

**ANALISIS PENGARUH VARIASI *GEAR RATIO* TERHADAP
PERFORMASI SEPEDA MOTOR DENGAN SISTEM *CONTINUOUSLY
VARIABLE TRANSMISSION* (CVT)**

Oleh

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ABSTRAK

Penelitian ini bertujuan untuk mengkaji pengaruh perubahan *gear ratio* terhadap performa sepeda motor yang dilengkapi dengan sistem *Continuously Variable Transmission* (CVT). Penelitian ini dilakukan karena adanya penurunan fungsi sepeda motor yang dilengkapi dengan sistem transmisi CVT. Upaya penelitian ini melibatkan variasi tiga ukuran *gear ratio*: 14/43 (Variasi 1), 13/44 (Standar), dan 13/46 (Variasi 2). Tujuannya adalah untuk mengkaji peningkatan performa sepeda motor yang dilengkapi dengan sistem transmisi CVT. Penelitian ini merupakan investigasi eksperimental yang akan menguji pengaruh perubahan *gear ratio* terhadap torsi, daya, dan efisiensi bahan bakar. Pengumpulan data untuk setiap variabel diulang sebanyak 10 kali pada putaran mesin berkisar antara 3000 hingga 5000 rpm. Setelah penelitian, hasil uji torsi puncak dicapai dengan *gear ratio* 13/46 pada 5,75% saat beroperasi pada 3000 rpm. Selanjutnya, peningkatan daya paling signifikan terjadi pada *gear ratio* yang sama yaitu 13/46 sebesar 4,89%, dan penurunan konsumsi bahan bakar paling besar terjadi pada *gear ratio* 13/46 sebesar 0,02% saat dijalankan pada putaran 3500 rpm.

Kata kunci: Variasi *gear ratio*, Transmisi Variabel Kontinu, Performa kendaraan.

ANALYSIS OF THE EFFECT OF GEAR RATIO VARIATIONS ON MOTORCYCLE PERFORMANCE WITH CONTINUOUSLY VARIABLE TRANSMISSION (CVT) SYSTEM

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ABSTRACT

This study aims to examine the effect of changes in gear ratio on the performance of motorcycles equipped with a Continuously Variable Transmission (CVT) system. This study was conducted due to the decline in the function of motorcycles equipped with a CVT transmission system. This research effort involved variations in three gear ratio sizes: 14/43 (Variation 1), 13/44 (Standard), and 13/46 (Variation 2). The aim was to examine the increase in performance of motorcycles equipped with a CVT transmission system. This study is an experimental investigation that will test the effect of changes in gear ratio on torque, power, and fuel efficiency. Data collection for each variable was repeated 10 times at engine speeds ranging from 3000 to 5000 rpm. After the study, the peak torque test results were achieved with a gear ratio of 13/46 at 5.75% when operating at 3000 rpm. Furthermore, the most significant power increase occurred at the same gear ratio of 13/46 by 4.89%, and the greatest decrease in fuel consumption occurred at the gear ratio of 13/46 by 0.02% when running at 3500 rpm.

Keywords: *Gear ratio variation, Continuous Variable Transmission, Vehicle performance.*

