INFLUENCE OF DIGITALIZATION ON IMPLEMENTATION OF SUSTAINABLE DEVELOPMENT GOALS IN PUBLIC ADMINISTRATION IN KENYA

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ABSTRACT

Mainstream government have suffered serious setbacks in most government institutions with policymakers in public administration largely remaining unskilled in ICT creating a gleaming future for SDGs implementation. The purpose of this study was to examine the influence of digitalization on sustainable development goals implementation in public administration in Kenya. The objectives of the study were to examine institutionalization of digital technologies. The study was anchored on the transformative approach perspectives to public administration, and structural-instrumental perspective theories. The study adopted descriptive design, case study method was most appropriate to obtain qualitative evidence from multiple sources and gain theoretical proposition. The study used mixed method approach that is both quantitative and qualitative methods. The study employed structured questionnaires were administered to target within the government ministries that includes directors, senior managers and ICT Officers. The study will apply purposive sampling and snowball sampling to sample the target respondents. Data analysis methods were employed which included coding and categorization, tabulation, thematic analysis and use of statistical package for the social sciences (SPSS Version 23). Validity test of the research instrument was done to ensure it measures what it claims to measure. Reliability coefficient was determined using Cronbach's Alpha. Ethical consideration regarding integrity and quality of the study, privacy, the confidentiality of the data given by respondents were put into consideration. Based on the findings the study concluded that the study indicates that there was a moderate positive and statistically significant correlation between Institutionalization of digital technologies and implementation of Sustainable Development Goals SGDs ($r = 0.565$; $p < 0.05$). This implies that there was correlation between institutionalization of digital technologies on implementation of Sustainable Development Goals SGDs in public administration in Kenya. The researcher recommended that organizations should install computer technology tools, software's and databases for tracking, monitoring to enhance implementing SGDs efficiently. Institutionalization of digital technologies should be strengthened to sustainable development goals implementation in public administration in Kenya. Coordination of ICT Infrastructure should be enhanced to sustainable development goals SDGs. There should be internalization of digital skills to enhance sustainable development goals (SDGs). This study suggests that future studies should be done to establish digitalization challenges on implementation of sustainable development goals (SDGs).

INTRODUCTION

Background to the Study

Digitalization process involves arrays of technological implications including applications of digital skills, digital public service, Information Communication Technology (ICT) infrastructure, connectivity and the use of the internet (OECD, 2015). Gartner (2018) views digitalization as more focused towards organization business and he goes further to describe digitalization as the process of moving to a digital business and use of digital technologies to provide innovative revenue, business model and value-producing opportunities. (Gray & Rumpe, 2018) emphasizes that digitalization is based on the accessibility of huge and voluminous amounts of internal and external based on cloud data, machine learning activities and data mining for prediction of client behavior and future market. Globally, digitalization has seen considerable improvements in digital innovation and digital transformation in the past centuries by creating new ways of economic and social interaction (Mark, 2017).

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Fyson et al, (2019) emphasize the need for governments and public institutions to work closely on SDG implementation through regional and local authorities in a subnational government structure. Consequently, digitalization and implementation of SDGs will largely depend on the leadership and digital skills of public servants to navigate complex frameworksof SDGs and ability to turn SDG policy commitments and principles into actions (Fyson et al,2019). Civil servants will therefore need to acquire skills and knowledge sphere that allows them to operate beyond the traditional cross-disciplinary operating environment. The applications of newly acquired skills will allow them to apply mainstream government process.

To ensure sustainable digitalization implementation, countries need to overcome the challenges and make considerable efforts in creating stronger partnerships for sharing best governance practices for SDGs as well as enabling strategies and action plans that consistently ensure policy coherence for sustainable development, support compartmentalized government structures and

overcoming institutional fragmented actions and silos (OECD, 2019). Further, leading SDG accelerations and policy implementation requires strong inclusive political commitment, leadership backed by policies, legislations, incentives and strategies for sustainable development. Similarly, policy integration that allows cross-sectoral collaboration that is strategic to institutional frameworks are integral in ensuring alignments of new realism in public sector innovations, experimental policy design, system thinking as well as enable them to meet complex intransigent cross-cutting policy challenges posed by supranational policy programmes like SDGs (OECD, 2019). In Kenya, digitalization, on one hand, affects adoption of Sustainable Development Goals, while on the other hand, it has remained a critical issue in the public service and administration as it is anchored in development agendas. Banga and Velde (2018), Attributed that the discussion between Sustainable Development Goals and digitalization has shown thatdigital technologies have proved to be a transformative and enabling factor of sustainable development. In Africa, Kenya has emerged a leader of digitalization. Recent evidence shows that continued efforts of both private and public sectors in Kenya point to roughly 25 percent of internet penetration in the period 2001–2016 (Banga and Velde, 2018).

The increasing trend of digitalization development of Kenya's digital economy has been advanced by recognition of ICT as a development pillar in the government's 2030 vision, the inclusion of digital payment systems like M-Pesa, setting up undersea fiber-optic cables, private sector support to technology hubs and networks. The introduction of the National Cyber Security Strategy and National Broadband Strategy and the improvement in ease of doing business, and government (Banga and Velde, 2018). Thus, taking cues from these, this project explored digitalization repertoires in implementation of supranational policy programmes, the case of SDGs in public administration in Kenya specifically narrowing down to 7 SDGs (SDG Compass, 2016) within the Ministry of Information Communication Technology Ministry of Labor, Ministry of Health, Ministry of Education. Ministry of Devolution and ASALs. Ministry of Water and Sanitation, Ministry of Energy. This study will focus on the seven SDGs as they are prominently structured within the ministries targeted and it was also easier to get data on the proposed SDGs. This study aims at investigating this correlation between digitalization and public administration in Kenya.

