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Analysis Of Participation Level Of Building Users On School Building Maintenance At Smp Negeri 2 Meulaboh

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Abstract: *School is an institution built as a place for teaching and learning to take place. The function of the school is basically a place for education that is highly expected and maintained to be able to create the potential of qualified and intelligent human resources so that it is recognized by the world. Limitations and the realization of funds for school maintenance is one of the causes of obstacles in realizing the main function of schools as the center of education. As the feasible period increases, the performance of school buildings will decrease. The purpose of this study was to determine the level of participation of the building user community in the maintenance of the Meulaboh 2 Public Middle School building. In this study using a mixed method (mix method), namely qualitative methods and quantitative methods, primary data collection was obtained through interviews, documentation, and distributing questionnaires to respondents, while secondary data collection was obtained from related agencies or institutions. Data processing in this study uses the Likert Scale method, with validity and reliability tests through the SPSS (Statistical Product and Service Solution) program to obtain valid or invalid, whether or not a statement item can be trusted. The number of samples was obtained from calculations using the slovin formula, namely 64 people consisting of 50 students, 9 teachers, 4 school staff and 1 school guard. The results of the analysis obtained were 38 students (76%) included in the high participation category, 12 students (24%) were included in the medium participation category, for 13 respondents (92, 9%) consisting of 9 teachers and 4 staff are included in the high participation category, finally 1 School Caretaker Respondent (7.1%) is included in the moderate participation category, and no Respondent is included in the low participation category. The conclusion shows that the Meulaboh 2 Public Middle School building users participate in the maintenance of the school building and shows that the dominant building users fall into the high participation category*

Keywords: *Participation, Community, Maintenance System, Building School.*

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I. INTRODUCTION

School is an institution built as a place for teaching and learning to take place. The function of the school is basically an educational facility that is highly expected and maintained to be able to create the potential of qualified and intelligent human resources so that it is recognized by the world. Limitations and realization of funds for school maintenance are one of the causes of obstacles in realizing the main function of schools as educational centers, therefore schools as educational centers must be better in their maximum function. The habit of building users who are not good on an ongoing basis can make the school environment not maintained and maintained.

The definition of maintenance according to The Committee On Building Maintenance, Usman, K., et.al (2009) is maintenance is an activity carried out to maintain, renew and also repair all existing facilities as part of a building, both service facilities and the environment around the building so that they remain in standard conditions applicable and maintain the use and value of the building.

Planned maintenance according to opinion Mahfud (2015) regarding planned maintenance, conveys that planned maintenance is maintenance that is organized and carried out for thought in the future and record keeping includes preventive maintenance and corrective maintenance.

In unplanned maintenance according to Mulyandari, et.al (2011) are maintenance activities that occur suddenly beyond predictions or schedules due to damage or non-functioning of a system or equipment. This is very much avoided so that it does not happen because the impact that appears is very large and is detrimental to all parties.

Community participation is a right that belongs to the community to participate fairly in decision-making at all stages of the development process, starting from the initial planning, implementation, monitoring and environmental preservation. Here the community is not only the recipient of facilities and benefits but as the subject of sustainable development (Dewi, Fandeli ,dan Baiquni. 2013).

Community participation in the maintenance of school buildings is a form of community activity(school principals, school staff, teachers, students, and school caretakers) to participate in being responsible for maintaining and caring for the school building together. Community participation in school buildings aims to maintain the function of the building so that it does not suffer damage and realizes a longer building life.

II. RESEARCH METHODS

2.1 Likert scale

The Likert scale is a scale in research data that is used to measure attitudes, opinions, and perceptions of individuals or groups related to social phenomena that are currently the subject of research (Sugiyono, 2017). The way to measure this Likert scale is to ask a number of questions to the respondents who are used as samples. The questions given usually consist of 5 choices and each choice has a score. The table form can be seen in the table below:

Table 2.1 Likert Scale (Form of a Positive Statement)

Category	Score
Strongly Agree (SS)	5
Agree (S)	4
Simply Agree (CS)	3
Disagree (TS)	2
Strongly Disagree (STS)	1

Table 2.2 Likert Scale (Negative Statement Form)

Category	Score
Strongly Disagree (STS)	5
Disagree (TS)	4
Simply Agree (CS)	3
Agree (S)	2
Strongly Agree (SS)	1

2.2 Validity test

The validity test is to determine the validity level of the questionnaire instrument used in data collection. This validity test was carried out to find out whether the items presented in the questionnaire were truly able to express with certainty what would be studied (Sugiono, 2010).

$$r_{xy} = \frac{N\sum XY - (\sum X)(\sum Y)}{\sqrt{[N\sum X^2 - (\sum X)^2][N\sum Y^2 - (\sum Y)^2]}} \quad (2.1)$$

Information :

r_{xy} = correlation coefficient between x and y
n = number of respondents
∑x = number of item scores
∑ y = the total of the total scores obtained by each respondent
∑ x2 = sum of the squares of the grains
∑ y2 = the total of the squared sum of the scores obtained by each respondent
∑xy = the number of multiplication results between the scores of the questionnaire items and the total scores obtained by each respondent (Sugiyono., 2015).

