

# The impact of training provided by Huduma Centres for e-government public service delivery in Kenya

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*This paper assessed the impact of training conducted on Huduma Centres' employees and clients to effectively use the e-government service in Kenya. This paper presents preliminary findings of the larger study which aimed to evaluate Huduma Centres' e-government initiative for sustainable delivery of services in public organizations in Kenya. For this case study, positivist paradigm and quantitative research approach was used. Primary data was collected through a questionnaire for both Huduma Centre staff and client. This study was informed by the revised DeLone & McLean model. The findings revealed that Huduma centre staff are trained and always ready to provide services to clients. ICT user training was not conducted to the clients, which limits their ability to access the Huduma online services. Further, it was revealed that one of the most significant hindrances to e-government online services' access is insufficient ICT user training. The study is useful to e-government practitioners, policy makers and researchers in identifying ICT user training as a factor to enhance and promote usage of public services in the developing world.*

**Keywords:** E-government; Huduma Centre; ICT training; digital competency; information system, public service, Kenya

## 1 Introduction and background

E-government has become the centre piece for building effective, accountable and inclusive institutions at all levels globally. Governments world over are in pursuit of successful e-government services for the citizens.

For decades, the Government of Kenya grappled with the problem of slow-paced, inefficient public service delivery to its citizens (Muketi and Wainaina, 2020) This led the government to implement the Huduma Kenya Programme, comprising a one-stop e-government initiative that centralizes public service provision under a single roof. Using an integrated system approach as reflected in a recent contextualization of Huduma Centre status and activities (Nkanata and Ocholla, 2022). This preliminary study is based on quantitative data collected from 16 Huduma centres, which is part of a larger study for a PhD on evaluating the impact of the Huduma Centres' initiative in public service delivery in Kenya. Guided by the DeLone & McLean (2003) updated IS success model (see also (Nkanata, 2019); (Nkanata, 2024). The study examined the impact of training conducted for Huduma centres' employees and clients as catalysts for effective use of public services in Kenya.

E-government infrastructure is internet and computer based. Therefore, computer self-efficacy is an essential aspect for using e-government online services. Digital literacy goes beyond mere technical skills, it entails being knowledgeable on how digital platforms work and understanding digital privacy and security issues (AbdulKareem and Oladimeji, 2024). Effective customer support makes users comfortable to use e-government services (Kumar *et al.*, 2018). Human capital development is considered important because successful e-government initiatives will depend on the literate population to utilize e-government online services.

ICT literacy and digital skills are considered important in increasing the usage of e-government services (United Nations, 2020). Low education and insufficient ICT skills' level are some of the human factors which make e-government initiatives fail to achieve the desired vision. In the fast-changing digital environment, governments keep developing, maintaining and strengthening digital literacy through a life-course approach. According to a UN e-government survey (United Nations, 2020: 168) progress being made to bridge the digital divide through developments in e-government vary from one region to another. The report further explains that in Africa, 95 per cent of the population still lag, only four (4) out of the region's fifty-four countries (South Africa, Mauritius, Seychelles and Tunisia) have E-government Development Index (EGDI) values above the world average.

Beyond moving e-government services online, governments need to strive to ensure that online services provided to citizens are easily accessible and user friendly (Lee, Lee and Lee-Geiller, 2020) Prioritizing investment in digital literacy to

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prepare e-government initiatives staff and society for inclusive e-government adoption and easier access is critical. The digital world can be intimidating for some of the e-government customers, expected to access e-government online services for the first time. Once e-government initiatives are established there is a need for ICT user skills training to enhance effective utilisation of online services (Mahlangu and Ruhode, 2021).

Nevertheless, a number of studies (Mwangi, Irura and Makori, 2022 ; Osah and Pade-Khene, 2020 ; Bwalya, 2018) have reported that lack of ICT skills among e-government employees and citizens is one of the dominant success barriers of e-government initiatives in developing countries.

Governments need to ensure that digital literacy programmes and policies keep up with developments in technology and can meet the diverse needs of different user groups in the population. The United Nations, (2022: 134) acknowledges that reforming education policies is a major strategy for improving public digital literacy, skills and confidence across all levels of the population.

### 1.1 Purpose of the study

The purpose of the study is to determine the impact of training conducted on Huduma Centres' customers and staff to effectively use and offer public services. The paper focused on the following six research questions:

- RQ1. How ready are the Huduma Centres' employees to provide services to users?
- RQ2. Has user training been provided to employees on the use of Huduma Centre services?
- RQ3. Are the Huduma Centres' services able to address customers' specific needs?
- RQ4. What are the abilities for Huduma Centre to provide services within a short period of time?
- RQ5. How far have the Huduma Centre customers been trained on the use of Huduma online services?
- RQ6. What are additional training needs for Huduma centres' employees and customers?
- RQ7. What improvements are required for the Huduma Centre training?

## 2 Theory and literature review

The current study applied the updated DeLone and McLean, (2003) model which has been discussed in a detailed study (Nkanata, 2019 ; 2024). The model was introduced by DeLone and McLean in 1992. In their search for information systems' success measures, they found a wide variety of measures in different studies. After comprehensively reviewing literature in 180 empirical studies, they grouped the information system (IS) success measures into six dimensions. The model helps in understanding IS from two angles; first it provides an orderly plan for classifying the many IS success measures. Secondly, it proposes a model of cause and effect between the categories. Hussein *et al.*, (2007: 2) explain that the DeLone and McLean (D&M) model was breakthrough in the IS field, as the model has become universal and instrumental in evaluating information systems performance.

