

# Developing Key Performance Indicators Framework in Tenancy Management for Public Housing in Malaysia

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**Abstract:** Effective performance measurement (PM) is a crucial element in ensuring the success and sustainability of public housing management. While Malaysia's public housing sector has made notable strides in building maintenance and facility management, the vital area of tenancy management remains underexplored. This book brings to the forefront the importance of monitoring tenancy-related functions—ranging from unit allocation and rent collection to tenant relations and neighborhood issues—as an integral part of overall housing performance. Drawing on international perspectives and local realities, this work highlights the emerging trends of Externalization, Reconceptualization, and Managerialization as frameworks for improving tenancy management. Among these, Managerialization stands out for its structured, goal-oriented approach. However, Malaysia's current PM efforts often overlook the tenant-level dynamics essential to achieving holistic housing outcomes.

Through a rigorously designed mixed-method study grounded in pragmatism, this book introduces a tailored set of Key Performance Indicators (KPIs) specifically for tenancy management in Malaysia's public housing context. Employing the Delphi method, expert interviews, and successive rounds of surveys, the research identifies and validates 51 critical KPIs. These indicators are further analyzed using the Importance–Practicality Quadrant Analysis (IPQA) to determine their real-world applicability and impact. A key contribution of this book is the integration of a "Social Perspective" into the Balanced Scorecard (BSC) model—an innovation that addresses the broader societal role of public housing. By framing tenancy performance within this expanded model, the book provides a more comprehensive tool for policy evaluation, transparency, and equitable service delivery.

This book serves as an essential guide for housing administrators, policymakers, and researchers seeking to advance the quality and accountability of tenancy management in Malaysia's public housing sector. It not only fills a critical gap in existing PM literature but also paves the way for future improvements that align with the social and operational realities of public housing.

**Keywords:** Public housing, tenancy, housing policy, Delphi management.

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## LIST OF SYMBOLS AND ABBREVIATIONS

|        |                                                                     |
|--------|---------------------------------------------------------------------|
| 3Es    | : Economy, Efficiency, Effectiveness                                |
| ALMOs  | : Arms-Length Management Organizations                              |
| BBSH   | : Social Rental Sector Management Order                             |
| BOVEAP | : Board of Valuers, Appraisers, Estate Agents and Property Managers |
| BSC    | : Balanced Scorecard                                                |
| CBL    | : Choice Based Letting                                              |
| CHP    | : Community Housing Provider                                        |
| EMA    | : External Management Agency                                        |
| HDB    | : Housing Development Board                                         |
| HK     | : Hong Kong                                                         |
| HKHA   | : Hong Kong Housing Authority                                       |
| HMCDD  | : Housing Management and Community Development Department           |
| IOO    | : Input, Output, Outcome                                            |
| IPQA   | : Importance Practicality Quadrant Analysis                         |
| JPN    | : Jabatan Perumahan Negara / Department of National Housing         |
| KPI    | : Key Performance Indicator                                         |
| LA     | : local authority                                                   |
| LHA    | : Local Housing Authority                                           |
| NMM    | : New Management Model                                              |
| NPM    | : New Public Management                                             |
| ORS    | : Open Registration System                                          |
| PA     | : Perumahan Awam                                                    |



|       |                                                    |
|-------|----------------------------------------------------|
| PH    | : Public Housing                                   |
| PKPNJ | : Perbadanan Kemajuan Perumahan Negeri Johor       |
| PM    | : Performance Measurement                          |
| PMF   | : Performance Measurement Framework                |
| PPA1M | : 1 Malaysia Civil Servant Housing Programme       |
| PPMC  | : Private Property Management Company              |
| PPP   | : Public Private Partnership                       |
| PPR   | : Program Perumahan Rakyat / Public Rental Housing |
| PRH   | : Public Rental Housing                            |
| PSA   | : Property Services Agent                          |
| RFS   | : Registration of Flat System                      |
| SD    | : Standard Deviation                               |
| SEBC  | : Social Enterprise Balanced Scorecard             |
| SPV   | : Special Purpose Vehicle                          |
| SRA   | : Social Rental Agencies                           |
| TQM   | : Total Quality Management                         |
| UK    | : United Kingdom                                   |
| USA   | : United States                                    |



