

Comparison of place attachment influence on the level of happiness of people living near residential parks

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Abstract. Several studies have shown that living close to a park is associated with high levels of happiness. However, there is a possible difference in the level of happiness between living close to a park (0-400 meters radius) compared to living far from the park (400-1.000 meters radius). Therefore, this study aims to compare the influence of Place Attachment on the level of happiness for people living near a park, especially residential parks in some housing areas in Malang City. Place Attachment in this study defined as a bond between an individual and a particular setting. The study demonstrates a positive influence of Place Attachment on the level of happiness of people living near the park. Respondents who live close to a park ($R = 0.441$; Happiness Level = 97.8%; Average Happiness = 6.833) tend to have a higher level of happiness compared to respondents who live far from a park ($R = 0.326$; Happiness Level = 69.9%; average Happiness = 4.148). This result shows the urgency to reconsider the provision standard of residential parks in Indonesia which only suggests one residential park for every 1,000 meters radius.

1. Introduction

Cities continue to grow every year in terms of demographics. One of the contributing factors is the trend of urbanization or the population movement to the city [1]. By 2030 it is predicted that 60 percent of the world's population will choose to live in cities [2]. The choice to live in the city has consequences, one of them relates to psychological aspects such as mental health and happiness. A study conducted by White et al. [3] showed that urban dwellers tend to have high levels of stress, poor mental health, and low levels of happiness.

On the other hand, some studies demonstrated that the provision of green space in urban areas can be a solution to problems of mental health and happiness. Several studies have also shown that living near green space has a positive influence on mental health [4,5] and happiness [6-8]. Studies conducted by Beyer et al. [5] show that by living in a neighborhood with more green space is associated with better mental health levels than living in neighborhoods with less green space. The green space also has an impact on happiness as showed by Larson et al. [8] who indicated that green space has a positive influence on the happiness of the city dwellers who live nearby (800 meters radius).

Gordon Jack's article in the book of Wellbeing and Place [9] entitled Role of Place Attachments in Well-Being revealed the relationship between place and well-being. Jack [9] mentioned that some studies have shown how places and well-being relate to one another. It reinforces several studies showing the relationship of green space (place) and happiness (well-being). The place factor can be



judged by how the city dwellers living near green space feel attached to the green space itself. The bond between an individual and a place can be assessed using Place Attachment theory [10]. The happiness of the city dwellers living near the green space itself can be assessed using the theory of Subjective Well-Being [11].

Although some studies have shown that living near green space affects happiness, there may be differences in the level of happiness between people living close to green space compared to people living far from it. It is as revealed by White et al. [3] living close to green space is associated with high levels of happiness.

Therefore, this study aims to compare the level of happiness that is influenced by the attachment of the people with the green space (Place Attachment) for people living near green space, especially residential parks. The level of happiness in this study is a dimension of happiness measured through Subjective Well-Being theory with variables of Life Satisfaction, Positive Affect, and Negative Affect. The distance in this study which is divided into close to the park and far from the park is determined using the standards of walking distance and residential park service radius [12,13]. The happiness in this study is influenced by the bond of the people living near the park with the park itself (Place Attachment). The luxury housing is chosen as a research location because of the ability of these housing developers to provide the residential parks in accordance with the standards.

2. Research methods

2.1. Data collection methods

Data collection methods in this research were divided into primary and secondary surveys. The primary surveys were conducted through field observations and questionnaires. The field observations were used to collect data on the neighborhood green open space and residential characteristics, while the questionnaires were used as a tool to measure Place Attachment and Subjective Well-Being. The secondary survey in this research was conducted to collect data on the classification of luxury housing from Real Estate Indonesia (REI) Malang. The figure below shows the distribution of luxury housing in Malang City according to REI Malang City 2016.

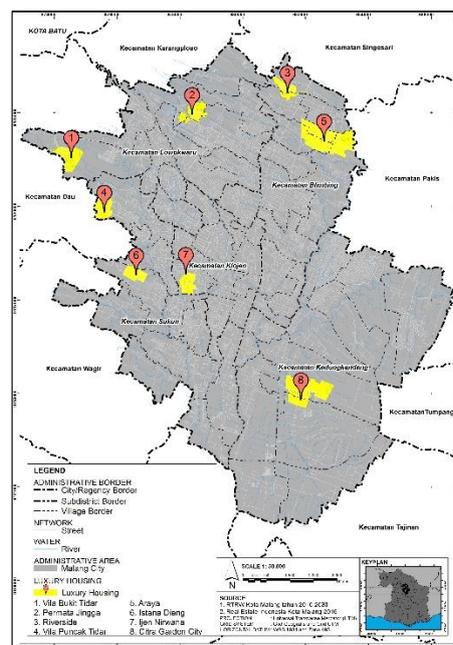


Figure 1. Distribution of Luxury Housing in Malang City.

2.2. Population and sample

The population in this study consisted of luxury housing in Malang City and people living within a radius of 1,000 meters from the chosen park. The radius was subdivided into close distance to the park (0-400 meters) and far distance from the park (400-1,000 meters). The close distance to the park was a could be reached by the park visitors with a walking distance up to 400 meters based on SNI 03/1733/2004 [12]. Meanwhile, the far distance from the park was the distance outside the walking distance (>400 meters). The researcher assumed the barrier for the farthest distance from the park based on SNI 03/1733/2004 [12] and Regulation of Public Works Minister Number 05/PRT/M/2008 [13]. Both documents stated that the service scale of the residential park with the minimum area of 1,250 square meters is a 1,000 meters radius. Based on that, the researchers assumed that the far distance from the park was the distance outside the walking distance up to the radius of the park service scale, i.e., a 400-1,000 meters radius. The housing sample was selected based on criteria covering the availability of residential parks, the residential parks with a minimum area of 1,250 square meters and the availability of houses in a radius of more than 400 meters. The table below shows the results of determining the study location.

