

Intervention Measures towards Successful Implementation of Software Projects in Public Universities in Kenya

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ABSTRACT

Kenya is in the forefront of embracing ICT in steering her economic growth and one of the indicators that shows this commitment is the emergence of the Vision 2030. Software projects in public universities have been identified as building blocks in realizing this vision; however attempts to implement software projects in Kenyan universities have not been very successful. There is inadequate information addressing this matter because it appears no documented comprehensive study has been done to determine the causes of failure, nor outline counter measures. The study sought to identify factors that affect software project implementation in public universities; establish intervention measures towards successful implementation of software projects in public universities and develop a software implementation framework for public universities. The study focused on software project implementation at Masinde Muliro University of Science and Technology and the University of Eldoret. The study adopted a survey design. Analysis of data was done by the use of descriptive statistics. The results identified as intervention measures included ICT policies, positive, user involvement, training of users and top management support.

Keywords: *ICT, Software, Projects, Implementation, intervening measures*

1. INTRODUCTION

ICTs are technologies that provide an enabling environment for physical infrastructure and services development of applications for generation, transmission, and processing, storing and disseminating information in all forms. These forms include; voice, text, data, graphics and video [1]. Educational systems around the world are under increasing pressure to use Information and Communication Technology (ICT) to teach students the knowledge and skills needed in the 21st century [2]. Development and application of ICT in African Public Universities is critically important if the continent is to reduce the knowledge, technological and economic gaps between itself and the rest of the world [3]. Public universities engage in software projects with a purpose of improving service delivery and customer satisfaction. Public Universities initiate ICT projects yearly which call for enormous amounts of resources and its implementation is critical; for example the Information Resource Management centre of Moi University in Kenya is one of the projects that failed. Bii et. al., [4], highlighted the following factors as the causes of the failure; conflicting management styles, lack of funds, lack of training and communication breakdown among other reasons that led to the project failure. This paper therefore seeks to addresses intervening factors behind successful software project implementation in Kenyan public universities. The paper is organized into main sections as follows; introduction, related studies, research methodology, findings and discussions, future research areas and conclusion.

2. RELATED STUDIES

This section points out other related studies that were conducted and the recommendations that were presented. The studies had identified intervening factors for successful ICT implementation. The factors identified

include; ICT policies, top management support and user involvement. Bii, et. al, [4] states that it is a truism that if followed, policies or guidelines help in overseeing the success of an initiative. ICT policies accelerate the implementation of software projects in public universities. Baruch et. al., [5] on the other hand observes that a major factor in the adoption of change is the school principal. Studies found that projects receiving the principal's support were more likely to succeed, since the principal's involvement indicates that the project is being taken seriously, and it helps in recruiting both material resources and psychological support [6]. A principal in this case it taken to be a top manager synonymous of a vice chancellor in university setting. Therefore software projects are more likely to succeed if they are supported by the top management. Another factor that was pointed out was user involvement. The respondents suggested that user involvement is a major contributor towards successful software implementation.

3. RESEARCH METHODOLOGY

The research was conducted through a survey study. The research was concerned with determining factors that affect software project implementation in public universities in Kenya. Stratified sampling was used in coming up with the sample population. Systematic random sampling was used to select the representative sample of respondents in each institution while purposive sampling was used to select the institutions. Mugenda & Mugenda, [7] states that 10-55% is appropriate for selecting a sample. These techniques were adopted because they enabled the researcher to classify the population into three strata's whereby 10% of the population was randomly sampled in each stratum. The researcher used questionnaires, checklists and interviews to collect data. The questionnaire adopted the five point Likert scale with elements ranging from Strongly Agree,

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Agree, Undecided, Disagree, and Strongly Disagree. Scores were awarded from 5 to 1 for each respective element for positive feedback. Categorical scales were also used. They adopted open-ended and closed ended questions. Open ended questions solicited additional

information for the researcher while closed ended questions were answered finitely and restrictively

4. FINDINGS AND DISCUSSIONS

The findings are presented in figures and tables.

