

# Building Sustainable Social Housing System: A Singapore Case from New Institutionalism Economics Approach

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**Abstract.** Policymakers worldwide currently face challenges in planning, regulating, and managing the housing market. One of the primary solutions is the provision of affordable social housing fostering economic development, culture integration, technology empowerment, and social stability. Singapore is recognized as a successful model of well-balanced centralized legislation and market-augmented governance. However, current studies have mainly focused on urban planning and real estate finance fields. A holistic approach should be conducted to understand the effectiveness of the whole framework and policy conduit including affordability, inclusiveness, and connectivity. This study emphasizes the importance of the Housing and Development Board (HDB) governance and analyzes what policies make social housing schemes robust and sustainable by combining the Singapore case with the New Institutionalism Economics (NIE) approach. HDB decreases transaction costs by centralized planning and establishes a transparent system to increase housing affordability and ownership. Inclusiveness is achieved by inter-departmental joint force so that social capital can be maximized for diverse community cohesion. Socio-technical change and institutional evolution have mutual effects on each other for efficiency and connectivity. Digital innovations make sustainable communities and smart cities. As a result, this study proposes a practical framework for learning from Singapore's implications for national governance, institutional development, and policy formulation that holds universal reference value.

**Keywords:** New-Institutionalism-Economics, Affordability; Inclusiveness, Digital Innovations, Smart City.

## 1. Introduction

Nations worldwide face the pressing challenge of providing sustainable social housing. In recent years, the Singapore social housing system has gained significant attention for its achievements of affordability, inclusiveness, connectivity, and sustainability. However, existing research in this field primarily covers urban planning issues such as regeneration, gentrification, and inequality, or adopts a real estate finance perspective, addressing price and economic concerns. The understanding of how policies and institutions are formulated by the government remains limited within the realm of land economy or neoclassical economics [1-4]. Consequently, the New Economics (NIE) framework is necessary for the exploration of social housing under bounded rationality and incomplete information.

Social housing policy is a complex scheme of multiple intertwined and influential elements. In examining the effectiveness of policies, scholars and policymakers have proposed conceptual frameworks that generally relate to legal, economic, social, and technological factors. From the legal and economic perspective, as Ronald H. Coase [5] discussed rights should be allocated to the most efficient parties, the Singapore government owns the land and central-govern the social housing system with less transaction cost. Considering the social importance, the policymakers dedicated to building an optimal level of community-based social capital for an equilibrium of societal well-being and economic growth as Joseph E. Stiglitz analyzed [6]. Moreover, technological advancements can disrupt existing institutional arrangements, leading to new structures and rules to accommodate the changes, which further fosters digital innovations as the virtuous circle [7]. Finally, policy efficacy is relevant to the interrelationship of the influences and the extent to which the policy objectives are reached. The NIE principles shed light on the delicate balance between market augmentation and institutional accountabilities as the driving force and cornerstone of national prosperity [8].

The Organization for Economic Co-operation and Development (OECD) suggests three key policy objectives for evaluating housing programs: inclusiveness, efficiency, and sustainability [9] which are recognized as instructive benchmarks and implications. Most policy areas cut across multiple dimensions and create synergies with other policy effects; a more comprehensive and customized framework needs to be put forward for Singapore's performance specifically for the social housing system. Without appropriate intervention, problems such as inequality, income, and ethnic segregation are likely to worsen [10]. The Singaporean government has implemented policies to position this nation as a distinctive global city through initiatives [11]. Glaeser perceived Singapore as a good balance of free-market with state-led progress [12]. Chua highlighted the global housing affordability problem and the role of homeownership policies in Singapore in mitigating income and wealth inequality [13]. The Singaporean social housing system has been commended for its inclusiveness, fostering multi-racial integration within housing communities [14]. A foresight study has explored the impact of technology on Singapore's social housing, emphasizing its ability to improve residents' access to amenities and services [15]. Additionally, Phil Allmendinger discussed how disruptive technology influences the growth of flywheels and considered Singapore a successful smart city [16]. Li Wan also studied the interoperability and compatibility of smart cities quoting Singapore initiatives as referential examples [17].

In conclusion, Singapore's social housing success and sustainability are highly correlated with the aspects of affordability, inclusiveness, and connectivity. This study aims to adopt the New Institutionalism Economics (NIE) approach and the Singapore case to figure out how to design institutional arrangements and what contributes to policy efficacy.

