

# Integrated Library Systems and Performance of the Post-Modern Library of Kenyatta University, Kenya

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**Abstract:** *Integrated Library Systems are adopted by libraries in order to meet the ever changing needs of their users and make the library staff more efficient and effective in conducting their work on a daily basis. In recent years' libraries have made huge investments in acquisition of these systems. This study has established the effects of integrated library systems' (ILS) performance of the Post Modern Library of Kenyatta University, Kenya. Empirical literature indicates the link between the library system and performance of its patrons, staff and other stakeholders. The study empirically analyzed the effect of usability of the library system on performance of the post- modern library of Kenyatta University, Kenya. The study used Technology Acceptance Model. The research design was descriptive cross sectional approach. The target population was 176 system users comprising of 56 library staff members from the Post Modern Library of Kenyatta University who work with the system on a daily basis, 60 students; 30 at postgraduate level and 30 students at undergraduate level. The study was guided by primary data collected using structured questionnaires and secondary data obtained from the integrated Library System used by the Kenyatta University Post Modern Library. The analysis of collected data was grounded on descriptive and multiple regression analysis. The study concluded that the KU post- modern library's system had better usability features, included guidelines, usability testing and ease of use. The study recommends that the library management should also put in place strict measures to control access to the system avoid data loss tampering or even manipulation.*

**Keywords:** Performance, ILS, Post-Modern Library of Kenyatta University

## 1. Introduction

Internationally, libraries always tend to serve specific purposes and structure out to attain the stakeholder's goals and objectives. Moropa (2010) provided that objectives in different libraries will tend to differ based on the nature and the expectations of the user community. In case the library attains its set objectives, there is a high possibility that the users and the societies it serves will consider it valuable (financially or otherwise). Managing objectives strategically, then allows libraries to achieve their desired outcomes and those of its users (Omeluzor, Adara, Ezinwayi, Bamidel & Umahi, 2012). Library stakeholders and customers also expect to receive high-quality service, libraries now exist in a culture of striving to achieve excellence and deliver continual high-service performance.

In the United States use of ILS started in the Georgia consortium Pines with over 250 libraries which began using a next generation ILS which they wrote from scratch within 2 months they racked up 2 million checkouts and 500,000 renewals for a collection of 8,000,000 items and 1,500,000 borrowers, while they were not the first to come up with an open source solution, for the most essential library operations they were the largest and most complex in the United States to make such an attempt. The Georgia system came up with two options for their ILS (Moropa, 2010). The first one was Evergreen which can scale up to serve very large libraries and the second one was koha, which has been available for several years and it continues to be updated and improved with additional functionality and can handle millions of records (Tennant, 2007).

In Africa for a long time, technological changes have been affecting every profession, during the last two decades' this rapid technological development has also affected library services (Arif & Mahood, 2010).

Gwynn and Rosenberg (2009) put forward that there has been significant transition from paper-based to electronic access to information and knowledge for higher education. Libraries automate their operations and services using an Integrated Library System to increase operation efficiency and to be able to meet the ever-evolving users' demands. Upon library automation using Integrated Library System (ILS) libraries should consider their Information Communication and Technology (ICT), infrastructure, local support community, available training and be realistic about the costs.

With the invention of use of computers, in academic libraries in Nigeria there was a shift from their isolated past of using the annual systems into integrated systems and networked operations. According to Khalid (2010), networked and integrated functions provide the required experiences of the libraries' evolution in the developed nations. Nigeria's libraries are always trying to developed strategies of having a competitive edge with their counterparts in the developed nations. Omedluzor et al. (2012) provided that "the pursuit for success in key aspects within an instruction's educational framework made it imperative for the institutions across the globe to embrace their roles". In the event a librarian is expected to offer prompt and adequate services to patrons, they must always embrace the globally changing environment and apply

modernized softwares.

Rachel and Philiam (2018) provides that Ugandan academic libraries are trying to embrace ILS with the objective to enhancing flexibility as they aim at changing the needs perceived at an affordable cost though not all are effectively fulfilled. These actions have been adopted by koha as it is key in strategic position and its valued by all of the nation's libraries without any ILS or a proprietary ILS. ICT infrastructure, organizational procurement regulations and national procurement legislation, human resource capacity and inadequate finances hindrances less to diffusion.

