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Enhancing provincial government's revenue generation for effective service delivery

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Background: The Constitution of South Africa assigns the duty of providing basic social services and administering social security grants and welfare schemes to the various provinces that fund their expenditure from the allocation received from the national government and provincially raised revenue. The provincial equitable share (PES) formula is employed to allocate revenue to provinces based on the size of the province's population. Provincial governments rely heavily on the budget transfers from the national treasury, as the revenue that is raised at the provincial level is inadequate to fund expenditure but the revenue received through the PES has been declining and exerting additional strain on service delivery in the Eastern Cape Province.

Aim: This article aimed to analyse provincial own receipts (revenue) and the factors that affect revenue generation in the Eastern Cape province of South Africa. The article further aimed to utilise the results to generate recommendations as to how the province can enhance provincial government revenue.

Setting: Eastern Cape province, South Africa.

Methods: This research utilised quantitative, descriptive statistics.

Results: The observations indicated that improved economic growth, household incomes and employment opportunities will not necessarily lead to improved revenue generation in the province. Authorities cannot rely on improving economic variables alone to increase such revenue and sound administration is required to enhance revenue generation in the Eastern Cape Province.

Conclusion: The Eastern Cape Province needs to enhance the efficiency of the revenue collection strategies whilst simultaneously broadening the revenue base.

Keywords: South Africa; government revenue; Eastern Cape Province; service delivery unemployment; household disposable income; and provincial own revenue.

Introduction

Intergovernmental transfers are critical elements of a multilevel fiscal system and are the most dominant revenue source for provincial or subnational governments in most developing economies (OECD/UCLG 2019). Provinces fund their expenditure from allocations received from the national government and their provincial receipts or internally generated revenue (IGR). Transfers from the national government constitute the greater part of provincial revenue and are distributed through the provincial equitable share formula (PES), which is largely population driven. Economic opportunities are not equally endowed, as there are provinces that are much wealthier and offer greater economic opportunities than others. This prompts many people, young and old, to follow economic opportunities whilst their roots remain intact in their provinces of origin. This interprovincial mobility of the population thus affects the fiscal distribution to the provinces on the grounds of diminishing population size (in less-resourced provinces) in favour of those that are economically resourceful. Given the foregoing discussion, provinces such as the Eastern Cape with high negative net migration of economically active people cannot rely on transfers from the national government but must seek ways to enhance IGR. This article is based on a study that focused mainly on the provincially generated revenue in the Eastern Cape province and employed quantitative methodology to evaluate the relationship between selected macroeconomic variables and provincial own receipts. This article provides a brief literature review, an analysis of the relationship between own revenue and macroeconomic variables using econometric models (non-parametric Nadaraya–Watson estimates and quantile regression models) and advances policy recommendations for own revenue enhancement strategies.

Statement of the problem

To meet their expenditure and service delivery obligations, provinces are assigned several fiscal instruments. The main sources of provincial revenue are (1) provincial taxes and fines or own revenue (or own receipts) (e.g. motor vehicle licenses, gambling tax and fees for goods and services provided), (2) other revenues such as administrative fees, fines and penalties and 3) grant transfers from the national government. For all nine provinces in South Africa, transfers from the national government account for close to 97% of provincial income (Roos 2020; South African National Treasury 2019; Statistics South Africa 2018). For the Eastern Cape Province, revenue transfer from the national government has declined over the years and the provincially generated receipts contribute only a limited percentage to total receipts. The provinces' heavy reliance on intergovernmental fiscal transfers of grants (revenue received from the national government) has become problematic given the decline in these transfers. Following the reduction in planned expenditure relative to the 2020 budget, the national treasury announced a reduction in the PES by approximately R209.7 billion in the upcoming three financial years (South African National Treasury 2020). The treasury indicated that rural provinces (Eastern Cape, for example), which are heavily dependent on intergovernmental transfers from the equitable share that they receive from the national government, are likely to be more adversely affected than urban provinces that have alternative revenue sources (South African National Treasury 2020). Enhancing provincially generated revenue has become crucial and as a result, this research focused mainly on the analysis of the Eastern Cape Province's own revenue generation. To set the tone, this article presents a brief literature review, research methodology, the analysis and interpretation of the empirical results thereof and finally, conclusions and recommendations.