# PREFACE

Performance measurement (PM) is a critical tool for monitoring tenancy management activities in public housing (PH), including housing allocation, tenant relations, rent collection, and addressing social issues. Various initiatives categorized under “Externalization”, “Reconceptualization”, and “Managerialization”, emerge as the solutions for tenancy management improvement. Among these, Managerialisation retains the predominant focus, offering concrete mechanisms to monitor progress towards established goals, charting for future improvements through consistent PM. Despite its importance, PM efforts in PH Malaysia primarily focused on building, facilities, and maintenance management, largely overlooked on tenancy management. Addressing this imbalance is crucial for creating a more holistic and effective evaluation system in the public housing sector. Thus, this book will delve into the identification and validation of key performance indicators (KPIs) tailored specifically to the Malaysian public housing context. Delphi methods were conducted to gather input on the KPIs. Interviews were conducted in the first round with experts to gain insights into tenancy management operations and establish relevant KPIs. Subsequently, successive rounds of Delphi, employing questionnaires survey, were utilized to validate these identified KPIs. Throughout the pages of this book, readers will uncover strategies and insights that promote transparency, equity, and tenant satisfaction from the framework that has developed. May these meaningful improvements in public housing management and provide a robust foundation for future research and policy development.



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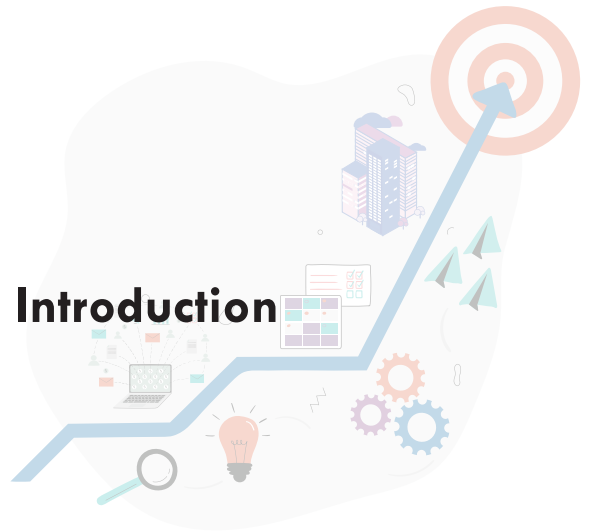
This book completion could not have been possible without my dedicated team, Sr Dr. Ainoriza Binti Mohd Aini, Sr Dr. Zafirah Al Sadat Binti Zyed. Your passion, guidance and expertise have been invaluable throughout this process. I also extend my heartfelt gratitude to the experts who generously shared their valuable opinions and participated in my data collection through several rounds, despite their demanding professional commitments. Your insights and suggestions have not only shaped the development of this book but have also sharpened the focus on what is essential to include in the measurement process for tenancy management in public housing.

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Last but not least, I would like to dedicate this book to my beloved family and husband. Thank you for your unwavering support in every way. Your encouragement and understanding have meant the world to me, and I am deeply grateful for your constant presence and love throughout this journey.



