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Data and knowledge production in the City of Johannesburg's water services sector

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Abstract

This paper attempts to give an understanding of the state from the lens of knowledge production. It outlines the nature, process and purpose of data generation and the creation of knowledge in one of South Africa's metropolitan municipalities – the City of Johannesburg. The analysis of knowledge generation reveals not just the complex nature of public administration at local state level but also the various incentives for knowledge generation by officials across the entire bureaucratic value chain. Evidence gathered from the City shows that there are three main incentives for knowledge generation namely: planning, monitoring and reporting, with various implications for bureaucrats at various levels across of the City's administrative structure. However, the paper shows that such reporting rests on faulty theoretical notion that focuses on outputs as measures of progress and not necessarily outcomes. The complex nature of the City's administrative structure is a further complication that has resulted to an unintended consequence – the performance paradox.

1. Introduction

How is state knowledge generated and how is it used? What connection if any exists between knowledge generation by the local state and service delivery at that level? What has been the impact of bureaucratic practices on what? What conclusions about service delivery and role of the state can we draw from the nature of knowledge generation? This paper seeks to answer these questions with a view to uncover (ii) the generation of use of knowledge at various institutional levels in the city. (i) the institutional complexities in one South Africa's metropolitan municipality - the City of Johannesburg (the City). The hypothesis to be tested has to do with the ends and purposes of knowledge generation in the City and does the use of knowledge have any value add to the process of basic service delivery? I will show that (i) as data moves up the value chain its form and character changes (ii) the purpose for which it serves get more abstract the higher you go and (iii) eventually performance of top executives and hence of the City is based on information that is not linked to actual delivery on the ground. This disjuncture in measurement results in a performance paradox at bureaucratic level and a frequent cause of a dissatisfaction with service delivery at consumer level. This argument will sustained through evidence gathered

from an ethnographic exercise undertaken in the City between January and February of 2016.

It may well be worth asking why one should bother venturing into understanding knowledge generation by the state. The answer to this question goes back many centuries to the development of statistics. Koren (1918) argued that “the development and organisation of official statistics is not a barren record of steps in a scientific process of dealing with facts, but of efforts to get a working knowledge about the fundamental elements on the life of a country – the population, its environment, and its manifold economic and social relations. By taking measure of these elements, statistics reveal condition and trend in every direction and set out milestones for the guidance of the administrator and legislator”.

Koren’s observation sets the tone of what the objective of collecting official statistics should be and in our case lays the basis upon which knowledge generation in the City of Johannesburg will be analysed. However, Michael Foucault has other ideas, he argues knowledge generation by the state is designed as an instrument of control, to identify and punish offenders and not necessarily an objective way of accessing progress. Keith Breckenridge, on the other hand concluded that (contrary to Foucault and Koren) that there is no “will to know” on the part of the state (ref). His conclusion is based on a detailed analysis of the rise and fall of official registration of Africans during South Africa’s colonial period. Breckenridge’s conclusion resonates with observations that have prompted the writing of this article. With so much outsourcing in the South Africa, what happens to knowledge that generated by consultants that are contracted to carry particular tasks on behalf of the state?

2. A tale of two cities

A recent attempt to obtain data from City of Johannesburg and from Mogale City Municipality in the West revealed that there are various reasons for which data is collected, packaged and used. What is clear from both cases is also that the state may be denying *itself* (not only the external scholar seeking to conduct a research) important information by either withholding data (hence preventing rigorous analysis) or by giving away critical data to third in favour of mere summaries that serve the purposes of a few operational objectives and the demands of senior management.

In 2013, the Gauteng City-Region Observatory (GCRO) formulated a research project to measure changes in water use behaviour to consumers on pre-paid water meters in the City of Johannesburg. Data for that purpose was envisaged to come from Johannesburg Water (JW), the City’s water service utility. JW is a private company wholly owned by City of Johannesburg i.e. the City is the sole shareholder. However, as will be demonstrated here, this relationship is very complex. The purpose of the GCRO study was purely academic, testing for behaviour changes in water consumption by users and testing for positive changes in terms revenue streams. Through this analysis was intended to contribute to debates on water sustainability amid reports that Johannesburg will run out of water by 2018. The research was also meant to assess whether the pre-paid water project added any value from a financial point of view, given all the controversy that surrounded it which led to a ruling by the Constitutional Court.

