

## STUDENT DIGITAL ADMISSION AND ACADEMIC MANAGEMENT IN PUBLIC UNIVERSITIES IN WESTERN KENYA

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### Abstract

COVID-19 crisis forced Education Systems worldwide to find alternatives to in-person Management. As a result, digital management of student's academics was used on an unprecedented scale. The purpose of the study was to examine the influence of digital platform on the management of student's academics in public universities in western Kenya. The study was designed to examine the use of digital tools on Admission in management of student's academics in public universities in western Kenya. The target population was picked from 1043 respondents comprising 543 university academic staff in Western Kenya comprising; lecturers, CODs' and 500 students. The study adopted a sample size of 289 respondents that were a representative of the study population. The mixed research design was adopted where both qualitative and quantitative approaches were used. Sampling involved the use proportionate stratified random sampling. Data collection instruments included the use of questionnaires, interviews and observation. Data was analyzed using Descriptive statistics; Mean median and standard deviation while inferential statistics used were Logistic regression analysis and Chi square test. The study was informed by the theory of online collaborative learning and the management theory. The outcome displayed that student digital admission had some significance on academic management in public universities in Western Kenya with a constant coefficient value of 2.534. Based on the results of this study, it was concluded that digital admission of students offers consistent evaluation techniques, assessment, tracking, monitoring and evaluation of students. This study recommends that admission of students in universities should be done through the digital platform in order to reach out many students and especially those who are very far from the university.

**Key words:** Digital tools, Digital delivery and E-management

### Introduction

At a time when knowledge and information flow rapidly, the application of digital platforms covers various fields and industries. Based on different positions or points of view, definitions differ. Digital platform refers to the technology that streamlines and manages operations. It's

therefore the process that students and instructors use to manage and learn institutional processes. The digital platform enables instructors and students to share information and collaborate with each other hence creating a robust network that ensures efficiency, credibility and integrity of the academic process (Agbatogun, 2013). Anshari, et al. (2016). considered digital management as a digital means of acquiring digital information for online or offline management activity through wired or wireless networks.

Student's academic Management is the ability to design pedagogical strategies that achieve academic outcomes for students, effective admissions and registration processes, as well as student transitions and graduations. The concept of academics management was developed by Richard Smith of Central Queensland University (Australia) and is derived from architectural design (the ingenious arrangement of resources for definite goals) and is best depicted as deliberate intent. Academic management then means an emphasis on designing and implementing pedagogical strategies that achieve learning outcomes (Opataye, 2021). . Underlying the premise of academic management is a new set of knowledge and skills, collectively referred to as future orientation, which attempts to prepare the mindsets and skill sets of teaching graduates for the conditions of social change pervading local and global societies in the 21st century. An expert in the management of academics is referred to as an administrative manager. Complementing the theory and practice of academic management is the academic management design process (LMDP) (Rizwan, et al. 2016) .

### **Theoretical Review**

This study was guided by the management theory. Throughout history, the development of various theories has had a profound effect on the education system. Behaviorism emerged in the early 20th century. According to Watson (1913) and Skinner (1953), this theory is concerned with the observable behavior of humans and animals rather than the unobservable events that

take place in their minds. It also relates our development and growth to our response to our environment. It focuses on one particular view of learning: behavior change achieved through large repetitions of desired actions, rewarding good habits and discouraging bad habits. In the second half of the 20<sup>th</sup> century, behaviorism was largely overshadowed by the consequences of the cognitive revolution. Unlike behaviorism, cognitivism focuses on internal mental processes such as thinking, memory, and problem-solving. According to this theory, knowledge can be understood as symbolic mental constructions, hence the name constructivism (Piaget, 1964).

