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Children-Friendly Assessment of Urban Green Open Space: The Case of Trunojoyo Park in Malang City, Indonesia

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ABSTRACT
UNICEF issued a policy in the form of CFCI (Child-Friendly City Initiative) as an effort to fulfill children's rights. Malang City has fulfilled the child-friendly indicators with a Madya rank, by meeting 60-70% of the Child-Friendly City Indicators. Malang City provides a playground for children in public spaces; one of them is in Taman Cerdas Trunojoyo. However, some problems can affect the child-friendliness of the park, such as poor maintenance of park facilities. Therefore, the question arises whether Taman Cerdas Trunojoyo is child-friendly or not? This research is conducted to get a result if Taman Cerdas Trunojoyo is child-friendly or not. This research is descriptive research. The method used is a mixed-method, which combines quantitative and qualitative methods with research respondents are parents/ guardians of children and children. Quantitative methods are used to determine respondents' perceptions of the quality of the object of study. The qualitative method is used to review the existing condition of the object of study through the researcher's perceptions and literature. Based on the analysis of the literature and 141 respondents, it was found that the child-friendly quality of Taman Cerdas Trunojoyo was good, according to parents/guardians of the children. While according to children's perception, the quality of child-friendly of the park is Decent. So, it can be said that Taman Cerdas Trunojoyo is child-friendly and suitable for children.
Keywords: *Child-friendly, quality, playground*

1. INTRODUCTION

Green Open Space is an elongated area/lane and/or cluster that is used more openly, where plants can grow, both natural and intentionally planted [1]. One type of green open space is a city park. There are 14 city parks in Malang, one of them is Taman Cerdas Trunojoyo, which is located on Trunojoyo Street, Malang City. The location is very strategic and can be accessed from anywhere with any vehicle or on foot. The park has playground facilities, fountain play area, seating area, and community reading park.

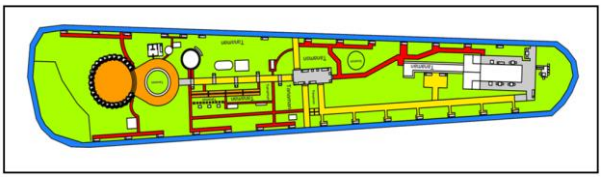

Figure 1 Taman Cerdas Trunojoyo siteplan

Malang City Government intends to increase the level of the city's child-friendliness. To realize Malang City as a Child-Friendly City, playgrounds have begun to be added to some parks. The government also cooperates with companies through the Corporate Social Responsibility program to develop the city. One of which is by providing playgrounds in city parks. Malang City has achieved the Child-Friendly City award with the implementation of child-friendly city indicators reaches 60-70% [2]. The eligibility of Child-Friendly City is evaluated by the Child-Friendly City Indicators. There are 31 Child-Friendly City indicators. One of them is "there are facilities for creative and recreational activities that are child-friendly, outside of school, and accessible to all children". One way to fulfill this indicator is by providing playgrounds.
A city park that facilitates children's play activities must be able to meet the needs of children of any kind. However, there are several problems encountered in the park, such as the park facilities is not disabled-friendly enough and can be dangerous for children. Based on the phenomena, the author is interested in evaluating the child-friendliness quality of Taman Cerdas Trunojoyo.

2. THEORETICAL FRAMEWORK

2.1. Open Space

Open space is a large space in the city that consists of green and nongreen open space [1]. It provides a space for movement, communication nodes, and public space for play and leisure [3]. Open space is formed because of the needs of a place to meet or communicate with each other [4].

There are two types of open space based on the activity that occurs inside of it, which is active open space and passive open space. Active open space is an open space that has human activities inside it. The opposite of active open space is passive open space, an open space that has no human activity in it. Passive open space only acts as an area buffer or just for aesthetic purposes.
Open space has two constituent elements, which is the soft material and hard material. Soft element is an element that can give softness and life, elastic, and flexible (i.e., vegetation). Hard element is an element that can give the nature of an open space become rigid and giving a strong impression of a place (i.e., pavement ways).

2.2. City Park as a Green Open Space

A city park is an open space that is functioning as leisure, education, or other activity's space at the city level [1]. One of the means of the availability of open space in a city is to fulfill the needs of the community of a place to do leisure activities or sport. City parks can be used to do many social activities. It can be used as a green open space with leisure facilities, playgrounds, gardens, sports facilities, and sports areas with green space availability of 30%. Park facilities should able to be accessed by everyone because it is a public green open space. The percentage of green open space availability in a city park is 70-80% of its total area [1].

2.3. Child-Friendly Park

The child-friendly park is a park that provides children needs of their activities. According to UNICEF [5], a child-friendly city is a city, town, or community in which the voice, needs, priorities, and rights of children are an important part of public policies, programs, and decision making. There are five clusters as the aspects of a child-friendly city, according to Permen. PPPA No. 12 Year 2011 [6]. One of it is the fourth cluster: education, leisure, and cultural activities. In the cluster, there are indicators to determine the score of the cluster. One of it says, "The availability of facilities for creative and recreational activities that are child-friendly, outside of school, and are accessible to all children."
Children have the right to have time to rest and make use of their free time to do creative things, such as art and cultural activities. It can be realized by providing a space for children to play and do recreational and creative activities. The availability of playgrounds in city parks can support the child-friendly quality of a city. Children's playground is a place designed for children to play freely to gain excitement, pleasure, and excitement as well as a means of developing their cognitive, social, physical, and emotional abilities [7].
A playground must be designed carefully so it can meet the needs of children's activities. The criteria of a playground designed are shown in Table 1.

Table 1 Qualitative results for park's play, leisure, and sports facilities.

Criteria	Indicator
Safety	The physical condition of the playground facility does not allow/cause accidents to the user while being used
Healthy	Free from things that can cause health problems in the short and long term
Comfort	Physical comfort: freedom of using playground facilities, and not disturbed in doing activities Psychologist comfort: feeling safe from the surroundings and protected from a climate that can disturb the comfort
Ease	All playground facilities can be used, understand, and reachable by all children
Security	Free from any criminal acts and/or vandalism
Beauty	Attractive visually, can encourage people to come and have its uniqueness and identity as a playground

Aside from playground needs, natural space can also be used as a playground too. A playground must be able to flow from one area to another, as open and simple as possible, which can encourage children to use their imagination and having a connection with nature. Natural material (i.e., water, sand, stone) can be used as a medium for children to play and learn as well.

2.4. Child-Friendly Park Design Criteria

The child-friendly park is important for fulfilling children's needs for playing and other activities. A good, safe, and comfortable playground are necessary. Based on the theoretical framework, it can be concluded that we can use four points as the criteria for child-friendly park design.

