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Influence of Finance Digitization on Revenue Collection in Trans-Nzoia County, Kenya

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Abstract: **Counties in Kenya have adequate revenue based in financing their current services, but the collection levels are often low. Thus the counties are striving to re–engineer strategies towards improvement of revenue collections since it is their mandate to offer quality and timely service delivery to the residents and they cannot proceed well without enough finances to run crucial activities. The study therefore seeks to investigate the influence of finance digitization on revenue collection in Trans-Nzoia County. The specific objective was to find out how electronic invoicing influence revenue collection process in Trans-Nzoia County. The research methodology included descriptive research design with target population of 195 respondents comprising management and directors of revenue staffs, revenue collecting and reporting staffs. Proportional stratified random sampling technique was used to obtain a sample size of 100 respondents from the target population. Open and closed ended questionnaires was used and lastly the data collected was analyzed quantitatively and qualitatively and presented in form of tables, pie charts and bar graphs using Statistical Package for Social Science (SPSS). The study concluded that the adoption of electric invoicing by county governments not only improves revenue collection but also accurate and timely tax compliance facilitates revenue collection process in the revenue department. The study recommended that revenue collection officers should adopt electronic invoicing as it as accrued benefits in the revenue collection processes especially it helps improve accuracy and timely tax compliance. To the government and policy makers, this study recommends that training should be offered to county revenue officers on the importance of financial digitization and its contribution to enhancing revenue collection. The government agencies in charge of all revenue collection should also organize seminars for training on critical financial software skills and make it a perquisite for all revenue departments.**

Keywords: **Electronic Invoicing, Revenue Collection.**

1. INTRODUCTION

The adoption of finance digitalization in revenue collection is very critical in enabling the governments to run efficiently and also in improving revenue collection (Jepkoech, Tibbs and Tsuma, 2021). Digitalization of revenue collection process plays an important role in reducing errors, cost reductions and it also allows for standardization of the operational procedures (Adams, 2013). The need for revenue digitalization emanated from the desire to make the revenue collection process effective, cheap and reliable. The devolved units and governments around the world depend on revenue to run their affairs (Bochere, 2021). However, the revenue collected by some governments is not sufficient to facilitate the provision of quality services. The shortage in revenue demands that the governments discover new ways and methods of revenue collection. For Gitaru (2017) sound revenue collection procedures by the decentralized governments is necessary prerequisite in achieving optimal revenue collection. Globally, revenue collection is a fundamental aspect of every government because it allows the

government to operate and run development activities (Balunywa et al. 2014). However, revenue collection has not been efficient due to several challenges such as corruption that has resulted in several reforms targeting revenue collection methods (Aghion, Akcigit and Kerr, 2016).

In Africa, the adoption of finance digitalization of revenue collection is still in its infant stages. Uganda is one of the countries that has implemented digitalization in revenue collection (Omwono, John and Kevin, 2016). The experience of Uganda revealed that there is a positive correlation between digitalization and revenue collection. Digitalization saves time for tax clearance and contributes towards the efficiency of revenue collection. The financial services sector in most African countries was traditionally characterized by an underdeveloped market. This market includes traditional banks, building societies, savings and credit-offering financial institutions, and microfinance houses. The services offered include savings, credit, withdrawals, and at times the facilitation of payments (Munoz et al. 2022). Over the past decade, the growth of DFS has ushered in a wide range of financial services provided by digital means. These include savings, remittances, payments, credit, and insurance. According to Munoz et al. (2022, p. 11), "Digital financial channels refer to the internet, mobile phones, automated teller machines (ATMs), point of sale (POS) terminals, etc.". New entrants into the digital financial services sector also include mobile networks and Fintech, among others, and traditional banks have digitally transformed their operations to make room for digital financial services. Despite the possible variations in digital financial services offered across African countries, there is an urgent need to assess their taxation.

