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Examining the planning model and rationality values of Singapore's state planning: Is it effective and successful?

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ABSTRACT

National planning plays a crucial role in navigating the increasing complexity of modern development, which is marked by rapid urbanization, climate change, and social inequity. Singapore is a compelling case study because of its remarkable success in transforming itself into a developed nation through a highly structured, rational, and long-term-oriented planning system. Its approach reflects a strongly technocratic and centralized model, with the government exercising dominant authority in shaping development trajectories through data-driven and scientifically informed concept and master plans. To understand this phenomenon, this study employs the Synoptic, Incremental, Transactive, Advocacy, and Radical Planning (SITAR) framework as the analytical foundation. Based on an extensive literature review and the author's argumentative analysis, Singapore's planning practice is most accurately classified under the Synoptic or Rational Comprehensive Planning Model, which prioritizes rationality, consistency, and efficiency. While this model has contributed significantly to policy coherence and effective development outcomes, it also has limitations, particularly regarding public participation and flexibility in responding to evolving social dynamics. Overall, rational planning in Singapore has proven effective in a stable political environment, but it must be complemented by more communicative and inclusive approaches to meet future development challenges.

Keywords: national planning; rationality value; Singapore; sitar; synoptic planning

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1. INTRODUCTION

In the current era, globalization plays a crucial role in accelerating rapid and information-driven transformations, compelling every nation to adopt a planning system that is not only technically effective but also adaptive to social, economic, and environmental dynamics (Bamrunghul & Tanaka, 2023; Jie, 2025). Massive urbanization, climate change, and social inequality have become major challenges that require comprehensive and long-term planning approaches (Safo et al., 2024; Mbatu et al., 2025; SmithBattle & Flick, 2024). In this context, national planning serves as a strategic instrument for determining development trajectories, maintaining stability, and optimizing resources (Barrington-Leigh & Millard-Ball, 2020; Boeing, 2022; Chen et al., 2024). Therefore, examining the planning model of a particular country is essential for understanding how rationality and policy effectiveness are formulated and implemented in that country.

Singapore is a prominent example often referenced in development planning practices (Ng et al., 2023). This small nation with limited natural resources has managed to transform itself into a global center of economic activity and innovation through a strong, structured, and measurable planning system (Ng et al., 2017). Its success is frequently attributed to a rational, centralized, and data-driven planning approach (Cao et al., 2022). However, behind this effectiveness lies a critical question of how far the planning model truly addresses development complexities without compromising participation values (Day, 1997; Diehl & Chan, 2021; Glass, 1979), social equity (Okonkwo et al., 2025; Teo et al., 2025), and adaptability to societal dynamics (Diehl & Chan, 2021).

To examine Singapore's planning in greater depth, this study employs the SITAR model (Z. Cao et al., 2018). This model provides a comprehensive analytical framework for assessing rationality orientations, decision-making patterns, and the roles of actors in planning processes. Each model has distinct characteristics: the synoptic model emphasizes full rationality and state control; the incremental model highlights gradual compromise; the transactive model values dialogue between planners and communities; the advocacy model focuses on social justice; and the radical model calls for structural transformation (Hudson et al., 1979). Using this framework, Singapore's planning can be understood not merely as a technocratic practice but also as a reflection of rationality values and the political paradigm underpinning it.

This scholarly essay is driven by the central question: *Is Singapore's national planning model truly effective and successful in addressing the complexities of modern development?* To answer this question, this study analyzes the rationality value underlying Singapore's planning policies and assesses their alignment with the SITAR model. By examining how decision-making processes unfold, the extent to which public participation is incorporated, and how efficiency is balanced with social legitimacy, this study aims to provide a comprehensive understanding of the strengths and limitations of Singapore's planning model.

This analysis is important because it offers deeper insights into the relationship between planning models, policy rationality, and development outcomes in countries with strong political and administrative characteristics, such as Singapore. Moreover, the findings can provide valuable lessons for other countries, including Indonesia, in designing planning systems that balance technocratic rationality and public participation. Thus, this study not only evaluates the effectiveness of Singapore's planning but also enriches the academic discourse on planning models and rationality values within the context of modern state development.

