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EFFECT OF MANAGEMENT SUPPORT ON IS USAGE AND ORGANIZATIONAL CULTURE ON THE PERFORMANCE OF UNIVERSITIES IN NAIROBI COUNTY, KENYA

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Abstract

Purpose: To investigate the effects of management support on IS usage and organizational culture on the performance of universities in Nairobi County, Kenya.

Methodology: The study assumed a descriptive research design because it facilitated the gathering of quantifiable information that was used for statistical inference on the target group.

Results: Management support and organizational culture had significant influence on the performance of universities.

Unique contribution to theory, practice and policy: Management support within universities should consider augmenting their support to tangible levels so as to directly affect the adoption and adaption levels within the technical and other faculty and administration staff. This can be realized among other ways by formulating and appropriating pro IS policies as well as consciously apportioning fair budgetary votes towards IS advancement. There is need of initiating an organizational culture change within public universities whilst creating awareness as to why IS adoption and process automation would be beneficial to the user and the university as a whole

Keywords: *information systems, performance, management support, organizational culture*

1.0 INTRODUCTION

1.1 Background of the Study

An IS is a man-made system that generally consists of an integrated set of computer-based components and manual components established to collect, store, manage data and to provide output to users (Gelinas, Dull &Wheeler, 2012). Laudon and Laudon (2009) equally described an information system as a set of interrelated components that collect (or retrieve), process, store, and distribute information to support decision-making and control in an organization. The system utilizes computer hardware and software, manual procedures, models or analysis, planning, control and decision making and databases (Ramachandra & Srinivas, 2012). Information systems are made up of six major components: hardware, software, data, people, procedures and networks (Whitman, Mattord 2012).

Although IS has evolved over the past sixty years to become the backbone of business and industry that it is today, the simple application rules created in the 1960s and 1970s still remain relevant in applications where data or information is transferred whatever the business model, no matter the complexity (Laudon & Traver, 2011; Haag & Cummings, 2012).In addition to supporting decision-making, information systems help managers and other workers analyze complex problems, develop new products, and integrate various modules both within and across departments (Alter, 2001; Haag & Cummings, 2012). Moreover, the transmission of information and data made possible by IS allows inter-departmental communication, leading to better coordination and improved transparency by sharing information throughout the organization (Thompson, 2005).

1.2 Statement of the problem

"The implementation of ICT in the public sector can be conceived as a tool to build public trust, to enhance confidence, and to promote a more participatory citizen–government relationship, as well as a means for equitable ICT policies" (Cordella & Bonina, 2012).Research has indicated that quite a number of parastatals lack appropriation of information technologies and that despite the tremendous effort to embed IT in organizational processes, use of ICT in parastatals is not effective (Lytras *et al*, 2008). This is corroborated by the fact that a substantial number of Government Parastatals in Kenya, once initiated, are unable to achieve their objectives without any support of ICT capabilities (Daniels & Associates, 2006). It is imperative to note that assimilation of highly integrated systems across many departments in an organization requires incremental steps and a high level of participation (Weerakkody *et al*., 2011). In relation to this, there is sustained pressure on human resource professionals to be equally the managers of change; including change emanating from the introduction of new IS (Fearon *et al*., 2013; Kajouri, Fallah, Khodayari, & Mohammady, 2013). In addition, Charles Borura (2010) asserts that there is need for parastatals to implement information systems effectively in order to be able to harness the capabilities of the particular IS in line with the strategy of the organization.

The converse to the above highlighted benefits of implementing IS solutions in organizations, in this case universities, is the failure to realize the accrued benefits which subsequently skews the performance of such institutions. Failure to fully embrace IS, means continued use of the legacy

manual and semi – automated modes of data transmission and delivery which affects the preservation, processing and retrieval of information either on operational basis or institution's repository. The failure to effectively adopt IS results in wasteful application of resources because of the immense operational costs required to run legacy systems. Such a scenario directly impacts on efficiency and effectiveness in service delivery. The study sought to interrogate the extent to which IS has been implemented in universities within Nairobi county and subsequently find out how such affects their respective performances.