Kenya like many other developing countries around the world experiences the revenue collection challenges. Oduor et al. (2016) pointed out that the digitization of revenue collection process by some counties in Kenya has resulted into improved service delivery and revenue collection. The study conducted in Kiambu County on impact of automated revenue collection system showed that automated revenue collection system resulted into increased revenues and improved visibility of county revenues and trends (Kosaye, 2010). Revenue collection in Kenya has been majorly run by both the Kenya Revenue Authority (KRA) and the county government. The use of the ICT and the manual systems both had been used to collect revenues in Kenya. (Maisiba & Atambo, 2016). The use of ICT on revenue collection in local authorities has boost the revenue collection however the revenue has not been to its optimal peak level of collection due to some hindrances factors which inhibits maximum revenue collection. Mercy W. (2013) study in Kenya on Factors Affecting Revenue Collection in Local Authorities in Municipal Council of Nyeri found out that the revenue collection processes was affected by information technology despite the fact that it was inaccessible. A study carried out by (Momanyi and Nyandusi, 2012) on the determinants of revenue collection in developing countries, findings indicated that Kenya was among many developing countries struggling with the problem of tax non-compliance by the tax payers affect revenue collection negatively.

Trans-Nzoia County has not fully implemented in its sub-counties due to some limiting factors such as lack of enough resources and policy framework on finance digitization (East African Digital Business week Newspaper, 2014). Finance digitalization adoption for revenue collection in the counties; maximizes returns and promotes transparency. However finance digitization on revenue collection had some determinants such as budget allocation which hinders the implementation (Business Digital Business Daily Nation, 2015). Digital financial payment generally refer to the far-reaching technologies available to perform financial services from a widespread range of providers to an extensive category of recipients. This is possible by use of digital remote means including e-money, mobile money, card payments, and electronic funds transfers (Asian Development Bank, 2016). Digital financial payment (DFS) are basically about sparing cash, getting to credit and protection, and performing exchanges through advanced channels like cell telephones, cards, PCs, tablets, et cetera (Martin et al., 2016). Digital financial payment products allow users to access funds from far-flung business people, relatives and friends during moments of crisis, reducing the likelihood that they will fall into poverty, to begin with (Klapper, El- Zoghbi & Hess, 2016). Advanced budgetary administrations, for example, versatile cash furnish people with more prominent accommodation, protection, and, as a rule, improved security contrasted with putting away money at home or going with money (Villasenor, Darrell & Lewis, 2015).

Computerized back likewise assumes an essential part for little organizations as it gives them access to fund alongside secure budgetary items, electronic installment frameworks and an opportunity to assemble a money related history (Mujeri, 2015). Digital financial payment addresses particular unending difficulties in the worth chain particularly those difficulties that need money related administrations arrangements, and where the conventional account division is not completely tending to the requests in rustic markets (Martin et al., 2016). Computerized money related administrations are a win–win for purchasers and suppliers. Customers can relocate their cash to a more secure environment, execute and deal with their

record in a more advantageous and prompt way and as it were that frequently saves them money (Peake, 2012). Digital payments also improve the delivery of government anti-poverty programs by reducing opportunities for corruption and ensuring funds reach their intended recipients (Klapper, El-Zoghbi & Hess, 2016).

Digital financial payment encompass electronic installments, including retail installments via card or cellular telephone (Dayadhar, 2015). Specialists are the foundation to any DFS and they empower clients get to their records from any operators or country stores, where they can trade out and money out from their record without expecting to get to conventional physical saving money base (European Investment Bank, 2014). Mobile Financial Services or mobile money are also form the core part of DFS and as phone-based payments (Dayadhar, 2015). Mobile money services are used to keeping money administrations, execute budgetary exchanges and cover both value-based and non-value-based administrations (Martin et al., 2016). Another sort of DFS is web saving money, which alludes to a web entry by which customers can utilize different sorts of keeping money administrations going from bill installment to making speculations (Nicoleta, 2009).

