College Navigator: An Interactive R Shiny Platform for Transparent and Evidence-Based Decision-Making

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Abstract

The U.S. college application process is often characterized by fragmented information sources, ambiguous ranking methodologies, and tools that prioritize institutional prestige over student-institution fit. Such conditions complicate students' ability to evaluate institutions holistically and increase reliance on external heuristics rather than data-driven criteria. We present *College Navigator*, an interactive R Shiny application that leverages the U.S. Department of Education's College Scorecard dataset to support more transparent and evidence-based decision-making in the college application process. The system aggregates data from more than 6,600 institutions and 3,300 variables into a unified platform with three key features: (1) a College Finder feature that allows users to filter institutions based on self-defined parameters; (2) a College Comparison tool that enables side-by-side evaluation of two colleges across financial, academic, and graduation outcome metrics; (3) a Composition Dashboard that visualizes gender and racial distributions to provide a comprehensive look on student body profiles. By consolidating disparate data into a single, user-friendly interface, *College Navigator* reduces cognitive overload, improves interpretability, and reframes the application process around systematic evaluation rather than externally imposed rankings. This work demonstrates the potential of data-driven tools to enhance the decision-making process in higher education.