DataCities in Practice during 2024 – Linking Data Analytics to Routine City Decisions & Policymaking: A case of Property & Street Parking Revenue Mobilization in Fort Portal City, Uganda

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1. Introduction

In today's fast-paced digitalized world, generated data resources and data analytics supported by artificial intelligence (AI) capabilities, are transforming the way cities engage residents, plan and govern the urbanization development process (Ferhati et al., 2024; Almaz et al., 2024; Herath & Mittal, 2022). Fort Portal is one of the newest cities focused on developing as a tourists' hub in Uganda, committed to piloting a few *data & AI use cases* in pursuit of this dream. For example, the city authority is harnessing the power of data and desires to optimize AI capabilities through the *Integrated Revenue Administration System (IRAS)*. The core strength of IRAS lies in its ability to streamline and automate critical processes such as taxpayer registration, property assessments, and revenue collection. Before this system was implemented, the city's revenue collection was often manual, time-consuming, and prone to errors. By digitizing these functions, Fort Portal City has unlocked a new sphere of data use for transparency and efficiency in managing its property revenue generation, in particular.

This dynamic digital data platform is more than just a tool for collecting local revenue. According to the DataCities assessment of the facility, it was found to have considerable untapped potential to support evidence-informed rapid decisions, local tax policymaking, stakeholders' engagement, mobilization for increased awareness on city's economic resilience, if optimized well. By optimizing IRAS' performance through *instituting data integrity standards* for real-time data and *AI capabilities* integration into city revenue governance and management, the city will not only be streamlining administrative processes, but also ensuring that decisions are based on accurate, up-to-date information that benefits everyone from residents, utility service providers/stakeholders to policymakers (Huang et al., 2023; PcW, 2024).

2. Background of DataCities Program and the Engagement with Fort Portal City Revenue Mobilization Department

The history of the DataCities program interventions can be traced back from ToroDev's research work on baselining *urban data governance* in Uganda's new cities (Baguma & Muhumuza, 2023) as the first project within the *"Data and Evidence-Informed Policymaking for Improved Urbanization in Uganda"* program strategy (2021-2026). Several recommendations were made in the above study to support practical and resilient data systems in strategic pilot cities of Jinja and Fort Portal, located in Uganda's eastern and western regions, respectively (World Bank, 2023; NPA, 2020). The DataCities Consortium (ToroDev, Sunbird AI and UN Global Pulse) are implementing the eight years' program with support from the US-based Hewlett Foundation, in partnership with the above two city authorities in Uganda.

Key areas of tourism, revenue mobilization and public health/waste management were discussed and agreed on by the two cities in November 2023. This was at the end of the knowledge exchange visit by city authority leaders from Jinja and Fort Portal, to some of the key South African cities (Cape Town, Durban and Johannesburg) identified to have taken considerable strides in dedicated data governance and management for efficient urban development. ToroDev, under its Open Data Analytics (ODA) initiative, organized this cities' knowledge exchange visit within the DataCities program implementation framework in November 2023. Further, the knowledge exchange visit yielded into a realization of the need to support the two pilot cities to build context-specific City Data Governance Frameworks.

2.1 The Need to Improve City Property Tax Revenue through IRAS Data Optimization

In the second quarter of 2024, ToroDev-ODA commissioned several engagements with city authorities (Data Steering Committees) to co-create a city data governance framework for Fort Portal City, facilitated by a South African think-tank, the Open Cities Lab (OCL). It is at this point that the Fort Portal City authorities deemed necessary to employ a *"data-use case"* approach to developing a sustainable framework. The revenue department of the city particularly observed that property tax generation was extremely underperforming at a collection of only 23% of the target revenue in the 2023/24 financial year and, therefore, could be an urgent data use case to model. The city revenue department committed to work with the DataCities program to improve the performance of property tax revenue mobilization up to least 60% by the end of the 2024/25 financial year.