County governments in Kenya originate from the promulgation of the constitution of Kenya in the year 2010. Devolved governance were distributed to all 47 counties in Kenya. They were meant for good effective governance and efficient service delivery to the citizens of the entire Nation. County governments requires efficient and reliable sources of revenue for them to run their operations effectively (E. A. Tax, 2014). County governments had constitutionally powers to imposed taxes and charges on various sections on the economy in within their areas of jurisdiction as per the constitution of Kenya; Article 209. Counties gets it revenue from various sources such as car parking, single business permit, rates, rent and other sources allocation from the national government. Counties uses these revenues for various development projects in the respective counties for the main purpose of service delivery to the citizens.

The bodies which are responsible for collecting revenue in Kenya is the national government through Kenya Revenue Authority and the County governments. KRA has digitized its system of revenue collection. For instance initially since 1989 it was using a system called Bishop office Freights Forwarders Integrated Network (BOFFIN) and now it has upgraded to electronic system called Simba as from 2005 to date. Counties too have not been left behind; Nairobi county government has launched JamboPay system which it will aid on revenue collection and management (Muthama, 2013).

Revenue collection among the counties enables them to acquire assets which are not liable to debt and which the government uses to develop its economy and improves living standards of its people as well as better service delivery. However, revenue collection in the developing economies in counties has not always been as effective as it should be (Ngotho & Kerongo, 2014).To eliminate or significantly reduce corruption, the e-payment revenue collection project provides an alternative means of payment of county revenue that do not require cash to exchange hands (Kinyanjui & Kahonge, 2013). Despite the literature review of the studies in various countries and in Kenya on the factors affecting the revenue collection process, there are limited or no review relating to County governments in Kenya, therefore this study would fill the gap based on the limited information in Kenya and other countries. The process of revenue collection in Kenya faces several challenges making it difficult for Counties to generate sufficient funds to provide quality service delivery. World Bank (2014) pointed out that donor aids, statutory grants and county levies are not adequate to provide enough revenues for county governments. Kosaye (2018) established that low levels of revenue collection in counties are due to ineffective revenue mobilization procedures, inadequate and ineffective revenue administration and low quality of staffs.

Revenue department in county governments are very instrumental in any government due to the value addition to the society, the public and other related stakeholders. Despite the fact that reforms are regularly made by the central tax system in many African countries that contribute to efficiency in revenue collection, there are inconsistent levels of collections in state county governments as evidenced by the influence of several factors in the revenue collection authorities (Bikas & Andruskaite, 2013). The factors related to difficulty in revenue collection include taxpayers' resistance as well as their high level of ignorance. According to Jepkoech, Tibbs and Tsuma (2021) revenue collection in the county governments has failed because most county governments are unable to meet their targets. Additionally, there is overreliance on the national government to fund the county governments due to low levels of revenues collected in counties which is not sufficient to enable them run the county governments effectively. For instance, Nandi county government failed to collect enough revenues as it had been targeted between 2017/2018. The controller of Budget report (2019) pointed out that the county failed due to lack of capacity to mobilize enough revenues. The report further cited that the inability for Nandi County to collect enough revenue is directly linked to absence of sound revenue collection system. Adenya and Muturi (2017) pointed

out that revenue collection challenges facing counties originates from factors such as lack of information technology infrastructure, inadequate capacity among the revenue collecting staffs and corruption in the devolved governments.

In view of the discussion aforementioned, it is evident that none of the previous studies have focused on the correlation between finance digitalization and revenue collection in the county government of Trans Nzoia. Therefore this study seeks to fill this gap by investigating the influence of adoption of electronic invoicing on revenue collection in Trans Nzoia County-Kenya.

