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ANTECEDENTS OF SUSTAINABLE PERFORMANCE OF HOUSING DEVELOPMENT BUSINESSES IN BANGKOK AND SURROUNDING AREAS

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Abstract

This study develops antecedents of sustainable performance of housing development businesses in Bangkok and surrounding areas, integrating insights from theory, quantitative research, and qualitative interviews with a sample of 400 housing business owners, executives, and experts. The resulting "LISA Cycle to Sustainable Performance of Housing Development Businesses" identifies four essential stages and accompanying strategies for achieving sustainability - Entrepreneurial Leadership Development: Promotes visionary leadership committed to environmental, social, and economic sustainability. Strategies include fostering leadership skills that prioritize long-term goals, integrating sustainable values across company culture, and implementing forward-looking policies to drive organizational change. Management Innovation: Focuses on eco-friendly, efficient housing production through innovative practices. Key strategies involve streamlining operations, adopting environmentally sustainable materials and methods, and developing customer-centric services that respond to market needs. Marketing Mix Strategy: Aligns marketing initiatives with customer preferences and company resources. Strategies include utilizing the 7P marketing mix framework to target specific demographics, leveraging digital platforms for customer engagement, and adapting marketing messages to emphasize sustainability features. Organizational Agility: Ensures the business can swiftly adapt to market and economic changes, fostering resilience. Strategies here involve implementing flexible operational structures, maintaining continuous market research, and investing in employee development to increase adaptability across all levels. The findings indicate that these four stages and their associated strategies collectively enhance sustainable performance, providing a structured framework for long-term growth and resilience in housing development businesses. The LISA Cycle serves as a strategic guide for developers aiming to achieve a competitive advantage through sustainability-focused practices.

Keywords: Sustainable, Performance, Development Businesses.

1. INTRODUCTION

The housing development industry in Bangkok and its surrounding areas plays a vital role in supporting urban expansion and meeting the increasing demand for residential spaces. With rapid population growth and accelerating urbanization, the need for sustainable housing solutions has become more urgent (Jones & Smith, 2021; Lee, 2019). Sustainable performance in housing development not only supports environmental preservation by minimizing resource consumption and reducing waste but also strengthens economic stability and enhances social welfare (Martinez et al., 2020).

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Understanding the antecedents that drive sustainable performance within this sector is essential for shaping effective policies and best practices. Identifying key factors—such as innovative building practices, resource-efficient technologies, stakeholder collaboration, and regulatory frameworks—can guide housing developers and policymakers in creating sustainable models that are both economically viable and socially responsible (Brown & Davis, 2022).

Ultimately, insights gained from this study have the potential to promote long-term success in the housing development industry, supporting Bangkok's broader goals of sustainable urban growth and improved quality of life for its residents.

This research aims to examine the factors influencing the sustainable performance of housing development businesses in Bangkok and nearby provinces. By identifying and analyzing key drivers, such as organizational strategies, resource management, technological innovation, and stakeholder engagement, this study provides valuable insights into how these components contribute to sustainability in the housing sector (Gurran et al., 2021; Jones et al., 2019).

Understanding these factors allows for the design of strategic frameworks and best practices that not only enhance business performance but also align with the principles of environmental responsibility and social welfare (Horne & Hayles, 2020; Robinson & Adams, 2018).

The findings from this research are anticipated to serve as a critical resource for housing developers, policymakers, and urban planners. By providing actionable recommendations, this study aims to support the development of sustainable housing projects that are well-integrated with Bangkok's urban and environmental objectives. In doing so, this research contributes to the broader goal of achieving sustainable urban growth, ultimately fostering a balance between economic development and environmental stewardship in Bangkok and its surrounding regions.

The significance of this study lies in its potential to address pressing challenges within the housing development industry by emphasizing sustainability-focused approaches. As sustainability increasingly becomes a priority for businesses and governments globally (Kates, Parris, & Leiserowitz, 2005), this research seeks to contribute to the growing discourse on sustainable development. Particularly in urban centers like Bangkok, balancing rapid growth with environmental stewardship is essential for ensuring long-term resilience and enhancing the quality of life for current and future residents (McGranahan, Marcotullio, Bai, & Balk, 2005).

