DETERMINANTS OF ENTERPRISE RESOURCE PLANNING PARTIAL IMPLEMENTATION IN THE PUBLIC SECTOR IN KENYA: A CASE OF THE MINISTRY OF LABOUR AND SOCIAL PROTECTION

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ABSTRACT

The purpose of this study was to find out the determinants of enterprise resource planning partial implementation in the public sector in Kenya: a case of the Ministry of Labour and Social Protection. The study was guided by the following specific objectives: to determine the influence of top management support on partial implementation of enterprise resource planning in the public sector in Kenya and to establish the influence of staff competence on partial implementation of enterprise resource planning in the public sector in Kenya. The population of the study comprised departments at the Ministry of Labour and social protection involved with ERP implementation. These departments included Finance, Procurement, Information Technology, Audit and Business Development departments. The target population was all employees working in the named departments. On average, there were approximately 100 employees working in each department. Therefore, the study population comprised of 500 employees. The study employed the stratified purposive sampling technique to select the sample. From the target population of 500, 30% (150) was studied. The study collected primary data using a structured questionnaire. Data was analyzed with the help of the statistical package for the social sciences (SPSS). The study found that the two independent variables (top management support and staff competency) had a great influence on ERP system partial implementation. The two variables were found to influence 70.9% of the ERP system partial implementation. The study recommended that the ministry management must strive to improve employees' knowledge and provide good leadership during the project implementation.

Keywords: *Top Management Support, Staff Competence, Enterprise Resource Planning*

INTRODUCTION

The Gartner Group described ERP (Enterprise Resource Planning) as the next generation of Manufacture Resource Planning (MRP) software in 1990s. Manufacture Resource Planning that was used in raw material purchasing, to structure the production system and generate operational schedules in 1970s developed to Manufacture Resource Planning II (MRP II) that coordinated all manufacturing process in 1980s. Integration of all the facets of the business enterprise under a common software application was the sole objective of developing and using Manufacture Resource Planning in 1970s and its subsequent evolution into MRP II in 1980s.

A business management system that integrates all business facets that include marketing, sales, manufacturing and planning is a generalized definition of Enterprise Resource Planning by Davenport (2010). PeopleSoft, Oracle and SAP are some of the widely known ERP software developers. According to Davenport (2010), ERP is a way of life and not just a project. Institutions and organizations need to change their working way because Enterprise Resource Planning system does not change anything. It involves a lot of consultation and planning to implement ERP system. It is a very complex process that can take a lot of time say months or years.

ERP system implementation is regarded as a journey of six stages as stated by Al-Jabri in 2008 who argued that ERP system is implemented in stages and the last stage is the post implementation stage which commences after Go-live. For an enterprise to function as a well-integrated and coordinated business unit that is supported by a strong and unique IT structure, ERP systems is the most important IT solution that is highly recommendable to achieve such a noble objective. According to Ismail, (2014), enterprise managers are given a good overview of all integrated processes involved in it by a successful ERP system which acts as a backbone of the enterprise intelligence.

Huang & Palvia, (2011) argued that Developing countries such as Kenya have lagged behind in terms of Enterprise Resource Planning (ERP) system adoption although there is wide adoption of the system in developed countries such as North America and European countries. Third world countries are becoming major targets for ERP vendors due to their level of economic growth. ERP systems have been slowly adopted and implemented in various developing economies Kenya included and many more are expected to follow the track. The presumed best business practices embedded within ERP systems have attracted several adopting organizations hoping to benefit from it. However, due to predicaments such as regulatory, economic, cultural and other local requirements the developing countries adoption of systems made in developed countries have encountered mismatch problems severally. Organizations often run into costly and sometimes fatal difficulties with implementation and subsequent maintenance of ERP systems as shown by studies various studies carried out in various developed countries (Brady & Gargeya, 2012). The typical budgets of implementing ERP systems rages from tens to hundreds of millions of dollars and takes one to three years. With very little explanation on the main cause, popular press and trade journals have documented both successes and failure of ERP system implementation and maintenance in various countries. In developed economies the ERP system implementation failure is estimated to be 68% while in developing economies it is estimated to be 93% (Poba-Nzaou et al., 2008). ERP technology faces additional challenges in developing countries related to basic infrastructure, cultural and economic issues and its implementation is likely to be more problematic in less developed countries like Kenya

since the trade press is now replete with articles on ERP failures in Europe and North America where most of these systems are made from (Poba-Nzaou et al., 2012).

ERP system is an application that integrates all business data and functions into a common system that is shared within the whole organization. Scholtz & Kapeso, (2014) argued that through an integrated software modules ERP system integrate information, monetary and material flows. The main objective of implementing ERP system is to help the organization management to run the organization in an integrated platform.