Although Singapore is frequently celebrated as a planning success story, much of the literature tends to emphasize visible developmental outcomes while paying less attention to the planning logic and normative trade-offs that produced these outcomes. In particular, the relationship between technocratic efficiency and democratic legitimacy remains to be examined. A planning system may be considered successful in terms of housing delivery, spatial order, and infrastructure integration, yet still raises important questions about whose interests are prioritized, how dissent is managed, and whether long-term effectiveness can be sustained when social aspirations become more plural and complex. This gap is especially relevant in the Singaporean case, where a centralized authority has generated highly

coordinated urban development, but where the space for public contestation and deliberative input remains comparatively narrow (Alexander, 2002; Innes, 1995).

Accordingly, this study positions Singapore not merely as a model of planning efficiency but as a critical case for assessing the continuing relevance of rational-comprehensive planning in contemporary state governance. By interpreting Singapore’s planning through the SITAR framework, the analysis goes beyond descriptive admiration and evaluates how rationality values are institutionalized, what forms of effectiveness they produce, and what limitations they create for participation, flexibility, and social inclusion. This perspective is important for countries that seek to learn from Singapore’s experience because it suggests that planning success cannot be separated from political structure, administrative capacity, and the social contract that supports state intervention. In this sense, the Singapore case offers both inspiration and caution for broader planning debates in Asia and beyond (Hudson et al., 1979; Hall & Tewdwr-Jones, 2019).

2. LITERATURE REVIEW

In contemporary planning studies, a solid understanding of theoretical frameworks is essential for analyzing the operation of planning systems. Two key concepts that are particularly relevant in examining national planning approaches are the SITAR model and rationality values in planning.

2.1. SITAR Planning Model

The SITAR model is an analytical framework used to understand various approaches in the planning process. Each model embodies distinct characteristics and rationality values in terms of how policies are formulated and implemented (Cao et al., 2018; Hudson et al., 1979). The Synoptic model emphasizes comprehensive rationality, data-driven analysis, and a top-down structure with strong state control. The Incremental model focuses on gradual, small-scale changes shaped by political compromise and practical experience. The Transactive model highlights the interaction between planners and communities through dialogue and mutual learning. The Advocacy model underlines social justice by empowering marginalized groups to have a voice in planning processes. Meanwhile, the Radical model seeks fundamental structural transformation to address social and economic inequalities. Thus, SITAR serves as a comprehensive conceptual tool for assessing rationality orientations, ideological values, and the overall effectiveness of a planning system, including in the context of national planning (Hudson et al., 1979). Here is the refined SITAR Planning Model table (see Table 1).

Table 1. SITAR Planning Model Table

No	Planning Model	Key Characteristics	Rationality Values	Approach
1	Synoptic	Comprehensive, systematic, data-driven, top-down	Comprehensive rationality	Holistic analysis and long-term planning
2	Incremental	Gradual change, small-scale adjustments, adaptive	Bounded/practical rationality	Step-by-step policy adjustment
3	Transactive	Interactive, dialogue-based, mutual learning	Communicative rationality	Direct engagement between planners and communities
4	Advocacy	Social justice-oriented, representing marginalized groups	Normative rationality	Interest representation and pluralistic planning
5	Radical	Structural transformation, systemic change	Critical rationality	Fundamental restructuring of socio-economic systems

Source: Hudson et al. (1979)

The SITAR framework provides a comprehensive lens for understanding different planning approaches based on their characteristics, rational values, and methods of implementation. The Synoptic model emphasizes a comprehensive, data-driven, and top-down approach grounded in rational analysis

and long-term planning. In contrast, the incremental model adopts a more pragmatic and adaptive strategy through gradual, small-scale policy adjustments. The Transactive model highlights communicative rationality by fostering direct interaction and mutual learning between planners and communities. Meanwhile, the Advocacy model focuses on normative rationality by promoting social justice and representing the interests of marginalized groups within the planning process. Finally, the radical model is rooted in critical rationality, aiming to achieve fundamental structural changes to address deep-seated social and economic inequalities. Together, these models illustrate the diverse rationality orientations and approaches that can be used to assess the effectiveness and ideological foundations of planning systems.

2.2. Rationality Value in Planning

The rationality value in planning reflects the degree of rationality adopted in the formulation and implementation of development policies (Steinhoff, 2009). This underscores the importance of decision-making that is logical, data-driven, and aligned with the relationship between goals, means, and outcomes sought (Læg Reid, 2016). In practice, rationality is not only tied to technocratic efficiency but also to the extent to which planning accommodates social, political, and moral values. Various forms of rationality exist, such as instrumental rationality, which focuses on efficiency and outcomes, and communicative rationality, which emphasizes dialogue, participation, and consensus building in planning (Diller & Oberding, 2018). Accordingly, rationality serves as a crucial foundation for assessing whether a planning process is effective, equitable, and responsive to societal needs.

