

## **EVALUATING THE SOCIAL SUSTAINABILITY OF URBAN REGENERATION INITIATIVE IN MALAYSIA : THE CASE OF KUALA LUMPUR SENTRAL, BRICKFIELDS**

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### **ABSTRACT**

Urban regeneration is deemed as an applicable approach in resolving the intricate problems encountered in run-down old cities via numerous initiatives toward the improvement of physical, economic, social, and environmental conditions. Generally, urban regeneration supports sustainable development as it utilizes the already developed land. Nevertheless, implementing this approach poses some setbacks because often the focus is more on accomplishing economic regeneration while overlooking the implications on social and environmental sustainability. This paper aims to investigate the issue in the local context, by evaluating the impacts of urban regeneration initiative implemented in Kuala Lumpur, Malaysia. Certain social sustainability indicators are examined through questionnaire survey conducted to the 400 residents living within 2 km vicinity of Kuala Lumpur (KL) Sentral which is one of the urban regeneration initiatives done in Brickfields, Kuala Lumpur. The resulted analysis indicated there are positive impacts in few indicators following urban regeneration, such as the provision of community benefits as well as the improved living environment. Nonetheless, the implications are inconsequential for other indicators, signifying the needs for a comprehensive method that concentrates more on improving the quality of life for residents living in run-down old cities. This study contributes to the advancement of knowledge in urban regeneration studies in Malaysia by demonstrating that further efforts are crucial to improve the social sustainability performance of urban regeneration initiative by integrating the fundamental determinants within the policy framework.

**Keywords:** urban regeneration, social sustainability, sustainability evaluation, indicators, factor analysis

### **INTRODUCTION**

Urban regeneration is deemed as an applicable approach to restore the impressive history of old cities by resolving the urban deterioration problems and develop sustainable cities (Ercan, 2011; Lee & Chan, 2008), engaging long-term plans to upgrade the physical, economic, social and environmental conditions (Ercan, 2011; Adams & Hastings, 2001; Roberts & Sykes, 2000); enhancing land value (Menchawy, 2008; Chan & Yung, 2004); upgrading the disorder of run-down old cities (Said, Aksah& Ismail, 2013); improving its infrastructure and fostering its ordinary roles (Yu & Kwon, 2011); and accomplishing numerous socio-economic aims (Lee &

Chan, 2008), such as augmenting the current social networks and including vulnerable groups (Chan & Yung, 2004).

Urban regeneration can be defined as “comprehensive and integrated vision and action which seeks to resolve urban problems and bring about a lasting improvement in the economic, physical, social, and environmental condition of an area that has been subject to change or offers opportunities for improvement” (Roberts, Sykes & Granger, 2017 : 18). In general, it is a process that enhances deteriorating areas to be physically, economically, socially and culturally revitalized (Said et al., 2013). Urban regeneration approach has progressed from mere demolitions and reconstructions to a more inclusive approach of assimilating the goals of sustainable development; consistent with the rising emphasis of building sustainable cities and communities globally as highlighted in the “2030 Agenda for Sustainable Development”. Nevertheless, implementing urban regeneration poses some setbacks because often the focus is more on accomplishing economic regeneration while overlooking the implications on social and environmental sustainability (Lee & Chan, 2008; Couch, 2003; Fraser, Couch & Perry, 2003; Raco, 2003).

In Malaysia, the urban regeneration initiatives are progressively being implemented as land are scarce especially in the city centre; to cater for the increasing demand for new development. However, there has been limited studies on urban regeneration in the country, since this field of research is still at an early phase in Malaysia (Rosly& Rashid, 2013). Not much information can be gathered on the effectiveness of the implemented urban regeneration initiatives in Malaysia, what more on the question of whether the implemented initiatives improve the economic vitality and social needs of the people living in the area as well as the environment conditions, or not. As highlighted by Turcu (2012), research on how effective is urban regeneration in contributing to urban sustainability is still lacking. Therefore, this study is vital to determine the essential determinants influencing social sustainability and assessing the effectiveness of urban regeneration initiatives at the Malaysian local context, from the residents’ perspective.

## **REVIEW OF LITERATURE**

### **Linking Sustainable Development and Urban Regeneration**

Sustainable development is recognised and generally described as development that fulfils the requirements of the current population without denying the posterity from being capable of fulfilling their own needs (WCED, 1987). While the urban regeneration approach, in general, provided opportunities to attain sustainable development (Zheng, Shen, Song et al., 2017; Liu, Yi, Zhang et al., 2017; Rosly& Rashid, 2013; Ng, 2005), even at the most rudimentary phase by (i) restoring run-down land and structures; (ii) decreasing the request for outlying expansion; and (iii) enabling the development of compact cities. Consistent with prevailing and previous studies, Bromley, Tallon and Thomas (2005) emphasised that ‘sustainable development’ is contextual to the urban regeneration approach which started in the 1990’s in the United Kingdom (UK). Via the Sustainable Development : The UK Strategy (DOE, 1994) and The Sustainable Development

Strategy for the UK: A Better Quality of Life (DETR, 1999), the UK government acknowledged the importance of urban regeneration in influencing to sustainable development by improving the existing established areas in the most resourceful manner, and simultaneously converting such areas into more appealing locations for residence and employment which is viable, vibrant and sustainable (Davidson & Lees, 2005).