By investigating sustainability-oriented practices in housing development, this study aims to offer actionable insights that support environmentally responsible growth, minimize ecological impact, and create socially beneficial outcomes (Berke & Conroy, 2000). The findings are intended to assist industry stakeholders—including developers, urban planners, and policymakers—in making informed decisions that align with sustainable urban goals, ultimately promoting resilient and adaptive urban ecosystems in Bangkok and its neighboring regions (Newman, Beatley, & Boyer, 2009).

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2. RESEARCH OBJECTIVES

1. To study the level of entrepreneurial leadership, management innovation, organizational agility, 7P marketing mix strategy, and sustainable performance of housing estate businesses in Bangkok and surrounding areas.
2. To study the influence of precursors affecting sustainable performance of housing estate businesses in Bangkok and surrounding areas.
3. To develop a model for the success of sustainable performance of housing estate businesses in Bangkok and surrounding areas.

3. METHODOLOGY

Population and Sample Scope

Population:
The population consists of 1,135 entrepreneurs in the housing estate business in Bangkok and surrounding areas, each representing one of the 1,135 housing estate projects (Real Estate Information Center, 2017).

Sample:
The sample includes 440 entrepreneurs from the housing estate business in Bangkok and surrounding areas, representing 440 housing estate projects, with one entrepreneur or representative providing information per project. The sample was selected using a multistage random sampling technique.

Key Informants

Data were collected using in-depth interviews with experts relevant to the research topic, specifically focusing on the sustainable performance of housing estate businesses in Bangkok and surrounding areas. The key informants are categorized into three groups:

Group 1: 10 entrepreneurs from the housing estate business in Bangkok and surrounding areas, known for their outstanding achievements, success, and recognition within the industry.

Group 2: 10 academics with research experience in housing estate businesses in Bangkok and surrounding areas, including areas of business sustainability.

Group 3: 10 executive-level government officials responsible for supervising and monitoring the housing estate business in Bangkok and surrounding areas. These officials possess a strong understanding of business sustainability dimensions.

All key informants were selected based on their exceptional knowledge and abilities in relation to the research topics, using intensity sampling with specific criteria through purposive sampling.

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Scope of Variables

Extraneous Variables

Latent Variable: Entrepreneurial Leadership, composed of the following empirical (observed) variables: Job Ability, Risk-Taking, Communication Skills, and Quick Decision-Making.

Endogenous Variables

1. **Latent Variable:** Innovative Management, comprising empirical variables such as Product Innovation, Process Innovation, Managerial Innovation, and Paradigm Innovation.
2. **Latent Variable:** The 7P's Marketing Mix Strategy, consisting of the following empirical variables: Product, Price, Channels, Promotion, People, Physical Evidence, and Process.
3. **Latent Variable:** Organizational Agility, with empirical variables including Responsiveness, Competency, Flexibility, and Quickness in work.
4. **Latent Variable:** Sustainable Business Performance, with empirical variables: Social Performance, Economic Performance, and Environmental Performance.

Time Scope

This research was conducted from May 2024 to October 2024.

Spatial Scope

Data collection was focused on housing estate businesses in Bangkok and surrounding areas, segmented by the Office of the Permanent Secretary of Bangkok (2023) into the following regions: Central Bangkok, Northern Bangkok, Southern Bangkok, Eastern Bangkok, North Thonburi, South Thonburi, and the Metropolitan Area.

4. RESULT

Table 1: Latent Variables and symbols

Latent Variables	Empirical Variables	Symbols
Entrepreneurial Leadership (ENPLD)	Job Skills	JBABL
	Risk Taking	TkRSK
	Communication Skills	CMUSK
	Quick Decision Making	QCDCS
7P Marketing Mix Strategy (MKTSG)	Products	PROD
	Price	PRICE
	Distribution Channels	CHANL
	Promotion	PROMT
	Personnel	PEOPL
	Physical Characteristics	PHYEV
	Process	PROCS
Management Innovation (INOVMG)	Product Innovation	INOPDT
	Process Innovation	INOPCS
	Management Innovation	INOMA

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	Innovation Paradigm	INOPRG
Organizational Agility (OGAGL)	Response Ability	RESP
	Competency	COMPT
	Flexibility in Operation	FLBT
	Quickness in Operation	QCKNS
Sustainable Business Performance (SUSNP)	Social Performance	SOCI
	Economic Performance	ECON
	Environmental Performance	ENVR

General Information

Data were collected from a sample group of entrepreneurs in the housing estate business in Bangkok and surrounding areas, totaling 440 individuals. This sample represents 440 housing estate projects, with one entrepreneur or representative providing information for each project. The details are as follows: The majority of the sample group were male, totaling 284 individuals (64.50%). Among the participants, 180 individuals (41.00%) were over 46 years old. A total of 273 individuals (62.00%) held a bachelor's degree. Additionally, 282 individuals (64.00%) reported an annual income between 50,000,001 and 100,000,000 baht.