2. EFFECTS OF ELECTRONIC INVOICING ON REVENUE COLLECTION

In the state of São Paulo, Saran (2012) demonstrates the enormous leap in efficiency obtained by the State Treasury. Among the improvements cited are assisting the fight against unfair competition, the simplification of consulting obligations and the cost reductions achieved in terms of data and the consumption of paper. Mattos et al. (2013) and Naritomi (2016) studied the São Paulo Electronic Invoice and concluded that there was a 2% increase in the collection from the tertiary sector and an increase in revenues of 22% over four years for the retail sector. However, the focus of both of these studies was not the EI program, but rather the fiscal incentive program which uses EIs. Mello, Dias, Fontana and Fernandez (2009a) cover the main concepts of the operational model of EIs adopted by countries such as Chile, Brazil, Ecuador, Colombia and Mexico. Later Mello, Dias, Fontana and Fernandez (2009b) considered this program to be the most important change in this paradigm, due to the integration of the government's taxation administration bodies to make an efficient form of tax assessment viable in real time and make electronic cross-referencing possible in the battle against fraud and tax evasion. Bărbuţă-Mişu (2011) classified factors that contribute to tax compliance into economic factors including tax rates, tax audit, income level, and potential penalties for noncompliance, and noneconomic factors including attitude toward taxes, the personal, social, and national norms, and the perceived fairness of the tax system. Although electronic tax administration such as electronic registration, e-filing, and e-invoice is increasingly adopted in many countries, research on its effect has been surprisingly limited.

Ainsworth (2006, pp. 929-930) suggested a "digital VAT" as and efficient national consumption tax for the United States to contemplate, stressing that "in terms of the critical accuracy of the automated processes, the D(igital)-VAT relies on the inherent "self-checking" attribute of a creditinvoice VAT. (….) DVAT's automation of the invoice flows will allow this self-checking function to be measured, assured, and verified." Yilmaz and Coolidge (2013) analyzed the effect of e-filing on tax compliance costs in developing countries and showed that if policy implementation of e-filing were improperly managed (e.g., requiring taxpayer's to report both e-filing and paper filing), the tax compliance cost might raise the total compliance costs. Bird and Oldman (2000) demonstrated in a Singaporean case study that Singapore successfully introduced integrated computerized tax administration not by simply introducing new technology to tax administration but by completely reengineering tax administration, improving taxpayer service, and facilitating compliance.

PricewaterhouseCoopers (2010) presented mandatory e-invoicing as one of the alternative VAT collection methods to the European Commission indicating that under this model "tax authorities gain access to information on sales transactions at a very early stage, i.e. at the time the invoice is issued." Limited or no research has not been carried out on revenue collection and specifically on the influence of finance digitization on revenue collection in Trans-Nzoia County, most research studies carried out focus on finance and other areas different from finance digitization. Most of the research carried out in Kenya focus on revenue generation in counties, Nairobi stock exchange and other parastatals that are not related to Trans-Nzoia County government. All the literature studied shows that previous researchers only focused on a few variables or other topics of innovations while this study covers additional variables that were omitted by previous studies. Tchouassi (2012 examined the impacts of mobile phones on banking services. This study attempts to discuss the use of mobile phones to extend banking services to the poor, vulnerable and unbanked population in the society. However it does not explain how the m- banking services performed will affect the revenue collection. Mugodo E, (2016); Focused on the effects of electronic banking on financial performance of commercial Banks in Kenya. The study focused on associations between the return on assets and the electronic banking variables (ATM value of transactions, mobile banking value of transactions and internet banking value of transactions) however this study only focuses on mobile banking technology and not finance digitization on revenue collection.

3. METHOD

The study used descriptive research design and inferential statistics in analysis. The main purpose of using this type of design is that it assessed the influence of finance digitization on revenue collection in Trans-Nzoia County. The target population for this study consisted of: 11 directors and management of revenue staffs, 184 revenue reporting and collecting staffs. The approach of selecting the sample size is the proportional stratified random sampling technique and was applied fairly to 195 participants (Foster et al., 2010). The questionnaire used was structured to ensure uniformity of responses and contained both open ended and closed ended questions. The questionnaire had 2 sections; one dealing with general information on the participants, and section two which seeks information on the effects of digital financing on revenue collection and to what extent. Secondary data provided us with a theoretical background to the research problem and was obtained from past studies, journals, books and reports. The primary data was collected using appropriate research instruments mainly through administration of questionnaires and interviews to the respondents from the different commercial banks. A pilot study was carried out prior to data collection to a pilot group of 18 respondents from selected revenue staff from Uasin-Gishu County to ensure validity and reliability of the results to test the validity and reliability of the data collection instrument. The data was then coded and checked for any errors and omissions (Cooper & Schindler, 2003) and processed with help of a computer Statistical Package for Social Sciences (SPSS) program; that generates quantitative reports through tabulations, percentages, and measure of central tendency. The data was subjected to a regression analysis to measure the relationship between the finance digitization and revenue collection.