At present, assimilating the ambitions for sustainability in urban regeneration initiatives has turned out to be a worldwide tendency (Chan & Lee, 2006; Berke, 2002; Shutkin, 2000), as the various needs of the current population are fulfilled without foregoing the resources for the future generations. According to Chahardowli, Sajadzadeh, Aram and Mosavi (2020), sustainable urban regeneration is amongst the vital approaches in the development of historical inner cities, as it incorporates all aspects of sustainability. Successful urban regeneration embraces the criteria of sustainability that include the concerns on economic contribution, environmental impact and community benefit (Jones & Gripaos, 2000). Urban regeneration can influence sustainable development meaningfully, should it follow a sustainable route (Zheng, Shen & Wang, 2014). Although the process of linking sustainable development and urban regeneration is complex, integrating both concepts does provide a direction for sustainable cities in the future and should be linked together as recommended by Zheng et al. (2014).

### **Social Sustainability Indicators**

Social sustainability denotes the upkeep and advancement of the current population and posterity's welfare (Chiu, 2003), where socially sustainable projects generate a well-balanced living space, diminish social disparities, and largely enhance the quality of life (Enyedi, 2002). Adequate affordable housing (Ho, 2001; Adair, Berry & McGreal, 1995), is amongst the indicators of social sustainability as it promotes the "return to the city" aspirations. Providing sufficient and excellent amenities for special groups, i.e. the disabled, the elderly, and children within a community, is also a significant indicator of social sustainability (Chan & Lee, 2008). Satisfactory and available public and retail services, along with open/green spaces are indispensable toward improving social sustainability because they deliver rudimentary requirements to the people (Rothenberg, 1969). Smith (2000) stated that the accessible convenience to such amenities and open/green spaces are crucial in fostering social sustainability because residents will want to live, work, and play (leisure and cultural activities) without the need to make long-distance trips. To move freely from one location to another is acknowledged as a fundamental human right to be valued (Chan & Lee, 2008). The capacity to accomplish psychological needs, such as the sense of belonging in certain places and the sense of being involved with the community, are also an indispensable component in each area. Ng, Cook and Chui (2001) posited that public involvement can foster the sense of belonging as residents partake in the developmental efforts for their community; where the outcome would most probably fulfil the residents' overall requirements and necessities.

The feeling of safe living in the neighbourhood is another indicator of social sustainability. Corbett and Corbett (2000) claimed that security is another indispensable psychological necessity, as residents prefer to inhabit a safer and well-protected neighbourhood. Through good

urban design, public areas could be observed under public surveillance, where the residents are aware of any activities within their neighbourhood. Shamsuddin (2011) stated that townscape design influences social sustainability through residents' perspective and familiarity of the streets, their sense of belonging to the area, and the persistent preservation of local culture. The outcomes of urban regeneration are more attractive for the locals and visitors when cultural heritage and place identity are given more emphasis (Evans, 2003). Poor townscape design practices extinguish a location's distinctiveness and hamper the residents' sense of belonging. People are more content when the visual facade is pleasing and the structural arrangements are appropriately planned based on density, height, mass and layout (Lee, 2003; Vandell et al., 1989; Li & Brown, 1980) in Lee and Chan (2008).

Beside functioning as buffer zones in crowded areas, open spaces and green areas play crucial role in facilitating social gathering and public interaction (Chiu, 2003; Corbett & Corbett, 2000; Cuthbert & Dimitriou, 1992). Rydin (2011) mentioned that the creation of meeting points and the promotion of social capital with the establishment of quality public spaces which offer active pedestrian movement, can safeguard or boost the quality of environment. A comprehensive approach of urban regeneration encompassing of all the social, cultural, economic, functional, physical, and environmental contexts; leads to creation of a positive image of historical inner cities (Ferretti & Grosso, 2019).

This study will evaluate the social sustainability of areas undergone urban regeneration by examining these social sustainability indicators. The area within 2 km radius of KL Sentral in Brickfields, Kuala Lumpur which is one of the pioneer urban regeneration initiative implemented in Kuala Lumpur since 1997 (more than 20 years) is chosen as study area. Since its development, this 72-acre transit-oriented development has become an impetus for other new developments that transformed Brickfields which was once consisting of mostly shophouses, flats and housing quarters into potential urban development area (Zainudin, Bachek & Haron, 2014) with remnants of old historical buildings. The assessment is critical to evaluate the efficiency of urban regeneration initiatives in enhancing the local residents' quality of life.