In Kenya academic libraries have had to shift their gears so as to justify their existence within this dynamic technological era. Adoption of ILS has been observed in both private and public university libraries with Unites States International University Africa (USIU), Catholic University of Eastern Africa (CUEA) and Kenyatta University being among the first libraries to automate their systems. Moropa (2010) put forward that although academic libraries have and are still being referred to as the heart of the university it does not appear so the reality is that they have been dislodged from that position. In case libraries must be operational at the moment, the manual processes must provide a way for information and Communication Technologies (ICTs) and a computer driven world, those libraries that cannot adapt to these new information technologies will not survive (Adekele & Olorunsola, 2010).

A key area to consider when assessing the performance measurement (indicators) is critical success factors, the areas in which a business or organization's performance must be satisfactory in order for it to perform well (Ali & Younes, 2013; Morrisson, 2020). Critical success factors need to be systematically monitored and measured through the use of performance indicators (PIs). Examples of critical success factors for a library is to deliver excellent services, accessible service models, efficient and reliable suppliers, motivated, skilled and technically expert staff, customer-focused mission and a robust IT network infrastructure.

## 2. Literature Review

The study was anchored on the technology acceptance model, this model is valued as one of the globally applied behavioral models established by (Davis, Bagozzi & Warshaw, 1989). It aims at explaining the full utilization of ICT services and devices. Its approach is particularly established with the objective of predicting personal adoption and use of new ICT. The model applies two technology recognition measures which are the Ease of Use (EOU) and Perceived Usefulness (PU). As stated by Davis et al (1989), the major idea for the establishment of this Model is PU and EOU, and not the attitude that ultimately expresses one's behavioral intention of using IT. Perceived usefulness reflects on the level of which a forth coming user trusts that applying particular technology will enhance his or her job performance.

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(Davis *et al.*,1989). ILS allows current library functions such as cataloguing to be automated, it can be done at a lower cost as it has also become easier for information professionals by substituting para-professionals for librarians, who use copy cataloguing to make work easier, in addition to eliminating card catalogues reducing the huge amounts of paperwork and save on time that could have been spent filling. Items lost through the circulation are reduced through item checkout but never returned. Some libraries have installed self-check outs through Integrated Library Systems that provide service points at the circulation desk reducing on staffing requirements at the circulation desk (Konchtanek, 2017). Since effort is a determinant resource an individual may allot to different events for which one is accountable (Radner & Rothschild, 1975). This theory is underpins system usability and performance.

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Cox and Jantti (2012) carried out a research on the use of Information resources on performance. The research aimed at determining the correlation between information resources and performance. Research findings indicated a strong correlation between the use of University of Wales Lampeter (UWL) Information resources and student results. For instance, students who avoided UWL electronic resources in 2011 had an average of 55. Students who had spent at least one hour per year had an average of 61. As expressed from the chart, it would be evident that there exists a strong nonlinear relationship between average usage of resources and average marks of students ( $R$ -squared-0.91). Notably, the study was based on correlation analysis. This study was based on inferential analysis which is multiple regression analysis.

Ali and Younes (2013) also explored the implications of user output information systems that were an exploratory study. The study's analysis was conducted out in the context of multiple regression analysis. Results of this research indicated that usability has a huge significance on user performance. However, the study was based on user performance unlike the current study which was based on Library System performance.

### 3. Methodology

The research embraced cross sectional descriptive research structure. Kratochwill, (2015) defined research design as the detailed arrangement and analysis of data to concur with the study objectives. The study adopted descriptive research design to achieve the objectives.

This design focused on collecting data that is useful in analyzing events and coming up with relevant conclusions and recommendations. The population target comprised of all the library staff of Kenyatta University Main Campus who interact with the system in conducting their duties and students in the campus. The total number of library staff is 188. The study focused on simple random sampling of students and the library staff of Kenyatta University Main Campus who use the library system. Both primary and secondary data was adopted with structured formulae.

Secondary relating to the Library Management System was collected. Data was obtained on Library Management System used by the Kenyatta University Post Modern Library which is KOHA and information security put in place by the institution.