The study found that the leadership of entrepreneurs (ENPLD) was at a high level, with an average score of 4.44. When examining each aspect, the ability to work (JBABL), risk-taking (TkRSK), communication skills (CMUSK), and quick decision-making (QCDCS) were all rated highly, with average scores ranging from 4.35 to 4.50.

The 7P marketing mix strategy (MKTSG) also achieved a high level, with an average score of 4.40. Among its components, the process (PROCS) received the highest rating, with an average score of 4.54. The aspects of products (PROD), prices (PRICE), distribution channels (CHANL), promotion (PROMT), personnel (PEOPL), and physical characteristics (PHYEV) were all rated highly, with average scores ranging from 4.27 to 4.49.

Innovative management (INOVMG) was evaluated at a high level, with an average score of 4.36. When considering each component, product innovation (INOPDT), process innovation (INOPCS), management innovation (INOMA), and paradigm innovation (INOPRG) were all rated highly, with average scores ranging from 4.29 to 4.44.

Organizational agility (OGAGL) was rated at a high level, with an average score of 4.47. Among its components, operational flexibility (FLBT) received the highest score, averaging 4.51. Response ability (RESP), competency ability (COMPT), and speed of operation (QCKNS) were also rated highly, with average scores between 4.43 and 4.48.

Sustainable business performance (SUSNP) was assessed at a high level, with an average score of 4.43. Examining each aspect revealed that social performance (SOCI), economic performance (ECON), and environmental performance (ENVR) were all rated highly, with average scores ranging from 4.40 to 4.45.

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Results of Structural Equation Model Analysis According to Hypothesis Model

The goodness of fit of the hypothesis model was examined against empirical data using the LISREL software. It was found that the hypothesis model did not fit well with the empirical data, as indicated by the fit indices: χ^2 = 779.46, df = 202, p-value = .00000, χ^2 / df = 3.85, RMSEA = .081, RMR = .022, SRMR = .040, CFI = .99, GFI = .86, AGFI = .83, CN = 159.45.

The χ^2 = 779.46, df = 202, p-value = .00000 did not meet the criteria because it remains statistically significant. The χ^2 / df = 3.85 also did not meet the criteria as it is greater than 2.00. RMSEA = .081 did not meet the criteria because it is greater than .05. RMR = .022 met the criteria as it is less than .05. SRMR = .040 met the criteria as it is less than .05. CFI = .99 met the criteria as it is greater than .90. GFI = .86 did not meet the criteria as it is less than .90. AGFI = .83 did not meet the criteria as it is less than .90, and CN = 159.45 did not meet the criteria as it is less than 200.00.

These results indicate that the hypothesis model does not fit well with the empirical data, as the fit indices χ^2, χ^2 / df, RMSEA, GFI, AGFI, and CN did not meet the specified criteria (Joreskog & Sorbom, 1996: 121-122). Therefore, the researcher does not have confidence in the parameter estimates obtained from the hypothesis model. It is necessary for the researcher to modify the model (Modification Model) to align better with the empirical data by allowing some pairs of empirical variable error variances (θ) to correlate, considering theoretical appropriateness and feasibility, as well as relevant research findings and the potential for discussing research results from the modified model. Only after the adjusted model (Adjust Model) fits well with the empirical data will the paths of relationships in the model be considered, detailed as follows.

Results of the Adjusted Structural Equation Model Analysis (Adjust Model)

The researcher made adjustments to the hypothesis model to achieve a better fit with the empirical data by allowing the error variances (θ) of some empirical variables to correlate, resulting in 12 pairs (the df for the hypothesis model was 202, while the df for the adjusted model was 109). The adjustments made to the model resulted in the adjusted model (Adjust Model) fitting well with the empirical data, as indicated by the fit indices: χ^2 = 370.82, df = 190, p-value = .00000, χ^2 / df = 1.95, RMSEA = .047, RMR = .015, SRMR = .029, CFI = .99, GFI = .93, AGFI = .91, CN = 293.54.

