chronic stress can have long-term effects on mental well-being and can lead to more severe mental health disorders^[54].

Behavioral public laws and incentive-based strategies offer potential solutions to mitigate these health consequences by influencing individual decision-making and, more importantly, policy implementation^[24]. For instance, policies that promote higher housing standards and provide incentives for landlords to maintain property can reduce residents' exposure to environmental hazards^[55]. Incentives, such as providing information about the health benefits of proper ventilation and mold prevention, can encourage residents to adopt healthier behaviors^[56].

3.4. Internal and External Validity of Behavioral Strategies in Housing

The behavioral strategies and policy interventions discussed in this section illustrate a variety of tools with the potential to improve housing outcomes across economic, environmental, and social dimensions. However, it is important to emphasize that many of these examples are context-dependent and may not be universally applicable without local adaptation.

Most of the referenced cases are drawn from studies conducted in specific countries or cities, such as energy-efficiency nudges in European social housing contexts^[25], rent payment incentives in Singapore and the UK^{[43][39]}, and zoning strategies in the United States and New Zealand^{[38][26]}. Their success depends on their legal frameworks, cultural norms, institutional capacities, and demographic characteristics. To assess their internal validity, one must consider whether the outcomes were measured systematically, whether the intervention was implemented as designed, and whether confounding factors were addressed. To assess external validity, scholars and policymakers must ask whether the underlying behavioral mechanisms, such as present bias or social norm sensitivity, are likely to operate similarly in different regulatory or cultural contexts.

Housing exemplifies a *wicked problem*: multiple interdependent actors, long feedback loops, and unintended consequences shape outcomes. Nudges can address some behavioral barriers, but they are most effective when combined with systems-based approaches. Methods such as agent-based modeling, system dynamics, and journey mapping of retrofit decisions can capture interactions between tenants, landlords, energy providers, and regulators. Integrating such methods helps policymakers design interventions that are both behaviorally sensitive and systemically coherent.

While this study did not aim to conduct a systematic comparative evaluation of each case, Table 2 includes brief information on the implementation context and available outcome data, where possible. This helps situate each example more clearly and illustrates the broader lesson that behaviorally informed housing strategies must be tailored to specific contexts to be effective and equitable.

Rigorous evaluation of housing nudges is essential, yet randomized controlled trials (RCTs) are rarely feasible at scale. Policymakers can instead employ:

- **Quasi-experimental designs** (e.g., difference-in-differences when interventions are rolled out gradually across regions);
- **Natural experiments** (using regulatory changes as treatment shocks);
- **Longitudinal monitoring** (tracking rent payment patterns or energy consumption across years);
- **Participatory evaluation** (engaging tenant associations or NGOs to collect impact data).

These types of approaches help balance methodological strength with the constraints of real-world housing systems. Ultimately, the promise of nudging in housing policy lies not in replicating isolated interventions but in understanding the conditions under which behavioral tools are most likely to succeed and in designing governance structures that can support iterative experimentation and contextual refinement.

Sustainability Dimension	Specific Housing Challenge	Relevant Bias / Principle	Nudge / Choice Architecture Intervention	Key Legal-Ethical Considerations	Context of Implementation	Reported Outcomes
Economic	Low uptake of energy-efficient mortgages among eligible homeowners	Present bias, complexity aversion, status quo bias	Simplified information, default "green" mortgage packages, streamlined applications	Transparency, fairness in access, avoiding predatory inclusion	France; China ^{[36][37]}	Mixed impact; defaults help but are insufficient alone
Economic	Delayed rent payments in social housing	Procrastination, optimism bias, lack of salience	Loss-framed reminders, easy payment platforms, small incentives for on-time payment	Dignity of tenants, fairness of penalty structures	UK, Singapore; ^{[43][39]}	Improved payment regularity in pilot programs
Environmental	Poor waste separation in multi-unit dwellings	Social loafing, inconvenience, lack of immediate feedback	Convenient bins, social norm messaging, gamification	Equity in service delivery, collective responsibility	Germany ^[44]	Increase in sorting rates and compliance
Environmental	Underinvestment in home insulation by landlords (split incentive)	Split incentive, bounded rationality	Energy rating disclosures, retrofit subsidies with nudges, default energy standards	Tenant protection, affordability after retrofitting	Eastern Europe ^[25]	Energy savings observed; adoption varies
Social	Low participation in community housing governance	Bystander effect, low self-efficacy, participation cost	Personalized invitations, online forums, clear impact framing	Inclusion, representation, avoiding tokenism	Netherlands; UK ^[28]	Moderate increase in attendance and engagement
Social	Reluctance to downsize by elderly owner-occupiers (underoccupation)	Endowment effect, loss aversion, status quo bias	Framing gains (e.g., financial benefits, easier maintenance), testimonials, personalized support	Autonomy, avoiding undue influence, availability of options	China ^[40]	Low mobility despite incentives; emotional attachment is strong

Table 2. Application of behavioral strategies to enhance sustainable housing outcomes

A synthesis of illustrative examples of behavioral insights applied to specific housing challenges across economic, environmental, and social dimensions, highlighting potential interventions and normative considerations. These are representative but non-exhaustive examples that may vary in different contexts.