3. RESEARCH METHOD

The method used in this study is a literature review complemented by argumentative analysis. This approach was chosen because it offers a rational and comprehensive means of examining Singapore's national planning using theoretical insights and secondary data. A literature review was conducted by tracing relevant scholarly sources, including journal articles, books, and published research reports, to obtain an in-depth understanding of the planning models and rationality values applied. An argumentative approach was employed to construct a critical analysis based on logical reasoning and the author's reflection on planning theories, particularly the SITAR model. Through this combination, the study provides a conceptual description and an in-depth argumentative interpretation of the effectiveness and rationality of Singapore's national planning.

To strengthen the review process, the literature examined in this study was selected based on its relevance to three key dimensions: Singapore's planning institutions and practices, theories of planning rationality, and comparative discussions of planning models. Priority was given to peer-reviewed journal articles, academic books, and institutional publications that specifically addressed land governance, urban development instruments, public housing, and state-led planning in Singapore. This purposive strategy allowed the study to focus on sources that are conceptually rich and empirically relevant while avoiding descriptive materials that do not sufficiently explain the logic of planning or the values embedded in policy formation.

The analytical procedure was performed in several stages. First, the selected literature was reviewed to identify recurring themes of centralization, long-term vision, public participation, efficiency, and legitimacy. Second, these themes were mapped onto the main components of the SITAR framework to determine which planning model most closely corresponded to Singapore's practice. Third, the identified patterns were interpreted through the lens of rationality values, particularly instrumental, technocratic, and communicative rationality, so that the analysis could move from classification to critical evaluation. Through this process, the study connects empirical observations about Singapore's development outcomes with broader theoretical debates in planning scholarship.

Because this research relies on secondary materials and argumentative interpretation, it does not seek statistical generalization. Instead, its strength lies in the depth of conceptual synthesis and ability to generate a theoretically informed reading of a well-documented planning case. Nevertheless, the study

recognizes that literature-based analysis is shaped by the availability of published sources and the interpretive position of the author. Therefore, the discussion is framed cautiously, emphasizing that the conclusions should be understood as an analytical assessment of Singapore's planning rationality rather than an exhaustive account of every institutional or political dimension of the country's development process.

4. RESULT AND DISCUSSION

4.1. Types of Planning Models in Singapore

The planning phenomenon in Singapore is best understood through the Synoptic Planning or Rational Comprehensive Planning model, which emphasizes rationality, technocratic precision, and strong state control. This model is grounded in the belief that effective planning must be based on comprehensive scientific analysis and systematic implementation to achieve the national development goals. The Singaporean government employs data, projections, and technical assessments to determine the city's development trajectory, positioning each policy as the outcome of a rational and efficient process (Lim, 2014).

The core characteristics of this model are reflected in the long-term Concept Plan (spanning 40–50 years) and the Master Plan, which is updated every five years (Yuen, 2011). These instruments illustrate a hierarchical planning system designed to anticipate population growth, infrastructure needs and global economic dynamics. The planning process remains top-down, governed by agencies such as the Urban Redevelopment Authority (URA) and the Housing and Development Board (HDB), both of which exercise extensive authority over spatial planning, public housing, and urban zoning (Binder, 2019). This underscores the state's dominance at all stages, from policy formulation to implementation.

Although effective and stable, this model has limitations in terms of public participation and social flexibility. Strong centralization restricts opportunities for citizen involvement, resulting in a more technocratic than participatory orientation. Nevertheless, in Singapore's context, this approach remains successful because of political consistency, high institutional capacity, and a societal culture that supports government-led initiatives. Thus, Synoptic Planning has proven effective in achieving development objectives, although its success heavily relies on political and social structures that sustain rationality and strong state control.

4.2. The Relevance of Synoptic Planning in Singapore

The Synoptic Planning model is highly relevant in Singapore, as it aligns with the country's political, administrative, and social characteristics, prioritizing efficiency, stability, and strong governmental control. This approach emphasizes rational, systematic, and data-driven decision-making, forming the foundation of national development policies. Through institutions such as the URA and HDB, the government implements technocratic planning that is grounded in scientific analysis. Instruments such as the Concept Plan and Master Plan serve as concrete representations of this model, directing development based on projected needs and future growth. The support of an efficient bureaucracy and stable political leadership further contributes to the effectiveness of this model in creating orderly spatial planning, adaptive infrastructure, and a globally competitive city.