## **2. Sustainable Development of Singapore Social Housing System**

### **2.1. Introduction of the Singapore Social Housing System**

Singapore's social housing system has been widely recognized as a successful model for providing affordable housing, a quality living environment, and sustainable communities. Facing a unique conundrum due to high residential density, the policymakers have implemented a comprehensive set of initiatives. As a market-augmenting government, Singapore HDB and other institutions coordinate to ensure resource allocation and empowerment equality and transparency. Advanced technologies such as big data, AI, blockchain, Internet of Things (IoT), and Information and Communication Technology (ICT) are used to plan, develop, and transform towns into eco-friendly spaces.

### **2.2. Enhance Housing Affordability**

The Singapore government takes many measures to enhance affordability. The key dimensions can be categorized as centralized planning and legislation, and subsidized pricing and financing assistance.

#### **2.2.1. Centralized Planning and Legislation**

The Singapore government has spearheaded a comprehensive approach to social housing, encompassing all stages of the process, including planning, design, allocation, and ongoing management. The legal structure is consistently crafted and progressively strengthened to protect the welfare of citizens with a focus on public responsibility, transparent information, and effective governance.

Fundamentally, in line with the core idea of NIE, the Singaporean government has ensured centralized control over institutional design and legislation to enhance the effectiveness and efficiency of policy implementation. For example, The Housing and The Development Act in 1960 gave HDB the management position. Subsequently, other key shareholders are well united and organized for more entitlements. Clear legal instructions also obstruct the possibilities of rent-seeking and shirking. In 1968, Central Provident Fund (CPF) savings could be used for housing loan payments.

Since then, assorted policies and institutions have been established progressively to tamp and reinforce affordability without being jeopardized by corruption or anarchy.

### **2.2.2. Subsidized Pricing and Financing Assistance**

The long-term commitment is made to keep public housing accessible for Singaporeans. The programs prioritize first-time flat buyers, support seniors, and offer more options for low-income singles.

Initially, HDB flats are sold at subsidized prices, significantly lower than market rates. The discounted price cautiously ensures that a significant portion of households can afford HDB flats. Specifically, the HDB sets the price of a three-room flat such that 90% of households are capable of purchasing. The average HDB public housing price is only around  $\frac{1}{3}$  to  $\frac{1}{4}$  of the private property including condos and landed houses. Additionally, HDB also offers numerous financing schemes to help Singaporeans afford their homes. The government provides substantial grants of up to \$80,000. These include the Central Provident Fund (CPF) Housing Grants, which provide financial assistance to eligible buyers, and housing loans with favorable interest rates.

## **2.3. Build Inclusive Community**

Singapore has made significant efforts to promote inclusiveness in various aspects of a multi-racial, multi-religious, and multi-cultural society. The government has taken initiatives to ensure equal opportunities and access for all individuals, regardless of their background or circumstances. In terms of housing, HDB implements fair allocation policies to ensure equitable access to housing for different ethnic groups, income levels, and family types. This helps to foster social cohesion and integration within communities.

### **2.3.1. Diverse Ethnic and Cultural Integration**

Fostering a collective Singaporean identity among diverse ethnic groups and cultivating a multicultural society characterized by peaceful coexistence are core principles of inclusivity.

The Inter-Religious Organization (IRO) was established to advance religious unity and harmony through interfaith community programs, complemented by secular policies, meticulous planning, and governance. The Housing Development Board (HDB) strategically allocated new flats to integrate different ethnicities within new housing estates. Subsequently, the Ethnic Integration Policy (EIP) was implemented to prevent the formation of ethnic enclaves, imposing racial quotas for HDB blocks and neighborhoods. The Maintenance of Religious Harmony Act (MHRA) was also introduced by the government to promote tolerance and moderation among various religious groups, aligning with the Inverted-U Theory in the context of social capital, which underscores the non-linear relationship between factors and outcomes for policymakers.

Comprehensive policies necessitate well-coordinated implementation involving stakeholders at all levels. For instance, Singapore's urban planning policies incorporate Places of Worship (PWs) as social amenities and cultural assets, integrating religious institutions into the broader community. Common areas such as void decks, amphitheaters, and community centers are designed to host social and religious events for residents of diverse backgrounds, fostering mutual understanding of each other's customs and beliefs. The National Steering Committee (NSC) on Racial and Religious Harmony and the Religious Rehabilitation Group (RRG) play pivotal roles in conflict resolution.

### **2.3.2. Multiple Income and Family Types**

Singapore social housing is accessible to individuals and families across various income levels. This helps to address the housing needs of low-income households who may struggle to afford market-rate housing, and also the middle class who may hope to generate income and make a profit by investment through prime HDB.

