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Dimensions of Enterprise Resource Planning Systems Success in Public and Private Universities in Kenya

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Abstract: **Enterprise Resource Planning (ERP) systems have been adopted and implemented in the Kenyan higher education sector, with their success being described in many ways that one. Empirical studies have identified Quality, use, and benefits dimensions as suitable descriptors of success of ERP systems. This study used the results of a cross-sectional survey conducted in selected public and private universities in Kenya, coupled with theories and literature from existing Information System (IS) success models, to examine the effect of these dimensions on success of ERP systems. An understanding of ERP systems success dimensions will help to appreciate how each dimension fit in the higher education sector and provide a basis from which mitigation mechanisms can be employed to ensure success. There is need for universities to match their expectations on ERP systems with efficiency, assurance, accuracy, coupled with good support service by experienced professionals that will ensure the desired level quality is guaranteed. Engaging end-users during implementation and providing adequate training to employees have a direct impact on productive use of the ERP system. In addition, universities also need to define the strategic goals clearly before embarking on implementation, such that the process can always be steered towards the realization of benefits associated with the ERP system.**

Keywords: **ERP Success; Information Quality; Net Benefits; Service Quality; System Quality; Use.**

1. INTRODUCTION

Universities are currently faced with an increased demand for robust Enterprise Resource Planning systems that will encompass campus wide business goals [11]. On the global arena universities have been challenged by their governments to improve on performance and efficiency [1]. Consequently, many universities have implemented ERP systems to improve their operations, and also to enable transparency in their management. Over the last decade Kenyan universities have been undergoing major changes. For instance, Kenyan universities have witnessed increased student enrolments as a result of deliberate efforts to expand internally, and to establish campuses, colleges, and affiliations across counties and also outside the country [22]. Consequently these institutions have experienced changes in the nature of academic work, increased competition from other institutions, pressure by regulatory bodies to improve on quality and efficiency, and increased expectations of stakeholders. Universities are challenged in complying with their own cultures (statutes) and with the requirements of governing and regulatory bodies, notably the Commission of University Education (CUE) and other professional bodies. For instance in 2014, the Engineers Board of Kenya (EBK) suspended some engineering courses in three public universities for not meeting certain specifications set out by the board [19]. With the enforcement of the Universities Act (2012) professional bodies and CUE assumed powers to approve and accredit academic programmes in all universities.

The demand for university education has soared with institutions developing curricula for non-regular modes of study [22]. At the same time, universities have resulted to adjusting their academic calendars to accommodate more semesters.

This has resulted to more demands due to the increased number of students, increased market pressures to reform structures, to lower costs, and to achieve greater administrative efficiency in order to support research activities. Particularly, establishing a functional and coherent support framework for open and distance learning mode of study continues to haunt even the well-established public and private universities. Thus, the need for an integrated ERP system has become a priority and major strategic objective.

1.1 ERP Systems in Higher Education:

Universities have already experienced significant troubles trying to implement ERP systems [1]. Many of these institutions plan to upgrade, replace, or install modern enterprise-wide system, often as a result of inadequacies of their current systems, which are commonly disjointed. However, unlike other companies in manufacturing sectors, universities have specific and unique administrative needs. Typically, ERP systems address basic business administrative functions such as finance operations, sales and marketing modules, inventory modules, customer relationships modules [23]. Universities require customized systems for: student admissions, registration, timetabling, curriculum management, library, hostel management, campus financials, and other applications, not part of typical ERP software. Developing in-house software of this magnitude is not a viable option for many universities. Most universities are non-profit organizations, which renders them deficient in terms of talent and financial resources needed to create and manage a robust enterprise system. According to experts at PeopleSoft, a leading and dominant provider of ERP solutions for higher learning institutions, a large part of the problem results from the inexperience of university Information and Communication Technology (ICT) departments and their tendency to rush implementations and inadequately test the new systems [32]

In the global arena, universities have had a fair share of woes arising from failed ERP systems. Few of these experiences are rarely made public, perhaps because that would be “bad publicity”. As a result, many of these experiences only become public after a formal lawsuit have been lodged by a client against the vendor. In 2001, the University of Cambridge considered possible legal action against Oracle and KPMG Consulting for a faulty computer system that the university estimated to have spent $13 million. In 2004, Cleveland State University sued software maker PeopleSoft, seeking up to US$510 million in damages and costs for a faulty ERP installation [34]. Very recently, Montclair State University sued Oracle for delays that “could ultimately cost the school some $20 million more than originally planned” [15]. The claimant also alleged that Oracle “failed to deliver key implementation services, caused critical deadlines to be missed, refused to make available computer resources that it had promised, failed to deliver properly tested software, and overall, failed to manage properly the entire project.

