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POST OCCUPANCY ASSESSMENT COMPARATIVE ANALYSIS TOWARDS SUSTAINABLE TOWNSHIP DEVELOPMENT

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Abstract

Sustainable township development is the foundation of a sustainable society; however, the development of sustainable neighbourhoods as it currently stands will not permit all stakeholders, particularly end users, to effectively address current or anticipated unforeseen situations that are beyond the scope of physical development. Thus, it is crucial to determine if a pre-occupancy sustainable neighbourhood concept or a certified green project acknowledged sustainable dimension pillars (SDP) adaptive measures after occupancy. The purpose of the study was to identify the post-occupation township development's based on of sustainable criteria. The Stakeholders-Inclusion Approach and Post-Occupancy Evaluation Model were utilised as evaluation tools. This study's objective is to assess and classify the SDP gap in environmental, social, and economic responsiveness and balance methodology towards progressive developments in sustainable and resilient neighbourhood development at the community and individual levels. The respondents of this study are end-users or homeowners who have resided in these developments for over a year. In post-occupancy sustainable neighbourhoods, the findings revealed SDP adaptation gaps. As a result, it provides significant identified criteria measures for further improvement and refinement towards the development of a resilient and sustainable ASEAN neighbourhood.

Keyword: SDG11, Sustainable cities, Green Township, Post-occupancy Evaluation

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INTRODUCTION

A problem that affects the entire world is creating economically productive urban development conditions that are also environmentally sustainable and socially equally livable. According to recent forecasts, by the year 2030, the world will have developed into a global city rather than a global village, as was commonly understood in the past (UNEP-WGBC 2012). The city and its surrounding conurbation serve as a hub for anthropological livelihoods and economic development in addition to being the centre of economic activity and productivity. The development of cities or townships ought to be planned at the micro district level, which calls for evaluation and benchmarking of its operations; it ought to be economically viable and a sustainable living environment in addition to being socially fulfilling. It is anticipated that greening townships, districts, and eventually cities will be an extremely difficult challenge. It is without a doubt essential to have a solid understanding of the sustainable criteria and framework that can be gained from greening buildings. The prototype for the ideal sustainable neighbourhood should emphasise the significance of placing the pedestrian at the centre of urban planning and design concerns, while vehicular traffic should be viewed as a byproduct of these efforts (Pucher and Dijkstra 2000). Energy consumption is reduced, and as a result, fewer greenhouse gases are released into the atmosphere or environment. This is accomplished by putting an emphasis on communal living and encouraging activity within walking and cycling distances to access daily needs and engage in social interaction. Communities are connected to the natural world through the "green lungs," which include things like gardens, green parks, and playfields. Opportunities for employment and education, opportunities for residents to participate in civic life, and the provision of local facilities all contribute to an improvement in residents' social well-being (Woodcraft, Hackett et al. 2011). An initiative to encourage community carpooling, bicycle parking racks, and shower stations could all be potential criteria for the evaluation.

The importance and value of sustainable township development has been recognised by governments, local authorities, project developers, and communities throughout the ASEAN region; however, efforts must be consolidated into actions because a holistic approach to sustainable built environment, community, and economic development is rather complicated (Ding, 2008). Numerous rating criteria and evaluation tools for sustainable township development have been developed, and they are being revised on a regular basis for the purpose of improvement. Green Township indexing tools in ASEAN countries have identified the need for sustainable frameworks and guidelines for communities. The purpose of developing these sustainable frameworks and guidelines was to offer a path that is both clear and consistent for the formation of green or sustainable communities. In addition to this, it acts

as a resource for local governments in terms of policy framework, the development and approval of projects, and, ultimately, sustainable urban development causes (Hezri 2004). However, with the exception of Malaysia, Singapore, and Indonesia, the majority of green evaluation tools in ASEAN lack sustainable township or neighbourhood pre-occupancy and post-occupancy evaluation tools aimed at end-users or households. This is the case even though Malaysia, Singapore, and Indonesia are considered to be leaders in this field (Yaman et. al, 2017).

MATERIALS AND METHODS

The Ken Rimba Development in Greater Kuala Lumpur, Malaysia, and the Parinyada Village in Bangkok Metropolitan, Thailand, are serving as the case studies for this investigation. Both of these communities are located in Malaysia and Thailand respectively. These case studies were selected because the stakeholders (end-users/homeowners) occupied them for more than a year prior to the study's beginning.