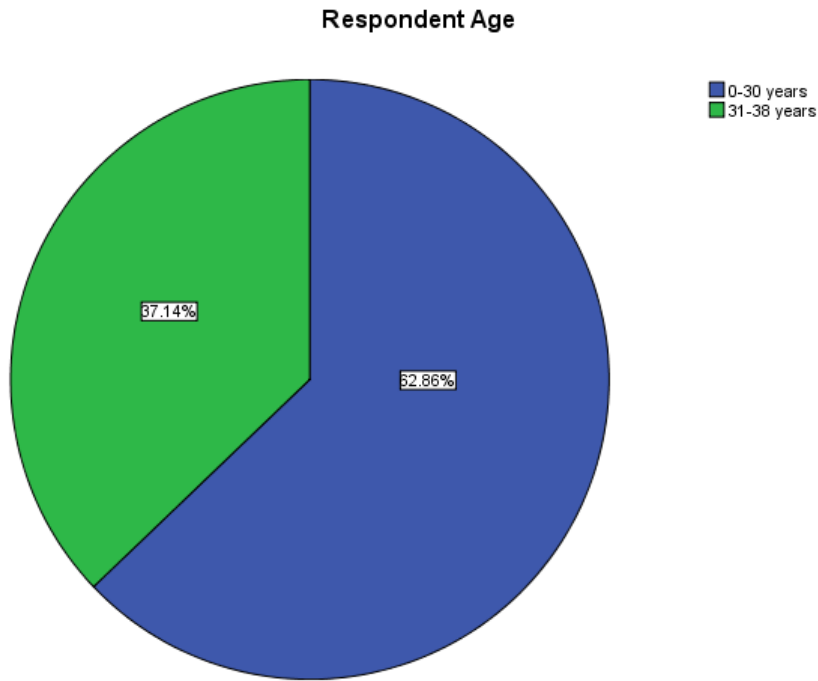


Fig 4.1: Respondents Age at MMUST source (Author)

Figure 4.1 presents the results of the respondent's age. The age of respondents was discussed as: 62% of respondents were below thirty years while 38% of the respondents were between 31 and 38 years old. Other researchers have argued that the young people tend to adopt new technologies faster than the elderly

ones. Therefore this population was better placed to provide us necessary information towards software implementation in public universities. The study also proved the point that the young managers are quick in adopting ICTs.

Table 4.1: Intervention factors in percentages: source (Author)

Factor	UOE					MMUST				
	SA	A	U	D	SD	SA	A	U	D	SD
ICT Policy	31.4	54.2	8.57	5.71	0	6.9	41.4	37.9	13.8	0
Management support	57.1	31.4	5.71	2.86	2.86	58.6	27.6	6.9	6.9	0
Early user involvement	45.7	42.8	8.57	2.86	0	41.4	50.0	3.6	3.6	0
User training	40.0	51.4	8.6	0	0	53.8	38.5	7.7	0	0
Risk assessment	40.0	42.8	14.2	2.86	0	48.2	24.1	20.6	0	6.9
Positive feedback resolution	17.1	20.0	31.4	22.9	8.6	20.7	48.3	17.2	13.8	0
Launching the software	48.5	34.2	11.4	5.7	0	65.1	24.1	10.3	0	0
Management support	63.2	26.3	5.3	5.3	0	83.3	16.7	0	0	0
Clear Communication	5.3	68.4	15.8	10.5	0	77.8	22.2	0	0	0
Early user involvement	5.3	47.4	26.3	15.8	5.3	55.6	44.4	0	0	0
User training	47.4	36.8	15.8	0	0	61.1	38.9	0	0	0
Positive feedback resolution	26.3	15.8	42.1	10.5	5.3	5.56	33.3	38.8	16.6	5.56
Approval of software model	15.8	21.1	42.1	15.8	5.3	44.4	38.9	16.7	0	0
Clear functions and Roles	68.4	21.1	5.3	5.3	0	38.9	61.1	0	0	0
Launching the software	52.6	26.3	25.8	5.3	0	66.7	33.3	0	0	0

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The results in table 4.1, highlights the factors that were identified as intervening factors that contributes to successful software project implementation. The factors are discussed as follows;

4.1 ICT Policy

Research findings on this factor revealed 31.42% of the respondents at UOE strongly agreed that the ICT policy will accelerate the software project success compared to 6.9% at MMUST, 54.28% agreed at UOE compared to 41.4% at MMUST, 8.57% were undecided at UOE unlike 37.9% at MMUST while 5.71% disagreed at UOE unlike 13.8% at MMUST. Bii, et. al, (2005) states that it is a truism that if followed, policies or guidelines help in overseeing the success of an initiative. ICT policies plays integral role in the implementation of software projects. A large percentage of the respondents agree.

4.2 Management Support

The research findings on this factor showed 57.1% of respondents at UOE agreeing with the fact that software projects will succeed if supported by the top management compared 58.6% at MMUST. Whereas 31.4% of respondents at UOE agreed with this fact compared to 27.6% at MMUST. From this observation it can be concluded that software projects will succeed if they are supported by the top management. A total of 88.57% of the respondents at UOE agree that software projects will succeed if the top management gave it full support. Management support is a key component in software project success. On the other hand the result findings of the managers revealed 63.2% of respondents at UOE strongly agreed with this fact compared to 83.3% at MMUST while 26.3% were in agreement at UOE compared to 16.7% at MMUST. In conclusion software projects to succeed in public universities there is need for top management support. Where the project received full management support the software project succeeded. Chikati (2010) highlights that leaders motivate, they inspire, and they create vision. In many cases the top managers are the project 'owners' and without their support the project is doomed to fail.

