Sustainable City: Assessing the Community Happiness of Residents in Putrajaya Municipality Malaysia

Haruna D. Musa[1], Mohd R. Yacob[1], Ahmad M. Abdullah[2] & Mohd Y. Ishak[1]

[1] Department of Environmental Management, University Putra Malaysia, Serdang, Selangor, Malaysia

[2] Department of Environmenatl Science, University Putra Malaysia, Serdang, Selangor, Malaysia

Correspondence: Mohd R. Yacob, Department of Environmental Management, Universiti Putra Malaysia, 43400 UPM Serdang, Selangor Darul Ehsan, Malaysia. Tel: 6-16-208-2524. E-mail: mrusli.env@gmail.com

Abstract

With the recent establishment of linkages between characteristics of the community and subjective well-being of residents by a sociologist, the ability to design and monitor urban development that enables human and environmental well-being becomes necessary. Developing communities sustainably require resilient economic, environmental, social and governance systems. This study assesses community happiness based on perceived satisfaction of sustainable development interventions in urban areas. A sample of 400 residents was selected to complete the self-reported survey on specific items on a 10-point response scale (1 means "very dissatisfied" and 10 means "very satisfied"). The sample comprised of residents between 18 years of age and above who lived and works in the town, outside and identified with the communities in the city. The results show that the environmental well-being (M=7.69, SD=1.59), social well-being (M=6.96, SD=1.73), and urban governance (M=6.69, SD=1.61), and economic well-being (M=6.19, SD=2.01) respectively were positively perceived to contribute to the overall community happiness (M=6.88). The findings suggest that investments unto the dimensions could lead to a more optimistic outlook for sustainable community future. The study contributed to the literature on the connection between subjective well-being and sustainable development, and also the measure of community happiness in local context using subjective approach, particularly in Malaysia.

Keywords: community well-being, happiness, subjective well-being, sustainability, urban development

1. Introduction

Urban environment including the large cities is assuming increasing importance in global environmental health concern due to rapid urbanization (Zanuzdana, Khan, & Kraemer, 2013). More than 3.4 billion people around the world now live in urban areas and cities, with expected 6.3 billion increase by the year 2050 (United Nations, 2013). This is an indication that the world will depend on urban environments to meet their social, economic and housing needs. Rapid urbanization in many developing countries transforming production capacities, income levels and living standard or quality of life, with ample pressure on the cities and the supporting ecological systems (Costanza et al., 2014). Thus, enhancing, creating or recreating healthy and viable communities becomes the aim of contemporary public policies that target city communities across nations. Furthermore, policy-makers have increasingly adopted holistic and integrated approaches that address social, economic, physical and community development together rather than in isolation (Christakopoulou, Dawson, & Gari, 2001).

Sustainability is defined as increasing the efficiency of which well-being is produced relative to the harm done to the environment. Such an approach is coherent with recent policy calls to look beyond affluence as a metric of well-being (Stiglitz, Sen, & Fitoussi, 2009). In the past, urban planners have proclaimed that the well-being of communities is related to their perceptibility or imaginability (Okulicz-Kozaryn, 2013). Subjective well-being offers a new approach that invites reflection on sustainability issue couple with opportunities to enhance the quality of life and contribute to individual, family and community life. Subjective well-being measure of individuals can be accomplished by administering questionnaires about their perceived satisfaction of life or satisfaction with specific life domains (Diener, Lucas, Schimmack, & Helliwell, 2009). In asking the public about the well-being, it becomes clear that people tend to have a good understanding of various dimensions. Subjective well-being assessment has been shown to be reasonably accurate (Diener & Chan, 2011).

Policy makers need to have the information to understand fully specific areas and to establish comprehensive baselines to measure future changes. If they are to identify suitable interventions and to target resources effectively, the policy makers need to have a clear view of the community's strength and weaknesses (Christakopoulou, Dawson, & Gari, 2001). Community well-being is a useful guiding principle towards sustainability. Community well-being integrated with the concepts of sustainability, progress, and development make it practically useful for local planning (Kim & Lee, 2014). Recent global warming and environmental issues have shown local planning must consider factors that do not have immediate connections to an individual's emotions. Community well-being is more comprehensive and can thus aid local governments in balancing and coordinating among several policies.

Malaysia is currently experiencing urbanization with increasing population, rapid economic growth, industrial development, and a changing lifestyle (Haron, Paim, & Yahaya, 2005). However, the impacts on community well-being are yet to be studied. This study, therefore, assesses community well-being using subjective indicator approach based on the holistic integration of social, economic, environmental and urban governance dimensions of sustainability in Malaysia.

