South African CitiesNetwork

URBAN ECONOMIC MEASUREMENT FRAMEWORK

CONTENTS

FIGURES

BOXES

TABLES

ACKNOWLEDGEMENTS

Chief Editor(s)/Project Manager(s): Kgomotso Tolamo (SACN)

Project Management Support Team: Sadhna Bhana (SACN) Kopano Ntsoane (SACN)

Contributing Author: Claus Rabe, Dylan Weakley, and David Karpul (PDG)

Design & layout: Shaun Watson (SACN)

Suggested Citation: SACN (South African Cities Network). 2023. Urban Economic Measurement Framework. Johannesburg: SACN.

FOREWARD

Historically, initiatives which tracked whether an environment was conducive to doing business focused on tracking improvements in rankings with limited focus on monitoring the correlation between an improved operating environment and the resultant impact of specific economic outcomes.
Through this work, the SACN sought to leverage MFMA Circular 88 data to measure progress against specific aggregate economic outcomes, i.e., economic growth, poverty reduction, job creation and entrepreneurship, and to understand the most critical drivers to improve these outcomes. In doing so, the case study's findings should help clarify which initiatives and reforms offer the most return on investment (both human capital and monetary).

This exploratory research has further emphasised that the main levers available to a city government for promoting positive aggregate economic outcomes reside in its core mandates: (1) to provide social and economic infrastructure, (2) to provide services to customers affordably and effectively, (3) to manage the public realm and (4) to regulate land use and building development. A city government's ability to deliver on these four mandates has a far more significant impact on the realisation of economic growth, poverty reduction, job creation, and entrepreneurship (or, more concretely, on whether a growth-oriented entrepreneur will survive, grow or fail) than ad hoc, large-scale projects. While large-scale initiatives can amplify the economic benefits of a solid foundation, these, in isolation, cannot compensate for any weaknesses in the foundation.

This first iteration of the Urban Economic Measurement Framework serves as a starting point towards creating an economic measurement framework suited to South African metros. One that is directly linked to municipal action, that appropriately engages with the complexity of urban systems and can feed back, adapt, evolve and improve over time.

1. INTRODUCTION

South African metropolitan (metro) municipalities comprise 55% of South Africa's economy[1] and 52% of jobs. Between 2011 and 2021, employment in South African metros increased by 222,000 compared to 212,000 for the country as a whole. Prospects of South Africa's economy growing, creating jobs, reducing poverty, and creating opportunities for entrepreneurs will be primarily driven by the urban economies of its metros. While metros are critical to enabling the economy to prosper, evidence suggests an uneven track record in recent decades.

By harnessing the growing availability of administrative, official, and third-party data, metros are better positioned to gain insight into the functioning of their city economies and, on that basis, identify and prioritise interventions that are more likely to yield meaningful developmental returns.

1.1 Purpose of Document

This exploratory research project aimed to investigate the potential to use Municipal Finance Management Act (MFMA) Circular 88 indicators to inform a framework which can measure progress towards economic growth, poverty reduction, job creation, and an improved operating environment for entrepreneurs in South African metros. The research was commissioned by the South African Cities Network's Productive Cities programme, which provides research and market intelligence support to city governments in their drive to enable inclusive and resilient growth.

1.2 Background

Despite significant efforts to embed minimum reporting standards across South Africa's metros, the pace of institutionalisation remains uneven. These laudable efforts have revealed both the gaps in readily available data and the scarcity of technical capacity to engage with data meaningfully.

This exploratory research forms part of a larger effort to streamline reporting and ensure that the reported indicators are consequential to the aggregate development outcomes envisioned by cities.

1.3 Research Brief

The research explored (through desktop review, applicable theory and consultation with city officials) the potential to leverage MFMA Circular 88 indicators and associated reporting **to create an outcomes measurement framework for measuring progress towards four mutually-reinforcing priorities:**

Economic Growth	Poverty Reduction	Job Creation	Entrepreneurship

[1] By GVA 2021. Quantec EasyData.

BOX 1

What is an Outcomes Measurement Framework?

An OMF is a conceptual model for the classification of outcomes with respect to city governments, firms and households. It is a tool to collect and display information about outcome measures characterising the urban economic system. The image below provides a visual illustration of an OMF as applied to the four economic priorities identified above, hereafter referred to in this document as the '**UEMF**':

1.4 Research Questions

The high-level questions guiding the research are:

1. What is a useful **outcomes framework** centred on micro-, small and medium-sized enterprises in metropolitan municipalities in relation to the four priorities listed above?
2. What would be an **ideal set of indicators** for the UEMF?
3. To what extent does **MFMA Circular 88** generate data for potentially useful indicators in this regard?
4. What other indicators and data are available to track progress in relation to the UEMF?

1.5 Structure of the Report

This report is structured in three sections: Section One introduces the research rationale, the points of departure and the conceptual framework guiding the methodology. Section Two surveys the current data landscape in South African metros. This is followed by a review of best practice concerning urban economic outcomes measurement frameworks. Section Three presents the framework adapted to the South African context, linking a set of problem statements to intermediate and high-level outcomes through a set of causal mechanisms which operate through three types of economic actors, i.e., households, growth-oriented entrepreneurs and formal businesses. Having introduced a UEMF, existing data sources are reviewed and collated into a suite of indicators, which are then nested, weighted, and drawn into an indicator dashboard. The preliminary results for the City of Johannesburg are presented to demonstrate the potential of this framework.

1.6 Approach

While the basic premise and potential benefits of systematically measuring economic outcomes can be deduced from international best practice, it will only be helpful to South African metros if adequately adapted to a South African context. To this end, a set of points of departure are put forward, which guide the conceptual development of the OMF. These points of departure reflect, firstly, known characteristics of city economies; secondly, the levers available to city governments in influencing those economies; and thirdly, the current economic conditions facing South African cities. And finally, South African metro governments' track record in influencing these outcomes.

1.6.1 The Nature of the Economies

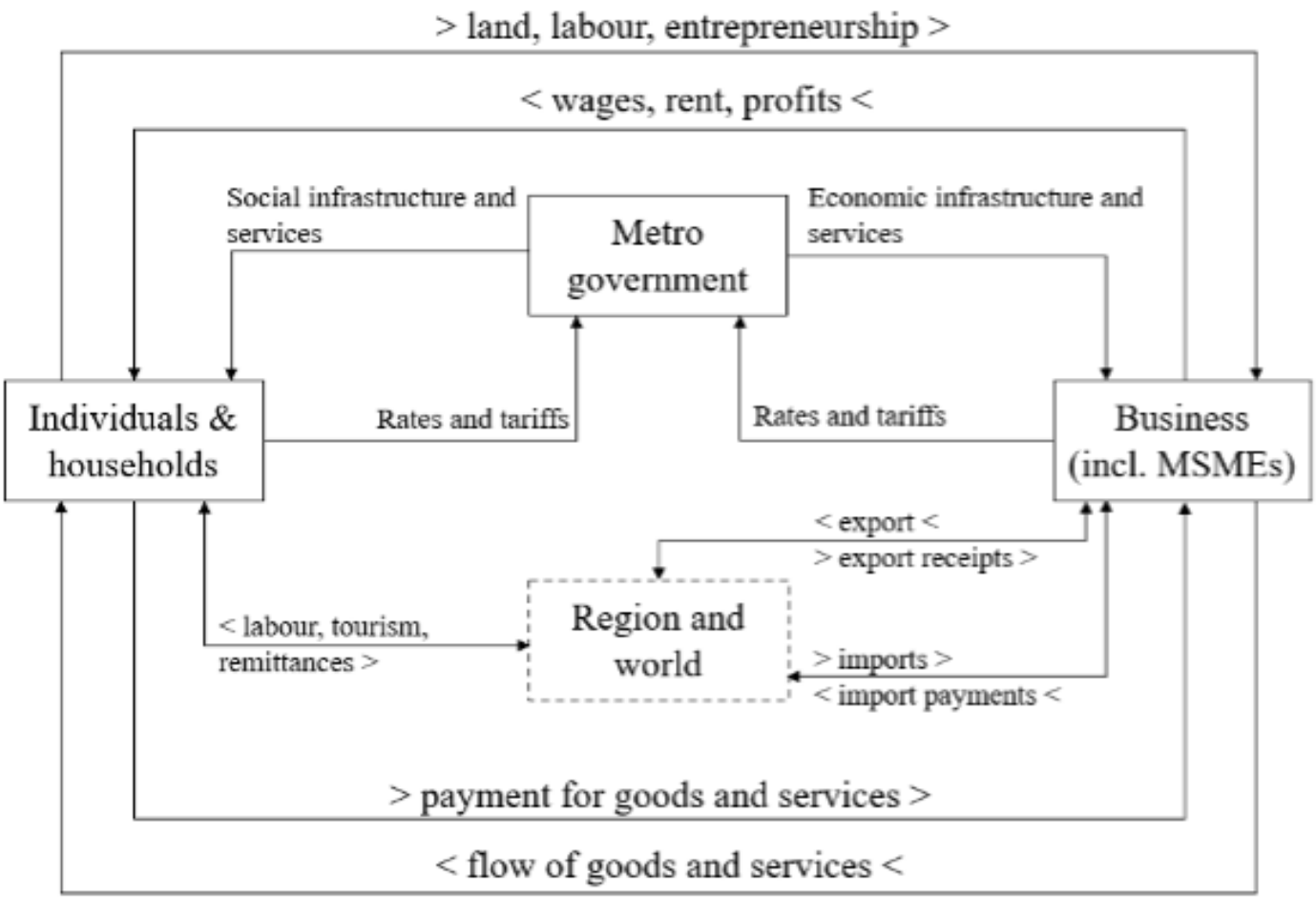
- **City economies are inherently spatial.** The first law of geography states that everything is related to everything else, but near things are more related than distant things. Applied to city economies, economic outcomes (and the causal mechanisms that govern them) cannot be understood unless spatial structure (i.e., economic concentration, accessibility, urban form, place-based dynamics, spatial inequality) is accounted for. One implication for the UEMF is that it should seek to incorporate metrics that reflect spatial structure

