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**E-Government Services and Performance of County Governments in Kenya: The Case  
of Nairobi City County**


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Strategy

### E-Government Services and Performance of County Governments in Kenya: The Case of Nairobi City County

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#### Abstract

**Purpose:** The aim of the study was to examine E-Government Services and Performance of County Governments in Kenya: The Case of Nairobi City County.

**Methodology:** The study adopted a descriptive research design. The target population comprised of 11,603 employees from the Sectors of Mobility and Works, Business and Hustler Opportunities, Boroughs Administration and Personnel, Lands and Build Environment of the county government of Nairobi working at City Hall. The sample size was 387 staff that was calculated using Yamane formula and selected using stratified random sampling method. Piloting was done to establish the reliability and validity of the questionnaire. Quantitative data was analyzed using descriptive and inferential statistics. Descriptive statistics entailed percentages, means and standard deviation. Inferential statistics included Pearson Correlation analysis to determine the nature and strength of the correlation between e-government services and Nairobi City performance. Regression analysis was conducted using multiple regression models to determine the effect of e-government services on performance of Nairobi City County. Data was presented in form of tables.

**Findings:** From the findings, e-government services had a positive and significant influence on the performance of Nairobi City County ( $F=49.021$ ,  $P<0.05$ ). Additionally, it was also established that e-parking ( $b=0.212$ ,  $p=0.000<0.05$ ), E-Business Licensing ( $b=0.177$ ,  $p=0.002<0.05$ ), e-job application ( $b=0.232$ ,  $p=0.000<0.05$ ) and e-land services ( $b=0.153$ ,  $p=0.015<0.05$ ) had a positive and significant affect performance of Nairobi City County. The study concluded that e-parking, e-business licensing, e-job application and e-land services are significant determinants of the performance of Nairobi City County.

**Unique Contribution to Theory, Practice and Policy:** The study was guided by Diffusion of Innovation Theory. The study recommended that the county government of Nairobi ought to fully implement e-parking services, e-business licensing services, e-job application services and e-land service to tap its benefits. The study further recommended that the National Government through the ministry of Information, Communications and Digital Economy ought to digitize the delivery of government services to the citizens in all ministries.

**Keywords:** E-Government Services, Performance, County Governments

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## INTRODUCTION

E-government is continuously gaining popularity as its adoption globally is increasing. Some of the key advantages of adopting e-government in service delivery entail improved service delivery, reduced costs saves on time as well as increasing the effectiveness and efficiency in service delivery (Sachan *et al.*, 2018). In addition, with e-government, there is increased transparency, increased ICT skills of the users, creation of new work opportunities and enhances accountability in the delivery of government services (Anshari & Hamdan, 2022). However, the use of e-government equally has its own share of challenges that include lack of shared standards and compatible infrastructure, privacy and security lack of awareness of ICT infrastructure, resistance to change, high costs involved among other challenges (Hazineh *et al.*, 2022).

Globally, the high-income nations rank among the top in the e-government ranking index attributed to their financial ability to develop and roll out advanced e-government initiatives. There has been a slight increase in the global average EGDI to 0.6102 in 2022 from 0.5988 in 2020 because of the improvements in the ICT infrastructure (UN, 2022). In terms of the developments in e governments, the average EGDI for Africa was (0.4054), Oceania (0.5081), the Americas (0.6438), Asia (0.6493) and Europe 0.8305 (UN, 2022).

In Africa, the performance in the public sector has recorded significant improvements as innovative and new ways are being sought by the political leaders and other government officials in an attempt to solve the challenges of public management that are long standing (Arundel *et al.*, 2019). These improvements have been attributed to increased innovation, driving results as well as improved public resource management (Rosenbloom *et al.*, 2022). South Africa has incorporated information technology in the provision of public services to its citizens. E-government services allows the public to directly engage with the government on issues service delivery as well as allows feedback from the citizens regarding the services rendered by the government and hence better performance (Jakoet-Salie, 2020). The South African government launched the implementation and development of South Africa Online, which facilitates access to all information about services provided by the government and e-government gateway which is a hub of the service delivery improvement programme of the government (Vyas-Doorgapersad, 2019). This is aimed at enhancing the efficiency and effectiveness of service delivery and the performance of the government (Enaifoghe *et al.*, 2023).

In Kenya, the government has recognized the essence of adopting e-government service delivery because of the perceived easy importance of the system as it enhances the access and effective provision of the services to the citizens. ICT is categorized as a key pillar in the Kenya Vision 2030 as it makes the service delivery effective as quality service provision (Riany, 2021). The government of Kenya through the E-Citizen platform has reported to have more than 5,000 government services from across the ministries, government departments, agencies and counties. This has even more simplified government service delivery as well as unified the government records (eCitizen report, 2023). According to Nkanata and Ocholla (2022), Kenya possesses strengths and possibilities that could facilitate the growth of Huduma e-government efforts. These include political goodwill, increased systems interoperability, capacity-building and e-government regulatory framework.

A study was conducted by Kang'ethe (2020) on centralized public parking management with a focus on County Government of Nairobi. The structure adopted primary data with its target population who commute daily to the City of Nairobi as well as the employees of the County Government of Nairobi who were resourceful in providing information about the current parking system used by the county. The study indicated that Nairobi County still applies the manual parking, which is associated with minimal levels of correctness and transparency. The system is inefficient, inconsistent and costly as it involves manpower which affects the productivity of the county. However, the study presented a conceptual gap. The study specifically focused on centralized parking system whereas the current study focuses on e parking.

A study was conducted by Kamau (2022) on e-government practices strategy effects on public sector delivery of services focusing on Nakuru County. Case study design was adopted with the target population being the customers utilizing services at Nakuru Huduma Center. The investigation concluded of a link between service delivery and e business. It pointed out that previously it could take a longer time just to do a business name registration which was time consuming and costly. However, with e business, the delivery of services has seen great improvement as it save time as well as the costs of accessing crucial business services. The investigation presented a contextual gap as well as a methodological gap. The study was mainly conducted on service delivery in the public sector focusing on Nakuru County Kenya using case study design whereas the current study focuses on performance of Nairobi County using a descriptive design..

In an investigation on the impact of e-recruitment on public service delivery in Tana River County, Kenya, Buya and Kembu (2022) used a descriptive research design. The study population comprised of 126 staff in the Public Service Management, Administration and ICT department of the County government of Tana River. The research employed a census survey since the population of the study, 126 staff in the Public Service Management, Administration and ICT department of the County government of Tana River was small. The study pointed out that electronic recruitment of county staff positively and significantly influences public service delivery. Fully informing applicants online about the qualifications required to perform the job before being hired, using online platforms to attract applicants for different jobs, fully assessing and interviewing applicants online would improve public service delivery. The study presents a contextual gap as this research sought to identify the effects of e job application on Nairobi City performance.

Research study was conducted by Halid and Nawawi (2023) on transforming land administration through e-government in Malaysia. The results indicated that Malaysia has gone beyond providing official websites and is now fulling providing service to the public online. Among the most recent services to be integrated in Malaysia is the land administration owing to its jurisdictional complexities. Thus, it is also possible for the developing economies to employ e government services including land administration in consideration of the country's technological advancement, the adequacy of financial resources the support by the central government, legislation adaptation and policy. The study however presents contextual gaps as the study at hand seeks to identify the effects of e land services on the of Nairobi City performance.

### **Statement of the Problem**

The performance of the County Government of Nairobi can be evaluated by its ability to provide services aligned with citizens' preferences, deliver high-quality services at minimal costs, and achieve revenue collection targets (Commission on Revenue Allocation, 2022). E-government aims to enhance service delivery, operational transformation, and efficiency (Chohan & Hu, 2022). Nairobi has implemented e-government for various public services including job applications, parking, business licensing, and land services to improve revenue collection. However, despite the deployment of e-government, the revenue collection targets have not been fully met. In the first quarter of 2023, Nairobi's revenue increased by 6.4% to Ksh. 3.44 billion, driven by a 34.1% improvement in land rates collection due to better property documentation and mapping (Nairobi City County Report, 2023; Sande et al., 2023). Additionally, single permit revenue rose by 16.2% to Ksh. 942.7 million, and parking revenue grew by 8.7% to Ksh. 619.9 million, reflecting the impact of automation on easing business processes and parking management (Mwangi, 2019)

Even with the recorded increasing performance, Nairobi County still managed to collect less than 50% of the revenue targets which is far below the recommended 75% own source revenue targets for the counties (Controller of Budget, 2022). The own source revenue collection of the County Government of Nairobi has for years been faced with systems of collection of revenue that are weak and fraud. According to Nairobi City County (2022), Nairobi City County loses approximately Ksh.2 billion a month due to weak transactions that cannot be accounted for. Hence, the introduction of Nairobi Pay app by the County Government of Nairobi is expected to enhance performance and streamline service delivery (Walubengo *et al.*, 2023). However, this has not been ascertained through an empirical study. Thus, the investigation at hand seeks to determine the effect of e-government services on Nairobi City County performance.

Researches have been conducted in the field of e-government service delivery; however, there are gaps in the past studies that this research seeks to fill. A study was conducted by Kang'ethe (2020) on centralized public parking management with a focus on County Government of Nairobi. The study indicated that Nairobi County still applies the manual parking, which is associated with minimal levels of correctness and transparency. The system is inefficient, inconsistent and costly as it involves manpower which affects the productivity of the county. However, the study presented a conceptual gap. The study specifically focused on centralized parking system whereas the current study focuses on e parking.