To find out whether the instrument is valid or not, it is done by consulting the correlation coefficient (r) at a one-way 5% significance level. If r count > r table then the instrument can be declared valid, so that the instrument can be declared feasible to collect data.

2.3 Reliability Test

Reliability tests are carried out to determine how far the measurement results remain consistent when measuring two or more times the same symptoms using the same measuring instrument (Sugiono, 2010).

$$r = \left(\frac{k}{k-1}\right)\left[1 - \frac{\sum \sigma_b^2}{\sigma_t^2}\right] \quad (2.2)$$

Information :
r = Reliability
k = Number of questions
$\sum\sigma_b^2$ = Number of item variances
σ_b^2 = Total variance

The Cronbach Alpha technique is used to test the reliability, where an instrument can be said to be reliable if it has a reliability coefficient or alpha of 0.6 or more.

2.4 Participation Value and Percentage

In finding the average score related to participation, Sudjana (2005),the following equation is used (Zifra, Herza., 2021):

$$\bar{x}=\frac{\Sigma x}{N} \quad (2.3)$$

Information:
$\bar{x}$ = Calculated average value
Σx= Total score X
N = Number of research samples

1. Look for the value of questionnaire data processing using the following equation:
   a. Maximum range = High score x number of questions (2.4)
   b. Minimum range = Low score x number of questions (2.5)
   c. Spread distance area = Maximum – minimum range (2.6)
   d. Deviation unit (σ)= Spread distance / Highest scale (2.7)
   e. Theoretical means(μ)= $\frac{\text{Maximum score + minimum score}}{2}$ (2.8)
2. Classify the answers into 3 categories of participation levels using the following equation:
   - $X<(\mu - 1.0\ \sigma)$ Low participation (2.9)
   - $(\mu - 1.0\ \sigma)\leq X\leq (\mu + 1.0\ \sigma)$ Moderate participation (2.10)
   - $(\mu + 1.0\ \sigma)<X$ High participation (2.11)
3. Data analysis is described using the percentage equation as suggested by (Sugiyono, 2008):

$$P=\frac{F}{N}x100\% \quad (2.12)$$

Information :
P = Price percentage sought
F = Total frequency of answers
N = Number of samples
100 = Constant number

Table 2.3 Variables and Indicators

No	Variables	Statement	Answer Choices				
			SS	S	CS	TS	STS
1		The school principal provides information/instructions, outreach and guidance in maintaining school facilities and infrastructure.					
2		The teacher sets a good example for students in maintaining school facilities and infrastructure					
3		The teacher gives an understanding of the importance of student participation in maintaining school facilities and infrastructure					
4		Teachers reprimand students / students who are found to damage school facilities and infrastructure					
5		Often attaches/nails pictures, photos, bulletin boards, wall magazines, and statistics boards on the wall surface in an					

		inappropriate way, causing holes in the wall surface, cracking, cracking, and peeling of the wall plaster.
6		Doodle on walls, doors, and windows using colored pencils, pens, stipo, and markers.
7		Pulling or pushing the table and chairs by sliding, causing the surface of the tile (ceramic) to crack, scratch or come off
8		Students play swing on the door handle (slot handle) causing the bolt handle to come off and break
9	Periodic Maintenance	Students are not careful when playing ball in the yard so that the ball that is hit hits the glass windows, tiles and ceilings
10		Leftover food that fell was not thrown in the trash but trampled on, so that the surface of the floor could be seen with sticky stains.
11		When opening and closing doors/windows, it is done by pulling or pushing/pressing hard, resulting in bumpy bumps on the doors/windows, unable to close completely, worn out hinges and slots.
12		Cleans dirt and moss that sticks to the concrete surface evenly.
13		Carry out periodic checks for possible termite attacks coming through walls or electrical installation pipes.
14		Clean the roof surface from dirt, garbage and tree branches that can damage the roof surface.
15		Make repairs to plaster walls, floors, and ceramics that are peeling or the surface is damaged
16		Maintenance of school buildings is not only the duty of the Education Office, but building users (principals, teachers, school staff, students, and school caretakers) are also responsible for and participate.
17		The teacher checks and keeps the room clean before and after teaching
18		Always flush or turn off the water faucet when finished using the KM/WC.
19		Not immediately mopping the floor surface after spilled drinks, so that the surface of the floor is dull with stains
20		Dirty shoe mats carry residual sand/soil or step on water, without cleaning the footwear directly into the room so that the floor surface is dirty and stained
21	Continuous maintenance	Clean glass and windows, including room dividers (partitions) when dusty
22		Clean dust, stains and cobwebs attached to walls, ceilings and sills, with a broom or brush
23		Clean dust, dirt, and mop all stairs including footings and handrails
24		Cleaning all toilet and other equipment, including toilet seats, urinals, sinks, zinc, vanity top surrounds, faucets, mirrors and other equipment
25		Throw away used tissues, ashes and cigarette butts, used food wrappers in their place
26		Repair it immediately if a leaky roof covering is found to avoid weathering of the wood frame structure
27	Emergency Maintenance	Repairing ceilings that are damaged on the surface due to leaks, and replace them with new ones.