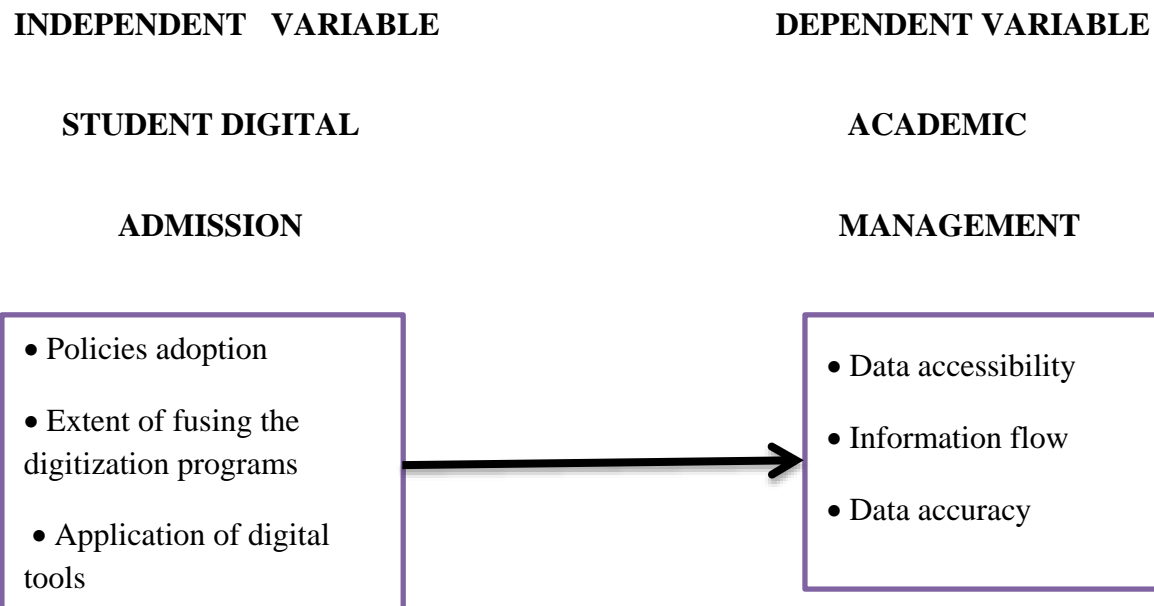
Constructivism emerged as a theory explaining how knowledge is constructed using prior information that has been developed in each individual as a result of other experiences or learning. In its approach to education, this theory places great emphasis on the way knowledge is created to fit the world. Piaget (1964) focuses on how knowledge is constructed from interaction with the environment, while Vygotsky (1978) emphasizes the idea of how the social environment enables the internal reconstruction of each individual. The most recent theory is connectivism, proposed by Siemens (2005) and Downes (2010). Connectivism attempts to understand learning as a process of connecting specialized nodes or information sources; this learning may reside in non-human devices.

Siemens (2005), states that learning is a process that takes place in a nebulous environment of shifting fundamental elements not entirely under the control of the individual. Learning that resides outside of us focuses on connecting specialized information sets, and the connections that allow us to learn more are more important than our current state of knowledge.

### **Conceptual Framework**

A conceptual framework illustrates the expected relationship between variables. It defines the relevant objectives for the research process and maps out how they come together to draw coherent conclusion. It shows the independent variables and the dependent variables. (Thomas,

A.S. 2012). The independent variables are the digital platform while the dependent variable are academic affairs management as follows.



### Hypotheses

The study hypothesized that:

- i. There is no statistical significance in the use of digital tools on admission in management of student's academics in public universities in Western Kenya.

### Methodology

The study adopted a sample size of 289 respondents that were a representative of the study population. The mixed research design was adopted where both qualitative and quantitative approaches were used. According to Kothari, (2014), both qualitative and quantitative approaches employ the method of collecting information by interviewing and administering questionnaire to a sample of individuals. Sampling involved the use proportionate stratified random sampling. Data collection instruments included the use of questionnaires, interviews and

observation. Data was analyzed using Descriptive statistics; Mean median and standard deviation while inferential statistics used were Logistic regression analysis and Chi square test.