ERP systems in higher learning institutions constitute the largest portion of their IT investment. JKUAT announced their successful use of Sage ACCPAC ERP system for registration of new students during the 2011/2012 academic year [14]. The author also pointed out that the ERP system “is so far the largest ICT project the University has implemented” to focus on key areas of the university operation. Large ICT projects such as ERP implementations have more chance to be failures than most people expect. Many studies have shown a persistent dismal performance of ERP implementation experiences. For instance in the 2011 ERP Report, [23] showed that 61.1 % of the projects took longer expected, 74.1 % exceeded the budgeted costs, while 48% of the companies rated their business benefits realization below 50% of the projected benefits [23]

1.2 Statement of the Problem:

It is worth noting that even the very successful of ERP implementations experience a significant number of challenges. A lot of emphasis is given to success of the “project management” process as opposed to the success of the product. Past studies have shown that it is possible for a project to fail in financial, time frame, and scope metrics and still be considered as success. [4] and [25] suggested the need to make a distinction between product success and project management success. Similarly, there is need to distinguish between ERP implementation success and ERP success.

[31] Emphasizes on the relative importance of efficiency, impact on customer, business success, preparation for the future while assessing success dimensions. The authors found out that for projects with lower uncertainty, their efficiency, measured on time and budget goals, may seem relevant and important. However, technological projects like ERP systems have higher uncertainty should be assessed on its business and long-term effects, rather than the short-term concerns of meeting time and budget performance.

[21] Found out that besides meeting the budget, time, and scope criteria, the ERP system should be assessed alongside the outcome indicators. These are product value, product use, and business value. In this particular study, product use and business value ranked higher than success measured in terms of financial indicators [21] .In relation to ERP systems, these indicators assume the dimensions of ERP system quality, ERP Use and the Net benefits of and ERP system.

The implementation of ERP systems in higher education institutions has been described as extremely difficult [43]. [38] Found out that ERP systems challenge organizations because several factors that can be directly linked to the three dimensions. First the lack of experienced professionals and inadequate training of the employees have a direct impact on the eventual use of the ERP system. Secondly, organizational expectations fail to match with the system efficiency, and lack of assurance on the accuracy of data negatively affects the "quality" of the ERP system. In addition, failure by organizations to clearly define the strategic goals, coupled with the latter factors, impacts on the benefits that the organization would get from an ERP system. This study sought to establish how well the various dimensions can be used to describe the success of ERP systems in public and private universities in Kenya.

Research in issues related to ERP systems in higher education represents a forward step in analyzing the actual benefits potentially brought by these systems to organizations. ERP System projects differ from projects in other disciplines because there are no precise industry standards, legislated codes, or published performance benchmarks against which success can be measured. Consequently ERP projects are declared a success or failure based on subjective criteria, individual perceptions, partisan motivations, or other subjective factors. [9] observes that understanding the dimensions of information system success is important because an organization can leverage or control such factors to improve the success of the system.

1.3 Specific Objectives:

1. To determine the effect of "quality" in success of ERP systems in public and private universities in Kenya.
2. To determine the effect of "use" in success of ERP systems in public and private universities in Kenya.
3. To determine the effect of "net benefits" in success of ERP systems in public and private universities in Kenya.

2. LITERATURE REVIEW

There have been many studies on ERP implementation, adoption focusing on success factors, implementation procedures, and implementation outcomes. [6] investigated the success or failure factors for ERP systems in construction firms. [36] identified the critical success factors and the key benefits of ERP implementations. [18] carried out a comparative study of critical success factors in implementation of ERP systems in developed and developing countries.

[40] found that perceived initial misfits have negative impacts on the quality of an ERP system after implementation. [39] also found out that due to various misfits, ERP systems are failing to yield matching benefits causing some organizations to enjoy significant gains, while others have had to scale back their projects and accept minimal benefits, or even abandon investments on ERP systems. While noting that ERP systems trace their origins in the manufacturing sector, several studies have observed that their designs have disobeyed the higher education sector leading to issues of misfit [30]. ERP misfits are the gaps between the functionality offered by an ERP package and that required by the adopting organization. [33] found out that the issue of misfits issue may be worse in Asia because the business models underlying most ERP systems reflect western industry practices. Similar observations were made by [42] in their framework for classifying ERP misfits.