1.3 Objectives

1. To investigate how management support on IS usage affects the performance of universities in Nairobi County, Kenya.
2. To investigate how organizational culture affects the performance of universities in Nairobi County, Kenya

2.0 LITERATURE REVIEW

2.1Theoretical Review

Venkatesh *et al*., (2003) developed the Unified Theory of Acceptance and Use of Technology (UTAUT) as a comprehensive synthesis of prior technology acceptance research consisting of four key constructs namely performance expectancy, effort expectancy, social influence, and facilitating conditions. Performance expectancy was defined as the degree to which using a technology will provide benefits to consumers in performing certain activities; effort expectancy as the degree of ease associated with consumers' use of technology; social influence as the extent to which consumers perceive that important others believe they should use a particular technology; and facilitating conditions referred to consumers' perceptions of the resources and support available to perform a behavior (e.g., Brown and Venkatesh 2005; Venkatesh *et al*. 2003). According to UTAUT, performance expectancy, effort expectancy, and social influence were theorized to influence behavioral intention to use a technology, while behavioral intention and facilitating conditions determined technology use.

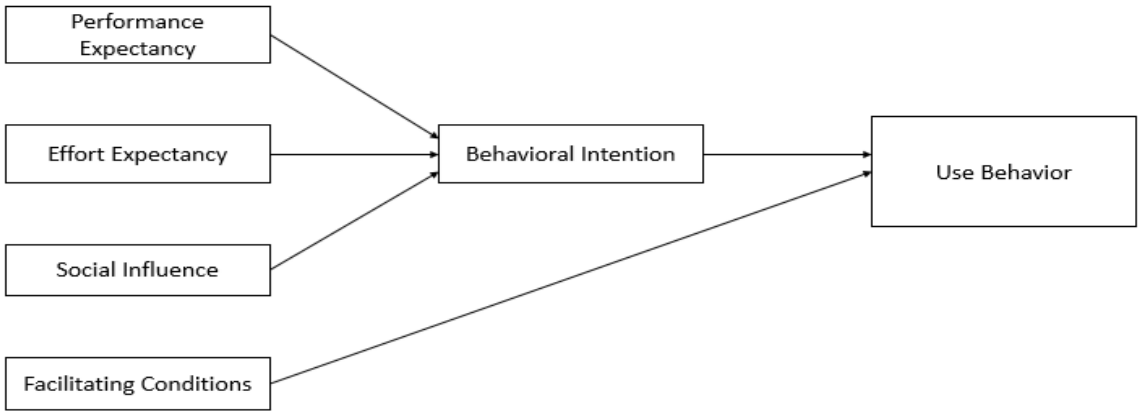

Figure 2.1: UTAUT Model

Source: Venkattesh *et al* (2003)

2.2 Empirical review

The Kenya Education Network (KENET), in its report: e-readiness survey of higher education institutions in Kenya (2006) based its findings on ICT strategy, Financing and human capacity. ICT strategy was measured using several sub-indicators that included the alignment of ICT strategy to the corporate strategy, the extent of ICT strategy implementation, and the reporting levels of the Head of ICT. ICT financing was measured using the sub-indicator of percent of annual institutional expenditure used to purchase Internet bandwidth. The ICT human capacity indicator was measured using indicators that included the business and technical experience of the Head of ICT, the frequency of upgrading the skills of the ICT staff, and the retention of ICT staff.

The study showed that most institutions have not developed detailed ICT strategic plans and the extent of implementation of ICT strategy is low. The results show that most of the large universities are allocating less than 0.5 % of their institutional budgets for purchase of Internet band width with some of them spending more on telephone expenses. It further showed that generally, institutions where the CEO is the champion are on average at a higher stage than those where the champion was at a lower level in institutional organizational structures. For example, the ICT champion at USIU was the vice chancellor while the champion at Kenyatta University (KU) was at a lower level. Subsequently it followed that USIU scored much in the institutional ICT policy and strategy as well as in network access compared KU. The KENET survey epitomizes the state as it is in public and private universities. However there are other determinants that could contribute to reduced ICT implementation which were not considered in the survey. Some of these determinants include the level of ICT skill among the non-technical staff and the infrastructure status.