The updated D&M (2003) information systems success model identified seven dimensions for determining IS success. These are Information Quality, Systems Quality, Service Quality, Intention to Use, Use, User Satisfaction and Net Benefit. In this study, the D&M model's seven dimensions were used to evaluate the performance of the Huduma Centre's e-government initiative in the delivery of public service in Kenya; to establish the strengths and weaknesses of the initiative and to inform policy and decision makers on whether the Huduma Centre's initiative is giving the desired performance outcomes.

In the e-government context, the service quality dimension of the D&M (2003) model involves interactions between citizens and e-government systems or websites. For this kind of interaction to succeed e-government employees need training to ensure they have the technical skillset and knowledge that is needed to provide services to citizens (Lee and Porumbescu, 2019). Stefanovic *et al.*, (2016: 724)) explain that when employees' training is implemented in the initial stages of e-government implementation, provision of public services would be more effective. Training for e-government initiatives can also play a key role in ensuring that citizens least likely to use e-government online services, are trained with a basic ICT skillset that can enable them to access required services. This will increase the diffusion of e-government services into the societies from the government side and will lead to higher adoption rates of e-government services from the citizens' side (Lee and Porumbescu, 2019).

E-literacy skills have been identified as another great hindrance to successful implementation of e-government. Bwalya, (2018: 222) affirms that most of the citizens in the developing world lack adequate ICT skills. Therefore, deliberate well designed e-government training programmes need to be provided so that most citizens can take advantage of e-government opportunities. The success of e-government initiatives depends, remarkably, on how well the targeted users make use of them. Most of the published e-government initiatives and strategies successful experiences are based in developed countries, which may not be applicable to the developing world (Hazineh, Eleyan and Alkhateeb, 2022). There is scant

research conducted regarding the issue of insufficient digital skills among citizens in e-government initiatives, given the level of the digital divide existing in developing countries (Abdulkareem & Ramli, 2022 ; Nkanata, 2024).

### 3 Methodology

This study employed a positivist research paradigm. A quantitative research approach in this case study was used to collect primary data from the selected study respondents. This study used the Huduma centre's criteria of low, medium and high performing centres. The Fifty-two (52) Huduma centres were clustered into the three categories: high (14) medium (29) and low (9) performance in terms of number of customers served in each centre per day. Stratified simple random technique and purposive sampling method was used to select sixteen Huduma centres out of fifty-two centres for the study.

Four (4) Huduma centres from high performing; nine (9) centres from medium and three (3) centres from low performing. This was arrived at due to logistic reasons in terms of distances between the centres, and the constraints of cost and time that was required to carry out the study. Semi-structured questionnaires with both open and closed ended questions was used to collect primary data from the study sample population of 416 respondents, Huduma centres' customers (331) and Huduma staff (85). A statistic expression, developed by Glenn (1992), was used to calculate the sample size of customers and staff in each Huduma centre. The R software (R core development team, 2021) was used to analyse numerical data collected to establish trends and relationships among the quantitative variables.

### 4 Findings

The study findings are related to quantitative data received from respondents' responses to research question (RQ) referring to the impact of ICT training conducted on Huduma centres' customers and employees to effectively use and offer public services. We received a total of 339 responses out of 416 targeted. From 339 respondents, 267 were Huduma centres' clients representing 78% of the total and 72 (22%) were Huduma centres' employees.

Skills-based products need a specific set of skills to use, such as computers and other technology devices. E-government portals/system are categorized as web-based technology and thus require a particular skill set to access services and information. Therefore, this section sought to determine the impact of training provided by Huduma secretariat to employees and customers in using e-government public services. Respondents were presented with statements to assess the readiness achieved by the training.

#### 4.1 Huduma centre employees' readiness to provide services to users

The respondents were presented with statement regarding "Huduma centre employees' readiness to provide services to users". In response to the statement, 95% of respondents supported the idea that Huduma centres' employees are always ready to provide services to them and only 5% of respondents did not support the statement as illustrated in Figure 1 (A).

When considering Huduma centres by categories (higher, medium and low performance). Figure1 Graph B shows that the most significant support of the statement "Huduma centre employees are always ready to provide services to users" was observed in medium performing centres 54% and 1% did not agree that staff are always ready to provide services. Followed by High performing centres, 25% affirmed Huduma employee's readiness to provide services and 3% did not affirm the readiness statement as illustrated in Figure 1 Graph B. The least support was observed in low performing centres where 16% supported that employees are always ready to provide services as shown in Figure 1 Graph B.