1. Accessibility:
   Access to the park can be accessed easily for everyone from every kind to access the park and the facilities inside it.
2. Play, leisure, and sports facilities:
   The availability of play, leisure, and sports facilities is needed to fulfill children's needs. These facilities can be used by children to make use of their leisure time to do various activities of art, culture, sport, and other activities.
3. Amenities:
   Amenities can be a complement facility to support visitors doing their activity inside the park.
4. Natural space:
   The availability of natural space can be a support for children to develop their skills.

3. RESEARCH DESIGN

This research is using an evaluation research approach, which attempts to determine whether a program or policy is successful or able to achieve its goals and objectives [8].

The evaluation is presented using the descriptive method, with the main purpose to provide a description using words or numbers about a situation, social, or relationship [8]. This research is using a combined research method (mixed methods) that combines quantitative and qualitative methods to form a new research method. With this method, researchers will be able to obtain a more comprehensive result [9]. The research design used in this paper is a concurrent triangulation design (Figure 2).

3.1. Place and Time of Research Observation

The observation takes place in Taman Cerdas Trunojoyo in Trunojoyo Street, Klojen, Malang City from Monday to Sunday, from afternoon to evening (01.00 PM-06.00 PM).

3.2. Research Population and Sample

The population of this research is visitors of Taman Cerdas Trunojoyo. Among the population, the sample is divided into two categories, which are parents/guardians of the children and children. The sample is chosen by nonrandom sampling with a purposive sampling technique.

3.3. Research Variables

Research variables are something that already decided by the researcher to be studied to gain information about the variable, then the conclusion of the research will be drawn [9]. The aspects are used to evaluate the child-friendly quality of Taman Cerdas Trunojoyo. The aspects that will be used to evaluate the park's child-friendly quality is accessibility, play, leisure, and sports facilities, amenities, and natural space (Table 2).

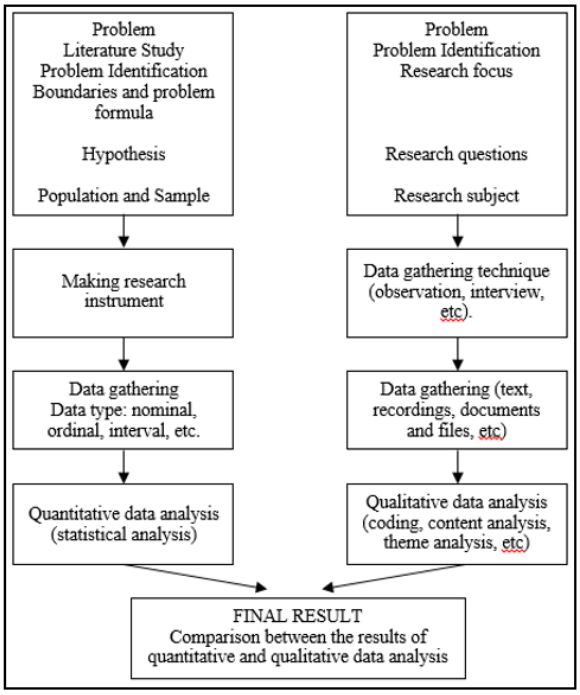

Figure 2 Concurrent triangulation research design diagram

Table 2 Research variables

Aspect	Indicator	Variable
Accessibility	Ease and Security of Park Accessibility	Playground's location security (A_1)
		Information system to park gate (A_2)
		Park accessibility and facilities for various groups (A_3)
		Pedestrian ways maintenance and comfortness (A_4)
		Pedestrian ways safety (A_5)
	Parking Lot	Parking lot availability (A_6)
		Parking lot security (A_7)
Play, Leisure, and Sport Facilities	Playground Facilities	Children can practice social skills and confidence (FRKO_1)
		Physical safety of playground facilities (FRKO_2)
		Surfacing under playground facilities (FRKO_3)
		Educative nature of facilities (FRKO_4)
		Maintenance and comfort of playground facilities (FRKO_5)
	Park Seating	Seating facilities creates social interactions (FRKO_6)
		Maintenance of seating facilities (FRKO_7)
Park Amenities	Sanitation Facilities	Availability of public toilets and washrooms (FP_1)
		Availability of trash can (FP_2)
		Maintenance and comfort of sanitation facilities (FP_3)
	Park Seating Area	Seating area facilities as a place to gather and socialize (FP_4)
Park's Natural Space	Park Vegetations	Comfort with vegetation that shades the park (RA_1)
		Maintenance of park's vegetation giving comfort (RA_2)
	Nature as children area	Nature as the medium for learning and playing for children (RA_3)

3.4. Data Collection Method

The data collection method is divided according to each research method, namely, quantitative and qualitative data.

1. Quantitative Data, gathered using questionnaires. The questionnaire uses a Likert scale with a range of scales of one (Strongly Disagree), two (Disagree), three (Neutral), four (Agree), and five (Strongly Agree).
2. Qualitative Data, gathered by directly observing the park. The researcher observes the facilities and visitor's behavior in the park. Qualitative data is gathered with a camera, pen, and paper.

3.5. Data Analysis Method

The data analysis is divided according to each research method, which is by quantitative and qualitative methods.

1. Quantitative method, is used to understand respondents' perceptions of the child-friendliness quality of Taman Cerdas Trunojoyo. Quantitative data analysis uses several steps, namely mean score analysis, factor analysis, and regression.
2. Qualitative method, is used to compare the observations data with kinds of literature and the researcher's perception.
3. Mixed-Method. The research uses concurrent triangulation design by combining the analysis result to reach a conclusion whether the data is converging into one understanding or divided into different understandings.

3.6. Data Synthesis Method

After the data is analyzed, then the result will be synthesized. Data synthesis is performed by determining whether the analysis result per indicator will come under Poor, Decent, or Good for child-friendliness quality. The synthesis result will then be compared to each respondent group to find out if both groups have the same or different perceptions.

3.7. Conclusion Drawing

Conclusions are drawn from the final results of the analysis and synthesis of qualitative, quantitative, and combined analysis. After the conclusion has been drawn, then the design recommendation will be given.

4. FINDINGS AND DISCUSSION

Taman Cerdas Trunojoyo is a city park that is also a children's playground. This park is located on Trunojoyo Street, Klojen, Malang City. This park is equipped with play and sports facilities to support children's play needs. The park also has a reading room as an educational medium for children and other park visitors. Amenities found in this park are the rinse room, public bathroom, and a seating zone with a tent roof.

