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CRITICAL SUCCESS FACTORS FOR IMPLEMENTATION OF INFORMATION COMMUNICATION TECHNOLOGY STRATEGY AMONG NON-GOVERNMENTAL ORGANIZATIONS IN KENYA

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ABSTRACT

The study interrogated the critical success factors for implementation of information communication technology strategy among non-governmental organizations in Kenya. Specifically, the study focused on Human Resource, leadership, Information Technology Infrastructure and organization culture as independent variables and implementation of information communication technology strategy as dependent variable. Anchored on the Resource Based view theory, Systems theory, Human Relations theory and Upper Echelons theory, 70 registered NGOs were targeted. A census was adopted for the study and the data was collected through a structured questionnaire. The data was analyzed through descriptive statistics and inferential statistics such as correlation and regression. The findings indicated that that Human Resource, leadership and Information Technology Infrastructure has a positive and significant influence on Implementation of ICT Strategy among NGOs in Kenya. However, organization culture has a positive but not significant influence on Implementation of ICT Strategy among NGOs in Kenya.

The study concludes that availability of human resources for instance employees in the organization having high knowledge of IT, high technical expertise, high level of IT skills and a high work experience is associated with high rate of implementation of ICT strategy. Another conclusion is that various leadership attributes such as having top management which is committed to introduction of new technology by providing funds, employee participation in making organization's key decisions, top management being supportive to introduction of new technology and the employees leading from the front is associated with high rate of implementation of ICT strategy. It was also concluded that investment in ICT infrastructure ICT hardware, ICT software and having ICT policy which works is associated with high rate of implementation of ICT strategy. The study also concluded that organizational culture involving commitment to mission and employee trust is associated with high rate of implementation of ICT strategy although that is not a critical factor given the other three factors.

Key Words: *Human Resource, Leadership, Information Technology Infrastructure, Organization Culture, Implementation of Information Communication Technology Strategy*

BACKGROUND OF THE STUDY

According to a report on NGOs (2015), Non-governmental organizations play major developmental roles in Africa's social economic sections. Their important roles have long been attributed to the failure of state government in providing basic needs to citizens living in deplorable conditions in both rural and urban areas. International and governments' funding organizations opt to use NGOs in channeling development to less fortunate citizens in areas of health, education, and general welfare. Similarly, NGOs have been associated with delivering quality services that meets donors' and funders' expectations hence satisfying the needs of citizens. Their performance characteristic has seen emergence of many NGOs offering similar services and seeking funding from almost similar sources. Additionally, NGOs have defined operational strategies that aim at ensuring they stand out in relation to competitors (NGOs, 2015). One of the strategies adopted and implemented by many NGOs is information communication technology strategy. According to GoK (2015), ICT refers to all digital technologies incorporated by businesses, organizations and individuals that enable easier accessibility and use of information. In this century, ICT is a key element to business growth that enables organizations to survive and advance especially in the current highly competitive and dynamic business environment. Purwoko (2011) asserts that ICT contributes to organization's cost effectiveness, efficiencies and in production of quality goods and services that satisfies customers' needs. Similarly, Hardjo and Suharjito, (2013) views ICT as a marketing tool that enables organizations to contact their customers and clients and looking for possible new customers.

Hardjo and Suharjito, (2013) agrees that organizations have increasingly continued to adopt ICT in developing solutions to business related problems, and to improve efficiencies in the process of making decisions. Additionally, ICT contributes to production of quality goods and services, achievement of stability emanating from business dynamics and in enabling firms to compete for new markets. Most organizations aim at acquiring technologies that contribute to their manpower in management and production sectors. Adoption and implementation of ICT amongst non-governmental organizations as NGOs, (2015) discovered, has been a challenge that has seen many of them fail to deliver to their expected level. Similarly, the challenge has seen many organizations incur losses in the course of operations. Although different organizations have different approaches through which they adopt and implement ICT, Purwoko (2011) agrees that the main goal lies in increasing efficiencies and effectiveness in operations.

ICT strategies adopted by organizations should be beneficial and should contribute to smooth running of organization. Purwoko (2011) continues to agree that ICT strategies define how fair organizations compete with each other in offering goods and services to customers. Adoption and implementation determinants of ICT vary depending on organization's needs in product and service line. This study seeks to establish the critical success factors for implementation n of information communication technology strategy among non-governmental organizations in Kenya.