3.0 RESEARCH METHODOLOGY

The study assumed a descriptive research design because it facilitated the gathering of quantifiable information that was used for statistical inference on the target group. The primary data was collected by administering questionnaires where different strata of the population were included so as to ensure inclusivity and enhance credibility of the outcome. Analysis of this data was done using the SPSS tool version 21 with appropriate descriptive statistical forms used to present the results.

4.0 RESULTS

4.1Sample Characteristics

4.1.1Respondent's Gender

The gender of the respondents played a significant role in seeking to find out whether there exists any correlation with the uptake of IS solutions in universities within Nairobi County. Limayem et al, (2007) attribute gender in their Unified Theory of Acceptance and Use of Technology 2 as one of the variables that influence user behavior in regards to IS adoption. Considering this, the research consisted of a total of 180 males and 152 females forming percentages of 54.2% and

45.8% respectively. Therein, 114 males and 94 females were from private universities whereas 66 males and 58 females were from public universities.

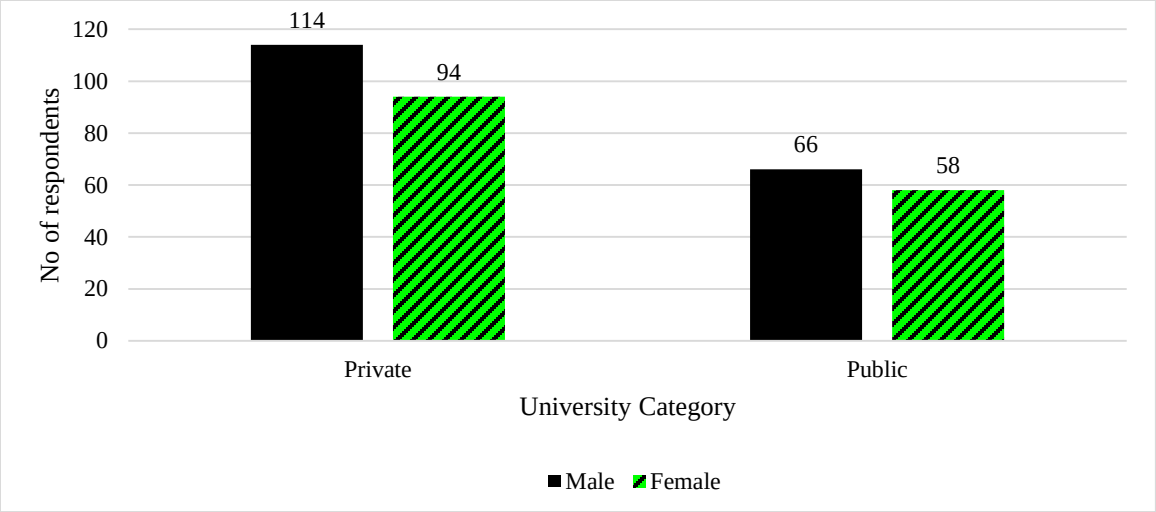

Figure 4.1: Gender of the Respondents

Source: Survey data, (2016)

4.1.2 Respondent's Age

It was established that respondents 30 years and below were 121 consisting 36.5%, 31yrs - 40yrs were 117 constituting 35.2%, 41yrs - 50yrs were 64 consisting 19.2%, 41yrs - 50yrs were 64 consisting 19.3% whereas Above 51yrs were 30 consisting 9% of the total respondents. In the build up to Unified Theory of Acceptance and Use of Technology 2, Morris et al, (2005) and Plude& Hoyer, (1985) asserted that older consumers tended to face more difficulty in processing new or complex information, thus affecting their learning of new technologies. The respondent's age was therefore critical in checking out whether the above statement held any water or not.