4.3 Early User Involvement

The findings revealed 45.7% of respondents at UOE strongly agreed with the fact that early user involvement will lead to successful implementation of software projects compared to 41.4% at MMUST. Whereas 42.8% of respondents at UOE were in agreement compared to 50.0% at MMUST. Further findings from the middle management revealed 5.3% of respondents at UOE strongly agreed with this fact compared to 55.6% at MMUST while 36.8% were in agreement at UOE compared to 44.4% at MMUST. Both respondents agree with the fact that software projects will succeed if users are involved in the project early enough. From this observation it can be concluded that users are supposed to be involved in the project at an early stage. End user involvement is also a major factor that should be considered in software project implementation.

4.4 User Training

Concerning this factor the results showed 40.0% of respondents at UOE strongly agreed that user training will lead to successful implementation compared to 48.2% at MMUST. Further findings revealed 51.4% of respondents at UOE were in agreement with this fact compared to 38.5%. Middle management revealed that 47.4% of respondents at UOE strongly agreed with this fact compared to 61.1% of respondents at MMUST whereas 36.8% of respondents at UOE were in agreement compared to 38.9% at MMUST. In conclusion software projects will succeed in public universities if users are trained on the software functionalities. Therefore user training is an important component for successfully implementation of software projects in public universities.

4.5 Positive Client Feedback Resolution

The results showed 17.1% of respondents at UOE strongly agreed with this fact compared to 20.7% at MMUST whereas 20.0% of respondents at UOE were in agreement compared to 48.3% at MMUST. This observation indicates that client feedback resolution rate is higher than UOE. Therefore users are likely to own the project at MMUST more than at UOE. The findings from middle management showed 26.3% of respondents at UOE strongly agreed with this fact compared to 5.56% at MMUST while 15.8% were in agreement at UOE compared to 33.3% at MMUST. In addition 42.1% of respondents at UOE were undecided compared to 38.8% at MMUST. Bii et. al, (2005) observes that feedback, especially from the consumers is very necessary to improve service provision to the clients. The feedback obtained from clients should be resolved positively.

4.6 Launching of the Software

Further results about this factor showed 48.5% of respondents at UOE strongly agreed that the top management launched the software upon completion compared to 65.1% at MMUST whereas 34.2% of respondents at UOE were in agreement compared to 24.1% who were in agreement at MMUST. In conclusion respondents in both universities opinioned that launching by the top management will lead to successful software project implementation.

4.7 Approval of Software Model

Middle management results revealed 15.8% of respondents at UOE strongly agreed with this fact compared to 44.4% at MMUST while 21.1% of respondents were in agreement with this fact at UOE compared to 38.9% at MMUST. This findings indicate that a larger proportion of respondents at MMUST were in agreement with the fact that a software model was presented whereas a small proportion of respondents at UOE agreed with this fact. Therefore chances of successful software implementation are higher in MMUST than UOE. A model increases the chances of software acceptability among the users before real software is delivered.

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4.8 Clear Functions and Roles

The summarized findings of the middle management showed 68.4% of respondents at UOE strongly agreed with this factor compared to 38.9% at MMUST whereas 21.1% were in agreement at UOE compared to 61.1% at MMUST. In conclusion clear functions and roles of the project team will lead to successful implementation of software projects in public universities. Conflicting functions and roles was identified as one of the major factors that led to the failure of information resource centre at Moi University (Bii,2005).

5. CONCLUSIONS AND RECOMMENDATIONS

The essence of this research was to identifying intervention measures towards successful software project implementation. It was revealed from the respondents that the following were identified to be intervention factors towards successful implementation of software projects in public universities: top management support, presentation of a model, early user involvement, positive client feedback resolution, ICT policies and user training. It was established that software projects will succeed if they are fully supported by the top management. We may conclude that objective was achieved.

From the research findings, the following recommendations that provide room for effective ICT projects Implementations:

- (a) Universities should put in place ICT policies detailing software project implementation. There is evidence of existence of ICT policies but there isn't enough information about software policies in public universities. The research findings revealed that comprehensive ICT policies that have a software component are essential in fast tracking software implementation in public universities.
- (b) University top management should give full support to software projects. No project can succeed without the top management support. The top management is the vision bearer, resource provider and facilitator of the project.
- (c) A software model should be presented to the users first for approval before designing final software. A software model presents the imitation of the real thing. When a model is

presented to the users, it facilitates quick understanding of the software functionality and users can conceptualize how the final product will function, this increases the chances of successful implementation.

- (d) There should be clear communication between the top management and all project stakeholders. Communication plays a vital role in an organization. Communication channels between all the stakeholders should be open and clear. This will enhance successful software project implementation.

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