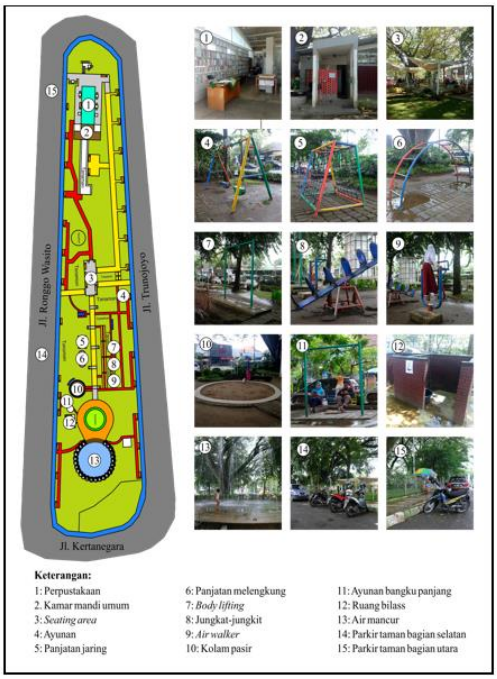

Figure 3 Facilities inside the park.

Referring to Detailed Spatial Plan (RDTR) of Malang 2016-2036 [10], the use of Taman Cerdas Trunojoyo space is included in the Green Open Space-1 sub-zone which is a green open space for urban parks and forests (Figure 4). The location can be easily accessed by both private vehicles and public transportation. There is a parking lot next to the park, so visitors do not need to walk far to reach the park.

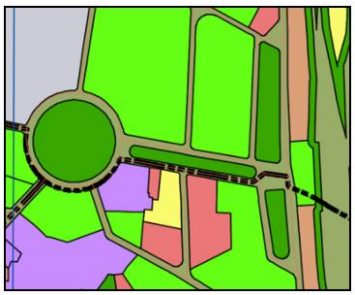

Figure 4 Zoning regulations of green open space for the city park [10]

4.1. Respondent Demographics

There are two groups of respondents of this research, which are parents/guardians of the children group and children group. There are 141 respondents gathered from both groups, with 76 respondents from parents/guardians of the children group and 65 respondents from the children group.

4.2. Qualitative Result

Qualitative data is analyzed by comparing the data with kinds of literature and the researcher's perception. The literature used to analyze the data are theories and standards for playgrounds and parks.

4.2.1. Park Accessibility

The quality of the accessibility of the park gets a decent quality for child-friendliness. This is because the indicator variables do not fully meet the existing standards and theories. Two variables have a good quality (A_1 and A_6), three variables have decent quality (A_2, A_5, and A_7), and two other variables have bad quality (A_3 and A_4).

Table 3 Qualitative result for the park's accessibility.

Indicator	Variable	Quality
Ease and Security of Park Accessibility	Playground's location security (A_1)	Good
	Information system to park gate (A_2)	Decent
	Park accessibility and facilities for various groups (A_3)	Bad
	Pedestrian ways maintenance and comfortness (A_4)	Bad
	Pedestrian ways safety (A_5)	Decent
Parking Lot	Parking lot availability (A_6)	Good
	Parking lot security (A_7)	Decent

4.2.1.1. Playground's location security (A_1)

Park fence is already installed as a barrier to limit outside interaction towards inside and vice versa. The fence is also hard to be climbed by children. There are two park gates placed on the same side of the park. There are benches behind the playground facilities so parents/guardians of children can watch their children easily. The park layout is also separated into two areas, but the areas have not grouped the playground facilities based on the categories (i.e., age group and activity group). Therefore, the quality of this variable is Good and child-friendly.

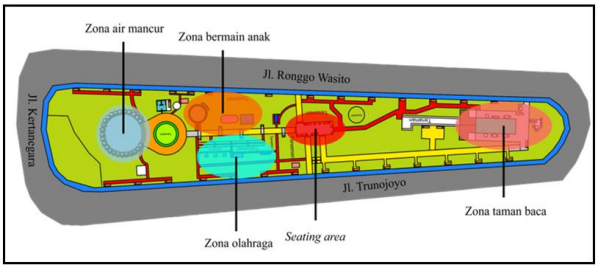

Figure 5 Park area zones.

4.2.1.2. Information system to park gate (A_2)

Park gate is given a different color, so it looks different from the fence. However, there is no specific detail for the gate, so the gate and the fence have the same shape (Figure 6).

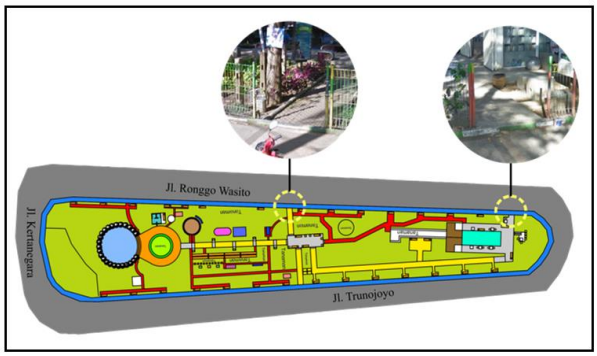

Figure 6 Park gate location and design

4.2.1.3. Park accessibility and facilities for various groups (A_3)

The availability of ramp inside the park is a few. There are only two ramps inside the park. The minimal amount of ramp availability can limit the movement of visitors with disabilities. Pedestrian ways also not disabled-friendly enough to be used by disabled visitors. This is because there is almost no street furniture to help the disabled move and access the park and the facilities. There is no specially designed playground facility for disabled children, so the disabled cannot freely use all playground facilities.

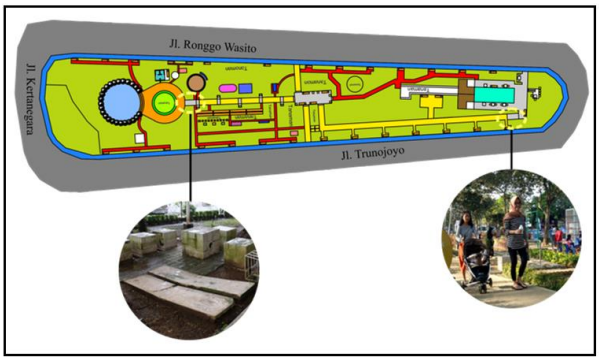

Figure 7 Park ramp

The availability of signage in the park is also minimal. There are signages available with rules and restrictions as the content of the signage. However, there is no signage to show the location for facilities in the park. This makes visitors sometimes did not know the availability of the amenities in the park. The visitor's self-awareness is also poor to keep the park clean and obey the rules in the park.