Table 1. Study location determination.

| Housing Name | Criteria | | | Total Score |
|-------------------|-------------------|-----------|--------------------|-------------|
| | Park Availability | Park Area | House Availability | |
| Araya | 1 | 1 | 1 | 3 |
| Vila Bukit Tidar | 1 | 0 | 1 | 2 |
| Permata Jingga | 1 | 1 | 1 | 3 |
| Istana Dieng | 0 | 0 | 0 | 0 |
| Ijen Nirwana | 1 | 0 | 1 | 2 |
| Citra Garden City | 0 | 0 | 0 | 0 |
| Riverside | 1 | 0 | 1 | 2 |
| Vila Puncak Tidar | 1 | 1 | 0 | 2 |

Based on the predetermined criteria, Araya Housing and Permata Jingga Housing were selected as study locations. The total score from Araya Housing and Permata Jingga Housing was three, which indicated that the housing fulfilled all the criteria determined by the researcher. Meanwhile, the sample of people living within a radius of 1,000 meters from the residential park was selected using the Slovin formula, which was used to determine the number of samples from known populations [14]. The Slovin formula could be used because the number of houses within a radius of 1,000 meters from the park could be known in number. In this study, one house would represent one research respondent. The table below shows the research population.

Table 2. Research population.

| Housing Name | Total Population | |
|----------------|--------------------------|--------------------------|
| | Living Close to the Park | Living Far from the Park |
| Araya | 664 | 1,075 |
| Permata Jingga | 613 | 361 |
| TOTAL | 1,277 | 1,436 |

From the population above, a research sample was determined for each distance to the park. The sample in this study was selected by a simple random sampling technique. Here the Slovin formula was used to determine the number of samples at each distance to the park.

$$n = \frac{N}{1+Ne^2} \quad (1)$$

Description:

n = Number of Sample

N = Total Population

e = Error tolerance

Table 3. Respondents sample determination.

| Living Distance to the Park | Population | Sample Determination | Result |
|-----------------------------|------------|--------------------------------------|------------|
| Close to the Park | 1,277 | $n = \frac{1,277}{1+(1,277)(0.1)^2}$ | 93 |
| Far from the Park | 1,436 | $n = \frac{1,436}{1+(1,436)(0.1)^2}$ | 93 |
| TOTAL | | | 186 |

Based on the calculation results, the sample size for each distance to the park was 93 respondents. Subsequently, a proportional sample would be determined for each distance to the park. **Table 4** shows the proportional sample calculation for respondents who live close to the park.

Table 4. Proportional sample for close to the park respondents.

| Housing Name | Population | Percentage | Proportional Sample |
|----------------|--------------|-------------|---------------------|
| Araya | 664 | 52% | 48 |
| Permata Jingga | 613 | 48% | 45 |
| TOTAL | 1,277 | 100% | 93 |

Based on the calculations, the proportional samples for respondents who live close to the park at the Araya Housing was 48 respondents and at the Permata Jingga Housing the proportional sample was 45 respondents. The following table shows the result of the proportional sample calculation for respondents who live far from the park.

Table 5. Proportional sample for far from to the park respondents.

| Housing Name | Population | Percentage | Proportional Sample |
|----------------|--------------|-------------|---------------------|
| Araya | 1,075 | 75% | 70 |
| Permata Jingga | 361 | 25% | 23 |
| TOTAL | 1,436 | 100% | 93 |

Based on the calculations, the proportional sample for respondents who live far from the park at the Araya Housing was 70 respondents and at the Permata Jingga Housing was 23 respondents.

2.3. Stage of data analysis

The data analysis in this study was divided into six stages, i.e., identification of park and housing environment characteristics, research instrument test, analysis of Place Attachment, analysis of Subjective Well-Being, analysis of Place Attachment influence on Subjective Well-Being and Comparative Analysis of Place Attachment influence on the level of happiness based on the distance to park. The following is the elaboration of the six stages of data analysis.

2.3.1. Identification of park and housing environment characteristics. At this stage of data analysis, the characteristics of park and housing environment were identified to determine the location of the study. The location of the study was chosen based on certain criteria using a scoring method with the Gutmann scale. Based on the identification of the characteristics of the park and the luxury housing environment in Malang City in **Table 1**, Araya Housing and Permata Jingga Housing were elected as the research location.

2.3.2. Research instrument test. At this stage of data analysis, the research instrument, the questionnaire, was tested before being used. The research instrument test was conducted to 30 respondents, 15 respondents from Araya Housing and 15 respondents from Permata Jingga Housing. The research instrument test was divided into the validity test and reliability test. Validity test was used to determine whether the questionnaire was valid or not. The questionnaire was considered valid if it was able to reveal something measurable [15]. Meanwhile, the reliability test was used to measure an indicator of a variable in the questionnaire. A questionnaire was considered reliable if the respondent answered the questionnaire consistently over time [15].

2.3.3. Analysis of place attachment. At this stage of data analysis, people attachment to the park was measured using the Place Attachment method. Place Attachment is the positive bond between an individual and a particular place [10,16]. The predictors of Place Attachment consisted of Place Dependence and Place Identity. Place Dependence is the functional bond between an individual and a particular place [17], while Place Identity is an emotional bond between an individual and a particular place [18]. Each of these predictors was measured through question items in a questionnaire adapted from Williams and Vaske [16] questionnaire. Place Attachment was the result of the average Place Dependence score plus the average Place Identity score.

2.3.4. Analysis of subjective well-being. At this stage of data analysis, the happiness of people who live near the park was measured by the Subjective Well-Being method. Subjective Well-Being is the cognitive and affective evaluation of a person that represents happiness [11]. The predictors of Subjective Well-Being consisted of Life Satisfaction, Positive Affect, and Negative Affect. However, in this study, the Life Satisfaction predictors were replaced by Housing Satisfaction because Life Satisfaction was considered too broad for assessing happiness. Housing Satisfaction is a predictor of a person's degree of content in his or her housing situation [19], whereas Positive Affect and Negative Affect were affections that reflect pleasant and unpleasant feelings and emotions [20-22]. Each Subjective Well-Being predictor was measured through question items in a questionnaire adapted from the questionnaires of Diener et al. [23] and Watson et al. [20]. Subjective Well-Being itself was the result of the average Housing Satisfaction score plus the average Positive Affect score and minus the average Negative Affect score.