Story 1: Johannesburg Water – ‘Holding back’

Date The GCRO approached JW for data on water use consumption for consumers that are on prepaid water meters. The initial encounter with JW revealed that the kind of data being sought was available from a JW depot manager in Soweto. The water utility had a system in place to collect meter readings from consumers on pre-paid meters. There are several reasons for reading these meters but most importantly is the need to reconcile the amount of water delivered to the revenue generated from the sale of that water. However, it turned out the JW had other motives for reading these meters - to identify and penalise offenders. Given the resistance against the meters many consumers were either vandalising or bypassing the meter hence enjoying “free water”. Hence JW took weekly readings of water used by this customer, generating a rich database with household that could have been useful for objective quantitative analysis of consumption patterns over time.

The depot officer acknowledged that the data was available but needed to consult with the depot manager first before releasing it. The manager queried the request for data and with little authority to release the data referred GCRO to the Chief Operations Officer (COO) at JW headquarters. After a series of exchanges, the matter was eventually assigned to the Manager Innovation and Technology – Strategic Business Support (MIT) at JW. The MIT Manager went ahead to explain the procedures that needed to be followed to obtain such data. The matter came to climax when JW issued a data use contract that binds GCRO to certain conditions regarding the use of the data and the dissemination of results of the analysis done on the data. As part of the University of the Witwatersrand, GCRO discussed the agreement with the University Legal Department and came to a conclusion that the data use contract was too restrictive as to infringe on academic freedom. A process of negotiating the contracting ensued involving rewording certain clauses and removing some. This process took nearly four months to reach a consensus on the wording of the contract (date). In a surprise twist, JW made all of a sudden an undertaking that they were not going to release any data to GCRO on the basis that they did not see the value of the analysis that was to be carried out on the data. However, it did turn out that the real reason why access was denied was that issues relating to pre-paid meters are a very sensitive both within JW and its among its customers. As such JW was not supporting any research in that domain. The decision to withhold the data was unanimous among committee members that sat to consider requests for data that come from various universities, research bodies and students.

The MIT manager advised GCRO to approach Mogale City Municipality for such data essentially for two reasons (i) their pre-paid water-metering programme pre-dated that of the City of Johannesburg and (ii) their data was likely to be more reliable than that of the City. Efforts to seek assistance through the City were not only fruitless but further revealed the complexity of the City’s governance arrangements not just for water but also for all entities.

Story 2: Mogale City – ‘Giving away’

While JW in case it was an express refusal, in Mogale City the situation was unique in a number of ways. First, the municipality was keen in having that kind of study carried out because it would help assess their progress in the water sector as well inform their current planning processes. Secondly, the municipality has outsourced the implementation of pre-paid water meters to at least three private companies each

responsible for specific areas or suburbs in the city. These companies also collect information on how much water is consumed on a daily basis at stand where the meters have been installed and send quarterly consolidated reports to the municipality. What this means is that the actual raw data remains in the hands of the private companies, in fragmented ways. Lastly, there does not seem to be any clauses that bind the private companies to hand over the data to the City should it be needed and neither does the City has any need for save in the form of reports. Further, the companies see no need of retaining the data beyond a certain point and hence historical records are not all available. Although the company was asked to supply GCRO with data, they could not because of basically two reasons (i) they felt no obligation to and (ii) they dispose of already or it was lying in an old hard drive somewhere in the office.

It quite ironic that Mogale City, a pioneer municipality in pre-paid water metering in the province which fully supported my research analysis of that nature finds itself not in possession of critical data and worse unable to give express instruction to their contractor to release the data. Although, GCRO did not feel the need to pursue the matter further, the experience itself has such a deeper meaning regarding knowledge generation by the state and the case of Mogale City was a classic example of what Breckenridge calls the ‘the will not know’.