STATEMENT OF THE PROBLEM

Non-Governmental Organizations operating in a dynamic environment are constantly faced with pressure to cut operational cost and become efficient, effective and sustainable (Bryson, 2018; Ihlen, Figenschou & Larsen, 2015). A survey done by United Nations and Vodafone Group foundation revealed that most of the NGOs recorded a share of administration costs more than 50% of the total budget. Others indicated that over 40% of the budget was related to fundraising expenses which indicates huge inefficiencies. The same report indicated that more than 99% of NGO's believed that adoption of ICT could enhance efficiency. Khieng and Dahles (2015) argued that ICT can strategically help NGOs to become more efficient and effective in their goals but Bryson (2018) admits that NGOs are not as responsive in the technology revolution as the business sector hence not enjoying the full benefits of adoption of ICT. The success rate in adoption of ICT among NGOs is only 10 to 30 percent (Elwak, 2013). This demonstrates that adoption of ICT strategy by NGOs still faces challenges despite its importance hence a need to conduct a study to find out the critical factors.

The study was also motivated by existing knowledge gaps in previous studies. A study by Karimi (2010) on challenges of strategic implementation presented a contextual knowledge gap; Kung'u (2012) assessed strategy implementation challenges and focused on mainstream churches in Kenya while this study focused on ICT strategy implementation among NGOs; Kinyoe (2012) examined the challenges of strategy implementation focused on the Christian Health Association of Kenya while this study focused on ICT strategy among NGOs; Musyoka (2011) focused on the challenges of strategy implementation; Gebhardt and Eagles (2014) focused on what influenced strategy implementation for parks and recreation centers in Ontario, Canada also presenting a contextual knowledge gap since it was conducted in Canada while this study focused on Kenya. All these studies focused on different concepts other than implementation of ICT strategy thus presented a conceptual knowledge gap. On the other hand, studies that were conducted outside the Kenyan context present contextual gaps.

OBJECTIVES OF THE STUDY

i. To determine the influence of human resource on successful implementation of information communication technology strategy among non-governmental organizations in Kenya
ii. To establish the influence of leadership on successful implementation of information communication technology strategy among non-governmental organizations in Kenya
iii. To assess the influence of ICT infrastructure on successful implementation of information communication technology strategy among non-governmental organizations in Kenya
iv. To determine the influence of organizational culture on successful implementation of information communication technology strategy among non-governmental organizations in Kenya