However, the relevance of this model requires further investigation. Despite its success in policy integration and efficiency, Synoptic Planning tends to limit public participation and weaken deliberative aspects of planning. The dominance of technocratic rationality positions society as policy recipients rather than active participants. Nevertheless, given Singapore's emphasis on political stability and trust in government institutions, this model remains widely accepted and is contextually appropriate. Thus, Synoptic Planning in Singapore can be understood as an effective form of rationality within a high-capacity state, although it does not fully align with the participatory paradigms commonly emphasized in liberal democratic settings.

4.3. Impacts of Synoptic Planning on Singapore's Development

Synoptic Planning has significantly shaped Singapore's development across spatial, economic, and social dimensions. This approach enables the government to design development that is well directed, efficient, and consistent with the nation's long-term vision. Through data-driven rational planning, Singapore has maximized its limited land, integrated transportation systems with residential areas, and created an orderly and sustainable urban environment. Centralized planning also ensures coordination across sectors such as housing, industry, and infrastructure, contributing to Singapore's status as one of the world's most livable and efficient cities (Yuen, 2011).

However, this model also raises critical concerns. State dominance in the planning process limits public engagement, resulting in development that prioritizes macro-level objectives over micro-level social needs. An overly technocratic orientation may overlook community aspirations and intangible cultural or emotional dimensions. Nonetheless, in a context characterized by political stability and a professional bureaucracy, this model reinforces governmental legitimacy. Overall, Synoptic Planning fosters efficient and orderly development, albeit with constrained public participation.

4.4. Rationality Values in Singapore's Development Planning

An assessment of planning ideologies, models, and paradigms reveals that urban planning in Singapore is dominated by rational values rooted in Unitary Ideology (Alexander, 2002), Rationalist/Technocratic Planning (Innes, 1995), and Utilitarian Ideology (Alexander, 2002), complemented by an increasing emphasis on sustainability. This approach is supported by a centralized governmental system, extensive state land ownership, and the view that planning is an instrumental and scientific tool for ensuring efficiency and public interest.

The government holds a unique position of authority, controlling 90% of the land and operating through unified voice (Binder, 2019). This reflects the rationality of Unitary Ideology (Alexander, 2002) and Apolitical Ideology (Kiernan, 1983), where planning is carried out technocratically, free from political contestation. Planning is not a product of social negotiation but a centralized coordination mechanism that claims to represent public interest.

Planning is conducted top-down by a centralized government (Binder, 2019), exemplifying Rationalist/Technocratic Planning (Innes, 1995) and Utilitarian Ideology (Alexander, 2002), where decisions prioritize efficiency and collective benefit rather than value pluralism. The Land Acquisition Act further reinforces the rationality of the Rational-Comprehensive Paradigm (Kiernan, 1983) and the Modernist/Fordist Paradigm (Natrasony & Alexander, 2005), positioning the state as the primary actor in optimizing land use for shared interests.

Singapore's long-term planning system, such as the Concept Plan (Binder, 2019), demonstrates Systems Planning rationality (Hall & Tewdwr-Jones, 2020). Singapore's planning is a continuous, adaptive process that remains within a unitary and non-participatory framework. Public housing policies under the HDB reflect Utilitarian Ideology (Alexander, 2002), aiming to efficiently deliver fundamental needs to the majority. In this context, advocacy is institutionalized through the state rather than civil society participation.

The limited judicial review culture in Singapore (Binder, 2019) reinforces Unitary and Apolitical Ideologies while signaling the absence of Conflict-Participatory Planning rationality (Hall & Tewdwr-Jones, 2020), which typically encourages public debate. Nevertheless, the integration of sustainability measures, such as the No Net Loss of Green Areas policy (Binder, 2019), illustrates elements of Systems Planning that balance economic efficiency with ecological management, albeit within a centralized decision-making structure.

In sum, Singapore's planning embodies the rationality of Synoptic Planning (Hudson et al., 2007). Singapore's planning is rational, technocratic, utilitarian, and systemic, producing an efficient, orderly, and sustainable city. However, it remains limited in terms of Dialogic Ideology (Alexander, 2002), Advocacy Planning, and Plural Planning (Davidoff, 1965), due to restricted spaces for dialogue and public negotiation, making planning more of a state policy instrument than a democratic deliberative arena.

