Administrative Strategies and Revenue Collection Efficiency within the Devolved Governments in Kenya: Case of Machakos County

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Abstract   The revenue collection within the county governments in Kenya has remained insufficient in funding the development projects and ensuring effective service delivery. However, administrative strategies, such as revenue diversification, human capital management and technology adoption, have been adopted by most of these county governments to enhance revenue collection efficiency. Hence this study sought to assess the effect of these administrative strategies on revenue collection efficiency within Machakos County in Kenya. The descriptive research design was applied to gather information using a structured questionnaire. Descriptive statistics and inferential analysis were used to analyze the data, which indicated that the adopted administrative strategies have positive influence on revenue collection efficiency within the devolved government systems, particularly the technology adoption strategy. The study recommends that the County Governments in Kenya should therefore put more effort on coming up with administrative strategies which are technology oriented in order to boost their revenue collections.

Keywords   Administrative strategies, Revenue diversification, Technology adoption, Human capital management, Revenue collection efficiency, Devolved governments

1. Introduction

Many Sub-Saharan African countries, such as Kenya, with their devolved governments, have enacted a lot of tax reforms, with an aim of improving the tax revenue collections [1]. Administrative strategy reforms, such as revenue diversification, human capital management and technology adoption, has been a major concept on the fiscal reform efforts in many developing countries, with an aim of restoring macroeconomic stability and restructure tax systems to make them more effective, simpler to administrate, and less disorderly to economic forces [2]. Additionally, many countries have developed and implemented revenue administration strategies in order to respond to emerging challenges which results from the devolved systems of governance [3]. Therefore, the study sought to assess the effect of administrative strategies on revenue collection efficiency within the devolved governments in Kenya.

Administration and decision theories, such as complexity theory, public choice theory and public administration theory, have tried to link administration strategies to revenue collection efficiency within the public sector [4,5]. In agreement with the proposition of these theories, Sausi, Kitali, and Mtebe [6] and Mbedzi and Gondo (2010) [7] showed that effectiveness of revenue among the local government authorities is influenced more by revenue administration, where ineffective revenue administration strategies negatively influence revenue collection strategies, since decline of revenue collection efficiency courses a diminution in its revenue (funding). Therefore, this study focused on revenue collection efficiency within local governments in Kenya.

The local governments from most developing countries, such as Kenya, are constitutionally authorized to collect tax revenue and spend locally in order to ensure effectiveness in service delivery and development locally, instead of depending on the national government entirely [8]. Therefore, for the devolved governments to attain the targeted development and service delivery, they must seek to adopt administrative strategies which enhances revenue collection efficiency. However, most devolved governments in Kenya are not collecting satisfactory revenue to sustain their service delivery and budgeted development [9]. On the other hand [10] found out that organizational structure or strategies have positively influence fiscal performance of devolved governments in Kenya. Machakos County, which

is one of the devolved governments in Kenya, has reported positive performance triggered by newly adopted management information system strategies within the county [11].

Therefore, this study, in addition to adoption of technology, introduced other administrative strategies, such as revenue diversification and human capital management, and tempted to assess how these administrative strategies influence revenue collection efficiency in Machakos County, Kenya. Specifically, the study sought to establish the effect of revenue diversification on revenue collection efficiency in Machakos County, the effect of technology adoption on revenue collection efficiency in Machakos County and the effect of human capital management on revenue collection efficiency in Machakos County.

2. Literature Review

The portfolio theory advocates that different ways of financial strategies or investments would help in reducing uncertainty on expected returns [12]. Portfolio theory proposes that through introduction of different administrative strategies, such as revenue diversification, an organization may reduce its financially related risks caused by fluctuations in financial expectations, such as revenue collection effectiveness. The mixture of several sources of revenue, which is an administration strategy, can work towards maximization of the effectiveness of generation of tax and reduction of the financial burden within devolved governments.