A practical illustration of the framework is provided by rent payment reminders in social housing. These are *ex post* nudges (type) directed at tenants (level) but with systemic benefits for housing providers. Their design involves tenants, housing authorities, and behavioral teams (stakeholders) and depends on contextual factors such as digital literacy and trust in institutions. Legal and ethical safeguards, including privacy protection and opt-out options, are essential to ensure legitimacy. Evidence from the UK and Singapore shows reductions of 10–15% in late payments^{[43][39]}, demonstrating how the framework can be used to assess both the potential and the limits of behavioral interventions in housing policy.

4. Legal and Ethical Considerations in the Use of Nudging within Behavioral Public Law

Before turning to the legal and ethical implications of behavioral regulations in housing, it is important to reiterate the structural relationship between *behavioral public law* and *nudging*. In this study, *behavioral public law* refers to the broader normative and institutional framework that seeks to integrate insights from behavioral sciences into the design and implementation of public legal norms. *Nudging*, in contrast, is a specific technique within this framework, a set of tools for altering choice environments to influence behavior in predictable ways without coercion. While nudging has become the most visible and discussed aspect of behavioral regulation, it should not be conflated with the entire field of behavioral public law, which also includes broader questions on institutional design, public engagement, and regulatory legitimacy.

4.1. Political-Legal Perspective

Behavioral public law and nudge-based strategies in the housing sector require a solid regulatory framework that ensures transparency, fairness, and the protection of fundamental rights. The integration of behavioral insights with technology has enabled more precise, data-driven interventions, although it also raises additional challenges concerning privacy and the protection of personal information^[57]. The use of automated systems and large-scale data analysis redefines public policies but must be balanced with regulatory safeguards to prevent violations of fundamental rights. Several real-world applications of nudging in the housing sector have revealed both the promise and the regulatory tensions inherent in these behavioral approaches.

For example, in the Netherlands, municipalities have experimented with nudges to promote energy-efficient retrofitting of social housing. These interventions, often implemented through default settings in renovation offers and informational campaigns using social comparisons, have raised questions regarding the *threshold of legal regulation*. While the interventions were generally seen as legitimate owing to their non-coercive nature, public concern over privacy and data usage (particularly in smart meter programs) prompted the adoption of formal legal safeguards and transparency requirements^{[57][28]}.

In France, behavioral interventions around mortgage choice and home energy labeling have been introduced without parallel updates to consumer protection regulations. Although these nudges were intended to improve decision quality, they exposed gaps in the legal framework, particularly regarding informed consent and the right to explanation. Consequently, regulators have debated whether certain nudges should be classified as *soft regulation* or as requiring statutory authority, depending on their cognitive impact^[36].

Some nudges have already been absorbed into statutory regulation in Europe. For instance, the default pre-selection of ancillary services in airline bookings has been prohibited by EU consumer law, and cookie-consent defaults have been restricted by the General Data Protection Regulation and subsequent Court of Justice of the European Union case law². These examples show how interventions that began as choice-architecture tools can cross the threshold into formal regulation once their market impact becomes significant.

These examples illustrate that even minimally invasive nudges can raise regulatory issues when deployed at scale. Therefore, legal systems must distinguish between light-touch nudges, which may fall outside formal legal frameworks, and structurally impactful interventions that should be subjected to full procedural and normative scrutiny. Policymakers themselves are subject to behavioral and organizational biases. Evidence from international organizations^[58] indicates officials may prefer “light-touch” tools because they are inexpensive, politically feasible, and easy to communicate, even when deeper reforms could be more effective. Recognizing these biases is essential for building balanced regulatory mixes in which nudges complement, rather than displace, necessary structural interventions.

To effectively regulate nudges in housing policies, an interdisciplinary approach that combines law, organizational psychology, sustainability, and data analysis is necessary^[59], both theoretically and methodologically^[45]. A robust regulatory framework must consider procedural justice, which is crucial for fostering compliance and citizen trust in regulations^[60]. Perceptions of fairness in regulatory processes, such as participation, can improve the acceptance and effectiveness of interventions. An effective regulatory approach combines deterrence strategies with risk-based compliance, allowing for the optimization of rule enforcement without imposing excessive restrictions^[60].

