

## **An Assessment of Malaysian Property Development: The Cost Components and the Economics Activities**

\*Fara Diva Mustapa, Farah Kamilah Zainuddin, Muzani Mustapa and Koh Fung Chieng

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**Abstract:** Housing is crucial for fulfilling basic human needs because it has a significant impact on the growth of a country and is essential for creating inclusive and sustainable cities. Despite its importance for human well-being, Malaysia's housing median multiple affordability score is classified as seriously unaffordable, leading to a lower rate of homeownership compared to other emerging nations. This study seeks to refute the housing development cost components and their associated economic activities, which are classified based on land costs, hard costs and soft costs. By analysing the cost components separately, it is possible to identify the main factors that contribute the most to the overall cost breakdown. This allows for a clear understanding of the economic activities associated with these significant cost components. By doing so, the hidden expenses and economic activities associated with property development can be determined. This research was conducted using case studies, document surveys and interview methods, which were subsequently analysed using content analysis. A total of 57 case studies from 6 distinct regions were obtained. The data confirmed that hard costs accounted for most of the gross development expenses, with land costs and soft costs following in order of importance. The distribution of land costs and soft expenses, which can be significant, were influenced by project characteristics, location, ownership and compliance rules. These factors vary depending on the locale and the specific needs set by local authorities. The assessment included the economic activities that generate the cost components. This will help industry players conduct feasibility studies to achieve process coordination and cost transparency, reducing uncertainty.

**Keywords:** Malaysian property development, Development cost components, Land costs, Hard costs, Soft costs, Feasibility studies

## **INTRODUCTION**

The fundamental needs for humans are food, air, water and shelter, as suggested by Maslow's hierarchy of needs (Maslow, 1943; Kaur, 2013; Flanagan and Jacobs, 2019; Trivedi and Mehta, 2019). Shelter, a concept primarily associated with property requirements, is now actively used to measure the societal well-being of human rights in the United Nations (Hamid et al., 2021). Moreover, scholars have proposed that the extent of property development

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Department of Quantity Surveying, Faculty of Built Environment and Surveying, Universiti Teknologi Malaysia, 81310 Johor Bahru, Johor, MALAYSIA  
\*Corresponding author: faradiva@utm.my

in a country serves as an indicator of its socioeconomic stability and progress (Ciferri, Soldi and Bongianni, 2022; Jagun et al., 2022; Zainuddin, Mustapa and Mustapa, 2022; Chang and Smith, 2023).

Despite the significance of property for human welfare and its connection to the country's economic performance, many individuals face difficulties affording it. Malaysia has a relatively low house ownership rate compared to other developing countries. Only 76.9% of Malaysians own their residences, while countries like Vietnam, Myanmar, Indonesia and Thailand have higher rates of 90.0%, 85.5%, 84.0% and 80.0%, respectively (Ministry of Finance Malaysia, 2022). The statistics from the Ministry of Finance Malaysia in 2019 and Khazanah in 2021 further support the scenario where the housing median multiple affordability score is 4.1 and 4.3, respectively, indicating that property prices in Malaysia are deemed to be seriously unaffordable and worsening (Hassan, Ahmad and Hashim, 2021).

Several studies have been conducted to investigate the root cause of the high property prices in response to the low housing ownership rate. Most of these studies examined the subject from both the perspectives of supply and demand analysis. For instance, the demand factors are mostly derived from demographics, the levels and distribution of income, the availability and cost of financing and government policies. From the supply perspective are land cost, government policies, availability and cost of financing and construction costs (Yakob, Yusof and Hamdan, 2012; Khazanah Research Institute, 2019; Osmadi et al., 2015; Panagiotidis and Printzis, 2016; Kamal, Hassan and Osmadi, 2016; Foo and Fuad, 2018; Yap and Ng, 2018; Olanrewaju et al., 2018; Amit, Sapiri and Yusof, 2020; Zaini, Arupin and Hadi, 2020; Hassan, Ahmad and Hashim, 2021; Daud, Rosly and Sori, 2022; Musaddad, Maamor and Zainol, 2025). Although both perspectives are deemed important, the most critical aspect of the issue is derived from the supply side. This is because the supply side is where the findings highlight the importance of studying the high construction costs and determining the factors that contribute to the cost components of property development. They are crucial to gain a comprehensive understanding of the underlying causes of the issues.

Hence, unbundling property development costs and analysing the specific cost components at each stage of the development process can illustrate transaction cost (TC) within the housing development process and suggest the required economic transaction efficiency improvement (Qian, Chan and Khalid, 2015; Zhuang et al., 2020; Chieng, Mustapa and Samsudin, 2022). Through TC analysis, identifying unnecessary or inefficient transactions and activities can portray better housing development cost drivers and the relevant yardsticks to reduce uncertainties in property development costs.

It also benefits industry players involved in property scheme development by facilitating feasibility studies, promoting process coordination and ensuring cost transparency (Flanagan and Jacobs, 2019; Zhuang et al., 2020; Bunker et al., 2021; Lu et al., 2021).