### 4. Findings and Discussions

Review of data on research was done in an attempt to turn it into usable form from which conclusions and recommendations were subsequently drawn. The data analysis of the study was based upon descriptive analysis and inferential analysis. Descriptive analysis offered the basic data characteristics that led in inferential analysis. Multiple regression was used to base Inferential analysis. Therefore, the multiple regression model used expressed performance as a function of Integrated Library Systems as presented below:

$$Y = \beta_0 + \beta_1 X_1 + \epsilon$$

Where:

Y = Performance

X1 = Usability

ε = Error term

#### Descriptive Results

To establish the effect of integrated library systems usability on performance of the Kenyatta University Post Modern Library, the participants were asked to show how strongly they agreed or disagreed with the following statements on a 5-point Likert scale. The findings were as follows;

**Table 1:** System usability and Performance

Statement for Usability	Mean	Std. Dev
The library system is operated with ease	3.55	0.846
There are guidelines put in place for users	2.79	0.833
There are library staff on standby to assist users	2.56	0.697
Users are often trained on how to use new features	2.61	0.761
New features are compatible with trending technology	3.79	0.854

Source: Field data 2019

The study respondents agreed that the Kenyatta University Post-Modern library system is operated with ease and the new features are compatible with trending technology as indicated by a mean of 3.55 and 3.79 correspondingly.

The respondents were neutral on whether there are guidelines put in place for users, there are library staff on standby to assist users furthermore users are often trained on the use of new features as indicated by the mean of 2.79, 2.56 and 2.61 respectively.

This indicated that the library system was significantly useable to the staff, students and other stakeholders. The system was easy to operate and had new and compatible features, had guidelines and that staffs are always ready to assist and train users. This also indicated that the library system was user friendly as also alluded to by Cox and Janti (2012) who carried out a study on the use of Information resources on performance of the University of Wales Lampeter (UWL) Information resources and students' results. It was evident that there exists a strong nonlinear relationship between average usage of resources and average marks of students.

#### Regression Analysis

Multiple regression analysis was conducted to determine the degree of influence between integrated library systems variables and performance of the KU Post-modern library. The outcomes were as shown in subsequent sections;

**Table 2:** Model Summary of performance of the KU post-modern library

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	0.806	0.813	0.827	0.1544

Source: Field data, 2019

As indicated by the outcomes, the correlation coefficient R was 0.806 and adjusted R squared was 0.827. An adjusted R square of 0.827 implies that 82.7% of changes in performance of Kenyatta University Post-Modern Library are explained by the independent variables of the study. However, there are, other factors that influence performance of the library that are not included in the model which accounts for 17.3%. An R of 0.806 on the other hand signifies strong positive correlation between variables of the study. Aljukhadar and Senecal (2009) in their study on information management role and firm performance indicated that information usability, security, informed selection and maintenance have a positive and significant effect on firm performance.

#### ANOVA Results

The ANOVA results for regression model regression model fitted for usability and performance was statistically significant as indicated below:

**Table 3:** ANOVA

Model	SS	Df	MS	F	Significance
Regression	1034.215	5	.206.8	97.701	0.013
Residual	137.61	65	2.12		
Total	1171.9	70			

Source: Field data, 2019

The value of F measured was 97.701 according to the ANOVA table above, while F critical was 7.8154. Because the measured value of F calculated was more than F critical, therefore, the overall concept of regression was significant, it was a reliable indicator of the study results. With respect to p values, this study indicated a magnitude of 0.01331 which was less than 0.05 consequently it was statistically significant as indicated by Kongetal. (2015).

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## 5. Conclusions

The study concluded that the KU library system was significant in the performance of the KU post-modern library. It had better usability features for library staff, students and other stakeholders. Where the usability features included guidelines, usability testing and ease of use. It was further concluded that system selection was significant in the performance of KU library, where system selection was indicated by library needs, evaluation of alternatives and written agreements.

## 6. Recommendations

For the library to manage all its functions, the study recommends the use of integrated system with consideration of usability, system selection, system maintenance and information security factors as identified in the study.

The research suggested that the library need to sensitize users of the integrated system to improve usability and access. The library management should also ensure that the system used is secure, up-to- date and user friendly to students and other stakeholders. Library management should also ensure that they put in place strict measures to control access to the library system avoiding data loss, tampering or even data manipulation. Distinguish user levels, implement system policies and authentication procedures.

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