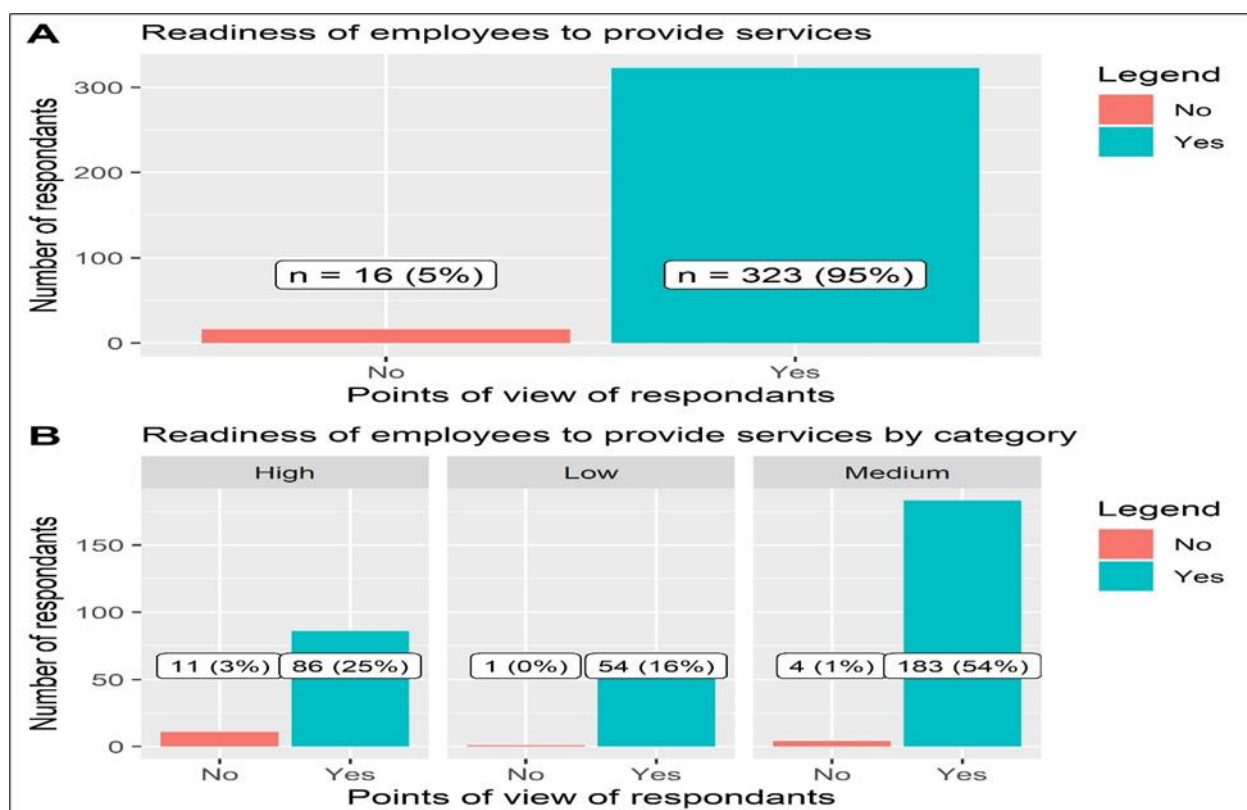


Figure 1: Points of view of respondents about Huduma centre employees' readiness to provide services to users following respondent category (graph A) employees and by Centre category (B)

#### 4.2 User training conducted on use of Huduma centre services

The study sought to determine whether user training was conducted on the respondents in readiness to utilize Huduma centres' services. Figure 2 Graph A shows that 41 % of the respondents said that training was conducted on the use of Huduma services and 59% disagreed that they were trained on how to use the services.