2.1 DeLone and McLean Information Systems Success Model:

The DeLone and McLean IS Success model [8] identified two indicators of information system (IS) success. These are system quality and information quality which focuses on use and user satisfaction. This in turn results to individual impact, and eventually organizational impact. The authors suggested that even though IS success can assume multiple dimensions, the number of dimensions should be reduced significantly such that research results can be compared and finding validated.

The original IS model [8], which has been cited or used in over 300 articles published in referred journals, provides a framework that can be extended to integrate IS success research findings. However, some IS researchers have criticized

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the approach for giving a subjective assessment of IS success. Among the first critics of the original model were [28], who observed that the model combined both causal and process relationship explanation. They also observed that "use" is ambiguous and is not an appropriate dimension for explaining causal relationships. Whether the system is good or not and whether the user likes it or not, there is no choice. They go on to observe that conclusions about individual impact and organizational impact are also difficult to determine

After ten years the authors of the original model proposed an updated IS success model based on evaluation and contributions from many researchers [9]. [5] acknowledge the inclusion of service quality in the updated DeLone and McLean IS model. This is advised by the fact that modern IS systems (commonly ERP systems) are complicated and highly integrated. Thus, the quality of service provided by ICT departments, vendors and consultants have become more critical to success of ERP systems than was for isolated IS of before.

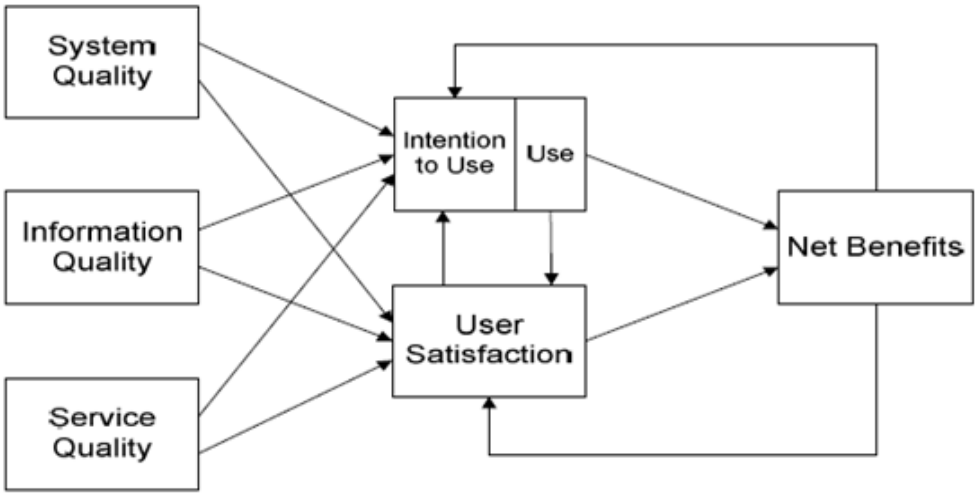

Figure 1 The updated DeLone and McLean IS success model

The revised model demonstrated the relationships and associations that were proposed between the various success dimensions. The [9] encouraged further development of the model in order to ensure its continued evolution. In an effort to aid the understanding of the IS success model the authors combined IS process model with a causal model. The process model in this case entails the creation of the system, its use, and the consequences of its use. Each component of the model is "necessary, but not sufficient for the resultant outcome.

2.2 Technology Acceptance Model:

The Technology Acceptance Model (TAM), developed by [7] has also been adopted and its validity proved by many studies. The model theorizes that system use, and thus system acceptance is determined by two beliefs: Perceived ease of use and perceived usefulness. [7] defines perceived ease of use is "the degree to which a person believes that using a particular system would be free of effort", and perceived usefulness as "the degree to which a person believes that using a particular system would enhance his or her job performance". Subsequent researchers have attempted to identify the independent variables under the term "external factors".