# Chapter 1: Introduction

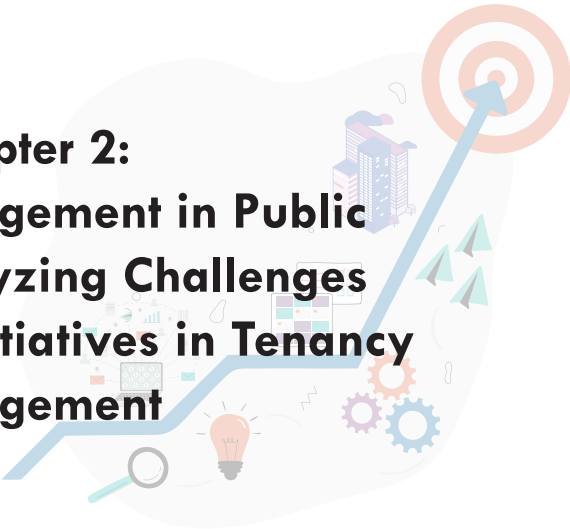


## 1.1 Background

Public housing was developed to address housing affordability issues that have impacted low-income groups by subsidizing housing prices or offering rental rates lower than the market price (Bilal et al., 2019). Despite the significance of public housing in bridging the gap between the high cost of living and access to safe, affordable housing, tenancy management issues in public housing are significant concern globally (Li et al., 2019; Zeng et al., 2017). These issues in Malaysia are also alarming, encompassing low turnover rates (Khair et al., 2022), inefficient allocation systems (Bernama, 2021), tenancy fraud (Khazanah Research Institute, 2023), and significant rent arrears (Bilal et al., 2019). Globally, various strategic initiatives have been implemented to tackle and improve these issues, which can be categorised into externalization, reconceptualization, and managerialization (Norris & O'Connell, 2010). Close examination of these initiatives has highlighted managerialization, which emphasizes performance measurement (PM), as the most favorable.

Drawing parallels with international best practices, both the social and public housing sectors in the Scotland and the United States (USA) have implemented Key Performance Indicators (KPIs) in tenancy management. This facilitates systematic assessment and improvement of tenant relations, rent collection processes, and overall tenant satisfaction. PM guidelines in the Scotland, such as The Scottish Social





## **Chapter 2: Effective Management in Public Housing: Analyzing Challenges and Exploring Initiatives in Tenancy Management**

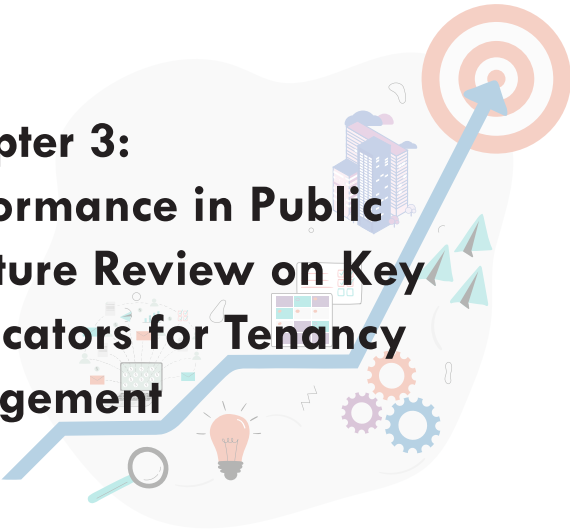
### **2.1 Introduction**

This chapter provides an extensive background on public housing and property management activities, examining both global and local contexts. Various administrative property management models employed in public housing across different countries are discussed, offering a diverse range of perspectives. The chapter highlights an overview of property management issues in public housing, with a specific focus on tenancy management issues, which serves as the rationale for the study's focus. A thorough review of existing literature on initiatives aimed at improving property management in public housing is provided.

### **2.2 Public Housing**

Housing, as categorized in Maslow's hierarchy of needs, is a physiological necessity that forms the foundation of the pyramid (Maslow, 1943). It serves not only as shelter but also fulfills various essential dimensions, including dwelling space, privacy, cultural identity, protection from the weather, and safeguarding against unwanted intrusions (Ahmed El Qattan, 2019; Adam, 2020). The United Nations Human Settlements Programme (UN-Habitat, 2015) expands this perspective, defining housing as a multidimensional commodity that encompasses physical structures, infrastructure, services, and urban development, including land and finance. Housing