### **Conceptual Framework**

A conceptual framework represents the presentation of the ideas and thoughts obtained from the inquiry fields appropriate which are crucial in ensuing and structuring introduction. The study embraced a framework that indicated nexus between independent and the dependent factors. The dependent variables of the study were e-parking, e-business licensing, e-job application and e-land services whereas the independent variable of this research was the performance of Nairobi City County.

**Independent Variables**

**Dependent Variable**

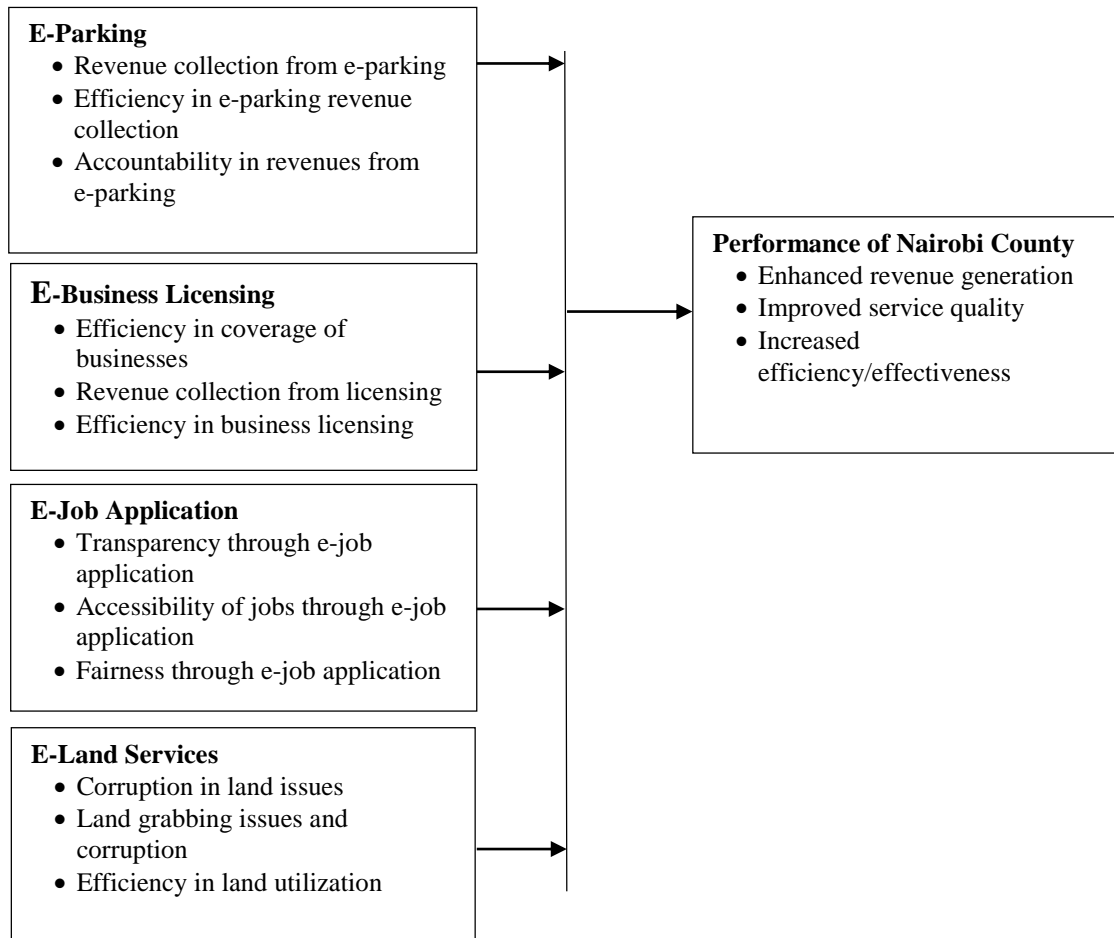


Figure 1: Conceptual Framework

**Diffusion of Innovation Theory**

The theory was advanced by Everett M. Rogers in 1962 (Rogers *et al.*, 2014). The theory posits that diffusion of innovation is the process in which members of a social system communicates innovation using defined channels over time. The theory recognizes four main elements which influences the spread of an idea or innovation. The elements include the social system, time, communication channel, and the innovation itself. The diffusion of innovation is largely dependent on human capital. Thus, for the innovation to be widely communicated, then the innovation should first be accepted and adopted. The rate of adoption of the innovations are what the theory calls diffusion (Dearing & Cox, 2018).

The theory is useful to this assessment, as e-Government service delivery is a kind of system that has already been applied by the developed economies in the delivery of services. Thus, in adopting the innovation, the County Government of Nairobi first has to get some benchmarks from those who have adopted the technology, learn from the weaknesses and strengths of the system before putting the innovation into use. This helps the Government on the ways of curbing the challenges that may occur in the process of its implementation. Thus, all the factors

of the investigation that is e-parking, e-business licensing, e-job application and e-land services are supported by the theory.

This theory was found to be effective in the context of this study which sought to examine the influence of e-Government services on the performance of Nairobi City County. By categorizing adopters into innovators, early adopters, early majority, late majority, and laggards, the DOI theory helps to understand the spread and acceptance of e-Government services among different user groups within the County. This theoretical framework illuminates how technological advancements and online public services are introduced and integrated into the daily operations of the County Government, influencing efficiency, transparency, and citizen engagement. By identifying factors such as the relative advantage, compatibility, complexity, trialability, and observability of e-Government innovations, the County Government could tailor strategies to enhance adoption rates, ultimately improving service delivery and administrative performance in Nairobi City County.

### **Knowledge Gap**

From the studies so far considered, a number of gaps have been identified. Kang'ethe (2020) conducted a study on centralized public parking management with a focus on County Government of Nairobi. However, this study presented a conceptual gap. The study specifically focused on centralized parking system whereas the current study focuses on e parking. Focusing at Tana River County, Buya and Kembu (2022) focused on the effect of e-recruitment on public service delivery. The study presents a contextual gap as the current study examined the impact of e job application on the performance of Nairobi City County. Singh (2022) did carry out a study on effectiveness of e-recruitment process in large-scale organization in India. The study presented both contextual and conceptual gaps as this research seeks to identify the effects of e job application on Nairobi County performance. Aspan et al. (2021) did a study on the challenges of digital integrated system in land management. The study presented methodological, contextual and conceptual gaps as this research sought to identify the effects of e-land services on Nairobi City performance using a descriptive research design.

### **METHODOLOGY**

The study adopted a descriptive research design. The target population of this study comprised of 11,603 county workers working at the City Hall. The unit of analysis in the study was the county government of Nairobi. Probability sampling was adopted in selecting individual respondents from the departments chosen to participate in the study. Using a combination of stratified and random sampling where the respondents were organized according to the different Sectors, 102 employees from Mobility and Works Sector, 220 employees from Business and Hustler Opportunities, 35 employees from Boroughs Administration and Personnel and 30 employees from Lands and Build Environment were selected to participate in the study. Data was collected using questionnaires. Data was analyzed using SPSS software. Data was presented in form of tables.

### **FINDINGS**

#### **Descriptive Results for E-Parking**

The respondents were given several statements assessing the influence of e-parking on performance of Nairobi City County and asked to indicate their extent of agreement or disagreement. A summary of the responses provided are shown in Table 1.

**Table 1: Descriptive Results for E-Parking**

	SD	D	U	A	SA	M	S Dev
The County Government of Nairobi has fully adopted e-parking	6.8%	10.3%	18.3%	28.1%	36.5%	3.8	1.2
E parking has significantly enhanced the accountability of parking fees	5.3%	15.2%	17.5%	26.6%	35.4%	3.7	1.2
With e-parking, the county government has drastically downsized its manpower reducing operational expenses	4.9%	11.8%	22.4%	29.7%	31.2%	3.7	1.2
E-parking increases the productivity and performance of staff at the county	7.2%	12.9%	19.8%	29.3%	30.8%	3.6	1.2
With the adoption of e-parking, the county government has realized increased revenue generation from e-parking fees	7.2%	11%	18.6%	30%	33.1%	3.7	1.2
E-parking is easy to use has it enhances car tracking	5.7%	11.8%	20.2%	29.7%	32.7%	3.7	1.2
The e-parking services has facilitated easy monitoring of cars packed within the city by the county government car parking attendants	7.2%	12.5%	18.6%	29.7%	31.9%	3.7	1.2
With e parking, one can be able to book a parking lot in advance	6.8%	10.3%	23.2%	26.2%	33.5%	3.7	1.2
E-parking has significantly enhanced the order and flow of traffic in the city	6.8%	9.5%	16.7%	27.8%	39.2%	3.8	1.2
<b>Aggregate Mean and Standard Deviation</b>						<b>3.7</b>	<b>1.2</b>

From the outcomes tabulated in Table 1, the respondents were positive that the County Government of Nairobi has fully adopted e-parking. The findings were as follows; 96(36.5%) of the respondents strongly concurred, 74(28.1%) of them agreed whereas 48(18.3%) did not take any side. In addition, 27(10.3%) disagreed with the statement while 18(6.8%) strongly disagreed. The average mean response was 3.8 whereas its corresponding standard deviation was 1.2 indicating that the responses in average were in tandem that the County Government of Nairobi had fully adopted e-parking. While most respondents concurred that the local government had fully implemented e-parking, a significant number 17% held dissenting views. This could mean that Nairobi County government had not adopted e-parking in some of its parking services.