Literature review

The next section will first describe the theoretical framework for the study and then provide an overview of evidence from literature.

Theoretical framework for the study

Public finance theory has over the years been dominated by efforts to understand the effects of fiscal policy on macroeconomic variables. In recent years, public finance has included criteria for evaluating public revenue and expenditure policy. On the expenditure side of the financial equation, the father of economics, Adam Smith, contributes to the theory of finance through his notion that the type of services that should be provided for or budgeted for must be evaluated before examining taxation or revenue issues. On the revenue side, he proposes a two-pronged approach, the first of which is that public services that cannot be financed by fees or direct charges should be paid for by taxes on an ability-to-pay basis that is proportional to revenue. In this sense he agrees or cuts across both the ability-to-pay theory and the benefit-received theory. Provincial and local governments rely heavily on external sources of revenue, such as intra-governmental transfers, rather than IGR. Theories on government revenue revolve mainly around taxation and, to a lesser extent, around internally generated and raised revenue by provinces or regions. These theories can be used by any government at any level, as they all need to raise revenue from a variety of sources to finance the necessary expenditure. The dominant theories in terms of government revenue (specifically to answer 'who should pay' and 'who should benefit' questions) are the benefit theory and the ability-to-pay theory. The benefit theory stipulates that tax levels should be automatically determined, and taxpayers should pay proportionally for the government benefits they enjoy or for the goods or services they use. As a result, those who make the most use or benefit the most will pay more. This means that people should have the ability to enable revenue to be generated, and issues of employment and household income, for example, then become significant. When people are employed, ceteris paribus, they will have the ability to pay. Holding other things constant, therefore, an increase in some macroeconomic variables (for example, employment) will likely increase revenue generation.

The given theories have implications on the aims of this study because the macroeconomic variables, ceteris paribus, affect the ability to pay. Unemployment, household income and gross domestic product (GDP) all affect the ability to pay. Even if the benefits received principle is applied, ability or availability of income or means to pay still remain significant. In this way, effect of unemployment on provincial receipts (as evaluated in this study) is expected to be negative because an increase in unemployment will reduce the ability to pay for the services. In the same way, household income and GDP are both related to the ability to pay and are expected to have a positive relationship with provincial own revenue.

Review of empirical literature

Recent literature emphasises the increasing importance of local government relying on provincial own receipts for financing their budgets and service delivery (Okeke, Chidi & Eme 2017). It has therefore become increasingly important for governments to enhance provincial income-generating capacity. The decline in IGR (provincial own receipts or revenue) can be partly attributed to weak macroeconomic and financial conditions that can affect business performance and the general population (CSEA 2021). In addition, there has been some increase in the consensus concerning the importance of own receipts and the government's reliance thereupon to finance local government activities.

There are few empirical studies on the analysis of IGR, as most studies explore the relationship between IGR and economic variables. Those studies, however, included limited analyses and recommendations on how to enhance IGR. Puopiel and Chimsi (2015) assessed the effectiveness of mobilising internally generated funds (IGF) in Metropolitan Municipal and District Assemblies (MMDAs) in Ghana's Northern Region. The research employed a multistage sampling technique of questionnaires, interviews, focus groups and key informant interviews to gather data from respondents and obtain an understanding of their situation in the 2013 fiscal year. The results revealed that failure to generate the required revenue to meet targets is mainly because of inadequate logistics to support effective IGF mobilisation, underdeclaring revenues, insufficient revenue collectors, poor supervision and monitoring, poor compliance by ratepayers, corruption, political interference, inadequate knowledge and skills amongst revenue collectors, poor service delivery by the assemblies, ineffective collaboration and lack of revenue data. The study identified a range of strategies that have already been implemented to enhance the generation of revenue, which include the engagement of revenue collectors, use of a mobile revenue taskforce, registration of businesses and visits to markets and business centres.