Henri Fayol's administrative theory implies that efficient human capital management is one of the administrative strategies which organizations should adopt in order to sustain their financial operations on the basis of a strong team work [13]. Every organization, including the devolved governments, endeavor to improve their human capital management to reduce employees' turnover and sustained productivity [14]. Hence, the effectiveness of operations, like tax collection within the devolved governments, will greatly be impacted by the human resource management strategies adopted by the devolved governments.

Most public organizations have embrace the new public management (NPM) theory, which advocates for reforms including modern administrative strategies that are technology oriented in their operations [15]. It is argued that the supremacy of citizens involvement in policy development and demand for superior service delivery from the governmental units have propelled lot of reforms in administrative strategies within the units [4]. With the adoption of the these public sector reforms, which majorly targets the administrative strategies, the financial productivity of most public organizations, such as revenue collections within the government units have been enriched.

Therefore the portfolio theory, Henri Fayol's administration theory and new public management concept, among others, are proposition advocating for administrative strategies, such as revenue diversification, human capital management and technology adoption, as the major

strategies that drive the efficiency of revenue collection within the governmental units like the devolved governments. However, the empirical research statistics have given varied results. Studies such as Ashyari and Rokhim [16], Kimm [17] and Jaafar, Latiff, Daud, and Osman [18] found that revenue diversification improves the financial operations of organizations particularly their net operating margin and revenue collections, including tax revenues. However, Yan [19], Shon [20] and Chen [21] found that revenue diversification within the local governments increases the instability of revenue collection significant when the economic base of the governmental unit is stable. Jaikampan [22] highlighted that tax administrative measure are effective in circumstances where revenue diversification is low and particularly under stable form of governments such as county governments.

On human capital management, Alasfour [23] argued that governments including the devolved units, need to enhance human resource strategies that cultivate a culture of trust and strong ethical values which works towards reduction of tax evasion and improved revenue collection. Empirically, studies such as Afosah [24], Mbedzi and Gondo [7] and Davis [25] have highlighted the fact that weak human resource management strategies within the local governments and tax authorities reduces their effectiveness in revenue collections. Other studies also have found that human capital management strategies like performance appraisal, performance management and result oriented management, cause deterioration in performance of the local government units due to varied challenges, including political influence [26,27].

There is enough empirical evidence on adoption of technology as an administrative strategy embraced by the devolved governments world over to improve efficiency in operations and performance within the government organizations [28]. Particularly, Carter, Ludwig, Hobbs, and Campbell [29] found that the major determinants of technology adoption within the tax collection systems are effort efficiency, performance efficiency and social influence. Other studies such as Majeed and Ismail [30], Sausi et al. [6], Masunga, Mapesa, and Nyalle [31] and Hussein, Norshidah, Abd Rahman, and Mahmud [32] determined that adoption of technology by the local governments have succeeded in improving the efficiency of revenue collection within the governmental units. However, Mu, Nigatu Mengesha, and Zhang [33] argued, form their findings, that technology existence is not a guarantee that it will be applied efficiently by the users. This fact is confirmed by Mallick [34] and Nnubia, Okafor, Chukwunwike, Asogwa, and Ogan [35] who surprisingly found out that there is no significant influence of technology adoption on revenue collection. Therefore, this study sought to find out the effect of technology adoption and other administrative strategies, such as revenue diversification and human resource management, on the efficiency of revenue collection within the devolved governments in Kenya, particularly Machakos County.

3. Methodology

The study applied descriptive research design to analyze, approximate, describe and forecast the associative relationships between administrative strategies and revenue collection efficiency within the devolved governments. The target population of the study consisted of 67 administrative employees of Machakos County, which was made up of 11 chief officers, 8 sub county administrators, 8 chief revenue officers and 40 revenue collection officers. Data was collected from all the 67 respondents using a standardized questionnaire. The validity and reliability test where performed on the data collection instrument, with the Cronbach's Alpha coefficient being 7.89. Thereafter the data was analyzed using both descriptive and inferential statistics. The regression model applied in inferential statistics was:

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \varepsilon \qquad (1)$$

Where Y represent revenue collection efficiency and β_0 represents the constant coefficient. β_1, β_2 and β_3 are coefficients of the independent variables X_1, X_2 and X_3 representing revenue diversification, technology adoption and human capital management strategies, respectively.

