

ABSTRAK

EVALUASI TINGKAT KENYAMANAN AYAM BERBASIS ANALISIS PERILAKU PADA KANDANG *CLOSE HOUSE* DAN *OPEN HOUSE* MENGGUNAKAN *DEEP LEARNING*

(2026: xiv + 57 Halaman + 30 Gambar + 8 Tabel + 30 Daftar Pustaka + 12 Lampiran)

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Evaluasi tingkat kenyamanan ayam merupakan aspek penting dalam meningkatkan kesejahteraan ternak dan produktivitas peternakan. Penelitian ini bertujuan mengembangkan sistem evaluasi kenyamanan ayam berbasis analisis perilaku menggunakan metode *Convolutional Neural Network* (CNN) dengan pendekatan *transfer learning* melalui arsitektur MobileNetV2. Dataset penelitian terdiri atas citra ayam pada kandang *close house* dan *open house* yang dikelompokkan ke dalam tiga kategori perilaku, yaitu makan (*feeding*), minum (*drinking*), dan istirahat (*resting*). Tahapan penelitian meliputi praproses citra, pelatihan model, pengujian, dan evaluasi menggunakan metrik *precision*, *recall*, *F1-score*, dan *accuracy*. Hasil penelitian menunjukkan model mampu mengklasifikasikan perilaku ayam dengan baik, memperoleh *precision* tertinggi sebesar 0,97, *recall* 0,90, *F1-score* 0,94 pada kelas *resting*, serta *accuracy* tertinggi sebesar 0,90 pada kelas *drinking*. Hasil klasifikasi dimanfaatkan untuk menganalisis distribusi perilaku sehingga memberikan gambaran tingkat kenyamanan ayam pada kedua sistem kandang.

Kata kunci: Evaluasi kenyamanan ayam, Analisis perilaku, CNN, *MobileNetV2*, *Transfer Learning*, *Close House*, *Open House*.

ABSTRACT

EVALUATION OF CHICKEN COMFORT LEVEL BASED ON BEHAVIOR ANALYSIS IN CLOSE HOUSE AND OPEN HOUSE CAGES USING DEEP LEARNING

(2026: xiv + 57 Pages + 30 Images + 8 Tables + 30 References + 12 Attachments)

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Evaluating chicken comfort is essential for improving animal welfare and poultry production. This study aims to develop a chicken comfort evaluation system based on behavioral analysis using a Convolutional Neural Network (CNN) with a MobileNetV2 transfer learning architecture. The dataset consisted of chicken images collected from close house and open house housing systems and categorized into three behavioral classes: feeding, drinking, and resting. The research workflow included image preprocessing, model training, testing, and performance evaluation using precision, recall, F1-score, and accuracy. Experimental results demonstrated that the proposed model achieved reliable classification performance, with the highest precision of 0.97, recall of 0.90, and F1-score of 0.94 for the resting class, while the highest accuracy of 0.90 was obtained for the drinking class. The classification results were subsequently utilized to analyze behavioral distributions, providing an overview of chicken comfort levels in both close house and open house systems.

Keywords: *Chicken comfort evaluation, Behavior analysis, CNN, MobileNetV2, Transfer learning, Close house, Open house*