- **City economies are complex systems** where everything is connected to everything else (see Figure 1 below). Changes in one part of the system can have a ripple effect on other components. Indicators that are too narrowly defined (e.g., measuring only outputs or sector outcomes) are blind to the efficiency trade-offs and unintended consequences of localised interventions. While cities' complexity makes it difficult to forecast or control the behaviour of urban economies, it also allows for adaptation, self-organisation and resilience in the face of shocks (e.g., the COVID-19 pandemic). One important implication is that the four high-level priorities are not discrete but mutually reinforcing.

- **City economies are driven by markets:** The decisions of private economic actors lie at the centre of the urban economy. Two-thirds of the urban economy are private transactions between individuals, households and firms (see Figure 1 below). The markets operating in a city economy include land, labour, consumer and housing markets. The UEMF would thus need to place these economic actors at the centre of its analysis.

- **City economies are enabled (or disabled) by city governments:** whereas control over city-level economic outcomes is limited by external conditions (e.g., macro-economic stability, State capacity) and natural endowments (e.g., distance to export markets, natural harbours), city governments can enable urban economies by providing and maintaining economic infrastructure and services, and through the efficient and prudent management of taxes and regulations on entrepreneurs and households. Therefore, the UEMF must narrow its focus to levers over which city governments have direct and meaningful influence rather than becoming a laundry list of high-minded policy objectives that – in seeking to achieve too many objectives- achieve none.

Figure 1. Circular flow of value in city economy



1.6.2 Levers Available to Metro Governments

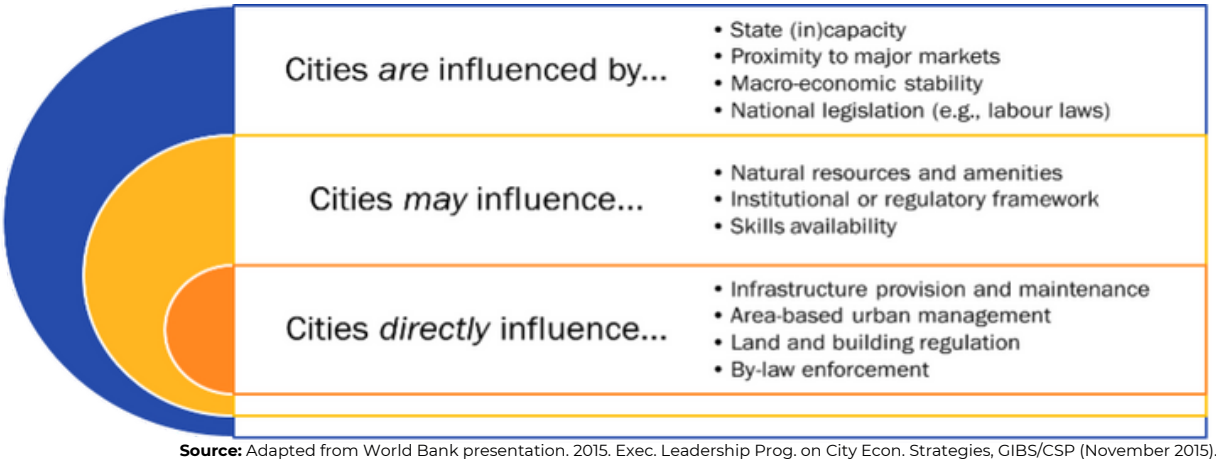
Local governments account for a significant portion of the overall economy. By our estimates, local government spending (both operating and capital) in South Africa in 2021 constitutes 29% of public expenditure and 9% of GDP[2]. This finding is supported by the 2013 Organisation for Economic Co-operation and Development (OECD) analysis, which highlighted that subnational governments account for approximately one-quarter of public expenditure and 9% of GDP. Notably, provincial governments obtain more than 90% of their revenue from national government grants, while local governments obtain only 25% from national government grants; the balance is generated from property taxes and service provision. Despite this tax-and-spend power, the performance of city economies over time – whether measured by employment or GDP – is more closely correlated with the performance of their counterparts in their economic region than the actions of the city governments themselves.

Whereas there is a prevailing tendency in policy discourse to place the State at the centre of cities' economic development, the reality is that more than two-thirds of our city economies are made up of private transactions between individuals, households, and businesses (see Figure 1 above). These private transactions are influenced by a range of factors over which city governments have no control, such as macro-economic stability, proximity to major markets, national legislation (e.g., labour laws) and the capacity (or lack thereof) of State-Owned Entities (SOEs) and national and provincial government departments. Furthermore, given the reality of migration across provincial and national boundaries, key economic metrics such as income per capita or unemployment rates are fundamentally influenced by the relative performance of governments beyond the boundaries of the municipality and, indeed, the country.

Whereas city governments cannot create natural endowments such as mineral resources, clean air, beaches and mountains), they do play a role in managing these natural resources. Similarly, cities have a role in indirectly influencing the drafting of institutional and regulatory frameworks. Finally, while cities are neither mandated nor resourced to supply its economy with adequately skilled workers (through education and training systems), they can indirectly influence the availability of skilled workers by providing the necessary amenities to attract and retain skilled workers (see Figure 1 above).

Ultimately, the main levers available to city governments in promoting positive aggregate economic outcomes reside in its core mandates: (1) to provide social and economic infrastructure, (2) to provide services to customers affordably and effectively, (3) to manage the public realm and (4) to regulate land use and building development (see Figure 2 below). City government's ability to deliver on these four mandates has a far more significant impact on the realisation of the four high-order priorities (or, more concretely, on whether a growth-oriented entrepreneur will survive, grow or fail) than ad hoc, LED-type projects that at best serve only a small number of beneficiaries, often at significant long-term expense by the City.

Figure 2. Role of metro governments in economic outcomes

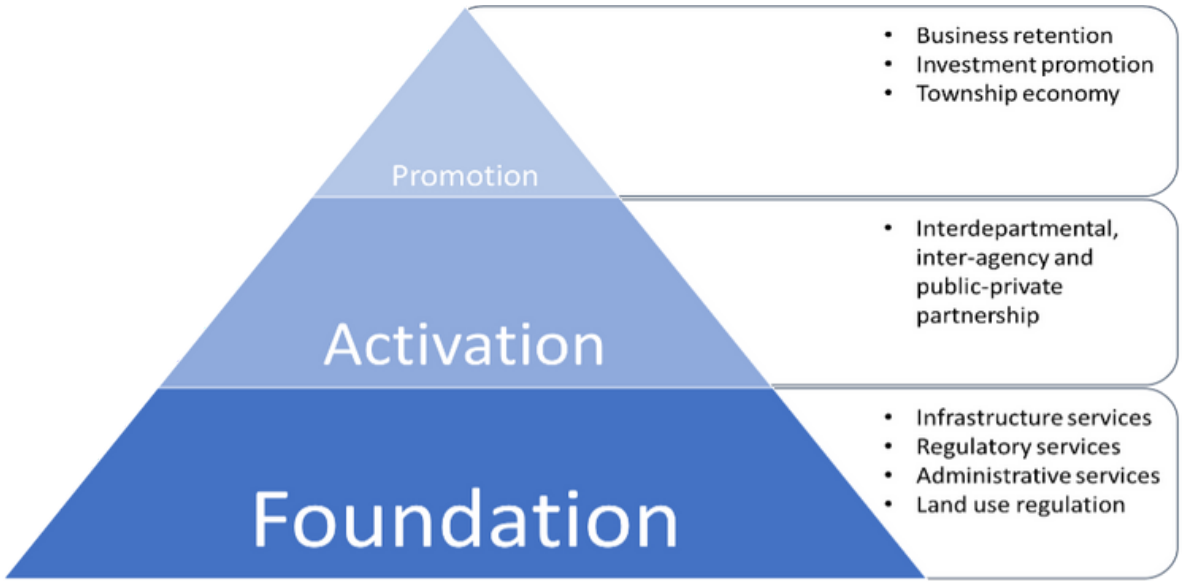


Source: Adapted from World Bank presentation. 2015. Exec. Leadership Prog. on City Econ. Strategies, GIBS/CSP (November 2015).