## **RESEARCH METHODOLOGY**

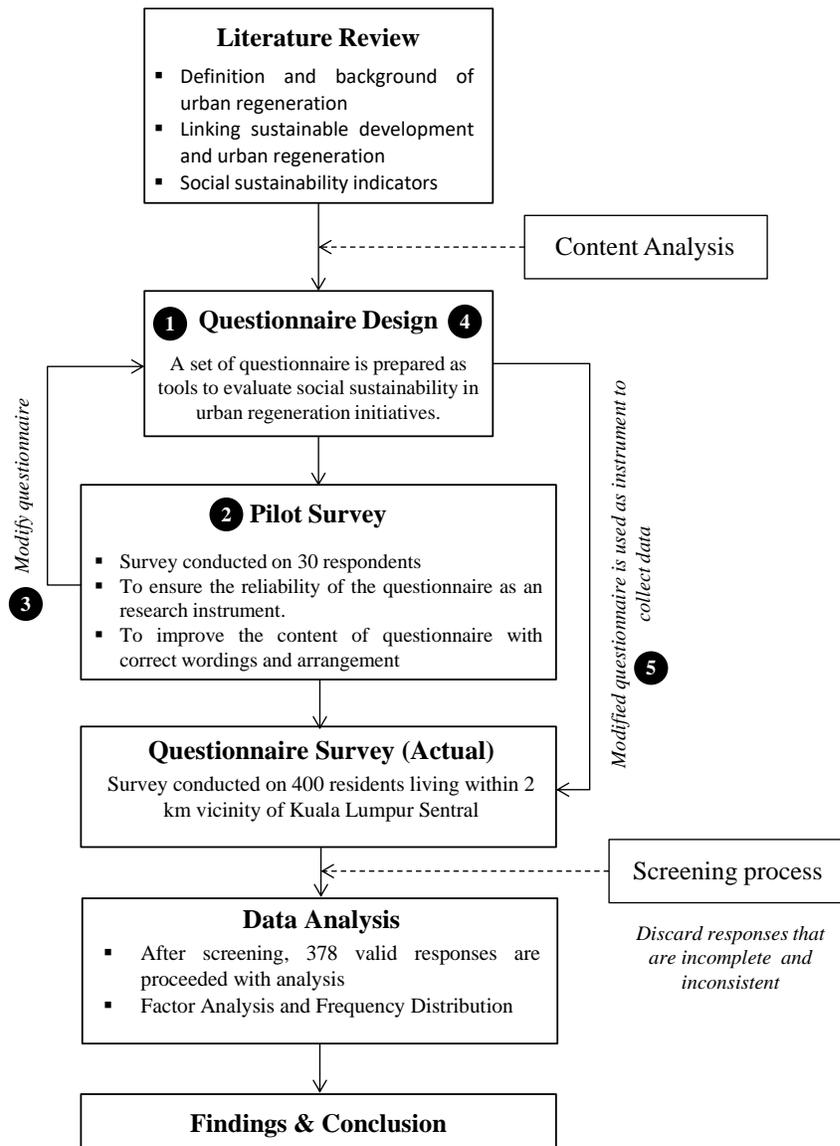
This study commenced by conducting literature review in order to comprehend the urban regeneration approach and how it supports sustainable development as well as identified the social sustainability indicators. Content analysis on reviewed journals, conference proceedings, books, government documents, and other dependable resources is performed to identify social sustainability indicators as the variables that are used in the questionnaire. As illustrated in **Figure 1**, questionnaire survey is conducted and followed by statistical analysis to interpret the survey results.

### **Data Collection**

The questionnaire comprises 41 measuring items (excluding the respondents' profile); a pilot survey is conducted on 30 respondents to confirm that the questions are representative of the

items to be assessed, with ample time to respond, precise vocabulary and layout. This is also done to evaluate the questionnaire’s reliability as a research instrument. Subsequent to several adjustments, the actual questionnaire survey is administered to 400 residents staying within a 2-km radius of KL Sentral. The questionnaire is self-administered and uses a 5-point Likert scale (from Strongly Disagree to Strongly Agree) to quantify respondents’ answers to the statements pertaining to the relevant variables (social sustainability indicators).

Figure 1: Research Methodology



## **Data Analysis**

Data obtained from the questionnaire survey are coded prior to the analysis using IBM Statistical Package for Social Sciences (SPSS) Version 21 software for Windows. Through the screening process, only 378 responses are valid and proceeded with analysis, from the 400 questionnaires distributed. Quantitative analysis method applied in this study includes factor analysis and frequencies.