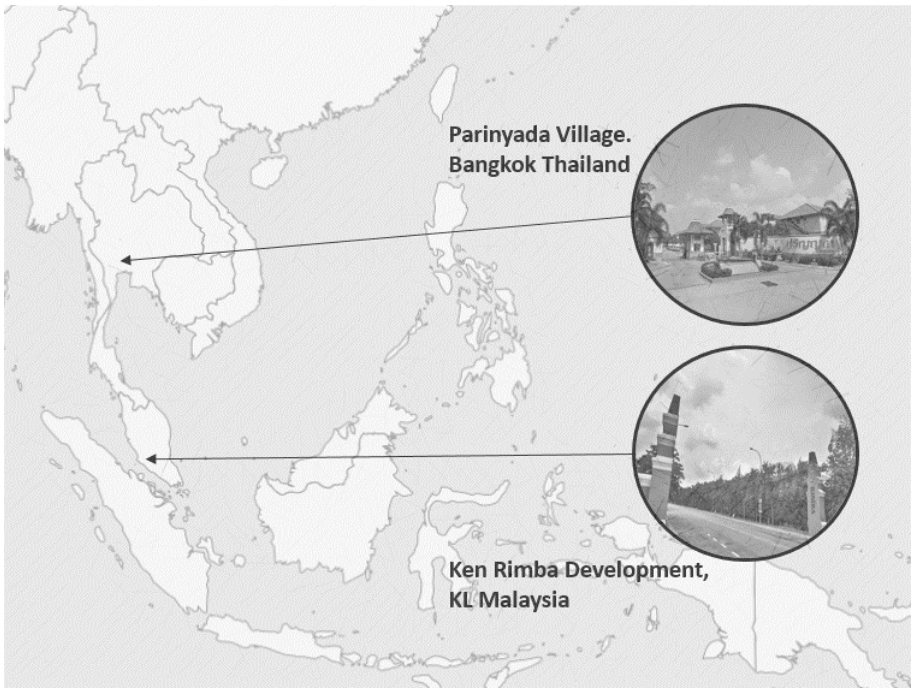

Figure 1: Case Study 1: Ken Rimba Development and Case Study 2 Parinyada Village
Source: Yaman, 2017

Study Area

Case study 1: Ken Rimba Development, Kuala Lumpur.

The development of the Ken Rimba neighbourhood is based on the concept of "the promise of beauty, luxury, and nature." Within the Klang Valley or Greater Kuala Lumpur, it is an integrated neighbourhood or township development located in the prime vicinity of Shah Alam. The Ken Rimba Commercial Centre, the Ken Rimba Legian neighbourhood residences, the Ken Rimba Jimbaran neighbourhood residences, and the two phases of the Ken Rimba Condominium developments make up this premium urban neighbourhood township development. The township development plot in the Ken Rimba neighbourhood is spread out over sixty acres of prime land with a freehold tenure and captures all of the luxury and seclusion that can be found. It is also the first green township in Malaysia, which has revolutionised the land-use change of an industrial area into a landscape paradise-like neighbourhood enclave in Shah Alam. This neighbourhood enclave can be found in Shah Alam.

Case study 2: Parinyada Village, Bangkok.

The components of Parinyada Village's development were dispersed across its three villages, of which there were two villages with townhouses and one village with single-family homes. The primary real estate development in the neighbourhood is called Parinyada Village, and it features both landed bungalows and the Village Clubhouse. The most prominent structure included in the development of this neighbourhood is the Village Recreational Clubhouse, which can be found right in the middle of Parinyada Village. It was the primary venue for social gatherings, and it also housed recreational facilities and other conveniences. Additionally, it was the most recognisable landmark in Parinyada Village. The second neighbourhood precinct, known as Parinlak Village, is a diverse community that consists of townhouses, residential units, office units, commercial areas, and recreational facilities. The third neighbourhood precinct is called Parinlak Light Village, and it features integrated components such as contemporary townhouse residences as well as a centrally located Clubhouse that features a dedicated swimming pool and recreational facilities. In total, there are 434 households, also referred to as property units. It is made up of 175 bungalow residences in Parinyada Village, 135 property units in Parinlak Village, and 124 residences in Parinyada Light Village.