[2] Quantec EasyData.

This focused perspective on the role of metro governments in economic development is echoed by the Cities Support Programme, which argues that, while macro-economic conditions may be outside of city control, cities can contribute to economic development in the three 'focus areas' described in the figure below. While activation and promotion initiatives can amplify the economic benefits of a solid foundation, these, in isolation, cannot compensate for weaknesses in the foundation. A review of cities' economic development strategies, however, suggests that the relative effort per focus area resembles an inverted pyramid, where the bulk of economic policymaking and programmes is focused on economic promotion, without a commensurate effort to strengthen the city economies' infrastructural foundation nor build partnerships beyond the confines of city departments[3].

Figure 3. Economic infrastructure and services[4]



Source: Adapted from CSP 2018. 4 focus areas for local government

1.7 Methodology

This exploratory research followed a conventional methodology consisting of the following steps:

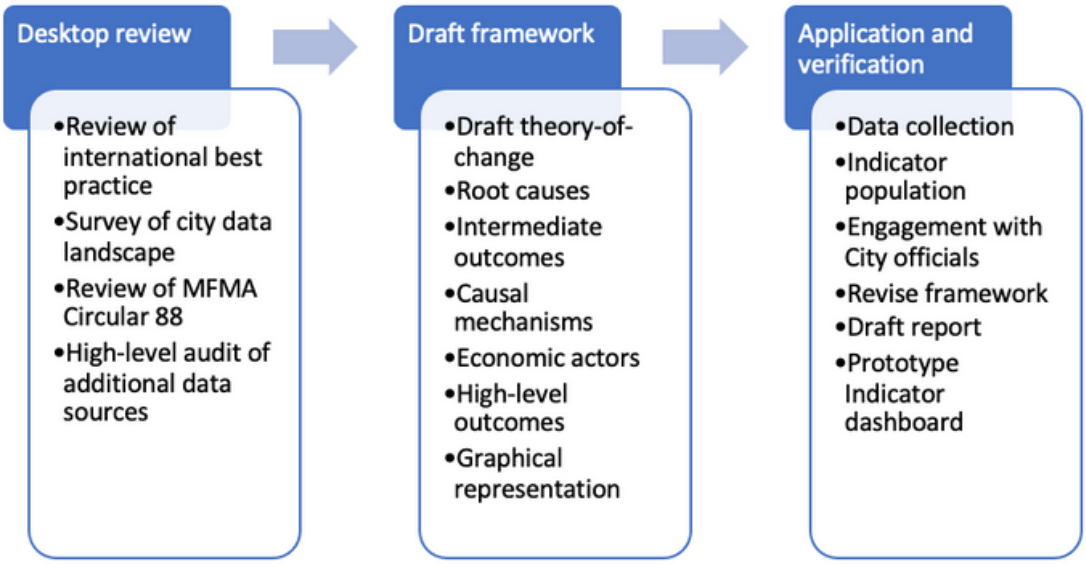
- **Section Two: a** desktop review entailed a review of international best practice on outcome measurement frameworks, identifying several possible approaches. These approaches were then applied to the South African urban economic context. Next, a survey is conducted on the data landscape facing metro officials seeking to drive evidence-led decision-making.

- **Section Three:** In the next phase, a conceptual model is developed, starting with a high-level theory of change. Each of its components and the links that bind them are introduced and described in detail. Starting with the root causes, the framework identifies intermediate outcomes linked to high-level outcomes through a set of causal mechanisms mediated by three types of economic actors: households, growth-oriented entrepreneurs and businesses. This section culminates in an ideal set of indicators linking intermediate outcome indicators with high-level outcomes via a set of causal mechanisms associated with economic actors.

- **Section Four:** The ideal set of indicators identified in the preceding section is tested against a review of the availability of MFMA Circular 88 indicators. This is followed by a high-level audit of additional data sources which have the potential to augment the MFMA Circular 88 data. These additional data sources draw from administrative, official and third-party data. This section culminates in a proof-of-concept indicator dashboard.

[3] See the problem statement below for substantiating evidence.
[4] CSP (City Support Programme, National Treasury). 2018. Cities Support Programme: What the Cape Town Drought Taught Us: 4 focus areas for local governments. Climate Resilience Briefing Note. Available online: https://www.csag.uct.ac.za/wp-content/uploads/2018/12/CSP_climate_policy-brief_2018_11_26.pdf

Figure 4. Methodology



Source: Author

2. INTERNATIONAL REVIEW AND LOCAL LANDSCAPE

This section reviews best practices and the local data landscape. The first part explores international examples of economic measurement frameworks, including some theories on broad approaches to these. It introduces four conceptual approaches that an OMF for South African city economies could adopt. Secondly, we survey the data landscape. This survey – outlining data, analysis and monitoring challenges - was partly informed by the project team members' experience and on an engagement with officials from the City of Johannesburg held in June of 2023.

2.1 Outcomes measurement best practice

While many approaches to monitoring progress in cities exist, this section focuses on measuring aggregate economic progress in cities. In line with the high-level priorities of the SACN, namely inclusive economic growth, poverty reduction, job creation and entrepreneurship, the section attempts to further focus on measurement frameworks for inclusive, resilient, and sustainable urban economies.

The section introduces broad concepts and approaches to outcomes measurement frameworks in cities; it considers the various goals of measurement frameworks and gives brief examples of urban outcomes measurement frameworks, focussing on the urban economic components.

2.1.1 Approaches and Measurements

Before developing an OMF for South African metros, it was necessary to consider urban indicator frameworks from a high level. While the literature on this theory seems limited, a very useful source is the Asian Development Bank's "Urban Indicators for Managing Cities" (Westfall and de Villa, 2001).[5] The document provides a typology of frameworks commonly used to measure outcomes in human development.

[5] Westfall, M. S. and de Villa, V. A. (eds) (2001) Urban Indicators for Managing Cities. Asian Development Bank. Available at: http://www.kas.de/upload/dokumente/megacities/ADB.pdf

Broadly, they are as follows:

- The **policy-related approach** focuses on creating and implementing policies that address specific issues or challenges. It involves identifying the problem, formulating a policy to address it (or identifying a policy already formulated), and monitoring the implementation over time. This approach relates to issues such as urban planning, housing, transportation, and environmental management.

- The **thematic/index approach** uses indexes based on indicators to measure and monitor urban systems. These indicators and indexes relate to a wide range of themes, such as health, education, economic development, environmental sustainability, and social inclusion. The data collected through these indicators can be used to identify trends, compare different cities, and evaluate the impact of policies.

- The **systems approach** views the city as a system of interrelated parts and emphasises the importance of understanding the relationships and interactions between these parts. It involves looking at the city as a whole rather than focusing on individual components or issues. This approach aims to identify the underlying causes of urban problems and develop integrated solutions for urban development.

- The **policy-related approach** above fits the goals of the UEMF most closely. However, components from the other two approaches are also useful, most notably the links to causality and the complexity of urban systems spoken about in the systems approach.

The following table is provided by the Asian Development Bank, which includes three more frameworks[6]. These are performance frameworks (such as Circular 88), needs-based allocation frameworks to inform allocative decisions, and benchmarking frameworks to identify efficiency gaps within organisations:

[6] These are included here for reference only and are detailed further in the referenced work.