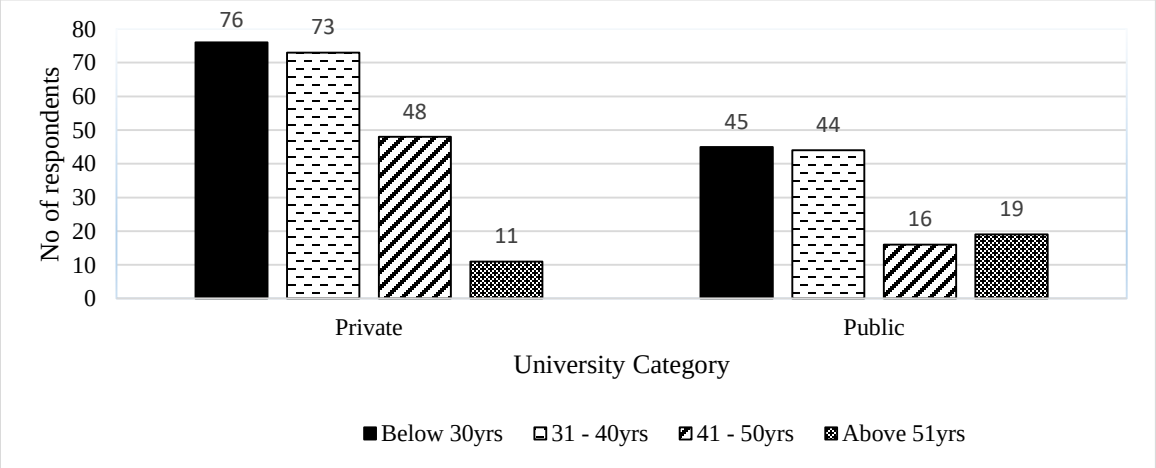

Figure 4.2: Age distribution

Source: Survey data, (2016)

4.2 Management Support

The section was aimed at interrogating the respondent's view on how management can contribute into the performance of the university through its support of IS.

4.2.1 The university encourages staff to use IS

It was key to establish what respondents thought if the university in any way encouraged staff in the use of IS. As reflected in KENET's report on e-readiness survey of higher education institutions in Kenya (2006), support on use of IS was critical and that higher adoption levels were witnessed in institutions where the vice chancellor representing the management championed implementation of related ICT strategy plans. Of the respondents, 0.3% did not respond at all, 5.1% strongly disagreed, 3.0% disagreed, 10.2% fairly agreed, 32.5 agreed and 48.8 strongly agreed

Table 4.1: The university encourages staff to use IS

	University Category		Total	Percent
	Private	Public		
0	1	0	1	.3
Strongly disagree	8	9	17	5.1
Disagree	1	9	10	3.0
Fair	10	24	34	10.2
Agree	62	46	108	32.5
Strongly agree	126	36	162	48.8
Total	208	124	332	100

Source: Survey data, (2016)

4.2.2 The university influences training for IS users.

The use of IS is affected by the role management plays towards training staff members. It was hereby necessary that the perception of respondents is established. The training aspect was equally highlighted by KENET, (2006) while looking at the ICT human capacity indicator, measures were hinged on indicators that included the business and technical experience of the Head of ICT, the frequency of upgrading the skills of the ICT staff, and the retention of ICT staff. Thus is also captured by Limayem *et al*, (2007) as being part of the facilitating conditions that influences the user behavior when it comes to technology adoption. In this study therefore, 0.3% of the respondents did not express their opinion, 5.1% strongly disagreed, 8.7% disagreed, 18.4% fairly agreed, 39.2% agreed and 28.3% strongly agreed.

Table 4.2: The university influences training for IS users

	University Category		Total	Percent
	Private	Public		
0	1	0	1	.3
Strongly disagree	6	11	17	5.1
Disagree	8	21	29	8.7
Fair	31	30	61	18.4
Agree	92	38	130	39.2
Strongly agree	70	24	94	28.3
Total	208	124	332	100

Source: Survey data, (2016)

4.2.3 Management recognizes my efforts in the use of IS

Staff members will be motivated whenever they feel that management recognizes their efforts in the course of their day to day duties. This role management plays in supporting the use of IS falls within the facilitating conditions which refers to consumers' perceptions of the resources and support available to perform a behavior (e.g., Brown and Venkatesh 2005; Venkatesh *et al*. 2003). The study revealed that 0.9% of respondents did not make known their views, 7.2% strongly disagreed that management recognized their efforts, 9.3% disagreed, and 23.8% were fair, 35. 2% were in agreement whereas 23.5% strongly agreed.