Investments in technologies and efficient operational processes that enhance internal efficiencies are the key determinants of ERP system success in the ministry of labour and social protection. On basis of reliable delivery of services, the technology solutions adopted by the ministry should aid in improving the ministerial functions to satisfy the general public need. The ministry can manage their assets and deliver effectively to the general public through the ERP system. To support management decision making a clear view of all asset data across the ministry is quite important and this can be provided through adoption of the system. It is through accurate and a well detailed records that ERP systems enable the ministry management to show compliance because it faces scrutiny of labour law compliance, safety precautions and financial records.

Vision 2030 is the new development blueprint that aims at making Kenya a newly industrialized nation by the year 2030. It covers the period of 2008 to 2030. Kenyan stakeholders from all parts of the country were involved during the development of this vision. It is believed that by 2030 Kenya will be providing high quality life for all its citizens. political pillar, social pillar and economic pillar are the three pillars based on this vision. *Social pillar* aims at building a society that is cohesive and just with social equity in a secure and clean environment through investments on land reform, people development, public sector reforms, infrastructure, and security. *Political pillar* seeks to realize a democratic political system founded on the issue-based politics that protects the freedom and rights of every individual in the Kenyan society, and respect the rule of law while *economic pillar* aims at providing economic development programmes through achieving an average of 10 percent GDP growth rate annually.

Problem statement

Evidence is accumulating to show that accruing benefits from an ERP is not straightforward despite the continued popularity of ERP Systems and the promises by those promoting and selling such systems. There is evidence of wastage of resources (time and money) by several organizations that have gone through various predicaments during the ERP system implementation. For instance, the government of Kenya through ministry of finance undertook to adapt and implement the Enterprise Resource Planning System in the civil service operations to improve efficiency in management of public records. The implementation has been module by module approach and up-to-date it is still implemented partially. Implementing an Enterprise Resource Planning system is generally an extensive challenge, it extends from the setting up of the project to the full operation of the system. If not well implemented, the operational functionality of the Enterprise Resource Planning becomes a major problem to the entire organization. The performance of the civil service may get worse before it gets better and sometimes encountering resistance throughout the stages of Enterprise Resource Planning system implementation. Therefore, Understanding the factors affecting ERP implementation is quite important for organizations planning to implement

the systems in order to minimize the risk of failure. Prior studies have been done based of ERP system adoption. For instance, Nyaga (2006) studied the critical success factors for the successful implementation of Enterprise Resource Planning systems, Nyandiere (2002) studied the challenges facing Enterprise Resource Planning, Nah and Delgado (2006) conducted a research study to find out the critical factors that affect ERP implementation, a research study was also carried out by Robert Campbell Pitney (2005) on public sector business process Optimization which came up with ten rules for maximizing ERP system impact. This clearly show that there is no specific study that has been done to find out the determinants of ERP system partial implementation in Kenyan ministries. Therefore, this study sought to seal this gap by establishing the determinants of Enterprise Resource Planning partial implementation in Kenyan public sector, Ministry of Labour and Social Protection guided by four specific variables that included determining the influence of top management support on partial implementation of enterprise resource planning in Kenyan public sector and establishing the influence of staff competence on partial implementation of enterprise resource planning in Kenyan public sector.

Objectives of the Study

The main objective of the study was to establish the determinants of Enterprise Resource Planning partial implementation in the public sector in Kenya: a case of the Ministry of Labour and Social Protection. The specific objectives were:-

- To determine the influence of top management support on partial implementation of enterprise resource planning in the public sector in Kenya
- To establish the influence of staff competence on partial implementation of enterprise resource planning in the public sector in Kenya

Research Hypothesis

- There is no relationship between the top management support and partial implementation of enterprise resource planning in the public sector in Kenya.
- There is no relationship between staff competence and partial implementation of enterprise resource planning in the public sector in Kenya.

LITERATURE REVIEW

Theoretical review

Diffusion of innovation (DOI) Theory

Diffusion of innovation theory is one of the oldest social science theory that was developed in 1962 by E.M Rogers. It is also called Innovation Diffusion Theory (IDT). According to Masrom & Hussein, (2008) diffusion of innovation theory has been used widely to predict adoption of innovation both at individual level and organization level. Rogers argued that innovation adoption rate is influenced by five innovation characteristics that include observability, triability, complexity, compatibility, and relative advantage.