3. What then?

These two stories raise three critical questions about the local state in South Africa. The first question would be – (from the JW case) why is it so difficult to access certain information state or public in a democratic society that has embraced principles of democracy, transparency and accountability? The figure below taken from a PAIA Civil Society Network Report for 2014 shows that approximately 70% of information requests sent to public bodies were expressly refused. This indicates that withhold data or information is a government-wide phenomenon not unique to JW.

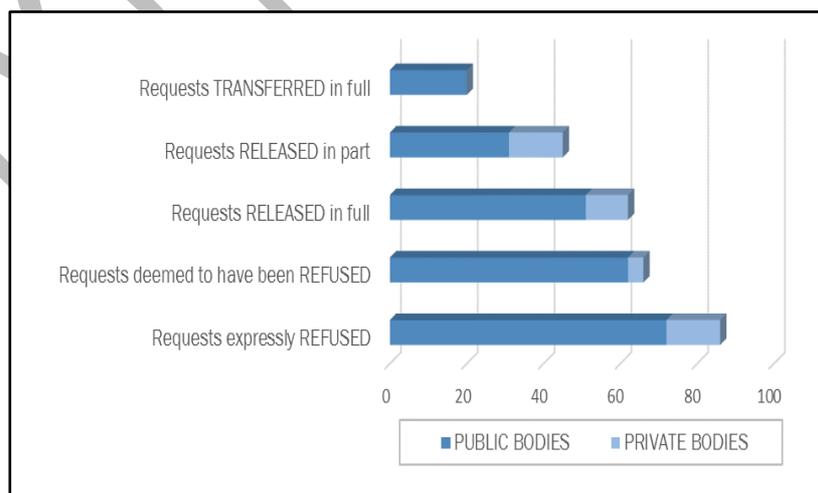


Figure 1

The second would be – (from the Mogale City case) is there a will to know on the part of the local state in South Africa and if so why and if not why? However, the most critical question, which has become the focus of this paper, is “How can we

understand the state through the lens of knowledge production?” More specifically, how is data generated and for what purpose and for whose end and how is it packaged as it travels from the point of collection to the very top of the value chain. What impact does this have on the behaviour and practices of bureaucratic officials?

In order to answer these questions GCRO was privileged to obtain permission to undertake an ethnography of the state in the City of Johannesburg's Office of the Executive Mayor. This exercise is on-going and what is presented in the paper are only preliminary findings from the two months spent in the City.

4. Literature review

Generally, there is agreement across the academic world that the state and in particular the local state, plays a crucial role in the daily lives of citizens which significantly impacts positively on regional as well as the national economy. There is also an acknowledgement that the knowledge about the finances, employment, and programs of state and local governments is vital for many purposes and many groups (NRC, 2007). Providing information on government activity such as revenues, expenditure, functions, employment, and other aspects is a critical task of a democratic government. Such information is essential for decision makers in all branches of government, as well as for private-sector decision making, research and evaluation, and, ultimately, accountability to the public. A complex set of data collection, processing, and estimation tasks is essential to enable the state to enumerate or measure their activities (NCR, 2007).

Performance measurement is the key process for governments across the world and not just South Africa. These processes have been cascaded down to lower tiers of government where a lot of the planning and delivery of services to the public takes place. Huge investments are made by municipalities such as City of Johannesburg to hire personnel and contractors to collect and package data on the City performance and prospects for the future.

The influence of New Public Management principles has been so strong on the public sector that governments are making huge investments in the interest of performance management on an increasing basis (OECD, 1996; Pollitt and Bouckaert, 2000; Osterloh, 2010). As Osterloh observed, the management approaches such as management by objectives and pay-for-performance have been and are still being transferred from private companies to public service organizations such as hospitals, schools and transport services. The idea is to enforce market mechanisms, raise accountability, productivity, and efficiency within public service institutions through results based approaches (Osterloh, 2010). The result has been that institutions such as schools and universities, local governments, and other administrative agencies, including developmental aid organizations are all involved in producing data and information on performance results. Power (1994, 1997, 2000) refers this as the 'audit explosion' or the 'audit society'. Believers in New Public Management (NPM) attribute a high priority to measuring output and outcomes and aim to base their new policies and management activities on this type of information. In spite of limited success the need for measuring output, outcomes, and evaluation activities remains an important element in statements by politicians and administrators focused on improving government's performance (Van Thiel and Leeuw, 2002).