The fit indices revealed that χ^2 = 370.82, df = 190, p-value = .00000 did not meet the criteria due to remaining statistically significant (P-Value > .05) (Joreskog & Sorbom, 1996). However, since the χ^2 test statistic is sensitive to sample size, the researcher also considered the value of χ^2 / df, which was found to be 1.95, passing the criteria since it is less than 2.00 (Tabachnick & Fidell, 2007). RMSEA = .047 was deemed acceptable as it is less than .05 (MacCallum et al., 1996). RMR = .015 also met the criteria as it is less than .05 (Diamantopoulos & Siguaw, 2000). SRMR = .029 passed the criteria as well since it is less than .05 (Diamantopoulos and Siguaw, 2000). CFI = .99 passed the criteria as it is greater than .90 (Tabachnick & Fidell, 2007). GFI = .93 also met the criteria as it is greater than .90 (Tabachnick & Fidell, 2007). AGFI = .91 passed the criteria as it is equal to .90 (Tabachnick & Fidell, 2007), and CN = 293.54 passed

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the criteria as it is greater than 200.00 (Joreskog & Sorbom, 1996). Based on these fit indices, it can be concluded that the adjusted structural equation model (Adjust Model) fits well with the empirical data, and the parameter estimates within this model are therefore acceptable. The analysis results are as follows:

Table 2: Comparison results of calculated statistical values with criteria to check the consistency with empirical data of the adjusted structural equation model (Adjust Model)

Criteria List	Defined Criteria (Jöreskog & Sörbom, 1996: 121-122)	Model Statistics	Assessment
Likelihood Ratio Chi-Square Statistic (χ^2)	P-value greater than or equal to .05 (Jöreskog & Sörbom, 1996)	χ^2 = 370.82, df = 190, p-value = .00000	Not Passed
Relative χ^2 (χ^2/df)	Less than or equal to 2.00 (Tabachnick & Fidell, 2007)	1.95	Passed
Root Mean Squared Error of Approximation (RMSEA)	Less than or equal to .05 (MacCallum et al., 1996)	.047	Passed
Root Mean Squared Residuals (RMR)	Less than or equal to .05 (Diamantopoulos & Siguaw, 2000)	.015	Passed
Standardized Root Mean Squared Residual (SRMR)	Less than or equal to .05 (Diamantopoulos & Siguaw, 2000)	.029	Passed
Comparative Fit Index (CFI)	Greater than or equal to .90 (Fan et al., 1999)	.99	Passed
Goodness of Fit Index (GFI)	Greater than or equal to .90 (Tabachnick & Fidell, 2007)	.93	Passed

It shows that the fit index of the adjusted structural equation model is consistent with the empirical data, as considered from the fit indices below: χ^2 = 370.82, df = 190, p-value = .00000, χ^2 / df = 1.95, RMSEA = .047, RMR = .015, SRMR = .029, CFI = .99, GFI = .93, AGFI = .91, CN = 293.54. Based on the aforementioned fit index values, it can be concluded that the adjusted structural equation model (Adjust Model) is consistent with the empirical data, and the parameter estimation in the model is acceptable.

Table 3: The Variables and Their Influences

Dependent Variable	R^2	Influence	Independent Variables
Marketing Mix Strategy 7P (MKTSG)	.73	DE	-
		IE	-
		TE	.86*(17.60)
Management Innovation (INOVMG)	.91	DE	-
		IE	-
		TE	.95*(19.20)
Organizational Agility (OGAGL)	.84	DE	.41*(6.92), .55*(9.12)
		IE	-
		TE	.41*(6.92), .55*(9.12), .87*(18.82)
Sustainable Business Performance (SUSNP)	.87	DE	.46*(5.38), .47*(5.46), .45*(5.71)
		IE	.34*(3.35), .39*(3.46), .87*(18.91)
		TE	.80*(8.20), .86*(7.53), .45*(5.71), .87*(18.91)

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Dependent Variables:

Marketing Mix Strategy 7P (MKTSG): The model shows a coefficient of determination (R^2) of .73. The influence of the independent variables on this dependent variable is assessed, showing the effects only in the Total Effect (TE) column.

Management Innovation (INOVMG): This variable has an R^2 of .91, indicating a strong influence on the outcomes measured, with significant total effects recorded.