Compatibility is the extent to which an innovation is considered to be consistent with the needs of potential adopters, past experiences, and values. An innovation will not be adopted rapidly if it is not compatible with their norms and values but if it is compatible it will be rapidly adopted. *Relative advantage* it is the extent to which an innovation is considered to be better than the idea it supersedes by a particular group of users. It may be measured in terms of satisfaction, convenience, social prestige or economic advantage. An innovation is likely to be adopted more rapidly if its relative advantage is considered to be greater. *Triability,* it is the extent to which an innovation can be experimented with on a limited basis. Less uncertainty to an individual

considering innovation adoption is represented by an innovation that is more triable. *Complexity* is the extent to which an innovation is considered to be difficult to use or understand. Innovations that require the adopter to develop new skills and understandings are not adopted more rapidly like innovations that are simpler to use and understand. *Observability* is the ease in which the results of an innovation is seen by an individual. The easier the observability the greater the possibility of adoption while the more difficult it is to observe results the lower the possibility of adoption.

Rogers (1995) argued that the knowledge that decision makers have about a technology determines the decision on its adoption. This knowledge establishes the attitude behavior toward the technology and helps the decision maker to decide whether to reject or adopt the innovation.

Technology Acceptance Model (TAM)

Determinants of user acceptance of a wide range of computing technologies was explained by technological acceptance model which was proposed by Fred Davis in 1985. Perceived Usefulness (PU) and Perceived Ease of Use (PEOU) were identified in technological acceptance model as the main theoretical constructs that affect the intention to use a system. PU has a positive correlation with both adoption intention and continuance intention as confirmed by some scholars. Hikmet, Anol & Bhattacherjee, (2008) argued that PU has been found to influence satisfaction and attitude toward the technology in post adoption studies. Both perceived use and adoption intention are influenced by Perceived ease of use (Davis, 1989). Perceived ease of use was found to influence satisfaction by other studies done to investigate post-adoption studies by Thong, Hong and Tam, (2006). According to Venkatesh & Davis, (2000), both actual continuance

usage and continuance intention was found to be influenced by PEOU. However, this theory has not gone without criticism. It was criticized for its limitations such as the original model's intended generality and parsimony. It was also criticized for its failure to consider non-organizational setting and satisfaction. The original TAM was later developed to TAM2 which explained the usage intention and perceived usefulness including experience, cognitive instrumental processes (result demonstrability, output quality, and job relevance), and social influence (image, voluntariness, and subjective norm). TAM2 was tested in both mandatory and voluntary settings. Venkatesh & Davis, (2000) argued that 60% of user adoption using the advanced version of TAM (TAM2) was explained by the results that strongly supported Technological Acceptance Model. Perceived usefulness is determined by four cognitive instrumental processes in TAM2 which include the perceived ease of use, *result demonstrability* defined as the tangibility of the results of using the innovation, *output quality* defined as the degree to which an individual judges the effect of a new system, and the *job relevance* which is as an individual's perception regarding the degree to which the target system is applicable to his/her job (Shin, & Kim, 2008). System users may attribute their achievement to work behavior rather than usage of the system if the result demonstrability of a system is low. From the user point of view, since this theory expounds on some of the factors that might affect ERP system implementation in the public sector, then it is relevant to this study. This is so because, whether the user actually rejects or uses the system is highly determined by the attitude of a user toward the system. Two major beliefs are considered to influence the attitude of the user. Such beliefs are perceived ease of use and perceived usefulness with perceived ease of use having a direct influence on perceived usefulness.
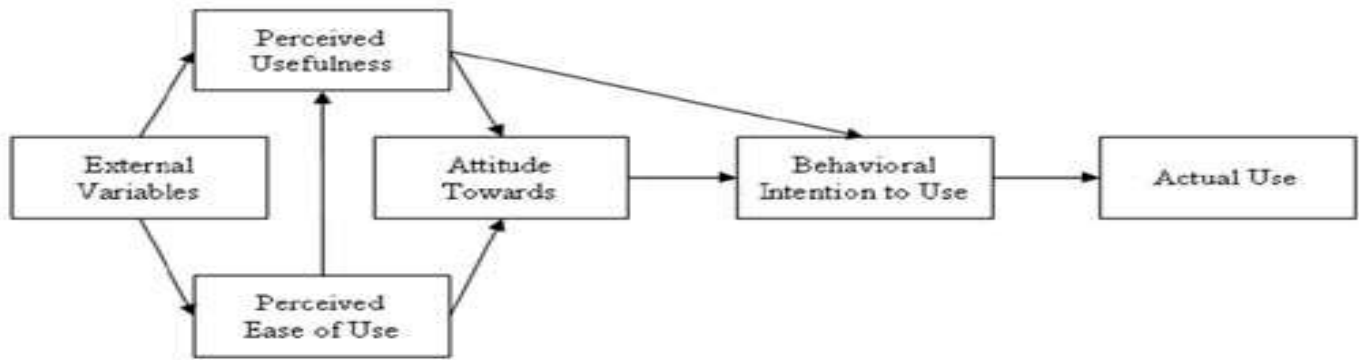
Figure 1: original technological model (TAM)