E-parking has significantly enhanced the accountability of parking fees attracted the following responses; 93(35.4%) of those contacted strongly agreed with the statement, 70(26.6%) of them agreed, while 46(17.5%) of the responses moderately agreed. Furthermore, 40(15.2%) disagreed with the statement while 14(5.3%) strongly disagreed. The mean and the corresponding standard deviation of the statements were 3.7 and 1.2 respectively implying that the respondents were in agreement that e-parking has significantly enhanced the accountability of parking fees. While most respondents concurred that e-parking has significantly enhanced the accountability of parking fees, a significant number 20.3% held dissenting views. This could mean that even with the adoption of e-parking, there was no full accountability of parking fees within the local government.

Furthermore, the responses regarding the question, with e-parking, the county government has drastically downsized its manpower reducing operational expenses pointed out the following;



82(31.2%) indicated a strong agreement with the statement, 78(29.7%) of the respondents contacted agreed whereas 59(22.4%) recorded a neutral position. In addition, 31(11.8%) disagreed with the statement while 13(4.9%) strongly disagreed. The average and the standard deviation of the responses were 3.7 and 1.2 in that order meaning that the responses were in agreement that with e-parking, the county government has drastically downsized its manpower reducing operational expenses. Even though most respondents concurred that e-parking has significantly enhanced the accountability of parking fees, a significant number 20.3% held dissenting views. This could mean that even with the adoption of e-parking, there was no full accountability of parking fees within the local government.

Regarding the statement, E-parking increases the productivity and performance of staff at the county, 81(30.8%) of the responses were strongly in agreement. However, 77(29.3%) were in tandem with the statement whereas 52(19.8%) did not take any side. Furthermore, 34(12.9%) disagreed with the statement while 19(7.2%) strongly disagreed. The average and the standard deviation of the responses were 3.6 and 1.2 indicating that there was agreement among the responses that E-parking increases the productivity and performance of staff at the county. Whereas most respondents concurred that e-parking increases the productivity and performance of staff at the county, a significant number 20.1% held dissenting views. This could mean that even with the adoption of e-parking, the productivity of the county staff may not be fully enhanced.

With the adoption of e-parking, the county government has realized increased revenue generation from e-parking fees the responses were as follows; 87(33.1%) strongly agreed with the statement, 79(30%) agreed while 49(18.6%) of the participants in the study did not take any position regarding the statement. Additionally, 29(11%) disagreed with the statement while 19(7.2%) strongly disagreed. The average and the standard deviation of the responses were 3.8 and 1.1 in that order. This implies that the respondents agreed that with the adoption of e-parking, the county government has realized increased revenue generation from e-parking fees. Whereas most respondents concurred that the county government has realized increased revenue generation from e-parking fees with the adoption of e-parking, a significant number 18.2% held dissenting views. This could mean that even with the adoption of e-parking, the revenues from e-parking may have increased but not significantly.

In addition, with regards to the question, E-parking is easy to use as it enhances car tracking, 86(32.7%) of the respondents strongly agreed with regards the statement, 78(29.7%) of them agreed and 53(20.2%) moderately agreed. Additionally, 31(11.8%) disagreed with the statement while 15(5.7%) strongly disagreed. The line mean and standard deviation of the statement were 3.7 and 1.2 in that order implying that the respondents agreed that E-parking is easy to use as it enhances car tracking. Whereas most respondents concurred that e-parking is easy to use as it enhances car tracking, a significant number 17.5% held dissenting views. This could mean that even with the adoption of e-parking, it may not be easy to use by all the county staff considering different ages of the staff.

With respect to the question, e-parking services has facilitated easy monitoring of cars packed within the city by the county government car parking attendants, 84(31.9%) of the responses strongly agreed, 78(29.7%) agreed whereas 49(18.6%) moderately agreed. Furthermore, 33(12.5%) disagreed with the statement while 19(7.2%) strongly disagreed. The average and the standard deviation of the responses were 3.7 and 1.2 indicating that the responses were in

agreement that e-parking services has facilitated easy monitoring of cars packed within the city by the county government car parking attendants. Whereas most respondents concurred that e-parking services has facilitated easy monitoring of cars packed within the city by the county government car parking attendants, a significant number 19.7% held dissenting views. This could mean that even with the adoption of e-parking, the county government to a greater extent may monitor cars parked within the county.

The statement on whether with e parking, one can be able to book a parking lot in advance attracted responses as follows. The responses indicated that 88(33.5%) strongly agreed, 69(26.2%) agreed while 61(23.2%) of the participants moderately agreed with the statement. In addition, 27(10.3%) disagreed with the statement while 18(6.8%) strongly disagreed. The average and the standard deviation of the responses were 3.7 and 1.2 respectively. This signifies that the participants were in agreement that with e parking, one could be able to book a parking lot in advance. Whereas most respondents concurred that with the adoption of e parking, one can be able to book a parking lot in advance, a significant number 17.1% held dissenting views. This could mean that even with the adoption of e-parking, one may fail to secure a parking lot in advance.

Finally, on whether e-parking has significantly enhanced the order and flow of traffic in the city, the responses indicated that 103(39.2%) strongly agreed with the statement, 73(27.8%) agreed while 44(16.7%) moderately agreed. Furthermore, 25(9.5%) disagreed with the statement while 18(6.8%) strongly disagreed. The average and the standard deviation of the responses were 3.9 and 1.1 in that order meaning that the responses were in agreement that E-parking has significantly enhanced the order and flow of traffic in the city. Whereas most respondents concurred that e-parking has significantly enhanced the order and flow of traffic in the city, a significant number 16.3% held dissenting views. This could mean that the city could still be experiencing a problem with the flow of traffic even with the adoption of e-parking.

The aggregate mean and standard deviation for the responses on E-parking were 3.7 and 1.2 respectively. This implies that on average, the responses were in agreement with regards the adoption of e-parking by the Nairobi City County. These results are consistent with the findings of Maulida et al. (2021) which concluded that the utilization of e parking is primarily on the basis of its perceived benefits including being useful for Unit Pelaksana Teknis (UPT) Parking officers, increasing productivity in work, enhancing work effectiveness and improving the officer performance. E-parking is instrumental in facilitating parking users by improving the services such provision of timely information including checking the availability of parking spaces as well as paying parking charges at the user convenience. The results are in congruence with postulations of the theory of planned behaviour.

### **Descriptive Results for E-Business Licensing**

The respondents were given several statements assessing the influence of e-business licensing on performance of Nairobi City County and asked to indicate their extent of agreement or disagreement. A summary of the responses provided are shown in Table 2.

**Table 2: Descriptive Results for E-Business Licensing**

	SD	D	U	A	SA	M	S Dev
The county Government of Nairobi has fully adopted e-business licensing improving quick and efficient business registration	15 5.7%	35 13.3%	48 18.3%	75 28.5%	90 34.2%	3.7	1.2
The adoption of e-business licensing has seen the county government generate more revenue from business licensing	20 7.6%	24 9.1%	43 16.3%	76 28.9%	100 38%	3.8	1.2
The county government has been able to license more business as a result of the adoption of e-business licensing	16 6.1%	48 18.3%	52 19.8%	68 25.9%	79 30%	3.6	1.3
E-business licensing has significantly reduced administrative costs incurred by the county government in undertaking manual business registrations	19 7.2%	26 9.9%	40 15.2%	84 31.9%	94 35.7%	3.8	1.2
E-business licensing has drastically reduced the time it takes for a business to get a license	17 6.5%	34 12.9%	59 22.4%	67 25.5%	86 32.7%	3.7	1.2
E-business licensing has significantly reduced the cases of corruption in licensing businesses	17 6.5%	32 12.2%	48 18.3%	80 30.4%	86 32.7%	3.7	1.2
E-business licensing has helped reduce the effort spent by businesses to comply with county business regulatory requirements	21 8%	38 14.4%	53 20.2%	62 23.6%	89 33.8%	3.6	1.3
E-business licensing has significantly reduced the bureaucracies experienced during the process of licensing businesses	13 4.9%	33 12.5%	49 18.6%	72 27.4%	96 36.5%	3.8	1.2
With the adoption of e business licensing, more business are compliant with county business regulatory requirements	20 7.6%	32 12.2%	56 21.3%	68 25.9%	87 33.1%	3.6	1.3
<b>Aggregate Mean and Standard Deviation</b>						<b>3.7</b>	<b>1.2</b>

It can be noted that the statement, the county Government of Nairobi has fully adopted e-business licensing improving quick and efficient business registration recorded responses as follows; 90(34.2%) of the responses strongly agreed, 75(28.5%) of them agreed whereas 48(18.3%) moderately agreed. Furthermore, 35(13.3%) disagreed with the statement while 15(5.7%) strongly disagreed. The average response was 3.7 whereas its corresponding standard deviation was 1.2 indicating that the responses in average were in tandem that the county Government of Nairobi had fully adopted e-business licensing improving quick and efficient business registration. Whereas most respondents concurred that the county Government of Nairobi has fully adopted e-business licensing improving quick and efficient business registration, a significant number 19% held dissenting views. This could mean that even with the adoption of e-business licensing by the county, business registration may not be as quick and efficient as expected by some of the clients.

The adoption of e-business licensing has seen the county government generate more revenue from business licensing attracted the following responses; 100(38%) of those contacted strongly agreed with the statement, 76(28.9%) of them agreed while 43(16.3%) of the responses moderately agreed. Additionally, 24(9.1%) disagreed with the statement while 20(7.6%) strongly disagreed. The mean and the corresponding standard deviation of the

statement were 3.8 and 1.2 respectively implying that the respondents were in agreement that the adoption of e-business licensing has seen the county government generate more revenue from business licensing. While most respondents concurred that the adoption of e-business licensing has seen the county government generate more revenue from business licensing, a significant number 16.7% held dissenting views. This could mean that even with the adoption of e-business licensing by the county, to some, revenue generation by the county may not have improved as expected.