[16] narrowed down on the user characteristics and system characteristics as the external factors to the TAM model. They found out the effect of user characteristics being more significant than system characteristics on perceived usefulness. Conversely they also found out the effect of system characteristics being more significant than user characteristics on perceived ease of use. The research indicates that it is possible for an organization to vary systems characteristics during its design / implementation, which in turn can have an impact on its success. The same however, could not be argued for the user characteristics. [41] integrated system characteristics to TAM, identifying information quality and system quality as the external factors. Their model validates the DeLone and McLean IS success model which identified system characteristics as the independent variables.

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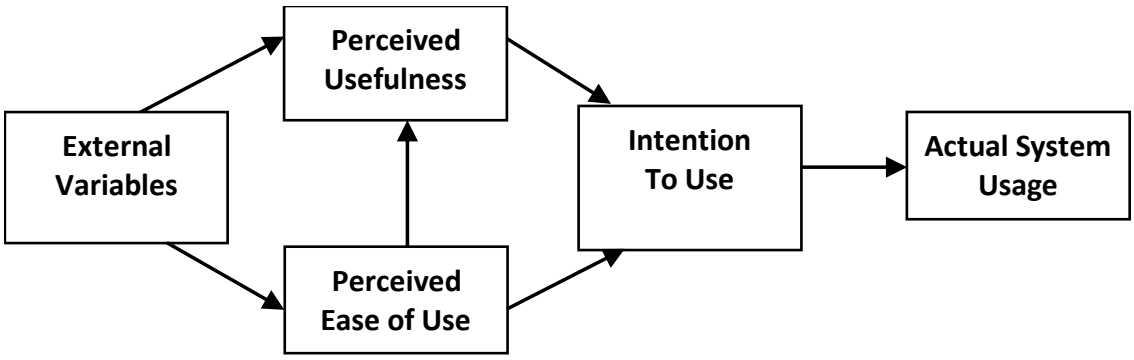

Figure 2. Refined Technology Acceptance Model

[35] showed the usefulness of integrating contemporary IS usage models, to investigate impact of use of ERP systems on organizational benefits (via individual performance). Their study also agrees with critics of the IS usage models that system use is not an end in itself. The authors conclude that in order to determine if IT investments are successful, usage should be studied alongside outcomes.

2.3 Task-Technology Fit (TTF) Model:

The Task-Technology Fit (TTF) model is based on IS implementation theory. [12] describe TTF as "the correspondence between task requirements, individual abilities, and the functionality of the technology". Their study validates the TTF model and demonstrates how it can be used to predict IS implementation success. Adapting this idea to the study of ERP systems, TTF can be used to describe the degree of match between the facilities provided by the ERP package, the tasks undertaken by its users, and the skills and attitudes of individual users.

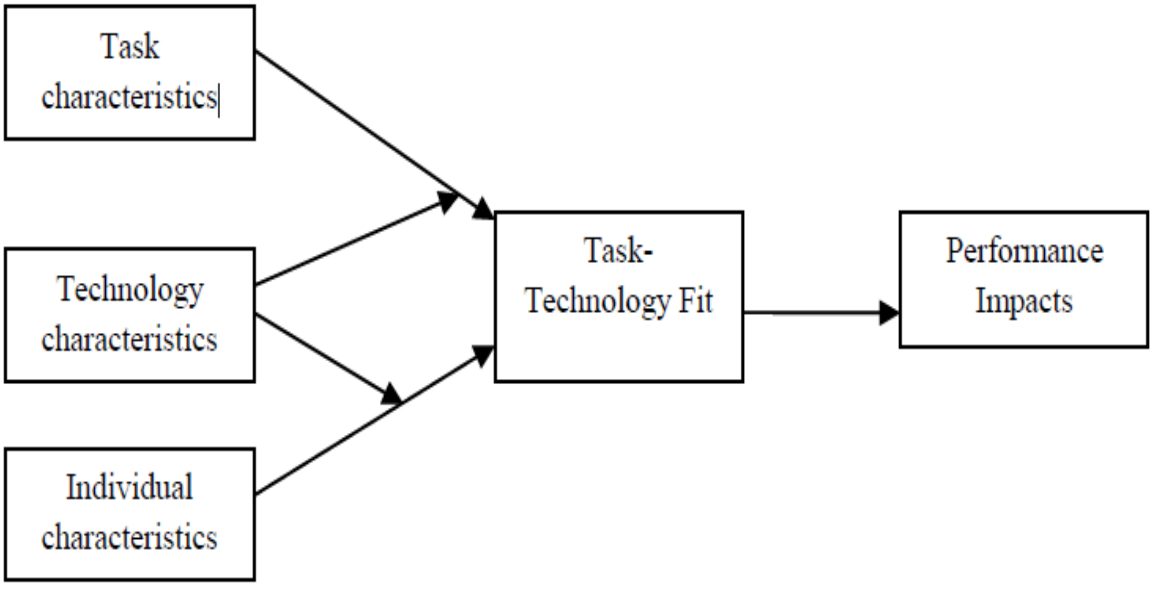

Figure 3. The Task-Technology Fit Model

Source: Goodhue, (1995)