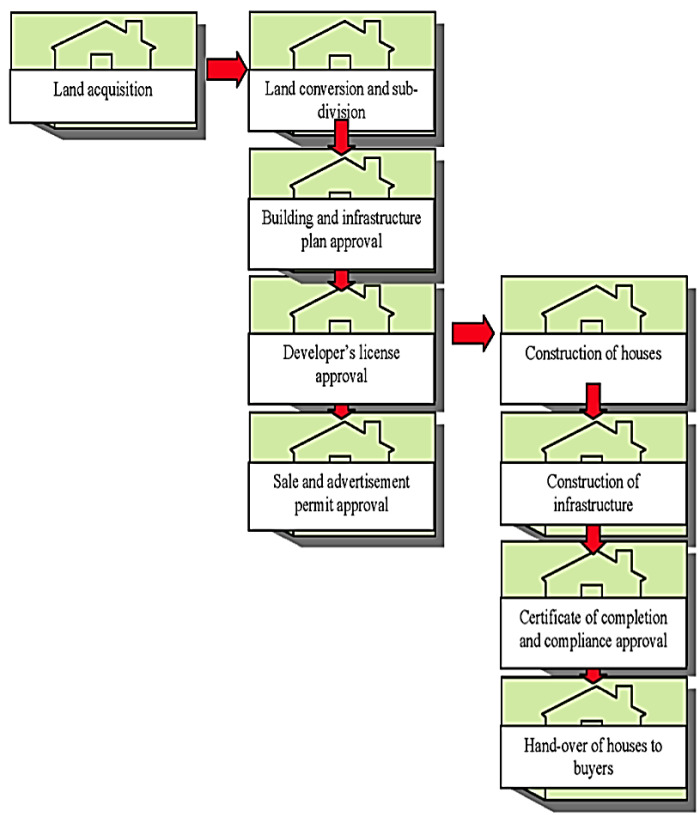
## **LITERATURE REVIEW**

### **Malaysian Property Development Processes**

To analyse the individual components of property development costs, it is necessary to directly examine the property development processes and the economic activities that result in these costs. The Malaysian property development processes are outlined in Figure 1. The process typically begins with land acquisition, followed by land conversion and sub-division. It then proceeds with the approval of building and infrastructure plans, as well as the developer's license. The construction of houses and infrastructure follows, culminating in the approval of the certificate of completion and compliance. Finally, the houses are handed over to the buyers (Soffian, Ahmad and Rahman, 2018; Marzukhi et al., 2020; Zainuddin, Mustapa and Mustapa, 2022).

Based on the Malaysian property development processes depicted in Figure 1, the processes are classified into the pre- and post-contract stages, along with the players involved from various organisations, as summarised in Table 1.

In addition to the primary stakeholders in property development, such as the developer, consultants and designated contractor, the local authorities also play a crucial role in Malaysian property development. The local authorities implemented the rules, regulations and recommendations pertaining to the process of land and property development in Malaysia (Marzukhi et al., 2019; 2020).



**Figure 1.** Malaysian property development processes

Source: Jaafar, Bakar and Daud (2015); Soffian, Ahmad and Rahman (2018); Marzukhi et al. (2019) and Suliman, Samsudin and Ahmad (2021)

**Table 1.** Stages of property development processes

| Housing Development Stages (Li, Arditi and Wang, 2014; 2015) | Housing Development Process (Jaafar, Bakar and Daud, 2015; Zainuddin, Mustapa and Mustapa, 2022)                                              | Players Involved (Jamaluddin, Abdullah and Hamdan, 2016) |
|--------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------------------------------------|----------------------------------------------------------|
| Pre-contract stage                                           | 1. Land acquisition<br>2. Land conversion and sub-division<br>3. Building and infrastructure plan approval<br>4. Developer's license approval | a. Developer<br>b. Consultants<br>c. Local authorities   |