Furthermore, regarding the question, the county government has been able to license more business because of the adoption of e-business licensing pointed out the following responses. From the results, 79(30%) strongly agreed with the statement, 68(25.9%) of the respondents contacted agreed whereas 52(19.8%) moderately agreed. Furthermore, 48(18.3%) disagreed with the statement while 16(6.1%) strongly disagreed. The average and the standard deviation of the responses were 3.6 and 1.3 in that order meaning that the responses were in agreement that the county government has been able to license more business as a result of the adoption of e-business licensing. While most respondents concurred that the county government has been able to license more business because of the adoption of e-business licensing, a significant number 24.4% held dissenting views. This could mean that even with the adoption of e-business licensing by the county, the number of businesses licensed may have improved but not as significant as expected by some.

Regarding the statement, E-business licensing has significantly reduced administrative costs incurred by the county government in undertaking manual business registrations, 94(35.7%) of the responses strongly agreed, 84(31.9%) agreed whereas 40(15.2%) moderately agreed. Additionally, 26(9.9%) disagreed with the statement while 19(7.2%) strongly disagreed. The average and the standard deviation of the responses were 3.8 and 1.2 in that order indicating that there was agreement among the responses that E-business licensing has significantly reduced administrative costs incurred by the county government in undertaking manual business registrations. While most respondents concurred that e-business licensing has significantly reduced administrative costs incurred by the county government in undertaking manual business registrations, a significant number 17.1% held dissenting views. This could mean that even with the adoption of e-business licensing by the county, some view that the administrative costs may still be high.

E-business licensing has drastically reduced the time it takes for a business to get a license also received the responses as follows. From the results, 86(32.7%) strongly agreed, 67(25.5%) of those contacted agreed and 59(22.4%) of the participants in the study moderately agreed regarding the statement. Furthermore, 34(12.9%) disagreed with the statement while 17(6.5%) strongly disagreed. The average and standard deviation were 3.7 and 1.2 respectively. This implies that the respondents agreed that E-business licensing has drastically reduced the time it takes for a business to get a license. While most respondents concurred that e-business licensing has drastically reduced the time it takes for a business to get a license, a significant number 19.4% held dissenting views. This could mean that even with the adoption of e-business licensing by the county, the time it takes to get a business license may have reduced but not to a level expected by some.

In addition, concerning the question, e-business licensing has significantly reduced the cases of corruption in licensing businesses, 86(32.7%) of the respondents strongly agreed with

regards the statement, 80(30.4%) of them agreed and 48(18.3%) moderately agreed. Furthermore, 32(12.2%) disagreed with the statement while 17(6.5%) strongly disagreed. The average and the standard deviation of the responses were 3.7 and 1.2 respectively implying that the respondents agreed that -business licensing has significantly reduced the cases of corruption in licensing businesses. While most respondents concurred that e-business licensing has significantly reduced the cases of corruption in licensing businesses, a significant number 18.7% held dissenting views. This could mean that even with the adoption of e-business licensing by the county, the cases of corruption in business licensing may not have been completely eradicated as viewed by some of the respondents.

With respect to the question, E-business licensing has helped reduce the effort spent by businesses to comply with county business regulatory requirements, 89(33.8%) of the responses strongly agreed, 62(23.6%) agreed whereas 53(20.2%) moderately agreed. In addition, 38(14.4%) disagreed with the statement while 21(8%) strongly disagreed. The average and the standard deviation of the responses were 3.6 and 1.3 respectively indicating that the responses were in agreement that E-business licensing has helped reduce the effort spent by businesses to comply with county business regulatory requirements. While most respondents concurred that e-business licensing has helped reduce the effort spent by businesses to comply with county business regulatory requirements, a significant number 22.4% held dissenting views. This could mean that some of the clients may still be using significant effort to comply with county business regulatory requirements even with the adoption of e-business licensing.

The statement on whether E-business licensing has significantly reduced the bureaucracies experienced during the process of licensing businesses attracted responses as follows. The results indicated that, 96(36.5%) strongly agreed, 72(27.4%) of those contacted agreed and 49(18.6%) of the participants moderately agreed regarding the statement. Furthermore, 33(12.5%) disagreed with the statement while 13(4.9%) strongly disagreed. The average and the standard deviation of the responses were 3.8 and 1.2 respectively. This implies that the respondents agreed that E-business licensing has significantly reduced the bureaucracies experienced during the process of licensing businesses. While most respondents concurred that e-business licensing has significantly reduced the bureaucracies experienced during the process of licensing businesses, a significant number 17.4% held dissenting views. This could mean that some of the clients may still be facing bureaucracies during the process of licensing businesses even with the adoption of e-business licensing.

Finally, on whether with the adoption of e business licensing, more business are compliant with county business regulatory requirements, the responses indicated that 87(33.1%) strongly agreed, 68(25.9%) of the respondents agreed, 56(21.3%) moderately agreed with the statement. In addition, 32(12.2%) disagreed with the statement while 20(7.6%) strongly disagreed. The average and the standard deviation of the responses were 3.6 and 1.3 respectively meaning that the responses were in agreement that with the adoption of e business licensing, more business are compliant with county business regulatory requirements. While most respondents concurred that with the adoption of e business licensing, more business are compliant with county business regulatory requirements, a significant number 19.8% held dissenting views. This could mean that some of the businesses may still be not compliant with county business regulatory requirements.

The aggregate mean and standard deviation for the responses on E-Business Licensing were 3.7 and 1.2 respectively. This implies that on average, the responses were in agreement with regards the adoption of e-business licensing by the Nairobi City County. The findings concur with the results by Kamau (2022) which concluded of a link between service delivery and e business. It pointed out that previously it could take a longer time just to do a business name registration which was time consuming and costly. However, with e business, the delivery of services has seen great improvement as it saves time as well as the costs of accessing crucial business services.

The results are further in line with the postulations of the diffusion of innovations theory. This is because the decision-making in diffusion follows a number of steps including awareness of the innovation, which culminates into an individual gaining an interest in the idea, the evaluation of the idea, trial and finally adoption of the innovation. Thus, the adoption of innovation through e business licensing has led to improved business transactions. However, the findings of Francisco et al. (2020) argued that spending more time and spending a higher proportion of total business costs dealing with government regulations were associated with a lower probability of an SME growing in terms of revenue and number of employees.

### Descriptive Results for E-Job Application

The respondents were given several statements assessing the influence of e-job application licensing on performance of Nairobi City County and asked to indicate their extent of agreement or disagreement. A summary of the responses provided are shown in Table 3.

**Table 3: Descriptive Results for E-Job Application**

	SD	D	NS	A	SA	M	S Dev
The county Government of Nairobi has fully adopted e-job application facilitating easy electronic job advertisements and applications	20 7.6%	24 9.1%	59 22.4%	59 22.4%	101 38.4%	3.7	1.3
With the adoption of e-job application, the County Government of Nairobi has seen increased job applicants because advertisement of job are seen by many job seekers countrywide	21 8%	24 9.1%	52 19.8%	74 28.1%	92 35%	3.7	1.3
With the adoption of e-job application, the county government has been able to hire applicants with the best qualifications	14 5.3%	37 14.1%	57 21.7%	67 25.5%	88 33.5%	3.7	1.2
E-job application has significantly helped reduce the processing time for job applications	11 4.2%	28 10.6%	63 24%	74 28.1%	87 33.1%	3.8	1.1
There is enhanced fairness in the recruitment and selection of candidates with the adoption of e-job application	9 3.4%	29 11%	50 19%	88 33.5%	87 33.1%	3.8	1.1
With e-job application, applicants can easily know of job openings in the County Government without need of third parties information	13 4.9%	26 9.9%	60 22.8%	77 29.3%	87 33.1%	3.8	1.2
E-job application has led to a reduction in the hiring costs by the county government	12 4.6%	33 12.5%	60 22.8%	71 27%	87 33.1%	3.7	1.2
E-job application has enhanced efficiency by easily sorting out applicants based on their qualifications	16 6.1%	28 10.6%	50 19%	73 27.8%	96 36.5%	3.8	1.2
<b>Aggregate Mean and Standard Deviation</b>						<b>3.8</b>	<b>1.2</b>

The statement, the county Government of Nairobi has fully adopted e-job application facilitating easy electronic job advertisements and applications recorded responses as follows;

101(38.4%) of the responses strongly agreed, 59(22.4%) of them agreed whereas 59(22.4%) moderately agreed. Furthermore, 24(9.1%) disagreed with the statement while 20(7.6%) strongly disagreed. The average responses was 3.7 whereas its respective standard deviation was 1.3 indicating that the responses in average were in tandem that the county Government of Nairobi had fully adopted e-job application facilitating easy electronic job advertisements and applications. While most respondents concurred that the county Government of Nairobi has fully adopted e-job application facilitating easy electronic job advertisements and applications, a significant number 16.7% held dissenting views. This could mean that some of the job applicants may not easily have access to the advertisements.