Statement of the problem

The execution of SDGs, as well as the adoption and appreciation of related targets, are still a major challenge influencing their implementation and acceleration in public administration (Murr et. al, 2017). Generally, the ICT process was not recognized while drafting the SDGs resulting in the inadequacy in measuring the digitalization process (Huawei, 2017). Achieving SDGs and other national policy programmes will not be easy if the governments do not work across digitalization policy areas and known obstacles to boost the capacity of governments to coordinate, to act, to plan and to serve as a catalyst in support of SDGs implementation. The existence of unclear roadmap and framework on the integration of the strategies for implementing SDGs by the governments has resulted to grey gaps hindering the achievement of the SDG related targets

by the public administrators and implementers (Madelin, 2019). This can largely be attributed to policy adoption challenges of public administrators revolving around policy coordination, policy reforms and politics in the public sector. At the public service and administration level especially in Kenya, SDGs implementation has become challenging to accelerate and implement as different departments have specialized in their own domains (Murr et. al, 2017). Further to this, studies have implicitly and explicitly demonstrated that public sector organization employees have rarely considered the seriousness through which they can monitor and evaluate the digitalization process of SDG intheir plans. In Kenya, digital skills and connectivity that form part of the digitalization process in mainstream government have suffered serious setbacks in most government institutions with public administrators largely remaining unskilled in ICT (Mwansa, 2017).

Allison (2019) asserts that appreciating the increased adoption and acceptance of ICT usage among public administrators is far-fetched and is far from being realized. Conversely, while statistical documents show steady improvement and spread digitalization solutions in public administration, there is little existence of knowledge of the organizational process in relation to institutionalization, internalization and coordination of SDGs (Madelin, 2019). As noted bySachs et.al (2016), "ICTs role in the implementation of SDGs in the era of 2016-2030 will steadily develop quickly and rapidly" despite the fact there are a couple of problems affectingeffective and efficient adoption as well deployment strategies aimed at the digitalization of SDGs. The challenges noted include regulation hindering the utilization and implementation of ICT, knowledge and skills advancement among public administrators assigned the role of operating information systems and the rapid growth of internet and innovation in the telecommunication sector. According to Jones et.al (2017), it is a fact that digitalization is faced by several constraints that the government should play a leading role in resolving to digitalize and align SDGs for digitalization. Therefore, this study intends to explore the Influence of digitalization implementation on sustainable development goals in public administration in Kenya.

Purpose of the Study

The purpose of this study was to examine the influence of digitalization on sustainable development goals implementation in public administration in Kenya.

Objectives of the study

To examine the influence institutionalization of digital technologies on implementation of Sustainable Development Goals (SGDs) in public administration in Kenya.

Research questions

How does the institutionalization of digital technologies influence on implementation of Sustainable Development Goals (SGDs) in public administration in Kenya?

LITERATURE REVIEW

Empirical Review

Digitalization and Sustainable Development Goals

Heads of United Nations (UN) representatives, United Nations Council, member nations, and the crowns of state gathered on the 25th September 2015 and settled on the seventeen Sustainable Development Goals to override and replace the earlier proposed Millennium Development Goals (MDGs) in UN represented the council in the year 2000 (SDG Compass, 2016). These seventeen SDGs include SDG 1-No poverty, SDG 2- Zero hunger, SDG 3- Good Health and wellbeing, SDG 4- Quality education, SDG 5-Gender equality, SDG 6- Clean Water and Sanitation, SDG 7- Affordable and clean energy, SDG 8- Decent work and economic growth, SDG 9- Industry, innovation and infrastructure, SDG 10- Reduce inequality, SDG 11- Sustainable cities and communities, SDG 12- Sustainable consumption and production, SDG 13-Climate action, SDG 14-Life below water, SDG 15- Life on Land, SDG 16- Peace, justice and strong institutions, and SDG 17- Partnership for the goals were prompted to inspire action in the succeeding fifteen years to transform the pathway of humanity (SDG Compass, 2016). This project took stock of the central presumption that since the public administration plays a high priority role in integrating and implementing SDGs into National Development Plans; it was essential to guide acceleration of SDG in Public Administration through digitalization process.Before transition to SDGs in 2015, MDGs were declared to promote global partnership to reduce extreme poverty with specific time-bound 8 targets ending in 2015. Even though many countries made extraordinary progress in improving citizens lives, developing countriesfaced significant challenges and missed on the set development targets by large margin over weak governments and institutions that are accountable to their citizens, corruption, lack of transparency and accountability and weak governance (Clemens and Moss, 2015).

Similarly, Amin (2016) and Bond (2016) critically discussed the uneven progress of MDGs and unearthed the underlying political characteristics of MDGs suiting rich states and interest of corporations in what is termed as neo-liberal globalization. The realization of uneven progress and weak implementation targets gave rise to the 17 Goals of SDGs which are institutionalized within the government development structures and are mainly implemented by the Public Administrators among other intergovernmental structures and development organizations. Looking at the implementation challenges recognized during MDGs and institutionalization of SDGs in the current global development dispensation, it was therefore important to critically assess the digitalization and implementation process of the current targets.

The Digital Economy and Society Index (DESI) was technologically advanced by The European Commission to measure a country's achievement in the digitalization levels. The Digital Economy and Society Index (DESI) summarize the indicators linked to digital competitiveness and

performance. It is summarized as a set of indicators associated with the digital policy framework having a three-layer structure (European Commission, 2017). It is noted that the first level has five principles that are Digital Public Services, Digital skills, Connectivity, Use of Internet and the integration of digital technology while the second level comprises of 12 individual indicators while the third level has 31 indicators.