### ***Exploratory Factor Analysis (EFA)***

Factor Analysis is performed to classify a comparatively small quantity of determinants that can clarify most of the observable variables (Kline, 1994), and can also characterise the correlations among a series of multiple interlinked variables (Nor, 2009). In this study, EFA is utilised to decrease the 41 measuring items into a smaller quantity of indirect determinants recognised as the fundamental stimuli that influences the social sustainability of local urban regeneration initiatives.

EFA is a commonly adopted factor analysis technique to ascertain the patterns of how respondents have answered the sets of questions, and to investigate the primary structure to the response patterns (De Vaus, 2001). Comrey and Lee (1992) proposed five main procedures to acquire consistent outcomes from such an analysis: (i) Ascertain the variables; (ii) Calculate a relationship matrix for the variables; (iii) Extricate the unrotated determinants to determine whether or not the selected model corresponds to the data; (iv) Rotate the determinants to ensure interpretability; and (v) Interpret and mark the rotated determinants. Subsequent to the initial extraction is to choose the number of determinants to be retained for rotation. In most statistical software packages, the default setting is to retain all determinants with eigen values greater than 1. Nevertheless, a general agreement in the literature asserts this to be one of the least precise techniques for choosing the number of determinants to be retained (Costello & Osborne, 2005). Therefore, a scree test is executed by assessing the graph of the eigen values to detect natural bends or break points in the data where the curve levels out.

### ***Frequency Distribution***

Frequency distribution is the elementary statistical method to examine data and recognise their statistical inferences (Nor, 2009). This method is applied to describe the respondents' evaluation on every social sustainability indicators (variables).

## **RESEARCH FINDINGS**

### **Factors Contributing to Social Sustainability**

The first extraction produced 8 factors that had eigenvalues greater than one, with 60.211% variance explained. Based on the scree test outcome in Figure 2, the second extraction yielded

four factors (**Table 1**). Rotation via the varimax technique did not increase the total variance explained, but succeeded to raise the percentage of variance explained for Factor 2, Factor 3, and Factor 4. Hence, the influences of these determinants to the social sustainability are more clear and noteworthy.

Figure 2 :Scree Plot of 41 measuring items

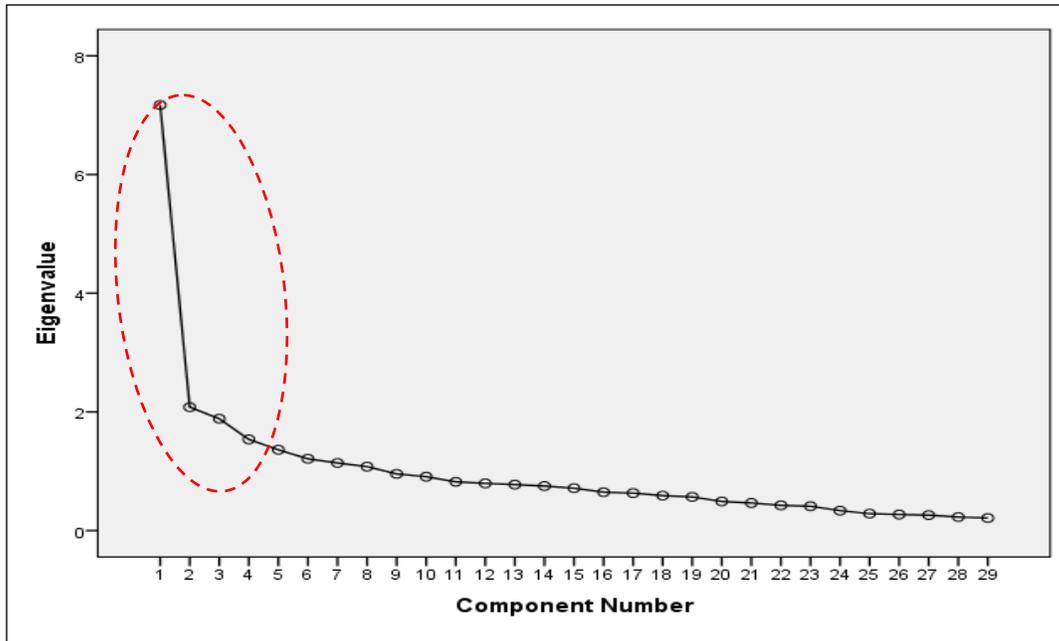


Table 1: Rotated and Unrotated Eigenvalues and Variance Explained

Factor	Extraction Sums of Squared Loadings			Rotation Sums of Squared Loadings		
	Eigenvalues	% Variance Explained	% Cumulative Variance Explained	Eigenvalues	% Variance Explained	% Cumulative Variance Explained
1	7.171	24.729	24.729	3.678	12.681	12.681
2	2.080	7.174	31.903	3.303	11.388	24.070
3	1.885	6.501	38.404	2.954	10.187	34.257
4	1.537	5.300	43.703	2.739	9.447	43.703

Table 2 below shows the factors and variables that influence social sustainability, as ascertained from the analysis.