4.5. Why Singapore's Planning Is Effective and Contributes Significantly

Singapore spans 734 square kilometers and is the 21st smallest country in the world, with a population exceeding 5.9 million and the highest population density in Southeast Asia at 8,000 people per square kilometer. Given these conditions, centralized and top-down control is considered rational because every parcel of land must be managed with precision and efficiency. Planning approaches such as Synoptic Planning (Hudson et al., 2007) are highly relevant because they enable cross-sectoral coordination, spatial policy integration, and strong central authority over land use, ensuring policy consistency in development.

Synoptic Planning also supports rational, measurable, and data-driven spatial and economic policymaking, contributing to Singapore's development model, which is centered on efficiency, stability, and policy predictability. Singapore's planning success is evident in several key outcomes: (1) the creation of large-scale, affordable, and attractive public housing supported by continuous reinvestment and infrastructure renewal (Mauro 2018); (2) the reduction of car dependency and traffic congestion (Diao 2019); and (3) the achievement of one of the highest life expectancies in the world (Guo et al. 2025).

Beyond these measurable achievements, Singapore's planning effectiveness is also rooted in the coherence between its institutional arrangements and its long-term national vision. The government maintains a stable and highly capable bureaucracy that ensures that every planning instrument, whether the Concept Plan or the Master Plan, operates as part of a unified developmental strategy rather than as fragmented sectoral initiatives. This coherence is strengthened through solid interagency coordination, mandatory alignment with the national spatial strategy, and the state's ability to implement comprehensive land management instruments, such as the Land Acquisition Act. Through this framework, Singapore can continuously adjust its urban form, infrastructure network, and housing supply needs in response to demographic pressures, global economic dynamics, and climate change risks while maintaining policy consistency over time.

Moreover, the success of Singapore's planning is inseparable from its sociopolitical environment, which is characterized by high public trust, strong compliance, and broad acceptance of technocratic decision-making. The population generally views state-led planning as legitimate because it has been proven to deliver tangible welfare improvements, from reliable public transportation services to high-quality public housing. This belief reinforces the viability of a centralized planning model that may face resistance in pluralistic and competitive political contexts. Thus, Singapore's planning system is a unique example of how rationality, centralization, and long-term vision combine to produce sustainable development outcomes, although its success is difficult to replicate directly in countries with different governance structures.

A broader reading of these findings suggests that Singapore's planning effectiveness cannot be reduced to the technical superiority of the synoptic model. Rather, effectiveness emerges from the fit between a model and a country's institutional environment. The rational-comprehensive approach works in Singapore because it is supported by a disciplined bureaucracy, long policy horizons, strong interagency coordination, and a political system that minimizes abrupt policy changes. In other words, the success of planning is relational: it depends not only on the design of the model but also on the capacity of the state apparatus to execute that model consistently over time.

This is important because planning theories are often discussed as if they can be directly transferred across contexts. The Singapore case shows that this assumption is problematic in two ways. A synoptic model may function effectively in a high-capacity state, yet produce very different outcomes in countries with fragmented institutions, unstable political coalitions, weak regulatory enforcement, and contested land governance systems. Consequently, the lesson from Singapore is not that centralized rational planning should be copied wholesale, but that institutional coherence and implementation capacity are crucial preconditions for making such a model work in practice (Binder, 2019; Hall & Tewdwr-Jones, 2019).

Simultaneously, the analysis indicates that planning success, defined primarily through order, efficiency, and policy consistency, may obscure other dimensions of urban justice. Planning systems that prioritize technical optimization tend to evaluate success in terms of measurable outputs such as

infrastructure provision, housing delivery, and spatial control. However, these indicators do not automatically capture whether citizens feel adequately represented in the planning processes or whether the development choices reflect diverse social aspirations. This is precisely where the Singapore model reveals a tension between instrumental rationality and communicative rationality, because the prioritization of efficiency can narrow the space for negotiated outcomes and public co-production of policy (Innes, 1995).

From a governance perspective, this tension is particularly visible in the relationship between state legitimacy and public participation. Singapore demonstrates that a government can maintain legitimacy through high-performance delivery, particularly when public institutions are trusted and development outcomes are tangible. However, performance-based legitimacy can become more difficult to sustain when societies become more heterogeneous, expectations become more individualized, and citizens increasingly demand not only effective policy results but also procedural fairness and voice. Under such conditions, a planning model that is overwhelmingly top-down may face challenges in maintaining social responsiveness, even if it remains administratively efficient (Day, 1997; Glass, 1979).