The ultimate goal of the regulatory framework is to promote an ethical culture in housing policies. To achieve this, compliance strategies must influence the decision-making of key actors, ensuring that ethical principles are integrated into public policy formulation^[59].

Governments, particularly those at the local level, play a fundamental role in influencing land and housing market competitiveness. Their participation alongside central government bodies is essential for the

successful implementation of policies and mitigation of housing issues^[61]. To achieve this, they must address the intersection of public- and private-sector functions in housing provision. On the one hand, while privatization of housing can introduce competition and efficiency, it does not always lead to better outcomes if not properly regulated. Conversely, publicly driven housing projects can suffer from bureaucratic inefficiencies and misaligned incentives, as seen in large-scale developments that fail to meet the needs of the target population^[24]. The emphasis on providing below-market-rate housing through market mechanisms underscores the need for innovative financing instruments and policies. Implementing models that leverage market dynamics while ensuring affordability can help expand the available housing stock without compromising quality or accessibility^[62]. Effective housing policies require a balanced approach that harnesses the strengths of both sectors while mitigating their weaknesses.

Clearly, there are no universal solutions^[13]. Hankinson and de Benedictis-Kessner^[63] argued that tailored housing policy approaches, adapted and negotiated with the local private sector to the specific needs and conditions of a city, are important for mitigating availability issues. Additionally, existing design standards for public spaces may limit the application of nudges, even when behavioral theories suggest that they would be effective. These potential barriers highlight the need for coordinated action by public authorities and the adaptation of nudges to specific contexts^[34].

The legal configuration of behavioral tools must be carefully considered. While minimally invasive interventions can be implemented outside formal regulations, as long as they do not infringe on citizens' rights, more invasive behavioral interventions must be incorporated into formal regulation^[64]. For example, the debate over whether sanctions or nudges should be used to promote environmentally responsible behavior and other social objectives is particularly relevant. The analysis should be multifactorial and tailored to each city, even to specific neighborhoods, to assess the potential benefits and challenges of nudges as a policy tool in each case. Simultaneously, a more participatory approach to regulations involving citizens should be adopted^[29].

4.2. Ethical Implications of Nudging

There is significant debate regarding the ethics of using behavioral instruments in the public sector. Howard^[65] argued that the ethical perspective in public policies has both intrinsic value (enhancing citizens' moral and intellectual capacities) and instrumental value (increasing the justice of social policies). On the other hand, the use of nudges in behavioral public law aims to improve decision-making without eliminating freedom of choice. However, from another perspective, this can be viewed as interference with individual autonomy^[27]. The paradox of nudging lies in the fact that while it is based on the idea of limited rationality, it assumes a comprehensive view of rationality to correct suboptimal behaviors^[66]. From a different point of view, Lepenies and Malecka^[67] defend that it is important to focus on how behavioral policy is actually implemented, institutionalized, and justified in practice, rather than being overly preoccupied with theoretical debates on nudges.

Transparency is a fundamental requirement to ensure the legitimacy of nudges. For nudges to be ethically acceptable, citizens must be aware of their existence, understand their underlying mechanisms, and understand their objectives. If this is not done, the subtlety of these interventions may lead to a perception of manipulation if they are not properly communicated^[42].

A central ethical debate concerns the paradox that nudges claim to preserve freedom of choice while at the same time subtly steering behavior. For some, this raises concerns about manipulation, particularly when interventions are opaque or exploit cognitive vulnerabilities^{[8][18]}. Furthermore, while nudges are typically designed for short- or medium-term effects, evidence of their long-term durability is mixed^[68]. This raises a trade-off between *effectiveness* and *compliance*: stronger regulatory measures often generate greater impact but face higher resistance from powerful actors, whereas nudges tend to produce more modest changes but achieve broader compliance.

Moreover, the ethical concerns are not only hypothetical. In Singapore, the Housing and Development Board (HDB) introduced behavioral interventions to reduce rent arrears and improve tenant behavior in public housing estates. These included reminder messages, social norm posters, and behavioral prompts embedded in service communication. While these measures were effective in improving compliance, critics argued that their opacity and lack of informed consent risked undermining autonomy, particularly among low-income tenants with limited literacy or digital access^[29]. Consequently, the HDB reviewed its communication protocols, introduced opt-out options, and clarified the justifications for behavioral prompts.

Similarly, in Barcelona, neighborhood-level interventions using behavioral insights to promote tenant participation in housing co-management encountered ethical tensions when nudges were perceived as substituting for substantive inclusion. Although the interventions were well-intentioned, they were criticized for generating *tokenistic engagement* rather than fostering real deliberation^[69]. This highlights the

need to differentiate between behavioral tools that facilitate empowerment and those that inadvertently bypass democratic accountability.