Table 2: The Factors and Variables Contributing to Social Sustainability

Factor	Variables load heavily on this factor
1 : Townscape Design	Preservation of local culture; preservation of historical characteristics; connectivity; pedestrian safety and comfort; social interaction; community unity.

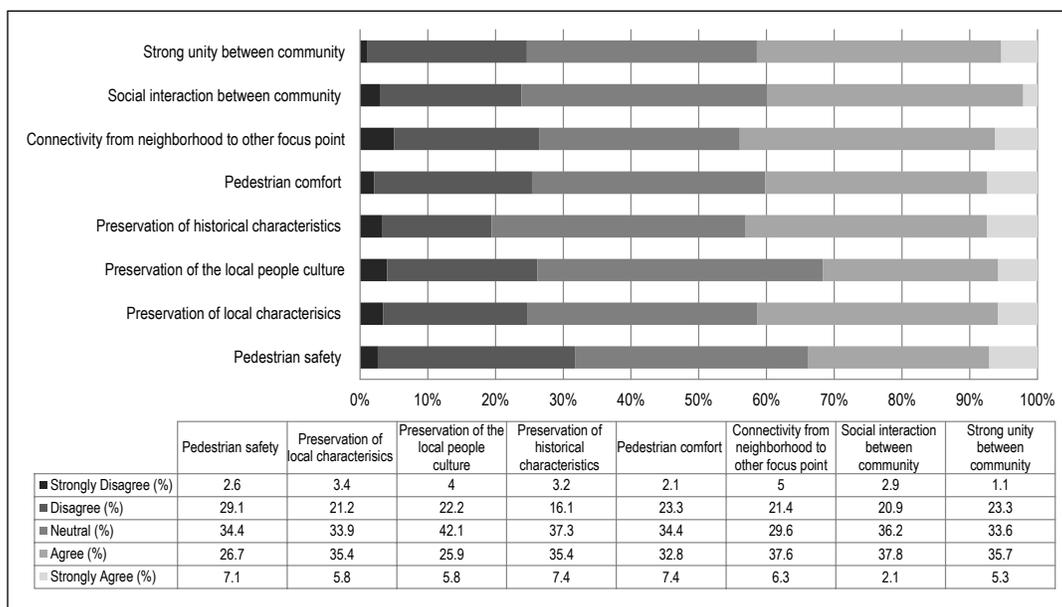
Factor	Variables load heavily on this factor
2 : Housing and Local Economy	Affordable housing; mix of housing cost types; access to health facilities; diversity of business activities; mix of activities.
3 : Community Benefits	Access to education facilities; access to open / green area; special provisions for the disabled; safe neighbourhood; preservation of environmental features.
4 : Living Environment	Housing condition; preservation of the place identity; urban environment quality; cleanliness; visual richness; public participation.

## **Evaluation of the Social Sustainability**

### ***Townscape Design (Factor 1)***

As indicated in **Figure 3**, only four out of eight indicators obtained positive responses namely; (i) preservation of the local characteristics; (ii) connectivity; (iii) social interaction; and (iv) community unity, while the remaining four indicators obtained neutral responses. Most of the respondents (35.4%) agreed that the urban regeneration initiative done manage to preserve the local characteristics in the area such as the old shophouses. Preservation of local characteristics is vital to maintain the intrinsic value as well as strengthen the image and identity of old city centres. Regarding connectivity, most respondents (37.6%) concurred that the neighbourhood is well-connected to other focus points such as commercial zones. As anticipated, connectivity within the study area is not a big concern as KL Sentral being a transit-oriented development. Most respondents concurred that the social interaction among the community is active (37.8%), with a robust harmony amongst the community in the residential area (35.7%). Nonetheless, these results are ambiguous as there is not much difference with the neutral responses, which indicate high probability that the respondents rarely participate in the activities held by the community, thus unsure on the matter.