Empirical literature review

Staff competency highly affects successful implementation of the ERP system. Technical knowledge, change management, and strategic visioning are some of the various competencies that employees should have in ERP system implementation. New ideas in system implementation efforts should be brought by staff with related job experience. According to Akkermans & Helden, (2014), lesser user involvement and participation results due to limited expertise in IT. ERP implementation projects are made unquestionably complex as well as requiring new project management abilities by its peculiarities of technical equipment and software as well as human and organizational resources. An extensive methodical planning and weighted management is required because of the complexity of ERP implementation projects. Key factors believed to determine the success or failure of ERP system implementation include the proficiency, abilities, workmanship, and knowledge of a project manager. Akkermans & Helden, (2014) argued that the vital implementation activity include education of users relating to new business processes and training of prospective users how to use the system. Problems that may result in a failed implementation of ERP systems may include lack of understanding as to how an enterprise resource planning system is going to

change an organization's business processes and the absence of user training. All employees and executives are familiarized with the logic and idea of enterprise resource planning systems through trainings and education to build a good related background knowledge. A better understanding of how work is related to other functional areas of an organization is developed through employees training and education. Organizations and companies should train their employees on how to use a system by explaining how their work is going to be affected by the new system and how their work relates to certain business processes. According to Akkermans & Helden, (2014), the usage and effort invested in learning the system rely on employees while the decision of adopting an ERP system depends on the organization. Training programs are always provided before the actual Information System application implementation is done because it increases the ability to use an information system (IS) application. Although powerful and integrated IT applications force users to continue learning new skills, training prior to implementation is important. A gap between how IT is actually used and the realization of its full potential is caused by lack of continuous information technology learning which is the learning that take place after an IS system has gone live. The key to realizing IT full potential is post implementation learning. The more employees continue to learn, the more effectively Information Technology is used and

the greater its impact on work. A successful implementation of ERP systems in an organization is significantly determined by employee knowledge on the system. Top management support has been emphasized by majority of research works as the prerequisite for a successful ERP systems implementation. Attaining of desired results and creation of a favorable environment for the implementation of ERP systems has been the main desire and the mission of top management. The top management must be the key participants of the ERP system implementation and not only as observers. According to Albano, Pino, & Borges, (2014), formulation of real and justified goals based on limitations provided by Information Technology and the awareness of the opportunities is the main role of top management in implementation of enterprise resource planning systems.

It has been proofed that for firms to improve the organization performance ERP system provides a number of advantages. For organizations to acquire both tangible and intangible benefits they choose to deploy ERP systems. Ecommerce, easy adaptability, global outreach, improved maintenance, improved scalability, cost reduction, delivery and cycle time redundancy, and reliable information access are some of the benefits of ERP system as stated by Rashid et al (2002). Wallace & Kremzar, (2001) argued that as a result of direct ERP system implementation many companies have experienced a dramatic increase in sales, on-time shipments, productivity, and responsiveness. Companies have also experienced substantial decrease in quality problems and purchase costs. Benefits from ERP systems were categorized into two by deloitte consulting in 1998 as cited at (O'Leary, 2004).

*Tangible benefits* are on time delivery, maintenance reductions, logistic cost reductions, Profit increases, Cash management improvement, Procurement Cost Reduction, IT cost reduction, financial close cycle reduction, order management improvements, productivity improvements, personnel reduction, and inventory reduction.

Intangible benefits include visibility, globalization, flexibility, standardization, integration, customer responsiveness, and new improved processes. It is argued by Shang & Seddon (2002) as cited at (De Loo et al, 2012) that ERP implementation organizational benefits evolve around six issues. Such *six issues* include increased employee morale and satisfaction, shifting work focus, building common visions, employee empowerment, facilitating business learning and broadening of employee skills, and changing work patterns with shifted focus.

Kenyan companies that have implemented ERP system have gone through a myriad of challenges. The incompatibility between the organization work practices and the ERP embedded business practices is one of the challenges. According to Otieno, (2010), claims that ERP embodies established ways of doing business that requires organizations to adopt ERP systems to change their business processes to conform to business practice exacerbates difficulty in ERP implementation in developed countries.

Six challenges that face implementation of ERP systems in Kenya was found by a study carried by Otieno (2010). They include complexity of ERP system that compromises security, lack of skills by both users and consultants, unreliability of vendors and poor quality of some ERP systems, poor change management and failure to realize ERP benefits, high cost escalated by extensive customization, and integration and staff turnover issues.