4. Results

Out of the targeted 67 administration staff of the devolved government unit, 56 responded by submitting back fully filled research instruments. This indicated a response rate of 83.58%, which is acceptable rate for further analysis [36]. The highest response rate of 90% was from the revenue collection officers who formed the bulk of the respondents, followed by the county chief officers at 81.82%, chief revenue officers at 75%, and lastly the sub county administrators at 62.50%. The descriptive statistics, based on the study variables i.e. revenue diversification, technology adoption and human capital management, and the research instrument on a Likert scale score of 5 (strongly agree) to 1(strongly disagree) was applied. The scores were converted into numeric data with 1-1.8 denoting strongly disagree, 1.8 to 2.6 disagree, 2.6 to 3.4 neutral, 3.4 to 4.2 agree and above 4.2 to 5.0 denoting strongly agree. The results are represented as follows:

4.1. Revenue Diversification

The study results in table 4.1 below shows that revenue diversification is one of the administrative strategies of the county government, though moderately practiced with a mean score of 3.16. The factor of ensuring accessibility of the revenue diversification within the county government indicated the highest score of 3.36, with the identifying diverse revenue diversification streams and encouraging investments on income generating projects scoring the lowest at 3.02. These results indicates that the county government has not put intense effort on developing different streams or sources of income and could be depending mostly on disbursements from the central government, which could be inadequate. Less effort on revenue diversification may also compromise the revenue collection efficiency since the economic base of the county will not be stable with less streams of finances [19].

Table 4.1. Revenue diversification

Revenue diversification indicator	Mean	Std. Deviation
Identifying diverse revenue diversification streams	3.02	0.77
Encouraging investments on income generating projects	3.13	0.99
Ensuring efficient utilization of all financial resources	3.02	0.77
Partnering with other stakeholders in creating income for the county	3.14	0.86
Ensuring accessibility of the revenue diversification	3.36	0.92
Monitoring and controlling performance of all revenue diversification	3.30	0.78
Revenue diversification composite mean	**3.16**	**0.85**

Source: Researcher (2023)

4.2. Technology Adoption

Results in table 4.2 below indicates that the county has put slightly more effort on embracing technology in revenue collection, which is the trend worldwide [28]. The technology adoption within the county has a mean score of 3.29, with developing revenue collection automation scoring the highest at 3.57. The adoption of technology within the county government's operation systems, including revenue collection systems, may have improved the overall efficiency and financial performance of the county [11]. However, the lowest score is on utilizing a complete revenue collection automation at 3.16, which could work towards reduction of revenue collection efficiency within the county government [33].

Table 4.2. Technology adoption

Technology adoption indicator	Mean	Std. Deviation
Implementing information technology infrastructure for revenue collection	3.21	0.80
Developing revenue collection automation strategies	3.57	0.91
Adopting billing automation for revenue collection	3.29	0.84
Utilizing a complete revenue collection automation	3.16	0.97
Employing electronic payment for all revenue collection processes and operations	3.20	1.05
Instilling collection controls at every stage of revenue processing	3.32	1.05
Technology adoption composite mean	3.29	0.94

Source: Researcher (2023)

4.3. Human Capital Management

The administrative strategy of human capital management is also one of the strategies that the county government of Machakos has put effort in enhancing as highlighted by the results in table 4.3 below. The strategy has enumerated a mean score of 3.30, which is above average, implying that in the effort of increasing efficiency within the operational systems of the county government, lot of emphasis has been but on the advancement of human capital [25]. The results show that more effort on human capital management has been towards ensuring that revenue staff gain sufficient experience in revenue collection with a score of 3.45. Nevertheless, more effort should also be put on properly facilitating staff to undertake their duties which has a lower score of 3.14, which my work towards enhancing trust and ethics among the staff and in return improve efficiency in revenue collection within the county [23].

