

## **Current Sustainable Development: Urban Region for a Livable City**

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**Abstract:** The construction industry has a substantial impact on the worldwide environment. Therefore, this industry has a disproportionate effect on our economy, culture, and environment. While sustainable construction has gained increased attention in recent years, construction professionals are unaware of its full potential. Having stated that, this research will examine the long-term viability of construction projects in Kuala Lumpur, Malaysia in accordance with the principles of sustainable state development. The objectives of the research are to identify the impact of development in the absence of sustainable development and to investigate the current contribution factors of poor implementation of sustainable development city in Malaysia. Following, one form of analysis, the quantitative method, is employed to achieve the study's objectives by distributing a survey form questionnaire to G7 construction firms in Kuala Lumpur, Malaysia. From a total population of 2,615 contractors, 313 contractors were selected as responders for this research, with a response rate of 32 percent. Consequently, Statistical Package for the Social Sciences (SPSS) software will be used to examine research data gathered via the distribution of questionnaires. A descriptive statistical analysis, including frequency distribution and mean score, is necessary for determining the impacts, current contribution factors and the improvements in order towards livable city in Kuala Lumpur. The research study was conducted within the Kuala Lumpur construction zone. The projected consequence of this study is that the absence of sustainable development will have negative impacts and factors not only on the environment, but also on the economy and society. Nevertheless, these impacts and factors can be effectively opposed by enhancing sustainable development to create a livable city in Kuala Lumpur, Malaysia. The impacts and factors must be taken rigidly, efficiently, and effectively to mitigate them. This research is expected to ensure environmental sustainability, economic development, and social wellbeing in relation to sustainable development in the construction industry.

**Keywords:** Sustainable, Urban, City

## 1. Introduction

Construction projects have a tremendous environmental influence on the world (Enshassi & *et al.*, 2014). Indeed, every component of construction has measurable consequences—from the mining techniques used to obtain resources to the garbage generated by the project and the manner in which it is disposed of. As a result, this industry has a disproportionate impact on our economy, society, and environment (Yusof & *et al.*, 2017). Construction projects have an enormous impact on the global environment (Enshassi & *et al.*, 2014). Indeed, every aspect of building has quantifiable effects, from the mining processes used to extract raw materials to the waste generated by the project and its disposal. Consequently, this industry has an outsized effect on our economy, social, and environment (Yusof & *et al.*, 2017). The environmental, natural resource, and social impacts of construction operations in Malaysia were reported to be 67.5%, 21.0%, and 11.5%, respectively (Yusof *et al.*, 2016). Environmentally, concerns about unlawful dumping in the building industry across the country have increased considerably. Now, let's concentrate on the precise position of the study area, Kuala Lumpur. On Monday, March 7, 2022, flash floods devastated Malaysia's Klang Valley, which contains the nation's capital Kuala Lumpur and portions of the neighboring state of Selangor. This comes barely three months after devastating flooding across the nation claimed hundreds of lives. Environment and Water Minister Tuan Ibrahim Man said in a statement, "The floods occurred as a result of extraordinarily high rainfall over a two-hour period, and the existing drainage system was unable to handle the additional flow of water" (Rodzi, 2022). Thus, it is indisputable that non-sustainable construction will influence the ecosystem. The next aspect is the social one. The social wellbeing of construction site employees is disregarded. Following reviewed into the problem statement it shows that sustainable development need to be more concern for livable city. This paper objective to identify the impact of development in the absence of sustainable development in the city. This paper will focus on Kuala Lumpur, the capital of Malaysia, due to the paucity of research in this area of sustainable development and the researcher's limits on the generalizability of findings. Kuala Lumpur was chosen for this study because it has 1,664 Grade 7 (G7) contractors registered with the Construction Industry Development Board (CIDB), which is the highest number among states (CIDB Malaysia, 2023). There are 1,664 G7 Contractors in Kuala Lumpur, and the sample size is 313 persons (Krejcie & Morgan, 1970). This survey will then collect responses from construction industry professionals, such as project managers, consultants, and developers employed by G7 construction businesses in Kuala Lumpur, Malaysia. A Google Form questionnaire will be distributed to these construction players via email, WhatsApp, and Telegram.

## 2. Literature Review

### 2.1 Impact of Development in the Absence of Sustainable Development in the City

This part will discuss the impact of development in the absence of sustainable development in the city from the economic, environmental and social well-being aspect as shown in Table 1.