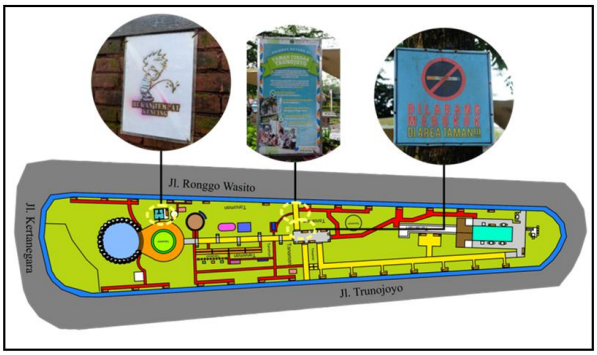

Figure 8 Park signage

4.2.1.4. Pedestrian ways maintenance and comfortness (A_4)

Pavement block design using the pavement block with holes in it. This can decrease the safety and comfort of visitors while walking in pedestrian ways. The level of pedestrian ways is also uneven, so when rain occurs, there are puddles everywhere, even in pedestrian ways.

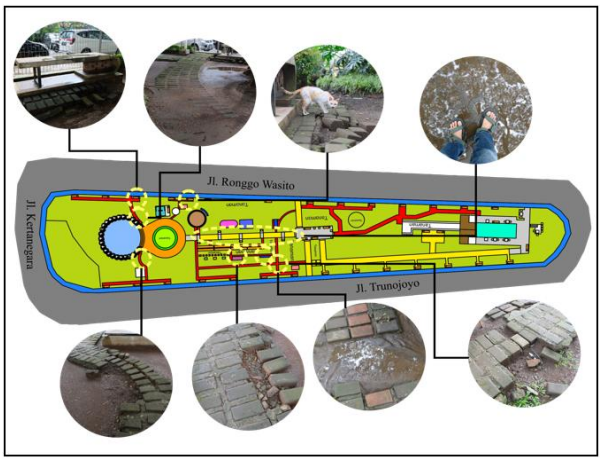

Figure 9 Broken pedestrian ways in the park

Some of the pedestrian ways segment are too narrow and does not meet the standards. Those segments have a width of ±40-80cm, while the standards recommended the minimum of pedestrian ways width is 90cm, while the minimum width for the disabled is 150cm [11].

4.2.1.5. Pedestrian ways safety (A_5)

The pedestrian ways are safe to be accessed anytime because there is lighting available during the night. However, the pavement block design has holes in it. This is unsafe and can make visitors tripped in the park because the holes will be hard to see.

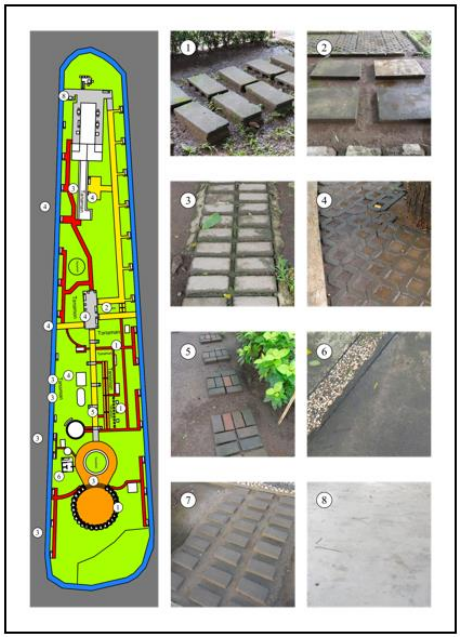

Figure 10 Types of pavement block designs in the park

4.2.1.6. Parking lot availability (A_6)

There is a parking lot located beside the park on Ronggo Warsito Street. The park is located near to park gates, so the visitors can easily access the park without having to walk far to reach the park.

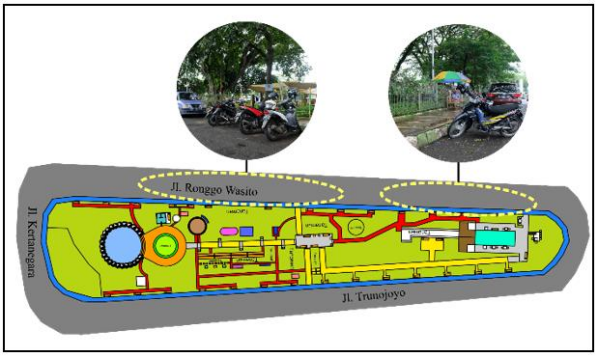

Figure 11 Park's parking lot

4.2.1.7. Parking lot security (A_7)

The parking lot is on-street parking. This can affect the safety of the parking lot because the parking lot is located on a narrow road, with a road width of 10m for two lanes. One side of the road is used for the parking lot, and the other side is used for street vendors. This left the remaining space for the vehicle to move only 6m. Parking officers guard each parking lot, but sometimes the officers did not guard the vehicle properly.

Figure 12 The parking officer

4.2.2. Park's Play, Leisure, and Sport Facilities

The quality of the play, leisure, and sports facilities of the park gets a decent quality for child-friendliness. This is because the indicator variables do not fully meet the existing standards and theories. Two variables have a good quality (FRKO_6 and FRKO_7), three variables have decent quality (FRKO_1, FRKO_2, and FRKO_5), and two other variables have bad quality (FRKO_3 and FRKO_4).

Table 4 Qualitative result for the park's play, leisure, and sport facilities

Indicator	Variable	Quality
Playground Facilities	Children can practice social skills and confidence (FRKO_1)	Decent
	Physical safety of playground facilities (FRKO_2)	Decent
	Surfacing under playground facilities (FRKO_3)	Bad
	Educative nature of facilities (FRKO_4)	Bad
	Maintenance and comforts of playground facilities (FRKO_5)	Decent
Park Seating	Seating facilities creates social interactions (FRKO_6)	Good
	Maintenance and comforts of seating facilities (FRKO_7)	Good

4.2.2.1. Children can practice social skills and confidence (FRKO_1)

Children can play freely using any playground facilities, but there is no playground facility specially designed for disabled children yet. Children can develop their social skills by asking other children to play swing, sand, and water fountain together. Children are also talking to their parents/guardians, asking about the vegetation, animals, and anything that happened inside the park. Children can develop their confidence by showing off their talent to their parents/guardians and other children. Nevertheless, sometimes the parents/guardians of children are too strict for children to do anything they want. This can affect the development of children to explore their skills more.

Figure 13 A mother holds her daughter while climbing

4.2.2.2. Physical safety of playground facilities (FRKO_2)

Based on the comparison between the existing condition of playground facilities and the standards, it is found that some of the playgrounds have not met the standards. According to Baskara [7], playground facilities' design must avoid a sharp angle and recommend the obtuse angle or curved corner. One of the swings have right angles on its corner, and this can be dangerous to children if it hits children's body or head. According to BS EN 1176, BS EN 1177 [12], and the U.S. Consumer Product Safety Commission [13], the playground facilities have already met the standards. However, the seesaw is not meeting the standards because of the tilt angle is too high.