1.1 Community Well-Being and Dimensions of Urban Issue

Cities are multifaceted and interdependent systems on whose dynamics the quality of life of human beings and the economy depend on (Mutisya & Yarime, 2014). Social, economic, environmental, and governance problems can create formidable barriers to urban sustainability. Governance remains a critical dimension of urban sustainability, especially when discussing urbanization in developing countries, given rapid population growth and imbalances in socio-economic development. The complexity of urban areas and surrounding environments require a proper understanding of the dynamic spatial interactions among its components to inform decision makers of the socio-economic and environmental consequences of responding to urban needs (Zellner, Theis, Karunanithi, & Cabezas, 2008). Sustainability according to the report of the World Commission on Environment and Development (UN WCED, 1987, p. 20), is "... a process of change in which the exploitation of resources, the direction of investments, the orientation of technological development and governance institutional changes are made consistent with future as well as present needs". The aspect of governance in urban development needs to be interlinked and integrated with environmental, economic, and social pillars to create a sustainable balance (Camagni, Capello, & Nijkamp, 1998) to promote well-being. This requires a multi-faceted strategy in which environmental, economic, and social interests are brought in harmony with each other through appropriate governance organizations and institutions.

Sustainable development ensures the well-being of humans by integrating social equity, economic viability, and environment conservation and protection (Ying, Yaacob, & Hazreena, 2013). It required the understanding of social institutions and their role in change and development, as well as the participatory systems which give the opportunity for the expression of opinion. Also, it requires the awareness of the resources and fragility of the physical environment and the effects on human activity and decisions, with a commitment of factoring environmental concerns into social and economic policy development; and the sensitivity to limits potential economic growth and their impact on society and environment.

Community well-being encompasses a broad range of social, economic, environmental, cultural and governance goals and priorities identified to be of high significance to the community (Cox, Frere, West, & Wiseman, 2010). Most of the efforts to well-being involve the use of objective approaches whereby factors concerning the social and the physical environment that are relatively easy to quantify are assumed to determine human well-being. Though, past decade has witnessed a massively increased interest in subjective measures of well-being based on social survey data, in which people are asked to rate their health, life satisfaction, and overall happiness.

1.2 Review of Major Empirical Findings of Happiness Studies

Happiness research has gone through series of studies ranging from income to other determinant factors. Personal income and wealth have been the single most studied factor in predicting personal happiness. Research has established a positive relationship between income and happiness, but the nature of the link is also not clear. Layard (2005) conducts the most thorough social science investigation using the United States General Social Survey, to assess the effect of finance and what he described as the "Big Seven" factors (work, health, personal freedom, personal values, family relationships, community, and friends) on satisfaction among adult populations. The result showed that after income, family relationships, Work, Personal freedom, personal values, are found to predict individual-level happiness. However, he concluded that the direction of this effect is not clear, and suggest a future research to better the understanding of the dynamics of the linkages. This implies that there is more to happiness than the variables identified due to the spatial organisation of the places we live.

Easterlin et al. (2011) explore the impact of modern economic growth on urban—rural differences in subjective well-being using cross-sectional data from the Gallup World Poll conducted between 2005 to 2008. Over 140 countries were selected and surveyed on a scale of 0 to 10 typical life satisfaction questions. The result shows that the urban-rural difference in life satisfaction is significantly and negatively related to log GDP per capita. The result indicated that the urban advantage in Least Developed Conutries (LDCs), including Asia and Latin America, exceeds 0.4 points on 0-10 scales for over half of the 48, while half of the 20 Developed Countries (DCs) show in contrast, rural life satisfaction exceeds urban. Their findings show that there are spatial differences in well-being as the geographical expression of increasing marginal utility of income. For instance, while some places become richer, their average level of well-being rises. Similarly, Leyden et al. (2011) study happiness among the residents living in 10 major international metropolitan cities using the 2008 Quality-of-Life survey conducted by Gallup Organization, based on three key indicators (health, wealth and social connectedness). Their finding shows that individual levels of happiness are associated with important attributes and functions of the city are among city residents around the world.

Regional or local happiness profiles are affected by the corresponding urban environmental conditions. The Quality of Life in urban area is evaluated by several methods—monetary, subjective and quantitative. D'Acci (2014) conducted a study by integrating monetary, subjective and quantitative approaches to assess the urban QoL and pleasantness in the cities, using willingness-to-pay and urban life satisfaction survey on a scale from 0 to 10. The result reveals that the urban residents expressed more feeling of satisfaction than rural inhabitants. People feel happier living in cities, not because of higher income, education, and better occupational structure, but because they prefer living in cities. As such, people expressed a willingness to pay for an improvement of the quality of the area where they live. The more uniform the distribution of the social benefits in cities, the better the "quality of life" in the city. Similarly, other studies of happiness (Cabello Eras et al., 2014; Seifollahi & Faryadi, 2011) reveal that residents of the city are happier when they feel connected to the people and the places of their cities. This is an indication that happiness is linked to whether people feel their cities successfully provide amenities that improve their quality of life. Consequently, the pursuit of happiness is a significant subject of concern for urban residences and urban policy towards sustainability.