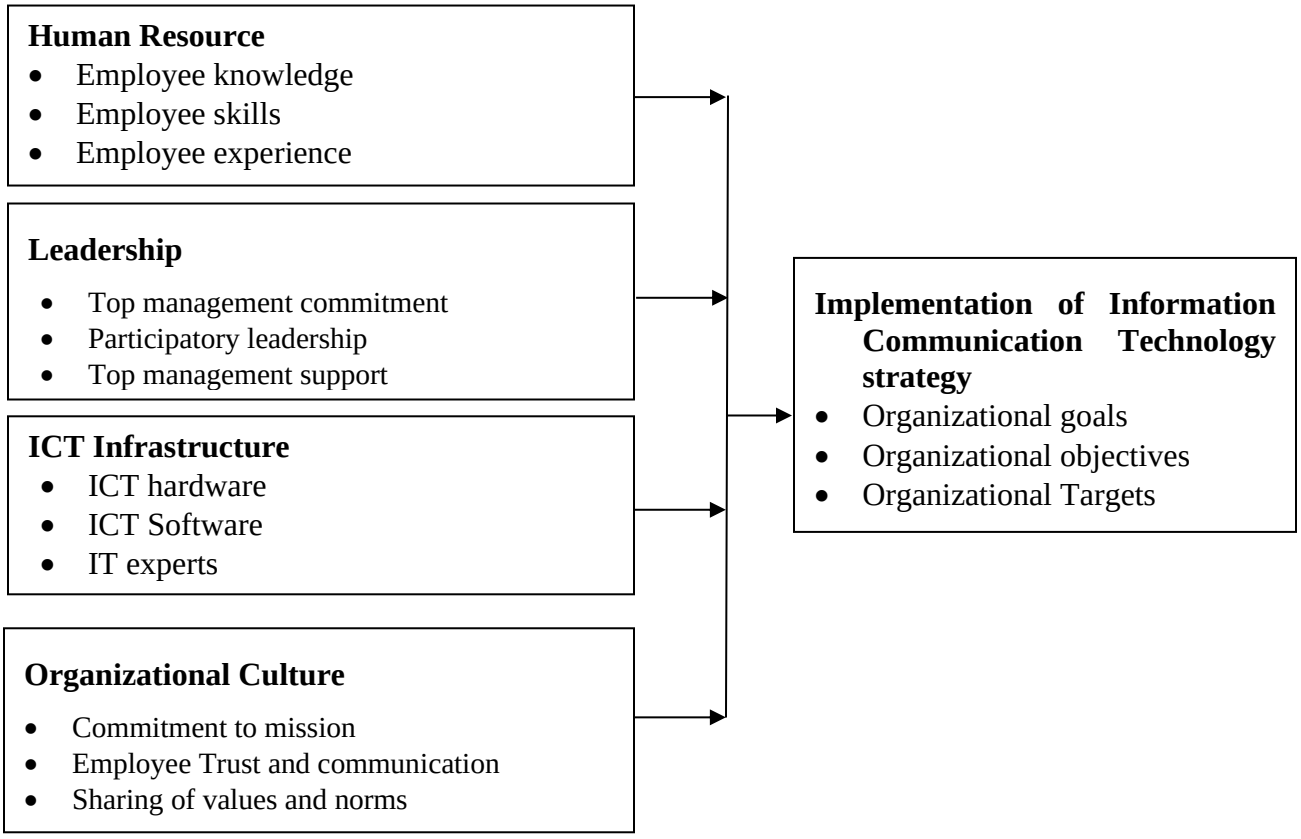
LITERATURE REVIEW

Theoretical Review

The theories that the study hinged on are RBV theory, Systems theory, Human Relations Theory and Upper Echelons Theory. Upper Echelons theory was proposed by Hambrick and Mason (1984). It has its foundations in the concept of dominant coalition which suggests that the human social biases, filters and idiosyncratic processes at the top of the organization substantially influence competitive behaviour. These competitive behaviour are likely to influence organization decision making and performance. In their 1984 theoretical paper on upper echelon theory, Hambrick and Mason (1984) suggested that top management characteristics could impair decision making and thus organizational performance. The theory in application to this study argues that leadership is key in determining and shaping decisions and strategies in an organization. The orientations of the top leadership affect corporate strategy choices and decisions and therefore have tangible effects on organizational outcomes. The theory supports leadership as an independent variable. Resource Based View by Barney (1991) argued that resources are the most important element of the production process because they yield products that have an implication on the performance of the firm. This theory therefore presents a discussion of how resources as well as other capabilities currently available to the firm or those that can be acquired can be employed by firm for the purpose of building its performance. According to Armstrong and Taylor (2014), the performance of the firm is a function of resources that are available and the capabilities that can also be sourced externally.

Systems Theory proposed by Talcott Parsons (1950) discusses the associations between the firm and the environment in which it operates. Systems theory stipulates that the capacity of a firm to recognize as well as manage functions / relationships by finding communication channels, shaping the flow of information and rationalizing as well as establishing congruence between a firm's development and its external association defines the behaviour of a competitive firms (Parsons, 1950). A properly functioning ICT network within the firm will determine the success of information sharing processes within the firm that betters its performance. Human Relations Theory by Mayo (2000) argued that the focus on individuals at a place of work is more important that the stipulated rules, processes as well as procedures within an organisation. It attributes the performance of an entity to its organisational culture with a favorable culture improving individuals and subsequently performance. This theory advocates collective communication processes that permit interaction between the TMT and other employees to make decisions and not unidirectional directives from the management. Motivating and providing emotional support to employees instead of quotas and strict requirements increases their productivity (Mayo, 2000).

CONCEPTUAL FRAMEWORK



Independent Variables **Dependent Variable**

Figure 1: Conceptual Framework

Empirical Review

A study carried out by Yambwa (2014) found out the reasons behind failure of strategic plan implementation at the ministry of Local Government, Namibia. The study identified some of the factors that affect implementation including dearth of suitable as well as committed human resource, ineffective organizational structure, financial resource deficiency, unsupportive organizational culture that was not aligned to strategy, inappropriate technology to facilitate sharing of information, lack of team works as well as commitment and poor leadership style. Nabwire (2014) assessed determinants of success in implementation of strategies in the banking sector. Resource allocation was found to be an important factor that enhances the success rate of strategy implementation.

Gebhardt and Eagles (2014) examined the factors influencing implementation of strategy. The study focused on parks as well as recreation centers in Ontario, Canada. The human factors as well as planning process were found to influence strategy implementation with skills and knowledge of the employees and planning key in the success of strategy implementation. Njoki (2012) interrogated whether leadership is critical in implementing strategies in organizations in Kenya. This study focused on Caritas in Nyeri. Leaders with requisite skills and experience positively influenced implementation of strategy which pointed out how leadership positively impacts on implementation.