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**Table 1** *Continued*

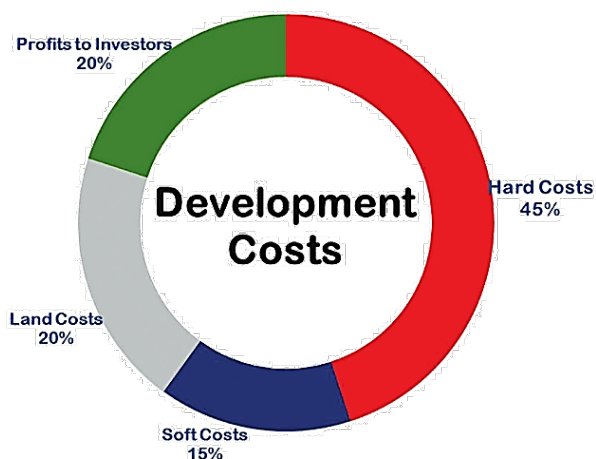
| <b>Housing Development Stages<br/>(Li, Arditi and Wang, 2014; 2015)</b> | <b>Housing Development Process<br/>(Jaafar, Bakar and Daud, 2015;<br/>Zainuddin, Mustapa and Mustapa, 2022)</b> | <b>Players Involved<br/>(Jamaluddin, Abdullah and Hamdan, 2016)</b> |
|-------------------------------------------------------------------------|-----------------------------------------------------------------------------------------------------------------|---------------------------------------------------------------------|
| Post-contract stage                                                     | 1. Construction of houses                                                                                       | a. Developer                                                        |
|                                                                         | 2. Construction of infrastructure                                                                               | b. Consultants                                                      |
|                                                                         | 3. Certificate of completion and compliance approval                                                            | c. Appointed contractors                                            |
|                                                                         |                                                                                                                 | a. Developer                                                        |
|                                                                         |                                                                                                                 | b. Consultants                                                      |
|                                                                         |                                                                                                                 | c. Local authorities                                                |
|                                                                         | 4. Hand-over of houses to buyers                                                                                | a. Developer                                                        |

Source: Soffian, Ahmad and Rahman (2018); Marzukhi et al. (2020); Suliman, Samsudin and Ahmad (2021) and Ang (2022)

## Property Development Cost Components

The previously explained property development processes contribute to the decomposition of the various cost components involved in property development. According to Foo and Fuad (2018), the property development cost components consist of land expenses, hard costs, soft costs and profits. The authors observed that for property development to be practical and workable, the optimum allocation of expenses should be as follows: land costs should be 20%, hard costs should be 45%, soft costs should be 15% and profits should be 20%, as depicted in Figure 2 (Foo and Fuad, 2018). Furthermore, Foo (2018) reinstated that capital contributions and compliance costs, such as development charges and planning authorities, also make up around 9.5% of the gross development value in property development cost components.

Amit, Sapiri and Md Yusod (2020) state that the components of property development costs can be influenced by factors such as financial support, property performance, property motivation, property market conditions and property policies. In their study, Olanrewaju et al. (2018) emphasised several key factors: location (urban/rural), property size, innovation, construction skills, developers' profit margin, strategic considerations, finance market issues and material sourcing. Yakob, Yusof and Hamdan (2012) identified land usage as the most significant component that is typically associated with planning control in property development (Kementerian Tenaga, Teknologi Hijau and Air, 2011; Yakob, Yusof and Hamdan, 2012; Suliman, Samsudin and Ahmad, 2021; Chieng, Mustapa and Samsudin, 2022). Osmadi et al. (2015) provided an explanation of the factors that influence dependence on population, demand and supply, location, physical attributes, accessibility, developer, cost of material and income.



**Figure 2.** Development cost components breakdown

Source: Foo and Fuad (2018)

Foo and Fuad (2018) support the viewpoint of Yakob, Yusof and Hamdan (2012) regarding land use and the associated compliance costs that impact average property development costs. The relevance of land usage is evident, as highlighted by Olanrewaju et al. (2018) and Amit, Sapiri and Md Yusod (2020). These studies highlight the importance of factors such as location (rural/urban), strategic considerations and property policies. From the developer's standpoint, there must be flexible factors or cost components within the gross property development cost that may be modified and managed to strategically plan the nature of the development.

In previous studies, the land cost component has been consistently identified as the main factor influencing manipulative costs (Yakob, Yusof and Hamdan, 2012; Grimes and Mitchell, 2015; Olanrewaju et al., 2018; de Baro and Kraatz, 2020). Soft cost components, which typically make up 20% of the total development cost, encompass a range of necessary expenses connected to administration. They are both partially hidden and obvious and are required for the successful completion of the property development project. Hard cost components, which refer to the expenses associated with constructing the physical building, accounted for a significant portion of the gross development costs (GDC), specifically 45%. The greater emphasis on GDC suggests there is potential for improvement, as the hard cost elements are influenced by the property's purpose, as stated by Amit, Sapiri and Yusod (2020).

Furthermore, there are programmes such as value engineering that provide the opportunity for improvement. To summarise, the only factors that can be manipulated or directly impact the overall cost of property development are

the costs associated with land and the costs associated with construction. Land matter is of particular significance in this instance, as the feasibility assessment will be undertaken prior to any property development. According to the World Economic Forum (2016), land acquisition is the most vital and difficult aspect of property development. To conduct the feasibility study, various details such as the project's location, architectural specifications and cost considerations are converted into numerical data to assess the project's viability.

Overall, numerous factors influence the various components that contribute to the cost of conventional property development. Based on various discoveries made by local researchers, the factors that need to be considered include financial aid, property performance, property motivation, property market, property policy, location (urban/rural), property size, innovation and construction skills required, developers' profit margin and material sourcing. Based on the rationale, it can be concluded that hard cost components and land cost components are the prospective and tangible elements that may be manipulated or adjusted in normal property construction. To further identify the elements that manipulate or influence the cost components, developers need to analyse the cost component drivers. This analysis involves examining the information collected from the standpoint of feasibility study components. The components of the feasibility study are shown in Table 2, which presents the distribution of property development cost components along with their yardstick, classification and distribution (Foo and Fuad 2018).

