



MANAGEMENT INFORMATION SYSTEMS PRACTICES AND PERFORMANCE OF HUDUMA CENTERS IN NAIROBI COUNTY, KENYA

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Abstract

Globally, improving public service delivery has received a lot of attention with various reforms being introduced to address problems faced by citizens. Huduma Kenya was introduced by the government of Kenya as a strategy for reforming public service sectors, with the objective of ensuring citizens easy access to various government services. However, since its inception, the program continues to face service delivery challenges mainly due to the ineffective use of implemented systems, and management processes used to monitor the organizations' performance. The purpose of this study was to investigate the effect of Management information systems practices on performance of Huduma centers in Nairobi County, Kenya. The study objective was to examine the effect of management information systems efficiency and effectiveness, service value, decision effectiveness, and information management, on performance. The target population was 5 Huduma Centers in Nairobi County with a sample size of 80 respondents. Primary data was collected through questionnaires and data was analyzed using descriptive and inferential statistics. A multiple linear regression model was used to determine the influence of independent variables on the dependent variable. The validity of the questionnaires was tested using content validity whereas reliability was tested using Cronbach's Alpha. The study found that there was a positive relationship between MIS



efficiency and effectiveness, information management, service value as well as decision effectiveness and performance. The study recommends that in order to continuously improve service efficiency and effectiveness, Huduma Centers' management needs to upgrade their systems, carry out systems integration, use data duplication tools, and introduce business intelligence modules.

Keywords: MIS Practices, System Efficiency, and Effectiveness, Service Value, Decision Effectiveness, Reliability of Service

INTRODUCTION

Governments handle large amounts of information and provide services that are crucial to the citizens. According to Bhatnagar, (2014), service delivery methods remain unchanged for many decades because of inefficient and corrupt processes in public offices. Evidence suggests that the currently implemented e-government systems for process reforms that are targeting to enhance transparency and accountability, can improve service delivery and lower corruption. Nevertheless, most of these systems remain underutilized and there is a need to fast-track the rate of generating and building the capacity for transforming service delivery processes (Bhatnagar, 2014). Information technology researchers have demonstrated that Management Information Systems investment improves organizational productivity, management capability, competitive advantage, and overall organizational performance, which is an enabler for socioeconomic development (Awan & Khan, 2016).

Globally, Management Information Systems (MIS) are key in the business environment because of technological advancement over the years, and hence, they become a critical part of business operations. Several studies have been done globally to determine the effect of Management information systems practices on the performance of organizations.

The Indian government launched a pilot project in Karnataka state as part of enhancing public service delivery. Primary Health Center Management Information System (PHC) is used to transmit live data for patient handling, analysis, deliveries, and the availability of treatment drugs along with GPS information. Officials of Karnataka state can now easily, monitor how services are delivered and can evaluate citizens' experience as well as detect gaps in service delivery and above all address issues to do with medical supply shortages.

A report by World Health Organization, (2017), suggested that Tanzania, had the largest density of facilities for primary health care across Africa, and the main challenge was the provision of quality care as well as accessing these facilities (World Health Organization, 2017). Through the Connect Program, the government of Tanzania managed to make a significant

improvement toward the reduction of the Child mortality rate. The project allowed community data to be integrated into the National Health Management Information System (NHMIS) for immediate analysis, and discussion, and this information was then used to solve community problems and improvement of comprehensiveness and quality of the health system.

The government of Kenya has initiated substantial investments towards the implementation of Information Systems in many government departments and institutions, these include the Integrated Financial Management Information System (IFMIS), and most recently the e-Government system (ICTMP, 2014). These systems provide online electronic services for businesses and citizens which enables them to access many government services online. Such determined investments are aimed to enhance public service delivery and through these initiatives, the government has spent millions of dollars with a major part being funded by donors among them, the World Bank (ICTMP, 2014). This study was therefore aimed

Statement of the Problem

The goal of public service by governments worldwide is to lead the modernization of service delivery with the aim of providing efficient and reliable services to meet the demands of citizens. Furthermore, public service departments are there to provide services needed by the citizens, as every citizen has the right to quality service (Venables, 2015). The ever-increasing market growth as well as information awareness across the globe have contributed heavily to the demands for efficient services by citizens. The government of Kenya has adopted the process of reengineering the public service sector to enhance performance and efficiency in service delivery (Korir, Rotich , & Bengat, 2015).