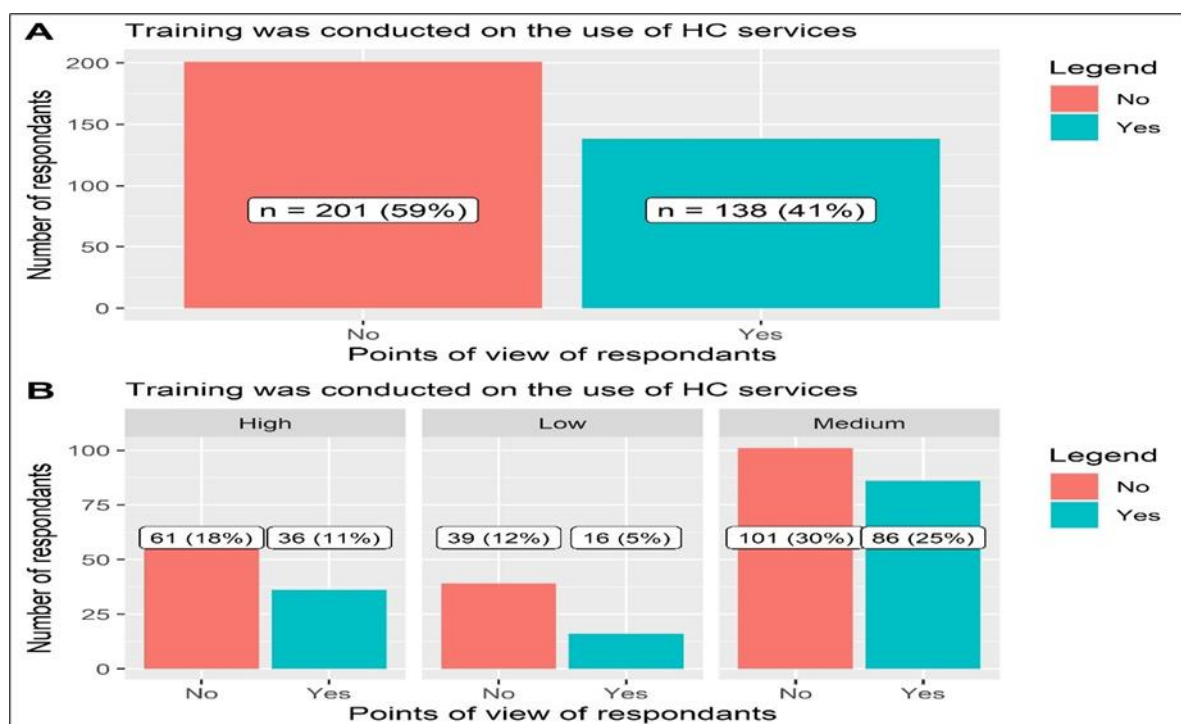


Figure 2: Points of view of respondents about training conducted to utilise Huduma service following respondent category graph (A) and by Centre category (B)

To establish the point of agreement and disagreement according to Huduma centres by performance categories (higher, medium and low). Figure 2 Graph B shows that the most significant disagreement of the statement on user training conducted on the use of Huduma centre services was observed in medium performing centres where 39% disagreed and 25% agreed; followed by High performing centres 18% disagreed and 11% agreed. While in low performing centres, 12% disagreed and 5% agreed. This could imply gaps in the training on the utilization of Huduma centres' e-government services.

#### 4.3 Huduma centres' services ability to address customers' specific needs

This section sought to find out whether Huduma centre services are meeting customers' specific needs. Every customer who goes to seek services in an e-government setup normally has specific needs to be met. Hence, the statement was presented to determine whether Huduma centre services are meeting centre customers responses are illustrated in Figure 3.