Conceptual Framework
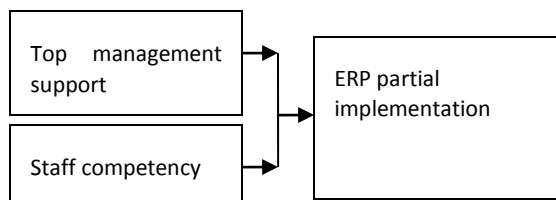
Dependent variable   Independent variables

Figure I: Conceptual Framework

(Source: author 2018)

METHODOLOGY

The study used a descriptive design which is a method of collecting information by interviewing or administering a questionnaire to a sample of individuals (Orodho, 2004). The population of the study comprised departments at the Ministry of Labour and Social protection involved with ERP implementation. These departments included Finance, Procurement, Information Technology, Audit and Business Development departments. The target population comprised all employees working in the named departments. On average, there are approximately The research instruments of the study were the Questionnaires.

FINDINGS

ERP system implementation

On statements regarding ERP system partial implementation, the respondents were asked to indicate the extent to which they agreed or disagreed with the statements. The responses were placed on a five likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). To indicate the dispersion from the mean standard deviation was used. High standard deviation indicated that the data was spread out over a large range of values while low standard deviation indicates that the data tend to be very close to the mean.

Table 1: ERP system partial implementation

	Mean	Std. Deviation
ERP system has been fully implemented in the ministry of labour.	1.5234	.25467
ERP system has been partially implemented in the ministry of labour	4.7574	.22348
Ministry of labour has not attempted to implement ERP system.	1.0232	.00946
Our operating costs has significantly reduced because of ERP	3.3452	.64427
Our operation performance has gone higher because of ERP	3.2634	.53722
Our services delivery has significantly improved because of ERP	3.0237	.42672

According to findings in the table above, respondents disagreed that ERP system has been perfectly implemented in the ministry of labour (Mean=1.5234), respondents strongly agreed that ERP system had been partially implemented in the ministry of labour (Mean=4.7574), respondents strongly disagreed that ministry of labour had not attempted to implement ERP system (Mean=1.0232), respondents agreed that ministry operating costs had significantly reduced because of ERP (Mean=3.3452), respondents further agreed that the ministry operation performance has gone higher because of ERP (Mean=3.2634) and respondents also agreed that the ministry services delivery has significantly improved because of ERP (Mean=3.0237).

Top management support

On statements regarding top management support, the respondents were asked to indicate the extent to which they agreed or disagreed with the statements. The responses were placed on a five likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). To indicate the dispersion from the mean standard deviation was used.

High standard deviation indicated that the data was spread out over a large range of values while low standard deviation indicates that the data points tend to be very close to the mean.

Table 2: Top management support

	Mean	Std. Deviation
The ministry top management has played a satisfactory role in the ERP implementation process	2.45763	.43477
Top management provided leadership for ERP implementation	3.26576	.34642
There is adequate top management support to technological innovations	2.59477	.32111
Top management is familiar with ERP system's functionalities	3.23422	.37565
Arrival of a new system is always communicated to all employees by top management	3.74543	.36646

According to the results in table above, the respondents disagreed that the ministry top management had played a satisfactory role in the ERP implementation process (Mean=2.45763), respondents agreed that top management provided leadership for ERP implementation (Mean=3.26576), respondents disagreed that there was adequate top management support to technological innovations (Mean=2.59477), respondents agreed that top management was familiar with ERP system's functionalities (Mean=3.23422) and they also agreed that arrival of a new system was always communicated to all employees by top management (Mean=3.74543).

The study further tested the hypothesis on whether top management support influences ERP system partial implementation in the ministry of labour and social protection. The results were as presented in table below showing the relationship between top management support and ERP system partial implementation.

Table 3: Top management support and ERP system partial implementation

		Top management support
ERP system partial implementation	Pearson Correlation	0.542
	Sig. (2-tailed)	**0.04
	N	112

Correlation is significant at the 0.05 level (2-tailed).

The results in table above showed that top management support was significant and positively correlated with ERP system partial implementation, r= 0.542, p=0.04. This means there was a significant relationship between top management support and ERP system partial implementation. Therefore, the study rejected the null hypothesis that there is no significant relationship between top management support and ERP system partial implementation in the ministry of labour and social protection and accept the alternative.

Staff competence

On statements regarding staff competence, the respondents were asked to indicate the extent to which they agreed or disagreed with the statements. The responses were placed on a five likert scale ranging from 1 (strongly disagree) to 5 (strongly agree). To indicate the dispersion from the mean standard deviation was used. High standard deviation indicated that the data was spread out over a large range of values while low standard deviation

indicates that the data points tend to be very close to the mean.