A study that was carried out by Spriano (2013) to find out what was the most important factor in e-government strategy implementation. It was revealed that the major reason for the failure of implementation of e-government strategy was lack of existing ICT infrastructure. A study by Larsen (2008) to establish the determinants of implementation of electronic commerce strategy among organizations established that institutional factors such as technological functionality, top management support, employee training and organizational structure were critical. Munyoroku (2012) examined sixty-four food processing companies operational in Nairobi KAM, 2011. The results pointed out the importance of organizational culture in expediting attainment of values, objectives, goals and targets of the organisation as set by management. A study on strategy implementation challenges by Mburu (2016) was conducted at Telkom Kenya. Unsupportive organizational culture was found to affect implementation of strategy negatively.

RESEARCH METHODOLOGY

The study adopted a descriptive research design. The target population was all the 70 registered NGOs according to the NGOs Coordinating Board of Kenya. A census was conducted on the entire target population. Humphries (2017) argued that a census can be used when the sample size is below 200. This study used primary data collected by use of structured questionnaires. It is an ideal tool for gathering descriptive data from a large sample within a relatively short period (Walliman, 2017). Before using the questionnaire in the main survey, a pilot test was conducted on 7 respondents representing 10% (7 respondents) of the target population. The rule of thumb is between 1% and 10% of the sample should constitute a pilot test (Rahi, 2017). This was used to determine the reliability of the research tool. In testing the reliability of the instrument, Cronbach Alpha was used. A Cronbach alpha of 0.7 was set as the threshold for reliability. The study conducted content validity by giving the questionnaire to experts, supervisor and lecturers in strategy who provided their thoughts as well as suggestions on areas of improvement. Since the data collected was quantitative, it was analysed by use of descriptive statistics such as mean, percentage distribution, standard deviation and median as well as inferential statistics such as, correlation and regression. The collected data was subjected to standardized statistical analysis techniques using statistical package for social sciences (SPSS) version 22. A multivariate regression model was the most suitable method of establishing the relationship between the variables. The regression model below was adopted:

$$Y= \beta_0+ \beta_1X_1+\beta_2X_2+ \beta_3X_3+ \beta_4X_4 + \varepsilon$$

Where: Y is Implementation of Information Communication Technology Strategy, X_1 is Human Resource, X_2 is Leadership, X_3 is ICT infrastructure, X_4 is Organizational Culture, β_0 is the regression constant or intercept, β_1, β_2, β_3, and β_4 are the unknown parameters (regression coefficients) and ε is the error term.

RESEARCH FINDINGS

A total of seventy NGOs were targeted. After issuing out the questionnaires, 57 had a response while the rest did not respond. A total of 57 is equivalent to 81% success rate. Silverman (2016) agreed that any response above sixty percent is satisfactory. The pilot findings in Table 1 indicate that the Cronbach Alpha Values of the variables in the study were above 0.7 which indicated reliability.

Table 1: Reliability Results

Variable	Cronbach's Alpha	Number of questions	Decision	Conclusion
Human Resource	0.807	5	> 0.7	Reliable
Leadership	0.761	5	> 0.7	Reliable
ICT Infrastructure	0.861	5	> 0.7	Reliable
Organizational Culture	0.806	5	> 0.7	Reliable
Implementation of ICT Strategy	0.879	5	> 0.7	Reliable

Descriptive Findings

The section gives the response for each of the questions per variable. Descriptive statistics describes the response given in a Likert form. Mean and Standard deviations were adopted and the standard deviations were used to indicate the variations in responses.

Descriptive Findings of Human Resource

Statements on human resource were rated on a likert scale and the measures of central tendency results are presented in Table 2. The results indicate that majority of the respondents agreed that the employees in the organization have high knowledge of IT (M = 3.63; SD = 0.77), the employees in the organization have high technical expertise (M = 3.68; SD = 0.78), the employees in the organization have high level of IT skills (M = 3.63; SD = 0.62), the employees in the organization have a high work experience (M = 3.51; SD = 0.66) and that the employees in the organization are trained regularly to enhance their understanding of operations (M = 4.00 ; SD = 0.68).

The findings imply that among the NGOs, employees in the organization having high knowledge of IT, high technical expertise, high level of IT skills and a high work experience is considered to a high extent (M = 3.69). The findings showed low variations which implies that this is a common trend among the NGOs (SD = 0.70). The findings are consistent with Yambwa (2014) who revealed the importance of human resources such as skills, experience and knowledge in implementation of strategies in organization.