Considering those mentioned above its deduced that literature emphasizes the importance of service and urban amenities that are associated with better health and well-being (Eibich, Krekel, Demuth, & Wagner, 2016). Residents are different, and the city management needs to take into account that the residents have different priorities towards community management activities and to make the best decisions it is important to study community opinion and involve them in the decision-making. This study, therefore, assesses the community happiness of the residents' based on sustainable development interventions from the subjective well-being perspective.

2. Method

2.1 The Study Area

Putrajaya is Malaysia new Federal Government Administrative Capital and the nation's largest urban development project on a Greenfield site, and a modern city of sustainable development. It is located about 25km south of Kuala Lumpur. Putrajaya cover 49.31 km^2 of land comprises approximately 40% of natural elements and lush greenery integrated taking full advantage of the natural surrounding (Yap et al., 2011). The city undulating terrain offers the community vistas of the natural environment with planned landscape in botanical gardens, wetlands, and parks, integrated into the built environment with the intention of green concept within processes of urbanization. Putrajaya city has a population of 80,000 residents, and currently the home of 25 Ministries, 51 Government Offices that provides 254,000 job opportunities (Azmi & Romle, 2015). Putrajaya has become a vital development catalyst due to its role as a model city, the nation's nerve centre, an ideal place to live, work, conduct business and engage in sports and recreational activities. The city design conceptualization and development objective as a high-quality environmental standard sets a roadmap in embracing sustainability and committed to a holistic strategic framework that integrates economic, physical and social development make it an ideal case study.
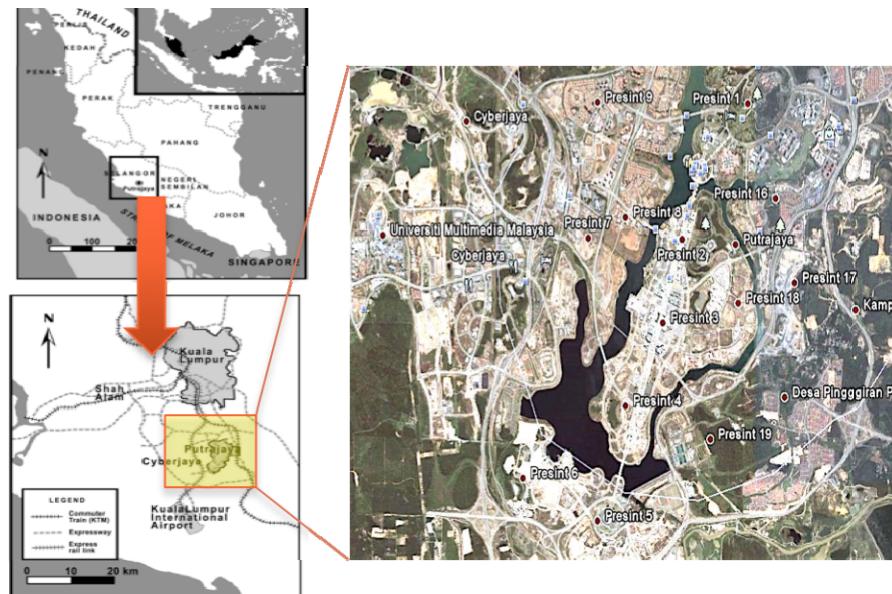
Figure 1. The location of Putrajaya, the study area

2.2 Measure Procedure

The opinion of the public was sampled using subjective assessment questions that capture community well-being based on social survey data where people are asked to rate their feelings of satisfaction or dissatisfaction rather then recall factual information (Ballas, 2013). This approach contrast to the more conventional measurement approach which uses objective indicators to determine well-being (Tinkler & Hicks, 2011). "Subjective well-being questions" are increasingly used in population surveys and is a rapidly growing body of interdisciplinary research on the determinants of happiness (Ballas, 2013). The structured questionnaire was administered to the respondents in the study area by trained interviewers using face-to-face method.

2.3 Sampling Procedures

A total of 400 residents in Putrajaya urban area between 18 years of the age and above were randomly sampled in a survey to measure the perceived community happiness across four sustainability well-being dimensions: social, economic, environment and urban governance underpinned with 37 indicator items developed through expert opinion.

