

# Institutional Facilities and the Quality of University Education in Uganda

Godfrey Bagonza<sup>1</sup>, Nicholas Itaaga<sup>2</sup>, Anthony Muwagga Mugagga<sup>2,\*</sup>

<sup>1</sup>Faculty of Education, Kyambogo University, Kampala, Uganda

<sup>2</sup>School of Education, College of External Studies, Makerere University, Kampala, Uganda

\*Corresponding author: [gbagonza@live.co.uk](mailto:gbagonza@live.co.uk)

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**Abstract** This study investigated the effect of institutional facilities on the quality of university education in Uganda in Uganda. Quality of university education was measured by satisfaction of students with their current university experience and their labour market expectations. Institutional facilities were measured by adequacy of classroom space and environment, Library facilities and availability of books, Laboratory facilities and availability of teaching apparatus, and Computer facilities and Internet Access. A correlational, cross-sectional survey design was used with quantitative approaches to collect data from a sample of 300 university students of the graduating class and qualitative approaches to collect data from 12 university heads of academic departments and 12 human resource managers of selected employers. The study found a positive significant correlation between institutional facilities and the quality of university education in Uganda. The study recommends that improving the quality of university facilities will improve efficiency in teaching and learning which in the long run should improve the quality university graduates.

**Keywords:** *quality of university education, institutional facilities, retention and course completion, employment expectations, earnings expectations*

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## 1. Introduction

Over the last eight decades, researchers and scholars have been interested in measuring the quality of university education [1,2,3]. While US research on university quality concentrated on reputational studies for ranking and rating universities, UK research focused on whether the different measures of institutional quality are reflected in the labour market outcomes of graduates [4,5,6].

This current study investigated how institutional facilities were affecting the quality of university education in Uganda. Adequacy of institutional facilities was measured by lecture room space, library facilities and space, laboratory facilities for teaching science and practical oriented courses, and access to computers and internet.

The quality of university education is defined as an improvement of all aspects of teaching and learning and ensuring excellence so that recognizable and measurable learning outcomes are achieved by all university learners [7]. In this study the quality of university education is analyzed in the context of educational outcomes in form of knowledge, skills and productive attributes which are rewarded in the labor market

## 1.1. The Theoretical View

This study was guided by the human capital theory advanced by Theodore Shultz [8] which suggests that individuals and nations spend on education in order to take advantage of better job opportunities and better earnings [9,10,11]. Many researchers agree that investment in education and training largely affects the growth of individuals' wages, the productivity of firms, and the growth of the national economy [12]. In a related way [13] show that the firm's competencies or competitive advantage is induced by the investment in human capital entailed with value creating potential.

Studies further suggest that individual decisions to pursue higher education involves an informal analysis of the costs of education as measured against the expected value of the returns to that education [14,15,16]. [17] notes that the human capital theory is based on the idea that education endows individuals with productivity-enhancing human capital and that this productivity results in increased earnings in the labour market.

This study therefore investigates how university facilities are affect or facilitating acquisition of productive skills among university students which should in the long run be rewarded in the world of work.

## 1.2. The Problem

The demand and supply of university education in Uganda are expanding and this is indicated by the rise in the number of students looking for university places; the increase in the number of public and private universities; and the raise in the private and public cost of education. Economic Theory would suggest that these changes in the university sector should benefit individuals who participate in education and the nation in terms of the contribution of the educated to national wealth.

However, there is concern that growth in university provision in Uganda has not been efficient at producing graduates who are relevant to the Ugandan labour market. This has contributed to high levels of graduate unemployment at 36% of graduates who are unemployed [18]. There is oversupply of graduates of arts and humanities and shortages of manpower in areas of science and technology.

This study investigated on how university facilities are contributing to graduates skills which are acquired from the university and how it is affecting their labour market expectations.

## 1.3. Purpose of the Study

The purpose of this study was to examine the relationship between institutional facilities and the quality of university education in Uganda.

## 1.4. Objectives of the Study

1. To find out how institutional facilities affect retention and course completion by current university students.
2. To establish how institutional facilities affect employment expectations of university students.
3. To examine how institutional facilities affect earnings expectations of university graduates.

## 1.5. Research Hypotheses

1. Institutional Facilities are positively related to university students' retention.
2. Institutional Facilities are positively related to university students' employment expectations.
3. Institutional Facilities are positively related to university students' earnings expectations.

## 2. Methodology

### 2.1. The Research Paradigm, Design and Approach

This study was leaning more on the positivist research paradigm which is rooted on the ontological principle and doctrine which suggests that truth and reality are free and independent of the viewer and observer [19,20,21]. The study followed a correlational cross-sectional survey research design which mainly allows quantitative approaches which enable the sampling of a large numbers of 'units of analysis' in a relatively short time and enabled

the generalization of findings to many universities in Uganda [22,23,24]. To a small extent, qualitative approaches were used to corroborate findings got from the quantitative approaches.