2.4 Conceptual Framework:

The success of an ERP system can be hypothesized from three major dimensions derived from a variety of empirical studies [24], [5],[17] These studies suggest that in order to achieve ERP success, organizations need to leverage on these dimensions. These dimensions are Quality, Use and Net benefits of the ERP system.

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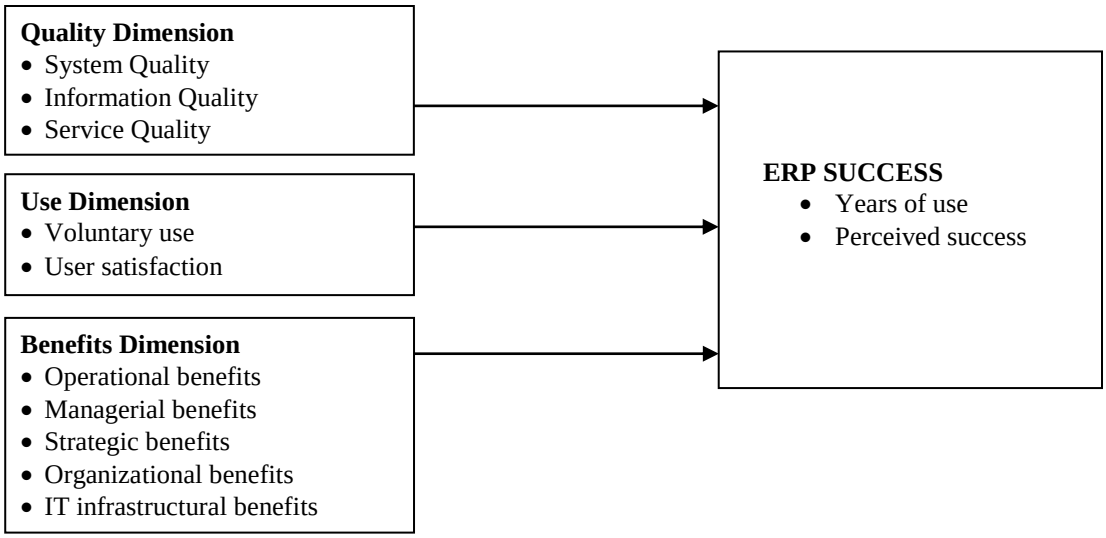

Figure 4. Conceptual framework

2.5 Quality Dimension:

The quality of an ERP can be measured using three criteria. These are systems quality, information quality, and service quality. [9] advise that each of these dimensions should be measured separately because singularly or jointly, they will affect subsequent "use" and "user satisfaction.

System Quality:

System quality refers to the desirable characteristics of an information system. These are ease of use, system flexibility, system reliability, and ease of learning, system intuitiveness, sophistication, and response times[24]. [5] define systems quality as a functional feature of the ERP system which makes it difficult to apply "ease of use" as a factor. Thus, their study focused on response time and accuracy to measure system quality.

Information Quality:

Information quality captures the degree to which the information generated by an ERP system possesses three attributes: content, accuracy, and format. [24] defines information quality as the desirable characteristics of system outputs or reports. These characteristics include relevance, accuracy, conciseness, completeness, understandability, timeliness, and usability. [13] studied the success of ERP systems using the attributes of quality and benefits. Contrary to guidance by [9] their study avoided the use dimension, and adopted an argument proposed by [10] that measures of success ought to be mutually exclusive. In so doing, each measure not only addresses a specific aspect of success but also avoids overlapping with other measures. Their study found out information quality as the most important dimension of ERP success.