2.3.5. Analysis of place attachment influence on subjective well-being. At this stage of data analysis, simple linear regression analysis was done to find the influence of place attachment on subjective well-being. Simple linear regression analysis was also used to determine regression modelling of the influence of place attachment on subjective well-being. In this study, the regression modelling consisted of two forms of regression modelling. The first model was the regression model of place attachment influence on the Subjective Well-Being at a radius of 0-400 meters from the park (close to the park). Meanwhile, the second model was the regression model of place attachment influence on subjective well-being at a radius of 400-1,000 meters from the park (far from the park).

2.3.6. Comparative analysis of place attachment influence on the level of happiness. Comparative analysis of the influence of place attachment on the level of happiness based on the distance to the park was done when the results of the regression analysis indicated a positive influence between place attachment to subjective well-being. The analysis was done by comparing the value of the place attachment variable coefficients, the classification of happiness level and the average happiness value at each distance (close to the park and far from the park). The results of the analysis would answer the research question of how place attachment influences the level of happiness in people living near the park.

3. Results and discussion

3.1. Zoning of the housing

This study included distance to the park as a component in the study to group respondents into two groups. The first group was the group living close to the park, while the second group was the group living far from the park. The basis of the zone division was the living distance from the park.



Figure 2. Housing research location.

Description:

(a) Araya Housing

(b) Permata Jingga Housing

The study location at the Araya Housing was a 2,100 square meters park located at Blimbing Indah Seltan X Street. The facilities in this park included tennis courts, park benches, and gazebo. In Permata Jingga Housing, the study location was a 3,200 square meters park located at Permata Jingga III Street. The facilities in this park included tennis courts, park benches, and children's playgrounds. The two parks were in a quite well-maintained condition at the time of the study.



Figure 3. Residential park research location.

Description:

(a) Araya Residential Park

(b) Permata Jingga Residential Park

The research sample in each zone was chosen by using simple random sampling. Each house in each zone was given an identity number, so the sampling technique could be run by randomly selecting the identity numbers. The random selection of house identity was done using Research Randomizer. The random identification number generated from the Research Randomizer was then mapped to see the spread of the research sample houses. The number of houses sampled in each zone had been determined with the proportional sample that could be seen in **Table 4** and **Table 5**. The figure below showed the zoning and distribution of the research respondents in Araya Housing and Permata Jingga Housing.

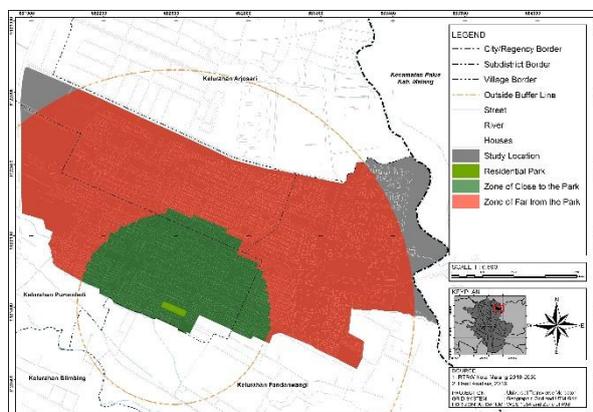


Figure 4. Zoning in Araya Housing.

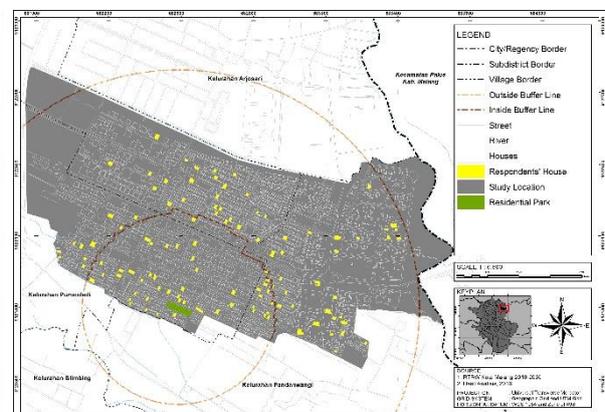


Figure 5. Araya respondents distribution.

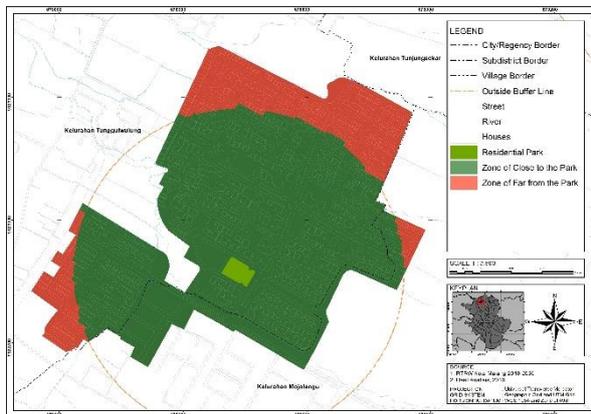


Figure 6. Zoning in Permata Jingga Housing.

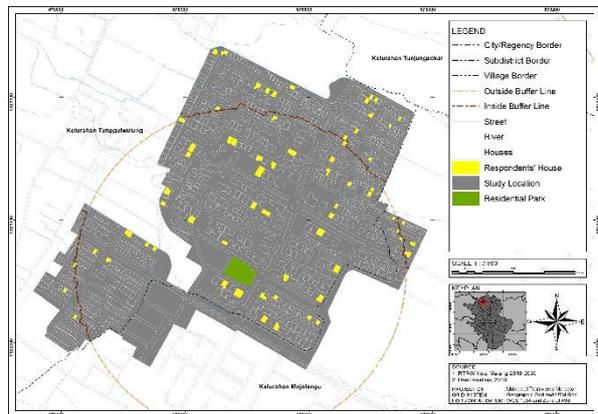


Figure 7. Permata Jingga respondents distribution.