An economy's digital development can only be achieved through the interconnection of these factors (European Commission, 2017). During the processes of technological change, the index changes and as of 2016 for instance, the changes included 4G coverage. The final DESIscore computation weighting system share the following: Human Capital and Connectivity as having the leading impact with 25% each, while the Integration of Digital Technology follows with 20%, the application and use of the Internet and Digital Public Services recorded the lowest control of 15% (European Commission, 2017). According to Murr et.al (2017), digitalization processes and tools increases efficiency and improve data transparency. Therefore, digitalization influences the future work concepts over the next years through the application of algorithm as decision-makers, use of data and the use of bots (Sergey N. et al., 2018).

State of digital policy and implementation of digitalization in Kenya

Fair-weather (2016) notes a prevalent belief that faculty members may occasionally impede the integration of digital technologies in higher education, which could diminish their efficacy in delivering services. However, research suggests that incorporating digitalization within university education can significantly contribute to national development. The goal of this strategy is to improve the quality of higher education and expand its reach, thereby enhancing and enlarging educational programs on a wider scale. In their research, Bhattacharya, Gulli, and Gupta (2015) presented seven distinct criteria for evaluating the quality of electronic services on government websites. These criteria provide crucial information for developers, helping them understand user requirements and improve the design and functionality of online services. However, like many other studies, this research does not offer a detailed explanation or justification for choosing these particular dimensions of service quality. Tat-Kei Ho (2016) argues that the e-government model shifts the focus of public managers from primarily considering producer-oriented concerns like cost-efficiency to prioritizing user satisfaction, control, flexible service delivery, and effective management of networks that include both internal and external stakeholders. This shift underscores the importance of innovation, organizational learning, and entrepreneurship in consistently improving and advancing institutional operations. Additionally, Naz (2019) studied the connection between e-governance and service performance outcomes, such as effectiveness, efficiency, and equity. The findings reveal that e-governance in public service delivery can exceed citizen expectations, successfully attaining the primary public management objectives of effectiveness, efficiency, and equity.Ajayi (2018) notes that the efficient utilization of digital technologies in information services has made it easier to manage high enrollment numbers in many public universities. This advancement offers new opportunities for rapid communication and worldwide information access. As digital

technology becomes more prevalent across different sectors, it increasingly allows people globally to access information resources from anywhere in the world.

Gronroos (2017) categorizes customer services into two types: high-touch and high-tech services. High-touch services emphasize personal interactions, while high-tech services rely on automated technologies. It's essential to recognize that high-touch services combine physical resources with technological systems, necessitating effective management and seamless integration to meet customer needs. Consequently, electronic services blend advanced technology with personalized interaction. For example, high-tech services include online payments, mobile billing, and ATMs, while high-touch elements involve providing guidance and personal assistance to customers using these technologies. This study aimed to investigate the use of resources in the digital service delivery program at Puntland State University

Theoretical Framework:

Diffusion of Innovation Theory

Chen, Gillenson, and Sherrell (2020) contend that this theory effectively predicts both the likelihood and extent of new innovation adoption. It highlights five crucial attributes of innovation: compatibility, relative advantage, complexity, trialability, and observability. The attribute of relative advantage refers to the perceived superiority of an innovation over the existing idea or practice it replaces, significantly influencing its adoption. Catalini and Tucker (2016) highlight the vital role of early technology adopters in the dissemination of new innovations. Their choices to adopt or reject a technology greatly influence its broader acceptance. For instance, blockchain technology has grown from a niche innovation to a widely acknowledged and secure platform, with various industries now exploring its use to enhance system security. This theory aims to explain the decision-making process in adopting new technologies, the factors affecting the adoption rate, and the different categories of adopters.

Theory Structural-Instrumental Theory

Recognizing that public administration is anchored on political science and administration, there are existing power relations and organizational arrangements that are entrenched by rational calculations, instrumental control and leaders (Christensen and Legreid, 2018). Politically, it is clear that there is extreme caution on how public administration handles the work that they do. Reforms and new roles must always have political backing and be calculated well in order to prevent cultural resistance and confrontational power. Inter- organizational coordination has been conceptually confused with integration, cooperation, coherence and collaboration while in essence, they are different (Onyango 2018). Structural and instrumental perspectives towards administration and organizational design coalesce around formal structures and organizational designs that are bureaucratic and non- receptive to new phenomena. It is also assumed that public administrators tend to score high on rational calculations (Christensen and Lægreid 2017). Therefore, it remains

critical to see how rationalization and digitalization for SDGs are taking place to reform the public administration. In particular, Organizational structures and managerial designs are valued such that they are religiously used to inform decision making by political and administrative leaders. While this is the case, the realization that digitalization process and digital transformation across the public sector is taking place, many organizational designs largely affect and constrain the effective implementation of SDGs. Loosely or tightly discretional powers within the organizational hierarchy may negatively or positively influence or affect the integration of SDGs and digitalization in the organization.In laying out ICT infrastructures, bureaucratic legislation has the potential to derail coordination of different players due to cultural nature of not working with the private sector or other players in the market (see, Onyango, 2019), thereby, affecting overall digitalization process. It is therefore clear that transformative approach uses central instruments from institutions to form and make decisions in public administration were hybrid and complex mixture of the polity features, environmental pressure and institutional history context are factored in (Christen and Legreid, 2018).