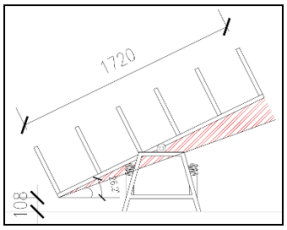

Figure 14 The seesaw's angle not meeting the standard

4.2.2.3. Surfacing under playground facilities (FRKO_3)

Some references suggest adding a protective surfacing below the playground facilities to protect children from severe trauma when they are falling off [7,12,13]. The surfacing used in this park is pavement blocks and earth, which cannot absorb the damaging impact when children fell off. This can be dangerous for children and considered not child-friendly.

Figure 15 No protective surfacing in the park

4.2.2.4. Educative nature of facilities (FRKO_4)

Playground facilities can also be a form of educative media for children to learn with fun. In Taman Cerdas Trunojoyo, some facilities can enhance children's creativity, imagination, and knowledge. Those facilities are playground facilities with natural elements as the play media, such as sand play area and water fountain play area. However, other facilities can only enhance children's motoric and sensory skills.
Aside from that, the types of playground facilities are also minimum of variance. This can prevent children from exploring their skills more. The educational facility's availability is only restricted to the reading park. The playground facilities itself is not educative enough for children to learn new things.

Figure 16 A boy is reading in the park library

4.2.2.5. Maintenance and comforts of playground facilities (FRKO_5)

The playground facilities mainly in good condition. There is a facility that cannot be used to full potential because it has broken, which is the air walker. Overall, the facility needs to be maintained regularly, so the facilities will not rust and break.

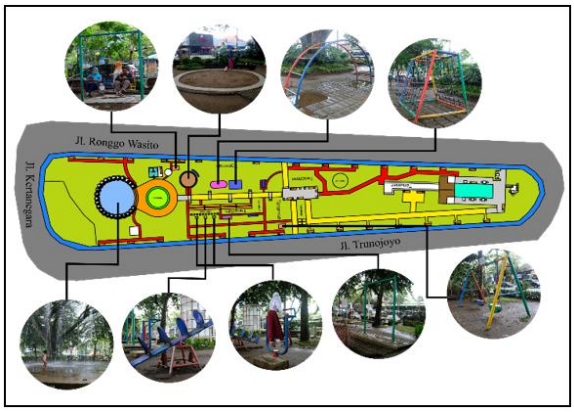

Figure 17 Playground facilities in the park

4.2.2.6. Seating facilities creates social interactions (FRKO_6)

Parents/guardians of children often sat together with other families. This creates interaction between parents/guardians and family as well. Aside from socializing with each other, they also supervise their children and the other.

Figure 18 Parents/guardians of children supervising the children playing

4.2.2.7. Maintenance and comforts of seating facilities (FRKO_7)

The bench park, as the seating facility, is made from concrete and stone. Some of them made of wood. The bench is sturdy and meets the standards of Permen PU No. 03/PRT/M/2014 [11], which requires a bench to be made from sturdy material with long durabilities such as concrete and metal.

Figure 19 Types of seating in the park

4.2.3. Park Amenities

The quality of the amenities of the park gets good quality for child-friendliness. Therefore, it can be said that this indicator is child-friendly. Three variables have a good quality (FP_1, FP_2, and FP_4), one variable had decent quality (FP_3), and no variable have bad quality.

Table 5 Qualitative result for the park's amenities

Indicator	Variable	Quality
Sanitation Facilities	Availability of public toilets and washrooms (FP_1)	Decent
	Availability of trash can (FP_2)	Good
	Maintenance and comfort of sanitation facilities (FP_3)	Decent
Park Seating Area	Seating area facilities as a place to gather and socialize (FP_4)	Good

4.2.3.1. Availability of public toilets and washrooms (FP_1)

Public toilets and washrooms are already provided in the park. The toilets are located behind the park library, while the washrooms are located near the water fountain play area. The washroom can be seen easily because the building can be seen directly. However, the public toilet is hidden behind the library park. No signage can tell visitors the toilet's location. This makes some visitors did not know the availability of public toilets inside the park.

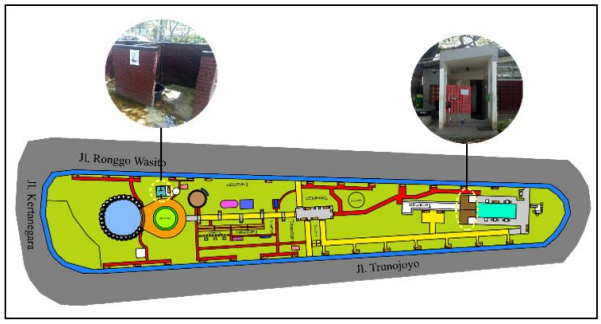

Figure 20 Location of the washroom and public toilet

4.2.3.2. Availability of trash can (FP_2)

Sixteen trash cans are provided in different areas of the park. There is a type of trash can for any kind of garbage, a type divided into two garbage categories (organic and inorganic), and a type divided into three garbage categories (organic, inorganic, and hazardous materials).

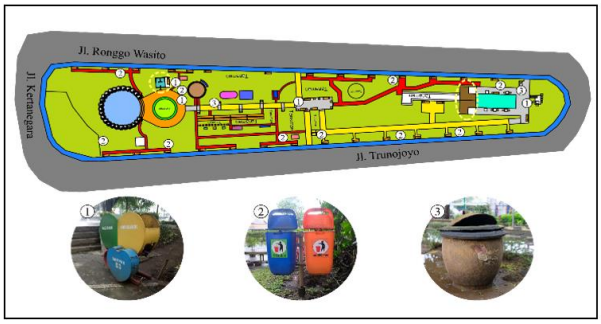

Figure 21 Types of trash cans inside the park

4.2.3.3. Maintenance and comfort of sanitation facilities (FP_3)

The amenities are averagely maintained. It needs to be cleaned regularly and be changed if it is necessary. Some trash cans need to be fixed and changed. Washroom and public toilets also need regular maintenance, so visitors can be comfortable while using it. The shower in the washroom is sometimes not working. Visitors sometimes ignore the rules to not urinate inside the washroom. The public toilet also needs regular cleaning so it can be free from unpleasant odor.

4.2.3.4. Seating area facilities as a place to gather and socialize (FP_4)

The seating area is one of the important places in the park. It can be a shelter for visitors from the sun, place where children and anyone can meet and hang out together.

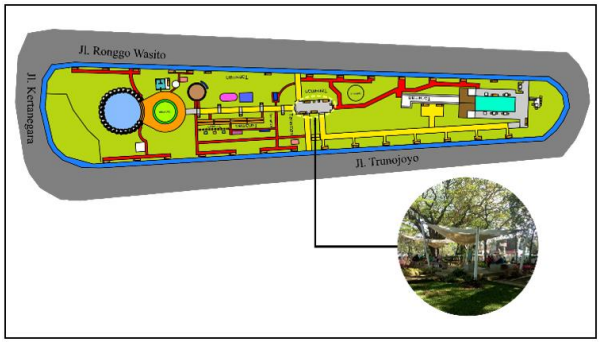

Figure 22 Park seating area

4.2.4. Park's Natural Space

The quality of the natural space of the park gets a good quality for child-friendliness. All variables in this indicator have a good quality and meet almost all of the standards and theories on the literature. Therefore, it can be said that this indicator is child-friendly.