A study to analyse the sources and uses of internally generated income, specifically local government funds in the Kaduna State of Nigeria, was conducted by Abdulkarim and Adeiza (2019) using the chi-square statistical tool and secondary data from 2010 to 2014. The research concluded that the main problems in the state are ineffective tax administration and negligence of revenue collectors, and in line with this, the research recommended that the focus should be on improving IGR by adopting enlightenment campaigns.

Jacobs (2019) addressed how South African municipalities can enhance revenue collection amidst the overwhelming socio-economic demands on citizens. The study utilised the Umsobomvu Local Municipality of South Africa and explored how the municipality can enhance its source revenue. By using semi-structured interviews and questionnaires, the study identified challenges in raising revenue in the municipality and recommended implementing measures to ensure a high-quality, sound municipal billing system, as the current ineffective system was the reason for the poor performance and was hindering the municipality from effectively collecting outstanding money owed from debtors.

Alhassan, Francis and Ude (2020) examined the trend of IGR and its effect on infrastructural development in the Taraba State from 2011 to 2019. They used an ex-post facto research design and the results indicated that the generated IGR was less than the budgeted IGR from 2011 to 2019, which resulted in insufficient funds being available for infrastructural development in Taraba State. The research, therefore, recommended the urgent implementation of strategies to enhance IGR. The recommendation was to improve the provision of goods and services to benefit the common people, as the citizens did not see the need to pay taxes and other levies.

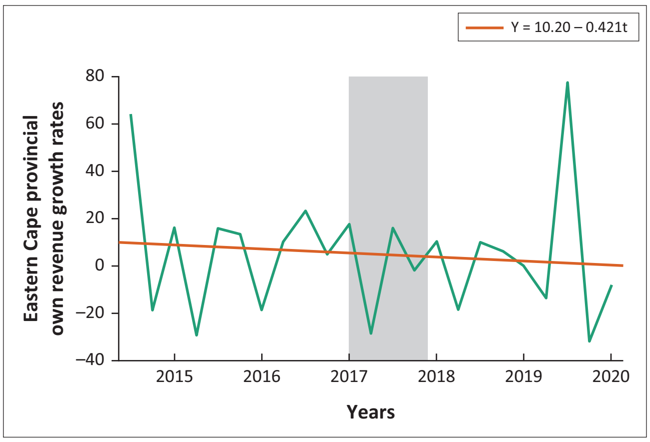
Both theoretical and empirical evidence reveal a strong relationship between IGR and the fiscal viability of state governments, which depends on the ability of that state to generate revenue. Efforts must be directed at stimulating internal revenue. Only limited research has been conducted in South Africa on IGR or provincial own revenue. This study intended to contribute to the body of knowledge in this regard.

Data and methodology

The impact of selected variables on own receipts in the Eastern Cape province was explored using quantitative research methodologies, specifically, the non-parametric Nadaraya–Watson estimates and quintile regressions. The Nadaraya–Watson is estimated as a locally weighted average and is a nonparametric regression. It is a regression analysis in which the predictor is constructed using information derived from the data, meaning it does not take a predetermined form. It is used to show the relationship between the predictor and the dependent variable, that is, whether the variables move together or not. In addition to the above estimation techniques, quantile regressions on household income, GDP and unemployment are estimated. Quantile regression is used to describe the distribution of the dependent variable and provides a more comprehensive picture of the effect of the independent variable on the dependent variable by looking at the different quantiles (see Dye 2020). It provides estimates of the linear relationship between repressors and a specified quantile of the dependent variable. It permits a more complete description, allowing one, for example, to see how the median or the 75th percentile of the response variable is affected by the repressor variables. It has the advantage that it is flexible for modelling data with heterogeneous conditional distribution.

The research looks at how selected macroeconomic variables affect own revenue generation. Theoretically, employment (or unemployment), GDP and household income are expected to affect how much revenue is raised, ceteris paribus. The research utilised time series regional data sourced from Quantec (easy data regional services) from 2014Q2 to 2020Q1. Figure 1 hereunder illustrates the trends of own revenue generation during the period under review.