**Table 1: The impact of development in the absence of sustainable development in the city**

| Author                             | Aspect      | Impact of Development in the Absence of Sustainable Development in the City |
|------------------------------------|-------------|---|
| Khalid, 2019                       | Economic    | Wealth Inequality   |
| National Weather Service, 2022     |             | Flash Flood   |
| Department of Social Affairs, 2013 | Environment | Climate Change  |
| Department of Social Affairs, 2013 |             | Rapid Urbanization  |
| Ferguson, 2020                     |             | Wildlife Disruption   |
| Esmaeilifar, & <i>et al.</i> 2015  |             | High Electricity Usage  |

|                                   |            |                            |
|-----------------------------------|------------|----------------------------|
| Choices, 2022                     |            | Improper Disposal of Waste |
| Health and Safety Executive, 2022 | Social     | Reduced Health             |
| Chern, 2018                       | well-being | Declined in Productivity   |
| Inspire, 2020                     |            | Worse living conditions    |

The impact of development in the absence of sustainable development on the city's economic, environmental, and social well-being from 2013 to 2022 is presented in Table 2.0. This section will use Table 1 as its foundation.

(a) *Economic Aspect*

Without healthy urban growth, there is wealth inequality. The Department of Societal Affairs (2013) reports that wealth inequality has reached an alarming level, posing a threat to societal stability. This disparity in wealth impacts nations, ethnic groups, and gender (Khalid, 2019).

(b) *Environment Aspect*

Moreover, unsustainable development will have an impact on the environment. Without sustainable expansion, the National Weather Service anticipates flash flooding in the city in the year 2022. Since the dawn of time, human activity has aggravated flash floods. Poorly designed dams and levees lead to flash flooding. Flash floods are capable of shifting boulders, uprooting trees, destroying homes and bridges, and forming new channels. Water might quickly climb 30 feet. Mudslides can also be triggered by flash flooding. Most flood deaths are caused by flash floods. Climate change is the next impact, and if enough safeguards are not taken, its effects may worsen. According to Department of Social Affairs (2013), rapid urbanisation is also influenced by significant changes in how urban expansion is organised and managed, as well as by substantial increases in public and private investments in urban infrastructure and services, particularly in developing cities.

According to Ferguson (2020), a construction project frequently begins with the destruction of ancient structures or the elimination of inconvenient habitat, causing disruption or harm to animals. Noise and light from construction can disrupt animals' eating and breeding cycles, and land disturbance can split huge ecosystems, harming species that require open space. Construction sites may draw wildlife to hazardous places. The next impact is high electricity usage. According to the analysis, the night shift is the most influential factor in a building's electricity consumption. Location of the site is secondary. Third most effective is equipment usage (Esmaelifar, 2015). Not all waste will decompose; in the process, it may emit unpleasant odours or produce flammable methane gas, which contributes to the greenhouse effect. Polluting leachate can result from improper disposal of waste (Choices, 2022).

(c) *Social Well-being Aspect*

The effects of unsustainable urban growth on social well-being. According to (Health and Executive., 2022), the absence of sustainable development has a negative impact on health since prolonged work exposure can damage the lungs and result in cancer and silicosis. According to (Chern, 2018), productivity subsequently declined. Material shortage on site, non-payment to suppliers resulting in the cessation of material delivery to site, change order by consultants, late issuance of construction drawings by consultants, and the inability of contractors' site management to plan site operations all hinder workforce efficiency. According to (Inspire, 2020), the living conditions in low-income regions are deteriorating due to waste, poor air quality, and other issues.

## 2.2 Research Gap

Table 2 shows the research gap for this study.