Table 4.3: Management recognizes my efforts in the use of IS

	University Category		Total	Percent
	Private	Public		
0	2	1	3	.9
Strongly disagree	8	16	24	7.2
Disagree	9	22	31	9.3
Fair	53	26	79	23.8
Agree	79	38	117	35.2
Strongly agree	57	21	78	23.5
Total	208	124	332	100

Source: Survey data, (2016)

4.2.4 The university allocates adequate funds for IS implementation

Funding is very critical in the adoption of IS in any institution, respondents views were therefore critical in evaluating the same. KENET (2006) report attributed that most of the large universities were allocating less than 0.5 % of their institutional budgets for purchase of Internet band width which is a critical resource in the implementation of IS. It was thus imperative that the state of funds allocation for IS implementation is determined. In this study therefore, besides 0.9% abstaining, 10.2% strongly disagreed, 11.4% disagreed, 29.5% fairly agreed, 30.1% agreed and

17.8% strongly agreed. The 47.9% of the respondents who were in agreement signifies that much still ought to be done in allocating financial resources.

Table 4.4: The university allocates adequate funds for IS implementation

	University Category		Total	Percent
	Private	Public		
0	3	0	3	.9
Strongly disagree	12	22	34	10.2
Disagree	16	22	38	11.4
Fair	59	39	98	29.5
Agree	73	27	100	30.1
Strongly agree	45	14	59	17.8
Total	208	124	332	100

Source: Survey data, (2016)

4.2.5 The user is aware that the university has a policy guideline on IS implementation

Policy guides are meant to inform and direct on the use and application of IS. This segment was key in establishing the extent to which IS policy has been crafted and disseminated down to the users. Policy which is normally incorporated in the ICT strategy, was one of the tenets that KENET used in its report, (2006) which was measured using several sub-indicators that included the alignment of ICT strategy to the corporate strategy, the extent of ICT strategy implementation, and the reporting levels of the Head of ICT. The study herein however indicated 1.2% of the respondents abstained from response, 6.3% strongly disagreed, 11.45 fairly agreed, 36.7% agreed, and 25.3% strongly agreed.

Table 4.5: The user is aware that the university has a policy guideline on IS implementation

	University Category		Total	Percent
	Private	Public		
0	4	0	4	1.2
Strongly disagree	8	13	21	6.3
Disagree	14	24	38	11.4
Fair	43	20	63	19.0
Agree	79	43	122	36.7
Strongly agree	60	24	84	25.3
Total	208	124	332	100

Source: Survey data, (2016)

4.3: Organizational culture

4.3.1 The use of manual ways of communication is easier than using automated approach

This was geared at evaluating respondent's views on ease of using manual systems vis a vis computer oriented. In this segment, we find that 0.9% did not indicate, 49,7% strongly disagreed, 25% disagreed, 11.4 said fair, 8.1% agreed and 4.8% strongly agreed

Table 4.6: The use of manual ways of communication is easier than using automated approach

	University Category		Total	Percent
	Private	Public		
0	3	0	3	.9
Strongly disagree	121	44	165	49.7
Disagree	49	34	83	25.0
Fair	17	21	38	11.4
Agree	10	17	27	8.1
Strongly agree	8	8	16	4.8
Total	208	124	332	100.0

Source: Survey data, (2016)

4.3.2 Manual ways of record keeping are trusted by users

The respondent's view on manual ways of record keeping reflected 0.9 % did non response, 26.8% strongly disagreed, 22% disagreed, 24.7% fair, 15.1% agreed and 10.5% strongly agreed.