Environmental Theory

For an organization to establish legitimacy and relevance, they are forced to operate within institutional environments both internal and external pressures such as the adoption of SDGs. This theory supports the realization of SDGs through digitalization in their institutional programming is critical. In most cases, SDGs were adopted and integrated into institutional frameworks of most organizations after the ratification of SDGs by the UN council and the realization that they were global driven goals. Therefore, formal organizations operate within certain parameters reflected by myths instead of adopting what they know would case. This theory brings the discussions on the forefront of whether adoption of SDGs by institutions was as a result of exerted pressure from international institutions. It also brings another argument backed up by Olsen (2019), who indicated that organizations may participate in forming a natural environment or the international environment as a form of pressure or norm.

Critically, the digitalization process centered on environmental factors and embedded on the strong realization that without technology and digital skills transformation, then the organization will bear the brunt of being left out of prestigious clubs. The ICT infrastructure and wave of digital skills improvement in the organization has been majorly influenced by the environmental pressure to adopt and adapt IT transformation. Nevertheless, improvement in ICT infrastructure is likely to be occasioned by international influences by laying out sophisticated internet cabling around the world including introduction of 5G. On other fronts, digital readiness coupled with a positive perception of the role of digitalization in organizations. It is mainly influenced by the leaders may curiously use the environment as an instrument to influence and maintain internal judgment processes by protesting the constraints of that methodological and institutional environment decision making and weakens public administration leadership in organizations thereby creating new organizations' realignment where public administrators have the opportunity to implement

new strategies for desired outputs. From Johan Olsen's arguments, it is possible to deduce that many public organizations and public administrators introduced SDGs into their organizational systems as a form of international ratifications by UN governing council in 2015.

Conceptual Framework

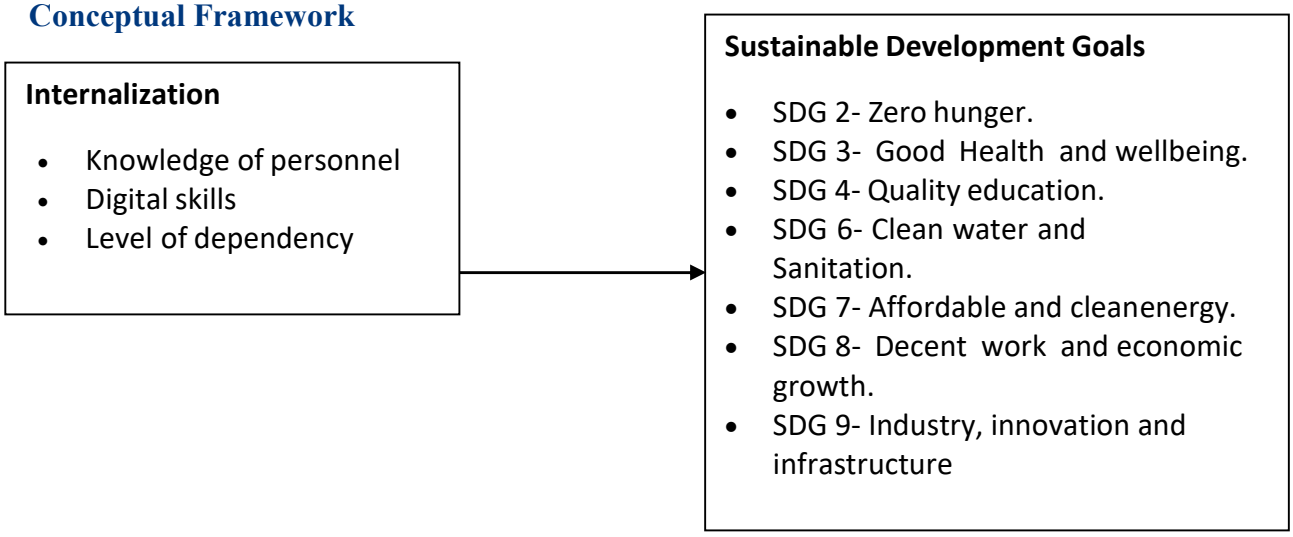

Figure 1: Conceptual Framework (Source researcher, 2023)

RESEARCH METHODOLOGY.

Research design

This study utilized a descriptive survey research design, a method frequently employed in social science to thoroughly investigate social behaviors or contemporary phenomena within their real-life settings. The survey offered a detailed overview of the state of digitalization and examined the challenges involved in managing such an institution. Yin (2015) recommended the use of a case study methodology as it enables researchers to explore in-depth and meaningful facets of real-life events. This approach focuses on detailed analysis over generalizability, concentrating on a few events and their interconnectedness. As this study focused on a single organization, the case study design was deemed the most suitable method to employ.

Looking at the nature of the study question of assessing the digitalization of SDGs in public administration, it is believed that the case study method was the most appropriate to obtain qualitative evidence from multiple sources and gain theoretical propositions. This presented an opportunity to the researcher to investigate and conduct an empirical inquiry by investigating digitalization of SDGs in public administration phenomenon. Further, the use of multiple causes of evidence allowed triangulation of findings. The case study also enabled the researcher the benefit of studying cases and phenomenon in details by the use of study variables.