**Table 2: Research gap**

| No. | Title  | Year | Location       | Author                                    | Methodology                               | Discussion  |
|-----|--|------|----------------|---|---|---|
| 1.  | Sustainability in the Construction Industry in Malaysia: The Challenges and Breakthroughs    | 2007 | Malaysia       | Chan, Lee & Jin                           | Qualitative method and exploratory method | Discusses the challenges faced by Malaysian developers adopting in sustainable practices and the causes of this in the construction industry.   |
| 2.  | Is the construction sector sustainable? : definitions and reflections                        | 2007 | United Kingdom | Pearce                                    | Collected data and asset-based approach   | Outlines the economist's approach to sustainability, which, to date, has been mainly applied at the national economy level  |
| 3.  | An overview of the contribution of construction sector to sustainable development in Nigeria | 2013 | Nigeria        | Isa, Richard, Achuen, & <i>et al.</i>     | Collected data                            | Assessing the contribution of construction sector to Nigeria economy towards sustainable development  |
| 4.  | Industry Revolution IR 4.0: Future Opportunities and Challenges in Construction Industry     | 2018 | Malaysia       | Alaloul, Liew, Wan & <i>et al.</i>        | Collected data                            | Presents a general idea of Industrial Revolution (IR) 4.0 with the introduction descriptions of important aspects in Construction Industry development.   |
| 5.  | Construction Sector Contribution to Economic Stability: Malaysian GDP Distribution           | 2021 | Malaysia       | Alaloul, Musarat, Rabbani & <i>et al.</i> | Collected data and Granger causality test | To determine the construction sector's connectivity with other sectors through complex likages that contribute immensely to the economy and gross domestic product (GDP).   |
| 6.  | How Can We Improve the Negative Impact Construction Has On The Environment?                  | 2021 | United Kingdom | Procure Partners hips                     | Collected data                            | This article discusses negative environmental impacts and suggest ways the industry can do to take ownership and responsibility for the impacts of the built environment and its symbiosis with the natural environment |

### 3. Research Methodology

#### 3.1 Research Instruments

The research utilised is a descriptive study. In descriptive research, data collected from a sample of respondents is examined in terms of frequency and mean score value prior to being used as the study's conclusions. The methods utilised to fulfil the objectives of this study are detailed in Table 3. The quantitative method involves the use of a questionnaire to collect the necessary data.

**Table 3: Methods for achieving objectives**

| No. | Objectives  | Methods                                 |
|-----|---|---|
| 1.  | The impacts of development in the absence of sustainable development city | Literature Review & Quantitative Method |

### 3.2 Data Analysis

Analytical information is essential to the study. After data has been obtained, it is analysed based on criteria and feedback. This study is descriptive in nature. The questionnaire data is processed to produce research information that is valuable. The frequency distribution organises data by the number of observations. Frequency distribution categories data. The highest percentage or frequency indicates the most popular response. The data will be presented in tables or graphs with percentages or frequencies that are simple to interpret. To determine the impacts of development in the absence of sustainable development for a livable city, the current contribution factors of poor implementation on sustainable development for a livable city, and the improvements of sustainable development in Kuala Lumpur, the mean score is required for this study.

### 3.3 Pilot Study

A pilot study is a small study used to test research methodologies, data collection instruments, sample recruitment strategies, and other research techniques prior to conducting a larger study. A pilot study is one of the crucial stages of a research project and is undertaken to discover potential issue areas and flaws in the research instruments and methodology before the complete study is implemented (Zailinawati & *et al.*, 2006). In this study, a pilot study was done with construction practitioners and academics to see whether the questionnaire was comprehensible and whether any modifications were necessary. The construction professionals and academics participating in the pilot project may need to have understanding of sustainable development. Table 4 has shown the number of respondents of the pilot study.

**Table 4: Number of respondents of pilot study**

| No. | Type of Respondents       | Profession                 |
|-----|---------------------------|----------------------------|
| 1.  | Academician 1             | Lecturer                   |
| 2.  | Academician 2             | Lecturer                   |
| 3.  | Construction Professional | Project Manager            |
| 4.  | Construction Professional | Project Manager            |
| 5.  | Construction Professional | Project Director           |
| 6.  | Construction Professional | Project Developers         |
| 7.  | Construction Professional | Contractor                 |
| 8.  | Construction Professional | Senior Production Engineer |
| 9.  | Construction Professional | Quantity Surveyor          |
| 10. | Construction Professional | Subcontractors             |
| 11. | Construction Professional | Contractor                 |
| 13. | Construction Professional | Civil Engineer             |
| 14. | Construction Professional | Civil Engineer             |
| 15. | Construction Professional | Contractor                 |

## 4. Results and Discussion

### 4.1 Alpha Cronbach's Reliability Test

This Cronbach's Alpha reliability test was conducted by a total of two academics and thirteen industry professionals. It was then analysed using SPSS software to conduct a reliability test. Table 5 displays the value of Cronbach's Alpha where the alpha value of the collected responses was found to be more than 0.6, the minimum acceptable value for a test of reliability. Based on the literature, the greater the value of Cronbach's Alpha, the greater the data's dependability. In conclusion, the collected feedback data is trustworthy and suitable for analysis.