**Table 2.** Property development cost components distribution

| Cost Component           | Yardstick                              | Cost Elements | Average Cost Distribution (%) |
|--------------------------|----------------------------------------|---------------|-------------------------------|
| 1. Land cost             | Area (hectare/acre)                    | Land costs    | 20                            |
| 2. Building cost         | Cost/m <sup>2</sup> (gross floor area) | Hard costs    | 45                            |
| 3. Infrastructure cost   |                                        |               |                               |
| a. Site preparation      | Area (hectare/acre)                    |               |                               |
| b. Earthwork             | Area (hectare/acre)                    |               |                               |
| c. Storm water drainage  | Area (hectare/acre)                    |               |                               |
| d. Sewerage reticulation | Area (hectare/acre)                    |               |                               |

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**Table 2** *Continued*

| Cost Component                                                          | Yardstick                                    | Cost Elements | Average Cost Distribution (%) |
|-------------------------------------------------------------------------|----------------------------------------------|---------------|-------------------------------|
| e. Sewerage treatment                                                   | Total population (population equivalent)     |               |                               |
| f. Water reticulation and hydrants                                      | Area (hectare/acre)                          |               |                               |
| g. Road works                                                           | Area (hectare/acre/m <sup>2</sup> )          |               |                               |
| h. Tenaga Nasional Berhad (TNB) substations (single and double chamber) | Number                                       |               |                               |
| i. External mechanical and electrical services                          | Area (hectare/acre)                          |               |                               |
| j. Landscape                                                            | Area (hectare/acre)                          |               |                               |
| 4. Preliminaries                                                        | 5% to 10 % of construction costs             |               |                               |
| 5. Contingencies                                                        | 5% to 10 % of construction costs             |               |                               |
| 6. Other pre-development costs                                          |                                              | Soft costs    | 15                            |
| a. Construction Industry Development Board Malaysia (CIDB) levy         | 0.125% of construction costs                 |               |                               |
| b. Professional fees                                                    | (8% to 10%) + (5% tax) of construction costs |               |                               |
| c. Plan and submission fees                                             |                                              |               |                               |
| • Planning                                                              | Area (hectare/acre)                          |               |                               |
| • Building                                                              | Number/m <sup>2</sup>                        |               |                               |
| • Earthwork                                                             | Area (hectare/acre)                          |               |                               |
| d. Capital contribution                                                 |                                              |               |                               |
| • TNB                                                                   | Area (hectare/acre)                          |               |                               |

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**Table 2** *Continued*

| Cost Component                                                                                                                                                                                                                                                                                                         | Yardstick                                                                                                    | Cost Elements         | Average Cost Distribution (%) |
|------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------------|--------------------------------------------------------------------------------------------------------------|-----------------------|-------------------------------|
| <ul style="list-style-type: none"> <li>Jabatan Bekalan Air (Department of Water Supply, JBA) (e.g., Syarikat Bekalan Air Selangor Sdn. Bhd.)</li> <li>Indah Water Konsortium Sdn. Bhd.</li> <li>Jabatan Pengairan dan Saliran (Department of Irrigation and Drainage, JPS)</li> <li>Telekom Malaysia Berhad</li> </ul> | <p>Area (hectare/acre)</p> <p>1.65% of income</p> <p>Area (hectare/acre)</p> <p>Area (hectare/acre/unit)</p> |                       |                               |
| e. Survey work                                                                                                                                                                                                                                                                                                         |                                                                                                              |                       |                               |
| <ul style="list-style-type: none"> <li>Boundary</li> <li>Pre-computation plan</li> <li>Subdivision/strata</li> </ul>                                                                                                                                                                                                   | <p>Area (hectare/acre)</p> <p>Unit/m<sup>2</sup></p> <p>Unit/m<sup>2</sup></p>                               |                       |                               |
| f. Soil investigation                                                                                                                                                                                                                                                                                                  | Number per hectare/acre                                                                                      |                       |                               |
| g. Developer's overhead and management cost                                                                                                                                                                                                                                                                            | 1% to 2% of construction costs                                                                               |                       |                               |
| h. Sales and marketing, and legal fees                                                                                                                                                                                                                                                                                 | 1% of income/sales of development                                                                            |                       |                               |
| 7. Contingencies                                                                                                                                                                                                                                                                                                       | 5% to 10% of construction costs                                                                              |                       |                               |
| 8. Profit for developer                                                                                                                                                                                                                                                                                                | 10% to 20% of development costs                                                                              | Profit marginal costs | 20                            |
| Total property development cost components                                                                                                                                                                                                                                                                             |                                                                                                              |                       | 100                           |

Source: Ahmad (2011) and Mustapa et al. (2023)

## **METHODOLOGY**

### **Research Approach**

A qualitative research approach is the most appropriate strategy for attaining the aim of this research, which is to identify the many components of property development costs and highlight any hidden costs associated with every component (Guba and Lincoln, 1994; Palinkas et al., 2015; Ames, Glenton and Lewin, 2019). The qualitative approach, which is a scientific research method, involves systematically examining an issue, using predetermined processes, gathering evidence and producing unbiased findings. Therefore, it is the most appropriate methodology for this research. This strategy provides results which can be used beyond the study's focus. It also seeks to understand a research issue by considering local perspectives. Qualitative research helps gather culturally distinctive data regarding a society's ideas, attitudes, behaviours and social situations (Mariampolski, 2016).