Low-income families could purchase standard housing with limited budgets to satisfy their essential living provisions. Plus, flats with choicer locations near MRT stations or town centers can cater for more wealthier families or individuals with more requirements. People with both living and

investment considerations would rather go for Prime flats close to the city center with nicer design and more amenities, which may have a higher value in the future. Multi-generation flats with 4 to 5 rooms can be applied by big families living together. Young singles can apply for new 2-room Flexi flats or buy resale flats in any estate along with relaxation in the eligibility and criteria. Marginalized people like the disabled can be taken care of by a lease scheme as well. Elderly aged 55 and above citizens have more choices with community regeneration.

## **2.4. Develop Seamless Connectivity**

In certain cities, indigenous populations have been adversely affected by the issue of gentrification, as affluent outsiders acquire properties and drive up the cost of living in these areas. While the government aims to address this problem through public housing initiatives, residents often hesitate to relocate due to concerns about inconvenient locations and unfamiliar surroundings. However, Singapore has adopted a distinct approach. The government has made a state-orchestrated smart HDB town framework to make intelligent transportation, convenient connections, and a smarter city.

### **2.4.1. Smart Transportation and “15 Minutes” Town**

Instead of locating public housing in isolated areas, HDB flats are strategically dispersed across various locations, ensuring excellent connectivity. Following the "neighborhood concept," HDB towns are designed to be self-sufficient, providing easy access to shops, schools, social and recreational spaces, and ample greenery. Facilities are arranged based on the "hierarchical concept," offering residents close proximity to a range of amenities. Schools and parks are strategically positioned amidst high-rise residential developments to provide visual and spatial relief throughout the town, following the "checkerboard concept." Renowned hawker centers, including stalls with "Michelin Star" status, serve as gathering places for people of all income levels and ethnicities to socialize, play, and dine together on delicious and affordable food.

Towns are meticulously planned with a comprehensive transport infrastructure, including interconnected cycling and pedestrian networks for convenience. The public transport system prioritizes first- and last-mile connectivity, typically centered around an integrated hub for the MRT station and bus interchange. Each block has access to a bus stop or MRT/LRT station, facilitating easy travel within the town and to other parts of Singapore. Diverse user groups on the move have access to a wide range of information services for an enhanced travel experience. Connected vehicles and infrastructure share extensive information to improve spatial contextual awareness and road safety.

### **2.4.2. IoT and ICT Empowered Community**

The advent of IoT connectivity has led to significant progress in residents' lives and governance. Digitalization is pivotal in reshaping communities and fostering unity among people. Through connected devices and sensors, individuals can conveniently access information, services, and resources, while governments can gather real-time data on various urban aspects such as waste management, energy usage, and public safety.

With over 80% of Singaporeans residing in HDB flats, this represents a substantial database containing diverse information. Collaborating with local universities, HDB utilizes big data and smart technology to analyze shifts in socio-demographic factors and develop new housing solutions that align with residents' evolving needs and aspirations. Initiatives like HDB's Smart Enabled Home, including the Elderly Monitoring System, offer families greater peace of mind regarding the well-being and safety of elderly relatives living alone. The Space Out system provides real-time crowd-level information to support COVID-19 efforts. Through ICT, communities can adapt to challenges, enhance resilience, and prepare for crises. In summary, digital innovations have transformed connectivity into a new paradigm and propelled city governance toward a smart future, with the potential to create more sustainable, inclusive, and livable cities for all.

### 3. Conclusion

The study concludes the key factors for Singapore's social housing sustainability. Firstly, the system achieves affordability, allowing citizens to become property owners. Additionally, it promotes inclusiveness, facilitating multi-racial integration within the communities. Furthermore, the system benefits from connectivity empowered by smart transportation and digital innovations. The government plays a crucial role in the success. On one hand, it implements effective centralized planning and a comprehensive legislative framework and collaborates with various institutions. On the other hand, it also protects market freedom and residents' demands through a clear vision and crystalized intelligent strategies since the system's inception. This balance between the market-augment approach and institution accountability ensures smooth policy deployment and as a result, contributes to the revitalization of the country. Other countries could learn from these experiences and adopt a more scientific approach to address housing issues.

As far as the limitation is concerned, it is worth noting that due to the peculiarities in terms of population density and the size of the state apparatus, Singapore's policy and institutional experiences may not necessarily have similar effects when applied to other national contexts. Therefore, a thorough and quantitative approach with nation-based comparisons should be explored for further policy efficacy examination.

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