There are shortcomings to this however. Meyer and Gupta (1994) argue that for performance management there is need for a larger number of performance indicators. They go on to say that few indicators are used; it is difficult to obtain an accurate report of the performance. Evidence from the auditors' reports shows a strong inclination to focus on procedures and deliverables rather than quality or content implied by the indicator (Leeuw, 2000; OECD, 1996). Evidence from the City testifies to this fact and there has been a concern that the current system on place has been focusing on monitoring and not evaluation (personal conversation with high rank official, 2015). According to Meyer and Gupta, 1994, a performance paradox likely to emerge where weak correlation between performance indicators and performance itself set out in (Meyer & Gupta, 1994; Meyer & O'Shaughnessy, 1993). Van Thiel (2001), performance paradox is caused by the tendency of performance indicators to run down over time, that is, they lose their value as measurements of performance ultimately failing to discriminate between good and bad performers. Analysis of annual reports shows that output and input indicators are used most often, but productivity indicators, quality measurements, and cost prices are still notoriously absent (Van Thiel, 2001). This causes divergence actual and reported performance. The key question to be asked is whether the local state is aware of this phenomenon and if so, what steps are being taken to deal with it. As the results will show, there are performance rewards attached to particular positions in the organisation there are specific indicators that determine that. However, on the face it, the relationship between the performance outcome in use, reward, and the actual outcomes is spurious.

Meyer and Gupta (1994) outline four processes that may lead to deterioration in the value of a performance indicator. Briefly states these are (i) Positive learning, (ii) Selection where poor performers with better performers hence reducing differences in performance, (iii) Suppression which occurs when differences in performance are ignored and (iv) Perverse learning where organizations or individuals have learned which aspects of performance are measured (and which are not), and they can use that information to manipulate their assessments.

This typology by Meyer and Gupta paints a gloomy picture of the public in which case the state can be trapped in a performance paradox. Fountain, (2001) for example thinks that an argument could be made that certain characteristics of the public sector increase the chance of a performance paradox's occurring. For example discrepancies between policy objectives set by politicians and the goals of executive agents (Smith, 1995). The translation by managers of ambiguous, non-tangible policy objectives into operational goals leaves room for deviations in policy implementation, which can lead to a performance paradox. Torenvlied, (2000) is of the view that in certain instances such discretionary authority is given intentionally, either because politicians want to appease multiple stakeholders or to facilitate executive agents' work. Evidence from the City of Johannesburg, support these assertions especially when one looks at the size of administration, its complex make up, and the size of the population it services and volume of services to be delivered. Interpretation of policy goals is not understood in the same way across the difference level. One official testified to the difficulty of changing things in the City resulting particular systems remaining in place long after being rendered obsolete.

Explaining the existence and nature of such a performance paradox and other perverse effects is a crucial exercise both from an academic and practical policy point of view. More knowledge on organizational behavior and the influence of institutions and public sector characteristics on the use of performance indicators can help to truly achieve the projected advantages of performance indicators in the public domain. Answers could be found as to why in spite of huge investments in service delivery by the local state, there is growing dissatisfaction by citizens with local government as shown over the last 6 years through the GCRO Quality of Life Surveys (ref).

5. Theoretical perspective

How then can we understand knowledge generation by the state and how does that process influence bureaucratic practices of public officials at local state level? I draw on the work of Gupta (2012) and Breckenridge (2012). Gupta conducted ethnographic research among officials charged with coordinating development programs in rural Uttar Pradesh. He questions why the plight of the poor is being met by bureaucratic indifference, when in fact citizens actively participate in civic issues and the state explicitly aims to bring development to the poor. His analysis revealed that attitude of the state towards its people is arbitrary in terms of what it generates as results and that arbitrariness is systematically produced by the very mechanisms that are meant to ameliorate social suffering. This he attributes to the structure of government, which does seem to impede the care it officially intends to deliver to its people.