With the adoption of e-job application, the County Government of Nairobi has seen increased job applicants because advertisement of job are seen by many job seekers countrywide the responses were as follows. The results indicated that, 92(35%) of those contacted strongly agreed with the statement, 74(28.1%) of them agreed while 52(19.8%) of the responses moderately agreed. In addition, 24(9.1%) disagreed with the statement while 21(8%) strongly disagreed. The average and the corresponding standard deviation of the stamen were 3.7 and 1.3 respectively implying that the participants were in agreement on average that with the adoption of e-job application, the County Government of Nairobi has seen increased job applicants because advertisement of job are seen by many job seekers countrywide. While most respondents concurred that with the adoption of e-job application, the County Government of Nairobi has seen increased job applicants because advertisement of job are seen by many job seekers countrywide, a significant number 17.1% held dissenting views. This could mean that the increase in job applicants may not be solely attributed to the adoption of e-job application by the county.

In addition, regarding the question, with the adoption of e-job application, the county government has been able to hire applicants with the best qualifications the responses indicated the following. From the results, 88(33.5%) strongly agreed with the statement, 67(25.5%) of the respondents contacted agreed whereas 57(21.7%) moderately agreed. In addition, 37(14.1%) disagreed with the statement while 14(5.3%) strongly disagreed. The average and the standard deviation of the responses were 3.7 and 1.2 implying that the responses were in agreement that with the adoption of e-job application, the county government has been able to hire applicants with the best qualifications. Whereas most respondents concurred that with the adoption of e-job application, the county government has been able to hire applicants with the best qualifications, a significant number 19.4% held dissenting views. This could mean that the hiring qualified staff by the county may not be attributed solely to the adoption of e-job application.

Regarding the statement, e-job application has significantly helped reduce the processing time for job applications, 94(33.1%) of the responses strongly agreed, 87(28.1%) agreed whereas 63(24%) moderately agreed. Furthermore, 28(10.6%) disagreed with the statement while 11(4.2%) strongly disagreed. The average and the standard deviation of the responses were 3.8 and 1.1 in that sequence indicating that the responses were in agreement that there was agreement among the responses that E-job application has significantly helped reduce the processing time for job applications. Whereas most respondents concurred that e-job application has significantly helped reduce the processing time for job applications, a significant number 14.8% held dissenting views. This could mean that some of the respondents

may not have realized reduced processing time of the job applications with the adoption of e-job application as they could have expected.

There is enhanced fairness in the recruitment and selection of candidates with the adoption of e-job application received the responses as follows. From the results, 87(33.1%) strongly agreed, 88(33.5%) of those contacted agreed while 50(19%) of the participants in the study moderately agreed regarding the statement. Additionally, 29(11%) disagreed with the statement while 9(3.4%) strongly disagreed. The average and the standard deviation of the responses were 3.8 and 1.1 in that sequence. This implies that the responses were in agreement that there was enhanced fairness in the recruitment and selection of candidates with the adoption of e-job application. Whereas most respondents concurred that there is enhanced fairness in the recruitment and selection of candidates with the adoption of e-job application, a significant number 14.4% held dissenting views. This could mean that even with the adoption of e-job application, some of the respondents perceive that the recruitment may not be as fair as they could have expected.

In addition, concerning the question, with e-job application, applicants can easily know of job openings in the County Government without need of third parties information, 87(33.1%) of the respondents strongly agreed with regards the statement, 77(29.3%) of them agreed and 60(22.8%) of them moderately agreed. Furthermore, 26(9.9%) disagreed with the statement while 13(4.9%) strongly disagreed. The average and the standard deviation of the responses were 3.8 and 1.2 in that order implying that the responses were in agreement that with e-job application, applicants can easily know of job openings in the County Government without need of third parties information. Whereas most respondents concurred that with e-job application, applicants can easily know of job openings in the County Government without need of third parties information, a significant number 14.8% held dissenting views. This could mean that some of the respondents perceive that some of the applicants are recruited through third party efforts.

With respect to the question, E-job application has led to a reduction in the hiring costs by the county government, 87(33.1%) of the responses strongly agreed, 71(27%) concurred whereas 60(22.8%) moderately agreed. In addition, 33(12.5%) disagreed with the statement while 12(4.6%) strongly disagreed. The average and the standard deviation of the responses were 3.7 and 1.2 indicating that the responses were in agreement that E-job application has led to a reduction in the hiring costs by the county government. Whereas most respondents concurred that e-job application has led to a reduction in the hiring costs by the county government, a significant number 17.1% held dissenting views. This could mean that some of the respondents perceive that significant costs are required in the hiring process.

Finally, on whether E-job application has enhanced efficiency by easily sorting out applicants based on their qualifications, the responses indicated that 96(36.5%) strongly agreed with the statement, 73(27.8%) of the respondents agreed whereas 50(19%) moderately agreed. Furthermore, 28(10.6%) disagreed with the statement while 16(6.1%) strongly disagreed. The average and the standard deviation of the responses were 3.8 and 1.2 in that order meaning that the responses were in agreement that E-job application had enhanced efficiency by easily sorting out applicants based on their qualifications. Whereas most respondents concurred that e-job application has enhanced efficiency by easily sorting out applicants based on their



qualifications, a significant number 16.7% held dissenting views. This could mean that some of the respondents indicated some of inefficiencies in the hiring process.

The aggregate mean and standard deviation for the responses on E-job application were 3.8 and 1.2 respectively. This implies that on average, the responses were in agreement with regards the adoption of e-job application by the Nairobi City County. The results are in tandem with the postulations of the theory of reasoned action. Theory of reasoned action has been used in ICT adoption. The subjective norm and attitude are significant factors that influence people's intents to adopt and use ICTs. The desire to accept and use ICT is greatly influenced by one's attitude. The outcome further agree with the findings of Buya and Kembu (2022) which pointed out that electronic recruitment of county staff positively and significantly influences public service delivery. Fully informing applicants online about the qualifications required to perform the job before being hired, using online platforms to attract applicants for different jobs, fully assessing and interviewing applicants online would improve public service delivery.

The findings of Singh (2022) postulated of the presence of a significant effect of e recruitment on the suitability of the applicant. The quality of human resources contributes immensely to the success of the company. Thus, ensuring the quality of human resources, quality e recruitment ought to be conducted, which includes identifying and attracting quality labour. Adopting e recruitment practices enhances the recruitment of quality and talented labour that is crucial for the success of the entity.

#### **Descriptive Results for E-Land Services**

A summary of the responses on the questions on e-land services are tabulated in Table 4.

**Table 4: Descriptive Results for E-Land Services**

	SD	D	NS	A	SA	M	S Dev
Nairobi County Government has fully adopted e-land services and land rates and other information are available online	16 6.1%	35 13.3%	52 19.8%	75 28.5%	85 32.3%	3.7	1.2
E-land services has reduced the time it takes in processing various land transactions within the county	16 6.1%	34 12.9%	50 19%	80 30.4%	83 31.6%	3.7	1.2
E-land services have significantly reduced the chances of corruption in land dealings within the county	14 5.3%	29 11%	51 19.4%	81 30.8%	88 33.5%	3.8	1.2
E-land services have significantly reduced the chances of land losses and grabbing because there is proper land records	19 7.2%	27 10.3%	50 19%	73 27.8%	94 35.7%	3.7	1.2
With e-land services, the county Government of Nairobi has been able to locate unregistered land parcels within the City	15 5.7%	32 12.2%	56 21.3%	82 31.2%	78 29.7%	3.7	1.2
E-land services has increased the opportunities that can be tapped in the land sector including identification of vacant lands and putting them in good services	20 7.6%	21 8%	50 19%	81 30.8%	91 34.6%	3.8	1.2
E-land services have increased revenues of the county generated from land rates	15 5.7%	27 10.3%	56 21.3%	72 27.4%	93 35.4%	3.8	1.2
E-land services has increased the efficiency of land use in the county government of Nairobi	14 5.3%	33 12.5%	50 19%	68 25.9%	98 37.3%	3.8	1.2
With e-land services, there is increased the effectiveness in accessing land services within the county.	18 6.8%	34 12.9%	55 20.9%	72 27.4%	84 31.9%	3.6	1.2
<b>Aggregate Mean and Standard Deviation</b>						<b>3.7</b>	<b>1.2</b>

The question, Nairobi County Government has fully adopted e-land services and land rates and other information are available online, recorded responses as follows. 85(32.3%) of the responses strongly agreed, 75(28.5%) of them agreed whereas 52(19.8%) moderately agreed. Further in addition more, 35(13.3%) disagreed with the statement while 16(6.1%) strongly disagreed. The average mean was 3.7 whereas its respective standard deviation was 1.2 indicating that the responses in average were in tandem that Nairobi County Government has fully adopted e-land services and land rates and other information are available online. Whereas most respondents concurred that Nairobi County Government has fully adopted e-land services and land rates and other information are available online, a significant number 19.4% held dissenting views. This could mean that some of the information pertaining land services may not be easily accessible online.

E-land services have reduced the time it takes in processing various land transactions within the county attracted the following responses; 83(31.6%) of responses strongly agreed with the statement, 80(30.4%) of them agreed whereas 50(19%) respondents moderately agreed. A further, 34(12.9%) disagreed with the statement while 16(6.1%) strongly disagreed. The average and the corresponding standard deviation of the statement were 3.7 and 1.2

respectively implying that the responses were in agreement that E-land services has reduced the time it takes in processing various land transactions within the county. Whereas most respondents concurred that E-land services have reduced the time it takes in processing various land transactions within the county, a significant number 19% held dissenting views. This could mean that some of the land transactions within the county could take longer than expected.