This methodology entails gathering data through interviews and document surveys to obtain cumulative case studies, which require collecting comprehensive information from multiple places at various points in time (Hayes, 2022). As there were no housing development project registrations in the data collection process, the research sampling was done purely by approaching industry players involved directly in housing development in Peninsular Malaysia to share their experiences with factors affecting housing development costs. Interviews are advantageous for this research since they serve as a method to extract the respondent's viewpoint on the research subject (Zhuang et al., 2020; Bunker et al., 2021). The chosen respondents are those responsible for and highly knowledgeable about the project and cost-related issues. They have the capacity to share their perspectives on the research subject (Saunders, Lewis and Thornhill, 2007; Fahimnia, Sarkis and Davarzani, 2015). A perceptive interview has the potential to generate substantial and significant data that will contribute to the study's aims (Knox and Burkard, 2016). By conducting interviews, it will allow for the identification of the various elements that contribute to the overall cost of developing a property scheme project, both before and after the contract is signed (Saunders et al., 2015).

In addition to interviews, case studies documentation was gathered mainly from the case feasibility studies attained primarily from the developers. The feasibility studies detailed the different cost components along with the cost drivers and their corresponding yardsticks. This technique enables a broader generalisation of the concealed expenses associated with property development.

## Research Scope

This research specifically examines the entire property development process, which includes site acquisition, pre-construction, construction, post-construction and the handover of vacant possessions. To ensure consistency in data collection and analysis, the conventional property development process employed was coupled with the Royal Institute of British Architects Plan of Work, a standard project development management framework, to provide uniformity in the economic activities associated with the overall property development. To formulate an assessment, this study relied on specific project characteristics. This is necessary to account for the varying impact of cost changes in different areas, which can be influenced by factors such as expensive land, project density and the type of property or building. The fundamental factors for evaluating property development expenses in this research are as follows:

1. Buildings within a project were analysed separately (townscape, building scape [main building; amenities]).
2. The information acquired facilitates the presentation of assessment based on abbreviated measurements.
3. The analysis was given in stages (pre and post) with each stage giving progressively more detail; the detailed costs in each stage should match the relevant group cost components of the corresponding group in the preceding stage. At any stage of analysis, any significant cost items that are more important to a proper and more useful understanding of the analysis were identified.
4. Preliminaries, planning permissions/charges and professional fees dealt with a separate item (not apportioned amongst elements).
5. Contingency sum to cover unforeseen expenditures are not included in the analysis but are shown separately.
6. Lump sum adjustments were spread pro-rate amongst all elements of the building(s) and external works based on all work excluding prime cost and provisional sums contained within the elements.
7. The principal cost unit of all elements is expressed in MYR per square foot of gross floor area.
8. A functional unit cost was given to represent better property development costs components.
9. Case studies were differentiated and analysed as follows:
  - a. Location (the location of the project; noting the region, state or/and city).
  - b. Building types (high-rise; landed).

- c. Tender date and market conditions: Regarding assessment preparations, the price for property projects is within the year 2016 to 2022. This typology has been set to derive uniform data from projects with linear similarity to reduce any possibility of discrepancy.

Geographically, this research covers the Peninsular Malaysia property development since Sabah and Sarawak have different regulations and development procedures that might cause discrepancies and disrupt the data collected.

Analysis

The respondents consist of professional individuals and representatives from developers. The positions of respondents ranged from town and country planning officers, land surveyors, quantity surveyors, senior contract executives, procurement managers, head of tender divisions and project managers from more than 10 organisations. The respondents of this research have at least 5 years of working experience in the construction industry and more than 15 years of working experience in property development.

RESULTS

Case Studies

Despite extensive and persistent efforts, only 57 project case studies were successfully gathered. Table 3 presents the results of the analysis of project case studies, which were selected based on their similarity in locality, project kinds and year aspects, as described in the research scope.