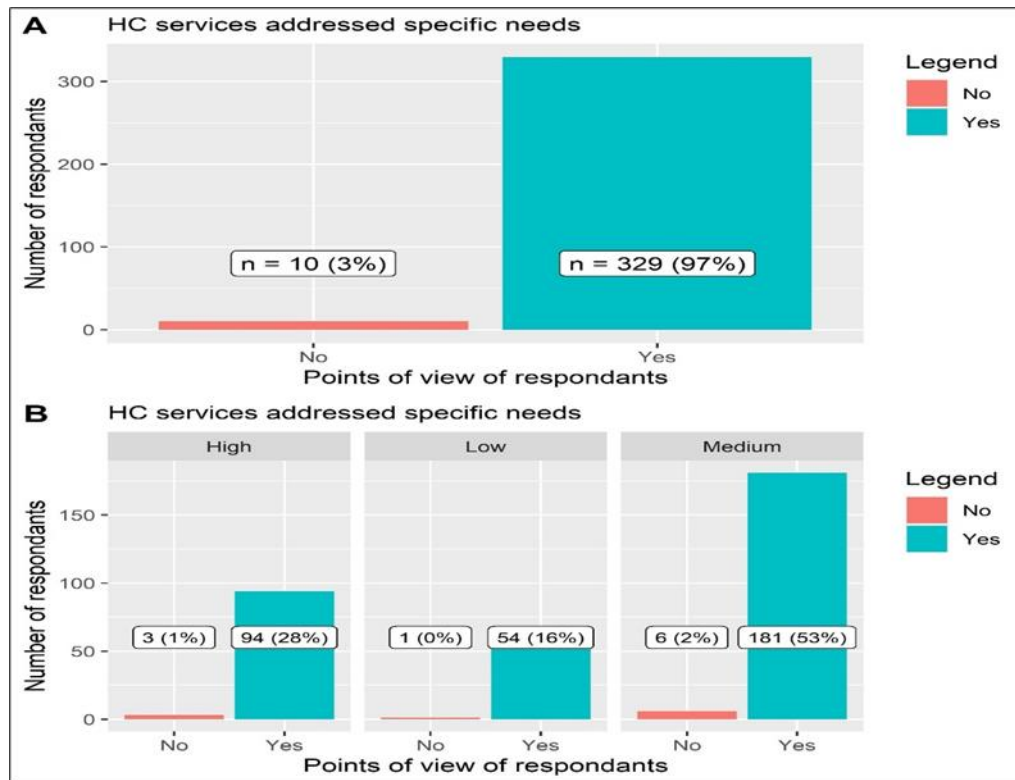


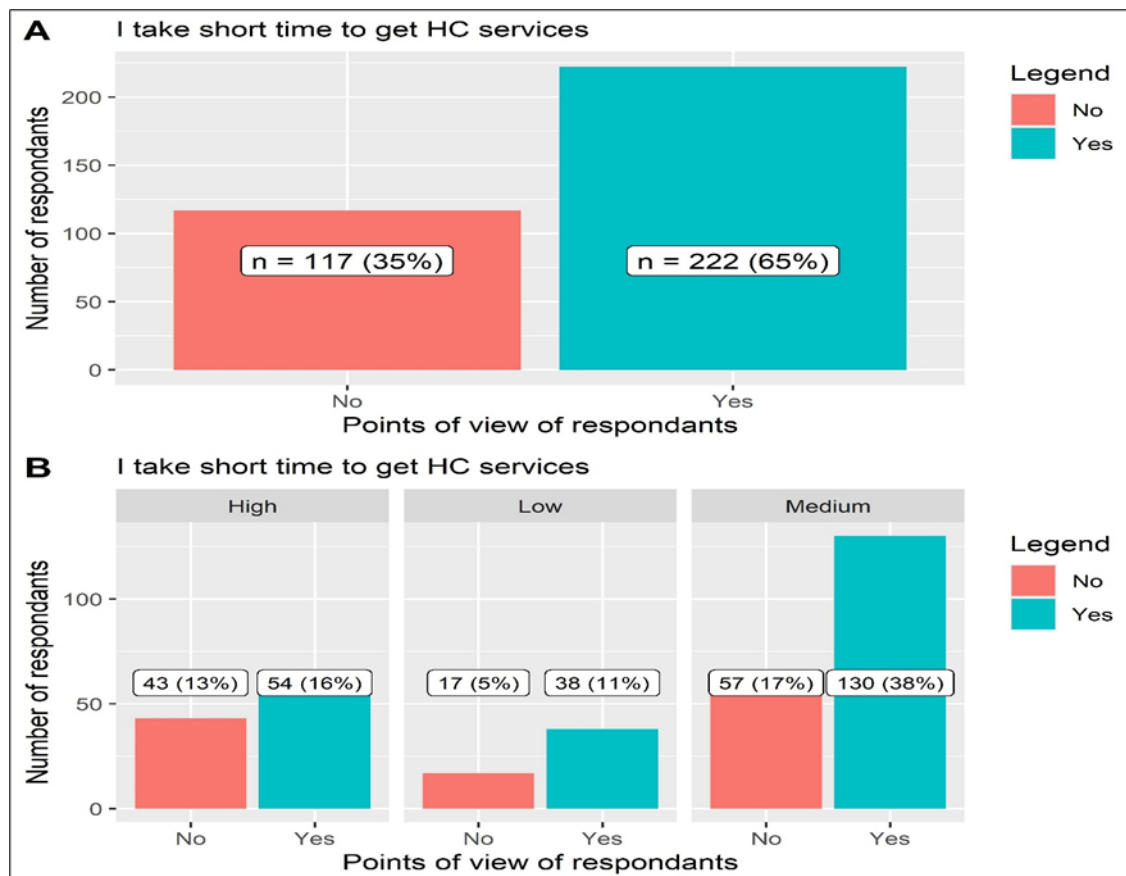
Figure 3: Points of view of respondents on the ability of Huduma centre services to address specific users' needs by respondent category (graph A) and by Centre category (B)

Figure 3 Graph A shows 97 % of Huduma centre customers affirmed that Huduma services are addressing their specific needs and 3 % disagreed with the statement. When considering Huduma centres by categories (higher, medium and low performance). Figure 3 Graph B depicts that the most significant support of the statement on Huduma centre services

addressing specific users' needs was observed in medium performing centres (54%). Followed by High performing centres 25%, while the least support was observed in low performing centres at 16%.

#### 4.4 Huduma centres' ability to provide services within a short period of time

This section sought to determine the duration of time respondents take to get services in Huduma centres. Figure 4 presents the respondents responses.



**Figure 4: Points of view of respondents on Huduma centres' provision of services within a short time by respondents category (graph A) and by Centre category (B)**

Figure 4 (graph A) shows 65% of the respondents agreed that they take a short time to get Huduma centres services and 35% disagreed with the statement. While Figure 4 (graph B) shows the respondents responses by Huduma centres' performance categories. The highest affirmation on taking a short time to get Huduma centres' services is shown by medium

performing centres at 38%, high performing centres follows at 16% and the least affirmation is shown by the low performing centres at 11%.

#### 4.5 Huduma centre customers training on use of Huduma online services

Online information dissemination and services access is the primary function of e-government (Teo, Srivastava and Jiang, 2008). This section sort to establish the training conducted on Huduma centres' customers to be able to utilize online Huduma centres' services.