As we can see in these examples, transparency, consent, and proportionality must be embedded not only in the design of nudges but also in their governance. Context-sensitive ethical oversight mechanisms tailored to different populations and regulatory traditions are indispensable for maintaining trust in behavioral public law.

Indeed, there is clear potential for manipulation through nudges. While they can be designed to promote public well-being, they can also be used to benefit certain interests at the expense of citizens, particularly in vulnerable sectors such as housing. The correct design of nudging strategies should include oversight and control mechanisms to prevent misuse^[70]. Designing effective and ethically responsible nudges requires careful evaluation of the factors influencing their impact and social acceptance.

Balancing effectiveness and ethics is essential for nudging strategies to be sustainable over time. While they can improve decision-making in housing, their application must ensure respect for individual rights and avoid any form of implicit or explicit coercion, such as hostile urbanism^[71], as well as promote the balanced use of public space^[72]. The regulations and ethical implications of nudging in housing require a balanced approach that combines transparency, fairness, and proper oversight.

It is also important to recognize that legal and technical design standards can constrain the application of nudges. For instance, fixed layouts of public spaces may prevent the repositioning of waste-sorting facilities, even where behavioral evidence suggests that small changes in bin placement could substantially improve compliance. Such limitations highlight the need to align behavioral interventions with existing infrastructural and regulatory contexts to avoid overestimating what nudging can achieve in practice.

5. Conclusions

This paper argues that behavioral public law, understood as the integration of behavioral insights into the design and implementation of legal norms, offers a promising yet underutilized framework for tackling the complex challenges of housing policy. Within this broader approach, nudging is a powerful tool for guiding individual decision-making through changes in the choice architecture. However, the relationship between nudging and behavioral public law must be clearly delineated. Nudging is a technique, not a theory of governance, that should always be embedded within a broader legal, ethical, and institutional framework.

At the same time, it is important to recognize the risk of what has been called the *individualization trap*. Behavioral interventions can inadvertently shift responsibility for systemic problems, such as housing shortages, affordability crises, or sustainability deficits, onto tenants and homebuyers, while leaving more powerful actors such as developers, landlords, or financial institutions largely unaffected. Addressing equity requires ensuring that behavioral tools do not displace attention from these structural determinants of housing policy.

By synthesizing theoretical debates, empirical examples, and regulatory case studies, this study contributes a structured analytical framework for assessing nudges in housing policy across five key dimensions: type of nudge, level of intervention, stakeholder ecosystems, contextual conditions, and legal-ethical requirements. This framework enables scholars and policymakers to distinguish between interventions that are contextually robust and transferable, and those that require significant adaptation. It also highlights the importance of aligning behavioral strategies with normative principles such as transparency, autonomy, inclusion, and fairness.

One of the central claims of this study is that nudging alone is insufficient to address the structural causes of housing inequality, environmental degradation, or social exclusion. Its effectiveness depends on how well it is integrated into economic, regulatory, and participatory processes. Moreover, poorly designed or opaque nudges may erode trust and democratic legitimacy. This implies that nudges must be regulated, not necessarily prohibited but institutionally supervised, ethically justified, and procedurally transparent.

From a legal perspective, behavioral public law must go beyond individual-level interventions to rethink how public institutions interact with citizens, particularly in the delivery of essential goods such as housing. This entails a shift from rule-centric governance to behaviorally informed regulatory ecosystems, where experimentalism, data governance, and citizen empowerment coexist under public scrutiny.

The broader lesson is that behavioral public law should not be seen as a substitute for traditional regulatory instruments, but rather as a complement that can enrich and refine them. Nudges and other behavioral tools are most effective when embedded in comprehensive policy mixes that also include legal mandates, financial incentives, and structural reforms. This integrated approach ensures both legitimacy and effectiveness in tackling complex housing challenges.

Finally, the long-term role of nudges in housing policy remains an open question. While they often enjoy higher compliance and public acceptability than coercive regulation, their effects may be modest and sometimes short-lived. This underscores the need for continuous evaluation, adaptive design, and

systematic monitoring of behavioral interventions in order to distinguish temporary effects from lasting contributions to affordability, sustainability, and equity.

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Data Availability

Data sharing is not applicable to this article as no new data were created or analyzed in this study.

Author Contributions

A.L.M. was the sole author and is responsible for the conception, analysis, and writing of the manuscript.

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Footnotes

¹ See Table 2 for a summary of how behavioral strategies are applied to enhance sustainable housing outcomes in relation to each dimension.

² See Judgment of the Court (Grand Chamber) of 1 October 2019. Case Verbraucherzentrale Bundesverband e.V. v Planet49 GmbH. Declaration of consent by means of a pre-ticked checkbox. ECLI:EU:C:2019:801

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