III. RESULTS AND DISCUSSIONS

3.1. Validity test

Table 2.4 Recap of the Output of Validity Test Results

Question	Count	Rtable (n=64)	Information
X1	0.386	0.3233	Valid
X2	0.398	0.3233	Valid
X3	0.672	0.3233	Valid
X4	0.415	0.3233	Valid
X5	0.444	0.3233	Valid
X6	0.537	0.3233	Valid
X7	0.456	0.3233	Valid
X8	0.602	0.3233	Valid
X9	0.470	0.3233	Valid
X10	0.403	0.3233	Valid
X11	0.646	0.3233	Valid
X12	0.583	0.3233	Valid
X13	0.517	0.3233	Valid
X14	0.528	0.3233	Valid
X15	0.352	0.3233	Valid
X16	0.659	0.3233	Valid
X17	0.626	0.3233	Valid
X18	0.626	0.3233	Valid
X19	0.706	0.3233	Valid
X20	0.428	0.3233	Valid
X21	0.503	0.3233	Valid
X22	0.827	0.3233	Valid
X23	0.776	0.3233	Valid
X24	0.760	0.3233	Valid
X25	0.803	0.3233	Valid
X26	0.838	0.3233	Valid
X27	0.447	0.3233	Valid

3.2. Reliability Test

Table 2.5 Output Recap Reliability Test Results

No	Indicator	Cronbach's Alpha>0.6	Information
1	X1	0.926	Reliable
2	X2	0.926	Reliable
3	X3	0.923	Reliable
4	X4	0.926	Reliable
5	X5	0.925	Reliable
6	X6	0.926	Reliable
7	X7	0.924	Reliable
8	X8	0.926	Reliable
9	X9	0.926	Reliable
10	X10	0.923	Reliable
11	X11	0.924	Reliable
12	X12	0.925	Reliable
13	X13	0.925	Reliable
14	X14	0.927	Reliable
15	X15	0.923	Reliable
16	X16	0.923	Reliable

17	X17	0.923	Reliable
18	X18	0.922	Reliable
19	X19	0.928	Reliable
20	X20	0.926	Reliable
21	X21	0.921	Reliable
22	X22	0.921	Reliable
23	X23	0.921	Reliable
24	X24	0.921	Reliable
25	X25	0.920	Reliable
26	X26	0.920	Reliable
27	X27	0.925	Reliable

3.3. Participation Category Value

1. Maximum span = high score x number of questions
   = 5 x 27
   = 135
2. Min span = low score x number of questions
   = 1 x 27
   = 27
3. Spread distance = maximum range – minimum range
   = 135 – 27
   = 108
4. Deviation unit (σ) = 108 / 5
   = 21.6
5. Theoretical mean (μ) $= \frac{\text{maximum score + minimum score}}{2}$

   $= \frac{135 + 27}{2}$

   = 81
6. Classifying answers into 3 categories of participation levels, namely:
   - **a. Low participation category**

     X< (μ - 1.0 σ)
     X< (135 - 1.0 x 21.6)
     X< (81 – 21.6)
     X< 59.4 (score less than 59.4 low participation category)
   - **b. Moderate participation category**
     (μ - 1.0 σ)≤ X ≤(μ + 1.0 σ)
     (81 - 1.0 x 21.6)≤ X ≤(81 + 1.0 x 21.6)
     59,4 ≤ X ≤102.6 (score from 59.4 – 102.6 medium participation category)
   - **c. High participation category**
     (μ + 1.0) < X
     (81 + 1.0 x 21.6)102.6 (score greater than 102.6 in the high participation category)