Figure 1 shows the trend of own revenue in the Eastern Cape Province for the period from 2015 to 2020. Although own revenue has generally been fluctuating, the trend is of a constant collection over the year. There was a downward trend just after 2017, which may be attributed to the technical recession in that year. Generally, the province has not been able to increase own revenue and has been relying heavily on intergovernmental transfers from the national government, which have also been declining (National Treasury 2020). To be able to continue delivering services effectively, there is need for an increase in the own revenue, and this study looks at how selected macroeconomic variables affect own revenue collection. In addition, the research will make policy recommendations on how to enhance revenue.



Source: Authors' computation using data from Quantec, 2020, *Easy data*, viewed 15 February 2021, from https://www.quantec.co.za/easydata/.

FIGURE 1: Eastern Cape Province's own revenue generation (2014Q2 to 2020Q1).

Table 1 hereunder provides a description of the data and Table 2 presents descriptive statistics.

All variables are transformed into logarithms and a prefix 'L' is added to each variable after transformation. The variables that are differenced are denoted by the addition of a 'd' prefix.

Ethical considerations

This article followed all ethical standards for research without direct contact with human or animal subjects.

Empirical results and interpretations

The results of the non-parametric Nadaraya–Watson estimates are presented in Figure 2, Figure 3 and Figure 4.

Effect of household disposable income on provincial own receipts

Figure 2 indicates an inverse relationship between household income and provincial own receipts, which implies that lower-income households are likely to contribute more to revenue receipts than are higher-income households and are more likely to utilise services such as public hospitals, clinics and schools. High-income households are likely to utilise the services offered by private institutions. Increasing use of private services by high-income households is prompted by poor-quality service delivery in public institutions, with indirect ramifications of low own revenue collection by the provincial government. Theoretically, as household income increases it is expected that people will be able to pay for services (ability to pay has increased) and as a result an increase in revenue is expected. The results show an inverse relationship, which implies that as people get income, they shy away from the public services and probably move to better services. In this sense, the issue of poor services or poor-quality service delivery being a contributing factor to low revenue collections the case as stipulated by Puopiel and Chimsi (2015) and Alhassan et al. (2020).

Effect of unemployment on provincial own receipts

Figure 3 indicates a positive relationship between unemployment and own receipts until a particular point, after which an inflexion point is observed, followed by a downward trend as unemployment intensifies. This reinforces the use of public services by the poor and the unemployed with low incomes. Some of the unemployed who accesses public institutions are likely not able to pay for the services they receive from those institutions, which ultimately reduces the provincial government's revenue receipts. Until such time that the quality of service delivery in the Eastern Cape improves to such an extent that public services become a preferred option for even the wealthy, own revenue will continue to dwindle. This is in line with what the study conducted by Puopiel and Chimsi (2015) concluded about the contribution of poor services to low own revenue generation.

Effect of gross domestic product growth on provincial own receipts

Figure 4 indicates a negative relationship between own revenue receipts and GDP. The non-parametric Nadaraya–Watson estimates indicate that improving economic conditions may be necessary but insufficient to increase own revenue. Growth on its own against a declining population that seeks employment opportunities in other provinces will not yield high levels of own revenue receipts. Own revenue receipts are

TABLE 1: Data description.

Variable	Description
OwnRev	Provincial own revenue
GDPR	Gross domestic product growth rate
Hhinc	Household disposable income
Unempl	Unemployment rate

TABLE 2: Descriptive statistics.

Variable	Observation	Mean	Standard deviation	Minimum	Maximum
OwnRev	24	415727.1	873330.35	264240.0	701366.2
GDPR	24	0.678075	1.724183	-3.259619	3.334210
Hhinc	24	270143.4	30535.64	226591.9	312351.4
Unempl	24	33.30140	0.598679	32.55253	34.15994

GDPR, gross domestic product growth rate.