2.4 Statistical Analysis of Variables

Happiness or Subjective Well-Being (SWB) is measured through questions on satisfaction directed to people's feelings about themselves (Cummins & Lau, 2005). This study adopts the specific life domain approach (life aspects), and the scores are averaged to produce a measure of SWB. Several SWB instruments have used this approach including the Personal Well-being Index. In this study, life domain scale approach in a structured questionnaire scales for subjective well-being questions (Wolfers, Stevenson, & Wolfers, 2008) on community happiness was used. The instrument designed comprises 37 indicator items across four sustainability dimensions. These include environmental (11 items), economic (7 items), social (12 items) and urban governance (7 items) measured on 10-point response scale from 1="very dissatisfied" to 10="very satisfied", to assess the level of community happiness of the residents. The items were obtained from the extensive literature review of theoretical and empirical studies related to different community elements. The questionnaire developed was translated and back translated in English and Bahasa Malaysia. The analysis of the resident's responses on perceived satisfaction of community happiness was collected and analysed using a descriptive statistic (means and standard deviations).

3. Results

3.1 Characteristics of the Respondents

Table 1 shows the descriptive analysis of demographic characteristics of respondents. The result shows that 50.7% (203) were male, and 49.3% (197) were female. The most age range of the sample was 26-35 years (61.5%) and 36-45 years (26%). The residents are majorly Malay (87.8%) with few Chinese (5%), Indians (4.5%) and others (2.8%), and predominantly practice Islamic religion (88.5%), and a sizeable number of Christian (5%), Hinduism (4%) and Buddhism (4%). For the marital status of the respondents, 74% were married, 25% single, and 5% each for widow and divorce. Most respondents in the city are literate and had formal education. Of the total respondents, 50.7% had a university degree, 31.8% (Technical Education), 16.5% (secondary) and only 1% had primary education. The occupational status shows that residents are employed and mostly engaged in government work (91.5%), and few privately employed (6%). The gross monthly income, majority survived on income range of RM1, 501-RM 3,000 (41.5%) and RM3, 001-RM 5,000 (26.5%). The majority of respondents' have stayed for 5-10 years (40%) in the city, 35.3% had stayed for <5 years while 17.5% stay 10-15 years.

Table 1. Socio-demographic profile of the urban residents

Variable	n	%
Gender		
Male	203	50.7
Female	197	49.3
Respondents age		
18-25years	29	7.2
26-35years	246	61.5
36-45years	104	26
46-55years	15	3.8
above 55years	6	1.5
Ethnicity		
Malay	351	87.8
Chinese	20	5
Indian	18	4.5
Others	11	2.8
Respondents religion		
Islam	354	88.5
Christianity	20	5
Buddhism	10	25
Hinduism	16	4
Marital status		
Married	296	74
Single	100	25
Widow	2	0.5
Divorce	2	0.5
Level of Education		
Primary	4	1
Secondary	66	16.5
Technical	127	31.8

University degree	203	50.7
Respondents Occupation		
Self-employed	9	2.3
Government employed	366	91.5
Private employed	24	6
Retired	1	0.3
Gross monthly income		
<RM1500	39	9.8
RM1501-RM3000	166	41.5
RM3001-RM5000	106	26.5
RM5001-RM7000	59	14.8
RM7001-RM9000	23	5.8
>RM9000	7	18
Number of years lives in the city		
<5years	141	35.3
5-10years	160	40
10-15years	70	17.5
15-20years	14	3.5
>20years	15	38

3.2 Community Well-Being by Indicator Measurement

The indicators measured on 10-point Likert scale from survey responses of residents in Putrajaya city. The higher the mean value (10) of an item, the higher the level of satisfaction with the service provision by the government of the items based on the urban sustainability. The result reveals the overall performance of indicators across the well-being dimensions (see Figures below). Participants who lived in towns indicated their sense of satisfactions of well-being ranging from the least, housing affordability (*M=4.1*, *SD=2.23*) to the highest, physical/built environment (*M=8.45*, *SD=1.32*). This performance trend in the level of satisfaction reveals the need for improvement in some of the indicators. Among the major concerns for most residents in the city if not all are housing affordability (*M=4.1*, *SD=2.23*), access to job/employment (*M=5.80*, *SD=2.04*), trust, energy cost (*M=5.17*, *SD=2.28*), and transportation adequacy (*M=5.64*, *SD=2.15*).