Table 2.6 Participation Categories

Low participation	Moderate participation	High participation
Score less than 59.4	Score between 59.4-102.6	Score above 102.6

Table 2.7 Student Participation Recapitulation

RESPONDENT	TOTAL SCORE	PARTICIPATION LEVEL
1	124	Tall
2	96	Currently
3	104	Tall
4	111	Tall
5	107	Tall
6	115	Tall
7	97	Currently
8	119	Tall
9	116	Tall
10	110	Tall
11	134	Tall
12	119	Tall
13	109	Tall
14	100	Currently
15	121	Tall
16	115	Tall
17	132	Tall
18	110	Tall
19	109	Tall
20	119	Tall
21	113	Tall
22	113	Tall
23	110	Tall
24	102	Currently
25	109	Tall
26	107	Tall
27	97	Currently
28	109	Tall
29	95	Currently
30	117	Tall
31	112	Tall
32	90	Currently
33	115	Tall
34	100	Currently
35	97	Currently
36	105	Tall
37	101	Currently
38	113	Tall
39	104	Tall
40	95	Currently
41	119	Tall
42	105	Tall
43	102	Currently
44	113	Tall
45	106	Tall
46	116	Tall
47	108	Tall
48	117	Tall
49	114	Tall
50	117	Tall

Table 2.8 Recapitulation of the Participation of Teachers, Staff and School Caretakers

RESPONDENT	TOTAL SCORE	PARTICIPATION LEVEL
1	117	Tall
2	135	Tall
3	119	Tall
4	115	Tall
5	119	Tall
6	125	Tall
7	120	Tall
8	132	Tall
9	129	Tall
10	125	Tall
11	102	Currently
12	134	Tall
13	135	Tall
14	135	Tall

IV. CONCLUSION

The results of the analysis of the level of participation of building users based on students conducted on 50 students at SMP Negeri 2 Meulaboh were 38 people with a percentage of 76% included in the high participation category, 12 people with a percentage of 24% were included in the medium participation category, and none Students / students who fall into the category of low participation. Furthermore, the level of participation of building users based on teachers, staff and school caretakers was carried out on 14 respondents at SMP Negeri 2 Meulaboh, namely 13 people with a percentage of 92.9% were in the high participation category, 1 person with a percentage of 7.1% was in the medium participation category. , and there are no teachers, staff and school guards who fall into the low enrollment category

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REFERENCES

[1]. Usman, K., et.al, 2009. Kajian Manajemen Pemeliharaan Gedung (Building Maintenance), Jurnal Teknik Sipil, Universitas Lampung, Lampung..
[2]. Mahfud, 2015. Manajemen Pemeliharaan Bangunan Gedung Sekolah, Jurnal Sains Terapan, 1(1), 7-18
[3]. Mulyandari, et.al, 2011. Pemeliharaan bangunan (Basic Skill Facility Management), Yogyakarta.
[4]. Dewi, Fandeli ,dan Baiquni. 2013. Pengembangan Desa Wisata Berbasis Partisipasi Masyarakat Lokal Di Desa Wisata Jatiluwih. Jurnal kawistara, vol.3
[5]. Sugiyono, 2017. Metode Penelitian Kuantitatif, Kualitatif, dan R&D. Bandung : Alfabeta, CV.Azevedo, K.S.P., Santos, M.C., Chung, S., Bicudo, A.J.A., 2017. Phaseolus vulgaris bean byproduct meal in diets for juvenile nile tilapia. Boletim de Indústria Animal 74, 79–85.
[6]. Sugiono, 2010. Metode penelitian kuantitatif, Kualitatif dan r dan d.Alfabeta, CV,Bandung..
[7]. Sugiyono., 2015. Metode Penelitian Kuantitatif. Kualitatif dan R&D. Bandung Alfabeta.Azevedo, F.R. de, Leitão, A.C.L., Lima, M.A.A., Guimarães, J.A., 2007. Efficacy of natural products to control Callosobruchus maculatus (Fab) in stored Material e Métodos. Revista Ciência Agronômica 38, 182–187.
[8]. Sudjana., 2005. Metode Statistika. Bandung: Tarsito.
[9]. Zifra, Herza., 2021. Optimalisasi Sistem Pemeliharaan Gedung Sekolah Berbasis Partisipasi Masyarakat. TGA. Universitas Teuku Umar. Maulaboh
[10]. Sugiyono, 2008. Metode Penelitian Bisnis. Alfabeta : Bandung.

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