Table 4: Staff Competency

	Mean	Std. Deviation
Employees in in the ministry are highly trained in the use of ERP systems	2.6346	.36636
Staff in the ministry are receptive to new technological innovations	3.4634	.42435
There is continuous training on new technologies among staff	2.5947	.34664
Staffs are provided with adequate training material on ERP modules in the ministry	2.7934	.33425
Staffs work as a team during implementation of the ERP system	3.0032	.36567

According to the results in table above, the respondents disagreed that employees in the ministry were highly trained in the use of ERP systems(Mean=2.6346), the respondents agreed that staff in the ministry were receptive to new technological innovations (mean=3.4634), the respondents disagreed that there was continuous training on new technologies among staff (mean=2.5947), further respondents disagreed that staffs were provided with adequate training material on ERP modules in the ministry (mean=2.7934), but they agreed that staffs work as a team during implementation of the ERP system (mean=3.0032)

The study further tested the hypothesis on whether staff competency influences ERP system partial implementation in the ministry of labour and social protection. The results were as presented in table below showing the relationship between staff competency and ERP system partial implementation.

Table 1: Staff competency and ERP system partial implementation

		Staff competency
ERP system partial implementation	Pearson Correlation	0.722
	Sig. (2-tailed)	**0.04
	N	112

Correlation is significant at the 0.05 level (2-tailed).

The results in table above showed that the staff competency was significant and positively correlated with the ERP system partial implementation, r=0.722, p=0.04. This meant that there was a significant relationship between staff competency and ERP system partial implementation. Therefore, the study rejected the null hypothesis that there is no significant relationship between staff competency and ERP system partial implementation in the ministry of labour and social protection and accept the alternative hypothesis.

CONCLUSIONS AND RECOMMENDATIONS

The findings showed a strong positive relationship between top management support and ERP system partial implementation. The two variables had a positive correlation of 0.542. This was a clear indication that if top management put more effort in supporting ERP system partial implementation there is a possibility of a successful implementation of ERP system in the public sector.

Similarly, there was a positive correlation of 0.722 between staff competency and ERP system partial implementation. This showed that staff competence was a key factor in the ERP system partial

implementation. Therefore, developing the staff competency through continuous training of the already hired staff and recruiting new competent staff would spearhead a successful ERP system partial implementation.

Recommendations

The following recommendations were made from the findings of this study: The ministry management must strive to improve employees' knowledge and skills to ensure successful ERP implementation. This can be done through user training before the system goes live and continuous training post implementation to fill the knowledge gaps. This would ensure that all employees are conversant with the ERP system and develop ownership of the system. Top management should involve all the key stakeholders in the implementation process. The involvement can enhance adoptability of the system and overcome resistance to change and prevent conflicts from emerging during the implementation process. Top management should also provide leadership during the implementation process and provide support to the project team.

Areas for further Research

Further research should be carried out to dig deep on the main challenges facing ERP system partial implementation in the Kenyan public sector. Although the study focused on the ministry of labour and social protection, there are also other distinct ministries in the public sector that may portray a different scenario/perspective in regard to ERP system partial implementation in the public sector in Kenya. Therefore, a study should be carried out in other ministry regarding the same main objective.

REFERENCES

Aldammas, A., & Al-Mudimigh, S., (2005). Critical Success and Failure Factors of ERP implementations. *Journal of Theoretical and Applied Information Technology*.Vol 28 No.2,

Alshawi, S., Irani, Z. and Baldwin, L., (2003). Benchmarking information technology investment and benefits extraction. *An International Journal.*Vol. 10, No.4.

Almajali, D. A., Masa'deh, R. E., & Tarhini, A. (2016). Antecedents of ERP systems implementation success: a study on Jordanian healthcare sector. *Journal of Enterprise Information Management*, *29*(4), 549-565.

Aloini, D., Dulmin, R., Mininno, V., & Spagnesi, A. (2016). Benefits and barriers of social/collaborative ERP systems: a state of the art and research agenda. In *Strengthening Information and Control Systems* (pp. 171-184). Springer, Cham.

Altamony, H., Al-Salti, Z., Gharaibeh, A., & Elyas, T. (2016). The relationship between change management strategy and successful enterprise resource planning (ERP) implementations: A theoretical perspective. *International Journal of Business Management and Economic Research*, *7*(4), 690-703.

Berglöf Stridh, M., & Wågström, J. (2013). The missing fit between ERP system and organizational structures: A qualitative case study of the implementation of PRIO in the Swedish Armed Forces.

Boersma, K., & Kingma, S. (2005). Developing a cultural perspective on ERP. Business Management Journal. Vol 11 No.2.

Bradford, M.,& Florin, J. (2003). Examining The Role of Innovation Diffusion Factors On The Implementation Success of Enterprise Resource Planning Systems. International Information Systems, vol 4, pp. 205-225.

Breakfield, C., & Burkley, R. (2002).Managing Systems Migrations and Upgrades. Digital Press.