## **Chapter 3:**

# **Evaluating Performance in Public Housing: A Literature Review on Key Performance Indicators for Tenancy Management**

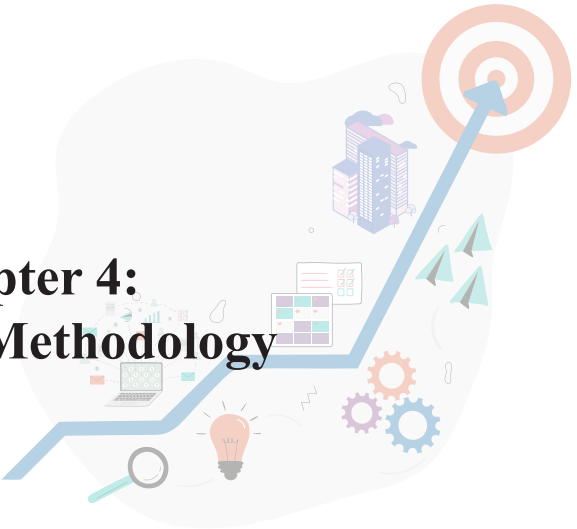
### **3.1 Introduction**

This chapter explores the critical role of performance measurement (PM) in public housing, focusing on its importance in enhancing operational efficiency and accountability. Beginning with an overview of PM development in Malaysian public housing, it examines current trends and focal points in PM studies, emphasizing effective governance and performance monitoring. In laying the foundation, the chapter reviews existing PM models across the public sector to understand their application and effectiveness in public housing management. The chapter further explores international literature on key performance indicators (KPIs) in tenancy management, laying the groundwork for developing tailored KPIs for Malaysian public housing. Finally, the chapter concludes by proposing a conceptual framework to address the gap of underdeveloped KPIs specific to tenancy management in Malaysian public housing. This framework aims to enhance governance, foster operational efficiency, and improve accountability within the sector.

### **3.2 Trend of Performance Measurement Studies in Public Housing Malaysia**

In Malaysia, research on performance measurement (PM) in public housing predominantly focuses on building management, facilities, and maintenance. One of the earliest studies, conducted by Hashim





## Chapter 4: Research Methodology

### 4.1 Introduction

This chapter outlines the research method used to achieve the objectives. The research design is structured into five phases according to the study's philosophical framework, with the modified Delphi method as the primary research strategy. Data collection involved both qualitative and quantitative methods, including interviews and questionnaires survey. The chapter provides a detailed discussion of the Delphi method's administration process, including participant selection, rounds of questioning, and consensus-building techniques. Additionally, it describes the procedures for data collection and the analytical techniques used to interpret the data. The chapter also addresses the trustworthiness of the study by discussing measures taken to ensure reliability and validity. It concludes with an overview of the ethical considerations adhered to throughout the research process.

### 4.2 Overview of The Research Methodology

The research methodology employed in this study is pragmatic, incorporating elements from both positivism and interpretivism. This philosophical stance allows for the integration of practical experiences with theoretical contemplations, providing a comprehensive methodology for developing a set of performance indicators specifically tailored for tenancy management in public





## **Chapter 5: Findings-Exploration and Evaluation of Key Performance Indicators in Tenancy Management for Public Housing in Malaysia**

### **5.1 Introduction**

This chapter discussed findings into three parts. Part I presents the thematic analysis of interviews conducted during the first round of the Delphi process, identifying key issues and practices in tenancy management for public housing in Malaysia. Part II focuses on the evaluation phase, detailing the findings from the second and third rounds of the Delphi process, where experts assessed the importance and practicality of the identified KPIs. Finally, Part III offers an analysis importance and practicality of each KPI through the Importance-Practicality Quadrant Analysis.

### **5.2 (PART I)- Delphi Round 1: Thematic analysis**

In this section, the findings and discussions from the interviews is presented. A total of 8 experts agreed to participate and completed the consent form (Appendix E). The first round of the Delphi process was conducted with interviews in October 2022. Initially, 11 experts were enlisted, and invitations were sent via email, but only 8 experts agreed to participate, resulting in a 72% response rate for the first round of the Delphi process. Further, aligned with the research approach, sequential mixed methods, the results from the interviews are first presented which will further form the basis for the further Delphi questionnaire in the forthcoming round of Delphi KPIs validation.





## **Chapter 6: Development of KPIs Framework in Tenancy Management for Public Housing Malaysia**

### **6.1 Introduction**

This study aimed to improve tenancy management performance for public housing in Malaysia by developing a KPIs framework for tenancy management in public housing Malaysia. With view that this KPIs framework could potentially improve the burgeoning tenancy management issues reported. This chapter outlines the phases involved during the development of KPIs for tenancy management in public housing Malaysia. Subsequently, the following subsections delve into a comprehensive discussion of the phases encompassed in the development of the framework.