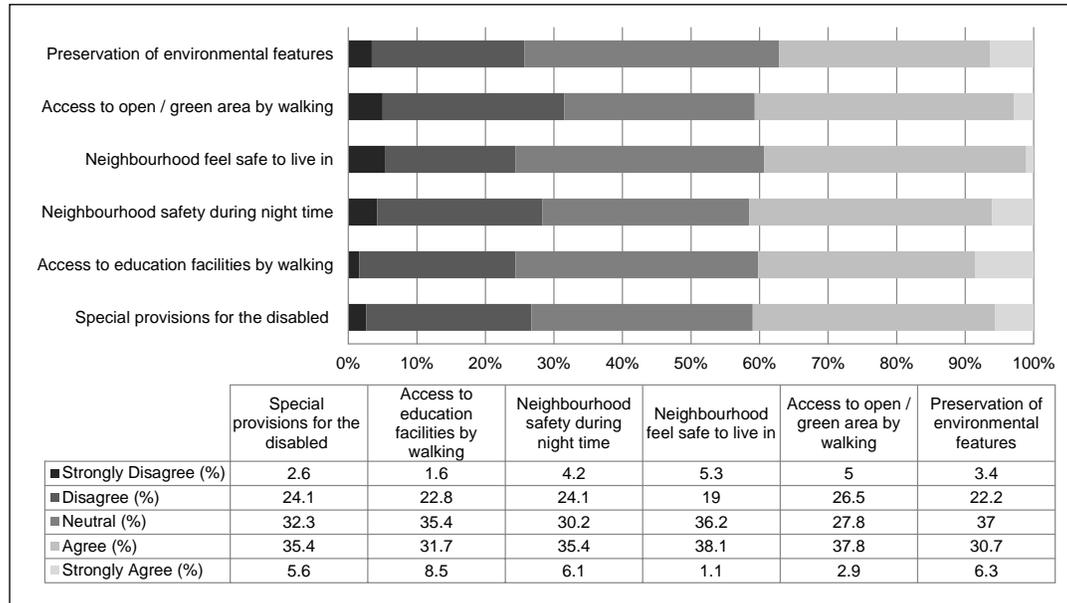
Figure 3: Frequency Distribution on the Townscape Design (Factor 1)



### ***Housing and Local Economy (Factor 2)***

The analysis results show that only three out of six indicators gained positive responses: (i) diversity of business activities (44.7%); (ii) connectivity from one place to another (46.5%); and (iii) mix of activities (39.4%) (**Figure 4**). In contrast, the other three indicators gained negative responses: (i) affordable housing (51%); (ii) mix of housing cost types (45.3%); and (iii) access to health facilities by walking (45%). New high-end developments brought by the urban regeneration initiative have increase the housing cost in the area; providing limited choice of housing cost types and lack of affordable housing for low income earners. This could lead to gentrification as the middle- and low-income earners would progressively move out while high-income earners relocate into the area, due to the upsurges price of residential properties. Raco (2003) asserted that an increase in the price of residential properties, coupled with inadequate supply of affordable housing generates social segregation in a regenerated area, as residential property prices and cost of living in the area typically become more expensive (Razzu, 2004; Groves, Middleton, Murie et al., 2003; Roessner, 2000; Turok, 1992).

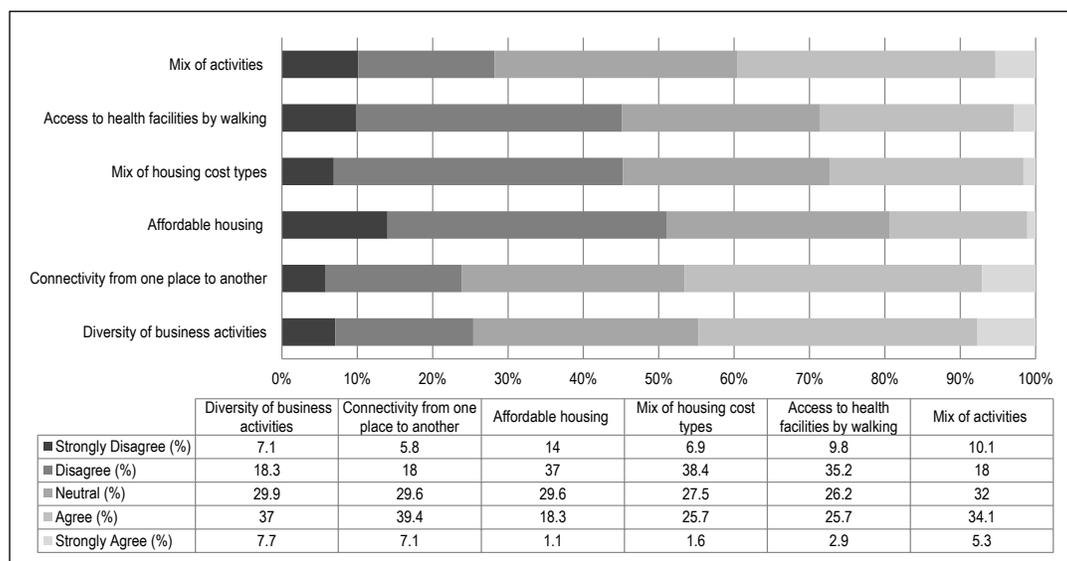
Figure 4: Frequency Distribution on the Housing and Local Economy (Factor 2)