The establishment of POEM Framework

The purpose of this planned POEM framework is to provide an evaluation measurable model for the effectual and sustainable urban neighbourhood development that addresses the limitations and gaps upon occupancy. This is significant because it will allow for an effective urban neighbourhood to be

developed. The overall concept of the study was discussed in the POEM Handbook conceptual framework (Figure 3). (Figure 3). The POEM framework was utilised in this research project in order to take into account the fundamental dimension aspects of sustainable urban neighbourhood development. These fundamental aspects were centred on issues relating to the environment, society, and economy. The POEM framework is constructed on three different sustainable dimensions, all of which need to be cohesively integrated in order to accomplish the objectives that have been outlined for this proposal framework. Particularly, the environmental, social, and economic dimensions (Yaman et. al, 2016). (Yaman et. al, 2016).

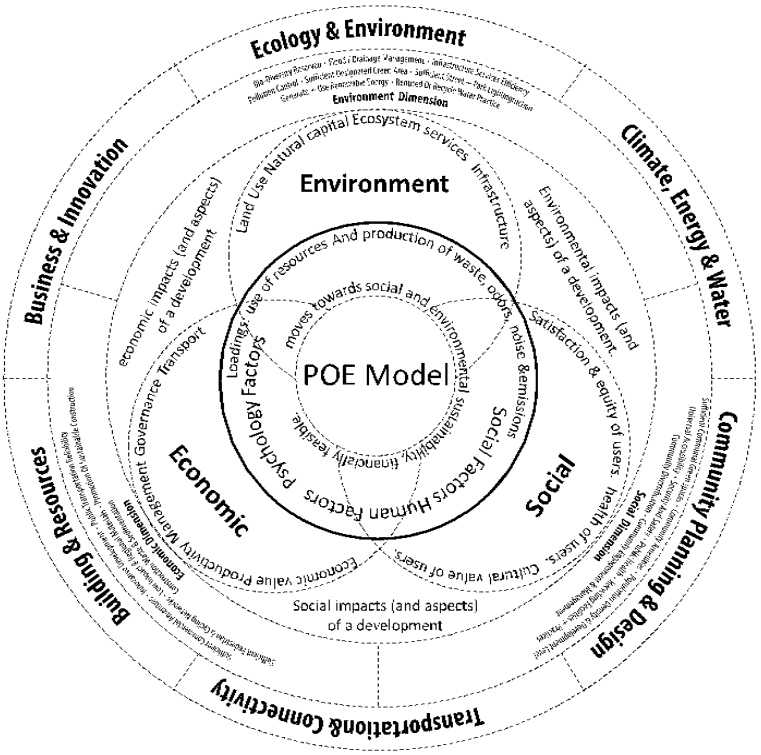

Figure 2: Research Conceptual Framework
Source: Yaman, 2017

The Stakeholder-Inclusion Approach is used in this study in order to gather households' opinion towards the POEM Handbook measurement criteria for sustainable neighbourhood development at community and individual level. It is developed to measure the sustainable indicators of green neighbourhood projects in this region and aims to address the underpinning research objectives: to evaluate and assess sustainability gaps through adapted sustainable dimensions

of POEM framework; and how these sustainable gaps can be addressed and improved towards urban resilience (Yaman et. al, 2016).

Methods for Evaluating and Ranking POEMS

The POEM evaluation criteria were broken down into three categories, with the Environment Dimension Pillar consisting of a total of eight evaluation sub-criteria (EnP Q1-EnP Q8), the Social Dimension Pillar consisting of a total of eight evaluation sub-criteria (SoP Q1-SoP Q8), and the Economic Dimension Pillar consisting of a total of eight evaluation sub-criteria (EnP Q1-EnP Q8) (EcP Q1- EcP Q8). The scoring for the POEM Handbook can be found by using the following equation (Yaman, 2017).