### **6.2 Developing a KPIs framework for Tenancy Management in Public Housing Malaysia**

A framework is deemed comprehensive when it can effectively tackle the key challenges and issues relevant to the organization and possesses the potential strength to empower the organization in achieving its strategic goals (Adewunmi et al., 2017). Additionally, a good framework should be easily understood, practical, applicable, systematic, and provide clear connections between phases and elements that support the overall framework (Yusof & Aspinwall, 2000).



## Chapter 7: Conclusions and Recommendations

### 7.1 Introduction

This chapter provides a comprehensive summary of the outcomes achieved in this study, aligning with the four research objectives outlined in Chapter 1. It offers a detailed interpretation of these outcomes, highlighting key findings and their implications. The chapter also discusses the significant contributions of the study to the field, along with its limitations. Furthermore, recommendations and suggestions for future research endeavors are provided to address potential gaps and advance the field further. Finally, the chapter concludes with closing remarks that summarize the overall findings and significance of the study.

### 7.2 Key Findings of The Study

This framework was developed based on BSC model and enhanced with system theory. The KPIs are pre-categorised into modified BSC perspectives with the added “Social Perspective” to better suit the context in public housing Malaysia which focuses on social aspects rather than business operations. To attain the four research objectives outlined in Chapter 1, this research adopts a mixed-method research design where Delphi was chosen as the main research strategy. Multiple rounds of Delphi were conducted to validate the proposed KPIs based on the expertise, knowledge, and views from respective experts. In the first round of Delphi, data was collected through

## BIBLIOGRAPHY

- Abdullah, Y. A., Kuek, J. N., Hamdan, H., & Mohd Zulkifli, F. L. (2017). Combating squatters in Malaysia: Do we have adequate policies as instruments? *Planning Malaysia*, 15(2), 51-62. <https://doi.org/10.21837/pm.v15i2.263>
- Achour, I., & Bichari, K. (2019). Improving public sector organizations' performance through the application of benchmarking: TRADE benchmarking model case studies from Dubai public sector organizations. *Journal of Economic Sciences, Management & Commercial Sciences (JESMCS)*, 12(3), 34-47.
- Adegbembo, T. (2022). The importance and use of key performance indicators of knowledge management in quantity surveying firms in Nigeria. *Journal of Surveying, Construction and Property (JSCP)*, 13(1), 76-89. <https://doi.org/10.22452/jscp.vol13no1.5>
- Adewunmi, Y. A., Iyagba, R., & Omirin, M. (2017). Multi-sector framework for benchmarking in facilities management. *Benchmarking: An International Journal*, 24(4), 826–856. <https://doi.org/10.1108/BIJ-10-2015-0093>
- Adler, M., & Ziglio, E. (1996). *Gazing into the oracle: The Delphi method and its application to social policy and public health*. Jessica Kingsley Publishers.
- Ahmed, Y., Atan, I., Sipan, B., Binti, H., & Hashim, A. (2020). Public-private partnership strategy for housing provision in Abuja, Nigeria. *International Journal of Scientific & Technology Research*, 9(1), 1958–1965. <http://www.ijstr.org>



- Ahmed, Y., Usman, M., & Saleh, A. (2022). Computational & applied sciences public-private partnership model for affordable housing provision in Nigeria. *Journal of Engineering and Computer Applications*, 6(1), 1–14. <https://doi.org/10.56892/jecas.v6i01.259>
- Al Qattan, A. (2019). Social housing between theory and implementation comparative analytical study. *Int. J. Curr. Eng. Technol*, 9(6), 800-809. <https://doi.org/10.14741/ijcet/v.9.6.1>
- Ameyaw, E. E., Hu, Y., Shan, M., Chan, A. P. C., & Le, Y. (2016). Application of Delphi method in construction engineering and management research: A quantitative perspective. *Journal of Civil Engineering and Management*, 22(8), 991–1000. <https://doi.org/10.3846/13923730.2014.945953>
- Ammons, D. N., & Roenigk, D. J. (2015). Benchmarking and interorganizational learning in local government. *Journal of Public Administration Research and Theory*, 25(1), 309–335. <https://doi.org/10.1093/jopart/muu014>
- Amos, D. (2021). A practical framework for performance measurement of facilities management services in developing countries' public hospitals. *Journal of Facilities Management*. <https://doi.org/10.1108/JFM-03-2021-0034>
- Andreea, T. (2021). Improving the Performance Management of Public Institutions: Is it Difficult to Measure Performance in Public Institutions? *Management And Economics Review*, 6(2), 145–156. <https://doi.org/10.24818/mer/2021.12-01>
- Andrews, R., & Van de Walle, S. (2013). New Public Management and Citizens' Perceptions of Local Service Efficiency, Responsiveness, Equity and Effectiveness. *Public Management Review*, 15(5), 762–783. <https://doi.org/10.1080/14719037.2012.725757>