3.3 Dimensins Community Well-Being

Participants reported favourable levels of well-being across the four sustainability dimensions used to assess community well-being. Environmental Well-being performing best with the indicator's minimum means score of 6.9 (water quality accessibility) and the maximum means score 8.5 (physical/built environment) (Figure 2). This is an indication that the residents are highly satisfied and happy with the environmental aspect of the City. The Social Well-being dimension (Figure 3) is the second best performing dimension with the lower mean value 5.6 (transportation/mobility adequacy) and highest satisfaction in recreation and sport (M=8.0). Social dimension requires improvement in the areas of transport/mobility adequacy, poverty, and food security that score low in the web charts. Similarly, in the urban governance dimension (Figure 4), the lowest score is 6.2 (Trust) and highest score of 6.6 (appropriate range and quality of council services). This aspect required special attention from governance institution to improve on trust, law enforcement and public participation that score low. The improvement of these parameters will increase performance, strengthen eco-environmental well-being and promote sustainability. Economic well-being dimension (Figure 5), on the other hand, have the indicator with the overall least mean score 4.1 (housing price/affordability) and the highest mean score 7.7 (Energy efficiency). This result is an indication of the poor performance of the economic activity in the city which is as a consequence of the city administrative status quo. Economic well-being dimension requires improvement in the housing price/affordability, energy cost, access to job/employment, and home ownership which have low satisfaction among the residents.
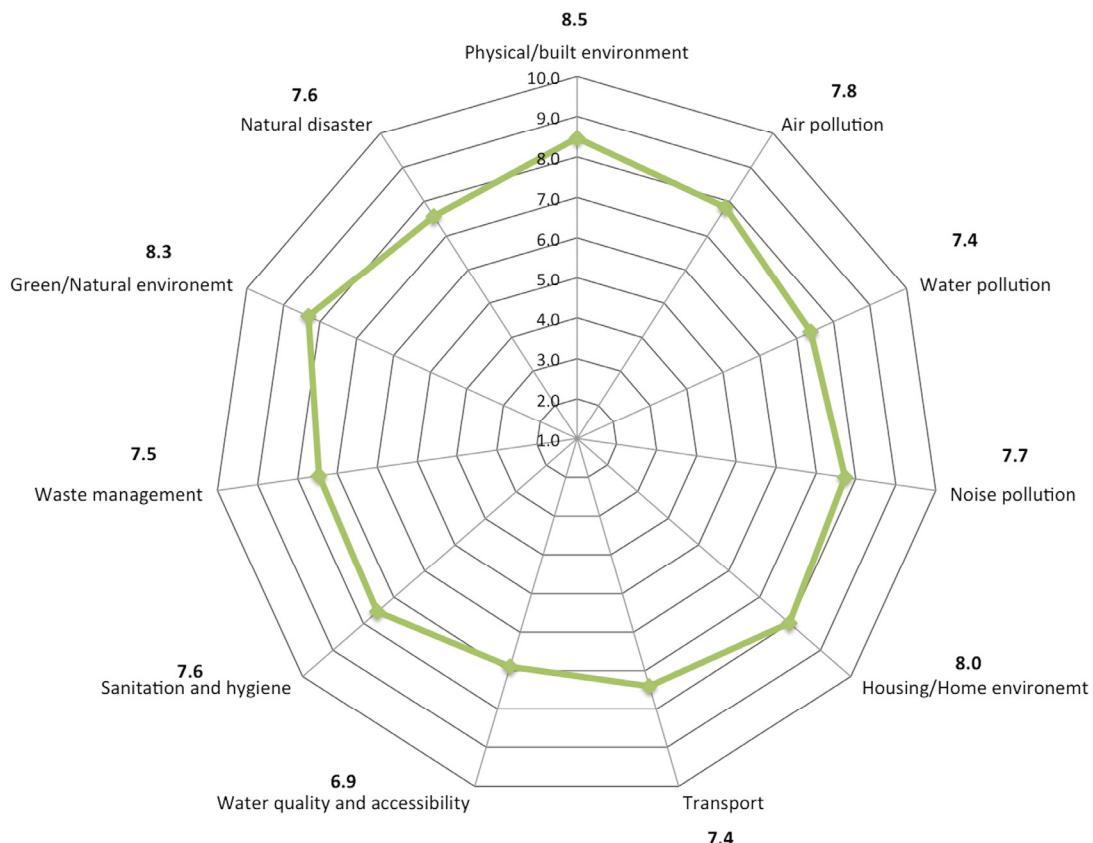
Figure 2. Average performance rating of indicators of environmental well-being dimension
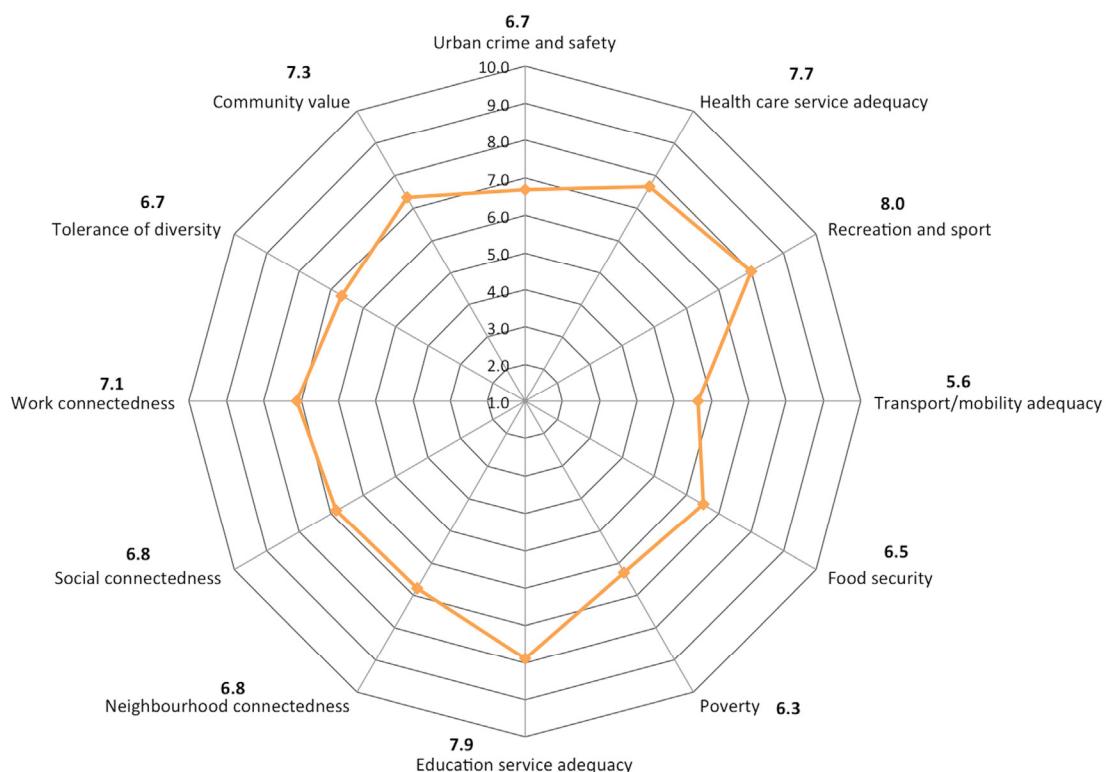