3.2. Characteristics of the research respondents

The characteristics of the respondents were identified at each of the living distance to the park (close to the park and far from the park) by gender and age. Based on gender, at distance close to the park, 59 percent of total respondents or 55 respondents were male and 41 percent of total respondents or 38 respondents were female. At far from the park distance, 55 percent of the total respondents or 51 respondents were male and 45 percent of the total respondents or 42 respondents were female. Based on age, at close to the park distance, 28 percent of the total population or 26 respondents were aged 31-40 years, 25 percent or as many as 23 respondents were aged 41-50 years, 19 percent or as many as 18 respondents were aged 20-30 years, 18 percent or as many as 17 respondents were aged 51-60 years, and 10 percent or as many as 9 respondents were aged over 60 years. At far from the park distance, 32 percent of the total population or 30 respondents were aged 20-30 years, 28 percent or as many as 26 respondents were aged 41-50 years, 27 percent or as many as 25 respondents were aged 31-40 years, 10 percent or as many as 9 respondents were aged 51-60 years, and 3 percent or as many as 3 respondents were aged over 60 years.

3.3. Research instrument test

The research instrument test aimed to determine the validity and reliability of the research instruments before being used to collect data. The research instrument test was conducted to 30 respondents; 15 respondents from Araya Housing and 15 respondents from Permata Jingga Housing. The research instrument test was conducted through validity and reliability tests.

The validity test aimed to determine the validity of the research instruments where the score of each item was correlated with the total score. The calculation of the validity test was done using the Pearson correlation technique. The question item would be valid if the correlation coefficient of r -calculate was greater than the r -table value of 0.361. Based on the calculation of the validity test, the question items were entirely valid. This could be seen from all r -calculate values being greater than the r -table value. Thus, the question items in the research instrument were valid and could be used as data collecting tool in this research.

The reliability test aimed to determine the consistency of the research instrument as a measuring tool so that a measurement could be trusted. The reliability test calculation was done by looking at the value of Cronbach's alpha. The instrument was considered reliable when its Cronbach's alpha coefficient was greater than 0.6 [15]. Based on the calculation of reliability test, each tested variable was entirely reliable. This could be seen from all Cronbach's alpha values that were greater than 0.6. Thus, each variable of the research instrument was considered feasible to be used as a data collecting tool in this study.

3.4. Place attachment comparison based on the distance to the park

Place attachment comparison aimed to see the difference between the Place Attachment analysis on each distance to the park. The comparison of Place Attachment analysis was divided based on each variable, i.e., Place Dependence and Place Identity. The following section is a discussion of the results of the Place Attachment comparison based on the distance to the park.

3.4.1. Place dependence comparison based on the distance to the park. The comparison of the place dependence analysis was done by comparing the analysis results of respondents who live close to the park and respondent who live far from the park. The comparison was done to see the difference of the analysis results based on the distance of respondents to the park. The following is the comparison result of the Place Dependence analysis based on the distance to the park presented in the form of a table and graphs.

Table 6. Place dependence comparison based on the distance to the park.

| Questions | Code | Average Answer Value | |
|--|------|----------------------|-------------------|
| | | Close to the Park | Far from the Park |
| This park is the best place for what I like to do. | PD1 | 3.62 | 3.22 |
| No other place can compare to this park. | PD2 | 3.55 | 2.75 |
| I get more satisfaction out of visiting this park than any other. | PD3 | 3.58 | 2.92 |
| Doing what I do at this park is more important to me than doing it in any other place. | PD4 | 3.66 | 2.90 |
| I would not substitute any other area for doing the types of things I do at this park. | PD5 | 3.81 | 2.82 |
| The things I do at this park I would enjoy doing just as much at a similar site. | PD6 | 3.77 | 2.91 |

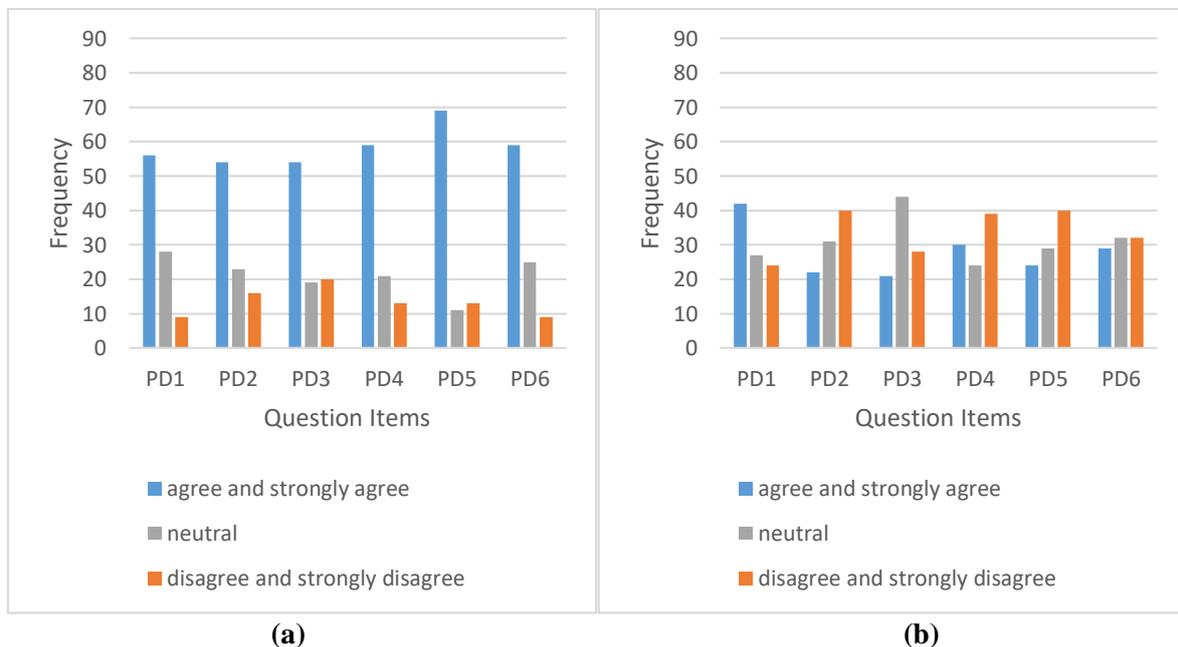


Figure 8. Place dependence comparison based on the distance to the park.