Table 3. List of case studies

| State                     | Type       |              |                   |                     | Total by States |
|---------------------------|------------|--------------|-------------------|---------------------|-----------------|
|                           | Mid-Landed | Mid-Highrise | Affordable-Landed | Affordable-Highrise |                 |
| Johor                     | 16         | 8            | 1                 | –                   | 25              |
| Melaka                    | 2          | 2            | –                 | –                   | 4               |
| Negeri Sembilan           | 2          | –            | 1                 | –                   | 3               |
| Kuala Lumpur and Selangor | 2          | 4            | –                 | 2                   | 8               |
| Perak                     | –          | –            | –                 | 1                   | 1               |

(Continued on next page)

**Table 3** *Continued*

| State         | Type       |              |                   |                     | Total by States |
|---------------|------------|--------------|-------------------|---------------------|-----------------|
|               | Mid-Landed | Mid-Highrise | Affordable-Landed | Affordable-Highrise |                 |
| Kedah         | 3          | –            | 1                 | 2                   | 6               |
| Penang        | 2          | 2            | –                 | 1                   | 5               |
| Pahang        | 4          | –            | –                 | –                   | 4               |
| Terengganu    | –          | –            | –                 | 1                   | 1               |
| Total by type | 31         | 15           | 3                 | 6                   | 57              |

### Property Development Cost Components and Economic Activities Identified through Case Studies

After examining all 57 case studies, the cost components were categorised based on the cost elements commonly used by developers in Peninsular Malaysia. This categorisation reveals the components that will impact the GDC and subsequently influence the valuation of the residual method in one of the feasibility study criteria assessments. The hard cost aspects of a total township development include subsets such as residential, townscape, operation with miscellaneous and contingency. Each subset is subdivided into more specific cost components, as illustrated in Table 4. These are the fundamental components of a feasibility study that will be utilised in conjunction with the residual method valuation assessments.

The soft cost, which serves parts of a comprehensive township development, consists of several components, including consultation fees, travel and reimbursable expenses, supervision and residence staff costs, project management expenses, authorities' contributions, management fees and contingency funds. Each subset is then divided into more specific cost components, as illustrated in Table 5. Like the hard cost, these are the fundamental components of a feasibility study that will be utilised in conjunction with the residual method of valuation assessments.

**Table 4.** Hard costs in property development

| No. | Element                                         | Yardstick           |
|-----|-------------------------------------------------|---------------------|
| 1.  | Residential                                     |                     |
| a.  | Earthwork                                       | Cost/acre           |
| b.  | Piling work                                     | Cost/m <sup>2</sup> |
| c.  | Main building work (depending on housing units) | Cost/m <sup>2</sup> |
| d.  | Infrastructure work                             | Cost/acre           |

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**Table 4** Continued

| No. | Element                                                  | Yardstick           |
|-----|----------------------------------------------------------|---------------------|
|     | e. Facilities                                            | Cost/m <sup>2</sup> |
|     | f. Guard house                                           | Cost/number         |
| 2.  | Townscape                                                |                     |
|     | a. Entrance                                              | Cost/number         |
|     | b. Landscaping                                           | Cost/acre           |
|     | c. Bus stop                                              | Cost/number         |
|     | d. Religious building                                    | Cost/m <sup>2</sup> |
|     | e. Others: Temporary signage and local authority signage | Cost/m <sup>2</sup> |
| 3.  | Operation and miscellaneous                              |                     |
|     | a. Soil investigation                                    | Cost/acre           |
|     | b. Staff accommodation                                   | Cost/m <sup>2</sup> |
|     | c. Security provision (e.g., manpower and equipment)     | Item                |
|     | d. Double chamber TNB substation                         | Cost/number         |
|     | e. Water tower                                           | Cost/acre           |
|     | f. Sewerage treatment                                    | Cost/acre           |
|     | g. Waste management                                      | Cost/acre           |
|     | h. Storage                                               | Cost/m <sup>2</sup> |
|     | i. Street lighting maintenance                           | Cost/acre           |
|     | j. Township management office                            | Cost/m <sup>2</sup> |
|     | k. Parking services in public area                       | Cost/acre           |
|     | l. Landscape maintenance                                 | Cost/acre           |
|     | m. Refuse chamber                                        | Cost/acre           |
|     | n. Road and drainage                                     | Cost/acre           |
| 4.  | Contingencies                                            | Percentage          |

**Table 5.** Soft costs in property development

| No. | Element                                    | Yardstick  |
|-----|--------------------------------------------|------------|
| 1.  | Consultancy fee                            | Percentage |
|     | a. Town planning consultant                |            |
|     | b. Land surveying consultant               |            |
|     | c. Site assessment and feasibility studies |            |
|     | d. Topographic survey                      |            |
|     | e. Hydraulic consultant                    |            |

(Continued on next page)