Table 6. Qualitative result for the park's natural space

Indicator	Variable	Quality
Park Vegetations	Comfort with vegetation that shades the park (RA_1)	Good
	Maintenance of park's vegetation giving comfort (RA_2)	Good
Nature as children area	Nature as the medium for learning and playing for children (RA_3)	Good

4.2.4.1. Comfort with vegetation that shades the park (RA_1)

The playground's location must have a micro-climate which shaded by vegetation/buildings [7]. This park is already shaded with trees with large canopy. The trees' canopy is large enough to cover most of the park. The visitors can feel comfortable and refreshed in the park because they are shaded from the sunlight.

Figure 23 Trees with large canopy shading the park

4.2.4.2. Maintenance of park's vegetation giving comfort (RA_2)

Other vegetation, such as bushes and flowers, can be used to add the esthetic of a park or to divide areas of the park [14]. The availability of vegetation can also support the existing ecosystem. The availability of vegetation aside trees can eliminate a negative space. The vegetation can provide comfort to visitors, and overall it has adequately maintained. Visitors suggests that the park needs more colorful vegetation so the park can be even more aesthetic and beautiful.

Figure 24. Small vegetation around the seating area

4.2.4.3. Nature as the medium for learning and playing for children (RA_3)

Nature gives the perfect environment for children to learn. The children can freely explore the park while playing with their friends or parents/guardians, asking their parents/guardians about the nature inside the park. Children can explore their imagination and creativity by building something out of sand or pretending to be a water bender.

Figure 25 Children playing together in the water fountain play area

4.2.5. Final Result of Qualitative Synthesis

Taman Cerdas Trunojoyo gives open space to the community, especially for children, to spend time together with family and friends. Based on all the synthesis of every indicator, it can be said that the child-friendly quality of the park is Good. Therefore, Taman Cerdas Trunojoyo is child-friendly. However, some variables needed improvement to improve the child-friendly quality of Taman Cerdas Trunojoyo.

4.3. Quantitative Result

Qualitative data is analyzed by using SPSS 24. There are three steps in the analysis: 1) mean score analysis, 2) factor analysis, and 3) regression.

4.3.1. Mean Score Analysis

To categorize the average score into classes, the Sturgess formula is needed to determine the class's interval value. Three classes are used to categorize the average score, which is Bad, Decent, and Good. To determine the length of a class interval, the equation used is:

$$i = R/K = (4.54–2.72)/3 = 1.82/3 = 0.6067 = 0.61$$

Based on the formula, the result for the class interval value is 0.61. Based on the class interval value, we can obtain each class's scale. 'Bad' class has a scale of 2.72-3.32, 'Decent' class has a scale of 3.33-3.93, and 'Good' class has a scale of 3.94-4.54.

4.3.1.1. Parents/Guardians of the Children Group

According to parents/guardians of the Children, the quality of child-friendliness of Taman Cerdas Trunojoyo is Decent with the average mean score of 3.88.

4.3.1.1.1. Park Accessibility

The quality of the accessibility of the park gets a decent quality for child-friendliness with an average score of 3.71. There is one variable that has a good quality (A_6), five variables have decent quality (A_1, A_2, A_4, A_5, and A_7), and one variable has bad quality (A_3).

Table 7 Parents/guardians of children's perception of the park's accessibility

Indicator	Variable	Score	Quality
Ease and Security of Park Accessibility	Playground's location security (A_1)	3.87	Decent
	Information system to park gate (A_2)	3.72	Decent
	Park accessibility and facilities for various groups (A_3)	3.24	Bad
	Pedestrian care and comfort (A_4)	3.68	Decent
	Pedestrian facility safety (A_5)	3.80	Decent
Parking Lot	Parking lot availability (A_6)	3.97	Good
	Parking lot security (A_7)	3.70	Decent

4.3.1.1.2. Park's Play, Leisure and Sport Facilities

The quality of the play, leisure, and sports facilities of the park gets a decent quality for child-friendliness with an average score of 3.59. There is one variable that has a good quality (FRKO_6), five variables have decent quality (FRKO_1, FRKO_2, FRKO_4, FRKO_5, and FRKO_7), and one variable has bad quality (FRKO_3).

Table 8 Parents/guardians of children's perception of the park's play, leisure, and sport facilities

Indicator	Variable	Score	Quality
Playground Facilities	Children can practice social skills and confidence (FRKO_1)	3.87	Decent
	Physical safety of playground facilities (FRKO_2)	3.50	Decent
	Surfacing under playground facilities (FRKO_3)	2.72	Bad
	Educative nature of facilities (FRKO_4)	3.64	Decent
	Maintenance and comfort of playground facilities (FRKO_5)	3.45	Decent
Park Seating	Seating facilities creates social interactions (FRKO_6)	4.12	Good
	The comfort of seating facilities (FRKO_7)	3.80	Decent

4.3.1.1.3. Park Amenities

The quality of the amenities of the park gets a good quality for child-friendliness with an average score of 3.99. Two variables have a good quality (FP_2 and FP_4), two variables have decent quality (FP_1 and FP_3), and no variable has bad quality.

Table 9 Parents/guardians of children's perception of the park's amenities

Indicator	Variable	Score	Quality
Sanitation Facilities	Availability of public toilets and washrooms (FP_1)	3.87	Decent
	Availability of trash can (FP_2)	4.30	Good
	Maintenance and comfort of sanitation facilities (FP_3)	3.74	Decent
Park Seating Area	Seating area facilities as a place to gather and socialize (FP_4)	4.08	Good

4.3.1.1.4. Park's Natural Space

The quality of the natural space of the park gets a good quality for child-friendliness with an average score of 4.33. All variables in this indicator have good quality. Therefore, it can be said that this indicator is child-friendly.

Table 10 Parents/guardians of children's perception of the park's natural space

Indicator	Variable	Score	Quality
Park Vegetations	Comfort with vegetation that shades the park (RA_1)	4.54	Good
	Maintenance of park's vegetation giving comfort (RA_2)	4.36	Good
Nature as children area	Nature as the medium for learning and playing for children (RA_3)	4.09	Good

4.3.1.2. Children Group

According to children, the quality of child-friendliness of Taman Cerdas Trunojoyo is Decent with the average mean score of 3.77.