Description:

- (a) Place dependence of respondents who live close to the park
- (b) Place dependence of respondents who live far from the park

In the comparison table, the average value of respondents who live close to the park was greater than the average value of respondents who live far from the park for all question items. In the comparison graph, the responses ‘agree’ and ‘strongly agree’ were more frequently answered by respondents who live close to the park compared to respondents who live far from the park for all question items. Based on these points, it can be concluded that the respondents who live close to the park have more functional bonds to the park compared to the respondents who live far from the park.

3.4.2. *Place identity comparison based on the distance to the park.* The comparison of the place identity analysis results was done by comparing the analysis results of respondents who live close to the park and respondent who live far from the park. The comparison was done to see the difference of the analysis result based on the distance of respondents to the park. The following is a comparison of the results of the Place Identity analysis abased on the distance to the park presented in the form of table and graphs.

Table 7. Place identity comparison based on the distance to the park.

| Questions | Code | Average Answer Value | |
|---|------|----------------------|-------------------|
| | | Close to the Park | Far from the Park |
| I feel this park is a part of me. | PI1 | 3.49 | 2.66 |
| This park is very special to me. | PI2 | 3.37 | 2.57 |
| I identify strongly with this park. | PI3 | 3.69 | 2.67 |
| I am very attached to this park. | PI4 | 3.62 | 2.51 |
| Visiting this park says a lot about who I am. | PI5 | 3.62 | 2.38 |
| This park means a lot to me. | PI6 | 3.75 | 2.67 |

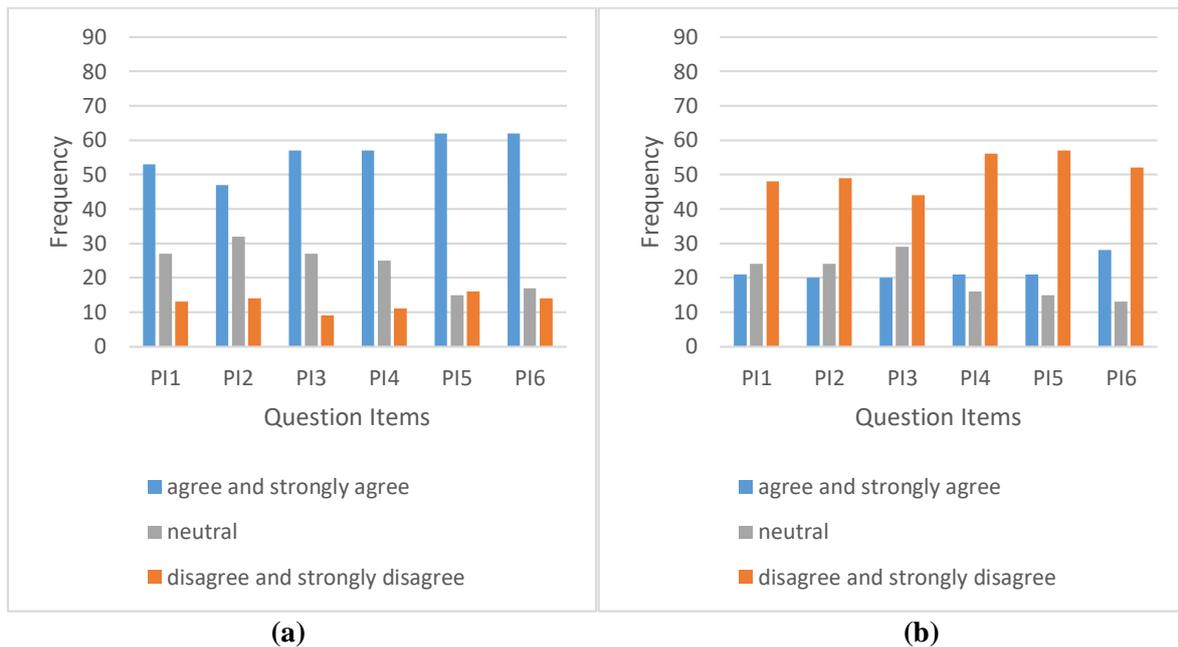


Figure 9. Place identity comparison based on the distance to the park.

Description:

- (a) Place identity of respondents who live close to the park
- (b) Place identity of respondents who live far from the park

In the comparison table, the average value of respondents who live close to the park was greater than the average value of respondents who live far from the park for all question items. In the comparison graph, the responses ‘agree’ and ‘strongly agree’ on all question items was more frequently answered by respondents who live close to the park compared to respondents who live far from the park. Based on these points, it could be concluded that the respondents who live close to the park have more emotional bonds to the park compared to the respondents who live far from the park.

3.5. Subjective well-being comparison based on the distance to the park

The subjective well-being comparison aimed to see the difference between the results of subjective well-being analysis on each distance to the park. The comparison of subjective well-being analysis as divided based on each variable, i.e., Housing Satisfaction, Positive Affect, and Negative Affect. The following is a discussion of the result of the Subjective Well-Being comparison based on the distance to the park.

3.5.1. Housing satisfaction comparison based on the distance to the park. The comparison of housing satisfaction analysis was done by comparing the results of the analysis of respondents who live close to the park and respondents who live far from the park. The comparison was done to see the difference of the analysis result based on the distance of respondents to the park. The following was a comparison of housing satisfaction analysis results based on the distance to the park presented in the form of a table and graphs.