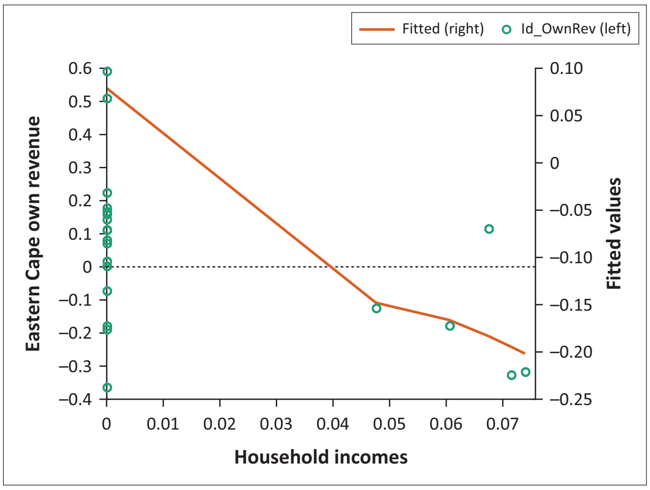


FIGURE 2: Relationship between own revenue and household income.

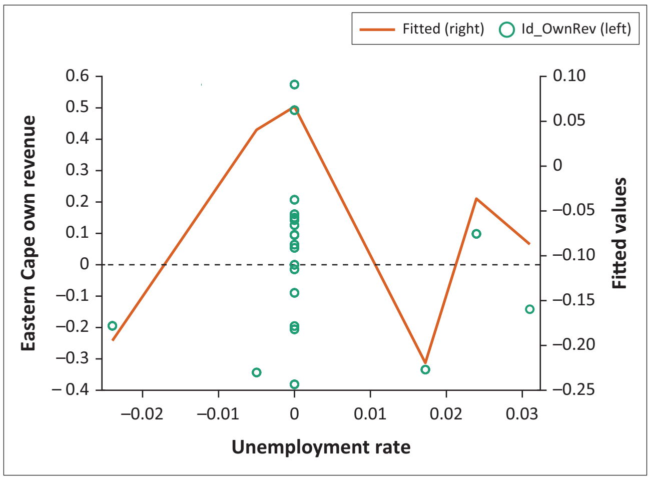


FIGURE 3: Relationship between own revenue and unemployment.

constrained by, for example, a narrow tax base despite the growing economy in the Eastern Cape. The findings are in line with the findings of Abdulkarim and Adeiza (2019) and Puopiel and Chimsi (2015), who both mentioned various issues that affect own revenue collection rather than income itself.

In addition to the Nadaraya–Watson estimate, quantile regressions were estimated and the results are presented in Figure 5.

Panel A of Figure 5 indicates the various household incomes' quantiles and the evidence from this panel indicates that at high household income quantiles, own revenue takes a sharp downward turn. This reinforces the nonlinear Nadaraya–Watson model results. The own revenue receipts in the Eastern Cape are derived mainly from poor and low-income households. It is, therefore, no wonder that the province was unable to raise sufficient revenue during the period under review. Again, this is in line with Puopiel and Chimsi's (2015) conclusion that poor service delivery is behind the declining own revenue. As people's income increases, the increase is not transformed to increase in revenue as is expected, because they will be more able to pay for services. Panel B indicates a declining trend of own revenue throughout the quantiles until the seventh, when a temporary marginal rise in GDP growth is indicated, which soon declines towards the higher quantiles. This reinforces the constrained own receipts generation despite the economic growth experienced in the Eastern Cape. Panel C indicates a slight increase in own receipts and a slight but temporary rise in the low quantiles of unemployment but a definite decline in the high quantiles. Similar trends are notable under the Nadaraya–Watson estimations.