### Logistic regression model

The Logistic regression model was used and it's given by;

$$\begin{aligned} \text{logit}(y) &= \ln(\text{odds}) = \ln\left(\frac{p}{1-p}\right) = \alpha + \beta_1 x_1 \dots \beta_n x_n \\ &= \frac{e^{\alpha + \beta_1 x_1 \dots \beta_n x_n}}{1 + e^{\alpha + \beta_1 x_1 \dots \beta_n x_n}} \end{aligned}$$

Where:

- $Y$ - is a binary dependent variable (*improvement of management of academic affairs in the university through adoption of digital admission*)
- $\left(\frac{p}{1-p}\right)$ -odds
- $p$  - is the probability of attending admitting student through digital platform
- $x_i$  -independent variables.
- $\beta_i$  - The regression coefficients estimated using maximum likelihood.
- $\alpha$  - constant
- $n$ - number of predictors

Logistic regression did not require many of the basic assumptions of linear regression models that are based on the ordinary least squares method, especially regarding linearity of the relationship between dependent and independent variables, normality of error distribution, homoscedasticity of errors, and level of measurement. Logistic regression addressed nonlinear relationships between dependent and independent variables because it applies a nonlinear

logarithmic transformation of linear regression. The overall fit of the model with k coefficients was examined via a likelihood ratio test which tested the null hypothesis

$$H_0: \beta_1 = \beta_2 = \dots = \beta_k = 0.$$

The Wald statistic was used to assess the contribution of individual predictors to the logistic model. The Wald statistic was calculated as the ratio of the square of the regression coefficient to the square of the standard error of the coefficient. Each Wald statistic was compared with chi-square with 1 degree of freedom.

## **Results**

### **Digital tools on admission in management of student's academics**

Logistic regression was used to test the null hypothesis that stated that, use of digital tools on admission do not influence management of student's academics in public universities in western Kenya. The findings of the logistic regression were displayed in tables below. The classification table below included only the intercept also called the constant. The logistic regression model predicted that without adding the independent variables into the model, 56.1% (that is, 84/150) of the university staff agreed that adoption of digital platform in student admission had led to improvement of management of student's academics in the university.

### Classification Table

Observed		Predicted			
		Do you think adoption of digital platform in student admission has led to improvement of management of academic affairs in the university?		Percentage Correct	
		Yes	No		
Step 0	Do you think adoption of digital platform in student admission has led to improvement of management of academic affairs in the university?	Yes	84	0	.0
		No	66	0	100.0
<b>Overall Percentage</b>				<b>56.1</b>	

The Omnibus Test added the independent variables into the logistic model. Omnibus Tests of Model Coefficients gave a Chi-Square of 23.345 on 4 degrees of freedom which was statistically significant with p-value of 0.000. This was an indication that the null hypothesis that adding independent variables into the logistics model did not influence management of student's academics in public universities in western Kenya, was rejected. This showed that there were factors that influenced admission of students through digital platform. The logistic model had a -2Log likelihood statistic value of 213.928. This statistic measured how poorly the model predicted admission of students through digital platform, therefore the smaller the value, the better the model. Cox and Snell R Square and Nagelkerke R Square showed how much of the variability of the dependent variable was explained by the independent variables. This study showed that the independent variables explained 12.6% of the variability of the dependent variable.

### Omnibus Tests of Model Coefficients and Model Summary

		Chi-square	df	Sig.
	Step	23.345	4	.000
<b>Step 1</b>	Block	23.345	4	.000
	Model	23.345	4	.000
Step	-2 Log likelihood	Cox & Snell R Square	Nagelkerke R Square	
<b>1</b>	<b>213.928</b>	<b>.126</b>	<b>.169</b>	

After adding the independent variables into the logistic model, the model correctly predicted that 65.3% of the university staff agreed that adoption of digital platform in student admission had led to improvement of management of student's academics in the university. This was an increase from 56.1% to 65.3%. A full logistic regression model with categorical variables was run. Results of the logistic regression were given as follows:

### Logistic Model on Admission of Students through Digital Platform

Variables	B	S.E.	Wald	df	Sig	Exp(B)
Extent of fusing	.353	.280	0.588	1	.018	1.423
The digitization programs						
Policies on adoption of	.309	.243	11.614	1	.000	1.362
Digital platforms						
Number of admitted students	.333	.231	8.087	1	.001	1.396
Application of digital tools	.432	.126	11.843	1	.000	1.541
Constant	2.534	.706	12.876	1	.000	.076