Table 4.7: Manual ways of record keeping are trusted by users

	University Category		Total	Percent
	Private	Public		
0	3	0	3	.9
Strongly disagree	66	23	89	26.8
Disagree	46	27	73	22.0
Fair	49	33	82	24.7
Agree	26	24	50	15.1
Strongly agree	18	17	35	10.5
Total	208	124	332	100.0

Source: Survey data, (2016)

4.3.3 Computer oriented solutions are readily embraced

The researcher desired to establish the extent to which IS systems are embraced upon introduction. 2.1 % did not indicate, 5.1 strongly disagreed, 2.1% disagreed, 7.8% fair, 24.1% agreed, 58.75 strongly agreed.

Table 4.8: Computer oriented solutions are readily embraced

	University Category		Total	Percent
	Private	Public		
0	5	2	7	2.1
Strongly disagree	13	4	17	5.1
Disagree	4	3	7	2.1
Fair	13	13	26	7.8
Agree	47	33	80	24.1
Strongly agree	126	69	195	58.7
Total	**208**	**124**	**332**	**100**

Source: Survey data, (2016)

4.3.4 User's rely on other people's views before embracing an IS

It was necessary that how respondents make decisions on adoption of IS is evaluated so as to know the extent at which individuals exercise their ability as an individual to whether embrace an IS or not. We find that 1.2% did not respond, 26.2 strongly disagreed, 25.3% disagreed, 22.6% fair, 16% agreed and 8.7% strongly agreed.

Table 4.9: Users rely on other people's views before embracing an IS

	University Category		Total	Percent
	Private	Public		
0	3	1	4	1.2
Strongly disagree	59	28	87	26.2
Disagree	53	31	84	25.3
Fair	42	33	75	22.6
Agree	35	18	53	16.0
Strongly agree	16	13	29	8.7
Total	208	124	332	100

Source: Survey data, (2016)

4.3.5 Users find it easier using manual systems than automated systems

In this particular segment, 0.9 % did not respond, 51.5% strongly disagreed, 26.8% disagreed, 11.1% said it was fair, 4.2% agreed, 5.4% strongly agreed.

Table 4.10: Users find it easier using manual systems than automated systems

	University Category		Total	Percent
	Private	Public		
0	2	1	3	0.9
Strongly disagree	115	56	171	51.5
Disagree	53	36	89	26.8
Fair	20	17	37	11.1
Agree	9	5	14	4.2
Strongly agree	9	9	18	5.4
Total	208	124	332	100

Source: Survey data, (2016)

4.4 Correlation between Management support and university performance

The correlations within this variable were relatively weak with the highest being 0.111 which was between IS policy awareness and the university performance. The performance of universities had also a fairly strong correlation with funds allocation for IS implementation alongside encouraging the use of IS, they scored a rate of 0.181 and 0.1547 respectively. Whether the management influenced training, scored a very low rate of correlation of 0.665 with the influence exerted by the same in the use of IS.

These results show the need for management to further support IS implementation if notable performance was to be realized. This tends to agree with KENET, (2006) report that showed generally, institutions where the top management championed IS adoption by implementing the ICT strategy realized advanced levels of progress than those where the champion was at a lower level in institutional organizational structures. In addition, Sife, A.S, Lwoga, E.T, and Sanga, C, (2007) referring to Dwyer *et al*, (1997) take on administrative support emphasize that for the integration of ICTs to be effective and sustainable, administrators themselves must be competent in the use of the technology, and they must have a broad understanding of the

Technical, pedagogical, administrative, financial, and social dimensions of ICTs in education

Table 4.11: Correlation between Management support and university performance

		University Performance	Staff encouraged to use IS	Influence on IS training	Effort recognition	Adequate funds	IS policy awareness
Pearson Correlation	University Performance	1.000	.147	.250	.212	.181	.111
	University encourages staff to use IS	.147	1.000	.665	.510	.421	.413
	University influences training on IS	.250	.665	1.000	.544	.509	.480
	Management recognizes my efforts on IS use	.212	.510	.544	1.000	.558	.478
	University allocates adequate funds on IS implementation	.181	.421	.509	.558	1.000	.556
	I am aware of the university's IS policy	.111	.413	.480	.478	.556	1.000

Source: Survey data, (2016)

4.5 Regression Results

Management support is seen to contribute towards performance by 0.276 units.