Table 1: Typology of city-oriented outcome measurement frameworks

Framework	*For whom*	*Purpose*	*Scope*	*Context*	*By whom*	*Example*
Policy-driven	City planners, policy makers	Dialogue between policymakers and stakeholders	City or sector	Political, pluralist	Stakeholders, experts	UNCHS
Theme- or index-driven	Development professionals	Comparative	Theme or metaphor	Development	Experts (top down)	UNDP
Systems	Experts advising policy	Sustainability	City or theme	Physical	Experts (top down)	State of the Environment
Performance	Policymakers	Accountability	Sector	Managerial	Bureaucracy (top down)	Program budgeting (and C88)
Needs-based allocation	Central policymakers	Resources for target groups	Target groups	Budget setting	Bureaucracy (top-down)	Asian Crisis (Thailand)
Benchmarking	Middle management	Efficiency	Organisation	Units	Employees (top down)	Best practice

Source: Westphal and de Villa, 2001 (pg. 19)

2.1.2 Organisational Rationales for Measurement

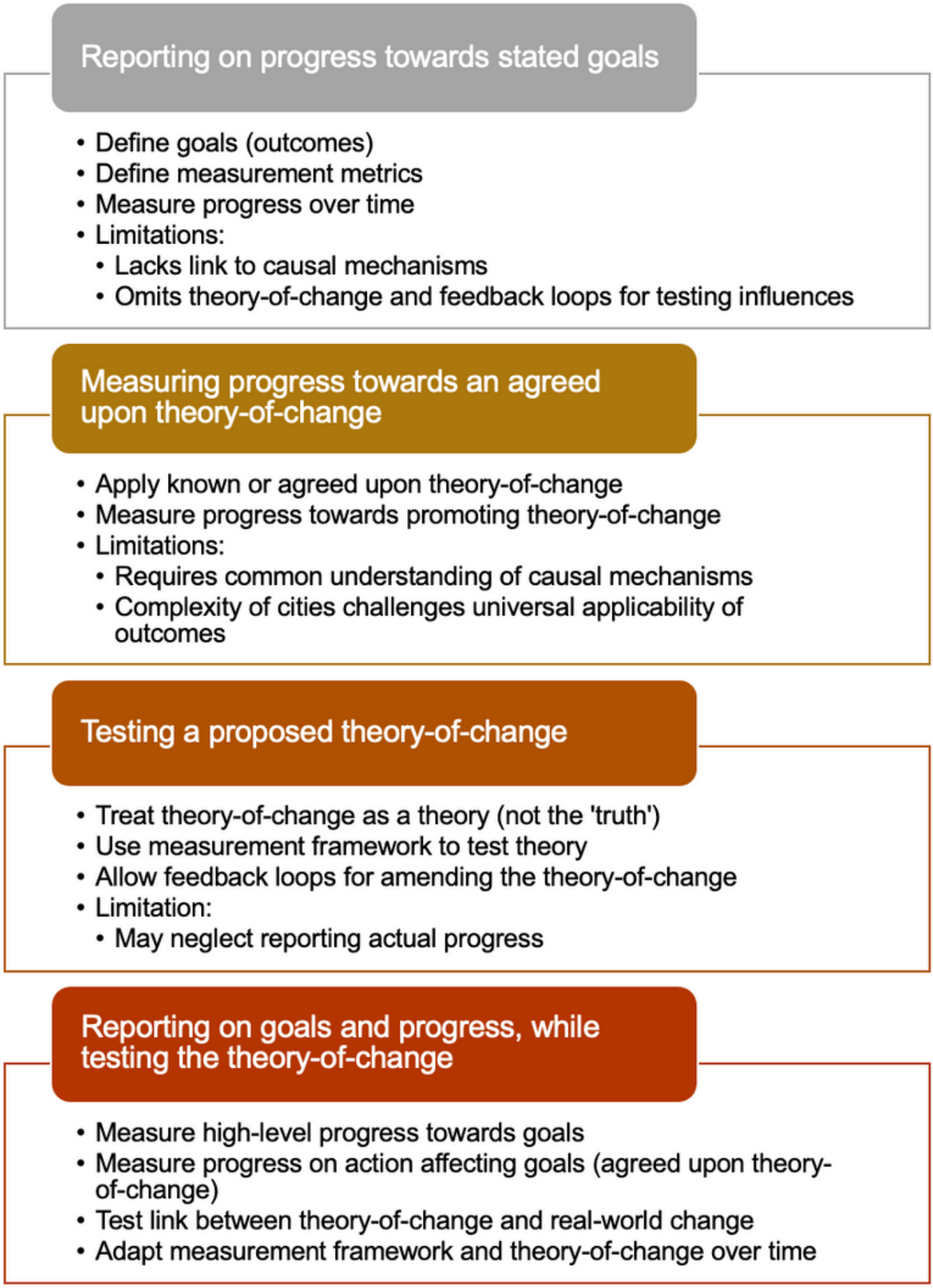
The broad questions various measurement frameworks are designed to answer include: “Are we making the economic progress we would like to make?”, “are our interventions being implemented?” “are our interventions working appropriately?”

To this end, four different organisational rationales for measurement are considered below:

- **Reporting progress towards stated goals:** This is the simplest approach and involves defining goals, defining measurement metrics, and then measuring progress towards those goals over time. A simple example would be a goal of economic growth, defining GDP growth as the test metric and then reporting on that yearly. This approach is a necessary starting point for the ones that follow and, of course, for understanding urban change. It is limited because it lacks a link to actions that drive change. It does not include causal mechanisms, a theory of change, or feedback loops to test what influences change.

- **Measuring progress towards an agreed-upon theory of theory of change:** This approach adds to the simple measuring of change above. It applies a known or agreed-upon theory of change and then measures progress towards achievement. A simple example may be that it is agreed (through research, consensus, experience or other mechanisms) that local government investment in urban infrastructure promotes GDP growth in a city. The framework would create a metric to measure investment in infrastructure and then use that measurement metric (GDP growth) to report progress over time. The theory of change would likely be more complex, with more actions and inputs affecting more outcomes. While this approach considers causal linkages between actions and outcomes while reporting on progress for both, it requires a common understanding of the causal mechanisms. In reality, the complexity of cities may not allow for this. While empirical research may indicate that a specific government action leads to a specific outcome, that link is likely not applicable across all cities. Or it could apply to varying degrees based on local variation. It also requires consensus on a clear and measurable set of cause-and-effect mechanisms which apply to different contexts; this is not easy to achieve.

Figure 5: Four conceptual approaches to Outcomes Measurement Frameworks



Source: Author

- **Testing a proposed theory of change:** Instead of assuming a chain of causal mechanisms and outcomes to be true and using the framework to measure progress, it sees the theory of change as just that, a theory, and uses the measurement framework to test that theory. The theory of change can be based on research, experience, consensus, or hypothesis, but with the caveat that the theory of change is likely only partially accurate. Considering the complexities of cities, this may be a more realistic approach. The approach can then measure change, measure progress in implementing the drivers for change, and allow feedback loops to test and possibly amend the theory of change over time. This approach is limited because it focuses on testing the theory of change while neglecting reporting on actual progress and change.

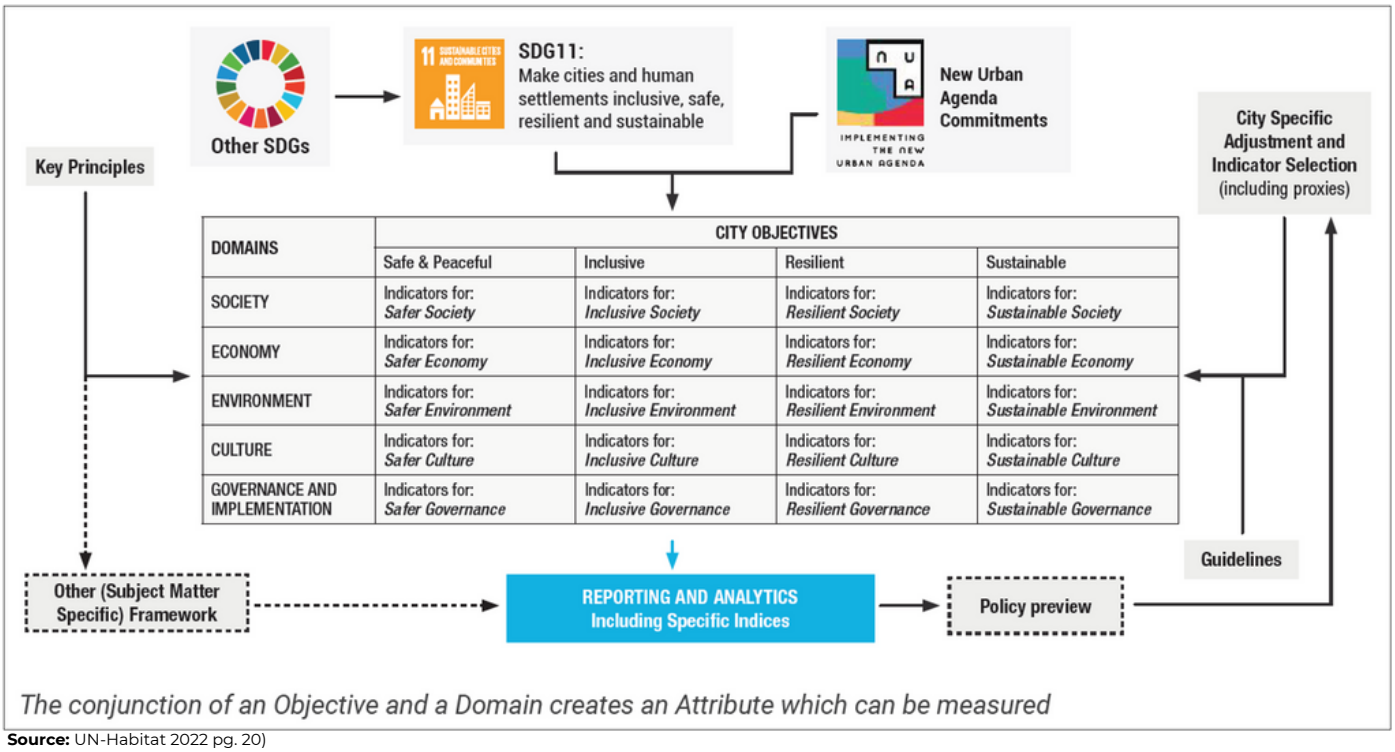
The UEMF is both a measurement framework and an exploratory study towards improving economic outcomes in cities; it is proposed that reporting on goals and progress while testing the theory of change is most applicable to the UEMF (in other words, a combination of the three options above). An approach that measures high-level progress towards stated goals measures progress on action designed to affect those goals, tests the link between the theory of change and real-world change over time, and adapts over time as a measurement framework.