Additionally, the question, E-land services have significantly reduced the chances of corruption in land dealings within the county pointed out the following responses. From the results, 88(33.5%) strongly agreed with the statement, 81(30.8%) of the respondents contacted agreed whereas 51(19.4%) moderately agreed. In addition, 29(11%) disagreed with the statement while 14(5.3%) strongly disagreed. The average and the standard deviation of the statement were 3.8 and 1.2 respectively meaning that the responses were in agreement that E-land services have significantly reduced the chances of corruption in land dealings within the county. Whereas most respondents concurred that E-land services have significantly reduced the chances of corruption in land dealings within the county, a significant number 16.3% held dissenting views. This could mean that there could be some isolated cases of corruption with regards land dealings.

Concerning the question, E-land services have significantly reduced the chances of land losses and grabbing because there is proper land records, 94(35.7%) of the responses strongly agreed, 73(27.8%) agreed while 50(19%) moderately agreed. Furthermore, 27(10.3%) disagreed with the statement while 19(7.2%) strongly disagreed. The average and aggregate standard deviation were 3.7 and 1.2 indicating that the responses were in agreement that E-land services had significantly reduced the chances of land losses and grabbing because there is proper land records. Whereas most respondents concurred that E-land services have significantly reduced the chances of land losses and grabbing because there is proper land records, a significant number 17.5% held dissenting views. This could mean that there could be some cases of land losses within the county.

With e-land services, the county Government of Nairobi has been able to locate unregistered land parcels within the City received the responses as follows. From the findings, 78(29.7%) strongly agreed, 82(31.2%) of those contacted agreed whereas 56(21.3%) of the participants moderately agreed regarding the statement. In addition, 32(12.2%) disagreed with the statement while 15(5.7%) strongly disagreed. The average and standard deviation of the statement were 3.7 and 1.2 in that sequence. This implies that the responses were in agreement that with e-land services, the county Government of Nairobi had been able to locate unregistered land parcels within the City. Whereas most respondents concurred that with e-land services, the county Government of Nairobi has been able to locate unregistered land parcels within the City, a significant number 17.9% held dissenting views. This could mean that there could be some existing challenges in locating unregistered land parcels within the county.

Further, concerning the question, E-land services has increased the opportunities that can be tapped in the land sector including identification of vacant lands and putting them in good services, 91(34.6%) of the respondents strongly agreed with regards the statement, 81(30.8%) of them agreed and 50(19%) of them moderately agreed. Furthermore, 21(8%) disagreed with the statement while 20(7.6%) strongly disagreed. The average mean and standard deviation of the responses were 3.8 and 1.2 in that order implying that the responses were in agreement that

E-land services have increased the opportunities that can be tapped in the land sector including identification of vacant lands and putting them in good services. Whereas most respondents concurred that E-land services has increased the opportunities that can be tapped in the land sector including identification of vacant lands and putting them in good services, a significant number 15.6% held dissenting views. This could mean that there could be some existing challenges in locating unregistered land parcels within the county.

With respect to the question, E-land services have increased revenues of the county generated from land rates, 93(35.4%) of the responses strongly agreed, 72(27.4%) agreed whereas 56(21.3%) moderately agreed. In addition, 27(10.3%) disagreed with the statement while 15(5.7%) strongly disagreed. The mean and the line standard deviation were 3.8 and 1.2 indicating that the responses were in agreement that E-land services have increased revenues of the county generated from land rates. Whereas most respondents concurred that E-land services have increased revenues of the county generated from land rates, a significant number 16% held dissenting views. This could mean that the increasing revenues from land rates may not be as significant as may have been expected.

On whether E-land services has increased the efficiency of land use in the county government of Nairobi, 98(37.3%) strongly agreed, 68(25.9%) of those contacted agreed while 50(19%) of the participants moderately agreed regarding the statement. Furthermore, 33(12.5%) disagreed with the statement while 14(5.3%) strongly disagreed. The average and standard deviation of the statement were 3.8 and 1.2 respectively. This implies that the responses were in agreement that E-land services had increased the efficiency of land use in the county government of Nairobi. Whereas most respondents concurred that E-land services has increased the efficiency of land use in the county government of Nairobi, a significant number 17.8% held dissenting views. This could mean that some inefficiencies of land use could still be existing.

Finally, on whether with e-land services, there is increased the effectiveness in accessing land services within the county, 84(31.9%) strongly agreed with the statement, 72(27.4%) of the respondents agreed whereas 55(20.9%) moderately agreed. Furthermore, 34(12.9%) disagreed with the statement while 18(6.8%) strongly disagreed. The average and the standard deviation of the statement was 3.6 and 1.3 in that order meaning that the responses were in agreement that with e-land services, there is increased the effectiveness in accessing land services within the county. Whereas most respondents concurred that with e-land services, there is increased the effectiveness in accessing land services within the county, a significant number 19.7% held dissenting views. This could mean that some inefficiencies regarding access to land services could still be existing.

The aggregate mean and standard deviation for the responses on E-land services were 3.7 and 1.2 respectively. This implies that on average, the responses were in agreement with regards the adoption of e-land services by the Nairobi City County. The results are in concurrence with the postulations of the technology acceptance model. The attitude towards the benefits of e-government services ensures that the county benefits from its adoption. Thus, the adoption of e land services may be determined by their willingness to adopt the e-government services or not. Those who have previously adopted e-government services have reported positive impacts in their performance. The results are also consistent with the findings of Kusmiarto et al. (2021) which postulated that in Indonesia, the land registration activities and land services have adopted digital applications. The assessment specifically aimed at checking and coming up

with a strategy for adopting digital service delivery in land services. This further ensures improving the quality of delivery of land services to the public. However, the results contrast the findings of Njeri et al. (2022) which indicated that in Nyandarua, the provision of land registration services is manual. Thus, many opportunities were being lost in the improvement of the service delivery speed because of delays in technological adoption.

**Descriptive Results for Performance**

A summary of the responses on the questions on performance of Nairobi City County are tabulated in Table 5.

**Table 5: Descriptive Results for Performance of Nairobi City County**

	SD	D	NS	A	SA	M	S Dev
With e government services, the County Government of Nairobi has seen an improvement in Revenue collection	20 7.6%	24 9.1%	60 22.8%	64 24.3%	95 36.1%	3.7	1.3
E-government services have led to efficiency in accessing county government services	13 4.9%	29 11%	52 19.8%	76 28.9%	93 35.4%	3.8	1.2
E-government services have led to improved quality of County Government services	21 8%	25 9.5%	44 16.7%	90 34.2%	83 31.6%	3.7	1.2
E-government services have reduced queues of citizens seeking County Government services	18 6.8%	39 14.8%	53 20.2%	77 29.3%	76 28.9%	3.6	1.2
E-government services have enhanced the productivity of staff in the county	16 6.1%	26 9.9%	56 21.3%	72 27.4%	93 35.4%	3.8	1.2
E-government services have enhanced efficiency in revenue collection by the county	10 3.8%	30 11.4%	49 18.6%	90 34.2%	84 31.9%	3.8	1.1
E-government services have led to increasing utilization of County resources	19 7.2%	28 10.6%	60 22.8%	62 23.6%	94 35.7%	3.7	1.3
E-government services have enhanced fairness in the distribution of County Government resources	16 6.1%	39 14.8%	48 18.3%	74 28.1%	86 32.7%	3.7	1.2
E-government services have increased efficiency in the delivery of services by the County	13 4.9%	24 9.1%	60 22.8%	74 28.1%	92 35%	3.8	1.2
<b>Aggregate Mean and Standard Deviation</b>						<b>3.7</b>	<b>1.2</b>

It can be observed that the question, with e government services, the County Government of Nairobi has seen an improvement in Revenue collection recorded responses as follows; 95(36.1%) of the responses strongly agreed, 64(24.3%) of them agreed whereas 60(22.8%) moderately agreed. Furthermore, 24(9.1%) disagreed with the statement while 20(7.6%) strongly disagreed. The line mean was 3.7 whereas its respective standard deviation was 1.3 indicating that the responses were in agreement that with e government services, the County Government of Nairobi had seen an improvement in Revenue collection. Whereas most respondents concurred that with e government services, the County Government of Nairobi has seen an improvement in Revenue collection, a significant number 16.7% held dissenting views. This could mean that improved revenues collected by the county may not be solely attributed to the adoption of e-government services.

E-government services have led to efficiency in accessing county government services attracted the following responses; 93(35.4%) of respondents strongly agreed with the statement, 76(28.9%) of them agreed whereas 52(19.8%) of the responses moderately agreed. In addition, 29(11%) disagreed with the statement while 13(4.9%) strongly disagreed. The mean and the corresponding standard deviation were 3.8 and 1.2 in that order implying that the responses were in agreement that E-government services have led to efficiency in accessing county government services. Whereas most respondents agreed that e-government services have led to efficiency in accessing county government services, a significant number 15.9% held dissenting views. This could mean that some inefficiencies with regards access to county services could still be existing.

The question, E-government services have led to improved quality of County Government services pointed out the following responses; 83(31.6%) strongly agreed with the statement, 90(34.2%) of the respondents contacted agreed whereas 44(16.7%) moderately agreed. Furthermore, 25(9.5%) disagreed with the statement while 21(8%) strongly disagreed. The average and the standard deviation of the statement was 3.7 and 1.2 in that order meaning that the responses were in agreement that E-government services have led to improved quality of County Government services. Whereas most respondents concurred that e-government services have led to improved quality of County Government services, a significant number 17.5% held dissenting views. This could mean that some inefficiencies with regards access to county services could still be existing.