Target Population

Table 1: Target Population and Response Rate

S/N	Category	Target Respondents Survey	Target No
1.	Ministry of Information Communication Technology	Directors	1
		Senior Managers	2
		ICT Managers	3
		Digitalization/ICT Officers	2
2.	Ministry of Labor and Social Protection	Directors	1
		Senior Managers	2
		ICT Managers	2
		Digitalization/ICT Officer	2
3.	Ministry of Health	Directors	1
		Senior Managers	2
		ICT Managers	2
		Digitalization/ICT Officers	2
4.	Ministry of Education	Directors	1
		Senior Managers	2
		ICT Managers	2
		Digitalization/ICT Officers	2
5.	Ministry of Devolution and ASALs	Directors	1
		Senior Managers	2
		ICT Managers	2
		Digitalization/ICT Officers	2
6.	Ministry of Water and Sanitation	Directors	1
		Senior Managers	2
		ICT Managers	2

		Digitalization/ICTOfficers	2
7.	Ministry of Energy	Director	1
		Senior Managers ICT	2
		Managers	2
		Digitalization/ICT Officers	2

Source: Kenya National Bureau of standards (2023)

Sampling Size

The sampling of the study was drawn from Senior Managers, Directors and ICT officer at the Government ministries. The government of Kenya has twenty- one ministries of which seven ministries were under the study. Consideration of seven SDGs out of seventeen were the focus of this study. Purposive sampling gave the researcher opportunity to generalize about the sample. The study used census to collect data since the number is not large.

Sampling Design

The study adopted purposive sampling in selecting respondents from the ministries. This technique gave the researcher opportunity to entirely choose respondents with characteristics and desire of the target population. Specifically, the study purposively targeted Directors, Senior ICT Managers and ICT officers within the government ministries.

Methods of Data collection

Structured Questionnaires

The study employed the use of structured questionnaires were administered to all prospective target groups within the government ministries that includes Directors, Senior Managers and ICT Officers. The structured questionnaires were designed to covers exploratory information to better understand the subjects as well as collect quantitativeinformation. The questionnaire design was both open-ended and closed-ended. The choice of open-ended aided respondents in giving their valued opinion in an elaborate manner and highlighted responses that they could not respond to. Closed questionnaire mostly collected quantitative information. Using structured questionnaires, purposive sampling was used to collect data from the randomly sampled staff of the ministries.
Kothari, (2018) notes that structured questionnaire provides the advantage of reaching a wider population promptly and that the respondents have ample time to think through before responding and filling the questionnaires as well as making it easy for the researcher to code and analyze questionnaires statistically. It is projected that open-ended questions allowed respondents to riposte questions in their own arguments without influence however, some expected challenges were expected to arise where respondents may not articulate proper responses while some may not

give full answers as they might have forgotten important points. To avoid this, the researcher lobbied senior management to facilitate the administration of the questionnaires and to give the researcher opportunity to explain to the respondents the importance of the study. Through close supervision and monitoring, the researcher managed to collect a considerable number of questionnaires from the respondents. In cases where the respondent may not have time to respond, therefore a revisit was done by booking an appropriate time for data collection.

Validity Test

Jackson (2017) defines validity as an indication of whether the instrument of the study measures what it claims to measure. According to Zohrabi (2013), validity was emphasized and checked right from the beginning of data collection to analysis and interpretation. The following validity tests were carried out.

Reliability Test

The reliability coefficient was determined using Cronbach's Alpha that were generated by SPSS. The researcher tried to minimize random error and increase the reliability of data collectedto

$$\alpha = \frac{N.\bar{c}}{\bar{v} + (N-1).\bar{c}}$$

acceptable coefficient levels of 0.80 or more (Selltiz, Wrightsman & Cook, cited in Githua,2020). On the split-half technique, the researcher assessed reliability by conducting one testwith two parts to ensure correlation of one score with another. This approach ensured the elimination of chance error. Therefore, data with high split-half reliability had high correlation coefficient.

Data Analysis

Captured data from the qualitative and quantitative research was analyzed, presented, interpreted and described systematically. To ensure accuracy and consistency, qualitative responses were identified broadly where concepts, ideas and phrases was assigned codes to help structure and label data. Conversely, in quantitative data analysis, descriptive analysis was conducted for quantitative data analysis methods to help summarize the data and find patterns using measures of central tendency, mean and standard deviation that was used to for interpretations for presentation in tables. Specific data analysis methods were employed that this included coding and categorization, tabulation, thematic analysis and used of statistical package for the social sciences (SPSS Version 25). The study adopted the following multiple regression model.

Regression Model

$Y = \beta 0 + \beta 1x + \varepsilon$

Where Y = Sustainable Development Goals

X_1 = Internalization

$\boldsymbol{\varepsilon}$ is the error term, ; $\boldsymbol{\beta}$ is the regression beta coefficient

Ethical Considerations

Since data collection is an intrusion into respondent's privacy, time and space, Cohen et al (2017) observe that a high standard of integrity and ethical considerations was sustained throughout the study. Therefore, to safeguard respondents on the participation on theinterview process, a consent letter noting all the interest in the research, the level of participation, who to contact, confidentiality and privacy of data was stipulated for respondent understanding and consent. This information in the informed consent was signed by the respondent in voluntary volition to participate freely in the study. Informed consent letter addressed all aspects and reasons for the research and what findings are goingto be used for.

RESEARCH FINDINGS AND DISCUSSIONS

Introduction

The chapter focuses on data analysis, results presentation and discussion of the findings. The purpose of this study was to examine the influence of digitalization on sustainable development goals implementation in public administration in Kenya.

Response Rate

Response rate equals the number of people with whom structured questionnaires were properly completed divided by the total number of people in the entire sample (Fowler, 2014). The study administered 45 questionnaires for data collection. However, 43 questionnaires were properly filled and returned. This represented 96 overall successful response rates. Respondents were also assured of confidentiality of the information provided. Trex (2018) suggested that a response rate of 50% is adequate 60% is good and 70% and above very good for analysis. This implies that 96 percent response rate was very appropriate for data analysis.

Demographic Information

According to the findings, 23(53%) of the respondents were male whereas 20 (57%) were female. This imply that majority of respondents were males.