**Table 5: Reliability test of Cronbach's Alpha value**

| Section   | Cronbach's Alpha | N for Item |
|---|------------------|------------|
| The impact of development in the absence of sustainable development | .955             | 10         |
| Total   | .955             | 10         |

### 4.2 Data Analysis

In this study, grade 7 (G7) contractors involved in the construction industry in Kuala Lumpur were surveyed via a digital questionnaire. All respondents are directly or indirectly involved in the construction industry, particularly on construction sites. In addition to a high Cronbach's Alpha value, the majority of respondents are experienced and knowledgeable in the construction industry, making the collected data accurate and trustworthy. This questionnaire contains section A, there is information about the respondent's background, including gender, age, organisation, job title, years of experience in the field, total number of projects participated in, and total number of green/sustainable projects participated in. Section B then discusses the effects of development absent sustainable development. In this section, the results of the data analysis will be presented in tables.

### 4.3 Item Analysis Based on Research Questions

On each addressed element, the index range is utilized to determine the amount of agreement based on the mean for each question item. The amount of agreement based on the mean index range is displayed in Table 6. If the value is between 3.80 and 5.00, it indicates a high interpretation, if the value is between 2.50-3.79, it indicates a medium interpretation, whereas a value between 1.00 and 2.49 indicates a low interpretation.

**Table 6: Interpretation of the mean score (Jamil, 2002)**

| Index table | Interpretation |
|-------------|----------------|
| 1.00 – 2.49 | Low            |
| 2.50 – 3.79 | Medium         |
| 3.80 – 5.00 | High           |

### 4.4 Analysis: Demographic Information

As demonstrated in Table 7, the general background of the respondents consists of gender, age, organization, job position, working experience in the construction industry, projects involved, and sustainable/ green projects involvements. Table 7 provides frequency and percentage breakdowns of respondent data. 100 individuals completed the survey. Men answered to the survey more frequently than women, with 57 responses, or 57% of the total, versus 43 responses, or 43%. The age of the respondent is then evaluated for demographic information. With 32 respondents and 32%, most respondents aged 50 or older. Organization of the respondents were considered when analysing their demographic information, the Public Sector has the highest score at 74 responses (74%), whilst the

Private Sector has the lower score at 26 responses (26%).

In addition, most participants (36, 36 percent response rate) were project managers. The next factor considered when analysing this study is the study's experience. With 47 responses and a response rate of 47%, most respondents have 11 years of experience or more. Consequently, this indicates that the responders to this questionnaire have experience working in the construction field. Next is the element of projects involved. According to the data, the majority of respondents had participated in 10 projects and above, with 43 respondents representing 43% of the total. This demonstrates that the respondents possess not only the required information but also the required skills and expertise. Last is the involvement in sustainable/green projects element. a majority of respondents had participated in two to five green projects, with 43 respondents representing 43% of the total.

**Table 7: Respondent's demographic information**

| Respondents' Background                     | Frequency (n) | Percentage (%) |
|---|---------------|----------------|
| <b>Gender</b>                               |               |                |
| Female                                      | 43            | 43             |
| Male  | 57            | 57             |
| <b>Age</b>                                  |               |                |
| 21-30 years old                             | 30            | 30             |
| 31-40 years old                             | 18            | 18             |
| 41-50 years old                             | 20            | 20             |
| 50 years old and above                      | 32            | 32             |
| <b>Organization</b>                         |               |                |
| Public Sector                               | 26            | 26             |
| Private Sector                              | 74            | 74             |
| <b>Job Position</b>                         |               |                |
| Project Managers                            | 36            | 36             |
| Project Developers                          | 21            | 21             |
| Contractors                                 | 19            | 19             |
| Others                                      | 24            | 24             |
| <b>Experience in the Industry</b>           |               |                |
| 12 months and below                         | 15            | 15             |
| 1-5 years                                   | 22            | 22             |
| 6-10 years old                              | 16            | 16             |
| 11 years and above                          | 47            | 47             |
| <b>Projects Involved</b>                    |               |                |
| 1-3 projects                                | 35            | 35             |
| 4-9 projects                                | 22            | 22             |
| 10 projects and above                       | 43            | 43             |
| <b>Sustainable/ Green Projects Involved</b> |               |                |
| 1 project                                   | 35            | 35             |
| 2-5 projects                                | 43            | 43             |
| 6-9 projects                                | 20            | 20             |
| 10 projects and above                       | 2             | 2              |