### Community Benefits (Factor 3)

Figure 5 shows that four out of six indicators under this factor gained positive responses, with the indicator of neighbourhood safety during night time receiving the highest (41.5%). Safety is a critical determinant that fulfils the mental comfort of residents in a neighbourhood. While the other two indicators obtained majority neutral responses namely; (i) access to education facilities (35.4%); and (ii) preservation of environmental features (37%)

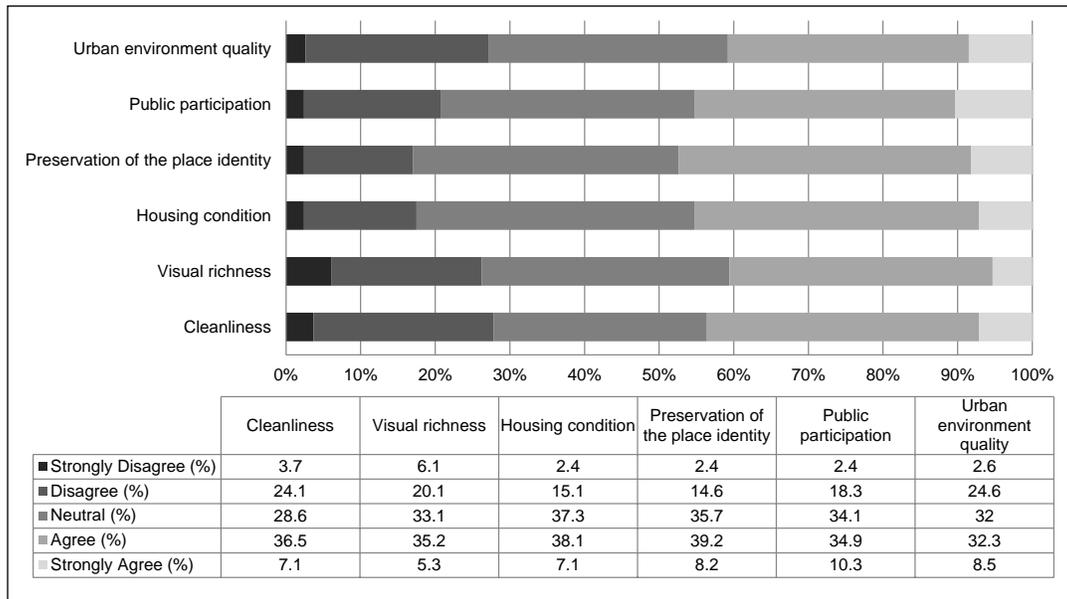
Figure 5: Frequency Distribution on the Community Benefits (Factor 3)



**Living Environment (Factor 4)**

**Figure 6** shows that all six indicators under this factor gained positive response, with the indicator of place identity preservation receiving the highest (47.4%). Place identity is a vital factor that creates a sense of belonging amongst the community residing in the area. From the survey, most respondents (45%) were irritated and were against the notion of eliminating historical structures in their location. Shamsuddin (2011) highlighted that resident can be hostile if part of their locality or neighbourhood is tangibly or figuratively destroyed. The resulted analysis amongst all four factors, indicate that Living Environment (Factor 4) gained the most positive outcome from the urban regeneration initiative implemented.

Figure 6: Frequency Distribution on the Living Environment (Factor 4)



**DISCUSSION**

In general, the results of the analysis done indicate that two factors namely Townscape Design (Factor 1) and Housing and Local Economy (Factor 2) gained Average outcome, while the remaining two factors which are Community Benefits (Factor 3) and Living Environment (Factor 4) gained positive outcome from the urban regeneration initiative implemented. Decent townscape design is a decisive determinant for social sustainability, not only for the artistic significance, but also for its role in fostering a sense of belonging, where residents can interact within an appropriate vicinity and setting. The local population generally emphasised that the new development resultant of urban regeneration initiative is somewhat consistent in preserving the local characteristics in Brickfields, such as old shophouses through urban design and conservation. Nonetheless, the local culture in Brickfields is gradually declining from its original

community while ‘new generation’ residents are substituting the unique culture that Brickfields had once been recognised for. New high-rise development in regenerated area is inevitable due to the high value of land, making the integration of new and the existing development challenging, especially in the historical old cities. Nonetheless, in order to maintain the uniqueness of the existing area, new developments have to strengthen and complement the positive identities through good urban design, preserve and conserve the existing historical structures and features as well as the communities’ culture and activities.