Regarding the statement, E-government services have reduced queues of citizens seeking County Government services, 76(28.9%) of the responses strongly agreed, 77(29.3%) agreed while 53(20.2%) moderately agreed. Furthermore, 39(14.8%) disagreed with the statement while 18(6.8%) strongly disagreed. The mean and the line standard deviation were 3.6 and 1.2 indicating that the responses were in agreement that E-government services had reduced queues of citizens seeking County Government services. Whereas most respondents concurred that e-government services have reduced queues of citizens seeking County Government services, a significant number 21.6% held dissenting views. This could mean that some of the citizens could still be queuing to access county services.

The statement, E-government services have enhanced the productivity of staff in the county received the responses as follows. From the results, 93(34.5%) agreed strongly, 72(27.4%) of those contacted agreed while 56(21.3%) of the participants moderately agreed regarding the statement. In addition, 26(9.9%) disagreed with the statement while 16(6.1%) strongly disagreed. The average and the standard deviation of the statement was 3.8 and 1.2 following that sequence. This implies that the responses were in agreement that with E-government services have enhanced the productivity of staff in the county. Whereas most respondents concurred that e-government services have enhanced the productivity of staff in the county, a significant number 16% held dissenting views. This could mean that some of the staff in the county could still be underproductive.

Furthermore, with regards the question, E-government services have enhanced efficiency in revenue collection by the county, 84(31.9%) of the respondents strongly agreed with regards the statement, 90(34.2%) of them agreed and 49(18.6%) of them moderately agreed. Furthermore, 30(11.4%) disagreed with the statement while 10(3.8%) strongly disagreed. The line mean and standard deviation of the statement were 3.8 and 1.1 in that order implying that

the responses were in agreement that E-government services have enhanced efficiency in revenue collection by the county. Whereas most respondents concurred that e-government services have enhanced efficiency in revenue collection by the county, a significant number 15.2% held dissenting views. This could mean that some inefficiencies in revenue collection could still be existing.

With respect to the question, E-government services have led to increasing utilization of County resources, 94(35.7%) of the responses strongly agreed, 62(23.6%) agreed whereas 60(22.8%) moderately agreed. In addition, 34(12.9%) disagreed with the statement while 18(6.8%) strongly disagreed. The average and the standard deviation of the statement was 3.7 and 1.3 indicating that the responses were in agreement that E-government services have led to increasing utilization of County resources. Whereas most respondents concurred that e-government services have led to increasing utilization of County resources, a significant number 19.7% held dissenting views. This could mean that some inefficiencies in utilization of revenues could still be existing.

On whether E-government services have enhanced fairness in the distribution of County Government resources, 86(32.7%) strongly agreed, 74(28.1%) of those contacted agreed while 48(18.3%) of the participants moderately agreed regarding the statement. Furthermore, 28(10.6%) disagreed with the statement while 19(7.2%) strongly disagreed. The average and the standard deviation of the statement was 3.7 and 1.2. This implies that the responses were in agreement that E-government services have enhanced fairness in the distribution of County Government resources. Whereas most respondents concurred that e-government services have enhanced fairness in the distribution of County Government resources, a significant number 17.8% held dissenting views. This could mean that some inequality in the distribution of resources within the county.

Finally, on whether E-government services have increased efficiency in the delivery of services by the County, 92(35%) strongly agreed with the statement, 74(28.1%) of the respondents agreed while 60(22.8%) moderately agreed. Furthermore, 39(14.8%) disagreed with the statement while 16(6.1%) strongly disagreed. The average and the standard deviation of the statement was 3.8 and 1.2 in that order meaning that the responses were in agreement that E-government services have increased efficiency in the delivery of services by the County. Whereas most respondents concurred that e-government services have increased efficiency in the delivery of services by the County, a significant number 20.9% held dissenting views. This could mean that some inequality in the delivery of services within the county.

The aggregate mean and standard deviation for the responses on performance of Nairobi City County were 3.7 and 1.2 respectively. This implies that on average, the responses were in agreement with regards the adoption of e-Government services and performance of Nairobi City County. The results are consistent with the findings of Naeku and Juma (2021) which concluded that the application of e-business services delivery in customs licensing, cost-effective service delivery and clearance, business registration and taxation, which are instrumental in reducing the costs of doing business. It does this by reducing the effort, time and costs of complying with the regulations as thus enhancing the efficiency of doing business. Thus, it is ultimately essential in enhancing the performance of the organization.

### Correlation between e-government services and performance of Nairobi City County

Correlation analysis serves to establish the strength and direction of association between e-government services and performance of Nairobi City County. In correlation analysis, a threshold of ( $r < 0.3$ ) is considered low implying a weak relationship between the variables. A moderate Correlation falls within  $0.3 \leq r < 0.7$  indicating a moderate relationship between the variables. High Correlation is when  $r \geq 0.7$ . This indicates a strong relationship between the variables. The correlation results are outlined in Table 6. Notably, the following key was adopted in presenting the correlation analysis; P.N.C.C – Performance of Nairobi City County, EP- E Parking, EBL- E-Business Licensing, EJA- E Job Application, ELS – E Land Services.

**Table 6: Correlation Results**

		P.N.C.C	EP	EBL	EJ	ELS
P.N.C.C.	Pearson Correlation	1				
	Sig. (2-tailed)					
	N	263				
EP	Pearson Correlation	.533**	1			
	Sig. (2-tailed)	0.000				
	N	263	263			
EBL	Pearson Correlation	.504**	.489**	1		
	Sig. (2-tailed)	0.000	0.000			
	N	263	263	263		
EJA	Pearson Correlation	.541**	.512**	.478**	1	
	Sig. (2-tailed)	0.000	0.000	0.000		
	N	263	263	263	263	
ELS	Pearson Correlation	.521**	.522**	.560**	.570**	1
	Sig. (2-tailed)	0.000	0.000	0.000	0.000	
	N	263	263	263	263	263

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

It is clear from the results in Table 6 that e-parking had a positive and statistically significant correlation with the performance of Nairobi City County ( $r=0.533$ ,  $p=0.000 < 0.05$ ). This means that e-parking has a positive impact on performance of Nairobi City County. E-Business Licensing on the other hand had positive and statistically significant relationship ( $r=0.504$ ,  $p=0.000 < 0.05$ ) with performance of Nairobi City County implying that e-business licensing positively affects performance of Nairobi City County.

Furthermore, the correlation between e-job application and performance of Nairobi City County from the analysis of the results of the study portrayed a positive and statistically significant correlation ( $r=0.541$ ,  $p=0.000 < 0.05$ ). Thus, e-job application positively affects performance of Nairobi City County. Finally, the correlation between e-land services and performance of Nairobi City County from the analysis of the results of the study portrayed a positive and statistically significant correlation ( $r=0.521$ ,  $p=0.000 < 0.05$ ). This has the implication that e-land services positively affected performance of Nairobi City County.

### Regression Analysis

Regression analysis was carried out to determine the linear relationship between e-government services (e-parking, e-business licensing, e-job application and e-land services) and the performance of Nairobi City County. The analysis is significant in answering the research questions. Table 7 outlines the model summary results.



**Table 7: Model Summary**

<b>R</b>	<b>R Square</b>	<b>Adjusted R Square</b>	<b>Std. Error of the Estimate</b>
.657a	0.432	0.423	0.40483

Predictors: (Constant), E-land Services, E-Parking, E-Business Licensing, E-Job Application

It can be observed in Table 7 that the estimated model explains to a tune of 43.2% of the total variations in the performance of Nairobi City County. This is explained by the R Squared value of 0.432. This implies that the independent variables under study (e-parking, e-business licensing, e-job application and e-land services) are significant in explaining the performance of NCC. Table 8 presents the ANOVA results.

**Table 8: ANOVA**

	<b>Sum of Squares</b>	<b>Df</b>	<b>Mean Square</b>	<b>F</b>	<b>Sig.</b>
Regression	32.135	4	8.034	49.021	.000b
Residual	42.283	258	0.164		
<b>Total</b>	<b>74.418</b>	<b>262</b>			

Dependent Variable: Performance of Nairobi City County

Predictors: (Constant), E-Land Services, E-Parking, E-Business Licensing, E-Job Application

The outcomes presented in Table 8 outlines the statistical significance of the estimated model. The results imply that the estimated model is statistically significant as provided by the estimated p value  $0.000 < 0.05$  as well as the estimated F value (49.021) less than the F critical 1.94486 in the F tables. The estimated results can hence be used to give reliable inference. From the F values observed, the null hypothesis is rejected and alternative accepted concluding that e government services had a statistically significant influence on the performance of Nairobi City County. Table 9 presents the estimates of the regression coefficients.

**Table 9: Regression Coefficients**

	<b>Unstandardized Coefficients</b>		<b>Standardized Coefficients</b>	<b>t</b>	<b>Sig.</b>
	<b>B</b>	<b>Std. Error</b>	<b>Beta</b>		
(Constant)	0.861	0.207		4.155	0.000
E-Parking	0.212	0.053	0.237	3.995	0.000
E-Business Licensing	0.177	0.057	0.186	3.105	0.002
E-Job Application	0.232	0.058	0.242	3.978	0.000
E-Land Services	0.153	0.063	0.156	2.439	0.015

Dependent Variable: Performance of Nairobi City County

The dependent variable of the study was the performance of Nairobi City County. The independent variables were e-parking, e-business licensing, e-job application and e-land services. Upon carrying out a regression analysis, the constant of the estimated model was positive (0.861). This gives an implication that other than the identified independent variables under study, there are other factors not considered in the study that are significant in explaining the variations in the performance of Nairobi City County.

