

Communication and Training Strategies on ERP Project Implementation

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Abstract

The successful implementation of Enterprise Resource Planning (ERP) systems in organizations is heavily reliant on effective change management strategies. This study investigates the effect of change management critical success factors, particularly communication and training strategies, on ERP implementation success in the context of Rural Electrification and Renewable Energy Corporation (REREC) in Kenya. The research is guided by the Diffusion of Innovation theory and Lewin's Three-Step Change Theory. A descriptive research design was adopted, and data was analyzed descriptively and inferentially through correlation and multiple regression. The study included 732 REREC corporate staff in Nairobi, with a sample of 146 selected via simple random sampling. The findings reveal that change management success factors, specifically communication strategy ($r= 0.462$; $p<0.01$) and training strategy ($r= 0.359$; $p<0.01$), have a statistically significant cause and effect relationship with ERP implementation. Of these relationships, communication strategy holds the highest influence ($r= 0.462$), followed by training strategy ($r= 0.359$). The study recommends that REREC should focus on enhancing communication skills, structure, and media in developing communication concepts and plans, while the training strategy should address user training needs, customized training materials, formal training programs, and time allocation.

Keywords: Communication, Training, Critical Success Factors, ERP Implementation, Change Management

DOI: 10.7176/EJBM/15-18-02

Publication date: November 30th 2023

1. Introduction

1.1 Background Information

In an ever-changing business landscape, organizational change is inevitable, driven by evolving business priorities, market dynamics, technological advancements, and scope modifications (Mathar & Mithun, 2019). Whether it's adapting to new business processes, IT services, or process flows, organizations require a people-centric approach to manage these changes effectively. This is particularly relevant in the context of implementing Enterprise Resource Planning (ERP) systems, which entail significant organizational changes effecting various aspects of the business (Korath, 2018).

ERP systems integrate various business functions such as sourcing, supply chain management, quality control, inventory, manufacturing, sales, and finance into a single platform, streamlining operations and serving as a central source of truth (Müller & Syed, 2021). However, the success of ERP implementation relies heavily on effective change management practices, as the adoption of these systems necessitates changes at multiple levels, including processes, technology, and, most importantly, the people within the organization (Park, 2018).

Therefore, change management critical success factors play a crucial role in the effective and successful implementation of ERP systems (Divya & Mithun, 2020). Two fundamental factors identified as critical for successful ERP implementation are communication strategy and training strategy (Divya & Mithun, 2020; Doan & Nguyen, 2020; Najm et al., 2018). Effective communication ensures that decisions, expectations, and goals are shared throughout the organization (Carmeli & Tishler, 2018). Communication strategy includes elements such as communication skills, communication media, communication structure, and communication concepts and plans (Müller and Syed, 2021).

Training is equally crucial, as it ensures that employees have the necessary skills to produce successful business results (Doan & Nguyen, 2020). A comprehensive training strategy includes identifying specific user training needs, customizing training materials, developing formal training programs, and allocating time for ERP training (Doan & Nguyen, 2020). Training enhances users' knowledge and proficiency, contributing to individual and organizational performance (Uddin et al., 2019). Furthermore, training reduces user resistance and increases the ease of use, which, in turn, enhances the likelihood of successful ERP system implementation (Chang, 2020).

ERP systems, as structured information systems, are essential for organizations to coordinate and manage critical aspects of their operations, centralizing resource planning (Müller & Syed, 2021). The success of ERP implementation is measured through indicators such as increased system adoption, improved project success rates, and increased system use and usability.

1.1.1 ERP System Projects in State Corporations

State corporations are increasingly automating their operations and embracing technology to maintain

competitiveness and efficiency. Automation through integrated ERP systems provides a centralized source of truth, integrating various business functions, including sourcing, supply chain management, quality control, inventory, manufacturing, sales, distribution, and finance (Müller & Syed, 2021). To achieve successful ERP implementation, it is crucial to ensure the acceptance and use of the system by internal and external stakeholders. Managing these changes and ensuring a successful transition is vital.