Organizational Agility (OGAGL): With an R^2 of .84, this variable indicates substantial influence from the independent variables, with direct effects (DE), indirect effects (IE), and total effects (TE) recorded.

Sustainable Business Performance (SUSNP): This variable has an R^2 of .87, indicating it is influenced by several factors across all measures of influence (DE, IE, and TE).

Fit Index Values: The model fit indices are reported, indicating a good fit with values of χ^2 = 370.82, df = 190, p-value = .00000, χ^2 / df = 1.95, RMSEA = .047, RMR = .015, SRMR = .029, CFI = .99, GFI = .93, AGFI = .91, CN = 293.54.

The adjusted structural equation model indicates that the influence of antecedent factors on the sustainable performance of housing estates in Bangkok and its surrounding areas is consistent with empirical data at an acceptable level. This is based on the fit indices as follows: χ^2 = 370.82, df = 190, p-value = .00000, χ^2 / df = 1.95, RMSEA = .047, RMR = .015, SRMR = .029, CFI = .99, GFI = .93, AGFI = .91, CN = 293.54. The parameter estimates in the structural equation model are as follows:

1. Entrepreneurial Leadership (ENPLD) has a direct influence on Management Innovation (INOVMG) with a coefficient of influence of .95*(19.20), which is statistically significant at the .05 level, confirming Hypothesis 1, which states that entrepreneurial leadership directly influences management innovation.
2. Entrepreneurial Leadership (ENPLD) has a direct influence on Marketing Mix Strategy 7P (MKTSG) with a coefficient of influence of .86*(17.60), which is statistically significant at the .05 level, confirming Hypothesis 2, which states that entrepreneurial leadership directly influences the marketing mix strategy 7P.
3. Marketing Mix Strategy 7P (MKTSG) has a direct influence on Organizational Agility (OGAGL) with a coefficient of influence of .41*(6.92), which is statistically significant at the .05 level, confirming Hypothesis 3, which states that the marketing mix strategy 7P directly influences organizational agility.
4. Marketing Mix Strategy 7P (MKTSG) has a direct influence on Sustainable Business Performance (SUSNP) with a coefficient of influence of .46*(5.38), which is statistically significant at the .05 level, confirming Hypothesis 4, which states that the marketing mix strategy 7P directly influences sustainable business performance.
5. Management Innovation (INOVMG) has a direct influence on Organizational Agility (OGAGL) with a coefficient of influence of .55*(9.12), which is statistically significant at

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the .05 level, confirming Hypothesis 5, which states that management innovation directly influences organizational agility.

6. Management Innovation (INOVMG) has a direct influence on Sustainable Business Performance (SUSNP) with a coefficient of influence of .47*(5.46), which is statistically significant at the .05 level, confirming Hypothesis 6, which states that management innovation directly influences sustainable business performance.
7. Organizational Agility (OGAGL) has a direct influence on Sustainable Business Performance (SUSNP) with a coefficient of influence of .45*(5.71), which is statistically significant at the .05 level, confirming Hypothesis 7, which states that organizational agility directly influences sustainable business performance.
8. The Marketing Mix Strategy 7P (MKTSG), Management Innovation (INOVMG), and Organizational Agility (OGAGL) collectively can predict Sustainable Business Performance (SUSNP) by 87%.
9. The Marketing Mix Strategy 7P (MKTSG) and Management Innovation (INOVMG) collectively can predict Organizational Agility (OGAGL) by 84%.
10. Entrepreneurial Leadership (ENPLD) can predict Management Innovation (INOVMG) by 91%.
11. Entrepreneurial Leadership (ENPLD) can predict Marketing Mix Strategy 7P (MKTSG) by 73%.