As shown by the following equation, the score for each individual respondent's dimension is determined by dividing the total number of credits earned by the total number of credits available, then multiplying that result by the weighting:

$$\frac{Sc\_CR}{Av\_CR} \times W\ (100\%) = D\_SA$$

Sc_CR: Individual Scored Credits
Av_Cr: Available Credits
W: Weighting
D_SA: Dimension Scored Achieved

As shown by the following equation, the best way to summarise the total respondents dimension score achieved (tD SA) is to take the sum of the total respondents dimension score credits (tSc CR) and divide it by the total sampling (N):

$$\frac{tSc\_CR}{N} = tD\_SA$$

tSc_CR: total respondents Scored Credits
N: total respondents
tD_SA: total Dimension Scored Achieved

The rating benchmark are based on Table 1 below;

Table 1: POEM Framework Rating Benchwork

Scores	POEM Ratings	Description
86 to 100 TD-CA	Platinum	Beyond outstanding criteria ratings of POEM for Sustainable Neighborhood
76 to 85 TD-CA	Gold	Outstanding criteria ratings of POEM for Sustainable Neighborhood
66 to 75 TD-CA	Silver	Good criteria ratings of POEM for Sustainable Neighborhood
50 to 65 TD-CA	Certified	Fulfilled criteria ratings of POEM for Sustainable Neighborhood
Below 50 TD-CA	-	Failed criteria ratings of POEM for Sustainable Neighborhood

Source: POEM Handbook (2017)

RESULTS AND DISCUSSION

Figure 3 (Ken Rimba Development) and Figure 4 depict the POEM Handbook's findings regarding the perspective of end-users/households on post-occupancy evaluation criteria based on SDP dimensions (Parinyada Village).

Case Study 1: Ken Rimba Development

Based on the proposed POEM Handbook framework, the total dimension scored achieved (tD SA) of the current green neighbourhood of Ken Rimba development has been calculated as the sum of the final dimension scored achieved of the three (3) dimension pillars. This calculation was based on the framework that was proposed in the POEM Handbook. As can be seen in Figure 3, the post-occupancy evaluation of the green neighbourhood included in the Ken Rimba development found that it satisfies 54.2% of the tD SA of the POEM Handbook's evaluation criteria for the development of sustainable neighbourhoods. After conducting an in-depth analysis of this neighbourhood in relation to the three (3) Sustainable Dimension Pillars, criteria, and sub-criteria of the proposed POEM Handbook, this total tD SA was determined.

POEM Scoring Calculation Master Sheet.					
Q_ No	Criteria Coding	POEM Evaluation Criteria	Available Credits	Scored Credits	
Environment Dimension Pillar			**Av-Cr**	**Sc-Cr**	
1	EnP Q1	Sufficient Designated Green Area	610	311	
2	EnP Q2	Sufficient Street Or Park Lighting	610	316	
3	EnP Q3	Generate Or Use Renewable Energy	610	315	
4	EnP Q4	Reduced Or Recycle Water Practice	610	319	
5	EnP Q5	Bio-Diversity Reserved Availability	610	184	Failed to fulfill POEM Rating
6	EnP Q6	Flood / Drainage Clogging Experience	610	304	Failed to fulfill POEM Rating
7	EnP Q7	Infrastructure Services Efficiency	610	368	
8	EnP Q8	Pollution Control & Experience	610	307	
		Dimension Av-Cr / Sc-Cr	4880	2424	
		EnP Dimension Scored Achieved		49.6%	
Social Dimension Pillar			**Av-Cr**	**Sc-Cr**	
1	SoP Q1	Sufficient Communal Greenspaces	610	371	
2	SoP Q2	Population Density & Development Level	610	410	Good POEM Score Rating
3	SoP Q3	Universal Accessibility Availability	610	382	
4	SoP Q4	Security And Safety Experience	610	326	
5	SoP Q5	Public Health Concerns	610	407	Good POEM Score Rating
6	SoP Q6	Recycling Facilities Or Practices	610	357	
7	SoP Q7	Community Diversification	610	401	
8	SoP Q8	Community Engagement & Management	610	365	
		Dimension Av-Cr / Sc-Cr	4880	3019	
		SoP Dimension Scored Achieved		61.8%	
Economic Dimension Pillar			**Av-Cr**	**Sc-Cr**	
1	EcP Q1	Distance To Community Amenities	610	317	
2	EcP Q2	Public Transport Reliability	610	321	
3	EcP Q3	Sufficient Pedestrian & Cycling Networks	610	317	
4	EcP Q4	Low Impact & Regional Materials	610	210	Failed to fulfill POEM Rating
5	EcP Q5	Promotion Of Sustainable Construction	610	315	
6	EcP Q6	Construction Waste & Sedimentation	610	261	Failed to fulfill POEM Rating
7	EcP Q7	Sufficient Commercial Amenities	610	395	
8	EcP Q8	Innovative Development	610	368	
		Dimension Av-Cr / Sc-Cr	4880	2504	
		EcP Dimension Scored Achieved		51.3%	
		Total Dimension Av-Cr / Sc-Cr	14.640	7947	
		Sc-Cr (72) / Av-Cr (120) x Weighting (100%)		54.2%	
		Total Dimension Scored Achieved		**54**	