2.1.3 Examples of economically oriented OMFs

This section briefly introduces some prominent urban monitoring frameworks relevant to the UEMF.
The Global Urban Monitoring Framework

In 2022, UN-Habitat produced a comprehensive framework for measuring the urban Sustainable Development Goals (SDGs) and the New Urban Agenda (NUA). It addresses economic, social, and environmental dimensions of sustainable urban development and is designed (where required) to prepare Voluntary Local Reviews (VLRs) and urban data. (UN Habitat, 2022 pg. 4).[7]

Figure 6: Global Urban Monitoring Framework



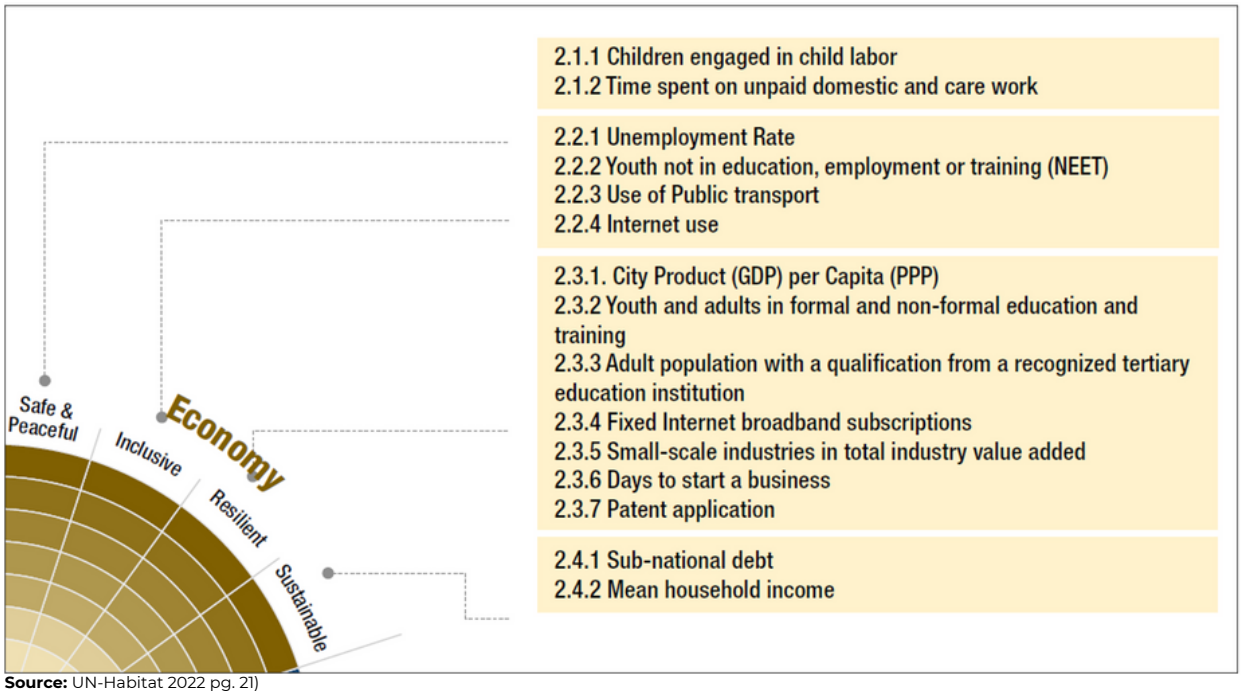
Source: UN-Habitat 2022 pg. 20)

[7] UN-Habitat (2022) 'The Global Urban Monitoring Framework', (March). Available at: https://unhabitat.org/the-global-urban-monitoring-framework.

Figure 7 shows an extract of the "economy" domain with the city objectives and listed indicators. The indicators described here are helpful for the UEMF and have inspired some of the indicators proposed later in the document.

An important aspect of UN Habitat's Global Urban Monitoring Framework is its acknowledgement of the need for adaptability in different contexts. To this end, proxies are recommended where specific data is unavailable, and proxy measures are used for challenging to quantify outcomes. This is important for the UEMF in the context of the data limitations noted above. Where data is missing, collected differently from what is required, or specific to a particular area, there should be scope for local adaption of the framework.

Figure 7: Economy Domain of the Global Urban Monitoring Framework



Source: UN-Habitat 2022 pg. 21)

UN-Habitat's City Prosperity Initiative/Index (CPI)

The City Prosperity Index developed by UN-Habitat measures the prosperity of cities across the world based on six dimensions: productivity, infrastructure development, quality of life, equity and social inclusion, environmental sustainability and governance and legislation. Baseline data for the index is available for 2016 and is also downloadable in a GIS format; however, it only includes data for the City of Johannesburg and the City of Cape Town as far as South Africa is concerned. Table 2 below summarises the data used in the CPI:

Table 2: Dimensions, themes and indicators from the City Prosperity Index

Dimensions	*Themes*	*Indicator*	*Unit*
Productivity index	Economic strength	City product per capita	USD (PPP)
	Employment	Unemployment rate	Rate
Infrastructure development index	Housing infrastructure	Improved shelter	%
		Access to improved water	%
	Social infra.	Physician density	Per one thousand
	ICT	Internet access	%
	Urban mobility	Use of public transport	%
		Average daily travel time	Min
		Traffic fatalities	# per 100 000
Quality-of-Life	Health	Life expectancy at birth	Years
		Under-five mortality rate	Rate
	Education	Literacy rate	Rate
		Mean years of schooling	Years
	Security	Homicide rate	Rate
Equity and Social Inclusion	Economic equity	Gini coefficient	Ratio
		Poverty rate	Rate
	Social inclusion	Slum households	%
		Youth unemployment	%
	Gender	Secondary school enrolment	Ratio
Environmental sustainability	Air quality	PM2.5 concentration	µg/m3
		PM10 concentration	µg/m3
	Water and energy	CO2 emissions	µg/m3
		Renewable energy consumption	%
Urban governance and legislation	Participation	Voter turnout	%

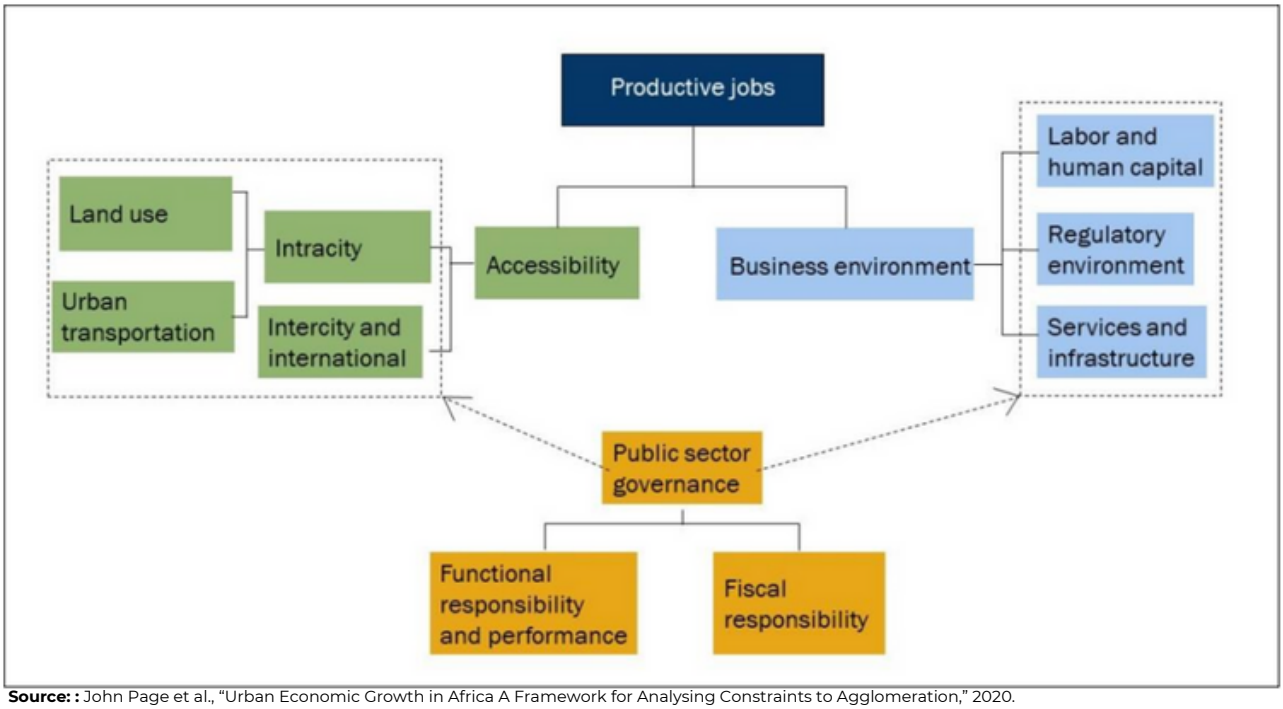
Source: UN Habitat (2020) City Prosperity Index | Urban Indicators Database. Available at: https://data.unhabitat.org/pages/city-prosperity-index (Accessed: 28 March 2023).