Descriptive statistics

The study requested respondents to give opinions in regard to the Institutionalization of digital technologies on sustainable development goals (SDGs). The value of the mean indicated the level of agreement ranging as follows Strongly Disagree – 1 Disagree – 2 Neutral -3 Agree – 4 Strongly Agree – 5.

Table 2 Institutionalization of digital technologies on sustainable development goals (SDGs)

The respondents were to state on institutionalization of digital technologies on sustainable development goals (SDGs). The findings are as indicated in Table 2.

Table 2: Digital technologies on sustainable development goals (SDGs)

Digital Technologies	5 %	4 %	3 %	2 %	1 %%	Mean	Std
Use of Digital technology e.g. emails, social media, mobile phones, multimedia improves skills and knowledge of publicadministrators in rolling sustainable development goals	32	39	19	6	4	4.44	0.61
I have advance digital technology and computer skills that canenable roll out SDGs work	37	41	9	8	5	3.71	1.67
Our organization has installed computer technology tools, software's and databases for tracking, monitoring and implementing SGDs	34	35	16	10	5	4.19	0.86
Use of ICT tools like emails, social media, mobile phones, multimedia has encouraged learning, knowledge sharing and SDG data use in our organization	47	29	14	7	3	3.80	1.50

(Source field data 2024)

The research findings revealed that majority of the respondents (39%) strongly agreed, 32 % agreed while those who moderately agreed were at 19 % that there was use of d igital technology e.g. emails, social media, mobile phones, multimedia improves skills and knowledge of public administrators in rolling sustainable development goals with a mean of 4.44 and the standard deviation of 0.61. The findings further indicated that majority of the respondents (41 %) agreed, 37% strongly agreed. Those who moderately agreed were at 9 %, 8% disagreed while the minority were 5% that they had advanced digital technology and computer skills that canenable roll out SDGs work with a mean of 3.71 and the standard deviation of 1.67.

The research findings also revealed that that majority of the respondents (35%) agreed, 34 % strongly agreed while those who moderately agreed were at 16 %, 10% disagreed and those who strongly disagreed were at 5 % that our organization has installed computer technology tools, software's and databases for tracking, monitoring and implementing SGDs with a mean of 4.19 and the standard deviation of 0.86.

The results showed that majority of the respondents (47%) strongly agreed, 29 % agreed while those who moderately agreed were at 14%, 7 % disagreed while 3 % strongly disagreed that use of ICT tools like emails, social media, mobile phones,multimedia has encouraged learning, knowledge sharing and SDG data use in our organization with a mean of 3.80 and the standard deviation 1.50. These results indicated that digital technologies have an influence on sustainable development goals (SDGs).

Inferential Statistics

Correlation Analysis

Institutionalization of digital technologies and Implementation of Sustainable Development Goals SGDs)

The study sought to establish the correlation between Institutionalization of digital technologies and Implementationof Sustainable Development Goals SGDs). The findings of the study are as shown in Table 3

Table3: Institutionalization of digital technologies and Implementation of Sustainable Development Goals SGDs).

		Implementationof Sustainable Development Goals SGDs).
Institutionalization of digital technologies	Pearson Correlation	.565**
	Sig. (2-tailed)	.000
	N	42

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

As indicated in Table 3, the study indicates that there was a moderate positive and statistically significant correlation between Institutionalization of digital technologies and Implementationof Sustainable Development Goals SGDs ($r = 0.565$; $p<0.05$). This implies that Institutionalization of digital technologies enhances implementationof Sustainable Development Goals SGDs in public administration in Kenya.

Table 4: Regression Coefficients

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	.054	.193		.251	.745
[1] Institutionalization of digital technologies	.368	.155	.528	4.551	.016

Table 4 shows the overall significant test results for the hypothesized research model. The interpretations of the findings indicated follow the following regression model.

$$\mathbf{Y= \beta_0 + \beta_1 X_{1+} \varepsilon}$$

Therefore,

$$\mathbf{Y= 0.054+ 0.368 X_1}$$

According to the intercept (β_0), when the three independent variables are held constant, the implementationof Sustainable Development Goals SGDs in public administration in Kenya was 0.054. In addition, holding all the other independent variables constant, a unit increase in

iinstitutionalization of digital technologies would lead to a 0.368 implementationof Sustainable Development Goals SGDs in public administration in Kenya.

SUMMARY, CONCLUSIONS AND RECOMMENDATIONS

Introduction

This chapter provides a detailed summary of the major findings of the actual study; it then draws conclusions and discusses implications emanating from these findings. Finally, it makes some recommendations and suggestions on areas of further study. The purpose of this study was to examine the influence of digitalization on sustainable development goals implementation in public administration in Kenya.

Institutionalization of Digital Technologies on Sustainable Development Goals (SDGs)

The research findings showed that there was use of d igital technology like emails, social media, mobile phones, multimedia improves skills and knowledge of publicadministrators in rolling sustainable development goals. The findings also showed that they had advanced digital technology and computer skills that canenable roll out SDGs work. The research findings also revealed the organization has installed computer technology tools,software's and databases for tracking, monitoring and implementing SGDs These results indicated that digital technologies has an influence on sustainable development goals (SDGs).

The research findings revealed that the institution leadership are advancing the use of information communication technologies to conduct SDGs work in the organization. The findings further indicated that there was adoption of computer systems like emails, tablets, mobile phones, databases, and social media for SDG implementation. The research findings also revealed that employees have adapted the use of digital systems like emails, tablets, databases, mobile phones, social media, for SDGs communication. The results showed that the culture of organization supports use digital systemsand technology like emails, E- government, tablets, mobile. These results indicated that digital systems has an influence on sustainable development goals (SDGs). From the analysis the study findings revealed that Institutionalization of digital technologies had on influence of digitalization on sustainable development goals implementation in public administration in Kenya.