Further, at the stage of city data governance framework co-creation, several areas of data access and use improvement were identified, ranging from current revenue data analysis, setting

quality revenue data standards and quality assurance team, updating of the property revenue register, deployment of the mobile platform for property revenue data and digital engagement of taxpayers/stakeholders, among others.

3. DataCities' Current and Future Works to Support Property and Street Parking Revenue Enhancement through IRAS Data Optimization in Fort Portal City

By the end of December 2024, we (DataCities Program/Consortium) have worked with the City's Revenue departments to analyze the IRAS datasets and identified opportunities and challenges to consolidate and address improvement in the coming year 2025.

A joint data analytics team was established with members from the city's ICT department and the DataCities Consortium. This team analyzed the property revenue datasets and was able to produce a report in November 2024. A joint meeting of Fort Portal city technocrats and policy makers (city executive and council members) on one side, and DataCities Consortium on the other side, was convened on December 19th, 2024 and several observations and resolutions were made by the city authority, aimed at improving property revenue up to 60% of targeted projections by the end of the 2024/25 financial year. Key resolutions and plans include;

1. Support Fueless Ltd (Fort Portal City contractor) to work with DataCities team to complete the updating of the Property Tax Register/Database, that was discovered to be outdated or missing some dataset attributes after the team's dedicated analysis.
2. Extension of the Fueless Ltd contract with the Fort Portal City Authority, in order to legally facilitate the updating of the Property Tax revenue register
3. Set up the Data Quality Assurance Team with clear terms of reference and work closely with the DataCities program team on quarterly reporting in 2025 to City TPC-Technical Planning Committee and Executive.
4. The Property Revenue Data Quality Assurance Team to set up data validation guidelines/rules and carryout quarterly data audits throughout 2025.
5. Amend contracts of service providers (Property Tax and Street Parking Revenue) to include closes on updating tools of data collection
6. The Property Revenue Data Quality Assurance Team to set up KPIs – Key Performance Indicators to guide the data generation and use for efficient revenue mobilization, which will be monitored on quarterly basis, supported by the DataCities Program team.

7. Support the piloting of the Mobile Data Cleaning digital tool for Property Revenue in at least three (3) wards per Division of Fort Portal City.
8. Intensify residents and stakeholders' sensitization on the importance of Property Revenue Mobilization for the city using social media, broadcast media and workshops.
9. Physically and digitally map/mark all streets for efficient parking with clear demarcations/lots on all tarmacked roads.
10. Consider termination of current street parking contract due to non-remittance of funds to the city and use cleaned dataset to award new contract to the successful service provider.

4. Conclusion

Fort Portal City's journey toward becoming a data-driven and smart city is just beginning. The lessons learned and the innovations implemented through IRAS will benefit all city's residents. As the city continues to express willingness to refine its structural and digital systems by adapting to new technologies, it is poised to lead the way of creating smarter, digitalized, more sustainable urban environments in Uganda, the region and Africa continent. By embracing the power of data and AI capabilities, the city is not just improving governance, but also building a future where urban decisions and policies are informed by facts, resources are allocated effectively and where residents and stakeholders have an opportunity to thrive equitably. As the "citification" moves forward, Fort Portal needs invites collaborators, partners and investors to join in this exciting journey toward a data-driven, transparent, and prosperous future.

Particularly, property and Street Parking revenue are among the key sources of economic sustainability for the emerging cities in Uganda like Fort Portal. These two areas, if well organized and data and AI are used to optimize their performance, they can generate high potential for the city's resilience to support improved service delivery. Efficient Data and AI governance and management processes, including the setting up of effective data and AI technology infrastructure implementation and oversight structures, functions, guidelines and standards, among others, can be a step in the right direction. Moreover, effective data analytics (descriptive, diagnostic, prescriptive and predictive) targeting to address and/or respond to specific co-created KPIs within an emerging cities like Uganda's Fort Portal, may also be an added advantage to support efficient routine complex urban decisions and policymaking process. The DataCities Program commits to pursuing the above ideals in the year 2025 together with the City Authority of Fort Portal.

5. References

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