Service Quality:

Service quality refers to the quality of support that system users receive from the support personnel. Service quality is measured in terms of responsiveness, reliability, technical competence, and empathy of the support staff [24]. Technical competence and reliability always go hand in hand, as users prefer getting assistance from a competent technical staff. Empathy of the support staff is the ability to understand the needs, urgency, and importance of users' request for technical assistance. [5] define service quality as extent to which the support staff positive attitudes towards and good relationships with its users. Thus, their study focused on responsiveness, reliability, and assurance to measure service quality.

2.6 Use Dimension:

System usage continues to be used as a dependent variable in a number of empirical studies and continues to be developed and tested by IS researchers. [9] argue that system use is an important measurement where the use is voluntary and essential to desired outcomes. IS researchers often consider use, especially informed and effective use, as an important dimension of IS success. [17] found out that most ERP success measurement models consider the user's point of view.

They argue that since the users interact with the system when doing their daily business, they are influenced by its performance directly.

[37] Assessed the "Use" dimension based on its two related attributes. These are "use of the ERP system" and "satisfaction". The use of an ERP system does not guarantee user satisfaction. However, satisfaction can only be derived if and only if the ERP system is used. It is common to encounter an ERP system that is being used by users who are not satisfied. This occurs where the use of the ERP system is not voluntary. Therefore, in order for the "use" dimension to be significant in the evaluation of ERP success, actual use and user satisfaction must be assessed simultaneously. [2] found out that perceived usefulness of an ERP system and its ease of use affect the overall use of the system. Their research recommended that practitioners and researchers should improve training in order to help user understand the benefits of using ERP system, and to improve the adaptability of the systems to user needs. [37] assessed "use" in terms of duration of use, number of reports generated, number of enquiries made by system users. They assessed "user satisfaction" in terms of information, software interface, and overall system satisfaction.

2.7 Benefits Dimension:

Organizations adopt and invest on ERP systems for various benefits and strategic reasons. The benefits are perceived in terms of being more efficient and eventually profitable to the organization. In many cases the calculation of return on investment (ROI) is weighted against the many intangible and strategic benefits. [26] observed that even though many of these benefits are commonly intangible, they form a part of weighting in the calculation of return on investment (ROI). For an organization to achieve the benefits of ERP systems it must be wary of certain disadvantages, and employ mechanism to mitigate them. They argued that one way through which organizations can use net benefits in describing the success of ERP systems is by being aware of the various pitfalls of ERP systems and employing mechanisms to mitigate them during implementation. First, ERP systems are expensive to implement in terms of time, human, and financial resources. Secondly ERP systems pose a challenge to organizations while they attempt to re-engineer their business process to conform to the ERP modules. Last but not least, ERP systems are also highly vendor- dependent. [29] proposed a framework for classifying ERP benefits by identifying five categories of benefits from past IS research. These categories are operational, managerial, strategic, organizational, and IT infrastructural benefits.

Operational benefits are realized when there is significant reduction of turnaround time in activities such as examination processing, payroll processing, procurement, inventory management among others. The efficiency realized in such process would in turn result to cost reduction, employee productivity improvement, quality improvement, improved customer service.

Managerial benefits are realized through the use of information acquired from an ERP system to make management decisions. Managerial benefits are linked to better resource management and improvement of performance in all levels or areas of the organization.

Strategic benefits are linked with how the use of ERP systems assists in achievement of various strategic goals. ERP systems can help institutions to grow, in terms of opening and supporting new centers / campuses, enroll more students, launch more academic programmes, adapt to rapid competition, comply with existing regulation, and establish new markets.

Organizational benefits are realized by building a consistent vision across the organization. This is achieved by the ERP system changing work patterns, facilitating organizational learning, and empowerment of workforce across the organization. Institutions are able to implement more efficient learning cycles like trimester system, open and distance learning, e-learning, part-time studies and so on.

IT infrastructural benefits are reduction of IT related costs, increased IT infrastructure capability, and flexibility [29]. The cost of maintaining legacy systems, multiple data centers, multiple applications, and consequently, the cost of a bloated IT workforce, can be reduced by implementing an integrated ERP system. Well implemented ERP systems, delivers reliable platforms, transforms information management, and increases the capability of IT resources. Finally, ERP systems adapt well with modern technology, integrate with a wide range of applications, and are highly customizable and configurable.