1.1.2 ERP System Project at the Rural Electrification and Renewable Energy Corporation in Kenya

The Rural Electrification Authority (REA) in Kenya, renamed the Rural Electrification and Renewable Energy Corporation (REREC) following the Energy Act of 2019, is a state corporation under the Ministry of Energy (MoE). REREC, established in 2007, sought to automate its manual business processes as part of the government's directives for increased transparency, efficiency, and integrity in offering government services (MoE). The organization viewed energy security as a national priority, integral to achieving Kenya's development programs such as Vision 2030 and the Big 4 Agenda. The implementation of ERP systems at REREC aimed to streamline and enhance its operations.

1.2 Statement of the Problem

Despite the efforts by governments and organizations to automate information systems for improved transparency and efficiency, ERP implementation projects often face high failure rates in government parastatals (Primeau & Leroux, 2019). Over 70% of ERP projects experience failure due to the lack of effective change management critical success factors (Almajali et al., 2018). Furthermore, the ERP Report of 2016 recorded that only 10% of the 215 ERP projects sampled were implemented successfully on schedule, within budget, and according to scope. A significant number of projects were either abandoned or delayed indefinitely, with substantial cost and schedule overruns (Panorama Consulting Solution Group, 2017). The intensity of focus on change management in ERP projects has varied, with some projects having little or no focus on this critical factor (Panorama Consulting Solution Group, 2018, 2022). Despite the recognition of communication and training strategies as key success factors in ERP projects, there is insufficient literature on the depth and extent to which these critical success factors are used. The effect of the depth of these critical success factors on ERP project outcomes and the organizational level management of change and its measurement remain underexplored areas (Park, 2018). This study seeks to fill these research gaps by providing comprehensive insights into the usage and effect of change management critical success factors in the context of REREC's ERP implementation in 2019. While previous studies focused on primary change management critical success factors, this study delves deeper into the extent of their application and measures their effects.

1.3 Purpose of the Study

- i. Assess the depth of change management critical success factors used in the ERP project implementation at REREC.
- ii. Determine the level of adoption of ERP implementation at REREC.
- iii. Establish the effect of change management critical success factors on ERP project implementation at REREC.

1.4 Research Questions

- i. What is the extent of utilization of change management critical success factors in the ERP project implementation at REREC?
- ii. To what degree has ERP implementation been adopted within REREC?
- iii. What is the influence of change management critical success factors on the implementation of the ERP project at REREC?

2. Literature Review

2.1 Theoretical Framework

2.1.1 Diffusion of Innovation (DOI) Theory

The Diffusion of Innovation (DOI) theory, developed by Everett Rogers in 1962, provides a framework for understanding how new ideas, innovations, or technologies spread among different groups of adopters. This theory delineates the stages of adoption and explains how ideas gain momentum over time, eventually leading to significant changes in a social system. DOI theory explores the diffusion process, its driving forces, and the rate at which innovation spreads, ultimately culminating in adoption by the intended audience (Rono, 2020).

While DOI theory offers valuable insights into the adoption process, it has faced criticism for its inability to comprehensively explain the complex processes associated with the adoption of sophisticated technologies (Lyytinen & Damsgaard, 2001). Some argue that it struggles to account for the rapidly evolving media landscape, making it challenging to predict outcomes in the modern era (Danowski et al., 2011; Atkin et al., 2011). Despite these limitations, DOI theory is relevant to this study, as it helps to understand the significance of various aspects

of ERP implementation success.

2.1.2 Lewin's Three-Step Change Theory

Kurt Lewin introduced the Three-Step Change Theory in 1947, consisting of three stages: unfreezing, changing, and refreezing (Burnes, 2020). Unfreezing involves making individuals understand the necessity for change, while the changing stage focuses on the actual process of reform. Finally, refreezing solidifies the new status quo, maintaining the change (Korhonen, 2019).

Critics of Lewin's theory argue that it oversimplifies the complex nature of change processes, particularly in the modern context of rapid and ongoing change (Cummings et al., 2018). Lewin's model has been criticized for being outdated and linear, failing to capture the intricate emotional experiences associated with change. It does not adequately address the complex interactions between individuals, groups, organizations, and society during the change process (Burnes, 2020).