Another important implication concerns resilience in the face of contemporary developmental uncertainty. The synoptic model is highly effective when long-term projections remain relatively stable, and institutions can coordinate around shared priorities. However, urban futures are increasingly shaped by uncertainty, including climate risks, demographic changes, technological disruptions, and shifting social values. In such settings, planning systems may need to incorporate more iterative learning, feedback loops, and participatory mechanisms to ensure that long-term strategies remain adaptable without losing their strategic direction. This suggests that Singapore's planning rationality may need to evolve from being predominantly comprehensive and state-driven to becoming more dialogic and reflexive over time.

For planning scholarship, the Singapore case therefore offers valuable theoretical insight: planning models should not be evaluated solely in terms of whether they conform to normative democratic or technocratic ideals in isolation. Instead, they should be assessed according to how effectively they balance coordination, legitimacy, adaptability, and justice within their political and institutional settings. In this regard, Singapore represents a strong example of the strengths of synoptic planning, but also serves as a reminder that no single planning model is sufficient for all development challenges. The more complex the urban conditions become, the more necessary it is to complement comprehensive planning with communicative and socially responsive approaches (Alexander, 2002; Davidoff, 1965; Hudson et al., 1979).

Taken together, the discussion confirms that Singapore's planning system has been highly effective in producing structured and measurable development outcomes, especially in terms of land use efficiency, housing provision, and urban integration. Nevertheless, the same characteristics that have enabled this success—centralization, technocratic control, and strong state authority—also define the model's limits. The long-term sustainability of Singapore's planning effectiveness will likely depend on how far the state can preserve strategic coherence while opening up greater room for inclusive dialogue, social negotiation, and adaptive governance. Thus, the central issue is no longer whether synoptic planning has been successful in Singapore but whether that success can continue under conditions that increasingly demand both efficiency and participation.

5. CONCLUSION

Singapore's planning approach, which closely aligns with the principles of Synoptic Planning, demonstrates a remarkably high level of effectiveness owing to the country's stable political structure, strong bureaucratic capacity, and societal culture that emphasizes discipline and compliance with regulations. These conditions provide the government with substantial authority to direct development centrally, allowing policies to be implemented consistently, with minimal political disruption. This combination of factors enables development processes to operate in an organized, efficient, and sustainable manner, particularly in terms of land management, public housing, and the integration of

transportation systems. However, such success is accompanied by the limitation of public participation opportunities, as diverse societal voices are often less represented in decision making. This highlights that technocratic effectiveness does not always correspond to democratic planning processes, especially when addressing broader social concerns.

Therefore, Singapore's achievements cannot be generalized as a universal model, as they stem from political, cultural, and institutional conditions that are highly distinctive. The country's political stability, strong public trust in the government, and extensive state ownership of land form a unique combination that is rare in many other national contexts. This analysis underscores an important lesson for planners: an effective planning system should not rely solely on technocratic rationality but must also incorporate public dialogue to ensure social justice and broader representation. Thus, a planning approach that integrates technocratic rationality, citizen participation, and social values is better equipped to address the increasingly complex and multidimensional challenges of contemporary development.

Ethical Approval

Not Applicable

Informed Consent Statement

Not Applicable

Authors' Contributions

MKA conceptualized the study, developed the analytical framework, conducted the literature review, and prepared the manuscript's original draft. MRAF contributed to refining the research design, supported the interpretation of the planning models and rationality values, and was responsible for reviewing and editing the manuscript. Both authors contributed to the overall analysis, discussed the findings, and approved the final manuscript.

Disclosure Statement

No potential conflict of interest was reported by the author(s).

Data Availability Statement

The data presented in this study are available on request from the corresponding author due to privacy reasons.

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Notes On Contributors

Muhamad Khoirul Anam

Muhammad Khoirul Anam contributed to the development of the theoretical framework, the analysis of planning rationality, and the integration of the SITAR model within the study of Singapore's national planning system. He also led the literature review process and ensured the argumentative coherence throughout the manuscript.

Muhammad Rifqi Al Faizi

Muhammad Rifqi Al Faizi played a significant role in collecting and evaluating secondary data sources, drafting the methodological section, and strengthening the overall argument through a critical examination of comparative planning models. Both authors jointly reviewed the manuscript, verified its academic rigor, and carried out the final refinements to ensure that the work meets comprehensive and scholarly standards.

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