Figure 3. Average performance rating of indicators of social well-being dimension
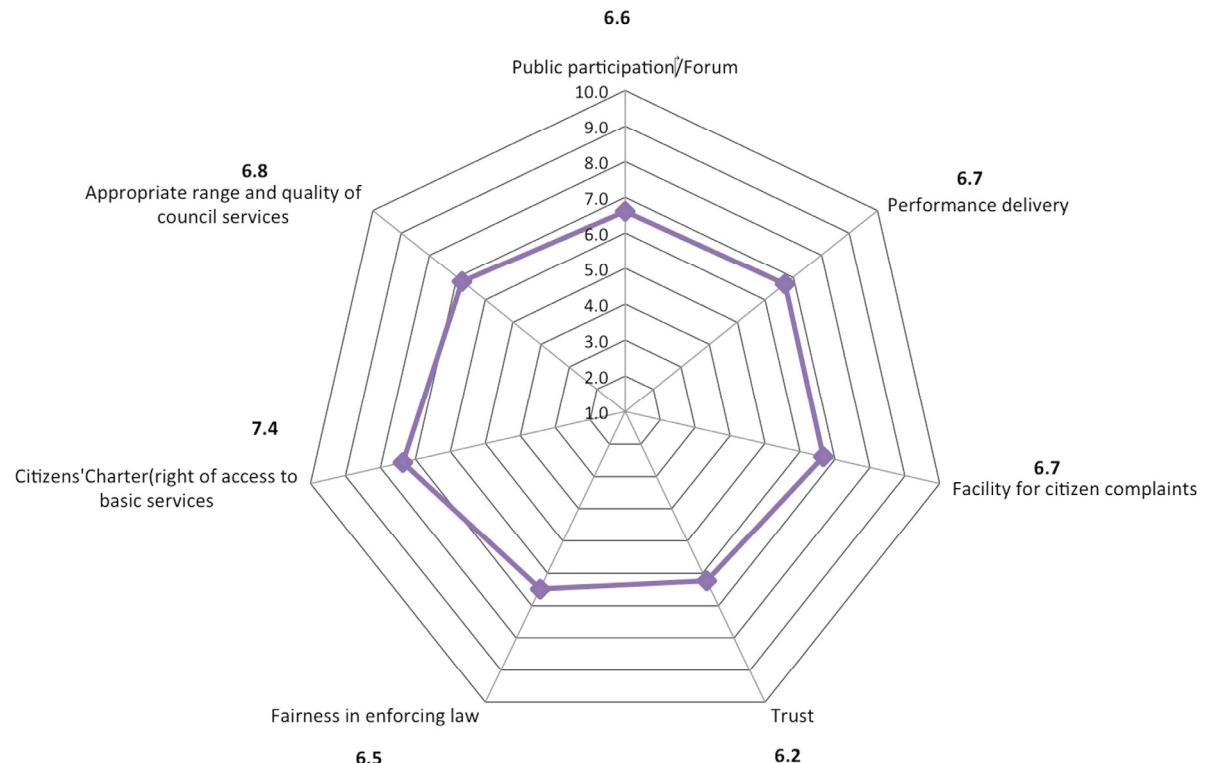
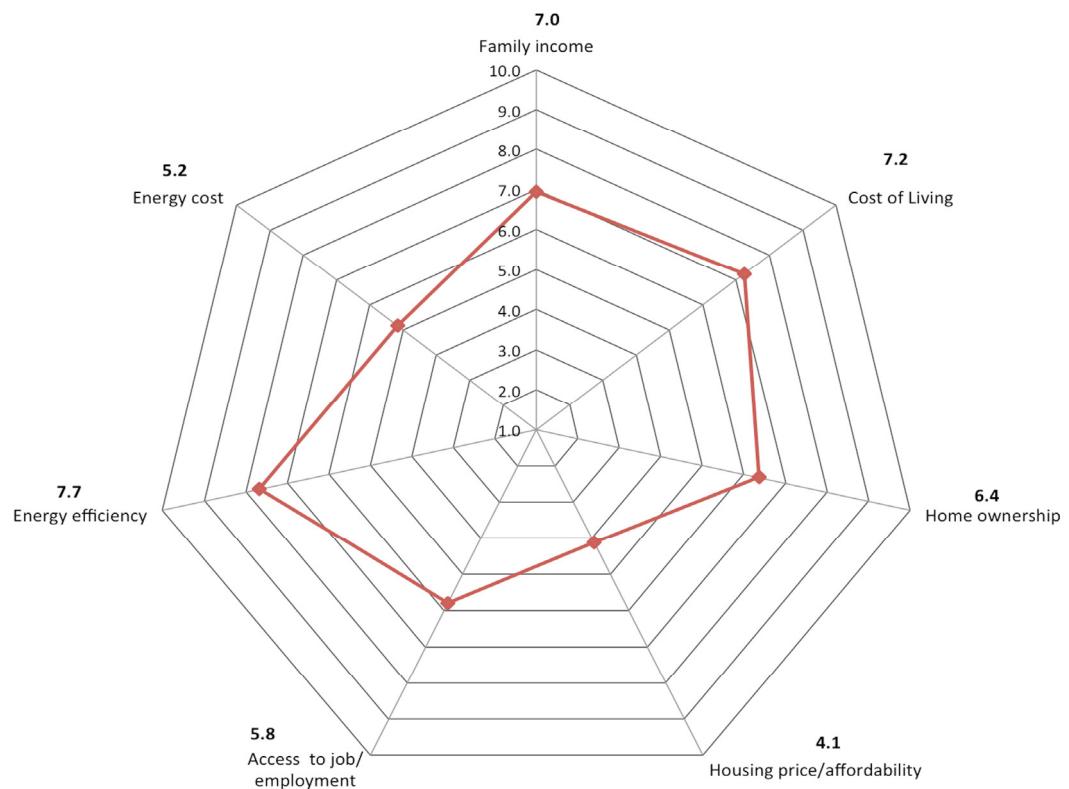Figure 4. Average performance rating of indicators of urban governance dimension