4. DISCUSSION

This study further analyzed the effects of electronic invoicing on revenue collection on a Likert scale and the absolute percentage values. The pertinent results are presented in Table 4.1.

Table 4.1: Influence of Electronic Invoicing on Revenue Collection

DERIVATIVE	SD	D	NS	A	SA
Cost savings (Lowers printing, storing and administrative costs) %	5.27	9.48	0.00	48.44	36.86
Provides a more secure and accessible information storage %	20.00	8.42	0.00	17.90	53.70
Enhances integration of invoice issuance with other internal and external processes %	10.53	12.64	6.32	40.01	30.54
Facilitates real-time monitoring of taxable transactions %	13.69	17.90	2.11	41.07	25.27
Reduce tax submission errors %	8.42	27.38	0.00	14.74	49.49

Key: **SD:** Strongly Disagree**, D**: Disagree**, NS:** Not Sure**, A:** Agree**, SA:** Strongly Agree

The study established that respondents were in agreement that electronic invoicing affects revenue collection in Trans Nzoia County, on whether electronic invoicing helps in cost savings as it lowers printing, storing and administrative costs, majority of the respondents 48.44% agreed with this view closely followed by 36.86% of the respondents who strongly agreed with this opinion. 9.48% of the respondents disagreed with the view while the rest 5.27% of the respondents strongly disagreed with the influence of electronic invoicing on cost savings.

Out of 95 respondents, more than half of the respondents 53.70% strongly agreed that electronic invoicing provides a more secure and accessible information storage respondents with 17.90% of them agreeing with the statement. 20.00% strongly disagreed with the opinion while the rest 8.42% disagreed with the opinion.

It is also evident that most respondents 40.01% agreed on the opinion that electronic invoicing enhances integration of invoice issuance with other internal and external processes closely followed by 30.54% of the respondents who strongly agreed with the view. However 12.64% of the respondents disagreed with the opinion with 10.53% strongly disagreed with the rest 6.23% being not sure.

It is further noted that most respondents 41.07% agreed with the view that electronic invoicing facilitates real-time monitoring of taxable transactions, 25.27% of the respondents strongly agreed that indeed E-invoicing facilitates monitoring of taxable incomes. 17.90% of the respondents disagreed with the statement with 13.69% strongly disagreeing with a least percentage of respondents 2.11% stating that they were not sure.

Electronic invoicing reduces tax submission errors as evident with majority of the respondents 49.49% strongly agreed that to a higher extent tax submission errors is minimized due to adoption of electronic invoicing, 14.74% agreed with the view. Furthermore the findings as indicated in table 4.1 above indicates that 27.38% of the respondents disagreed with the opinion with 8.42% strongly disagreeing. This implies that electronic invoicing in the revenue department is a critical factor in revenue collection in Trans Nzoia County.

4.1 Inferential Analysis

4.1.1 Pearson Correlation

The study sought to establish the strength of the relationship between independent and dependent variables of the study. Pearson correlation coefficient was computed at 95 percent confidence interval (error margin of 0.05). Table 4.2 illustrates the findings of the study.

Table 4.2: Correlation Matrix

		Revenue collection
Electronic invoicing	Pearson Correlation	.270**
	Sig. (2-tailed)	.000
	N	95

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

As shown in Table 4.2, the relationship between electronic invoicing and revenue collection was weak, positive and significant ($r = 0.270$; $p < 0.01$). This means that the higher the use of electronic invoicing the higher the amount of revenue collected and vice versa. This implies that the revenue department staff should maximize the use of electronic invoicing in order to ensure the revenue collection success is enhanced.