For the past decade, the Kenyan government has been working on measures to make most of its services and information available online and the introduction of e-Government system has been one of the major priorities towards the national development goals and objectives for wealth and employment creation for Vision 2030 (Kenya Vision 2030, 2007). Despite all these efforts by the government, public service delivery remains a major concern because of unreliable government systems and corrupt systems (Wambugu, Wachira , & Mwamba, 2016).

According to Nyongesa, Ondoro, and Ntonga, (2020), it has been noted that Huduma Kenya serves about 30,000 customers against a target of 80,000 per day, and collects Ksh.12 billion against a target of Ksh. 40 billion annually and at the same time, massive data duplications are still experienced. These are some of the challenges that are hampering the performance of Huduma Centers in terms of providing quality and efficient service to the citizens. The study, therefore, sought to investigate system efficiency and effectiveness,

information management, service value, and decision effectiveness on performance of Huduma centers in Nairobi County, Kenya. The general objective of the study was to explore the effect of Management Information Systems Practices on performance of Huduma Centers in Nairobi County, Kenya.

LITERATURE REVIEW

Theoretical Review

This study used theoretical models including Resource Based View Theory (RBV), and the Technology Acceptance Model (TAM).

Resource-Based View Theory (RBV) looks at employees as the key to organizational success and sees an organization as a pool of resources. The theory states that the growth of an organization includes balancing between the utilization of existing resources and producing of new ones. This enables the firm to become heterogeneous and competitive by utilizing these bundles of resources. According to the RBV protagonists, exploiting outside prospects utilizing organizational resources in a much different way is much appreciated than hiring new resources for every business prospect that comes along. The RBV model allows resources to be acquired from the market for future organizations' competitive advantage since rivals can quickly get similar assets. The RBV model fits this study to assess Huduma Center's internal skills and how they can be redistributed in line with information systems (IS) usage and the performance of the sector.

Technology Acceptance Model (TAM) The idea behind theory was to determine the adequacy of a tool as well as to find those modifications that can be done to a system for it to become useful. However, information systems cannot improve organizational effectiveness if the users failed to accept them and understand how the manner in which they function. Technology Acceptance Model (TAM) is considered the most effective measure of information systems (Davis, 1989).

Management information systems play an important part in organizations, that is to enhance performance in almost every area of the cooperation. This research adopts the Technology Acceptance model because organizational performance is measured by how the workers adapt to the technology in place. In the real world, people and machines must work together to achieve a desirable outcome. Management information systems, therefore, form part of effective performance management, as performance has to be reported in view of the end users. The technology acceptance model helped in addressing the gap between users and systems in line with the acceptability of the change management at Huduma Centers.

Empirical Literature Review

Data is now considered to be the new oil, and therefore, Information becomes a strategic resource that adds value and forms part of the organization's strategic decision-making process. Information Management refers to how management information systems are used to manage organizational processes to acquire, create, organize, distribute and generate information (Agu , 2017). Information management encompasses measures such as information input or gathering, information processing, and information storage and usage which provides an in-depth analysis of how information handling can be a key to organizational decision-making.

Ajibade (2018), investigated how efficient information Management Practices enhance organizational performance drivers in South Africa. The objective of the study was to bring out the relationship between enhanced service delivery, and the manner in which information can be processed, and managed as a key driver for organizational success. The findings of his study were that information management is very useful in measuring service delivery and organizational performance.

Decision-making by public officials drives programs and policies and has an impact on the lives of citizens. The process is usually influenced by political factors, which is why introducing MIS practices in the decision-making process can be a game changer for organizations looking for competitive advantage. Effective Decision is very key in determining the performance of any organization.