2.2 Empirical Literature

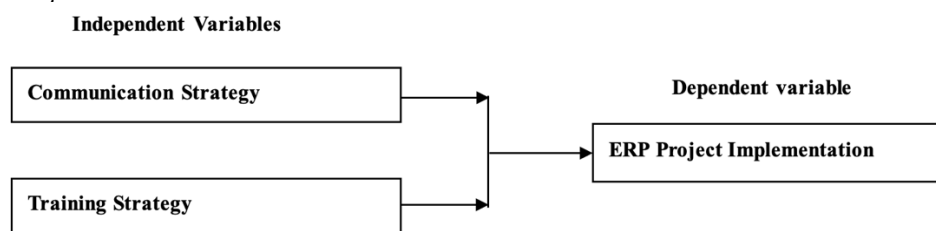
Empirical studies have emphasized the significance of communication and training strategies as change management critical success factors in the context of ERP implementations. Effective communication, encompassing communication skills, media, structure, concepts, and plans, is considered crucial for project success (Müller & Syed, 2021; Carmeli & Tishler, 2018). Studies have highlighted the importance of knowledge transfer and effective teamwork in managing ERP system integration (Ha & Ahn, 2014).

Training strategies that address user needs, customize materials, develop formal programs, and allocate sufficient time for ERP training have been identified as key success factors (Doan & Nguyen, 2020). Training enhances user proficiency and knowledge, ultimately contributing to individual and organizational performance (Uddin et al., 2019). Research suggests that project team competency is essential for harnessing resources and supporting effective operations during ERP implementation (Chang, 2020; Brem & Wolfram, 2017). Moreover, adequate training is linked to increased ease of system use and reduced user resistance (Mahraz, 2018).

Given the criticality of effective change management in ERP implementations, this study explores how communication and training strategies effect ERP implementation success in the specific context of REREC.

Figure 1

Conceptual Framework



Source: Kingori et al. (2023)

3. Research Methodology

To investigate the influence of Change Management on the successful implementation of Enterprise Resource Planning (ERP) systems, this study employed a descriptive research design method. Descriptive research aims to ascertain and depict the characteristics of variables within a specific context (Gupta & Rangi, 2018). This methodology is commonly utilized in corporate settings to understand and describe attributes and characteristics of employees. It facilitates the examination of factors such as resistance to change and readiness for change. The primary data collection method employed in this study involved the use of structured questionnaires to gather information. The study's target population consisted of the employees of Rural Electrification and Renewable Energy Corporation (REREC) in Kenya. Specifically, the study focused on the 146 individuals occupying top and middle management positions within the organization. Given the manageable size of this population, a census approach was employed, ensuring that data was collected from every member. Additionally, a pre-test was conducted at Geothermal Development Company (GDC), an institution similar to REREC, and situated within the Ministry of Energy's purview, in a similar location. Fifteen respondents from GDC participated in the pre-test, serving as a validation of the questionnaire's effectiveness.

4. Data Analysis, Presentation, and Interpretation

4.1 Inferential Statistics

The research investigated the effect of change management critical success factors on ERP implementation through the application of Multiple Regression Analysis (MRA). Multiple Regression Analysis was selected to explore the interactive effects between change management critical success factors (independent variables) and the implementation of the ERP system (dependent variable). The outcomes of this analysis are presented in

Table 6.
 Table 1
 Regression Analysis Results

Coefficients						
Model		Unstandardized Coefficients		Standardized	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	0.004	0.175		0.020	0.984
	Communication Strategy	0.255	0.073	0.313	3.490	0.001
	Training Strategy	0.226	0.082	0.231	2.747	0.007

a. Dependent Variable: implementation of ERP Systems

Source: Kingori et al. (2023)

The analysis aimed to examine the relationships between the independent variables (IVs) and the dependent variable (DV), as well as the interactions between the independent variables, the moderating variable, and the dependent variable, using a significance threshold (p-value) of 0.05. The results revealed that both communication strategy (p=0.001) and training strategy (p=0.007) had a statistically significant effect on the implementation of ERP Systems, as indicated by p-values less than 0.05. Specifically, an incremental unit change in communication strategy was associated with a 0.255 increase in the rate of ERP Systems implementation, while an equivalent unit change in training strategy corresponded to a 0.226 increase in the rate of ERP Systems implementation, and vice versa.