The research findings revealed that ICT infrastructures like internet, network, software's, and websites influences implementation of SDGs. The findings further indicated that coordination of computer services like databases and internetwithin our organization affects the management of SDGs. The research findings also revealed that ICT connectivity affects how SDGs are measured and managed These results indicated that ICT infrastructures has an influence on sustainable development goals (SDGs). The research findings revealed that there is dependency on digital technologies like mobile phones, tablets on digital technologies. The findings indicated that

majority there was dependency on ICT infrastructure like internet, network, software's and websites on digital technologies. The findings indicated that there was dependency on ICT digital skills and trainings like programming and databases on digital technologies. These results indicated that technology processes in the organization toimplement SDG on sustainable development goals (SDGs).

Conclusions of the Study

Based on the findings the study concluded that the study indicates that there was a moderate positive and statistically significant correlation between Institutionalization of digital technologies and implementationof Sustainable Development Goals SGDs ($r = 0.565$; $p < 0.05$). This implies that Institutionalization of digital technologies enhances implementation of Sustainable Development Goals SGDs in public administration in Kenya.

Recommendations of the Study

Based on the findings of the study, the researcher recommended that organizations should install computer technology tools, software's and databases for tracking, monitoring to enhance implementing SGDs efficiently. Institutionalization of digital technologies should be strengthened to sustainable development goals implementation in public administration in Kenya

REFERENCES

Accenture (2015). Digital Government: *Pathways to delivering public service for the future.* A comparative study of digital government performance across 10 countries.

Aker, J.C. (2017). Using Digital Technology for Public Service Provision in Developing Countries: Potential and Pitfalls. In Gupta, S., Keen, M., Shah, A. and Verdier, G. (eds.), *Digital Revolutions in Public Finance. Washington DC:* InternationalMonetary Fund.

Allison, G.T. (2019) 'Public and Private Management: Are They Fundamentally Alike in All Unimportant Respects?' in J.L. Perry and K.L. Kraemer (eds) Public Management: *Public and Private Perspectives,* Palo Alto: Mayfield.

Amin S. (2016). The millennium development goals – A critique from the South. Monthly *Review-an Independent Socialist Magazine. Retrieved from http://monthlyreview.org.* [Google Scholar] [Ref list]

Assia Alexandrova, Lucie Rapamiti, Ivan Horrocks (2018). *The legacy Problem in Government Agencies:* An exploratory study. Proceedings of the 16th annual international conference on digital government research pages 150-159

Augier, M., March, J.G. and Sullivan, B.N. (2015) '*Notes on the Evolution of a Research Community: Organizational* Studies in Anglophone North America 1945–2000', Organizational Science, 16 (1): 85–95.

Barnabas Mwansa (2017). The Role of Information and Communication Technology in Sustainable Development Goals in Africa: *A Review. Texila International Journal of Academic Research* Volume 4, Issue 2. DOI: 10.21522/TIJAR.2014.04.02. Art008 ISSN: 2520-3088

Baxter, P., & Jack, S. (2018). Qualitative case study methodology: Study design and implementation for novice researchers. *The qualitative report*, *13*(4), 544-559.

Bond P. (2016). *Global governance campaigning and MDGs*: From top-down to bottom-up anti-poverty work. *Third World Quarterl*y. 2006;27:339– 354. doi:10.1080/01436590500432622.

Carole Brooke, Magnus Ramage (2021) Organizational scenario and legacy systems. *International Information Management Volume* 21, Issue 5.

Chatterjee, D., Grewal, R., & Sambamurthy, V. (2020). Shaping up for e-commerce: institutional enablers of the organizational assimilation of Web technologies. MIS Quarterl*y*, 26(2), 65-89.

Christensen, T. Laegeid, P. , Ronness, P.G. and Rovik, K.A. (2017). *Organization Theory and the Public Sector*: Investment, Culture and Myth.

Creswell, J. W., & Miller, D. L. (2020). Determining validity in qualitative inquiry. *Theory into practice*, *39*(3), 124-130.

Creswell, J. W., & Plano Clark, V. L. (2017). Designing and conducting mixed methods research (2nd ed.). *Thousand Oaks,* CA: Sage.

E.H. Klijn, I. Snellen (2019), *Complexity theory and Public Administration:* a critical appraisal in G.R. Teisman, M.W. van Buuren en L.M. Gerrits. Managing Complex Governance Systems. London: Routledge, pages 17-36

Ericsson (2019), How Information and Communications Technologies can Achieve the Sustainable Development Goals. Report. *https://ww w.ericsson. com/res/docs/2015/ict- and-sdg-inter im-report.pdf, accessed* on 24th May, 2019.

Fabrice Henard, Leslie Diamond, Debra Roseverse (2018). Approaches to Internalization and their implication for strategic Management and Institutional Practice. *A guide to Higher Education Institution.*

Fagbayibo, B. (2018). From OAU to AU: Rethinking Supranational Governance in Africa. In The Palgrave Handbook of African Politics, Governance and Development (pp. 771- 782). *Palgrave Macmillan, New York.*

Gartner. (2018). IT Glossary: Digitalization. *Gartner.* Accessed May7, 2018: *https://w ww. gartner.com/it-glossary/ digitalization*

Gray, J., & Rumpe, B. 2018. Models for Digitalization. *Software & Systems Modeling*, 14(4): 1319–1320. https://doi.org/10.1007/s10270-015-0494-9

Greenwood, Royston, Christine Oliver, Kerstin Sahlin & Roy Suddaby (2018) 'Introduction' in Royston Greenwood, Christine Oliver, Kerstin Sahlin & Roy Suddaby (eds), The SAGE Handbook of Organizational Institutionalism, *Sage Publications Ltd., London*

Hilty, L., & Aebischer, B. (2015). ICT Innovations for Sustainability. *London: Springer*

Huawei (2017). The Role of ICT in realizing education for all by 2030.