George and Desmidt (2018), considered the effectiveness of decision-making in public sectors, from an information-processing perspective. The study focused on information processing theory to examine predictors of decision effectiveness in public sectors. Their study was based on information processing theory which states that good planning practices contribute to decision effectiveness by considering MIS in the process of decision-making. The results of their study suggested that tactical planning and management of performance in organizations can translate to effective decisions in an organization. The study focuses on information theory which stated that people can actively process the information they receive from their senses the same way computers do when making critical decisions

According to Yarimonglu and Mark (2014), service value relates to customer satisfaction and therefore service value is the customer's satisfactory feeling after service and as such many organizations have realized that service value leads to sustainability and competitive advantage. Value of service and Customer Satisfaction is very important to organizations that are aiming for competitive advantage (Angelova & Zekiri, 2011).

Danish, Humayon, Iqbal, and Raza (2018) looked at the impact of service quality in the telecommunication sector. Their study examined the impact of Service Quality and Value on

customer satisfaction and the study results reviewed that service value and quality have a great effect on customer satisfaction. The study mainly focused on the feedback from the customers experiencing the service and this had mixed reactions as some customers might not have given the correct details. This study explored service value through information systems to measure the performance of Huduma Centers in Nairobi County.

According to Ramachandra and Sriniva (2012), a system consists of elements linked in an organized way to achieve a common objective, and as such, System Efficiency is a desirable characteristic of an information system. The effect of MIS on Organizational Performance, authored by Azeez, Reyath, Yaakub, and Kamarul, (2019), examined the link between Management information systems (MIS) and organizational performance at Missan Oil Company in Iraq. Their study recognized six major MIS indicators namely system efficiency, information management quality, service value, system use, and user satisfaction. Their results showed that systems efficiency and effectiveness in relation to information management, and user satisfaction positively influenced the performance of an organization. The study research gap was that secondary data was used to draw out the research conclusions. This study relied mainly on the primary data collected from the information system users to assess how the use of Management Information Systems influences the performances of Huduma Centers in Nairobi County.

RESEARCH METHODOLOGY

This study used a descriptive research design to examine the effect of Management Information Systems practices on performance of Huduma Centers in Nairobi County, Kenya. A sample size of 80 respondents was taken from the population of 5 Huduma Centers namely GPO, City Square, Kibira, Makadara, and Eastleigh constituting 100 participants was used. The study employed random sampling through the selection of sample size, this was adequate to serve the specific objectives of the study. Primary data was collected through open and closed-ended self-designed questionnaires comprising questions related to the goals and objectives of the study.

Data from this research was required to be analyzed qualitatively as well as quantitatively and therefore, it was classified, checked, edited, and subjected to SPSS version 24 to obtain quick actionable insights from the collected data. Inferential statistics were used to investigate and summarize the data so as to draw a pattern that represented the true outcome of the research. The statistical model that was used includes regression analysis or linear regression, measures of central tendencies (mean). This research design was considered appropriate for the study since it relied on a flexible and interactive design using structured

questions and it provided a detailed response which helped in the investigation of the situation under study.

FINDINGS AND DISCUSSIONS

Descriptive Data Analysis

Management Information Systems' Efficiency and Effectiveness

The information below indicated that most of the respondents concurred to the extent that MIS systems were fully utilized with a mean of 2.29. This implied that the system usage was as per their expectation. On the other hand, the MIS systems at Huduma centers were being used for the intended purpose, with a mean of 2.42 this indicates that the majority of the respondents were in agreement. The study findings implied that users were satisfied with the accuracy, system efficiency, effectiveness value, personalization, and timeliness.

Similarly, respondents were asked to indicate their level of agreement in regard to whether systems were always available & dependable in data and information handling. The results indicated a mean of 2.95 and a SD of 0.952. This demonstrates a big divide between those who were in agreement and those who were uncertain. These findings agree with Ajibade (2018) also found that MIS was effectively being used in enhancing service delivery.