Table 4.12: Regression Results

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.808	.119		15.130	.000
	Management Support on IS affects	.276	.042	.381	6.579	**.000**

Source: Survey data, (2016)

4.6 Correlation between Organizational culture and university performance

There was notably a strong correlation of 0.025 between finding manual ways of communication easier than automated ones and readily embracing computer oriented solutions. Another strong correlation at 0.067 was between readily embracing computer oriented solutions and relying on other people's opinion's prior to embracing IS.

The least correlation here was viewed between trust for manual ways of communication and trust for manual record keeping at 0.429. Another low correlation at 0.402 was between trust for manual record keeping and ease of working with manual systems. There was however extreme negative correlation of -0.193 between ease of manual communication and the performance of universities.

Venkatesh& Davis, (2000) while advancing the technology acceptance model 2, explained that perceived usefulness and usage intentions including social influence (subjective norm, voluntariness, and image) affect the behavioral intention by users. The organizational culture incorporated thereby fits under the social influence category as enumerated. The mixed findings recap a study by Charles, B, (2010) which showed that, parastatals experienced difficulty in drawing the line between changing business process to suit the ISs. The researcher asserted that instead of changing the way people work, parastatals worked towards modifying

the system which ended up squeezing time and implementation costs. In addition, ISs ends up

documenting inefficiencies and redundancies because of poor process definition.

Table 4.13: Correlation between organizational culture and university performance

		Performance	Manual communication	manual records trusted	computerized solutions	Other people's views	manual systems easy
Pearson Correlation	University Performance	1.000	-.193	-.164	.151	-.053	-.083
	Manual ways of communication are easier	-.193	1.000	.429	.025	.124	.399
	I trust manual ways of record keeping	-.164	.429	1.000	-.087	.084	.402
	I readily embrace computer oriented solutions	.151	.025	-.087	1.000	.067	-.106
	I rely on other people's views before embracing IS	-.053	.124	.084	.067	1.000	.060
	I find it easier working with manual systems	-.083	.399	.402	-.106	.060	1.000

Source: Survey data, (2016)

4.7 Regression Results

The equation compilation shows that organizational culture contributes by a small extent towards the performance of a given university at 0.02. This is equally corroborated by the fact that the significance level is 0.488 as in table 4.30 below which is way above the recommended p value of less than 0.05.

Table 4.14: Regression Results

Model		Unstandardized Coefficients		Standardized Coefficients	t	Sig.
		B	Std. Error	Beta		
1	(Constant)	1.808	.119		15.130	.000
	Organizational Culture	.020	.029	.025	.694	.488

Source: Survey data, (2016)

5.0 Conclusions

Management support in IS usage was still wanting across private and public universities despite the fact that it notably contributed greatly to the performance of universities; staff members were not encouraged to embrace IS solutions. It was equally noted that management did little in influencing training as well as recognizing the efforts staff members were putting towards the use of IS. Inadequate funding was another factor that negatively affected implementation of IS. The study revealed that the organizational culture within institutions of higher learning contributed by a small extent to its performance Manual ways of communication and record keeping were still preferred at the expense of IS; in public universities female staff members lagged behind from their male counterparts when it comes to embracing IS. A significant part of staff members are equally still apprehensive of embracing IS without seeking their colleague's opinions.

6.0 Recommendations

Management support within universities should consider augmenting their support to tangible levels so as to directly affect the adoption and adaption levels within the technical and other faculty and administration staff. This can be realized among other ways by formulating and appropriating pro IS policies as well as consciously apportioning fair budgetary votes towards IS advancement. The policies could be by the specific universities as well by the caretaker government ministry.

There is need of initiating an organizational culture change within public universities whilst creating awareness as to why IS adoption and process automation would be beneficial to the user and the university as a whole.

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