Data Article

Learning analytics: Dataset for empirical evaluation of entry requirements into engineering undergraduate programs in a Nigerian university

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ABSTRACT

In Nigerian universities, enrolment into any engineering under-graduate program requires that the minimum entry criteria established by the National Universities Commission (NUC) must be satisfied. Candidates seeking admission to study engineering discipline must have reached a predetermined entry age and met the cut-off marks set for Senior School Certificate Examination (SSCE), Unified Tertiary Matriculation Examination (UTME), and the post-UTME screening. However, limited effort has been made to show that these entry requirements eventually guarantee successful academic performance in engineering programs because the data required for such validation are not readily available. In this data article, a comprehensive dataset for empirical evaluation of entry requirements into engineering undergraduate programs in a Nigerian university is presented and carefully analyzed. A total sample of 1445 undergraduates that were admitted between 2005 and 2009 to study Chemical Engineering (CHE), Civil Engineering (CVE), Computer Engineering (CEN), Electrical and Electronics Engineering (EEE), Information and Communication Engineering (ICE), Mechanical Engineering (MEE), and Petroleum Engineering (PET) at Covenant University, Nigeria were randomly selected.

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Entry age, SSCE aggregate, UTME score, Covenant University Scholastic Aptitude Screening (CUSAS) score, and the Cumulative Grade Point Average (CGPA) of the undergraduates were obtained from the Student Records and Academic Affairs unit. In order to facilitate evidence-based evaluation, the robust dataset is made publicly available in a Microsoft Excel spreadsheet file. On yearly basis, first-order descriptive statistics of the dataset are presented in tables. Box plot representations, frequency distribution plots, and scatter plots of the dataset are provided to enrich its value. Furthermore, correlation and linear regression analyses are performed to understand the relationship between the entry requirements and the corresponding academic performance in engineering programs. The data provided in this article will help Nigerian universities, the NUC, engineering regulatory bodies, and relevant stakeholders to objectively evaluate and subsequently improve the quality of engineering education in the country.

Specifications Table

Subject area	*Engineering Education*
More specific subject area	*Learning Analytics*
Type of data	*Tables, graphs, figures, and spreadsheet file*
How data was acquired	*For the five-year period of admission reported in this data article (2005–2009), the entry age, SSCE aggregate, UTME score, CUSAS score, and the CGPA of the undergraduates were obtained from the Student Records and Academic Affairs unit*
Data format	*Raw, analyzed*
Experimental factors	*Engineering undergraduates without all of the required variables (entry age, SSCE aggregate, UTME score, CUSAS score, and the CGPA) were excluded in this study*
Experimental features	*On yearly basis, first-order descriptive statistics of the dataset are presented in tables. Box plot representations, frequency distribution plots, and scatter plots of the dataset are provided to enrich its value. Furthermore, correlation and linear regression analyses are performed to understand the relationship between the entry requirements and the corresponding academic performance in engineering programs*
Data source location	*The dataset provided in this article were obtained at Covenant University, Canaanland, Ota, Nigeria (Latitude 6.6718° N, Longitude 3.1581° E)*
Data accessibility	*In order to facilitate evidence-based evaluation of the entry requirements into engineering programs, the comprehensive dataset is made publicly available in a Microsoft Excel spreadsheet file*

Value of the data

- The data is highly imperative for empirical evaluation of the relationship between entry qualifications and the academic performance of engineering undergraduates in Nigerian universities. This will help in determining the suitability and appropriateness of the admission policy set by universities and the NUC to engineering education in Nigeria [1,2].