4.3.1.2.1. Parks Acccessibility

The quality of the accessibility of the park gets a decent quality for child-friendliness with an average mean score of 3.57. All variables have a decent quality.

Table 11 Children's perception of the park's accessibility

Indicator	Variable	Mean	Quality
Ease and Security of Park Accessibility	Playground's location security (A_1)	3.62	Decent
	Park accessibility and facilities for various groups (A_2)	3.52	Decent

4.3.1.2.2. Park's Play, Leisure and Sport Facilities

The quality of the play, leisure, and sports facilities of the park gets a decent quality for child-friendliness with a mean score of 3.68.

Table 12 Children's perception of the park's play, leisure, and sport facilities

Aspect	Variable	Mean	Quality
Playground Facilities	Children can practice social skills and confidence (FRKO_1)	3.68	Decent

4.3.1.2.3. Park Amenities

The quality of the park amenities gets a good quality for child-friendliness with a mean score of 4.38.

Table 13 Children's perception of the park amenities

Aspect	Variable	Mean	Quality
Park Seating Area	Seating area facilities as a place to gather and socialize (FP_1)	4.38	Good

4.3.1.2.4. Park's Natural Space

The quality of the natural space of the park gets a decent quality for child-friendliness with a mean score of 3.60.

Table 14 Children's perception of the park's natural space

Aspect	Variable	Mean	Quality
Nature as children area	Nature as the medium for learning and playing for children (RA_1)	3.60	Decent

4.3.2. Factor Analysis

Factor analysis is used to find out what factors influenced the quality of child-friendly in Taman Cerdas Trunojoyo. Factors are formed from the results of data reduction.
The average communalities extraction value is >0.5 (>50%). The factors can be explained by the variables so that the analysis can proceed to the next step. However, there is a variable that is not strong enough to explain a factor, which is "Seating facilities create social interactions."

Table 15 Communalities

Variable	Initial	Extraction
Playground's location security	1.000	.749
Information system to park gate	1.000	.594
Park accessibility and facilities for various groups	1.000	.609
Pedestrian ways maintenance and comfort	1.000	.594
Pedestrian ways safety	1.000	.731
Parking lot availability	1.000	.821
Parking lot security	1.000	.857
Children can practice social skills and confidence	1.000	.606
Physical safety of playground facilities	1.000	.640
Surfacing under playground facilities	1.000	.505
Educative nature of facilities	1.000	.705
Maintenance and comfort of playground facilities	1.000	.735
Seating facilities creates social interactions	1.000	.431
Maintenance and comfort of seating facilities	1.000	.568
Availability of public toilets and washrooms	1.000	.660
Availability of trash can	1.000	.730
Maintenance and comfort of sanitation facilities	1.000	.691
Seating area facilities as a place to gather and socialize	1.000	.509
Comfort with vegetation that shades the park	1.000	.622
Maintenance of park's vegetation giving comfort	1.000	.726
Nature as the medium for learning and playing for children	1.000	.663

To determine how many factors are formed, it is necessary to check the Eigenvalue. If the Eigenvalue is >1, then the component can be used as a factor. Based on Fig. 42, 6 components have an Eigenvalue above 1.

Table 16 Eigenvalues of the Components

Component	Initial Eigenvalues		
	Total	*% of variance*	*Cumulative %*
1	6.453	30.729	30.729
2	2.221	10.578	41.306
3	1.737	8.272	49.579
4	1.211	5.764	55.343
5	1.080	5.145	60.488
6	1.044	4.973	65.461
7	0.993	4.729	70.190
8	0.880	4.192	74.382
9	0.845	4.026	78.408
10	0.759	3.612	82.020
11	0.590	2.810	84.830
12	0.522	2.487	87.317
13	0.459	2.183	89.501
14	0.416	1.979	91.480
15	0.401	1.907	93.387
16	0.342	1.629	95.016
17	0.313	1.489	96.505
18	0.219	1.042	97.546
19	0.213	1.015	98.561
20	0.167	0.793	99.355
21	0.136	0.645	100.000

To determine the variables in each factor, it is necessary to see the results of loading factors from the Rotated Component Matrix (Table 17).

Table 17 Rotated Component Matrix

Variable	Component					
	1	*2*	*3*	*4*	*5*	*6*
A_3	0.715					
FRKO_5	0.688					
FRKO_3	0.646					
FRKO_7	0.608					
FP_3	0.566					
FRKO_4		0.682				
RA_3		0.652				
FP_4		0.597				
FRKO_6		0.543				
FP_1		0.490				
A_5			0.816			
A_4			0.678			
A_2			0.560			
FRKO_1			0.553			
RA_2				0.795		
RA_1				0.756		
FP_2				0.686		
A_6					0.896	
A_5					0.888	
A_1						0.805
FRKO_2						0.579

Based on table 17, the first factor has five variables, the second factor has four variables, the third factor has four variables, the fourth factor has three variables, the fifth factor has two variables, and the sixth factor has two variables.

Table 18 Group of Factors

Factor	Variable	*Loading Factor*
Park Facilities	Park accessibility and facilities for various groups	0.715
	Maintenance and comfort of playground facilities	0.688
	Surfacing under playground facilities	0.646
	Maintenance and comfort of seating facilities	0.608
	Maintenance and comfort of sanitation facilities	0.566
Park as the Place of Activities	Educative nature of facilities	0.682
	Nature as the medium for learning and playing for children	0.652
	Seating area facilities as a place to gather and socialize	0.597
	Seating facilities creates social interactions	0.543
	Availability of public toilets and washrooms	0.490
Ease of Visitor Accessibility	Pedestrian ways safety	0.816
	Pedestrian ways maintenance and comfort	0.678
	Information system to park gate	0.560
	Children can practice social skills and confidence	0.553
Park Comfort	Maintenance of park's vegetation giving comfort	0.795
	Comfort with vegetation that shades the park	0.756
	Availability of trash can	0.686
Parking Lot	Parking lot security	0.896
	Parking lot availability	0.888
Playground Area Safety	Playground's location security	0.805
	Physical safety of playground facilities	0.579

4.3.3. Regression

Regression is used to determine which factor that influence the child-friendly quality of Taman Cerdas Trunojoyo the most. The dependent variable is the average child-friendly quality of Taman Cerdas Trunojoyo per respondent group. The independent variable is the factor value that formed from factor analysis. The results of the regression analysis are as follows.

4.3.3.1. Parents/Guardians of the Children Group

Based on Table 19, the R Square value is 0.721. This shows that the independent variable can explain 72.1% of the dependent variable. The remaining 27.9% is influenced or explained by other variables not included in this research model.