4.1.2 Multiple Linear Regression

The study used multiple regression analysis to determine the relationship between independent (internal digital financial audit, digital financial payment, electronic invoicing and digital finance information storage and retrieval) and dependent variable (revenue collection).

4.1.2.1 Coefficient of Determination (R^2)

Table 4.3: Multiple Regression Model Summary

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.271[a]	.074	.064	.65881

a. Predictors: (Constant), financial digitization

Table 4.3 illustrates the model summary used in this study, Adjusted R squared is coefficient determination of which tells us the variation in the dependent variables of the study due to changes in the independent variables, from the findings , the value of adjusted R squared was 0.064 an indication there was variation of 6.4 % on revenue collection due to changes in factors of finance digitization, R is correlation coefficient which shows the relationship between the study variables R indicated positive value 0.271. An indication that there exists a reasonable linear relationship between finance digitization and revenue collection.

4.1.2.2 Analysis of variance

Table 4.4: Analysis of variance (ANOVA[a])

Model		Sum of Squares	df	Mean Square	F	Sig.
1	Regression	3.207	1	3.207	7.389	.008[b]
	Residual	40.365	94	.434		
	Total	43.572	95			

a. Dependent Variable: Revenue collection process

b. Predictors: (Constant), electronic invoicing.

Table 4.4 illustrates the Analysis of Variance (ANOVA) which assesses the overall significance of the model. According to the table P<.05, (0.008), indicating that the regression model was useful in the study.

Table 4.5: Regression Coefficients

Model	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	**Std. Error**	**Beta**		
(Constant)	1.246	.138		9.050	.000
Electronic invoicing	.012	.042	.017	.276	.026

The regression function was derived from table 4.5 above; $Y=1.246+0.012x_3$

The results were used to check the relationship between the dependent variable. It was noted that there was a positive association between electronic invoicing and revenue collection process (x_3=0.012).

4.1.3 Hypothesis Testing

Ho_3: Electronic invoicing does not have a significant effect on revenue collection in trans-Nzoia

County Government.

From Table 4.5 above, electronic invoicing practices (β = 0.012) was found to be positively related to revenue collection activities in Trans-Nzoia County. From t-test analysis, the t -value was found to be 0.276 and the ρ -value 0.026. Statistically, this null hypothesis was rejected because ρ<0.05. Thus, the study accepted the alternative hypothesis and it concluded that electronic invoicing practices affects revenue collection in Trans-Nzoia County.

5. CONCLUSIONS AND RECOMMENDATIONS

Conclusions were made in respect with the study findings; Electronic invoicing practices (β = 0.012) was found to be positively related to revenue collection activities in Trans-Nzoia County. From t-test analysis, the t -value was found to be 0.276 and the ρ -value 0.026. Statistically, this null hypothesis was rejected because ρ<0.05. It is clear indication that electronic invoicing not only provides a more secure and accessible financial information storage but also helps in facilitating real-time monitoring of taxable transactions. It was therefore concluded that the adoption of electric invoicing by county governments not only improves revenue collection but also accurate and timely tax compliance.

The study recommended that revenue collection officers should adopt electronic invoicing as it as accrued benefits in the revenue collection processes especially it helps improve accuracy and timely tax compliance. It is further recommended that the revenue departments should adopt electronic invoicing in order to enhance a more secure and accessible revenue collection information storage, enhance integration of invoice issuance with other internal and external processes, facilitates real-time monitoring of taxable transactions as well as reduce tax submission errors. To the government and policy makers, this study recommends that training should be offered to county revenue officers on the importance of financial digitization and its contribution to enhancing revenue collection. The government agencies in charge of all revenue collection should also organize seminars for training on critical financial software skills and make it a perquisite for all revenue departments.

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