Table 1: Management Information Systems' Efficiency and Effectiveness

MIS efficiency & effectiveness		Rate of agreement						Std. Deviation
		Strongly Agree		Uncertain	Strongly Disagree		Mean	
		Agree	Agree	Uncertain	Disagree	Disagree	Mean	Deviation
MIS is being fully utilized	Freq	8	51	8	10	1	2.29	0.87
	%	10.3	65.4	10.3	12.8	1.3		
MIS is being used for the intended purposes	Freq	9	39	21	6	3	2.42	0.933
	%	11.5	50	26.9	7.7	3.8		
Systems are always available & Dependable in data and information handling	Freq	3	22	35	12	6	2.95	0.952
	%	3.8	28.2	44.9	15.4	7.7		

Information Management at Huduma Canter Systems

The researcher also asked respondents to rate how information was being managed at Huduma Canter Systems. The results are presented in Table 2.

Table 2: Information Management at Huduma Center Systems

		Rate on information management						Std.
Information management		Exceptional	Decent	Acceptable	Not Good	Poor	Mean	Deviation
Information Input								
/Gathering	Freq	14	41	15	7	1	2.23	0.896
	%	17.9	52.6	19.2	9	1.3		
Information processing								
	Freq	9	28	34	6	1	2.51	0.849
	%	11.5	35.9	43.6	7.7	1.3		
Information Storage and Usage								
	Freq	9	23	38	5	3	2.62	0.915
	%	11.5	29.5	48.7	6.4	3.8		

On information input /gathering, this recorded a mean of 2.23 with Information processing at a mean of 2.51 and information storage and usage with a mean of 2.62. The findings imply that in general, information management at Huduma Center systems received a favourable rating since the mean of 2.62 fell under the decent rating tending towards the acceptable rating. Markgraf, (2019), noted that information management improves performance through factors such as information input, information processing, and information storage and usage.

Management Information Systems' Service Value and performance

This section sought to understand respondents' level of agreement with statements in regard to MIS's service value rating. Table 3 presents the findings.

Table 3: Service Value Rating at Huduma Center

Service Value at Huduma Center		Excellent	Good	Fair	Poor	Mean	SD
Assurance	Freq	24	40	13	1	1.88	0.72
	%	30.8	51.3	16.7	1.3		
Availability	Freq	13	39	25	1	2.18	0.716
	%	16.7	50	32.1	1.3		
Responsiveness	Freq	7	26	43	2	2.51	0.698
	%	9	33.3	55.1	2.6		

Regarding service assurance, this was at a mean of 1.88 and implies that service assurance was excellent where a mean of 1.88 falls though tending towards good on the Likert scale. Service availability recorded a mean of 2.18 this means that service availability was largely good. In regard to service responsiveness, this was at a mean of 2.51, and service responsiveness was generally good since the mean of 2.51 corresponds with good on the Likert scale.

The findings demonstrate that MIS users derived value from its use through its availability, responsiveness to their needs, and its assurance. This means MIS users' effectiveness and efficiency was facilitated by these attributes. By extension, the findings imply that there was customer satisfaction since service value relates to customer satisfaction (Yarimonglu & Mark, 2014). The findings are in concurrence with Danish, et al. (2018) who found that service value and quality have a great effect on customer satisfaction.

Effectiveness of Decision Making at Huduma Centre

Respondents were asked to rate the effectiveness of decision-making at Huduma center, the findings of which are depicted in Table 4.

Table 4: Effectiveness of Decision Making at Huduma Center

Rating		Exceptional	Decent	Average	Not good	Extremely Poor	Mean	Std. Deviation
Speed of decisions	Freq	11	56	10	1	0	2.01	0.57
	%	14.1	71.8	12.8	1.3	0		
Accuracy of the decisions	Freq	9	54	12	2	1	2.13	0.691
	%	11.5	69.2	15.4	2.6	1.3		
Time of Decisions	Freq	32	33	8	4	1	1.83	0.903
	%	41	42.3	10.3	5.1	1.3		

In rating the speed of decision-making, this was at a mean of 2.01 and a standard deviation of 0.57. The mean of 2.01 translates to a value of 2 on the Likert scale which corresponds to respondents rating the speed of decision-making as decent implying that most respondents were of the opinion that the speed of decision-making was decent and hence effective.