A key feature of the state in India, which is worth interrogating in the case of the City of Johannesburg, is the complex nature of government. City officials in Johannesburg have repeatedly echoed the same sentiments: the City's administration is very large and the administrative system very complex. As in the case of India, the state does not either operate as a seamless, purposeful, and well-integrated whole, rather the Indian bureaucracy is fragmented and uncoordinated. Bureaucratic mandates and structures overlap and are oftentimes contradictory. Although Gupta frames his analysis of bureaucracy within a discussion of governmentality, he is cautious to shy away from Foucault's views that couch the state as unitary in nature. In the case of the City, it is this fragmented nature of the administration that creates not just multiple sites of power but conflicting mandates among the different departments as well as dysfunctional units that deliver very little if any. The interesting observation by Gupta in the case of India is that the bureaucracy generates great deal of data, and in the process creates reified images of the state and its populations which turn out to be an illusion in most cases because they do not reflect the true picture of everyday experiences (Gamburd, 2014). Gupta's view of the state is predicated on the theory of the disaggregated state, which consists of heterogeneous and complex set of levels and bureaus. An analysis of knowledge generation and use must therefore be in positions to differentiate and identify the key bureaus at play at each level. This is the format adopted in this paper in the case of City Johannesburg.

Contrary to Foucault, Gupta feels that an analysis of data collection methods and statistics leading to wrong conclusion about the power and use of statistical. He goes to say that ethnography is superior in that it exposes the fragmented nature of the state where statistics alone portray the state as a singular unit.

Gupta makes appealing contribution from the theoretical and methodological point.

From Breckenridge's work, we get an account of public officials charged with responsibility of carrying out civil registration of the African population lacking resources to carry out their mandate. Going back in history, Breckenridge demonstrate how civil eventually failed in spite of compelling evidence that the state had enough resources to successfully support the process. Breckenridge believes the South African 'gatekeeper state' was more concerned with policing and administering African only when they are in cities and not in the homelands. In addition Breckenridge argues that it was the absence of a political constituency arguing for registration, that allowed for the inertia. In the case of South Africa Breckenridge sees a close connection between technologies of segregation and the broader project of bureaucratic segregation, which to him were the real purposes of data collection by government. This does create an insatiable appetite for information about the people that the state has control of. However, even in post apartheid South Africa, Breckenridge considers that bureaucratic rationality and popular enthusiasm for the will to know are less than evident.

Based on the work of Gupta and Breckenridge and looking closely at the cases that prompted this analysis the following hypotheses can be made:

1. The configuration of the local state in South Africa in particular the City of Johannesburg is so very complex as to be contradictory.
2. The local state, though portrayed as unitary, is in fact fragmented and uncoordinated.
3. Knowledge generation is closely linked to rewards and hence only what matters for rewards purposes is collected.
4. The quality of services delivery has direct correlation with the system of performance measurement in place.

Method (incomplete)

This paper is based on an ethnographic exercise undertaken in the City of Johannesburg. This process is still on-going and what is presented here are the preliminary findings.

Evidence from the city of Johannesburg (incomplete)

The City set up a Department in the Mayors office known as the Group Strategy, Policy and Relations. This unit essentially works as the brain of the city development and testing strategies. A key feature of this unit is that it is data intensive and data driven. All analysis done at this level must be back by statistical evidence. This evidence is classified into two categories (i) strategic information – which relates to information that essential for planning across the entire City departments e.g. population, the human development index, quality of life index and so on, and (ii) sectorial information – referring data that can be traced to a particular line department e.g. number of kilometres of roads tarred. In addition to these kinds of information, there is also information about budgets i.e. expenditure and revenue collection. As articulated below such information is required for a variety of purposes ranging from compliance to plans, compliance with audit requirements, meet treasury requirements for release of grants, performance bonus for Section 57 employees.

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