

## INTISARI

AKMALIA LUTHFIA HERDANA, 2025. *Studi Design Requirements And Objectives (DR&O) Untuk Optimalisasi Fasilitas Sepeda Kampus Universitas Gadjah Mada Berdasarkan Preferensi Pengguna* (Dibimbing oleh Ir. Nursyamsu Hidayat, S.T., M.T., Ph.D.)

Universitas Gadjah Mada memiliki fasilitas sepeda kampus sebagai sarana transportasi ramah lingkungan, namun pemanfaatannya belum optimal. Penelitian ini bertujuan untuk mengidentifikasi preferensi pengguna terhadap fasilitas tersebut dan menyusun strategi pengembangan menggunakan pendekatan *Design Requirements and Objectives* (DR&O). Metode yang digunakan adalah kuantitatif, dengan penyebaran kuesioner kepada mahasiswa UGM yang pernah menggunakan sepeda kampus. Data dianalisis menggunakan *Exploratory Factor Analysis* (EFA) dan *Confirmatory Factor Analysis* (CFA) untuk mengidentifikasi faktor utama preferensi pengguna.

Hasil CFA menunjukkan tiga faktor utama yang memengaruhi preferensi pengguna, yaitu: (1) kualitas infrastruktur sepeda kampus, (2) aksesibilitas dan dukungan sistem, serta (3) kenyamanan penggunaan sepeda. Ketiga faktor tersebut memenuhi kriteria validitas konvergen dan reliabilitas.

Melalui pendekatan DR&O yang mencakup tahapan *Understand, Define, Diverge, Converge, Sketch, dan Test & Learn*, penelitian ini merumuskan sejumlah solusi prioritas, seperti perbaikan jalur sepeda, pengembangan aplikasi peminjaman digital berbasis poin, serta penyediaan fasilitas keselamatan dan kenyamanan. Rancangan solusi dituangkan dalam bentuk prototipe yang direkomendasikan untuk diimplementasikan secara terbatas di lingkungan kampus UGM.

**Kata kunci:** sepeda kampus, preferensi pengguna, EFA, CFA, DR&O, desain solusi.

## ***ABSTRACT***

AKMALIA LUTHFIA HERDANA, 2025. *A Study of Design Requirements and Objectives (DR&O) for Optimizing Campus Bicycle Facilities at Universitas Gadjah Mada Based on User Preferences (Supervised by Ir. Nursyamsu Hidayat, S.T., M.T., Ph.D.)*

*Universitas Gadjah Mada provides a campus bicycle facility as an environmentally friendly mode of transportation, yet its utilization remains suboptimal. This study aims to identify user preferences regarding the facility and to formulate development strategies using the Design Requirements and Objectives (DR&O) approach. A quantitative method was employed by distributing questionnaires to UGM students who had previously used the campus bicycles. Data were analyzed using Exploratory Factor Analysis (EFA) and Confirmatory Factor Analysis (CFA) to identify the main constructs of user preferences.*

*The CFA results revealed three primary factors influencing user preferences: (1) the quality of campus bicycle infrastructure, (2) accessibility and system support, and (3) comfort of bicycle use. All three factors fulfilled the criteria for convergent validity and reliability.*

*Through the DR&O framework—which consists of the stages Understand, Define, Diverge, Converge, Sketch, and Test & Learn—this study formulated several prioritized solutions, including infrastructure improvements, the development of a point-based digital rental application, and the provision of safety and comfort facilities. These solutions were presented in the form of prototypes, recommended for limited implementation within the UGM campus environment.*

**Keywords:** *campus bicycle, user preferences, EFA, CFA, DR&O, design solutions.*