Table 2: Descriptive Findings of Human Resource

Statements	Mean	Standard Deviation
The employees in the organization have high knowledge of IT	3.63	0.77
The employees in the organization have high technical expertise	3.68	0.78
The employees in the organization have high level of IT skills	3.63	0.62
The employees in the organization have a high work experience	3.51	0.66
The employees in the organization are trained regularly to enhance their understanding of operations	4.00	0.68
Average	**3.69**	**0.70**

Descriptive Findings of Leadership

Statements on leadership were rated on a Likert scale and the measures of central tendency results are presented in Table 3. The results suggested that among the NGOs in Kenya, there is a high extent of top management involvement by providing financial assistance (M = 3.63; SD = 0.82), involvement of employees in decision making (M = 3.79; SD = 1.00) as well as being the leader by example (M = 3.93; SD = 0.65) and encouraging employees to lead (M = 3.81; SD = 0.79). There is however a moderate extent of employee motivation (M = 2.96; SD = 1.16). The findings imply that the NGOs in Kenya prefer the top management to be committed to introduction of new technology by providing funds, employee participation in making organization's key decisions, top management to be supportive to introduction of new technology and the employees to lead from the front (M = 3.62). The findings are consistent with Gebhardt and Eagles (2014) who established that leadership characteristics such as commitment support and involvement is critical in implementation of strategies in organizations.

Table 3: Descriptive Findings of Leadership

Statements	Mean	Standard Deviation
The top management is committed to introduction of new technology by providing funds	3.63	0.82
There is employee participation in making organization's key decisions	3.79	1.00
The top management is supportive to introduction of new technology by leading by example	3.93	0.65
The organization encourages the employees to lead from the front	3.81	0.79
The top management encourages employee motivation	2.96	1.16
Average	**3.62**	**0.88**

Descriptive Findings of ICT Infrastructure

Statements on ICT infrastructure were rated on a Likert scale and the measures of central tendency results are presented in Table 4. It was shown that to a high extent, NGOs improve their hardware (M = 3.58; SD = 0.80), IT software (M = 3.82; SD = 0.71) and have working ICT policies (M = 4.05; SD = 0.91). It was also revealed that to a moderate extent, NGOs have hired ICT experts (M = 3.09; SD = 1.14) and conducted benchmarking (M = 3.14; SD = 0.74). The findings imply that NGOs in Kenya invest in improvement of ICT hardware, ICT software and have adopted ICT policy which works to a high extent (M = 3.54). Spriano (2013) similarly suggested that ICT infrastructures such as soft and hardware are important in implementation of ICT strategies.

Table 4: Descriptive Findings of ICT Infrastructure

Statements	Mean	Standard Deviation
There is investment in improvement of ICT hardware	3.58	0.80
There is investment in improvement of ICT software	3.82	0.71
The organization has an ICT policy which works	4.05	0.91
The organization has an enough ICT expert	3.09	1.14
The organization conducts benchmarking to enhance the ICT expertise	3.14	0.74
Average	**3.54**	**0.86**

Descriptive Findings of Organizational Culture

Statements on organizational culture were rated on a Likert scale and the measures of central tendency results are presented in Table 5. The presented results showed that among the NGOs, there is a high extent of commitment to mission (M = 4.07; SD = 0.90), vision (M = 4.11; SD = 0.90), employee trust (M = 4.23; SD = 0.78), sharing of values (M = 4.44; SD = 0.82) and norms (M = 4.05; SD = 0.83). The results imply that organizational culture involving commitment to mission, commitment to the vision, employee trust, sharing of values as well as sharing of norms among employees in the organization is considered to a high extent among the NGOs (M = 4.1). This seems to be a trend among most NGOs since the variation is small in the responses (Average SD = 0.85). The findings are also consistent with that of Munyoroku (2012) who established that the right ethical values, commitment and team work among employees is critical in enhancing implementation of any organizational strategy.

Table 5: Descriptive Findings of Organizational Culture

Statements	Mean	Standard Deviation
The organization encourages commitment to mission	4.07	0.90
The organization encourages commitment to the vision	4.11	0.90
The organization encourages employee trust	4.23	0.78
There is sharing of values among employees in the organization	4.44	0.82
There is sharing of norms among employees in the organization	4.05	0.83
Average	**4.18**	**0.85**

Descriptive Findings of Implementation of ICT Strategy

Results in Table 6 reveal that due to implementation of ICT, the NGOs have achieved over sixty percent of their goals (M = 3.51; SD = 0.93), objectives (M = 3.77; SD = 0.78) and targets (M = 3.75; SD = 0.79), overall efficiency (M = 3.63; SD = 0.88) and performance (M = 4.25; SD = 0.87). The findings imply that due to ICT implementation, NGOs are able to meet most of their goals, objectives and targets as well as record improved overall performance (M = 3.78). The findings are consistent with Khieng and Dahles (2015) that Information Communication Technology strategy implementation has strategically helped Non-Governmental Organizations their goals and objectives.