European Commission (2017 European Commission) "Digitization, digitalization and digital transformation: *the differences". Available at:* [Accessed: 4 April 2019].

Jackson, S.L. (2017). *Research Methods and Statistics: A Critical Thinking Approach 3rd edition.* Belmont, CA: Wadsworth.

James N. Danziger & Kim Viborg Andersen (2020) The Impacts of Information Technology On Public Administration: *An Analysis of Empirical Research from The "Golden Age" Of Transformation, International Journal of Public Administration*, 25:5, 591- 627.

Jones, P., Wynn, M., Hillier, D., & Comfort, D. (2017). The Sustainable Development Goals and Information and Communication Technologies. *Indonesian Journal of Sustainability Accounting and Management,* 1(1), 1–15.

Meyer and Rowan, (2019). Digitalization and Society'sSustainable Development - Measures and Implications. Zbornik Radova Ekonomskog Fakulteta u Rijeci / *Proceedings of Rijeka School of Economics*. 36. 905-928. 10.1804Th5/zbe fri.2018.2.905.

Karishma Banga and Dirk William te Velde (2018). Digital and the Future of Manufacturing in Africa. *Support Economic Transformation.*

Kenya National Bureau of Standards. (2018). The Kenya National ICT Master Plan. Retrieved from *www.ict.go.ke/docs/MasterPlan2017.pdf*

Madelin (2019). Rediscovering institutions: The organizational Basis of Politics. *New York: The Free Press.*

Mark Murr, Sijan Lin, Jacob whites and Siddharth Kulkarni (2017). Digitalization and The American Workforce. *Metropolitan Policy Program.*

Meyer, J.W. and Rowan, B. (2019). Institutionalized organizations: formal structure as myth and ceremony, *American Journal of Sociology*. 83(September): 340-363.

Murr, Michael Clemens and Todd Moss (2017). *What's wrong with the Millennium Development Goals?*

Mugenda, A., & Mugenda, O. (2018). Research methods; quantitative and qualitative approaches. *Nairobi, Kenya: Africa Center for Technology (ACTS*)

National Information & Communications Technology (ICT) Policy (2016), *Ministry of Communication and Communication.*

Olsen, (2019). Doing Business in the Digital Age Challenges, Approaches and Solutions. *Symposium Proceedings-XVI International Symposium Symorg.*

Njuguna Ndung'u, (2019). "Digital Technology and State Capacity in Kenya." CGD Policy Paper 154. Washington, DC: Center for Global Development. *https://www.cgdev.org/publication/digital-technology-and-state-capacity-kenya.*

OECD (201), Internalization and Trade in Higher Education: Opportunities and Challenges, OECD *Publishing. doi: 10.1787/9789264015067-en*

OECD (201), Governance as an SDG Accelerator: Country Experiences and Tools, OECD Publishing, Paris, *https://doi.org/10.1787/0666b085-en*

Olive M. Mugenda, Abel G. Mugenda (2018). *Research Methods: Qualitative and Quantitative Approache*s. ACT Press.

Olsen, J. P. (2019). Analyzing institutional dynamics. *Staatswissenschaften und Staatspraxis*, 2, 247-271.

Onyango G (2017). One stop shop service delivery in Kenya. In A. Farazmand (ed.), Global Encyclopedia of Public Administration, Public Policy, and Governance, DOI *10.1007/978-3-319-31816-5_3308-1*

Onyango G (2018) Devolution Coordination and Control of Accountability Reforms in Kenya. In A. Farazmand (ed.), Global Encyclopedia of Public Administration, Public Policy, and Governance, *DOI 10.1007/978-3-319-31816-5_3308-1*

Rouse, M. (2018). ICT (information and communications technology, or technologies). Retrieved December 24th 2018 *from http://searchcio.te chtarget.com/ definition/ICT- information-and-communications-technolog yor -technologies*

Sachs, Jeffrey D. 2016. *The age of sustainable development*: Columbia University Press.

Sara Fyson, Carina Lindberg, Ernesto Soria Morales, 2019. How can We Accelerate Achieving the Sustainable Development Goals? (OECD). *Governance for the Sustainable development Goals-Dubai Policy Review.*

Schwab, K. (2016). *The Fourth Industrial Revolution, Geneva*: World Economic Forum

Sergey N. Bobylev, Olga Yu. Chereshnya, Markku Kulmala, Hanna K. Lappalainen, Tuukka Petäjä, Svetlana V. Solov'eva, Vladimir S. Tikunov, Veli-Pekka Tynkkynen (2018). Indicators for digitalization of sustainable development goals in PEEX Program. Geography, *Environment, Sustainability,* Vol.11, No 1, p. 145-156.

UNCTAD (2017). New Innovations approaches to support the implementation of the Sustainable Development Goals.

Wasunna, N. and Frydrych, J. (2017). Person-to-government (P2G) payment digitization: Lessons from Kenya. United Kingdom, London: GSMA Head Office. Available at: *https://www.gsma. com/mobileforde velopment/p rogramm e/mobile-money/.*

Yin, R. K. (2018). *Case study research and applications: Design and methods*. Sage publications. Oaks.