ACEIoT

UNIVERSITY of RWANDA
College of Science and Technology

Africa Center of Excellence in Internet of Things (ACEIoT)

Research Seminar

Modelling Classroom Space Allocation at University of Rwanda-A Linear Programming Approach

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Abstract:

Education and training play a key role as the human capital function. This is especially true for tertiary education. However, infrastructure and equipment limitations are some factors that limits levels of students' enrolment in universities.

This is much so the case in developing countries where much of the infrastructure developments are donor-funded. For institutional managers and administrators, the allocating of the limited available classroom space is a constant problem that needs sophisticated approaches to deal with. Linear Optimization technique has shown promise in dealing with this problem. This research seeks to assess the Rwandan education system and highlight the strides made to broaden access to tertiary education. Using the data accessed from the College of Science and Technology for the 2019/2020 academic year, a linear programming model is formulated to assess the level of usage of the available classroom space at the College.

The model is solved using the Dual Simplex algorithm via the Cplex solver implemented in AMPL. A solution analysis shows that, out of the 68 classrooms available on the Nyarugenge campus, only 18 with a seating capacity of 2,147 are being used to facilitate the learning of approximated 4,088 students, and that 50 classrooms with a seating capacity of 1,506 are being underutilized or not being used at all. Relevant recommendations including that the college explores the usage of virtual laboratory platforms to overcome space and material limitations associated with physical laboratories are presented.

DATE & TIME:

11th June ,2021

10:00 am to 11:00