

Assistance in Manufacturing *Photocells* in Village Hall Lights as Efforts to Improve Lighting Effectiveness

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Abstract

The lighting in the Sumberbendo village hall already uses LED lights and energy-saving lamps with varying capacities. Based on the results of observations, The system installed to operate the lights is still in operation manually through switch Which connected to light lighting. Pattern like This requires residents who live around the Village Hall to regularly devote their time For turn on And turn off light the. Condition in the field found there are still many PJU lights that have not been turned off even though the conditions are bright, and Not yet turned on although condition Already start dark, naturally matter This will affecting comfort and safety as well as the use of electrical energy that does not efficient. Based on the results of discussions with the Village, community service activities This will focused on modification light lighting on Hall Village with adding *photocell technology* so that the Village Hall lights operate can taking place in a way automatic . Beside That, done Also transfer knowledge and *photocell installation skills* for several residents for development installation of several public street lighting and anticipating any problems. The results of the activities carried out were the installation of *photocell technology* at the Village Hall and exists enhancement knowledge And Skills partner related with technology *photocell* .

Keywords : Hall Village, *Photocell*, Sumberbendo, Devotion Public.

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Introduction

In general, Mantup District is located 20 km south of the city Regency Lamongan, Which border with region Regency Mojokerto And Gresik Regency. Has an area of 9,307,285 Ha. By land use: - agricultural land: 5,952.60 Ha - forest land: 2,306 Ha Sumberbendo Village is one of the villages in Mantup sub-district, Lamongan Regency. Condition region village Sumberbendo is plain low, part land productive use as rice fields. Village Sumberbendo consists of 4 hamlets, Sumpu hamlet, hamlet Suklan, Petuk hamlet and Kedungwungu hamlet. existence Sumberbendo Village Hall the on location Which very strategic Which Where settlement Which is at around the village hall it is not too dense so in terms of lighting it is possible carried out by residents around the village hall. In this case, the time the lights turn on and off depends on the initiative of local residents. Based on innovations developed by student KKN so done addition sensors *photocell*.

Photocells or called Also with *Photocontrol* is A component electronics that work based on the intensity of the light they receive. *Photocells* works For Light Lighting Which Work in a way automatic with use sensors intensity light Which called with *Photocells* (*photocontrol*).*Photocell* is a replacement for a manual switch (switch) to a switch that works automatically automatic (Philanthrope, 2020).

Method Work from *Photocells* that is decide source electricity going to light moment the intensity of the light is bright, so the lamp will turn off, and

vice versa, *the photocell* will connect and supply an electrical source to the lamp when the light intensity is low (dark), so the lights will turn on. The *photocells* are connected and disconnected simultaneously automatic (Fauziyah, 2020).

In technology *photocell* there is sensors LDR (*light dependent resistor*) And electronic circuit other. LDR functions as a switch automatic (on/off) Which works based on the intensity of sunlight captured by the sensor. LDR is a type of resistor whose resistance value can change according to intensity light received, the resistance value rises and falls will have an effect on electric current that goes to the load or light. With the addition of technology It is hoped that *the photocell* in the Village Hall lighting lamp will operate the lamp can taking place automatically, steadily maintain existing conditions (MCB installed) as protection current more (Mirza, 2016).

Method

A. Preparation

Preparation can done with method collection information beginning about The condition of the Sumberbendo Village Hall is that the timing of the lighting lights is inaccurate when the sun has set and vice versa when the sun has risen the lights in the Village Hall still haven't turned off. This is because of the system The lighting in the Village Hall still uses manual switches and is lacking initiative from Inhabitant around Hall Village.

B. Observation

Student KKN convey Meaning And objective activity in form

observation and installation activities for installing *photocells* on lights at the Village Hall Office Sumberbendo. Activity the addressed to device And public village Sumberbendo. Student KKN, especially from Program Studies Electro do installation installation panel *photocell* in the pavilion office Hall Village Sumberbendo. Observations were carried out one week before, such as asking permission from the device village, determining the place to install the panel, determining the electricity route, measuring the place installation and preparation of tools. Then, in the following week it is done installation *photocell* in Hall Village Sumberbendo.

C. Activity Planning

Activity planning can be carried out after the observations have been carried out, but first you need to do a survey about the condition of the Village Hall Office It's dark when the sun has set and vice versa when the sun is up rise light Still light up. So that program This walk in a way maximum, so required planning in a way appropriate, including:

- 1) Compile activity proposals For help in observation and installation running text in Office Hall Village Sumberbendo.
- 2) Observing the importance of holding a program because of the waste of energy that occurs in Office Hall Village.
- 3) Compile time implementation activity And request permission to party Which authorized with contact Device Village local Which has willing provide means activity.
- 4) Prepare equipment For installation *photocell* .

- 5) Place an order tools And equipment Which needed in accordance with the size Which has determined in accordance with size the place.

D. Implementation Activity

Method implementation in installation installation *photocell* in Office Hall Village Sumberbendo is as following:

- 1) Student prepare means infrastructure And equipment Which used in installation running text.
- 2) Student request permission For carry out installation *photocell* to device village including head village .
- 3) Student KKN technique Electro do installation running text.
- 4) Student KKN Study Program other help in installation *photocell* in Office HallSemberbendo Village.
- 5) Match track switch light For automatic flame And dead in accordance withthinking student And device village.
- 6) Evaluate results installation *photocell* .

E. Technique Execution

Implementation activity devotion on public This done with use method implementation. As for systematic implementation activity devotion This is as following : Do mounting installation *photocell* in accordance track lighting Which Already determined.

planting Fisher To use glue panel on wall And ensure panel installed with strong.

- The second stage, install the cables to *the photocell* and panel using pliers and screwdriver. After that, the cable channels from *the photocell* are assembled with panels as needed which has been agreed. After that,

arrange the cable flow neatly using clamps cable.

- Stage third, after installation *photocell* And panel electricity finished, cable panel connected to the source electricity Which There is in Office Village.



Figure 1. Team KKN do installation *photocell*

F. Monitoring And Evaluation

Monitoring and evaluation is carried out to determine implementation progress activities, and assess the suitability of activities that have been implemented with planning. Evaluator can also function as a motivator for KKN students, Device Village And Public in increase understanding Which related with Sumberbendo Village automation. The follow-up to this activity is: expected in the future they more repair facility as well as means And infrastructure in Village Sumberbendo especially the facilities Street lights.

Results and Discussion

This activity begins with a survey by interviewing the device village Sumberbendo And observation in environment village with method do observation on light PJU Village. After

done observation in condition Evening day light PJU No light up because No There is somebody Which turn it on, and vice versa when it starts to be morning the PJU lights remain on. Then next with do Installation installation And introduction to automation Technique use sensors *Photocells* Which Can turn on lights automatically when it's dark and turns off the lights automatically when bright conditions. After installation is carried out student make a transfer knowledge and skills to the Village and several residents for development at some point. The obstacle we experienced was that the village did not have one tool Which complete For do installation installation, so that student initiative bring tool- tool And equipment which exists in each other's house.

Conclusion

Activity devotion to public Which held in Village Sumberbendo can accomplished with fluent, as much 1 units technology *photocell* installed successfully on light PJU Village Sumberbendo and works fine so that operation light PJU can taking place in a way automatic based on condition time that is Afternoon And Evening day. Increasing knowledge And Skills related partners technology And method installation *photocell*.

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