Figure 5. Average performance rating of indicators of economic well-being dimension

3.4 Overall Community Well-Being

Figure 6 present the analysis of the sector rank performance by sustainable well-being dimensions. Results show that the participants perceived moderately high levels of overall community well-being (M=6.88, SD=1.72) in Putrajaya based on current state of sustainability. The three sustainable dimensions that were most positively perceived were environmental, social and urban governance. Participants were very satisfied with their feelings of the environmental well-being in the area that they live (M=7.69, SD=1.59), social well-being (M=6.96, SD=1.73) and urban governance (M=6.69, SD=1.61) and contribute to their community happiness; however, participants are satisfied with the economic well-being (M=6.19, SD=2.01) although, less compare to other three dimensions. The dimension performance reveals that the current state of the urban area is potentially sustainable with the economic aspect still at the transition. This finding is consistent with studies by Prescott-Allen (2001) and Nunoo (2010). The result suggests that, the sustainable urban development in Putrajaya city needs to focus more attention and effort towards the improvement of social, urban governance and economic well-being aspect to promote community well-being and sustainability.
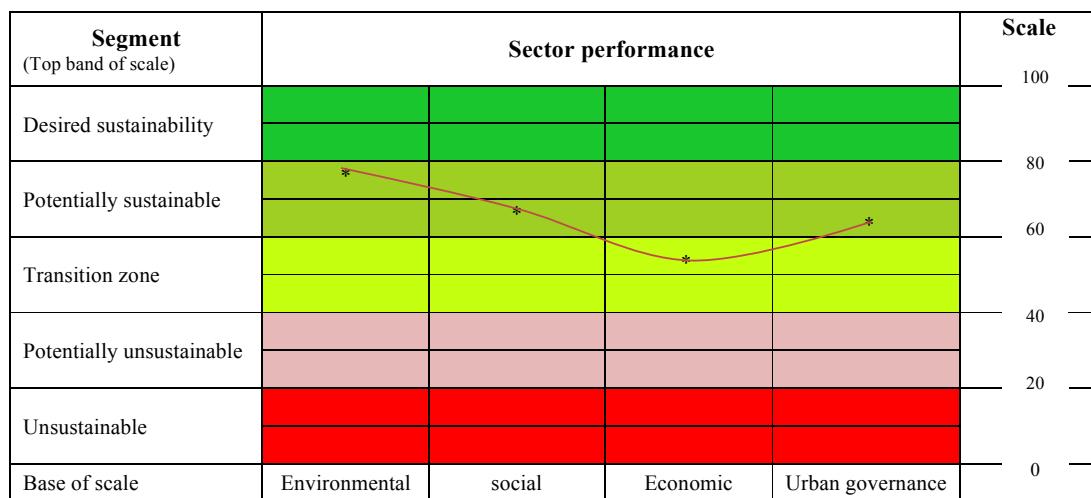
Segment (Top band of scale)	Sector performance				Scale
Desired sustainability					100
					80
Potentially sustainable					
					60
Transition zone					
					40
Potentially unsustainable					
					20
Unsustainable					
Base of scale	Environmental	social	Economic	Urban governance	0