Figure 3: POEM Framework results for Ken Rimba Development
Source: Yaman, 2017

Four of the sub-criteria for each POEM Evaluation failed to meet the POEM rating. In this study, POEM Evaluation sub-criteria for EnP Q5 and EnP Q6 (Environment Dimension Pillar); and EcP Q4 and EcP Q6 (Economic Dimension Pillar) is below score rating. In order to address the sustainable gaps in SDP adaptive measures in the post-occupied sustainable neighbourhood, the four identified POEM Evaluation sub-criteria were used.

According to this study's findings, there is less concern about the importance of biodiversity and flood/drainage systems (based on EnP Q5 and EnP Q6 scores). Although the developers of the project are not very aware of the importance of maintaining the biodiversity and ecosystem in the development project, despite this sub-high criteria's importance in the Environment Dimension Pillar. The development of the Ken Rimba neighbourhood is lacking in protected biodiversity. Water bodies, such as rivers, tributaries, streams, lakes, ponds, and reservoirs, are not present in this area or mentioned in the EnP Q5 reference guide. Despite the fact that this neighbourhood has some greenery, end-users and households have the impression that it is insufficient. The hydrology management system is another problem that needs to be addressed because this area is low and downstream of the Klang River, making it vulnerable to flash flooding in the

event of heavy precipitation. Findings for the Economic Dimension Pillar, EcP Q4 that fall below the certification level. Findings from the POEM Handbook's evaluation of the Economic Dimension Pillar indicated that less emphasis was placed on low-impact and local materials in Ken Rimba's certified township development (based on EcP Q4 score). The Construction Waste and Sedimentation sub-criteria also have a hole in them. As stated in the Ken Rimba township's pre-occupancy green features, the useful characteristics of "Australian" louvred windows that permit controllable continuous air flow across the interior space serve as an example of out-of-region materials that were used in this township development. Further consideration of the sub-criteria for transportation and connectivity as well as for materials and resources can be highlighted as another evaluation that supports the sustainable economic dimension. By improving pedestrian and bicycle connections and raising awareness of the materials and resources sub-criteria by promoting construction waste management and sustainable construction, additional work can be highlighted in the transportation and connectivity sub-criteria (Yaman et. al, 2017).

Case Study 2: Parinyada Village

The total tD SA of the current green neighbourhood in Parinyada Village has been confirmed to be equal to the sum of the final tD SA of the three (3) dimension pillars that were taken into consideration in the previous paragraph in accordance with the framework provided by the POEM Handbook. As can be seen in Table 4, the post-occupancy evaluation of the Parinyada Village development has demonstrated that it satisfies sixty percent of the tD SA set forth by the POEM Handbook evaluation criteria for sustainable neighbourhood development. In order to arrive at this tD SA, the proposed POEM Handbook's three (3) Sustainable Dimension Pillars, as well as its criteria and sub-criteria, were given careful consideration and evaluation.

According to this study's findings, there is a lack of consideration (based on the scores for EnP Q5, EnP Q3, and EnP Q4) regarding the significance of the preservation of biodiversity and ecology, energy efficiency, and water efficiency sub-criteria. Despite the fact that this sub criterion is of an equally high significance in the Environment Dimension Pillar, there is a lack of consideration on the part of the property developer in terms of preserving or conserving biodiversity and ecosystems; there is also a low awareness in the implementation of energy efficiency by generating and using renewable energy; and there is not enough effort taken in water efficiency through water recycling systems. The new neighbourhood development in Parinyada Village does not include any areas that have been set aside for the preservation of bio-diversity. The second factor contributing to the low score is insufficient energy efficiency. The findings from

the majority of the end-users point to a deficiency in the generation of on-site energy sources as well as a deficiency in the use of renewable energy.