It is clear from both the Nadaraya–Watson estimate and quantile regression result that revenue collection in the Eastern Cape province has more to do with internal issues that include administration, poor supervision and poor service delivery. Own revenue, despite favourable changes in the selected macroeconomic variables, continues to fall. Improvements in GDP and household income results in own

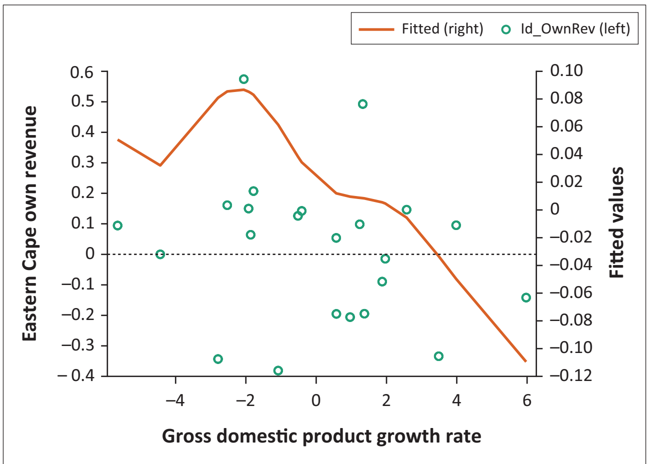


FIGURE 4: Relationship between own revenue and gross domestic product growth rate.

revenue to decline. The benefit-received principle suggests that people should pay based on the service they received, which means when poor services are being received, then users will be more reluctant to pay and, worse still, will opt for better services when they realise any increase or change in their financial status.

Implications of the results and recommendations

Both the Nadaraya–Watson and quantile regression results review that an improvement in macroeconomic environment alone is not sufficient to improve own revenue collected. An increase in GDP or GDP growth leads to an increase in per

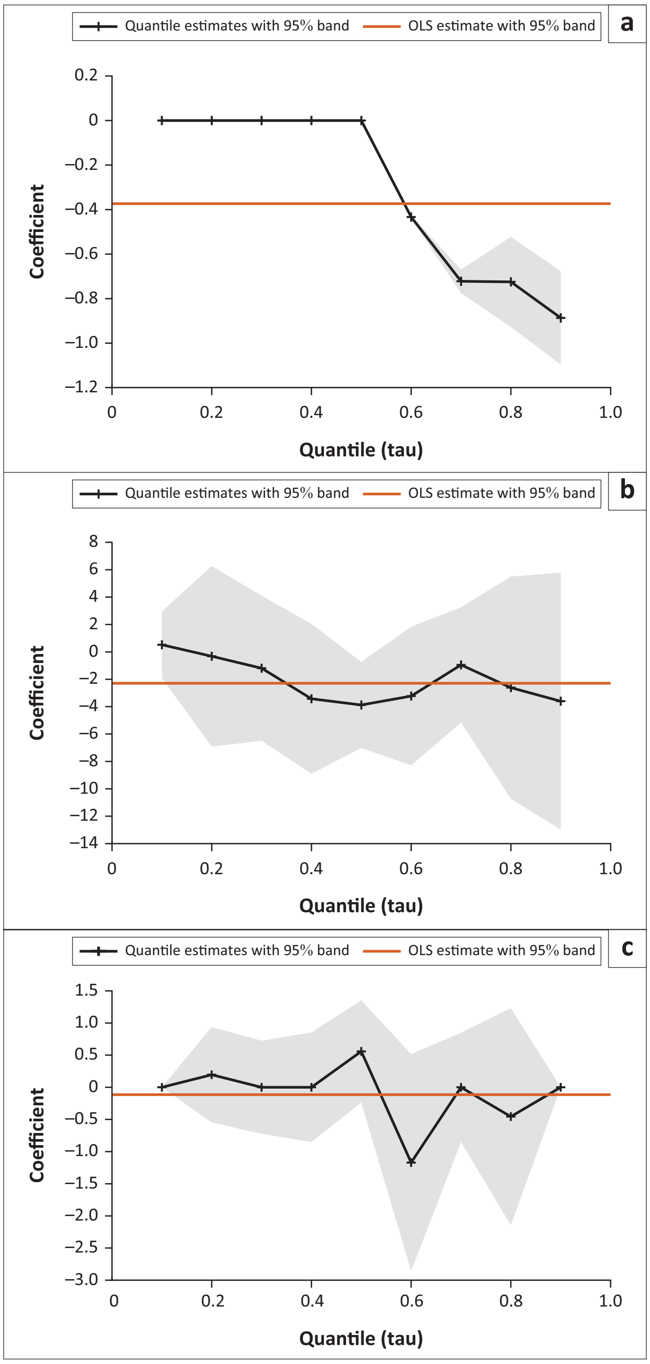


FIGURE 5: Quantile regressions.