#### 4.5 Analysis: Impact of Development in the Absence of Sustainable Development in the City

**Table 8: Impact of development in the absence of sustainable development in the city**

| No.                        | Item              | Mean              | Level of Agreement |
|----------------------------|-------------------|-------------------|--------------------|
| <b>B1) Economic Aspect</b> |                   |                   |                    |
| a.                         | Wealth Inequality | 3.86              | Medium High Level  |
| Mean Average               |                   | 3.86              | Medium High Level  |
| Overall Level of Agreement |                   | Medium High Level |                    |

|                              |                            |                        |
|------------------------------|----------------------------|------------------------|
| B2) Environment Aspect       |                            |                        |
| a.                           | Flash Flood                | 4.28 High Level        |
| b.                           | Climate Change             | 4.20 High Level        |
| c.                           | Rapid Urbanization         | 4.13 High Level        |
| d.                           | Wildlife Disruption        | 4.20 High Level        |
| e.                           | High Electricity Usage     | 4.07 High Level        |
| f.                           | Improper Disposal of Waste | 4.09 High Level        |
|                              | Mean Average               | 4.16 High Level        |
|                              | Overall Level of Agreement | High Level             |
| B3) Social Well-Being Aspect |                            |                        |
| a.                           | Reduced Health             | 4.16 High Level        |
| b.                           | Declined in Productivity   | 3.89 Medium High Level |
| c.                           | Worse Living Conditions    | 4.09 High Level        |
|                              | Mean Average               | 4.05 High Level        |
|                              | Overall Level of Agreement | High Level             |

The highest mean in Table 8 is 4.28 for Flash Flood. This indicates that respondents concur that flash floods are the primary consequence of unsustainable urban development. This demonstrates that this effect continues to have a significant consequence on current findings, as it did in 2022, when the National Weather Service cited the failure to construct a dam or levee with sustainability in mind as a cause of flash flooding. Climate Change and Wildlife Disruption have the second highest mean value, 4.20, indicating that respondents concur that they are the second most significant impact development has on cities without sustainable development. This demonstrates that this impact continues to have a significant effect on current findings, as it did in 2013 when the Department of Social Affairs reported that without effective safeguards, the impacts will worsen, and in 2020 when Ferguson describes how construction projects frequently begin with the destruction of old structures or the removal of inconvenient habitats that are harmful to wildlife. Too many structures will negatively impact both nature and wildlife.

Reduced Health ranks third with a mean of 4.16. This indicates that respondents concur that development without sustainable city development is detrimental to health. This demonstrates, as Hengel did in 2017, that this impact continues to have a considerable effect on modern findings, as Hengel outlines how chronic occupational exposure can result in severe lung damage and respiratory diseases. Putting health last throughout construction will result in a reduction in health. Average Wealth Inequality is 3.86 This indicates that respondents disagree with the assertion that development without sustainable development increases wealth inequality. The global average is 3.86 The second-worst condition is Declining Productivity. This demonstrates that respondents had diverse opinions regarding the impact of development without sustainable development on productivity.

## 5. Conclusions

This section summarizes and draws conclusions from the research findings. To achieve the first aim, a thorough literature study was done using secondary sources such as online articles, journal articles, reports, newspaper, and government documents. The literature study reveals three (3) categories: economic (wealth inequality), environmental (flash flood, climate change, rapid urbanization, wildlife disruption, high electricity usage, improper disposal of waste) and social well-being (reduced health, declined in productivity, worse living conditions. All of the impact of development in the absence of sustainable development were covered in the questionnaire in order to assess the understanding taken by construction professionals. The arithmetic mean test was used to determine the most prevalent impact of development in the absence of sustainable development. As a result, "Flash flood" has been placed at the top of the list, whilst the "Wealth inequality" has been placed at the bottom. Consequently, flash floods continue to be the primary impact of



unsustainable development, as demonstrated by previous research.

This study is significant because it identifies the impact of development without sustainable development in the city, investigates the current factors that contribute to the poor implementation of sustainable development in the city, and recommends improvements to sustainable development to achieve a livable city in Kuala Lumpur. Moreover, it will contribute to promoting sustainable development awareness, particularly in the Malaysian construction industry. The significance of becoming more sustainable in safeguarding the community, economy, and environment can be shown by the study's conclusions. Next, this study contributes to the body of knowledge by providing students, researchers, and academics with reading materials and new and latest research findings related to sustainable development in the construction industry for a livable city.

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