

ABSTRAK

Kabupaten Aceh Tengah berada pada ketinggian 1.000–1.200 mdpl dengan iklim sejuk yang mendukung pariwisata dan *homestay*. *Bie Homestay* sebagai *homestay* perintis dengan desain segitiga berbahan alami masih memerlukan peningkatan kenyamanan termal sesuai SNI 03-6572-2021 tentang ventilasi dan pengkondisian udara. Penelitian ini menggunakan metode campuran dengan pendekatan kuantitatif melalui pengukuran suhu, kelembapan, dan kecepatan udara, serta kualitatif melalui survei pengunjung. Data diperoleh pada dua tipe bangunan, yaitu superior dan suite, lalu dianalisis menggunakan metode PMV (*Predicted Mean Vote*) dan PPD (*Predicted Percentage of Dissatisfied*) mengacu pada standar ASHRAE 55:2023. Hasil pengukuran menunjukkan suhu 16–24,6 °C, kelembapan 66–73%, dan kecepatan udara $\leq 0,1$ m/s. Nilai PMV -1,85 hingga -0,82 dengan PPD 53,4%–25,4% menandakan kondisi belum optimal. Berdasarkan kuesioner, ketidakpuasan tertinggi terjadi pada pagi dan sore (65–75%), sedangkan siang hari merupakan periode paling nyaman dengan kepuasan 85%. Solusi yang disarankan meliputi pemanas sederhana, ventilasi adaptif, dan desain bangunan sesuai iklim lokal.

Kata kunci: kenyamanan termal, PMV, PPD, Homestay, Aceh Tengah, ASHRAE 55:2023

ABSTRACT

Central Aceh Regency is located at an altitude of 1,000–1,200 meters above sea level with a cool climate that supports the development of tourism and homestays. Bie Homestay, as a pioneering homestay with a triangular design made from natural materials, still requires improvements in thermal comfort in accordance with SNI 03-6572-2021 concerning ventilation and air-conditioning systems in buildings. This study employed a mixed-methods approach, combining quantitative measurements of air temperature, relative humidity, and air velocity with qualitative data obtained from visitor surveys. Data were collected from two building types, namely superior and suite, and analyzed using the PMV (Predicted Mean Vote) and PPD (Predicted Percentage of Dissatisfied) methods, based on ASHRAE Standard 55:2023. The results showed indoor temperatures ranging from 16–24.6 °C, relative humidity of 66–73%, and air velocity ≤ 0.1 m/s. PMV values ranged from -1.85 to -0.82 with PPD values of 53.4%–25.4%, indicating suboptimal thermal conditions. Based on questionnaires, the highest dissatisfaction occurred in the morning and afternoon (65–75%), while midday was the most comfortable period with an average satisfaction level of 85%. Practical solutions recommended include the use of simple heating systems, adaptive ventilation, and building designs that respond to the local climate.

Keywords: *thermal comfort, PMV, PPD, homestay, Central Aceh, ASHRAE 55:2023*