Canning, M. (2008). Evaluating enterprise resource planning systems using an interpretive approach. *Knowledge and Process Management*, Vol. 9, No. 2, pp. 72-82

Chang, J. F. (2016). *Business process management systems: strategy and implementation*. Auerbach Publications.

Davis, F. D. (1993). User acceptance of information technology: system characteristics, user perceptions and behavioral impacts. *International journal of man-machine studies*, *38*(3), 475-487.

Debela, J. (2009). "Translating Strategy into Effective Implementation: Dispelling the Myths and Highlighting What Works", *Strategy and Leadership Journal* Vol. 31, 3, MCB UP Ltd.

Dezdar, S., & Ainin, S. (2011). The influence of organizational factors on successful ERP implementation. *Management Decision*, *49*(6), 911-926.

Dezdar, S., & Sulaiman, A. (2009). Successful enterprise resource planning implementation: taxonomy of critical factors. *Industrial Management & Data Systems*, *109*(8), 1037-1052.

Dong, L., Neufeld, D., & Higgins, C. (2009). Top management support of enterprise implementations. *Journal of Information technology*, *24*(1), 55-80.

Dumitru, V. F., Albu, N., Albu, C. N., & Dumitru, M. (2013). ERP implementation and organizational performance. A Romanian case study of best practices. *Amfiteatru Economic Journal*, *15*(34), 518-531.

Eisenberger, R., Malone, G. P., & Presson, W. D. (2016). Optimizing perceived organizational support to enhance employee engagement. *Society for Human Resource Management and Society for Industrial and Organizational Psychology*, 2-22.

ERP, S. (2017). *Usability Evaluation of SAP ERP System (UNRWA Case Study)* (Doctoral dissertation, The Islamic University–Gaza).

Fountain, M. (2007). Enterprise resource planning: implementation procedures and critical success factors. *European Journal of Operational Research*, Vol. 146, No. 2, pp. 241-257

Galy, E., & Sauceda, M. J. (2014). Post-implementation practices of ERP systems and their relationship to financial performance. *Information & Management*, *51*(3), 310-319.

Glesne, C. (2015). *Becoming qualitative researchers: An introduction*. Pearson.

Hambrick, D. C. (2016). Upper echelons theory. *The Palgrave Encyclopedia of Strategic Management*, 1-5.

Hambrick, D. C., & Mason, P. A. (1984). Upper echelons: The organization as a reflection of its top managers. *Academy of management review*, *9*(2), 193-206.

Herman, J. L., & Smith, B. (2015). Upper Echelons Theory. *Wiley Encyclopedia of Management*, 1-1.

Hiebl, M. R. (2014). Upper echelons theory in management accounting and control research. *Journal of Management Control*, *24*(3), 223-240.

Ifinedo, P., & Nahar, N. (2009). Interactions between contingency, organizational IT factors, and ERP success. *Industrial Management & Data Systems*, *109*(1), 118-137.

Inigo, E. A., & Albareda, L. (2016). Understanding sustainable innovation as a complex adaptive system: a systemic approach to the firm. *Journal of Cleaner Production*, *126*, 1-20.

Jagoda, K., & Samaranayake, P. (2017). An integrated framework for ERP system implementation. *International Journal of Accounting & Information Management*, *25*(1), 91-109.

Kang'ethe (2007). Evaluation of the successful implementation of Enterprise Resource Planning at Haco industries, *Unpublished MBA paper, School of Business, University of Nairobi.*

Ke, W., & Wei, K. K. (2008). Organizational culture and leadership in ERP implementation. *Decision support systems*, *45*(2), 208-218.

Kelley, M. (2008). "Financial impacts on enterprise resource planning implementations" *International Journal of Accounting Information Systems*, Vol. 2, pp. 271-294

Kim, K. Y., Eisenberger, R., & Baik, K. (2016). Perceived organizational support and affective organizational commitment: Moderating influence of perceived organizational competence. *Journal of Organizational Behavior*, *37*(4), 558-583.

Lewis, S. (2015). Qualitative inquiry and research design: Choosing among five approaches. *Health promotion practice*, *16*(4), 473-475.

Loh, T. C., & Koh S. C. L. (2014). Critical elements for a successful enterprise resource planning implementation in small-and medium-sized enterprises. *International journal of production research*, *42*(17), 3433-3455.

López, C., & Ishizaka, A. (2017). GAHPSort: A new group multi-criteria decision method for sorting a large number of the cloud-based ERP solutions. *Computers in Industry*, *92*, 12-24.

Mackey, A., & Gass, S. M. (2015). *Second language research: Methodology and design*. Routledge.

Mackey, A., & Gass, S. M. (2015). *Second language research: Methodology and design*. Routledge.