Similarly, in rating the effectiveness of decision-making at Huduma Center this was at a mean of 2.13 and this implies that most respondents were of the opinion that the accuracy of decision-making was decent and hence effective. Further, in rating, the effectiveness of decision-making the mean was at 1.83 implying that most respondents were of the opinion that the time of decision-making was exceptional and hence effective.

Effective decision-making is important in determining the performance of any organization. George and Desmidt (2018) considered the effectiveness of the decision-making process. Azeez et al. (2019) stated that system efficiency, information management quality, service value, system use, and user satisfaction are key in influencing the performance of an organization. Therefore, organizations need to ensure that the information systems are accurate, efficient, and effective in providing timely information for decision-making (Kimathi, 2015).

Multiple Regression Analysis

Multiple regression analysis was used to determine the link between performance and the four independent variables, that is, management information system practices namely system efficiency and effectiveness, system information management, system decision effectiveness, and system service value. Findings are presented below in Table 5.

Table 5: Regression Coefficients

Model		Unstandardized		Standardized	t	Sig.
		Coefficients		Coefficients		
		B	Std. Error	Beta		
1	(Constant)	0.8	0.222		3.599	0.050
	System efficiency & effectiveness	0.218	0.078	0.316	2.802	0.007
	System information management	0.177	0.066	0.317	2.665	0.009
	System decision effectiveness	0.095	0.07	0.134	1.364	0.177
	System service value	0.012	0.081	0.016	0.147	0.883

Dependent Variable: System Performance

As per the SPSS generated table above, the regression equation;

$(Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \epsilon)$ becomes:

$(Y = 0.8 + 0.218X_1 + 0.177X_2 + 0.095X_3 + 0.012X_4 + \epsilon)$

According to the regression equation established, considering all factors (system efficiency and effectiveness, system information management, system decision effectiveness, and system service value) constant at zero, the performance of Huduma centers will be 0.800.

The data findings also indicate that taking all other independent variables at zero, a unit increase in system efficiency and effectiveness will lead to a 0.218 increase in performance. Further, a unit increase in system information management will lead to a 0.177 increase in performance, a unit system decision effectiveness will lead to a 0.095 increase in performance and a unit increase in system service value will lead to a 0.120 increase in performance of Huduma centers. This implies that system efficiency & effectiveness contributes the most to the performance of Huduma centers followed by system information management, system decision effectiveness, and system service value in that order. At a 5% level of significance and 95% level of confidence, system efficiency and effectiveness, system information management, system decision effectiveness, and system service value all significantly influenced the performance of Huduma centers.

The findings concur with Ajibade, (2018), who found that information management is very useful in measuring service delivery and organizational performance. Similarly, Devece, Palacios, and Martinez-Simarro, (2017), established that there is a strong relationship between information management capabilities and the performance of an organization. Similarly, Kinuthia (2012) found that there was a significant improvement in the decision-making process after the introduction of the Information System. Further, Kamarul, (2019), also established that management information systems positively influenced organizational performance through efficiency and effectiveness.

Correlation Analysis

Inferential statistics in the form of Pearson correlation was used to analyze the relationship between the independent variables (management information systems) and the dependent variable (performance). Under Pearson correlation, a positive correlation implies an increase in one variable leads to an increase in the other. Whereas a negative Pearson correlation infers that as one variable decreases the other increases. The results are presented in Table 6.

Table 6: Correlation between MIS and Performance

MIS Practices	System efficiency & effectiveness	System information management	System service value	System decision effectiveness	System performance
System efficiency & effectiveness	1	.547**	.345**	0.09	.507**
	Sig.(2-tailed)	0	0.002	0.433	0.000
N		78	78	78	78
System information management	Pearson Correlation	1	.446**	0.199	.524**
	Sig. (2-tailed)		0	0.08	0.000
N			78	78	78
System service value	Pearson Correlation		1	.281*	.304**
	Sig. (2-tailed)			0.013	0.007
N				78	78
System decision effectiveness	Pearson Correlation			1	.230*
	Sig. (2-tailed)				0.043
N					78