**Table 5** *Continued*

| No. | Element                                                            | Yardstick           |
|-----|--------------------------------------------------------------------|---------------------|
|     | f. Environmental assessment                                        |                     |
|     | g. Architectural consultant                                        |                     |
|     | h. Civil and structural consultant                                 |                     |
|     | i. Quantity surveying consultant                                   |                     |
|     | j. Mechanical and electrical consultant                            |                     |
|     | k. Landscaping consultant                                          |                     |
|     | l. Wayfinding and signage consultant                               |                     |
|     | m. Boundary demarcation, road and tree survey                      |                     |
|     | n. Development and programme service management                    |                     |
|     | o. Arboriculture consultant                                        |                     |
|     | p. Green consultant                                                |                     |
|     | q. Others: Rescue contractor; Future contract                      |                     |
|     | r. Others: Project manager                                         |                     |
|     | s. Others: Marketing consultant                                    |                     |
|     | t. Others: Traffic impact assessment consultant                    |                     |
| 2.  | Supervision and resident staff                                     | Percentage          |
|     | a. Site supervision                                                |                     |
|     | b. Township supervision                                            |                     |
|     | c. Operation and miscellaneous supervision                         |                     |
| 3.  | Project management procurement (tender preparation and evaluation) | Percentage          |
| 4.  | Authorities' contribution                                          |                     |
|     | a. TNB                                                             | Cost/acre           |
|     | b. JBA                                                             | Cost/acre           |
|     | c. Indah Water Konsortium Sdn. Bhd.                                | Cost/acre           |
|     | d. JPS                                                             | Cost/acre           |
|     | e. Telekom Malaysia Berhad                                         | Cost/acre           |
|     | f. Jabatan Bomba dan Penyelamat                                    | Cost/m <sup>2</sup> |
|     | g. Local authority                                                 | Cost/acre           |
| 5.  | Management fee                                                     | Percentage          |
| 6.  | Contingencies                                                      | Percentage          |

Property Development Cost Components and Economic Activities Breakdown through Case Studies

From the various cost components attained from the land, hard and soft costs of the case studies, the average land costs, hard costs and soft costs for the 57 case studies were determined. Figure 3 compares the average cost distribution over GDC across different locations, highlighting the variations in cost components between these regions.

Land Costs

From the land cost components, the findings indicated that it accounts for 13.23% in Southern Johor, 16.37% for Negeri Sembilan and Southern Melaka, 28.74% for Central Kuala Lumpur and Selangor, 15.77% for Northern Perak and Kedah, 14.35% for Northern district of Pulau Pinang and 8.57% for East Pahang and Terengganu.

Hard Costs

As for the hard cost components, the average proportion ranges from 58.88% to 77.10% across Peninsular Malaysia, with Central Kuala Lumpur and Selangor with the least proportion and East Pahang and Terengganu with the most.

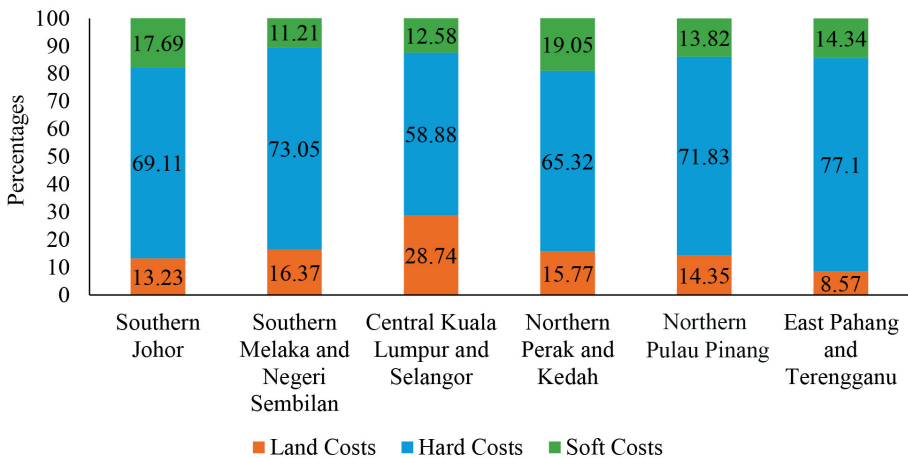


Figure 3. Comparison of average cost distribution over GDC between regions

## Soft Costs

Meanwhile, the average percentage for soft cost components ranges from 11.21% to 19.05%. The largest proportion is exhibited from both Northern Perak and Kedah, with Southern Johor being the second largest. The lowest soft cost composition was exhibited from Negeri Sembilan and Southern Melaka.

## DISCUSSION

The discussion from the results is based on the composition of land, hard and soft cost components derived from the cost drivers and yardsticks of the case studies. The factors that affect the corresponding cost components were highlighted to justify the GDC composition.

### Land Costs

From the land cost components, the findings on the portion of land cost over the GDC are contingent upon the nature of the property (e.g., acquired through a land bank or direct acquisition) and the ownership of the project (e.g., government-affiliated or private entity). In this instance, the input received revealed that acquiring land through a land bank is more cost-effective than obtaining new land. Respondents indicated that government-linked projects are often less expensive when certain conditions, such as subsidising, are met. As expected, the land cost components are higher in the central region, Kuala Lumpur and Selangor, due to high land costs in premium locations compared to other regions. Furthermore, different local authorities have different land acquisition processes, which will significantly affect the land premium, charges and compliance costs involved. The findings correspond with literature findings that highlighted that the land cost component has consistently been identified as the main factor influencing manipulative costs (Gurran et al., 2008; Grimes and Mitchell, 2015; Yakob, Yusof and Hamdan, 2012; Olanrewaju et al., 2018; de Baro and Kraatz, 2020).