2.8 ERP Success:

The definition and measurement of success are thorny matters. First, success depends on the point of view from which one measures it. Even within a single organization different people will have different ideas. [21] noted that that the different groups are always interested in different things. From a project manager's or a consultant's perspective, ERP success is often defined in terms of completing the project plan on time and within budget. On the other hand, the user and adopter tend to focus on transition from old systems into the new and stable operation. This will involve the realization of system quality, and information quality of the new system.

The three dimensions of time, budget and specifications has featured in many traditional definitions of project management success [3],[20] , [31]. However, over time, studies have shown that these are not sufficient to measure project success. Dimensions such as satisfaction of stakeholders' expectations, value, and even use have emerged and proved to be more significant. [4] emphasizes that researchers should always distinguish between the Project management success and project product success. Project management success focuses on the project management process and in particular on the successful accomplishment of the project with regards to cost, time and quality. According to [25] the three dimensions indicate the degree of the "efficiency of project execution" On the other hand; project product success focuses on the effects of the project's end-product. Although project product success is distinguishable from project management success, the successful outcomes of both are inseparably linked [25] .

[3] Studies the deficiency of "The Iron Triangle" consisting of cost, time, and quality to develop a success criterion which he referred to as "The Square root". His model acknowledged the need to focus on product, and product benefits as other success criteria. [25] states that "using traditional criteria for evaluating project success is like using the time of a single runner to determine whether or not a relay has been successful". He thus alludes that there is a need to incorporate product related dimensions in order to provide a more inclusive model of project success. [21] extends the initial triangle of cost, time, and product to include system use, value, and learning criteria. However, his findings based on views from different stakeholder groups observed that learning is of least importance.

[6] applied the logical framework of updated DeLone and McLean IS success model and proposed a success model for ERP systems. The model validated the use of quality, use, and benefits dimensions in evaluating success of ERP systems. Their study also sought to affirm the importance of service quality as an important dimension by distinguishing between external and internal services. This study adopted the model developed by [6] to evaluate the dimensions ERP systems success in public and private universities in Kenya.

3. RESEARCH METHODOLOGY

A cross sectional survey methodology was adopted with a target population of 140 respondents drawn from two public and two private universities in Kenya. Primary data was collected using a structured questionnaire that was automated in order to enhance the response rate. 114 completed questionnaires were received which represented a response rate of 81%.

Table 3.1 Demographic Characteristics

Characteristics		A	B	C	D	Total	%
Academic Qualifications	Undergraduate	12	15	13	13	53	46
	Postgraduate	12	14	17	18	61	54
Gender	Male	13	15	10	16	54	47
	Female	11	14	20	15	60	53
Age	Below 25 Years	0	4	0	1	5	4
	26-35 Years	17	14	17	25	73	64
	36-45 Years	7	11	13	5	36	32
Total		24	29	30	31	114	100

The gender of respondents was considered an important consideration in the research to eliminate any possible bias in regard to gender. Out of the 114 respondents who filled and returned their questionnaires 60 (53%) were women, and 54

(47%) were men. The difference in the percentage was minimal indicating a fair distribution of respondents across both genders. This shows that the views from both genders were equally considered and therefore, any possible bias that could have occurred because of gender was neutralized.

The age of the respondents was taken into consideration to ensure that the results the study were not adversely affected by skewedness of their perceptions and use of ICTs. From the results, 5(4%) respondents aged below 25 years, 73 (64%) aged 25 to35 years, 36 (32%) aged 36 to 44 years. None of the respondents was above 45 years. The results show that the respondents were all in a good age bracket to make good assessment of the ERP systems in their institutions.

The academic qualification of the respondents was important to reveal whether the respondents had the requisite qualifications to use and assess the various dimensions of ERP system success. From the findings, it was established that 53 (46%) had completed undergraduate studies, while 61 (54%) had post graduate qualifications. It can therefore be assumed that the academic qualifications of the respondents were sufficient for them to have a good understanding of ERP systems in their institutions.