### 2.2. Study Population, Sample Size and Selection

The general population for this study included all actors and stakeholders in the university education sector in Uganda. The target population for this study, included all enrolled students in private and public universities; academic heads of departments in private and public universities; and human resource managers of employers of graduates in Uganda.

The accessible population were the university students selected from six universities (three private and three public) and they were the principal subjects for the study. In order to complement the findings from the students, interviews were conducted with twelve (12) academic heads of departments selected from the six universities and twelve (12) human resources managers from two commercial banks and two telecom companies.

A sample of 300 students was selected for this study using the stratified random sampling methodology to include 50 students from each of the six sampled universities. The sample of 300 subjects was appropriate for this study because following the [22] sampling table of sample size determination a minimum sample of 300 elements for the population of 100,000 and above is representative enough.

### 2.3. Methods of Data Collection and Research Instruments

The structured questionnaire was used as an empirical method to collect data from university students as principal subjects. A structured questionnaire was preferred for this study because the study requires standardized data on facts and opinions to be provided by respondents and the respondents would give answers to identical items. Interviews were used to collect qualitative data from purposively selected heads of academic departments from the six selected universities, and human resource managers from the six selected employers.

### 2.4. Methods of Data Analysis

Data screening was done to check for missing values. Descriptive statistics specifically the mean, the standard deviation, and the Shapiro-Wilk test along with histograms and scatter plots were used to check whether data fulfilled the assumptions of normality, linearity, and bivariate normal distribution and if there were extreme outliers.

The spearman rank-order correlation (*rho*-coefficient) was conducted in IBM SPSS 24 to measure the strength and direction of the correlation between the predictor variables of internal efficiency and those of the quality of university education. A multiple regression analysis was run to establish which university facilities were most important in determining the quality of university graduates in Uganda.

### 3. Findings of the Study and Discussion

#### 3.1. Descriptive Statistics

Descriptive statistics were analysed to explain the central position, the distribution and pattern of responses on the different variables and also explain the spread of the data. The *mean* was analysed to describe the central position of the responses for each of the variables of interest in the dataset. The *standard deviation* was analysed for each of the variables of interest to describe how spread the responses were from the central position. The *Shapiro-Walk test*, *histograms* and *the scatter plot* were used to test whether data was normally distributed. The findings are presented in [Table 1](#).

**Table 1. Descriptive Statistics for Response on Adequacy of Teaching Facilities**

Variable	Descriptive Statistics			
	Alpha	Mean	SD	Shapiro-Wilk test
Adequacy of Facilities	0.903	2.34	1.102	0.863
Lecture room space	0.903	2.22	1.066	0.865
Library space and books	0.900	3.02	1.438	0.880
Computer and Internet Access	0.903	2.46	1.112	0.90

Source: Primary Data.

The major descriptive statistics to establish whether data was normally distributed include the mean and standard deviations. From [Table 1](#), the mean for lecture room space was 2.34 and the SD was 1.102; library space and availability of relevant books was 2.22 with the SD of 1.066; the mean for laboratory facilities 3.02 with the SD of 1.438; and the mean for computer and internet access was 2.46 with the SD of 1.112. These findings suggest a normal distribution of responses given the fact that respondents scores ranged from 1 to 5 where 1 was strongly agree and 5 strongly disagree. The attribute laboratory facilities seems to be skewed to the right of the normal curve with the mean of 3.02 and SD of 1.438 probably because most of the respondents who did not do the science courses scored the neutral position but the findings still indicate a normal position.

#### 3.2. Correlation between University Facilities and the Quality of University Education

Although there are usually many facilities and infrastructure in the university, lecture room space and

environment; library space and availability of relevant books; science laboratory and accompanying equipment and specimen; and computer and internet access are considered the most important factors in influencing learning at the university. In this study, these facilities were rated in terms of their adequacy according to the opinion of the students but also how they affected students' willingness to complete their programmes of study/retention and how they influenced students' labour market expectations in terms of employment and earnings. The findings on this are presented in [Table 2](#).

The results in [Table 2](#) suggest a positive significant correlation between students' rating of the adequacy of university facilities and the quality of university education in Uganda. The correlations between students' rating of adequacy of lecture room space and course completion/retention is  $Rho = 0.215$  and the P-value = 0.001, and between adequacy of lecture room space influencing employment prospects was  $Rho = 0.115$  with the P-value of 0.070, and adequacy of lecture room space and influence on earning prospects  $Rho = 0.200$  with the P-value of 0.002. Although the correlation for adequacy lecture room environment and employment prospects is low with  $Rho = 0.115$  and the P-Value=0.070, all these results are significant at the 0.01 level suggesting that lecture room space is an important factor in retaining students in the university but also in influencing their labour market expectations.