The estimated regression coefficient for e-parking was positive and statistically significant ( $b=0.212$ ,  $p=0.000 < 0.05$ ). This implies that a unit improvement in e-parking services by the Nairobi City County would yield a significant 0.212 units improvement in the performance of Nairobi City County. Thus, e-parking is a significant determinant of the performance of Nairobi

City County. Moreover, the null hypothesis was rejected and concluded that e-parking services had a statistically significant influence on the performance of Nairobi City County. The results of the study are consistent with the findings of Maulida et al. (2021) in Bandung City Indonesia, which concluded that E parking is instrumental in facilitating parking users by improving the services such provision of timely information including checking the availability of parking spaces as well as paying parking charges at the user convenience.

However, the findings of Nonci et al. (2021) pointed out that e parking has not been fully utilized in Makassar as few parking points have adopted e parking and the presence of illegal parking in Makassar City. Many officers responsible for managing parking spaces are engaged illegal parking, as there is no effective government control. It is evident that the supervision by the government is weak and there is no effective planning. There effective government intervention is necessary to control parking and enhance the revenue collection through parking.

Furthermore, the findings of Yutanto et al. (2018) concluded that Smartphone parking system in Indonesia is beneficial as it automates the parking services and facilitates the services such as managing the vehicle data as well as reporting and recording exit and entry vehicles. The system is also critical in managing the parking charges and hence, generally the system is beneficial to the government in managing traffic and revenue collection. However, the findings of Dawud et al. (2021) indicated that the City government of Bandung had adopted e parking services, which initially due to constrained user community awareness, rigid institutions as well as low commitment by the field officers, did not provide a significant increase in retribution revenue. The results of the study are inconsistent with the findings of Kang'ethe (2020) which indicated that Nairobi County still applies the manual parking, which is associated with minimal levels of correctness and transparency. The system is inefficient, inconsistent and costly as it involves manpower which affects the productivity of the county.

The regression coefficient for e-business licensing was positive and statistically significant ( $b=0.177$ ,  $p=0.002<0.05$ ). This implies that a unit improvement in e-business licensing services by the Nairobi City County would yield a significant 0.177 units improvement in the performance of Nairobi City County. Therefore, the null hypothesis was rejected and concluded that e-business licensing services has a positive and significant influence on performance of Nairobi City County. Thus, e-business licensing is a significant determinant of the performance of Nairobi City County. The results of the study concur with the findings of Kamau (2022) which concluded of a link between service delivery and e business. With e business, the delivery of services has seen great improvement as it save time as well as the costs of accessing crucial business services. The findings of Naeku and Juma (2021) further concurred with these results and indicated that the application of e-business services delivery is instrumental in reducing the costs of doing business by reducing the effort, time and costs of complying with the regulations as thus enhancing the efficiency of doing business.

Furthermore, the findings of Francisco et al. (2020) argued that spending more time and spending a higher proportion of total business costs dealing with government regulations were associated with a lower probability of an SME growing in terms of revenue and number of employees. Jin et al. (2022) in the findings concluded that Food Safety Law licensing gives the vulnerable an equal opportunity to do businesses, as the traders would be able to have a display of the FSL license on the platform. Further, Maulana et al. (2020) concluded that a one-stop

government in licensing bio-businesses ensures that all the licensing services and the obligations therein are provided online which enhance transparency and performance and improves on the effectiveness and performance of the various bio-business entities.

The regression coefficient for e-job application was positive and statistically significant ( $b=0.232$ ,  $p=0.000<0.05$ ). This implies that a unit improvement in e-job application services by the Nairobi City County would yield a significant 0.232 units improvement in the performance of Nairobi City County. The null hypothesis was rejected and concluded that there is a statistically significant relationship between e-job application services and performance of Nairobi City County. Thus, e-job application is a significant determinant of the performance of Nairobi City County. The results of the study are consistent with the findings of Buya and Kambu (2022) which pointed out that electronic recruitment of county staff positively and significantly influences public service delivery. Fully informing applicants online about the qualifications required performing the job before being hired using online platforms to attract applicants for different jobs, fully assessing and interviewing applicants online would improve public service delivery. Further, Mosonik et al. (2022) indicated e recruitment comes with numerous benefits in comparison with the traditional recruitment. The commercial banks in Nakuru have resorted to e recruitment because of its efficiency in time and costs as well as enhancing the quality of staff hired and reduced error levels thus enhancing organizational performance.

In addition, the results further concurred with the findings of Malekano (2021) which pointed out that recruiting electronically is beneficial as the vacancies can easily be assessed online, there is confidentiality in job application, and the job applicants can easily be sorted according to jobs applied as well as the qualification. The system also optimizes the job application time and resources. The findings of Nguti and Mose (2021) concluded that there was a significant between selection function and e-recruitment and selection function on the outcomes of HELB. Online selection, advertisement and job request influences HELB outcomes. Further, Singh (2022) pointed out that adopting e recruitment practices enhances the recruitment of quality and talented labour that is crucial for the success of the entity.

The regression coefficient for e-land services was positive and statistically significant ( $b=0.153$ ,  $p=0.015<0.05$ ). This implies that a unit improvement in e-land services by the Nairobi City County would yield a significant 0.153 units improvement in the performance of Nairobi City County. Thus, e-land services is a significant determinant of the performance of Nairobi City County. The results of the assessment are consistent with the findings of Kusmiarto et al. (2021) which postulated that in Indonesia, the land registration activities and land services have adopted digital applications improving the quality of delivery of land services to the public. The findings of Rana et al. (2017) indicate that e-district services provide citizens with services such as land revenue services including certificates related to land. E-District system is a transactional e-Government system, which citizens can use to pay for services such as land registry fees through the website.

However, the results are inconsistent with the findings of Njeri et al. (2022) which indicated that in Nyandarua, the provision of land registration services is manual. Thus, many opportunities were being lost in the improvement of the service delivery speed because of delays in technological adoption. Inconveniences in the storage of data as well as the

opportunities lost in enhancing the effectiveness and efficiency in the delivery of services to enhance satisfaction of customers was further reported.

## **CONCLUSIONS AND RECOMMENDATIONS**

### **Conclusions**

The study concluded that e-parking is a significant determinant of the performance of Nairobi City County. Thus, a unit improvement in e-parking services by the Nairobi City County would yield a significant improvement in the performance of Nairobi City County. E parking is instrumental in facilitating parking users by improving the services such provision of timely information including checking the availability of parking spaces as well as paying parking charges at the user convenience. It automates the parking services and facilitates the services such as managing the vehicle data as well as reporting and recording exit and entry vehicles, management of the parking charges and hence, is beneficial to the government in managing traffic and revenue.

The study further made the conclusion that e-business licensing is a significant determinant of the performance of Nairobi City County. Thus, a unit improvement in e-business licensing services by the Nairobi City County would yield a significant improvement in the performance of Nairobi City County. With e business, the delivery of services has seen great improvement as it saves effort, time as well as the costs of accessing crucial business services and thus enhancing the efficiency of doing business. A one-stop Government in licensing businesses ensures that all the licensing services and the obligations therein are provided online which enhance transparency and performance and improves on the effectiveness and performance of the various bio-business entities.

A conclusion was also made that that e-job application is a significant determinant of the performance of Nairobi City County. Thus, a unit improvement in e-job application services by the Nairobi City County would yield a significant improvement in the performance of Nairobi City County. Electronic recruitment of county staff is beneficial as it fully informs applicants online about the qualifications required to perform the job before being hired, using online platforms to attract applicants for different jobs, fully assessing and interviewing applicants online would improve public service delivery. It is efficient in time and costs as well as enhancing the quality of staff hired and reduced error levels thus enhancing organizational performance. It also enhances confidentiality in job application, and the job applicants can easily be sorted according to jobs applied as well as the qualification. The system also optimizes the job application time and resources.

Finally, the study concluded that e-land services is a significant determinant of the performance of Nairobi City County. Therefore, improving e-land services of the Nairobi City County by a unit would yield a significant improvement in the performance of Nairobi City County. The adoption of digital land services improves the quality of delivery of land services to the public. It provides citizens with services such as land revenue services including certificates related to land. However, the delays in the technological adoption in the delivery of land services leads to lost opportunities in enhancing the efficiency and effectiveness in the delivery of services to enhance satisfaction of customers was further reported.

## **Recommendations**

### **Recommendations to E-Parking Services**

The study recommends that the county government of Nairobi ought to fully implement e-parking services to tap its benefits. This enhances the revenues collected from parking charges by improving efficiency in parking. This includes provision of timely information such as availability of parking spaces, managing the vehicle data as well as reporting and recording exit and entry vehicles thus improving performance.

### **Recommendations to E-Business Licensing Services**

The study further recommends that Nairobi City County ought to adopt fully the e-business licensing services as it enhances its performance. The service is beneficial to both the citizens and the county. To the citizens, utilizing the service saves effort, time and costs of accessing crucial business services and thus enhancing the transparency and efficiency of doing business. To the county government, the service enhances the performance of the county through improved revenue collection through curbing unlicensed business outlets.

### **Recommendations to E-Job Application Services**

The study further recommends that Nairobi City County ought to tap on the benefits utilizing e-job application services. The service would be of benefit to both the county and the citizens. To the county, the service would reduce the costs of hiring and improve the quality of the staff hired. To the citizens, the service would enhance transparency; provide timely information on the available jobs as well as qualifications as well as enhancing their application processes.

### **Recommendations to E-Land Services**

The study finally recommends that owing to the benefits of adopting technology in the delivery of land services to the citizens, Nairobi City county ought to fully adopt e-land service to tap on these benefits. The service would ensure accurate mapping of the available land parcels belonging to the government and provides citizens with services such as land revenue services including certificates related to land.

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