capita income, ceteris paribus. This is expected to positively affect revenue. The result from both regression models estimated indicate a negative relationship, meaning that as GDP growth increases, own revenue collected decreases. Likewise with household disposable income, which is also expected to increase with own revenue showing a negative relationship with own revenue. Despite improvements in economic conditions, own revenue is not improving. These results have significant implications for the Eastern Cape province. The locally generated revenue reflects poor service delivery in the province, which makes the public institutions not a preferred option amongst high-income households. Poor quality service delivery has also muted the effects of economic growth on own receipts. In addition, the results may indicate that there are other factors that are affecting the ability to increase own revenue in the province. The rising unemployment's adverse effect on own revenue receipts in the province is needless to mention. The issue of service delivery quality is prevalent in both empirical literature and in the results obtained. Own revenue is mainly affected by its variations, and as a result, this research recommended more efficient revenue collection and a broader provincial revenue base, which can only be achieved through improved quality of service delivery in the province. Strategies must be developed to enhance own revenue collection in the province.

The research recommends the following strategies to enhance revenue collection:

- Improve the quality of public service delivery so that the use of public institutions becomes the first choice of most of the population, including the high-income households.
- Upgrade household incomes through various forms of grants, job opportunities and small businesses to enhance the ability to pay for services received.
- Create jobs and other economic opportunities to retain a large part of the population, including youths, in the province. This will not only improve own revenue receipts but also the PES to the province.
- Employ segmentation and differentiated pricing and prepayments, electronic payments and electronic records. The province can explore market heterogeneities and where possible employ price discrimination and market segmentation policies.
- Maintain satisfied customers by providing high-quality, reliable services and practise information sharing, including proper communication and coordination.
- Implement discounting and early settlement-of-accounts incentives (i.e. offer discounts to all who settle accounts by a set date).
- Offer easy payment options and make electronic account records available.
- The key departments on which the province should focus to increase revenue are agriculture, health, public works and transport. Regarding the Department of Transport, one of the recommended ways to raise revenue is to encourage people who purchase vehicles in the Eastern Cape but reside in other provinces to pay their motor vehicle licences in the Eastern Cape instead of changing vehicle registration to other provinces.

Conclusion

Based on the analysis included in the study, the bulk of own revenue is obtained from low-income households and the unemployed who are poor with inadequate incomes, whilst the high-income households utilise alternative services mainly supplied by the private sector. The general perception of the citizens in South Africa is that of poor service delivery in the public sector. It is for this reason that people who can afford to would rather opt for private sector services. This amounts to double taxation, because the citizens must pay twice for service delivery in South Africa; they pay taxes for service delivery that cannot be appreciated because of its poor quality and must pay for the same services in the private sector. The results of this study reveal that at higher income quantiles, own revenue declines. There is a growing concern that even amidst a growing economy in the province, the revenue generated in the province continues to decline. Needless to mention that the rising unemployment in the Eastern Cape further depresses the locally generated revenue. It is concluded that the Eastern Cape is trapped in its revenue generation conundrum vis-à-vis service delivery quality. The revenue enhancement strategies need to be accompanied by several other strategies that include maintaining satisfied customers, creating trust amongst customers, sharing relevant information, proper pricing and billing and easy payment methods, accountability, transparency and the eradication of corruption.

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Authors' contributions

T.T.C., R.N. and S.M. contributed equally to this article.

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Data availability

The authors confirm that the data supporting the findings of this study are available.

Disclaimer

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