Table 6: Descriptive Findings of Implementation of ICT Strategy

Statements	Mean	Standard Deviation
The organization has achieved most of its goals (over 60%) due to ICT implementation	3.51	0.93
The organization has achieved most of its objectives due to ICT implementation	3.77	0.78
The organization has achieved most of its targets due to ICT implementation	3.75	0.79
There has been an improvement in the overall efficiency due to ICT implementation	3.63	0.88
There has been an improvement in the overall performance due to ICT implementation	4.25	0.87
Average	**3.78**	**0.85**

Correlation Analysis

The results indicate that human resource has a positive and significant influence on implementation of ICT Strategy ($r = 0.632$, P-Value < 0.05). This implies that more human resource leads to a significant improvement in implementation of ICT Strategy. The findings are consistent with Nabwire (2014) who established that financial resources are important in supplementing the human resources which can positively improve implementation on strategies. It was also revealed that leadership has a positive and significant influence on implementation of ICT Strategy ($r = 0.447$, P-Value < 0.05). This implies that more committed leadership leads to a significant improvement in implementation of ICT Strategy. The findings are consistent with Njoki (2012) who also suggested that leaders with requisite skills and experience positively influenced implementation of strategy in organizations.

The correlation results further indicated that ICT infrastructure has a positive and significant influence on implementation of ICT Strategy ($r = 0.435$, P-Value < 0.05). This implies that investment in ICT infrastructure leads to a significant improvement in implementation of ICT Strategy. The findings are in line with that of Larsen (2008) who emphasized the need to have technological functionality before implementing ICT strategies in an organization. It was lastly showed that organization culture has a positive and significant influence on implementation of ICT Strategy ($r = 0.425$, P-Value < 0.05). This implies that a more committed organization culture leads to a significant improvement in implementation of ICT Strategy. The findings are consistent with Mburu (2016) who established that unsupportive organizational culture was found to affect implementation of strategy negatively.

Table 7: Correlation Analysis

		Human Resource	Leadership	ICT Infrastructure	Organizational Culture	Implementation of ICT Strategy
Human Resource	Pearson Correlation	1				
Leadership	Pearson Correlation	.496**	1			
ICT Infrastructure	Pearson Correlation	.606**	.477**	1		
Organizational Culture	Pearson Correlation	.574**	.629**	.435**	1	
Implementation of ICT Strategy	Pearson Correlation	.632**	.447**	.642**	.425**	1
	Sig. (2-tailed)	0.000	0.000	0.000	0.001	
	N	57	57	57	57	57
** Correlation is significant at the 0.01 level (2-tailed).						

Diagnostic Tests

Before conducting regression analysis, the study established whether the model obey the assumptions of classical linear regression. Normality of the variable was tested using Kolmogorov-Sminorv test and the results are indicated in Table 8.

Table 8: Normality Test

Tests of Normality	**Kolmogorov-Sminorv**			**Shapiro-Wilk**		
Variable	**Statistic**	**df**	**Sig.**	**Statistic**	**df**	**Sig.**
Human Resource	0.124	57	0.064	0.964	57	0.061
Leadership	0.128	57	0.056	0.984	57	0.058
ICT Infrastructure	0.126	57	0.078	0.958	57	0.064
Organizational Culture	0.088	57	0.067	0.971	57	0.058
Implementation of ICT Strategy	0.116	57	0.058	0.973	57	0.065
Lilliefors Significance Correction						

The findings in Table 8 indicate that all the variables had insignificant Shapiro Wilk values and Kolmogorov Sminorv values (greater than 0.05) implying that the variables were normally distributed. To test Multicollinearity, variance inflation Factor (VIF) was used. The results are presented in Table 9.

Table 9: Variance Inflation Factor Test of Multicollinearity

Variable	Tolerance	VIF
Human Resource	0.795	1.258
Leadership	0.857	1.167
ICT Infrastructure	0.702	1.424
Organizational Culture	0.918	1.089

A VIF value above 10 indicates presence of multicollinearity. Since no variable had a VIF value above 10, there was absence of multicollinearity. The study also used Breusch Pagan test to establish whether there was a problem of Heteroscedasticity in the error term. The results are shown in Table 10.

Table 10: Breusch-Pagan / Cook-Weisberg test for Homoscedasticity

Chi2(3) = 8.57
Prob > chi2 = 0.134

The results demonstrated that Prob > Chi2 > 0.05 implying absence of Heteroscedasticity. This indicates that the error term did not have the problem of Heteroscedasticity hence it was suitable to use OLS. Autocorrelation was also conducted to establish whether the error term was correlated. The study also used Breusch Godffrey. The results are shown in Table 11.

Table 11: Breusch-Godffrey test of Autocorrelation

Ho: Constant variance
Chi2(3) = 7.856
Prob > chi2 = 0.086

The results demonstrated that Prob > Chi2 > 0.05 implying absence of serial autocorrelation. This indicates that the error term did not have the problem of autocorrelation hence it was suitable to use OLS.