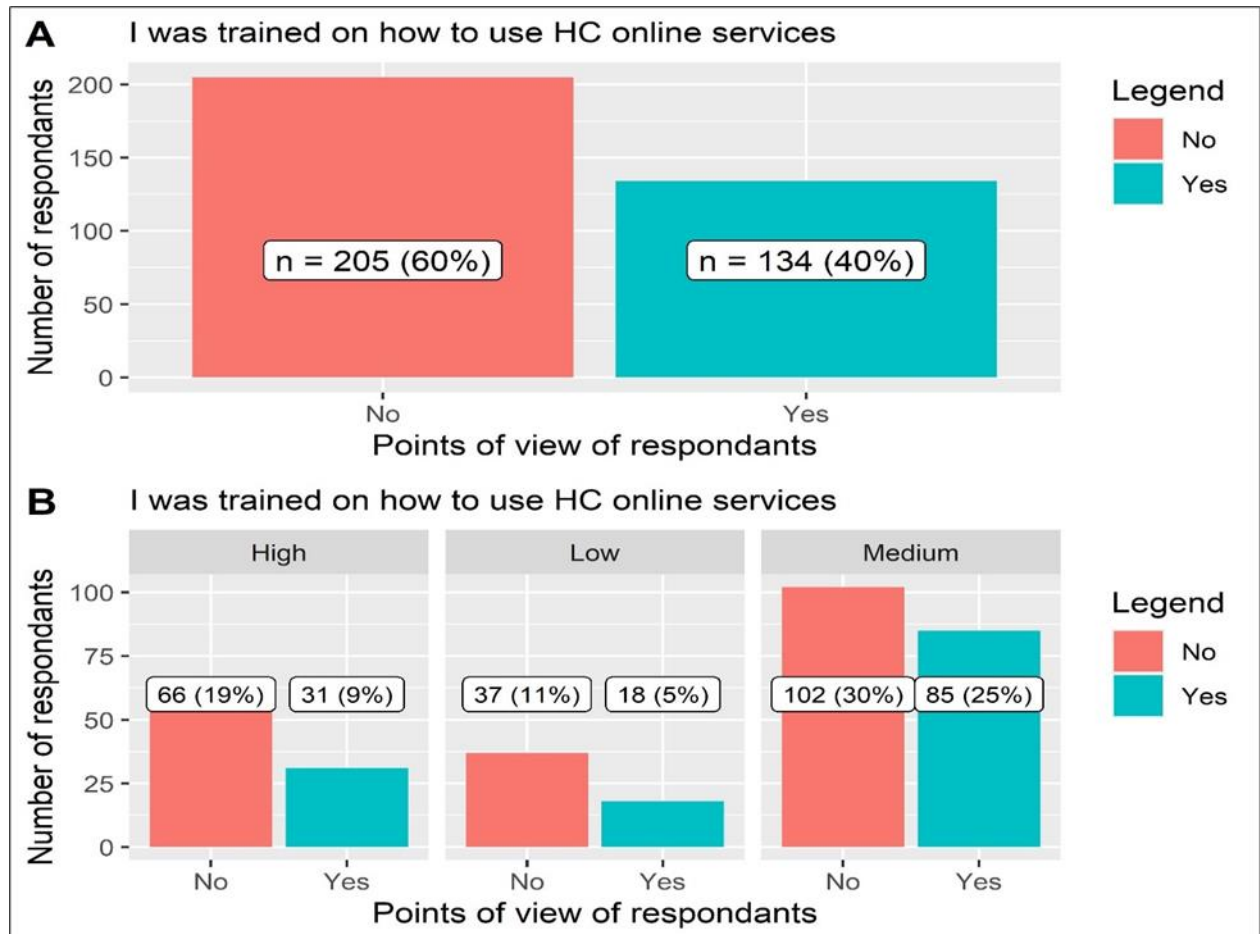


Figure 5: Points of view of respondents on Huduma centres training on how to use online services by respondent (graph A) and by Centre category (B)

Figure 5 (graph A) illustrates the customers responses, the bigger percentage of 60% disagreed they were not trained on how to use Huduma centres' online services, 40% agreed they were trained. On the respondent's responses according to Huduma centres performance categories Figure 5 (graph B) shows the highest number of respondent disagreement on having been trained to use online services in the medium performing centres 30% disagreed and 25% agreed they were

trained. Followed by high performing centres where respondents disagreed by 19% and 9% agreed they were trained. In low performing centres 11% disagreed on having been trained and 5% agreed they had been trained.

#### 4.6 Huduma centres' employees and customers need for additional training

We sought to establish whether the respondents needed additional training to be able to utilize Huduma centres' services. Figure 6 (graph A) established that (201) 79% of the respondents said they needed to be trained on how to access online Huduma centre services and only (72) 21% said they didn't need training.