Markus, M. & Tanis, C. (2000). *The Enterprise System Experience- From Adaption to Success*, Claremont Graduate University

May D. & Kettelhut M. (2008). "Managing human issues in re-engineering projects: A case review of implementation issues" *Journal of Systems Management*, Vol. 47, pp. 5-11

McGee, J. (2015). Resource-Based View. *Wiley Encyclopedia of Management*, 1-8.

Mulwa, J. M. (2015). Factors influencing adoption of ict in service delivery by county governments in Kenya: a case of Kitui County. *International Journal for Management Science and Terchnolog*, *2*(3), 47-54.

Munguti (2001). Factors that are influencing companies to adopt ERP in Kenya. *Unpublished MBA paper, School of Business, University of Nairobi.*

Myers, M. P., Stolarov, J. P., Eng, C., Li, J., Wang, S. I., Wigler, M. H., Parsons, R. & Tonks, N. K. (2008). "Office automation: A progress report" *Office Technology and People*. Vol.1, No.1

Nah, F. & Lau, J. (2003). 'Critical factors for successful implementation of enterprise systems'. *Business Process Management Journal*, 7 (3): 285-296.

Nettsträter, A., Geißen, T., Witthaut, M., Ebel, D., & Schoneboom, J. (2015). Logistics software systems and functions: an overview of ERP, WMS, TMS and SCM systems. In *Cloud Computing for Logistics* (pp. 1-11). Springer, Cham.

Nielsen, S. (2010). Top management team diversity: A review of theories and methodologies. *International Journal of Management Reviews*, *12*(3), 301-316.

Nyaga (2006). Critical success factors for the successful implementation of Enterprise Resource Planning systems in Bamburi Cement Ltd, *Unpublished MBA paper, School of Business, University of Nairobi*.

Obeidat, B. Y., Al-Suradi, M. M., Masa'deh, R. E., & Tarhini, A. (2016). The impact of knowledge management on innovation: An empirical study on Jordanian consultancy firms. *Management Research Review*, *39*(10), 1214-1238.

Okumu (2003). Assessment of the success of ERP in manufacturing sector in manufacturing sector in Kenya, *Unpublished MBA paper, School of Business, University of Nairobi*.

Orougi, S. (2015). Recent advances in enterprise resource planning. *Accounting*, *1*(1), 37-42.

Pan, M. J., & Jang, W. Y. (2008). Determinants of the adoption of enterprise resource planning within the technology-organization-environment framework: Taiwan's communications industry. *Journal of Computer information systems*, *48*(3), 94-102.

Pimentel, A. C. M., & de Mesquita Spinola, M. (2013, July). ERP implementation influence in SMEs organizational structure. In *Technology Management in the IT-Driven Services (PICMET), 2013 Proceedings of PICMET'13:* (pp. 1535-1541). IEEE.

Rotchanakitumnuai, S. (2010). Success factors of large scale ERP implementation in Thailand. *World Academy of Science, Engineering and Technology, Thailand*, *40*, 605-608.

Scholtz, B., & Kapeso, M. (2014). An m-learning framework for ERP systems in higher education. *Interactive Technology and Smart Education*, *11*(4), 287-301.

Scholtz, B., & Kapeso, M. (2014). An m-learning framework for ERP systems in higher education. *Interactive Technology and Smart Education*, *11*(4), 287-301.

Seethamraju, R. (2015). Adoption of software as a service (SaaS) enterprise resource planning (ERP) systems in small and medium sized enterprises (SMEs). *Information systems frontiers*, *17*(3), 475-492.

Silverman, D. (Ed.). (2016). *Qualitative research*. Sage.

Sumner, M. (2018). ERP Project Retrospectives—55 Enterprise Systems: Evaluating Project Success, Lessons Learned, and Business Outcomes.

Taylor, S. J., Bogdan, R., & DeVault, M. (2015). *Introduction to qualitative research methods: A guidebook and resource*. John Wiley & Sons.

Umble E.U, R.Haft,&M.M Umble (2003).Enterprise Resource Planning: Implementation Procedures and Critical Success Factors.European Journal of Operation Research. No 146.

Valacich J. & Schneider C. (2012). Information Systems Today-Managing in the Digital World. Pearson.

Wallace F. & Kremzar H. (2001). ERP: Making It Happen: The Implementers' Guide to Success with Enterprise Resource Planning: Wiley e-book.

Wong, A., Patrick Y., Scarbrough, H., Davison, R. (2005). Critical Failure Factors in ERP Implementation. Pacific Asia Conference on Information Systems.

Zhu, K., Kraemer, K., & Xu, S. (2003). Electronic business adoption by European firms: A cross-country assessment of the facilitators and inhibitors. European Journal of Information Systems, vole 12, No. 4, pp. 251–268.