On the other hand, the correlation between library space and availability of Relevant Books and students' completion/retention has  $Rho = 0.296$  and P-Value=0.000; with employment prospects has  $Rho = 0.252$  and the P-value of 0.001; and with earnings expectations  $Rho = 0.201$  with P-value=0.001. All these results are significant at the 0.01 level indicating that library facilities motivate students to stay in the university and also influence their labour market expectations in terms of employment and earnings.

In a related way, the findings in [Table 2](#) suggest that the correlation between availability of laboratory facilities with relevant equipment and completion of course/retention  $Rho = 0.298$  with the P-Value=0.000; influence on employment expectations  $Rho = 0.236$  with the P-value of 0.000; and influence on earnings expectations has  $Rho = 0.376$  and the P-Value of 0.000. These findings are significant at 0.01 level and they suggest that good laboratory facilities motivate students to complete their course of study and these facilities also have an effect on students' labour market expectations in terms of employment and earnings.

**Table 2. Correlation between rating of adequacy of university facilities and the quality of university education**

Adequacy of University Facilities	Indicators of the Quality of University Education					
	Retention and Completion		Employment Prospects		Earnings Prospects	
	Rho	P-Value	Rho	P-Value	Rho	P-Value
Adequacy of Lecturer Room Space	0.215	0.001	0.115	0.070	0.200	0.002
Library Space and availability of Relevant Books	0.296	0.000	0.252	0.001	0.201	0.001
Rating of laboratory facilities and relevant equipment	0.298	0.000	0.236	0.000	0.376	0.000
Rating of Computer and Internet Access	0.163	0.010	0.249	0.000	0.220	0.000

Source: Primary Data. \*\*\*Correlation is significant at the 0.01 level (2-tailed).

Finally, availability of computer facilities and internet access are positively and significantly correlated with course completion and retention with  $Rho=0.163$  and P-value of 0.010; influence on employment expectations  $Rho=0.249$  with P-value of 0.000; and influence on earnings expectations  $Rho=0.220$  with P-value of 0.000. Although significant, the correlation for computer and internet access and course completion/retention is relatively weak  $Rho=0.010$  and P-value of 0.010 compared to employment expectations and earning prospects suggesting that most students did not think having computers and internet influenced their stay in the university but they thought computer and internet access had a strong effect on their labour market expectations in terms of employment and earning prospects.

### 3.3. Multiple Regression Results

The purpose of the regression analysis was to establish which of the university facilities was more statistically significant in determining university students' outcomes. Table 3 contains Model Summary and ANOVA results for the three dependent factors of quality of university education, namely; retention, employment prospects, and earning prospects.

Table 3. Model Summary and ANOVA Results

IV: University Facilities	DV: Indicators of Quality of University Education		
	Retention	Employment Prospects	Earning Prospects
R	0.346	0.317	0.379
R-Square	0.120	0.101	0.144
Adjusted R-Square	0.105	0.086	0.130
F-Statistic	8.336	6.824	10.292
P-Value	0.000	0.000	0.000

Source: Primary Data.

The results in Table 3 suggest that the value of  $R=0.346$  for course completion or retention,  $R=0.317$  for employment expectations, and  $R=0.379$  for earning expectations. These values indicate a good predication of the dependent variables course completion, employment expectations, and earnings expectations. In a related way, the R-Square value indicates that the predictors of the independent variable 'university facilities' explain 12.0% of variability in retention, but 10.1% of variability in employment prospects and 14.4% of variability in earnings prospects.

These findings are supported by interviews with the selected employers who suggested that all university facilities were important to give students a conducive learning environment and develop in them confidence that they can perform in the world of work. For instance one of the employers commented that:

*Universities need to create a conducive learning environment with sufficient facilities which will enable learners to acquire practical skills which are needed by employers. Learners should be helped to develop the capability to compete and win on the labour market, perform well on the job and work in various locations. They should be helped to know that the world of work*

*is highly competitive and students look at higher education as preparation to obtain a better position in the highly competitive labour market. Therefore, universities should endeavour to provide facilities which match the status of employing companies if students are to be confident and impress when they are in employment.*

### 3.4. Conclusions of the Study

Adequacy of university facilities including lecture room space, library facilities, laboratories facilities, and computer and internet access have an effect on the quality of university graduates

### 3.5. Recommendations of the Study

1. There is need to increase financial resources both by the government and the institutions in order to improve on teaching facilities such as lecture rooms, library space, laboratory facilities, and computer and internet access in both the private and public universities in Uganda.
2. Both private and public universities need to improve facilities for teaching science disciplines since there is evidence that science courses have higher potential for employment and higher returns for the economy compared to arts courses.

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