POEM Scoring Calculation Master Sheet.					
Q_ No	Criteria Coding	POEM Evaluation Criteria	Available Credits	Scored Credits	
Environment Dimension Pillar			**Av-Cr**	**Sc-Cr**	
1	EnP Q1	Sufficient Designated Green Area	155	112	
2	EnP Q2	Sufficient Street Or Park Lighting	155	129	Outstanding POEM Score Rating
3	EnP Q3	Generate Or Use Renewable Energy	155	65	Failed to fulfill POEM Rating
4	EnP Q4	Reduced Or Recycle Water Practice	155	86	
5	EnP Q5	Bio-Diversity Reserved Availability	155	57	Failed to fulfill POEM Rating
6	EnP Q6	Flood / Drainage Clogging Experience	155	126	
7	EnP Q7	Infrastructure Services Efficiency	155	129	Outstanding POEM Score Rating
8	EnP Q8	Pollution Control & Experience	155	132	Outstanding POEM Score Rating
		Dimension Av-Cr / Sc-Cr	1240	836	
		Dimension Scored Achieved		57.5%	
Social Dimension Pillar			**Av-Cr**	**Sc-Cr**	
1	SoP Q1	Sufficient Communal Greenspaces	155	84	
2	SoP Q2	Population Density & Development Level	155	76	
3	SoP Q3	Universal Accessibility Availability	155	63	Failed to fulfill POEM Rating
4	SoP Q4	Security And Safety Experience	155	141	Outstanding POEM Score Rating
5	SoP Q5	Public Health Concerns	155	104	
6	SoP Q6	Recycling Facilities Or Practices	155	77	Failed to fulfill POEM Rating
7	SoP Q7	Community Diversification	155	78	Failed to fulfill POEM Rating
8	SoP Q8	Community Engagement & Management	155	91	
		Dimension Av-Cr / Sc-Cr	1240	714	
		Dimension Scored Achieved		67.1%	
Economic Dimension Pillar			**Av-Cr**	**Sc-Cr**	
1	EcP Q1	Distance To Community Amenities	155	109	
2	EcP Q2	Public Transport Reliability	155	90	
3	EcP Q3	Sufficient Pedestrian & Cycling Networks	155	100	
4	EcP Q4	Low Impact & Regional Materials	155	111	
5	EcP Q5	Promotion Of Sustainable Construction	155	95	
6	EcP Q6	Construction Waste & Sedimentation	155	125	Outstanding POEM Score Rating
7	EcP Q7	Sufficient Commercial Amenities	155	116	
8	EcP Q8	Innovative Development	155	112	
		Dimension Av-Cr / Sc-Cr	1240	858	
		Dimension Scored Achieved		69.1%	
		Total Dimension Av-Cr / Sc-Cr	3720	2408	
		Sc-Cr (72) / Av-Cr (120) x Weighting (100%)		64.6%	
		Total Dimension Scored Achieved		**65**	

Figure 4: POEM Framework results for Parinyada Village.
Source: Yaman, 2017

The third criterion that needs to be addressed is the water efficiency criterion. The majority of the end-users believe that the neighbourhood does not have enough practices in place that reduce or recycle the amount of water that is used. According to the findings of the environmental dimensions, in order to improve the sustainable level of the neighbourhood, additional efforts need to be made, in particular to provide biodiversity and ecosystems within the neighbourhood. Additionally, attention ought to be paid in improving energy efficiency by implementing rooftop solar PV and improving water efficiency by practising water recycling and introducing a method of rain-harvesting. According to the perspective of end-users or households for the Social Dimension Pillar, the majority of the sub-criteria for which credit was gained are considered to have satisfied the minimum POEM Handbook evaluation criteria or have been certified with a score of 57.5 achieved. POEM evaluation sub-criteria SoP Q2, SoP Q3, and SoP Q6 were the only ones in which it did not meet the POEM fulfilled requirement. As a result, the findings of this POEM Handbook evaluation suggested that there is a significant gap regarding the absence of