Table 4.3. Human capital management strategies

Human capital management strategies indicator	Mean	Std. Deviation
County obtaining academically qualified revenue staff	3.36	0.94
Ensuring revenue staff obtain high professional qualifications	3.25	1.00
Ensuring that revenue staff gain sufficient experience in revenue collection	3.45	0.99
Properly facilitating staff to undertake their duties	3.14	1.07
Facilitating target-oriented training on revenue administration	3.30	1.04
Improving the work environment to advance staff morale.	3.29	1.09
Providing revenue staff with development and growth opportunities	3.20	1.00
Providing for revenue staff (employee) welfare	3.38	0.91
Human capital management strategies composite mean	3.30	1.00

Source: Researcher (2023)

4.4. Revenue Collection Efficiency

The results in table 4.4 below shows that the mean score of revenue collection efficiency is below average at 2.83, with a standard deviation of 0.98. This confirms the argument of Nyabwengi and K'Akumu [9] that most of the devolved governments in Kenya are not collecting satisfactory revenue to sustain their service delivery and budgeted development projects. The results show that in all the low performance in revenue collection efficiency, the factor of "revenue is collected in time" in the county has scored the highest at 3.07. However, the score on the "revenue collection always complies with budget estimates" is the lowest at 2.50 indicating an experience of budget deficit which may impact negatively on development within the county government of Machakos.

Table 4.4. Revenue collection efficiency

Revenue collection efficiency	Mean	Std. Deviation
Our revenue collection always complies with budget estimates	2.50	0.93
The revenue collection sometimes exceeds the budget estimates in our county	2.82	1.01
The revenue is collected in time in our county	3.07	0.97
Revenue enforcement strategies are effective in achieving taxpayer compliance	2.79	0.99
The county maintains accurate records for revenue collected and banked	2.89	0.85
Revenue collections have continued to grow year after year	2.93	1.15
Revenue collection efficiency composite mean	2.83	0.98

Source: Researcher (2023)

4.5. Regression Results

The inferential statistical analysis process required the diagnostic tests to be performed before the regression analysis. Hence, the normality test was performed using the Shapiro-Wilk Test with p values of the revenue diversity, technology adoption, human capital management and revenue collection efficiency variables recording 0.298, 0.084, 0.272 and 0.314, respectively (i.e. all $p>0.05$) indicating that the data is normal [37]. Linearity test was also conducted using scatter plot diagrams which showed that the data distribution for all the variables presented linear trend with almost persistent variances [38]. Further, Multicollinearity test was performed using VIF, with independent variables of revenue diversity, technology adoption and human capital management VIF values recoding 1.090, 1.086 and 1.02, respectively (i.e. all VIF<10) indicating absence of Multicollinearity [39]. Lastly the Heteroscedasticity test was also done using Glejer test, with the p-values of the variables revenue diversity (0.488), technology adoption (0.154), and human capital management (0.209) being $p> 0.05$ indicting that Heteroscedasticity is absent [40].

In addition to diagnostic test, correlation analysis using the Pearson r statistic was conducted to compute bivariate correlations between the study variables and the results presented in table 4.5 below. The results shows that there exists a strong significant positive correlation between the study independent variables of revenue diversification and technology adoption and the dependent variable of the study; revenue collection efficiency.

Finally, the regression analysis was conducted using the regression model 1 below, and the regression results presented in table 4.6: regression model summary, table 4.7: ANOVAa and table 4.8: Ordinary Least Squares regression results below.

$$Y = \beta_0 + \beta_1 X_1 + \beta_2 X_2 + \beta_3 X_3 + \varepsilon \qquad (2)$$

Table 4.5. Correlation analysis

		Revenue collection efficiency	Revenue diversification	Technology adoption	Human capital management strategies
Revenue collection efficiency	Pearson Correlation	1			
	Sig. (2-tailed)				
	N	56			
Revenue diversification	Pearson Correlation	.421**	1		
	Sig. (2-tailed)	.001			
	N	56	56		
Technology adoption	Pearson Correlation	.432**	.272*	1	
	Sig. (2-tailed)	.001	.043		
	N	56	56	56	56
Human capital management strategies	Pearson Correlation	.321*	.121	.106	1
	Sig. (2-tailed)	.016	.375	.437	
	N	56	56	56	56

**. Correlation is significant at the 0.01 level (2-tailed).
*. Correlation is significant at the 0.05 level (2-tailed).
Source: Researcher (2023)

Where Y represent revenue collection efficiency and β_0 represents the constant coefficient. β_1, β_2 and β_3 are coefficients of the independent variables X_1, X_2 and X_3 representing revenue diversification, technology adoption and human capital management strategies, respectively.