A case study from the central region further reinstated the issue by highlighting that land matters are a big issue when the land intended for the development borders two different local authorities, forcing the developer to comply with two different local authorities. This situation translates into double costs and double economic activities, making them hidden costs and economic activities, consequently increasing the development cost components.

## **Hard Costs**

The hard cost components can be categorised according to the townscape and building scape, which make up the total hard development costs. Townscape cost components are mainly derived from the road and drainage requirements as well as open space and recreational facilities such as pedestrian walkways and public toilets. As for building scape, this refers to the actual building elements within a typical house. Between the townscape and building scape cost components, the building scape is more consistent in terms of the cost drivers due to the application of standard elemental cost analysis for cost planning and cost control of housing projects. In contrast, the townscape is subjective in nature as it varies according to the requirements set by the local authorities.

The largest percentage is attributed to the cost components of main building works and infrastructure works, while the lowest percentage is attributed to operation costs. Therefore, the only way to manipulate and strategise the hard cost components is by adjusting the property's design and specifications, as specifications dictate the total cost of housing development. Once again, the findings concur with what was highlighted in the previous studies, which emphasise that the hard cost components accounted for a significant portion of the GDC, specifically 45%. The largest proportion of the GDC suggests there is potential for improvement, as the hard cost elements are influenced by the property's purpose, as stated by Amit, Sapiri and Md Yusod (2020).

## **Soft Costs**

The research findings revealed that most of the costs are attributed to components such as professional fees and management expenses. Nevertheless, the significant conclusion regarding the issue of soft costs is that the authorities' contribution and compliance costs account for 5% to 7% of the GDC in at least five case studies. The developers emphasised that there are many additional and hidden contributions to local authorities along the property development process. These costs are separate from the development charges and other compliance costs that are straight-forwardly indicated in the building regulation (planning permission) submission. Similar to land and hard cost, soft cost components, which typically make up 20% of the total development cost from the past studies, encompass a range of necessary expenses connected to administration that are both partially hidden and obvious and are required for the successful completion of the property development project. Once again, the percentage distributions vary between states due to different regulations set by different municipalities.

These costs and economic activities are not clearly stated and are usually not forecasted. They are hidden costs that some developers cannot afford to absorb, albeit they are one of the important cost components. Some of the expert respondents claimed that there was once a case where the developer had completed the ceiling installation for a project but was taken down to cater to the additional requirement of a water sprinkler system installation, which was previously not required in the building plan approval stage in the housing development process.

Moreover, cross-subsidies have been identified as forming the largest portion of authorities' contribution and compliance costs, creating price distortion in the property market. Cross-subsidies mean property developers must charge buyers higher prices for ordinary units to cover losses from charging lower prices for more affordable units and fulfilling other compliances, such as surrendering 40% to 50% of saleable land. Additionally, fulfilling government policies such as providing affordable housing and losing the saleable land brings meaning to lesser property sales, which are also considered compliance costs, as highlighted by the CIDB (2021) and REHDA Selangor (2019). Overall, higher compliance and administrative requirements have converted into more costs and economic activities, which have predictably led to higher property prices. This is because the local authorities imposed additional requirements without considering any cost-benefit analysis of these requirements or their financial impact on a project and eventually, their effect on property prices.

## **CONTRIBUTIONS OF THE STUDY**

The findings provide more evidence supporting the notion that it is necessary to further analyse the varying development requirements and charges imposed by different local authorities in different states. These requirements impact property development costs and economic activities. Previous research by Foo and Fuad (2018) only indicates the GDC composition from a single case study in Selangor. Hence, the findings of this research managed to portray the land, hard and cost composition of the GDC according to the states. The findings also highlight that southern and central regions have more development requirements and compliance costs due to their recognition as capital and rising cities, as well as their state government intervention. Hence, the comparison of varying development requirements and charges imposed by different local authorities in different states should be able to demonstrate how certain development costs and economic activities could substantially impact the GDC of a particular development in terms of costs, economic activities and procedural aspects related to property development.

## CONCLUSION

This study assessed the various cost elements associated with property development at each stage of the process for typical property projects. The assessment encompassed several cost components of property development, along with the economic activities and benchmarks that should be considered and included in the preparation of feasibility studies for property development. This will provide an overview of how the costs are distributed in terms of weighting and percentage for each component of property development costs (land, hard and soft). It will particularly emphasise the hidden costs and the economic activities linked to them. Additionally, this research will provide industry stakeholders with enhanced understanding and precise data regarding property development expenses. Analysing the various cost components involved in property development and the economic activities that can be eliminated or enhanced to reduce these costs can aid decision-making in property scheme development. This analysis can assist in establishing a framework for an optimal property development cost model to address the issue of unaffordable housing.

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