Table 8. Housing satisfaction comparison based on the distance to the park.

| Question Items | Code | Average Answer Value | |
|---|------|----------------------|-------------------|
| | | Close to the Park | Far from the Park |
| In most ways, my housing situation is close to my ideal. | HS1 | 4.06 | 3.35 |
| The conditions of my housing situation are excellent. | HS2 | 4.12 | 3.39 |
| I am satisfied with my housing situation. | HS3 | 4.28 | 3.48 |
| So far, I have gotten the important things I want in my housing situation. | HS4 | 4.15 | 3.41 |
| If I could choose another housing situation, I would choose my current housing situation. | HS5 | 4.20 | 3.31 |

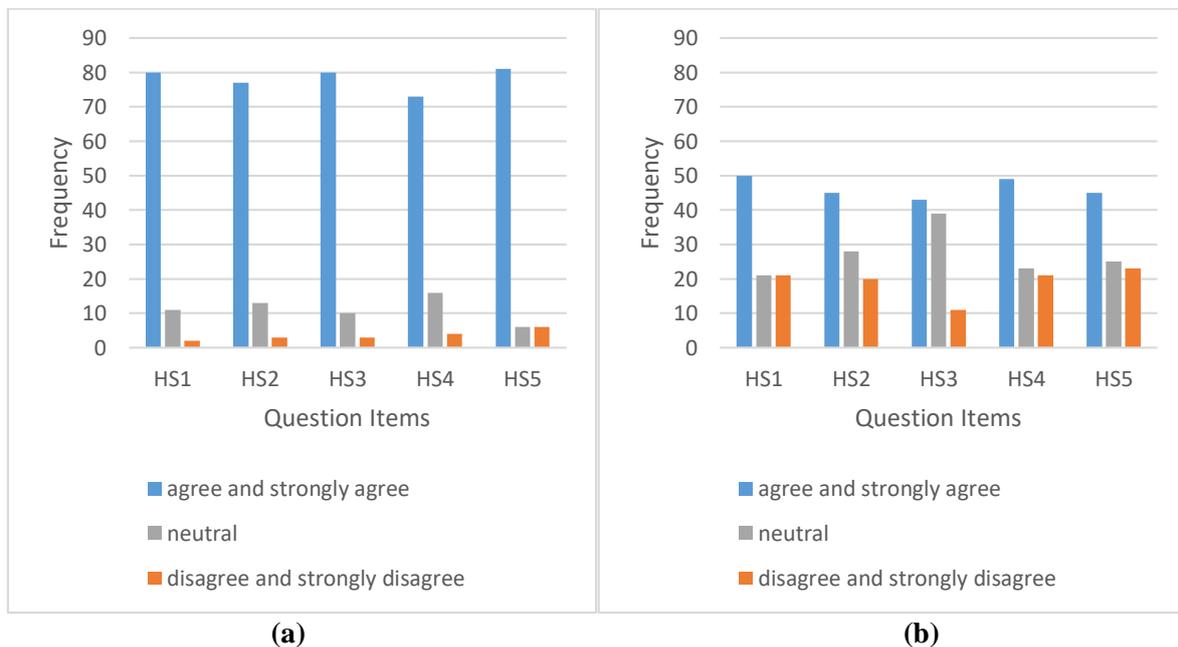


Figure 10. Housing satisfaction comparison based on the distance to the park.

Description:

(a) Housing satisfaction of respondents who live close to the park

(b) Housing satisfaction of respondents who live far from the park

In the comparison table, the average value of respondents who live close to the park was greater than the average value of respondents who live far from the park for all question items. In the comparison graph, the responses ‘agree’ and ‘strongly agree’ on all question items was more frequently answered by respondents who live close to the park compared to respondents who live far from the park. Based

on these points, it could be concluded that the respondents who live close to the park were more content with their housing situation compared to the respondents who live far from the park.

3.5.2. *Positive affect comparison based on the distance to the park.* The comparison of positive affect analysis was done by comparing the results of analysis of respondents who live close to the park and respondents who live far from the park. The comparison was done to see the difference of the analysis result based on the distance of respondents to the park. The following is a comparison of the positive affect analysis based on the distance to the park presented in the form of a table and graphs.

Table 9. Positive affect comparison based on the distance to the park.

| Question Items | Code | Average Answer Value | |
|----------------|------|----------------------|-------------------|
| | | Close to the Park | Far from the Park |
| Interested | PA1 | 3.81 | 3.35 |
| Excited | PA2 | 3.98 | 3.37 |
| Strong | PA3 | 3.98 | 3.25 |
| Enthusiastic | PA4 | 4.12 | 3.53 |
| Proud | PA5 | 4.05 | 3.43 |
| Alert | PA6 | 3.87 | 3.57 |
| Inspired | PA7 | 3.99 | 3.37 |
| Determined | PA8 | 4.08 | 3.42 |
| Attentive | PA9 | 4.13 | 3.56 |
| Active | PA10 | 4.16 | 3.51 |

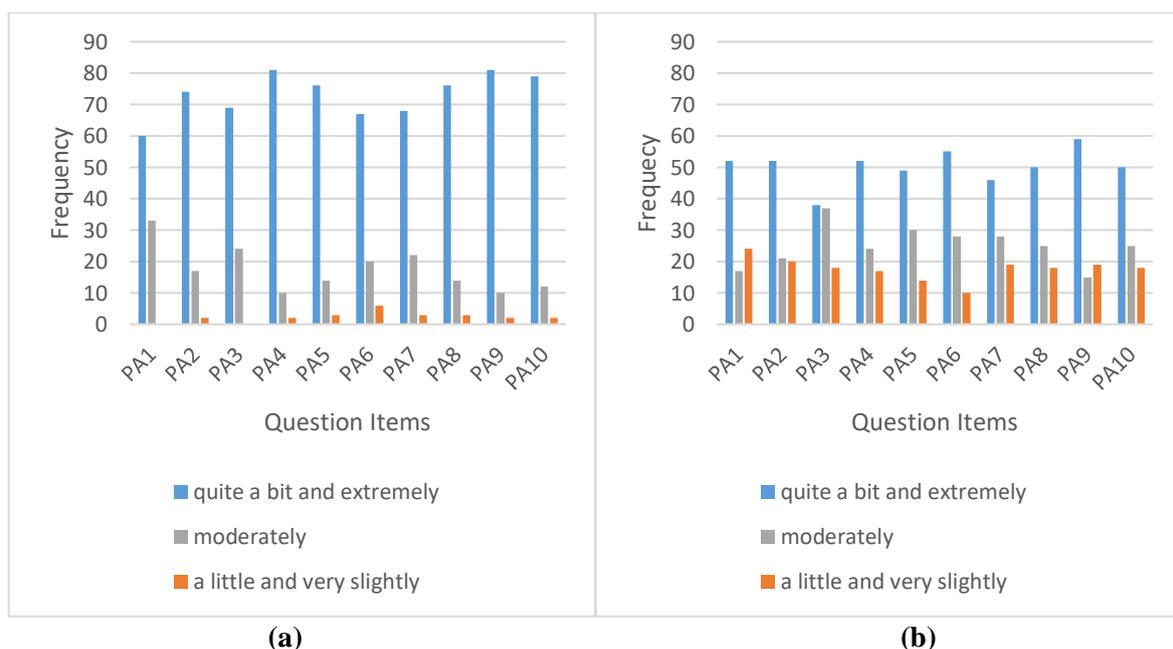


Figure 11. Positive affect comparison based on the distance to the park.