- Arnaboldi, M., Lapsley, I., & Steccolini, I. (2015). Performance Management in the Public Sector: The Ultimate Challenge. *Financial Accountability & Management*, 31(1), 1–22. <https://doi.org/10.1111/faam.12049>
- Arthurson, K. (2008). Australian Public Housing and the Diverse Histories of Social Mix. *Journal of Urban History*, 34(3), 484–501. <https://doi.org/10.1177/0096144207311192>
- Arthurson, K., Levin, I., & Ziersch, A. (2015). What is the Meaning of ‘Social Mix’? Shifting perspectives in planning and implementing public housing estate redevelopment. *Australian Geographer*, 46(4), 491–505. <https://doi.org/10.1080/00049182.2015.1075270>
- Asenahabi, B. M. (2019). Basics of research design: A guide to selecting appropriate research design. *International Journal of Contemporary Applied Researches*, 6(5), 76–89.
- Aujirapongpan, S., Meesook, K., Theinsathid, P., & Maneechot, C. (2020). Performance evaluation of community hospitals in Thailand: An analysis based on the balanced scorecard concept. *Iranian Journal of Public Health*, 49(5), 906–913. <https://doi.org/10.18502/ijph.v49i5.3207>
- Australian Institute of Health and Welfare. (2010). *Housing Assistance Data Development Series Public rental housing 2008-09*. Australian Institute of Health and Welfare. <https://www.aihw.gov.au/housing/assistance>
- Aydın, G. (2019, April 1). *The applicability of balanced scorecard in public sector: the case of ombudsman institution*. <https://dergipark.org.tr/tr/pub/sevad/issue/53342/709089>
- Aziabah, S. B. (2018). A Performance Assessment of Local Authorities in Managing Public Housing in Ghana. *Journal of African Real Estate Research*, 3(1), 39–60. <https://doi.org/10.15641/jarer.v1i1.553>



# *Developing Key Performance Indicators Framework in* **TENANCY MANAGEMENT FOR PUBLIC HOUSING** *in Malaysia*

Effective performance measurement (PM) is a crucial element in ensuring the success and sustainability of public housing management. While Malaysia's public housing sector has made notable strides in building maintenance and facility management, the vital area of tenancy management remains underexplored. This book brings to the forefront the importance of monitoring tenancy-related functions—ranging from unit allocation and rent collection to tenant relations and neighborhood issues—as an integral part of overall housing performance. Drawing on international perspectives and local realities, this work highlights the emerging trends of Externalization, Reconceptualization, and Managerialization as frameworks for improving tenancy management. Among these, Managerialization stands out for its structured, goal-oriented approach. However, Malaysia's current PM efforts often overlook the tenant-level dynamics essential to achieving holistic housing outcomes.

Through a rigorously designed mixed-method study grounded in pragmatism, this book introduces a tailored set of Key Performance Indicators (KPIs) specifically for tenancy management in Malaysia's public housing context. Employing the Delphi method, expert interviews, and successive rounds of surveys, the research identifies and validates 51 critical KPIs. These indicators are further analyzed using the Importance-Practicality Quadrant Analysis (IPQA) to determine their real-world applicability and impact. A key contribution of this book is the integration of a "Social Perspective" into the Balanced Scorecard (BSC) model—an innovation that addresses the broader societal role of public housing. By framing tenancy performance within this expanded model, the book provides a more comprehensive tool for policy evaluation, transparency, and equitable service delivery.

This book serves as an essential guide for housing administrators, policymakers, and researchers seeking to advance the quality and accountability of tenancy management in Malaysia's public housing sector. It not only fills a critical gap in existing PM literature but also paves the way for future improvements that align with the social and operational realities of public housing.



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