**Figure 6: Points of view of respondents concerning the need for receiving additional training in Huduma centres**

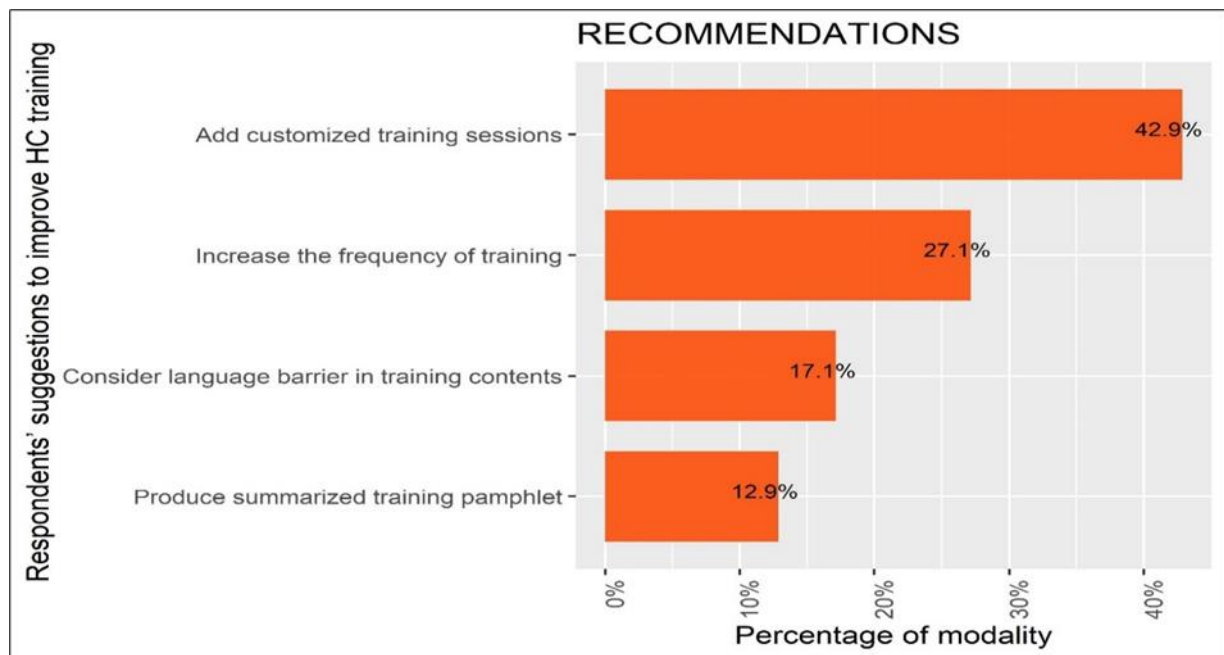
Figure 6 (Graph B) shows details of the level of agreement and disagreement according to the categories of Huduma Centres. Medium performing centres had the highest responses on the need for additional training where 42% agreed they needed more training, while 13% disagreed. Followed by high performing centres where 23% agreed they needed more training, while 5% disagreed. The least affirmation was seen in low performing centres where 13% agreed they needed additional training and 3% disagreed as illustrated in figure 6 (Graph B).

#### 4.7 Suggested improvement areas for Huduma Centres' trainers to consider

The study revealed that Huduma centres' employees are always ready to provide services to users, 95% of study respondents supported and only 5% of respondents were against. However, despite this high affirmation respondents raised several areas of weaknesses in the Huduma centres training program that need to be improved. This study sought to gather



information from the respondents about their point of views concerning what can be done to improve the training program. Figure 7 illustrates the respondents responses.



**Figure 7: Respondents' suggestions for the improvement of Huduma Centre training**

In response to the question “what improvement would you suggest for Huduma Centres trainers to consider?”, the respondents (staff) 42% wished to get customized training content in the sixteen Huduma centres such as.

- Mental health issues such as stress and depression for employee's mental health wellness
- Dispute and conflict resolution management
- More of Huduma standards trainings to avoid integrity issues
- Refresher ICT training to update employees on new system upgrades
- Refresher customer care trainings
- First Aid training in centres not having Ministry of Health counters

Additionally, 27% of respondents (employees) expressed the need for trainings to be increased in terms of the frequency. That is to say, the number of times the training is organized should be increased, some respondents suggested the need of the training conducted after every four months. Duration of training from the current three days to a week was also suggested. The idea behind the suggestion of duration extension is to have more areas covered concerning training needs for various Huduma centres. Some of the respondents said face to face training within the Huduma centres would be more effective than the Huduma centres online training due to interruptions as the employees serve customers and participate in the training at the same time.

Furthermore, the study indicated, as shown in Figure 7 that 17% of respondents (employees) suggested training in sign language to help them communicate and assist hearing impaired customers who they feel are not adequately served in Huduma centres. For those who may have missed some training sessions, the respondents suggested the production of summarized pamphlets that can serve as revision notes for them to catch up. This idea was supported by 12% of study respondents as shown in Figure 7. For the Huduma centre customers 78% indicated as shown in Figure 6 (graph A) that they need training, which is left to the Huduma centre secretariat to organize the way these can be done.

## 5.1 Discussion

The research questions guide the discussion of the findings in this section. On readiness of Huduma centres' employees to provide services to users The study findings revealed that Huduma centre employees are always read to provide services to users. Firestone *et al.*, (2017:15) explain that employees working in Huduma centres were carefully selected from the “mother” ministries to ensure coordination and efficiency in service delivery. Additionally, Mutegi, Nzioki and King'oriah,

(2021:97) acknowledge that Huduma centres staff training has significantly changed the employees attitude from slow and unresponsive public service approach to the more customer oriented fast and responsive approach.

### **5.2 Has user training been provided to employees on the use of Huduma centre services?**

The response from the respondents revealed that the Huduma centres' employees were trained to provide services to the citizens. Mutegi, Nzioki and King'oriah, (2021: 97) confirms that staff in-service training programs in the Huduma centres helped employees to serve the public in more efficient and effective ways. Related studies confirm when e-government employees training is implemented in the early stages of e-government project implementation, public service delivery becomes effective. For example, Rykleif and Tengeh, (2022) study in South Africa acknowledges that e-government employees place high value on training since it provides them with knowledge and skills, they need to better serve the communities, which in turn improves public service delivery.

### **5.3 Are the Huduma Centres' services able to address customers' specific needs?**

The study findings established that Huduma centres' services are addressing Huduma customers' specific needs. Huduma Kenya Secretariat, (2024:12) explain that the initiative has maintained 95% customer satisfaction rating level. Omungo and Nyariki, (2022: 203) note that Huduma centre customers acknowledge that the services received exceed their expectations and concur that the service quality has improved.