Brookings Institute's Framework for African Cities

While this is not an outcomes measurement framework, it is helpful to the UEMF in that it defines areas of constraint that prevent cities (specifically in Africa) from benefitting from agglomeration, namely accessibility, the business environment and public sector governance (Page et al., 2020).[8] It also defines indicators and data sources that can be used to measure these. The framework is summarised in Figure 8.

The Brookings Institute framework is beneficial because it extends from merely reporting economic outcomes. Like the UEMF aims to do, it builds on theory relevant to the constraints to economic advancement in African cities and defines a normative outcome: increasing productive jobs. It also engages with the informal sector, seeing it as a core and vital part of the economy in African cities that should be supported through government intervention.

Figure 8. Urban Economic Growth Framework



Source: : John Page et al., "Urban Economic Growth in Africa A Framework for Analysing Constraints to Agglomeration," 2020.

Global Competitiveness Indexes of Cities

Although several indexes rank the global competitiveness of cities, they were not relevant to the UEMF as it does not seek to rank South African cities. The UEMF is seen as a tool for improving outcomes, not one for ranking performance. Nonetheless, two examples of competitiveness indexes for cities are introduced below.

The Global Urban Competitiveness Report (GUCR)

The Global Urban Competitiveness Report (GUCR) is produced by the Chinese Academy of Social Sciences (CASS) and UN-Habitat. "Through theoretical research and empirical investigation, the report establishes an indicator system to measure the economic competitiveness and sustainable competitiveness of more than 1,000 cities across the world" (Pengfei et al., 2021 pg. 4).[9] Table 3 summarises the approach to creating the index.

[8] Page, J. et al. (2020) Urban economic growth in Africa A framework for analysing constraints to agglomeration. Available at: https://www.brookings.edu/wp-content/uploads/2020/09/20.09.28_urban_economic_growth_in_africa_FINAL.pdf.
[9] Pengfei, N. et al. (2021) 'Global Urban Competitiveness Report (2020-2021)-Global Urban Value Chain: Insight into Human Civilization over Time and Space', p. 101. Available at: https://unhabitat.org/report-on-sustainable-competitiveness-of-cities-worldwide2020-2021.

Table 3. Global Urban Competitiveness Report

Primary indicators	*Secondary indicators*	*Tertiary indicators*	*Quaternary indicators*
Degree of agglomeration	Hard agglomeration	High-end industrial agglomeration	Distribution of top corporate headquarters
		High income population concentration	Population with annual income above $20 000
	Soft agglomeration	Number of patents	Data of patent applications
		Number of papers	Data of papers published
Degree of connection	Hard connection	Number of aviation lines	Data of international flights
		Multinational company contraction	Distribution of HQs of top 175 productive services companies
	Soft connection	Information connections	Google trends of each city
		Knowledge connection	Data of papers published by cities in cooperation with other cities

Source: : JKamiya and Ni, 2020 pg. 12)[10]

Hot Spots Benchmarking Global City Competitiveness

This index, produced by the Economist Intelligence Unit, ranked 120 global cities in terms of competitiveness. The last index was produced in 2013 and used a range of indicators related to the following themes: economic strength, human capital, institutional effectiveness, financial maturity, global appeal, physical capital, environment and natural hazards and social and cultural character (Economist Intelligence Unit, 2012 and 2013).[11][12]

2.2 Economic monitoring landscape in South African metros

The project team met with officials from the City of Johannesburg to present and solicit feedback on the project. The City was represented by officials from the Department of Economic Development (DED) and Group Strategy, Policy Coordination & Relations (GSPCR). Insights from this meeting, along with project team members' experience working with municipalities on various indicators and urban monitoring processes, form the basis of this section. This section briefly introduces some challenges and opportunities for monitoring economic progress in South African cities.

The existence and availability of data varies across municipalities and even across departments and entities within municipalities. This was further affirmed by CoJ officials who noted that unlike the National Government, which has an entity dedicated to data, Stats SA, the City's data landscape is fragmented and uncoordinated; the need for better central data sources within the City was raised. Much of the available data is contained in reports that take time to collect and collate. While the MFMA Circular 88 indicators attempt to create common formats and systems for data collection and reporting, it is nascent and its benefit is yet to be realised. It was highlighted that it will take time for data infrastructure to be built across the three spheres of government that can consistently collect and share data.

[10] Kamiya, M. and Pengfei, N. (2020) Global Urban Competitiveness Report (2019-2020) The World: 300 years of transformation into city. Available at: https://unhabitat.org/sites/default/files/2020/10/global_urban_competitiveness_report_2019-2020_the_world_300_years_of_transformation_into_city.pdf
[11] Economist Intelligence Unit (2012) Hot spots Benchmarking global city competitiveness. Available at: https://www.citigroup.com/citi/citiforcities/pdfs/eiu_hotspots_2012.pdf.
[12] Economist Intelligence Unit (2013) Hot spots 2025 Benchmarking the future competitiveness of cities. Available at: https://www.citigroup.com/citi/citiforcities/pdfs/hotspots2025.pdf.

Additionally, resources (e.g. human capital, equipment and software) for collecting, analysing and reporting data are limited. Oftentimes, no specific people are hired for data collection and analysis. Rather the data-related tasks are added to existing workloads.

City officials also raised data relevance, questioning some of the metrics used in the MFMA Circular 88, e.g., the focus on GDP or GVA growth as the primary measure of economic improvement in cities. This is important for the following section and the UEMF, which stress the link between theories of change in the economy and data collection and reporting. Critiques like the one above are essential for improving cities' approaches to economic development over time, as they provide the starting points to generating new ways of doing things.

Datasets in municipalities are collected and stored in different ways. Municipalities are independent and, within the limitations defined by the legislative landscape, have scope to do things differently from one another. This may relate to policies, processes, systems and even by-laws. For data collection, different definitions, formats, and scales (temporal and spatial) may be used by different municipalities and spheres of government. This in itself is not a problem, and the system of governance in South Africa has been designed like this to allow for place-specific interventions. However, it can create challenges when comparing information across different metros. While some regularisation is useful (as is attempted with the MFMA Circular 88 indicators), as is seen later when assessing examples of international urban measurement frameworks, some flexibility in these frameworks is needed to allow for local variation.

Regarding economic data, CoJ Officials noted a specific lack of data. However, several solutions were also mentioned to address this shortfall, including a series of surveys, some planned and others already initiated. This includes an annual citywide business survey that can spatially and temporally monitor changes in the business environment. Similar surveys were mentioned for industrial areas, and the Quality-of-Life Survey run bi-annually by the Gauteng City Region Observatory and contributed to by the City of Johannesburg. The City also purchases data from various sources, including IHS Markit and FDI Markets.

A final notable input from CoJ officials was the importance of spatial economic data. Like much of the discussion regarding government data in South Africa, the City recognised the need for quality micro-level economic data. This would allow for more targeted and locally focused interventions that support economic growth. It was emphasised that there needs to be improved linkages between cities' spatial and economic planning departments. And that tailored interventions are needed for specific industries/areas, such as industrial parks.

2.3 Application to UEMF

The UEMF is being produced in a complex context of existing theory, well-established approaches to measuring urban outcomes, and an evolving landscape of economic measurement and reporting in South African cities. While challenges exist, promising progress is being made in metros, of which we hope the UEMF will be a part. Some of the key findings from this chapter are as follows:

n the landscape of economic monitoring in South African cities:

- Data availability and coordination are challenging, with inconsistencies across municipalities and even municipal departments.

- Limited resources hinder the process of data collection, analysis, and reporting.

- The use of different data collection methods, formats, and definitions across municipalities can make inter-municipal comparisons difficult.

- Potential bias and conflicts of interest can exist in self-reported data.

- To enhance targeted interventions, Johannesburg officials have emphasised the importance of spatial economic data.

While several approaches to economic frameworks exist, we propose an integrated approach that should be used for the UEMF: Reporting on goals and progress while testing the theory of change.