The analysis results can be presented as follows:

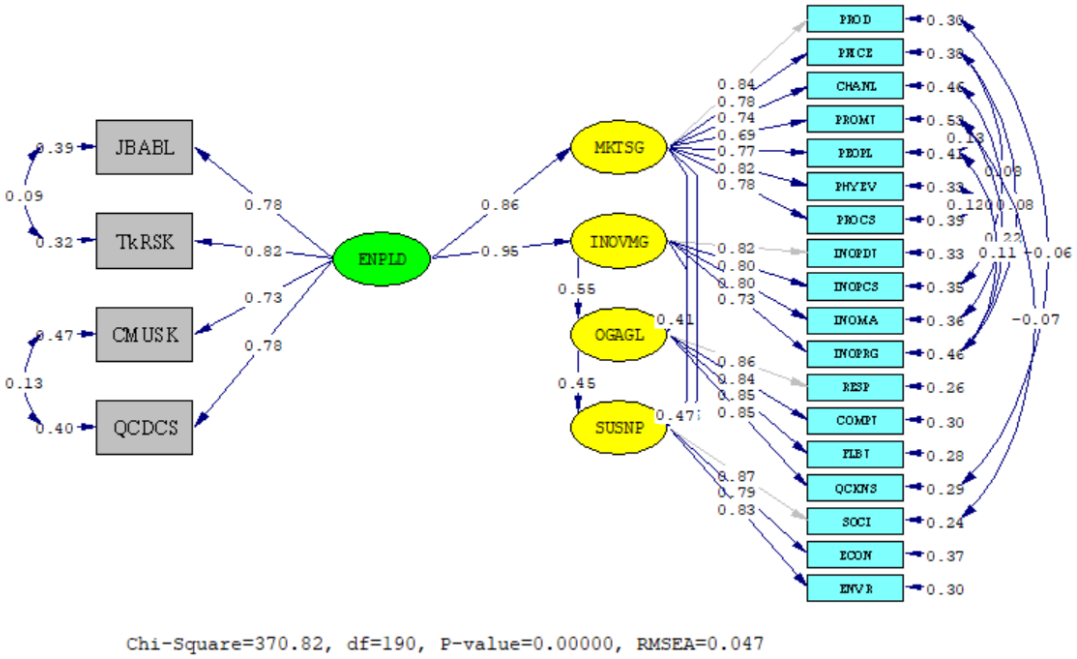

Figure 1: Modified model (n=440)

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The results of the development of the sustainable performance model for housing estate businesses in Bangkok and surrounding areas are as follows:

The researcher has synthesized a "success model for the sustainable performance of housing estate businesses in Bangkok and surrounding areas" by integrating knowledge resources from the following sources: (1) related concepts and theories obtained from a review of relevant documents and literature, (2) quantitative research results on the levels of entrepreneurial leadership, management innovation, organizational agility, the 7P marketing mix strategy, and sustainable performance of housing estate businesses in Bangkok and surrounding areas, (3) quantitative research findings on the influence of precursors affecting the sustainable performance of housing estate businesses in the region, and (4) qualitative data obtained from interviews with experts across three groups.

From these knowledge resources, the researcher has synthesized "The Model of Success for Sustainable Performance of Housing Estate Businesses in Bangkok and surrounding areas." This model presents the important factors that should be promoted (Main Factor), determines the direction of operations (Direction), provides operational guidelines (Operation Plan), and establishes criteria for performance evaluation (Indicator). The researcher has organized the model of success for sustainable performance of housing estate businesses into the LISA cycle model, referred to in English as the **LISA Cycle to Sustainable Performance of Housing Development Businesses**. This cycle outlines the steps leading to the success of sustainable performance for housing estate businesses in Bangkok and surrounding areas, consisting of four sequential steps:

Step 1: Develop Entrepreneurial Leadership. This is the starting point for fostering sustainable performance. Leaders must act as initiators of organizational change, possessing a vision for sustainability and serving as visionary leaders to guide the organization towards achieving sustainability goals across environmental, social, and economic dimensions.

Step 2: Develop Management Innovation. This step involves leveraging management innovation to streamline operations and produce modern, environmentally friendly housing estates. It includes the implementation of innovative solutions to deliver convenient and rapid services that meet customer needs. Executives and organizational leaders play a crucial role as primary drivers in this step.

Step 3: Develop Marketing Mix Strategy. At this stage, the housing estate business should be robust enough, with visionary leaders and sufficient management innovation, to propel the organization forward. The marketing mix strategy should align with the company's target customer groups, existing resources, and innovations to effectively motivate and persuade customers to consider purchasing housing estates, thereby ensuring the sustainability of the housing estate project.

Step 4: Develop Organizational Agility. This step aims to create stability in the company's operations within the housing estate sector in Bangkok and surrounding areas, leading to sustainable outcomes. Stability enables the company to adapt to various market conditions, competitive pressures, and changes in the economic environment both locally and globally.

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