### **5.4 Are the Huduma centres able to provide services within a short period of time**

On Huduma centre providing services within a short period of time. The study respondents agreed that they take a short time to get services from the centres. Opiyo *et al.*, (2017: 449) point out that Huduma centres have improved access to government services, by minimizing time customers take to access service as well as elimination of bureaucracy and corruption loopholes in the delivery of public service.

### **5.5 Are Huduma Centre customers trained on the use of Huduma online services?**

The study found that when respondents (customers) were asked about the ICT training conducted for them to access e-government online services, 60% of the respondents said they did not receive training. In a related study Mwangi *et al.* (2022) and Nkanata & Ocholla, (2022) submits that most Huduma centres are concentrated in urban areas and the rural population lacks the ICT skills necessary to use the internet and access e-government online services. This study confirmed that majority 60% Huduma centers' customers have trouble in accessing and using Huduma electronic services.

The ICT customer training relates to the ability to operate computers or smartphones to search for required information and to be able to access services on government websites. Abdulkareem and Ramli, (2021) explain that e-government user failure in the developing countries has been mentioned in various studies due to the inability of citizens to use the internet or navigate e-government websites. Also, Chohan and Hu, (2022: 16) point out that e-government ICT trainings provided for citizens can create a positive impact and promote more equitable usage of e-government online services. The two authors further advice that proper e-government ICT training for the citizens should be done through vocational and technical training.

### **5.6 Huduma centres' employees and customers need for additional training**

The study further sought to establish whether the respondents needed additional training to be able to utilize Huduma centres' services. The results from the study identified employee's skill gaps in areas such as mental health, dispute and conflict resolution, sign language, first Aid, refresher ICT training and refresher customer care training that would enhance skills in service provision. Regarding customers, the study revealed a bigger portion 79% of Huduma customer needed to be trained on how to access online Huduma services. Several studies have mentioned the gaps in education policy and frameworks especially in the developing countries (Maina and Otieno, 2024 ; Chohan and Hu, 2022). Bwalya, (2018) acknowledge the need for stringent framework and policies to bridge the gaps in ICT training for citizens.

### **5.7 What improvements are required for the Huduma Centre training?**

The study suggests the need for Huduma secretariat to liaise with the fifty-two centre managers to conduct a training needs assessment for each Huduma centres and tailor the employees training according to the needs. Huduma Kenya Secretariat, (2023: 27) acknowledges there is a gap in the training of citizens on how to access digital services. The Huduma Kenya Secretariat has plans to design a citizens' education portal to provide step by step instructions on how to access Huduma centres' digital services. The User Tutorial Portal will consolidate all user training materials into a single point of access for the convenience of citizens. This user tutorial portal will be accessible through the Huduma website and user mobile

application. The portal is intended to increase usage of Huduma digital services, since low usage of e-government online services by citizens could undermine the major purpose of e-government initiative (Nkanata and Ocholla, 2022).

Education reform is important in citizens ICT skills improvement. Lee, Lee and Lee-Geiller, (2020:9) explain that reforming education policy has been embraced as a key strategy for improving public service digital literacy. Mwangi, Irura and Makori, (2022: 18) recommend that for governments to train citizens on digital literacy, they need to collaborate with other institutions such as public libraries. Chohan and Hu, (2022: 30) suggest that extensive e-government ICT training programs should be introduced early in graduate and post graduate levels, where students are urged to use e-government online services as active citizen of the society which should be a challenge to LIS Schools.

## 6 Conclusion

In conclusion, the study established that there is impact of training conducted for Huduma centres' employees to effectively use and provide e-government public services to citizens. It was found that the Huduma centres customers are not trained to access online Huduma services. The centre employees highlighted areas of training that would equip them for better service delivery such as sign language for hearing challenged customers. In a related study, Muketi & Wainaina, (2020: 13) recommends that the management of Huduma centres need to organize regular in-service training for employees to improve their response to all customers' needs. The authors further recommend that Huduma centres should strive to have a workforce who serve customers with uniformity and equity.

Given that ICT/multimedia literacy is important for promoting e-government use, it may be helpful, for the Kenyan education system to consider reorganizing the curriculum to include or escalate ICT training in secondary education to enhance citizens' digital skills. Furthermore, reforming education policy has been a major strategy for improving public information literacy, particularly in Korea, through which it has gradually systemized. The study also recommends Huduma centres' policy change to include user programs to address citizens' inadequate e-skills to access online services. For those unable to attend user training sessions, there should be production of summarized pamphlets that can serve as revision notes for them to catch up. We note that the sample for the study is limited to a developing country situation with many challenges such as low ICT literacy and infrastructure/resources among the population when compared to high-income countries with well-established infrastructure to influence high digital literacy among the citizens.

The study findings imply that governments should be proactive in assessing the level of digital skills across various population segments and devise digital literacy targeted programs to empower less digital savvy citizens. Equipping citizens with digital access skills can boost utilization of e-government services and amplify e-government benefits for both government and citizens. It is also pointing the government to education policy change that will step up the efforts to develop ICT literacy teaching programs included in schools' curriculum at all stages. Despite the study limitations, it can be used for comparative studies beyond the current context. Some of the studies by these authors in the domain cited in this paper provide detailed information beyond this paper for further exploration.

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