The comprehensive regression model can be expressed as follows:

Implementation of ERP Systems = 0.004 + 0.255 * communication strategy + 0.226 * training strategy (ii)

Table 2

Model goodness of fit, Analysis of variance (ANOVA)

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	3.654	4	.913	13.581	.000b
	Residual	6.659	99	.067		
	Total	10.313	103			

a. Dependent Variable: implementation of ERP Systems

b. Predictors: (Constant), training strategy, communication strategy

Source: Kingori et al. (2023)

The results indicate that the p-value was 0.05 (p<0.01), signifying that the regression model presented substantial evidence supporting the assertion that both communication strategy and training strategy serve as predictors of ERP Systems implementation.

Table 3

Results on model summary

Model Summary									
					Change Statistics				
Model	R	R Square	Adjusted R Square	Std. Error of the Estimate	R Square Change	F Change	df1	df2	Sig. Change
1	0.595a	0.3543	0.3282	0.25935	0.3543	13.581	4	99	0.000

a. Predictors: (Constant), training strategy, communication strategy

Source: Kingori et al. (2023)

The findings from Model 1 reveal that the coefficient of determination (R²) stands at 0.3543, indicating that 35.43% of the variance in ERP Systems implementation can be accounted for by the combined influence of change management, communication strategy, and training strategy. Upon conducting inferential analysis, it is evident that both communication strategy (p=0.001) and training strategy (p=0.007) exert a statistically significant effect on ERP implementation. Specifically, a unit change in communication strategy correlates with a 0.255 rate of change in ERP implementation, and a unit change in training strategy is associated with a 0.226 rate of change in ERP implementation. The study unequivocally demonstrates that both training and

communication strategies have a significant influence on the implementation of ERP Systems, with statistical significance ($p < 0.01$), jointly contributing to 35.43% of the variance in ERP Systems implementation.

5. Conclusion and Recommendations

5.1 Conclusion

In conclusion, this study establishes that change management critical success factors, specifically communication strategy and training strategy, significantly affect the implementation of ERP Systems. Together, these factors account for 35.43% of the variation observed in ERP Systems implementation. It is noteworthy that effective communication skills, a well-structured communication framework, the development of communication concepts and plans, and regular updates on ERP project progress to all stakeholders are integral components of the communication strategy. The training strategy encompasses the identification of specific user training needs, customization of training materials, the provision of a formal training program, and allocation of time for ERP training. The policy and procedural guidelines stemming from government executive orders play an influential role in shaping the landscape of ERP implementation.

5.2 Recommendations

Drawing from the research findings and guided by the study's objectives, it is recommended that REREC undertakes a comprehensive review of its communication strategy. This entails providing clear specifications regarding the prerequisites for effective communication skills and building an effective communication structure while formulating robust communication concepts and plans for ERP implementation. Furthermore, REREC should consider acquiring highly effective communication media to disseminate updates on ERP project progress to all relevant stakeholders. Finally, REREC should prioritize the development of its training strategy, focusing on addressing specific user training needs, customization of training materials, facilitating access to a formal training program, and allocating adequate time for ERP training. It is essential to acknowledge that this study's scope was confined to REREC, a state corporation, which may limit the generalizability of its findings to other organizational settings. Therefore, similar investigations should be conducted in diverse industries and regions to provide a broader understanding of the subject. Additionally, while this study relied on primary data obtained from participants' opinions through structured questionnaires, future research should explore the topic using secondary data sources to validate these findings. To comprehensively address both quantitative and qualitative aspects, future studies should consider employing mixed-method research approaches.

The study's conclusions and recommendations support the broader development objectives of both the Millennium Development Goals and Kenya's Vision 2030. By prioritizing effective change management practices in ERP implementation, organizations can contribute to social and economic development, and environmental sustainability on both a national and global scale.

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