4. DATA ANALYSIS

4.1 Means and standard deviation:

	A		B		C		D	
Dimension	Mean	S.D.	Mean	S.D.	Mean	S.D.	Mean	S.D.
Quality								
System Quality	3.625	0.647	4.207	0.774	4.167	0.379	2.548	1.207
Information Quality	3.896	0.707	4.190	0.604	3.517	0.382	2.597	1.121
Service Quality	3.708	0.464	3.897	0.772	3.800	0.407	2.258	1.365
Use								
Voluntary Use	4.146	0.312	3.569	0.776	3.417	0.349	2.000	1.041
User Satisfaction	3.875	0.448	3.793	0.726	3.400	0.498	1.871	0.991
Net Benefits								
Operational	3.333	0.482	3.138	0.915	3.567	0.504	2.097	1.044
Managerial	4.652	0.272	3.172	1.136	3.500	0.509	2.323	0.832
Strategic	4.792	0.252	2.914	1.173	3.017	0.382	1.887	0.750
Organizational	4.823	0.204	3.517	0.796	3.500	0.415	2.532	1.372
IT infrastructure	4.250	0.255	3.448	0.772	4.450	0.304	2.726	1.316

From the above results, it is evident that each of the institution had different ERP success experiences. This was noted from the different mean scores received in each of the three dimensions of success that were used in this study

4.2 Correlation Analysis:

Variable		Quality	Use	Benefits	Success
Quality	Correlation	1	.730	.588	**.624**
	Sig. (2-tailed)		0	0	0
Use	Correlation	.730	1	.589	**.348**
	Sig. (2-tailed)	0		0	0
Benefits	Correlation	.588	.589	1	**.413**
	Sig. (2-tailed)	0	0		0
	N	114	114	114	114

All correlation is significant at the 0.01 level

The approximate significance value for each correlation measure is less that 0.01. From the table, it is evident that the quality of an ERP system is highly correlated (0.730) with use, followed by success (0.624), and then benefits (0.588). This implies that the use of an ERP system is largely influenced by the quality of the system. Similarly, use is more significantly correlated with benefits (0.589) than with success (0.348). This indicates that the benefits of an ERP system are largely influenced by its use. In brief, the results of correlation analysis shows that the three dimensions of ERP success are significantly related with the dependent variable, and also are inter-related. However, one problem that emerged with the our initial model was that correlations between independent variables and the dependent variable were much lower than correlation among the independent variables. In order to understand these relationships, more analysis was required that would remove the effect of control introduced by randomness each of the independent variables.

4.3 Regression Analysis:

In order to establish the independent contribution of each of the three variables, multiple regression analysis was used to test the proposed model. Variance Inflation Factor (VIF) and Tolerance statistics were extracted to ensure that the independent variables were not highly correlated. If correlations among the predictor variables were high, it would have led to unreliable and unstable estimates of regression coefficients.

Table 4.3 Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.652[a]	.426	.410	.87450

a. Predictors: (Constant), Benefits, Quality, Use

The value R value (0.652) indicates a good level of prediction of the dependent variable. The three predictors proposed in our model including quality, use, and net benefits can account for 42.6% of the variance in success of ERP systems.

Table 4.4 Regression Coefficients

	Unstandardized Coefficients		**Standardized Coefficients**			**Correlations**		
Model	B	Std. Error	Beta	t	Sig.	Zero-order	Partial	Part
(Constant)	.463	.336		1.378	.171			
Quality	.908	.135	*.746*	6.752	*.000*	.624	.541	.488
Use	-.280	.111	*-.278*	-2.514	*.013*	.348	-.233	-.182
Benefits	.144	.098	*.138*	1.476	*.143*	.413	.139	.107

a. Dependent Variable: Success

From the above results, it was concluded that even though a combinations of all independent variables significantly predicted ERP success ($p<0.005$), the benefits dimension was not significant at the chosen alpha level of 0.05. Secondly, the use dimension switched its sign because its positive correlation with ERP success was mainly through its large positive correlation (0.730) with the quality dimension.

5. CONCLUSION

The study found out that quality and use dimensions are good predictors of ERP success. Quality dimension was found to influence the use dimension which in turn had an impact on the net benefits dimension. Even though the use dimension was found to be significant, the study recommended the need to identify a more elaborate way of describing system use. The net benefits dimension was not found to be a suitable predictor of ERP systems success. Finally, this study suggests that quality (system quality, information quality, and service quality) is the most important dimension in determining the success of ERP systems in public and private universities in Kenya.

Further research is recommended to assess how each of the three dimensions of ERP success influences the other dimensions. This may require identifying different or new parameters for the use dimension, like usage patterns that can be collaborated by secondary data from the ERP systems. Research on ERP benefits based on longitudinal survey,

whereby expected benefits are clearly specified before implementation and assessed at various stages of the system maturity would provide a better understanding of how the net benefits dimension can describe ERP system success.

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