Numerous existing international monitoring frameworks are available, each with its own strengths and weaknesses. These have collectively influenced the development of the UEMF. For instance, UN Habitat's framework recommends using proxies for data that is unavailable or difficult to quantify, supporting our view that the UEMF needs to be adaptable to data limitations and local variance. The Brookings Institute framework, like the UEMF, goes beyond merely reporting economic outcomes. It focuses on overcoming constraints to economic advancement in African cities, promoting job creation, and recognising the importance of supporting the informal sector. While several global competitiveness indexes exist, the UEMF's goal is not to rank South African metros. Instead, it is seen as a tool for improving economic outcomes.

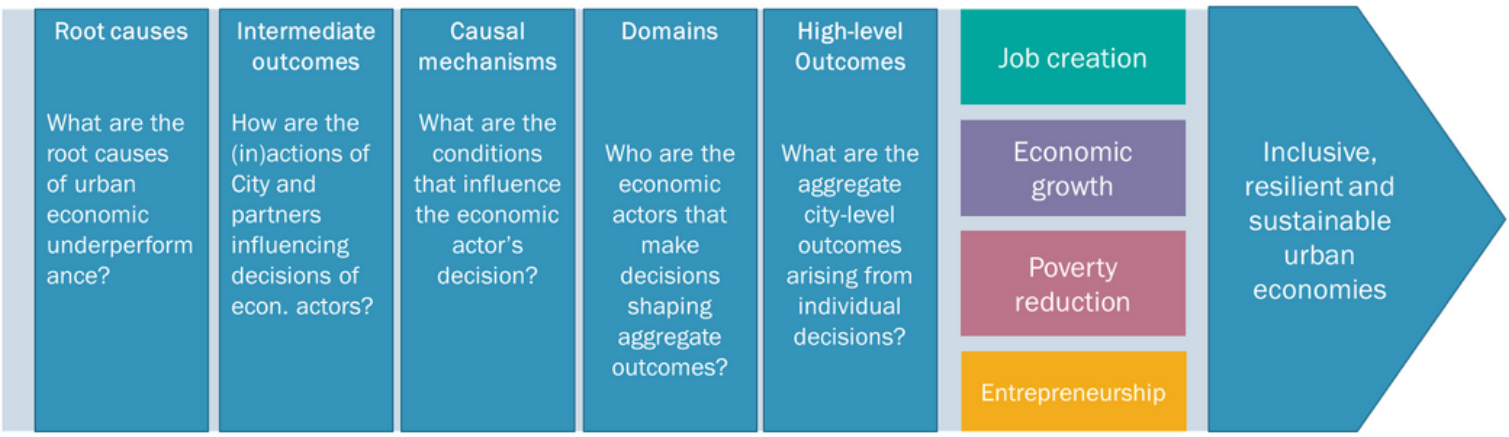
3. BUILDING THE FRAMEWORK

3.1 Theory-of-Change

The theory of change, applied to the UEMF, is intended to provide a broad causal logic. It begins with the question: what are the root causes of urban economic performance and non-performance? The approach taken by the UEMF is to place the economic actors that constitute the city economy – households, entrepreneurs and established (formal) businesses – at the centre of the economy. As per Figure 8 above, the metro government's role is to enable these economic actors to meet their material objectives. Given that city economies are complex, inter-related systems, enabling households to realise upward economic mobility, enabling entrepreneurs to build and grow their businesses, and enabling formal businesses to (similarly) grow, reinvest, employ and compete with other markets, all contribute to the realisation of the four aggregate economic priorities. The question thus arises: which conditions affect the decisions of those actors, and how do the actions and inactions of metro governments – whether direct or indirect – positively or negatively influence the realisation of an enabling economic environment? Finally, which measurable citywide outcomes can be confidently associated with the realisation of the four aggregate economic priorities?

These relationships are illustrated in the figure below:

Figure 9. High-level structure of the UEMF



Source: : Author

3.2 Root Causes

The two high-level and long-term urban economic dynamics common to all South African city economies are:

- **Urbanisation without growth:** while rapid urbanisation in other developing regions has been accompanied by fast economic growth and rising incomes, the gap between in-migration and income growth continues to widen in South African cities. One of the main reasons is that urbanisation has been driven by consumption rather than industrialisation. Consequently, tradable sectors (i.e., manufacturing and mining), essential for aggregate employment and income growth, have declined relative to non-tradeable sectors. The consequence of consumption-driven urbanisation is that city economies cannot rely on their "demographic dividend" from a relatively youthful population to drive long-term economic growth.

- **Deteriorating business operating environment:** underinvestment in the provision and maintenance of economic infrastructure, combined with a deterioration in public safety specifically and urban management in general, have precipitated a capital flight from employment nodes that are accessible towards peripheral "managed" enclaves far removed from public transport and increasingly served by private economic infrastructure. For emerging entrepreneurs, adverse operating conditions raise risks, reduce profits, and discourage reinvestment.

From the metro government perspective:

- **Limited success of LED and TOD:** The traditional, ad hoc approach to local economic development has not yielded broader economic returns over the past thirty years. Despite cities' preference for city-led capital projects such as cultural centres, incubators, etc., these projects, at best, reach a small number of beneficiaries. These projects often fail within ten years due to inadequate long-term planning, budget constraints, poor coordination, vandalism, extortion or corruption. More recently, transit-oriented development ('TOD') offered a more programmatic approach to economic intervention, harnessing the possibilities created by significant capital investment in public transport. With the benefit of hindsight, however, it is evident that these investments alone were insufficient to compensate for unevenness in the underlying urban land market and to unlock the expected land use responses along public transport corridors.

- **Cities are not spending efficiently:** A review of the performance of the South African economy from 2007 to 2022 by economist Ricardo Hausmann found that "[public sector] expenditure has become increasingly inefficient over time, with increasing expenditures of dubious productivity"[13] resulting in a "failure of policies to generate growth and employment". Consequently, Hausmann finds, South Africa's fiscal multipliers have, in recent years, dropped below zero[14]. In other words, every additional Rand taken from households and businesses through rates and taxes and spent on government programmes has a net negative impact on GDP

- **Cities are underinvesting in economic infrastructure:** There is a direct relationship between economic infrastructure investment and long-run economic growth[1][2]. Such infrastructure is largely revenue-generating and is well suited to being financed through borrowing. However, recent research has found that South African cities are generally underinvesting in economic infrastructure, limiting the potential for cities to support economic growth, job creation, poverty reduction and entrepreneurship. The SACN's State of Cities Finances Report found that the value of infrastructure (measured as PPE[3]) is declining relative to population growth in most of the cities[4]. Regarding committed budgets, metros in Gauteng are spending between 5 and 9 cents on capital projects for every Rand budgeted for operational expenses (against a National Treasury benchmark of 10 and 20%).

- **Cities are not partnering with the private sector:** Many metros have become increasingly dependent on grants, meaning they continue to roll out infrastructure to serve poor communities but fail to invest in infrastructure to enable economic growth, poverty reduction and job creation at scale. To close the gap, Lever 9 of the IUDF[19] emphasises the need for local government to leverage partnerships with the private sector to sustainably finance inclusive economic growth:

"Reaping the urban dividend underpinned by integrated urban infrastructure will be impossible without mutually beneficial partnerships between local government and the private sector" (IUDF, pg. 73).