Regression Analysis

Model Summary

The results suggested that up to 51.1% of the implementation of Information Communication Technology strategy among non-governmental organizations in Kenya attributed to the four critical success factors ($R^2 = 0.511$). Other factors account forth remaining 48.9%.

Table 12: Model Summary

R	R Square	Adjusted R Square	Std. Error of the Estimate
.715	0.511	0.474	0.49916
Predictors: (Constant), Organizational Culture, ICT Infrastructure, Leadership, Human Resource			

ANOVA

The ANOVA results from the regression model was used to show whether the regression model was fit. As shown in Table 13, the value of F statistic was significant (Sig < 0.05). This implies that the regression model was fit to predict the outcome.

Table 13: ANOVA

	Sum of Squares	df	Mean Square	F	Sig.
Regression	13.546	4	3.387	13.592	.000
Residual	12.956	52	0.249		
Total	26.502	56			
Dependent Variable: Implementation of ICT Strategy					
Predictors: (Constant), Organizational Culture, ICT Infrastructure, Leadership, Human Resource					

Model Coefficients

The model coefficients were used to achieve the significance of each of the study objectives. The results in Table 14 indicates that human resource has a positive and significant influence on Implementation of ICT Strategy among NGOs in Kenya (B = 0.463 ; t > 1.96; P-Value < 0.05). The results imply that improving human resource through training by one more time leads to an improvement in implementation of ICT strategy among the NGOs by 0.463 units. Lin and Lee (2007) in their study also established that most organisations whose employees have little knowledge of the new technology find it hard to implement the outlined strategy. The results also established that leadership has a positive and significant influence on Implementation of ICT Strategy among NGOs in Kenya (B = 0.105; t > 1.96; P-Value < 0.05). The results imply that improving leadership commitment by one unit leads to an improvement in implementation of ICT strategy among the NGOs by 0.105 units. The findings are consistent with Jooste and Fourie (2009) who established that strategic leadership has a significant effect on effective implementation of a strategy.

The results also established that ICT infrastructure has a positive and significant influence on Implementation of ICT Strategy among NGOs in Kenya (B = 0.403; t > 1.96; P-Value < 0.05). The results imply that improving ICT infrastructure by one unit leads to an improvement in implementation of ICT strategy among the NGOs by 0.403 units. Lin and Lee (2005) also established that if the strategy involves a new strategy, there was a need to have an already working infrastructure in place to improve the chances of success. The results on organizational culture showed that it has a positive but not significant influence on Implementation of ICT Strategy among NGOs in Kenya (B = 0.003; t < 1.96; P-Value > 0.05). The results imply that having uncommitted organizational culture is detrimental to implementation of ICT strategy among the NGOs. Carlopio and Harvey (2012) also established that alignment of organizational culture to strategy enhances effective implementation.

Table 14: Model Coefficients

	Unstandardized Coefficients		**Standardized Coefficients**	**t**	**Sig.**
	B	**Std. Error**	**Beta**		
(Constant)	0.278	0.522		0.533	0.596
Human Resource	0.463	0.177	0.357	2.625	0.011
Leadership	0.105	0.155	0.089	0.678	0.501
ICT Infrastructure	0.403	0.132	0.385	3.054	0.004
Organizational Culture	0.003	0.134	0.003	0.023	0.982
Dependent Variable: Implementation					

CONCLUSION

The study concludes that availability of human resources for instance employees in the organization having high knowledge of IT, high technical expertise, high level of IT skills and a high work experience is associated with high rate of implementation of ICT strategy. Another conclusion is that various leadership attributes such as having top management which is committed to introduction of new technology by providing funds, employee participation in making organization's key decisions, top management being supportive to introduction of new technology and the employees leading from the front is associated with high rate of implementation of ICT strategy. It was also concluded that investment in ICT infrastructure ICT hardware, ICT software and having ICT policy which works is associated with high rate of implementation of ICT strategy. The study lastly concluded that organizational culture involving commitment to mission, commitment to the vision, employee trust, sharing of values as well as sharing of norms among employees in the organization is associated with high rate of implementation of ICT strategy although that is not a critical factor given the other three factors.

RECOMMENDATIONS

Based on the findings that availability of human resources is critical in enhancing implementation of ICT strategy among the NGOs, the study recommends the NGOs and other NGOs to improve their employee's capacity, skills and ICT knowledge through training in order to stand a fair chance of successfully implementing ICT strategy. Since it was established that leadership is critical in implementation of ICT strategy among the NGOs, the study recommends NGOs and other NGOs which seek to implement ICT strategy to give more focus on the leadership attributes such as commitment, involvement and support training in order to stand a fair chance of successfully implementing ICT strategy.

