

## **Abstract**

This paper examines two different methodologies to a classification problem of higher education loan applicants. The paper looks into the allocations made by the Higher Education Loans Board (HELB) relative to the economic status of the applicant. In this article, we modeled Higher Education Loans Board (HELB) loan application data from three public universities to determine whether the loan was allocated based on the needs of the respective applicants. The data was classified into two natural categories of those not allocated the loan (0) and those allocated the loan (1). This paper classified further to consider the amounts awarded by the HELB. This was possible since we observed that HELB loans were awarded in distinct categories (Kshs 0, Kshs 35,000, Kshs 40,000, Kshs 45,000, Kshs 50,000), Kshs 55,000 Kshs 60,000). In this study, we used ordinal logistic regression and multiple binary logistic regressions in classifying the applicants into the identified categories. The models were generated that included all predictor variables that were useful in predicting the response variable. This study found that HELB allocate a loan amount to Kshs 40,000 but anything behold Kshs 40,000 is based on information provided by an applicant. The study revealed that the loans were not awarded based on the need of respective applicants. This has led to misclassification when allocating loan. The study found that wealth and amount of fees paid for siblings were other factors that could be considered to identify needy applicants. This results show that an ordinal regression model gives accurate estimates that can enable HELB make a viable awarding decision. It is expected that proper determination of the most accurate model will go a long way in minimizing the number of mis-classifications when awarding HELB loan. The study raises questions on the criteria used by HELB in loan allocation but further studies may be commissioned to confirm or disapprove our findings.