Description:

- (a) Positive affect of respondents who live close to the park
- (b) Positive affect of respondents who live far from the park

In the comparison table, the average value of respondents who live close to the park was greater than the average value of respondents who live far from the park for all question items. In the comparison graph, the responses ‘quite a bit’ and ‘extremely’ were more frequently answered by respondents who live close to the park compared to respondents who live far from the park for all question items. Based on these points, it could be concluded that the respondents who live close to the park were more dominant reflecting the pleasant feelings and emotions compared to the respondents who live far from the park.

3.5.3. *Negative affect comparison based on the distance to the park.* The comparison of the negative affect analysis was done by comparing the results of analysis of respondents who live close to the park and the respondents who live far from the park. The comparison was done to see the difference of the analysis results based on the distance of respondents to the park. The following is a comparison of the negative affect analysis based on the distance to the park presented in the form of a table and graphs.

Table 10. Negative affect comparison based on the distance to the park

| Question Items | Code | Average Answer Value | |
|----------------|------|----------------------|-------------------|
| | | Close to the Park | Far from the Park |
| Distressed | NA1 | 1.73 | 2.33 |
| Upset | NA2 | 1.58 | 2.33 |
| Guilty | NA3 | 1.45 | 2.34 |
| Scared | NA4 | 1.45 | 2.43 |
| Hostile | NA5 | 1.48 | 2.37 |
| Irritable | NA6 | 1.40 | 2.34 |
| Ashamed | NA7 | 1.46 | 2.42 |
| Nervous | NA8 | 1.39 | 2.39 |
| Jittery | NA9 | 1.38 | 2.33 |
| Afraid | NA10 | 1.48 | 2.39 |

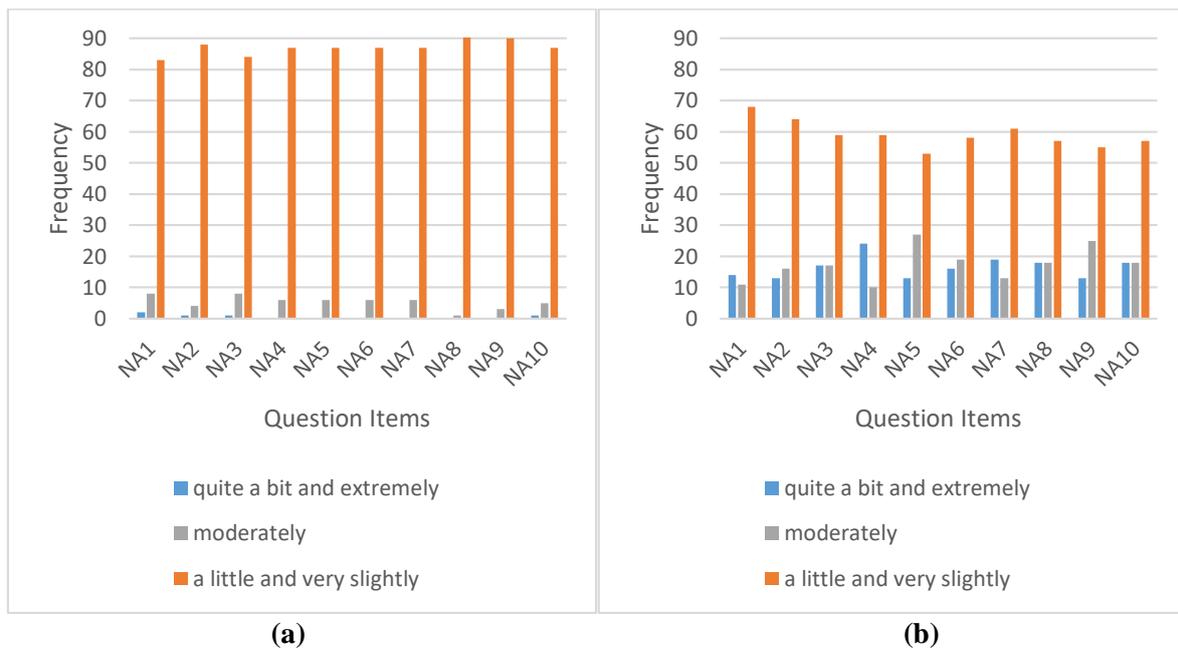


Figure 12. Negative affect comparison based on the distance to the park

Description:

- (a) Negative affect of respondents who live close to the park
- (b) Negative affect of respondents who live far from the park

In the comparison table, the average value of respondents who live close to the park for all question items was not greater than the average value of respondents who live far from the park. In the comparison graph, the responses ‘a little’ and ‘very slightly’ on all question items were more frequently answered by respondents who live close to the park compared to respondents who live far from the park. Based on these points, it could be concluded that the respondents who live close to the park did not have more unpleasant feelings and emotions compared to respondents who live far from the park.

3.6. Simple Linear Regression Analysis

A simple linear regression analysis showed the influence of place attachment on subjective well-being in people living close to the park and far from the park. Simple linear regression analysis in this study

was done using SPSS software. The following section is a summary of the simple linear regression analysis based on the distance to the park.

3.6.1. Simple Linear Regression Analysis of respondents who live close to the park. The following is an equation from a simple linear regression analysis on the data of respondents who live close to the park.

$$Y = 3.861 + 0.441 X_1 \quad (2)$$

Description:

Y = Subjective Well-Being

X₁ = Place Attachment

The regression equation from the simple linear regression analysis above showed the following.