Based on the findings that ICT infrastructure is a critical factor in implementation of ICT strategy among the NGOs, the study recommends the management of the NGOs and other NGOs to allocate more resources towards improvement of the existing ICT infrastructure such as ICT hardware and ICT software in order to stand a fair chance of successfully implementing ICT strategy. Since the findings revealed that organisational culture is important but not critical to implementation of ICT strategy among the NGOs, the study recommends the management of the NGOs and other NGOs to consider the employee's organizational culture based on change acceptability, commitment to mission, commitment to the vision, employee trust and sharing of values as well as norms more so that it can significantly improve the chances of successfully implementing ICT strategy.

CONFLICT OF INTEREST

No potential conflict of interest was recorded by the authors.

REFERENCES

Armstrong, M., & Taylor, S. (2014). *Armstrong's handbook of human resource management practice*. Kogan Page Publishers.

Barney, J. (1991). Firm resources and sustained competitive advantage. *Journal of management*, *17*(1), 99-120.

Bourgeois, L. J., & Brodwin, D. R. (1984). Strategic implementation: Five approaches to an elusive phenomenon. *Strategic Management Journal*, *5*(3), 241-264.

Bryson, J. M. (2018). *Strategic planning for public and nonprofit organizations: A guide to strengthening and sustaining organizational achievement*. John Wiley & Sons.

Carlopio, J., & Harvey, M. (2012). The development of a social psychological model of strategy implementation. *International Journal of Management*, *29*(3), 75.

Gebhardt, K. M., & Eagles, O. S. (2014). Factors leading to implementation of strategy plans for parks and recreation in province of Ontario, Canada.

Government of Kenya (2010), National information and communications technology (ICT) Policy. Ministry of information and communications. Government printer

Hardjo, L., & Suharjito, S. (2013). Development of information technology strategic planning for manufacturing industry (case study: pt mcm). *Commit (Communication and Information Technology) Journal*, *7*(2), 49.

Humphries, B. (2017). *Re-thinking social research: anti-discriminatory approaches in research methodology*. Routledge.

Ihlen, Ø., Figenschou, T. U., & Larsen, A. G. (2015). Behind the framing scenes: Challenges and opportunities for NGOs and authorities framing irregular immigration. *American Behavioral Scientist*, *59*(7), 822-838.

Jooste, C., & Fourie, B. (2009). The role of strategic leadership in effective strategy implementation: Perceptions of South

African strategic leaders. *Southern African Business Review*, *13*(3).

Karimi, S. W. (2010). Challenges of strategic implementation in Mathare 4A slum upgrading in Nairobi. *Unpublished MBA project. University of Nairobi*.

Larsen, H. (2008). Factors affecting the implementation of e-business strategies: An empirical study in Taiwan. *Management Decision*, *46*(5), 681-690.

Mayo, E. (2000). Deification of human relations. *Organization Studies*, *32*(3), 383-405.

Mburu, E. W. (2016). *Factors Influencing the Implementation of Strategic Plans in Organizations-A Case Study of Telkom Kenya Limited* (Doctoral dissertation, United States International University-Africa).

Munyoroku, K. (2012). The role of organization structure on strategy implementation among food processing companies in Nairobi. *Unpublished MBA Project. University of Nairobi*.

Nabwire, M. (2014). *Factors Affecting Implementation of Strategy A Case of Barclays Bank of Kenya* (Masters Dissertation, United States International University-Africa).

NGOs. (2015). The rise and role of NGOs in sustainable development | Working with NGOs. Retrieved from https://www.iisd.org/business/ngo/roles.aspx

Njoki, K. J. (2012). Factors influencing implementation of strategic plans: The case of Caritas, Nyeri Archdiocese. Masters project, University of Nairobi

Purwoko, P. (2011). Auditing Information System : Delivery Product Service. *Commit (Communication And Information Technology) Journal*, *5*(1), 21.

Rahi, S. (2017). Research design and methods: A systematic review of research paradigms, sampling issues and instruments development. *International Journal of Economics & Management Sciences*, *6*(2), 1-5.

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

Spriano, K. (2013). E-government strategy implementation in Zambia. An evaluation of Success and Failures. *International Journal of Computer Applications Technology and Research*, *4*(12), 906-915.

Walliman, N. (2017). *Research methods: The basics*. Routledge.

Yambwa, F. K. (2014). *Investigating reasons for failing to implement strategic plans in the Ministry of Regional and Local Government, Housing and Rural Development* (Doctoral dissertation).