The logistic regression model that this study was testing was; Log odds of improvement of management of student's academics in the university through adoption of digital admission =  $2.534 + 0.353(\text{Policies on adoption of digital platforms}) + 0.309(\text{Extent of fusing the digitization programs}) + 0.333(\text{Number of admitted students}) + 0.432(\text{Application of digital tools})$  From this logistic regression model, Application of digital tools had a statistical significant coefficient testing at 5% significance level. It had the highest coefficient of 0.432 in comparison to the other variables. This implies that one unit increase in admission of student through digital platform would result to the highest increase in the log odd of improvement of management of student's academics in the university. This variable had a correspondent odd ratio (Exp(B)) value of 1.541. This implied that a university that admitted student through digital platform was 1.541 times more likely to have improved management of student's academics than a university that did not adopt digital platform for admission. Digital platform adoption policies had the smallest coefficient (0.309) that would lead to very little change in the log odds of improving student's academics management at the university. This variable had a corresponding odd ratio value of 1.362, which meant that a university that had a digital admissions policy was 1.362 times more likely to improve student's academics management than a university that did not have a digital admissions policy.

The model had a constant coefficient value of 2.534, which was statistically significant testing at the 0.05 alpha levels because the P-value was less than 0.05. This implied that apart from the digital tool influencing the improvement of student's academics, there are many other factors that are not included in this logistic regression model that influence students' digital acceptance. Since all four variables were statistically significant, the study rejected the hypothesis that claimed  $H_0$ : the use of digital tools in admissions does not affect student's academics management in public universities in western Kenya.

Consistent with the conclusion of this study's hypothesis, Martin et al., 2020, although they conducted their research in private universities, also found that the use of digital tools such as Google Meet, Zoom, and Microsoft Teams substantially increases and improves student acceptance into college. Martin et al., 2020 further found that student engagement through digital platforms promotes communication and interaction between students and faculty through social discourse. Additionally, with increased student engagement through digital platforms, academic affairs professionals have more ways to reach many students and stimulate their participation in various educational programs or academic affairs.

The results of this study concurred with research conducted by Pittinsky (2004), in his study on the evaluation of the effectiveness of e-learning experience in some universities in Saudi Arabia from the perception of male students, he revealed that networked learning environments are used for evaluation and monitoring across educational careers. Assessment and tracking is the tracking of students that starts at admission level until they leave the university. Pittinsky went on to say that digital platforms provide a facility to assess and track student progress across a range of classes, semesters, cycles and academic careers. In addition, digital student admissions offers consistent assessment techniques, thereby improving the management of student's academics in universities.

Young 2012, in his investigation into whether digital platforms on campus save money through invention, stated that academic affairs are now being dealt with by students who are more technologically enlightened than before. These students expect their acceptance, learning and other matters to be enhanced by digital technologies, including the use of content-specific technologies and learning management systems. Young explained that digital access saves money, saves travel risk, provides the comfort of home and provides opportunities for all students to benefit from student activities. In addition, accepting students through digital

platforms offers the ability to communicate in real time with dispersed students through computers and mobile phones, secure recording and save sessions without the use of third-party software, create user-specific authentication, create real-time encryption. Meeting and accompanying students as they go through the admissions process.

### **Conclusion**

The following conclusions were made from the findings of the study. That, digital tools on admission offers consistent techniques for assessment, evaluation, tracking, monitoring and evaluation of students starting at the admissions level until they leave the university, thus improving the management of student's academics in universities. In addition, student recruitment through digital platforms has increased, the number of students being admitted to universities has increased, and students have become familiar with the various programs and courses offered at the university.

### **Recommendations**

The following recommendations were made from the themes developed from the study that university admissions should be done through digital platforms to reach many students and especially those who are very far away from the university. This will allow universities to reach students who are abroad. In addition, the university will expand its programs and courses it offers. This study further recommends that once students are admitted through the digital platform assessment, tracking, monitoring and evaluation should be done through the digital platform to improve their management. In addition, digital learning programs such as tutorials, e-debates, e-seminars, question-and-answer sessions, message boards and collaborative learning should be used to implement student and academic affairs processes in universities

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