Figure 6. Sector rank performances of sustainable well-being dimension

4. Discussion

The purpose of this study was to investigate community well-being. The overall level of community well-being was moderately robust (M=6.88) based on the current state of urban sustainability. The dimensions of community well-being which were rated most positively and promote community well-being in Putrajaya are environmental, social, urban governance and economic respectively. The analysis has demonstrated that the link between sustainable development and well-being does not only hold for individuals but scales to the level of communities to aggregate happiness out of community residents' self-reported satisfaction of social, economic, environmental and urban governance well-being of communities. This result suggests that it is possible to effectively assess the happiness of local communities from the residents' using subjective questionnaire. Cities are more than the sums of their built environment, with a broad range of activities that are locationally specific, and their spatial distribution offers different opportunities for residents' happiness (McCarthy, Ingram, & Moody, 2016). Thus, the significance of these results is that, people's live and their subjective well-being such as income gap, unemployment rates, education, transportation, urban safety etc., in an area, have shown to relate to people's happiness across different countries and time periods (Dolan, Peasgood, & White, 2008). This study finding will assist policy makers in making informed choices regarding urban planning. Additionally, a well-balanced integration of the complex and dynamic interaction between the economic, social and governance dimensions gives rise to specific effects that promote community well-being. The effects stem from accessibility to social services, such as education, health, social amenities and employment (Camagni et al., 1998).

This study provides guide to planners and policy makers for urban sustainability assessment and development of sustainable communities. Literature have highlights the awareness to improve community well-being to promote urban sustainability, because of the dearth of local data due to limited research conducted to investigate

community well-being. Many efforts have been made by government and international agencies to develop a framework to guide and monitor community well-being policy and outcomes (Salvaris & Wiseman, 2004). Despite these efforts, there is no generally accepted definition of well-being nor agreement on how best to measure it (Andelman et al., 1998). This study thus, contributes to knowledge about the link between subjective well-being and sustainable development and the measure of subjective well-being of community for sustainable development, especially in Malaysia.

5. Conclusion

This study measure residents' perception and satisfaction experience based on sustainable development interventions in their community from subjective well-being perspective. To conclude, the research findings highlight new directions for the measure of the subjective context of community happiness. The findings from the study offer the necessary measure of the influence of policies and services (social, economic, environmental, and urban governance) on subjective well-being and urban sustainability (Smith, Case, Smith, Harwell, & Summers, 2013; Summers et al., 2014) (Smith, Case, Smith, Harwell, & Summers, 2013; Summers et al., 2014) (Smith et al., 2013; Summers et al., 2014). The study provides a depth of analysis for more targeted interventions and a baseline data to improve outcomes for different segments of the community need. Thus, permit decision makers to examine the impact of specific decision alternatives on the well-being of the communities by specifying targets of sustainable development programme and allow decision to create more sustainable conditions for communities. In Malaysia, communities increasingly examining the management growth through sustainable development pathways, the findings thus, will assist the states and communities to assess the impact of decisions on the sustained well-being of their constituencies. The study will assist the governmental agencies to assess not only the direct impacts of decisions but also to assess the indirect impacts of these decisions based on finding outcomes.

However, this study is limited to one urban area in Malaysia, future research is required to assess the community happiness in different urban context. Also, the study employed a cross-sectional design, thus all the data are gathered within the limited period in which the surveys was conducted. Although the findings were consistent, however, the ability to draw firm findings and conclusions relating to the measure variables can be strengthened by a longitudinal study. Longitudinal studies are more complex and time-consuming, but it offer a powerful data collection approach that could be use to capture long time impact of sustainable development intervention on community happiness that a cross-sectional study cannot provide.

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