Universal Accessibility in this neighbourhood development (based on the score for SoP Q3), Population Density & Development Level (based on the score for SoP Q2), and Recycling Facilities & Practices (based on the score for SoP Q2) (based on SoP Q6 score). There is not enough provision or measures that were given in supplying facilities for disabled people, there is an absence of neighbourhood diversification, along with a poor effort made in recycling programs and practices (Yaman et. al, 2017). As a result, in order to make advancements before the study's conclusion, these three (3) sub-criteria need to have further consideration given to them in order to raise the score on the social dimension criteria for this neighbourhood development. Prior to the conclusion of this investigation, in order to accomplish a greater POEM evaluation criteria score or to be urban resilient, more efforts and measured to be taken towards continuing sustainable neighbourhood agenda of this neighbourhood by strengthening sub-criteria score, in particular the Social Dimension Criteria and the Environmental Dimension Criteria. This neighbourhood also needs to have urban resilience.

CONCLUSION

The findings of this case study's POEM Handbook for SND on-site testing should be acknowledged that pre-occupancy guidelines for sustainable township/neighbourhood development sustainability level differ from post-occupancy evaluation perceived by end-users/households. The findings suggested that related issues or criteria in this study context were influencing the community's sustainability agenda as well as the larger context of the ASEAN region in various ways based on environmental, social, and economic dimensions. The identification of these issues through the implementation of the POEM Handbook for certified sustainable neighbourhood development will provide insight into the root cause of post-occupancy sustainable practises and resilience to stressed and shocked development. Because urban development is a permanent and irreversible environmental alteration, the findings from these two case studies may contribute to urban stresses that weaken the fabric of a city, such as high unemployment, an overburdened or inefficient public transportation system, endemic violence, or food and water shortages. Furthermore, it has the potential to cause severe urban shocks such as floods, landslides, and disease outbreaks. As a result, the POEM Handbook for SND will improve the community's neighbourhood context's sustainability and resilience (Yaman et. al, 2017). As a result, the application of POEM for SND in assisting the enhancement and further development of sustainable township/neighbourhood and to increase urban resilience in the ASEAN region via identified low score dimensional criteria and after-effect consequences would be argued in this study.

The empirical data in Table 1 also indicate a lack of pre-occupancy and post-occupancy evaluation criteria among ASEAN nations, with only Case

Studies implementing post-occupancy evaluation criteria in this research. As a result, the author would like to recommend POEM for SND in this study because its implementation will benefit (Yaman et al, 2017):

- Ongoing SD Agenda - From Pre-Occupancy to Post-Occupancy and Beyond
- Fostering Sustainable Practice at All Levels—from Conurbation to Township to Neighborhood to Community to Individual—with Specific Sustainable Dimension Criteria & Sub-Criterion
- Simplified and easy to understand at every level, and applicable to any post-urban neighbourhood development
- The planned sustainable outline and agenda of viable urban development expansion and urban resilience for the ASEAN Region should ensure that long-term goals are met in tandem with ASEAN 2025 and the UN 2030 Agenda for Sustainable Development. As a result of this study, there are numerous general recommendations, and the intended model framework. Grounds, in particular, play a significant role in effective implementation. The current sustainable neighbourhood/township scenario in the ASEAN region could be significantly improved by the supportive role outlined in this outcome. The following are key points to demonstrate the important recommendations (Yaman et al, 2017):
- All stakeholders involved in sustainable urban development, particularly green neighbourhood planning, should be involved in anticipating projected and physical indicators and emphasising general benefits to the relevant authority and institution in order to avoid objective redundancy and conflict of interests among participants in advance.
- The unsustainable business-as-usual practice particularly in the recent urban development need to be stopped, in specific act of completely transforming a brown-site form a virgin green-site in the name of making way of new urbanization. Sustainable evaluation through awareness and education coupled with conservation and preservation application of eco-system and bio-diversity reservations must be duly advocated. The sustainable measures are the fundamental compliances in evaluating sustainable urban development.
- Post Occupancy Framework for sustainable practice and management significance at individual and communal level via the accommodation of environmental, social and economic dimension issues and aspects (SDP Adaptations) need to be instituted by establishing awareness and educational programs and campaigns at every level towards progressing sustainable agendas of the constituents.

Future recommendations of this study are to carry out further research on other certified green development and more focus on each dimension pillar of environment, social and economic.

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