

ABSTRACT

Comfortable is an aspect that need be considered when carrying out activities in the room. HVAC (Heating, Ventilation, and Air Conditioning) systems are needed to create a thermally comfortable room. This study aims to compare thermal comfort in knowing the ratio of thermal comfort and air quality in rooms using air conditioners and not using air conditioner. The method used to determine thermal comfort for room users is the PMV method. PMV (Predicted Mean Vote) is an average value that describes how the thermal sensation felt by residents to the room they occupy. While the air quality is measured by knowing the level of CO₂ in the air-conditioned room and not air-conditioned. This study measures and retrieves data using a predetermined measuring instrument and is carried out in the identified space and classification. The data taken included data on temperature, humidity, carbondioxide levels in the room and survey data of each student in the room. The results showed a significant relations that found with linear regression analysis between AMV and PMV, where the PMV value has a value of 1 point greater than the AMV value. This shows that respondents who do activities in the rooms are familiar with the condition of the room and they can tolerate conditions that are classified as warm when viewed in the standard. And obtained from the measurement of CO₂ in air-conditioned and non-air-conditioned rooms found that the air-conditioned room has an average concentration of CO₂ of 1076.54 ppm higher than the room that is not air-conditioned has a concentration of 683.65 ppm.

Key word: Thermal comfort, air quality, PMV, HVAC.