- The constant of 3.861 indicated that if the Place Attachment variable was constant (unchanged), the magnitude of the Subjective Well-Being change was 3.861.
- Place Attachment Coefficient of 0.441 showed that Place Attachment positively affected Subjective Well-Being. This meant that the better the Place Attachment then the Subjective Well-Being would tend to improve.

3.6.2. Simple Linear Regression Analysis of respondents who live far from the park. The following is an equation from a simple linear regression analysis on the data of respondents who live far from the park.

$$Y = 2.378 + 0.326 X_1 \quad (3)$$

Description:

Y = Subjective Well-Being

X₁ = Place Attachment

The regression equation from the simple linear regression analysis above showed the following.

- The constant of 2.378 indicated that if the Place Attachment variable was constant (unchanged), the magnitude of the Subjective Well-Being change was 2.378.
- Place Attachment Coefficient of 0.326 showed that Place Attachment positively affected Subjective Well-Being. This meant that the better the Place Attachment then the Subjective Well-Being would tend to improve.

3.7. Comparison of place attachment influence on the level of happiness based on the distance to the park

The simple linear regression analysis of the data of the respondents either living close to the park and far from the park indicated a positive influence. Based on this, the researcher could compare the influence of Place Attachment on the level of happiness based on the distance to the park. This was done to answer the research question of how the Place Attachment influences the level of happiness in people living near the residential park. The comparison involved comparing the values of the Place Attachment variable coefficients, the classification of the happiness level and the average happiness value at each distance to the park. Based on the results of simple linear regression analysis, the following was the value of place attachment variable coefficients at each distance to the park.

Table 11. Coefficient value of place attachment

| Coefficient Value of Place Attachment | |
|---------------------------------------|-------------------|
| Close to the Park | Far from the Park |
| 0.441 | 0.326 |

The coefficient value of the Place Attachment variable on the results of respondents who live close to the park was greater compared to the respondents who live far from the park. The value of place attachment was directly proportional to the value of happiness. It showed that the influence of the Place Attachment variable on the results of respondents who live close to the park had a greater influence on the value of happiness compared to the respondents who live far from the park.

The classification of the happiness level of each respondent based on the distance to the park could be determined by utilizing the mean and standard deviations from the Subjective Well-Being analysis. The value was used to classify the level of happiness into three classifications of high, medium, and low. The following **Table 12** shows the mean and standard deviation value of the Subjective Well-Being analysis of respondents' data who either live close to or far from the park.

Table 12. Mean and standard deviation values

| Minimal Score | Maximal Score | Mean (M) | Standard Deviation (SD) |
|---------------|---------------|----------|-------------------------|
| 1.2 | 8.6 | 5.58 | 1.69 |

The mean and standard deviation values were used to derive the range of values used as the basis for determining the classification of happiness levels. The classification of happiness levels was used to compare the respondents' happiness level at each distance to the park. The following **Table 13** shows the calculation of the happiness level classification at each distance to the park.

Table 13. Classification of happiness level based on the distance to the park

| Level of Happiness (Y) | | Living Distance to the Park | | | |
|------------------------|-------------------------------|-----------------------------|-------------|-------------------|-------------|
| | | Close to the Park | | Far from the Park | |
| Classification | Range of Value | Frequency | Percentage | Frequency | Percentage |
| High | $Y > M + 1SD$ | 36 | 38.7% | 2 | 2.2% |
| Medium | $M - 1SD \leq Y \leq M + 1SD$ | 55 | 59.1% | 63 | 67.7% |
| Low | $Y < M - 1SD$ | 2 | 2.2% | 28 | 30.1% |
| Total | | 93 | 100% | 93 | 100% |

The cumulative frequency of high and medium happiness levels in the respondents who live close to the park were 36 respondents and 55 respondents or 38.7% and 59.1% respectively. The cumulative frequency of respondents who live close to the park was greater than the respondents who live far from the park which was as much as 2 respondents and 63 respondents or 2.2% and 67.7%. Conversely, the frequency of low happiness level on the respondents who live close to the park was only 2 respondents or 2.2%. The frequency was smaller than the respondents who live far from the park, which were 28 respondents or 30.1%. This shows that respondents who live close to the park tend to be happier compared to the respondents who live far from the park.

The argument could be reinforced by looking at the average happiness value at each distance to the park. The average happiness value was obtained by running a simple linear regression equation model on each distance to the park. The following **Table 14** shows the average happiness value at each distance to the park.

Table 14. Average happiness value

| Statistics Analysis Results | Living Distance to the Park | |
|--------------------------------|-----------------------------|-------------------------|
| | Close to the Park | Far from the Park |
| Average Place Attachment Value | 6.74 | 5.43 |
| Regression Equation Model | $Y = 3.861 + 0.441 X_1$ | $Y = 2.378 + 0.326 X_1$ |
| Average Happiness Value | 6.833 | 4.148 |

The average happiness value of respondents was obtained by entering the average Place Attachment value into the regression equation model. Based on the calculation, the average happiness value of the respondents who live close to the park was greater than the respondents who live far from the park. It showed that respondents who live close to the park tend to be happier compared to the respondents who live far from the park.

4. Conclusion

The discussion of simple linear regression showed a positive influence of place attachment on happiness (subjective well-being) of the respondents who live close and who live far from the park. This was the

basis for further study, which compared the influence of place attachment on the level of happiness based on the distance to the residential park. The comparison involved the value of place attachment variable coefficients, the classification of happiness level, and the average happiness value at each distance to the park. Based on the comparison result, it could be concluded that the respondents who live close to the park tend to have a higher level of happiness compared to the respondents who live far from the park. This was because the influence of Place Attachment variables on the analysis result of respondents who live close to the park had a greater influence on the level of happiness compared to respondents who live far from the park. The study shows that the people living in a radius of more than 400 meters from the park are less happy. Moreover, the provision standard of residential parks in Indonesia only suggests one park for every 1,000 meters radius, which will result in a disparity of happiness level influenced by the park. Therefore, this study suggests to reconsider and review the residential park provision standards in Indonesia.

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