Table 19 Regression analysis for parents/guardians of children group

Model Summary[b]				
Model	*R*	*R Square*	*Adj. R Square*	*Std. Error*
1	0.849[a]	0.721	0.697	0.284

a. Predictors: (Constant), independent variables
b. Dependent variable

Based on Table 20, the conclusion is that the independent variables simultaneously influence the dependent variable because the significance value is 0.000>0.05. All independent variables affect the dependent variable because of the value of Fcount (29.701) > Ftable (2.23).

Table 20 Regression analysis for parents/guardians of children group

ANOVA[a]					
Model	*Sum of Squares*	*df*	*Mean Square*	*F*	*Sig.*
Regression	14.370	6	2.395	29.701	0.000[b]
Residual	5.564	69	0.081		
Total	19.934	75			

a. Dependent variable
b. Predictors: (Constant), independent variables

Based on Table 21, all factors have a significance of 0.000, which means it is below 0.05. This indicates that all factors influence the child-friendly quality of Taman Cerdas Trunojoyo. The most influential factor is Park Facilities because this factor has the largest tcount value (t_{count} (7.547) > t_{table} (1.667)

Table 21 Regression analysis for parents/guardians of children group

Model	Unstd. Coeff.		Std. Coeff.	t	Sig.
	B	*Std. Error*	*Beta*		
(Constant)	3.882	0.033		119.164	0.000
Park Facilities	0.247	0.033	0.480	7.547	0.000
Park as the Place of Activities	0.241	0.033	0.467	7.338	0.000
Ease of Visitor Accessibility	0.155	0.033	0.301	4.739	0.000
Park Comfort	0.127	0.033	0.246	3.871	0.000
Parking Lot	0.124	0.033	0.241	3.791	0.000
Playground Area Safety	0.129	0.033	0.251	3.948	0.000

4.3.3.2. Children Group

Based on Table 22, the R Square value is 0.844 (84.4%). This shows that the independent variable can explain 77.2% of the dependent variable. The remaining 22.8% is influenced or explained by other variables not included in this research model.

Table 22 Regression analysis for children group

Model Summary[b]				
Model	*R*	*R Square*	*Adj. R Square*	*Std. Error*
1	0.919[a]	0.844	0.831	0.204

a. Predictors: (Constant), Independent variables
b. Dependen variable

Based on Table 23, the conclusion is that the independent variables simultaneously influence the dependent variable because the significance value is 0.000>0.05. All independent variables affect the dependent variable because of the value of F_{count} (63.848) > F_{table} (2.23).

Table 23 Regression analysis for children group

ANOVA[a]					
Model	*Sum of Squares*	*df*	*Mean Square*	*F*	*Sig.*
Regression	13.348	5	2.670	63.848	0.000[b]
Residual	2.467	59	0.042		
Total	15.815	64			

a. Dependent variable
b. Predictors: (Constant), Independent variables

Based on Table 24, all factors have a significance of 0.000, which means it is below 0.05. This indicates that all factors influence the child-friendly quality of Taman Cerdas Trunojoyo. The most influential factor is Park Facilities because this factor has the largest t_{count} value (t_{count} (5.190) > t_{table} (2.001))

Table 24 Regression analysis for children group

Model	Unstd. Coeff.		Std. Coeff.	t	Sig.
	B	*Std. Error*	*Beta*		
(Constant)	.414	.214		1.940	.057
Playground's location security	.155	.045	.209	3.409	.001
Park accessibility and facilities for various groups	.164	.035	.274	4.679	.000
Children can practice social skills and confidence	.238	.046	.370	5.190	.000
Seating area facilities as a place to gather and socialize	.209	.042	.275	4.974	.000
Nature as the medium for learning and playing for children	.131	.037	.222	3.496	.001
Playground's location security	0.129	0.033	0.251	3.948	0.000

4.4. Mixed-Method Result

This research is using a mixed-method that compares the analysis and synthesis of qualitative and quantitative methods. After comparing both of the results, a new combined synthesis will be obtained. This gives a new synthesis between the results of qualitative and quantitative analysis and synthesis.

4.4.1. Parents/Guardians of the Children Group

There are three factors with decent quality and three other factors with good quality. If all factors are combined, then the final synthesis for the child-friendly quality of Taman Cerdas Trunojoyo, according to the parents/guardians of the child, is Good. This means that Taman Cerdas Trunojoyo is a child-friendly park. The factor which has the most influence on the park's child-friendliness is Park Facilities.

Table 25 Combined synthesis of parents/guardians of the children group

Factor	Synthesis		Combined Synthesis
	Qualitative	*Quantitative*	
Park Facilities	Decent	Decent	Decent
Park as the Place of Activities	Good	Good	Good
Ease of Visitor Accessibility	Decent	Decent	Decent

Factor	Synthesis		Combined Synthesis
	Qualitative	*Quantitative*	
Park Comfort	Good	Good	Good
Parking Lot	Good	Good	Good
Playground Area Safety	Decent	Decent	Decent
Average			Good

4.4.2. Children Group

There are three variables with decent quality and two other variables with good quality. If the results of all variables are combined, the final synthesis for the child-friendly quality of Taman Cerdas Trunojoyo, according to the children, is fairly child-friendly.

Table 26 Combined synthesis children group

Variable	Synthesis		Combined Synthesis
	Qualitative	*Quantitative*	
Playground's location security	Decent	Decent	Decent
Park accessibility and facilities for various groups	Bad	Decent	Decent
Children can practice social skills and confidence	Decent	Decent	Decent
Seating area facilities as a place to gather and socialize	Good	Good	Good
Nature as the medium for learning and playing for children	Good	Decent	Good
Average			Decent

5. CONCLUSION

Based on the research question, "How is the quality of the Taman Cerdas Trunojoyo with the Child-Friendly Criteria approach?", a mixed-method analysis was conducted to find the answer. Based on the results of qualitative and quantitative research regarding the child-friendly quality of Taman Pintar Trunojoyo, there are differences in the quality ratings between respondent groups, Parents/Guardians of Children, and Children. According to Parents/Guardians of Children, the quality of the Taman Cerdas Trunojoyo is Good, so it is child-friendly. However, according to the Children, the child-friendly quality of this park is decent enough for child-friendliness. These results are supported by quantitative and qualitative analysis and synthesis.
Based on the factor analysis result, six factors affected the child-friendly quality of Taman Cerdas Trunojoyo, according to parents/guardians of children. These factors are Park Facilities, Park as the Place of Activities, Ease of Visitor Accessibility, Park Comfort, Parking Lot, and Playground Area Safety.

Based on the results of the regression analysis, all of the factors that had been identified significantly affected the child-friendly quality of Taman Cerdas Trunojoyo, according to parents/guardians of the children. According to children, all variables also significantly affected the quality of the park as well. However, the most influential factor in the child-friendly quality of Taman Cerdas Trunojoyo is "Park Facilities." The most influential variable, according to children, is "Children can practice social skills and confidence."

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