** Correlation is significant at the 0.01 level (2-tailed).

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

The findings show that system efficiency and effectiveness and system performance of Huduma centers had a positive correlation ($r=0.507$, $p=0.000$). This implies that system efficiency and effectiveness at Huduma centers resulted to an improvement in the system performance. This finding is consistent with those of Devece, et al. (2017) who investigated how system efficiency in information management enhances organizational performance in South Africa. The study results show a positive relationship between system efficiency and performance in terms of service delivery, information processing, and management. On the other hand, system information management and performance had a positive correlation ($r=0.524$, $p=0.005$) indicating that the system information management positively impacted the performance of Huduma centers. The finding agrees with those of Azeez (2019) who studied the relationship between system information management and performance in

Missan Oil Company in Iraq. The study also found a positive relationship between system information management and performance in terms of efficiency, information management quality, service value, system use, and user satisfaction. On their part, Makau , Lagat, and Bonuke, (2017) advised that organizations need to incorporate information management in their operations in order to achieve enhanced overall organizational performance. This will enable them to maintain their customers and make timely and informed decisions.

Similarly, there was a positive correlation between system service value and performance as depicted ($r=0.304$, $p=0.007$). This implies that system service value resulted in an improvement on performance of Huduma centers. This finding is in line with that of Yarimonglu and Mark (2014) who too found that service value in terms of customer satisfaction directly resulted in improved organizational performance. The study concluded that the customer's satisfactory feeling after service leads to sustainability and competitive advantage. This is in agreement with Angelova and Zekiri (2011) who stated that the value of service and customer satisfaction is very important to organizations that are aiming for competitive advantage. In their investigation, Danish, Humayon, Iqbal, and Raz, (2018) looked at the impact of service quality in the telecommunication sector. The study examined the impact of service quality and value on customer satisfaction and the study results indicated that service value and quality have a great effect on customer satisfaction and by extension improved performance.

Further, system decision effectiveness equally had a positive correlation with performance, meaning that system decision effectiveness impacted positively on performance at Huduma centers in Nairobi County, Kenya ($r=0.230$, $p=0.043$) The finding concurs with George and Desmidt (2018) who studied how the effectiveness of decision making in public sectors, from information processing perspective influences performance. Equally, a positive correlation was found to exist between system decision-making and performance, meaning that system decision effectiveness impacts positively on performance. The study concluded that improved performance is a function of the decision's main effectiveness.

Analysis of Variance

Multiple regression analysis was used to determine the link between performance and the four independent variables, that is, management information system practices namely system efficiency and effectiveness, system information management, system decision effectiveness and system service value. Findings are presented in Table 7.

Table 7: Regression Coefficients

Model		Unstandardized		Standardized	t	Sig.
		Coefficients		Coefficients		
		B	Std. Error	Beta		
1	(Constant)	0.8	0.222		3.599	0.050
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Dependent Variable: system performance

As per the SPSS generated table above, the regression equation;

$(Y = \beta_0 + \beta_1X_1 + \beta_2X_2 + \beta_3X_3 + \beta_4X_4 + \epsilon)$ becomes:

$(Y = 0.8 + 0.218X_1 + 0.177X_2 + 0.095X_3 + 0.012X_4 + \epsilon)$

According to the regression equation established, considering all factors (system efficiency and effectiveness, system information management, system decision effectiveness, and system service value) constant at zero, the performance of Huduma centers will be 0.800.

The data findings also indicate that taking all other independent variables at zero, a unit increase in system efficiency and effectiveness will lead to a 0.218 increase in performance. Further, a unit increase in system information management will lead to a 0.177 increase in performance, a unit system decision effectiveness will lead to a 0.095 increase in performance and a unit increase in system service value will lead to a 0.120 increase in performance of Huduma centers. This implies that system efficiency & effectiveness contributes the most to the performance of Huduma centers followed by system information management, system decision effectiveness, and system service value in that order. At a 5% level of significance and 95% level of confidence, system efficiency and effectiveness, system information management, system decision effectiveness, and system service value all significantly influenced the performance of Huduma centers.