The new development has transformed Brickfields into a more lively and active location, with various activities, diverse business undertakings, and a satisfactory connectivity from one place to another. However, some of the drawbacks signify that the new developments discriminate low- and middle-income groups through increased prices and rental rates for residential properties. There is inadequate provision of affordable housing with limited choice of housing types in terms of cost as high-end apartment are being built as part of the urban regeneration initiatives. Nevertheless, to invigorate the dilapidated inner cities, affordable housing is necessary to encourage more residents to relocate into inner urban areas and sustain the prevailing community. The quality of residence and living space should be upgraded to appease visual attraction by designing structural arrangements appropriately, based on density, height, mass and layout. Constructed structures in adjacent locations must also be suitably planned to allow for a concordant living space; they should be sustained well to preserve and increase the residents’ standard of living. From the positive responses, the residents considered that their neighbourhood can offer elementary necessities such as the accessibility to public amenities, and psychological requirements such as the sense of safety, the preservation of natural landscapes, and admittance to open and green spaces that can contribute to a positive mind and body. Urban regeneration initiatives should ensure that the provision of these facilities is adequate as they are essential to fulfil the basic needs of the people as well as offer place for social gathering and leisure activities. Access to such amenities and open space/green spaces is necessary to improve social sustainability, as the residents desire to live, work, and play without making long-distance trips.

Sufficient and excellent amenities for special groups, i.e. the disabled, the elderly, and children within a community should be provided to allow for a comprehensive development. Assessment on the living environment disclosed that the regenerated area contributes to a decent urban setting, provides a strong sense of belonging within the community, improves residential conditions, offers a pleasant and clean visual appearance, and promotes a solid place identity. Areas which have experienced urban regeneration have distinct identities and recognisable image that must be conserved, such as architectural designs, construction materials, chosen colour schemes, etc. that define imagistic characteristics, whereas development patterns and human activities demonstrate the imagery and positioning of the regenerated areas. In retaining the unique positive identity of the area, current land uses, properties, and other features suggestively contribute to the imagery of the area and truly reflect the community’s previous accomplishments have to be conserved; as long as preservation and repairs necessitate sensible efforts and expenses.

There are three significant findings of this study which include; (i) the increase of residential property price and lack of options for low- and middle-income groups are driving them to progressively relocating elsewhere due to the rising cost of living, which eventually leads to gentrification as the new high-end development merely cater for the high-income groups; (ii) safety and comfort of pedestrians need to be improved in order to encourage walking in the area especially accessibility to public facilities (i.e. health and education facilities) which necessitate more advanced and strategic planning for developmental growth; and (iii) the existing local culture and historical characteristics in the area are not well preserved. New development brought by the urban regeneration initiatives should integrate and cherish the existing culture and historical value in the area to enhance the townscape design.

## **CONCLUSION**

This study has identified four underlying factors contributing to social sustainability through factor analysis on 41 measuring items. The factors that shape the foundation for assessing the social sustainability of urban regeneration initiative in Brickfields, Kuala Lumpur are 'Townscape Design', 'Housing and Local Economy', 'Welfare Requirements' and 'Living Environment'. The completed evaluation summarised that the implementation of the urban regeneration initiative yielded some positive effects to the local residents' quality of life, specifically in satisfying their conditions for well-being and improving the quality of living space. However, the disadvantageous social consequences are the housing become more expensive with lack of affordable housing, average pedestrian safety and comfort as well as local culture and historical characteristics that are not well preserved.

New development resulting from the urban regeneration initiatives is not well- integrated to value the local culture of the present community and historical features in the area. This trend could lead to gentrification as the housing price increases and the existing cultural and historical value of the area slowly diminishing. Results from this study are indispensable examples that should be further scrutinised to advance future urban regeneration policies in Malaysia, and to add to a broader context of sustainable development. The localised context in this study's findings can also serve as referential guideline for other Asian nations to evaluate whether or not urban regenerations initiatives in their countries have produced comparable or other detrimental social outcomes. Nevertheless, a foremost disagreement that can result from these findings is the high neutral responses obtained from the conducted survey. Yet, this is a typical situation in social sciences study, as it involves the intricacy of human behaviour. Hence, triangulation methods should be implemented to enhance the internal validity, by outlining or explaining in detail the depth and intricacy of human behaviour from research in more than one viewpoint with multiple approaches. For future studies, it is recommended that other critical factors to achieve sustainable urban regeneration namely; economy, environment and institutional sustainability should be explored. By recognising all the fundamental determinants that influenced sustainable urban regeneration, the overall sustainability level of the urban regeneration initiatives can be improved, as these determinants have been measured in the proposal phase toward improving the economic, physical, social, and environmental conditions of the area. Besides that, future studies

should also include qualitative technique in the sustainability assessment such as site observation and interview with the key stakeholders in urban regeneration initiatives as it offers in-depth and more comprehensive investigation. This study contributes to the advancement of knowledge in urban regeneration studies in Malaysia by demonstrating that further efforts are vital to improve the social sustainability performance of urban regeneration initiative by integrating the fundamental determinants within the policy framework. Strategies to achieve social sustainability have to be formulated as guide when designing urban regeneration projects, to ensure that the local people's quality of life are significantly improved.

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