Table 4.6. Regression model summary

R	R Square	Adjusted R Square	Std. Error of the Estimate
.589[a]	.3475	.3098	.39813

a. Predictors: (Constant), Human capital management strategies, Technology adoption, Revenue diversification
Source: Researcher (2023)

The results in table 4.6 above shows that the Adjusted R Square is 0.3098, which indicates that 30.98% of the variables that influence revenue collection efficiency within Machakos county government is determined by revenue diversification, technology adoption, and human capital management strategies. 69.02% of revenue collection efficiency within the county government is determined by other variables.

Table 4.7. ANOVAa

	Sum of Squares	df	Mean Square	F	Sig.
Regression	4.389	3	1.463	9.231	.000[b]
Residual	8.243	52	.159		
Total	12.632	55			

a. Dependent Variable: revenue collection efficiency
b. Predictors: (Constant), human capital management strategies , technology adoption, revenue diversification
Source: Researcher (2023)

The results in table 4.7 shows that F= 9.231 and P<0.01 which less than 0.05 (p<0.05) indicting that there is adequate confirmation to settle that at least one of the independent variables of the study, i.e. revenue diversification, technology adoption, and human capital management strategies, are significant in influencing the dependent variable of the study, i.e. revenue collection efficiency, within the county government. It further implies that the independent variables are estimators of the dependent variable within the county government of Machakos.

Table 4.8. Regression results

	Unstandardized Coefficients		Standardized Coefficients	t	Sig.
	B	Std. Error	Beta		
(Constant)	.830	.390		2.130	.038
Revenue diversification	.258	.100	.303	2.589	.012
Technology adoption	.205	.074	.323	2.767	.008
Human capital management strategies	.155	.070	.251	2.214	.031

a. Dependent Variable: Revenue collection efficiency
b. Predictors: (Constant), Human capital management strategies, Technology adoption, Revenue diversification
Source: Researcher (2023)

The results of regression analysis, using the ordinary least squares (OLS) method, in table 4.8 above shows that there is significant positive influence of all the independent variables of the study, i.e. revenue diversification, technology adoption, and human capital management strategies, on the dependent variable of the study i.e. revenue collection efficiency within the county government of Machakos. Nevertheless, the greatest influence, according to the results,

is the revenue diversification which has a positive beta factor of 0.258 and p-value <0.05(0.012). This result confirms the findings of other researchers who also found a positive influence of revenue diversification on revenue collection within the government units [16,17,18].

The results also highlights that the most sensitive predictor of revenue collection efficiency within the county government of Machakos is adoption of technology, with a positive beta factor of 0.205, and a p-value of 0.008 (p<0.05). Most studies have also found that embracing technological systems in revenue collection enhances efficiency within the local governments [6,30,31,32]. Further, the results shows that human capital management is also one of the administrative strategies within the county government of Machakos that influences revenue collection efficiency, with a positive beta factor of 0.155 and a p-value of 0.031 (p<0.05). Other studies such as have also found human capital management strategies to be one of the administrative strategies that impact on performance and revenue collection efficiency [7,24,25].

5. Conclusions

It is event from the results that the types of administrative strategies adopted by the devolved governments in Kenya influences revenue collection efficiency. Particularly, the influence of revenue diversification strategies on the revenue collection efficiency is more enhanced in comparison to technology adoption strategies and human capital management strategies, which also influence revenue collection efficiency within the devolved governments in Kenya. However, the most sensitive administrative strategy is the adoption of technology. Therefore in addition to advancing technology and human capital, more emphasis should also be placed on identifying different types of revenue sources within the devolved governments in Kenya.

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