The findings concur with Ajibade, (2018) who found that information management is very useful in measuring service delivery and organizational performance. Similarly, Devece et al. (2017) established that there is a strong relationship between information management capabilities and the performance of an organization. Similarly, Kinuthia (2012) found that there

was a significant improvement in the decision-making process after the introduction of the Information System. Further, Kamarul, (2019), established that management information systems positively influenced organizational performance through efficiency and effectiveness.

CONCLUSION

Respondents suggested a number of areas for improvement including carrying out continuous system upgrades, carrying out a departmental system integration, using data duplication tools, introducing business intelligence modules, running the system through a cloud platform, and regular training of system users. These findings imply that the MIS efficiency and effectiveness perfection level had not been reached since it required the various improvements in order to further performance as suggested by the respondents.

The study further concludes that MIS enabled thorough information gathering and handling since respondents indicated that the system had enough processing capacity to handle multiple transactions. Similarly, the study concludes that the output of management information systems was consistent and that information security was guaranteed. The system enabled information clarity and the output of information was always accurate. Similarly, the content MIS output was elaborate enough. Management information systems' service value influenced performance through service assurance, service availability, and service responsiveness. Further, management information systems' decision effectiveness influenced performance by getting rid of common mistakes in decision-making, since a majority of respondents indicated that this happened more than expected and very much did. Further, the speed of decision-making was largely exceptional and decent, and by implication enabled timely decision-making. Besides, the accuracy of decision-making was largely exceptional and decent.

System efficiency and effectiveness had a positive relationship with system performance, meaning that system efficiency and effectiveness at Huduma centers resulted in an improvement in system performance. On the other hand, system information management has a positive relationship with system performance, indicating that system information management positively impacted the performance of Huduma centers. Similarly, there is a positive correlation between system information management and performance.

The study also concludes that an increase in system efficiency and effectiveness leads to an increase in performance. Equally, an increase in system information management leads to an increase in performance. Similarly, an increase in system decision effectiveness leads to an increase in performance and an increase in system service value leads to an increase in the performance of Huduma centers.

RECOMMENDATIONS

The study has established that the existing systems require major improvements and therefore, the study recommends that the Kenyan government through the Huduma Secretariat should continuously carry out system upgrades, integrating various department systems to come up with a centralized database and to improve on network connectivity linking these systems. This will ensure MIS efficiency and effectiveness in data handling, the value of service, and decision-making effectiveness as well as improvement in the performance of Huduma Centers.

The study further recommends that Huduma center management needs to consider running their systems on a cloud platform to enhance system availability and reliability since they will not need to rely on the on-premises infrastructure to deliver the services. Also, system users should be regularly trained on system usage and the use of new technologies in order to maximize data handling and information processing capacity and also maximize the clarity and accuracy of information output.

The study also recommends that the Huduma Center management should put mechanisms in place to keep improving MIS service value in terms of availability, responsiveness to customer needs, and service assurance for its sustainability into the future. In order to continuously improve MIS's contribution to the decision-making process, the study recommends that management should work on improving data entry standards to eliminate common errors and implement data duplication detection tools to address the existence of multiple records of the same data.

SUGGESTION FOR FURTHER STUDIES

The analyzed data was collected from Huduma center employees and therefore results are based on their experiences with the management information systems in regard to its effectiveness, efficiency, and performance. The researcher recommends that a similar study be conducted targeting members of the public in regard to their experience in accessing Huduma center services online.

This study was purely quantitative where data was collected through questionnaires and analyzed through quantitative procedures. The researcher recommends that a similar study be conducted using qualitative methodologies including the use of interviews and focused group discussions where respondents' answers can be probed further for explanations and sharing of their experiences deeply without being constrained by the closed-ended questions used in questionnaires.

Future studies need to be conducted on MIS effects in the public financial sector in Kenya across all public institutions in the country so as to generalize the findings. This study was focused only on Huduma centers in Nairobi County and hence the findings cannot be generalized.

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