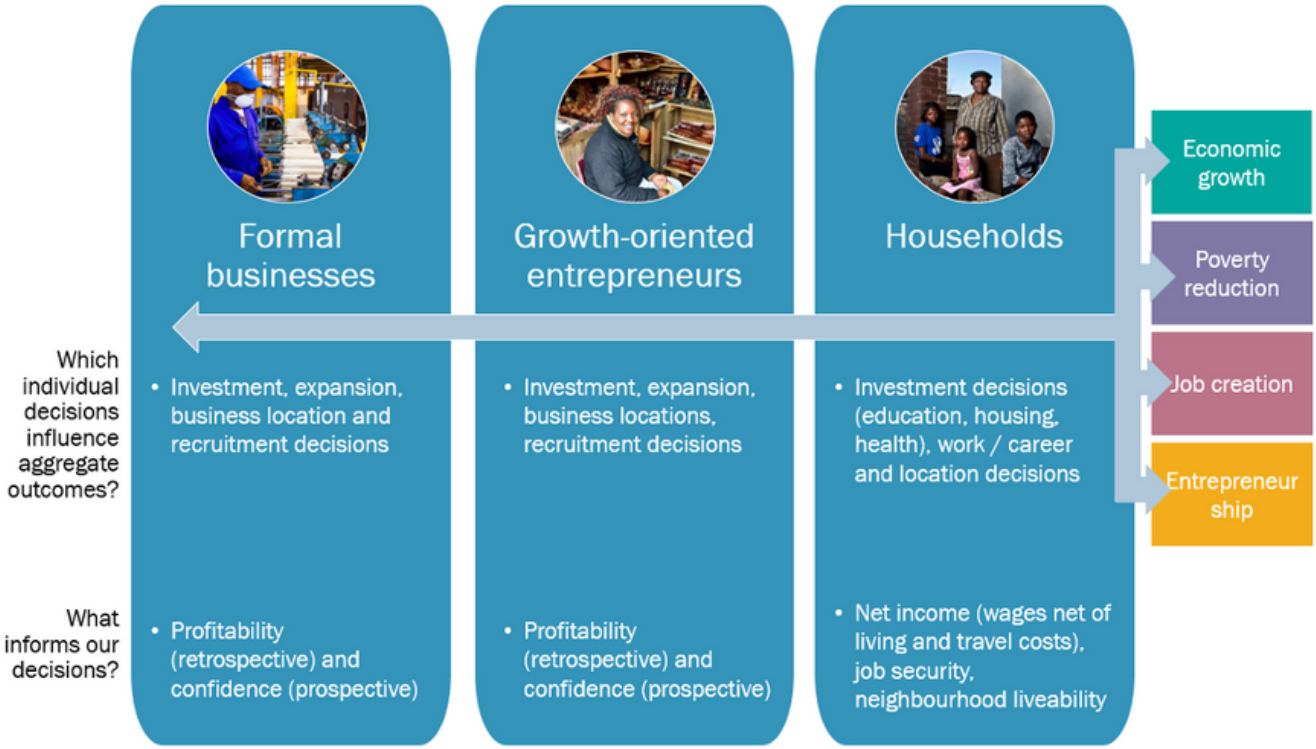
[13] Ricardo Hausmann, "South Africa's Macroeconomic Risks after a Decade of Microeconomic Turbulence," Working Paper Series 404 (Cambridge, Mass.: Centre for International Development, 2022), 21, https://growthlab.cid.harvard.edu/publications/macroeconomic-risks-after-decade-microeconomic-turbulence-south-africa-2007.
[14] Hausmann, 34.
[15] Peter Perkins, Johann Fedderke, and John Luiz, "An Analysis of Economic Infrastructure Investment in South Africa," South African Journal of Economics 73, no. 2 (2005): 211–28, https://doi.org/10.1111/j.1813-6982.2005.00014.x.
[16] provided that individual projects are chosen on the basis of appropriate cost-benefit analysis
[17] Property, plant, and equipment
[18] SACN, "State of City Finances Report" (Johannesburg, 2022).

However, the 2022 SACN report found a very slow uptake of public-private partnerships, with only 22 PPPs registered in various stages of finalisation, all of which were registered before 2017[20].

3.3 Causal Mechanisms

What distinguishes the UEMF from previous metro government-oriented economic measurement frameworks is that it explicitly places the economic actor—the individual, the household, the growth-oriented entrepreneur—at the heart of the city economy.It recognises that citywide economic outcomes, i.e., economic growth, job creation, poverty reduction and entrepreneurship, reflect the aggregation of economic decisions by those economic actors over time: where to work, where to access services, where to invest, how much to invest, where to live, whether to grow one's business, whether to employ additional staff etc.[21]

Figure 10. Ecomomic Actors



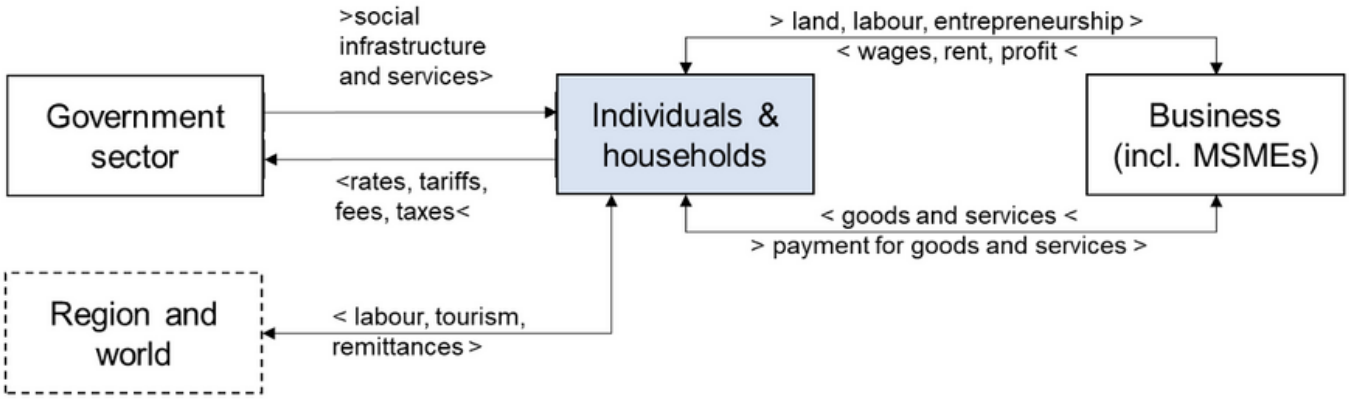
Source: : Author

[19] Department of Cooperative Governance and Traditional Affairs, "Integrated Urban Development Framework: A New Deal for South African Cities and Towns," 2016.
[20] SACN, "State of City Finances Report."
[21] This is admittedly quite different to the conventional lens applied by city officials with respect to economic development, which tends to place the City at the centre of economic development, in the belief that micro-economic interventions will somehow catalyse aggregate economic change. Underlying this traditional City-centered model is an assumption that individuals and entrepreneurs' motivations are perfectly aligned to the top-down economic development and spatial strategies generated by City officials principally concerned about spending budgets in line with available organisational resources.

3.1.1 Ecomomic Actors

- **Households:** Households are the primary consumers in the economy, purchasing goods and services, driving demand and stimulating economic activity. Their consumption patterns and preferences influence the production and distribution of goods. Households sell their skills and expertise to businesses, contributing to the production of goods and services. When they engage in entrepreneurial activity (see below), they contribute to job creation, innovation and economic growth. Households save, invest and pay taxes and tariffs. Notably, R1.6 trillion was paid to households in the form of employee compensation in 2021 across all South African metros (equal to 53% of metro GVA)[22]. Factors like productivity, commuting costs and access to public services all weigh on households' decisions in their desire to improve their material circumstances (i.e., upward economic mobility).

Figure 11. Households in the economy



Source: : Author

- **Growth-oriented entrepreneurs:** Like any successful businesses, growth-oriented entrepreneurs [23] are motivated by growth. From an economic perspective, there is little difference between growth-oriented formal and informal entrepreneurs. Many growth-oriented entrepreneurs are in processing activities or construction, welding and furniture making. These growth-oriented firms exhibit relatively high rates of return to fixed capital and attract more technically skilled entrepreneurs relative to retail trade or household services. The distinction between formal businesses and growth-oriented entrepreneurs in the UEMF reflects the policy need to target emerging entrepreneurs explicitly and that respective policy levers may yield different short-term impacts on emerging entrepreneurs relative to more established firms. For example, growth-oriented entrepreneurs may be less sensitive (in the short term) to tax relief or export facilitation while benefiting disproportionately from improvements to the business operating environment or the quality of economic infrastructure.

- **Formal businesses:** Like growth-oriented entrepreneurs, formal businesses are driven by growth and decide where to invest, whether to grow, or whether to close, based on their accumulated financial resilience and their confidence in expected future profits. Like entrepreneurs, formal businesses seek to generate profits by minimising costs and maximising sales revenue. Operating conditions, company taxes, regulations, workforce quality, and economic infrastructure shape their economic decisions. By reflecting on the factors that influence the decisions of economic actors, a model of economic decision-making emerges, which consists of six real-world causal mechanisms that link intermediate and high-level outcomes and, ultimately, the four high-level priorities.

[22] Quantec Easydata. Current prices.
[23] See Box 2 below for distinction between growth-oriented entrepreneurs and survivalist traders.

Figure 12. Causal mechanisms linking intermediate and aggregate outcomes.

Source: : Author

BOX 2

Entrepreneurialism and survivalism – a critical distinction

From a policy perspective, it is noteworthy that longitudinal studies[1] have shown a qualitative difference between growth-oriented informal entrepreneurs and survivalist traders[1]. Growth-oriented entrepreneurs create jobs already in the initial phases of the firm, whereas survivalist traders generally do not show even small increments in the number of hours employed. Survivalist businesses motivated by unemployment are far less likely to survive than those that have seized a business opportunity. Survivalist businesses—who tend to operate from their homes—were found to be far removed from formal sector business practices and do not generally create jobs. From a policy perspective, government and private sector policies aimed at stimulating survivalist traders are ineffective if their strategy assumes that survivalist and growth-oriented entrepreneurs are on different stages of the same trajectory rather than acknowledge their qualitative differences and develop appropriate policy responses for each. In other words, support for survival businesses cannot be seen as a temporary kick-start intervention, which, by providing one or more missing ingredient, sets in motion a self-sustaining process of business growth. Instead, ongoing socially-oriented intervention is more appropriate—focusing on education, health, social infrastructure, property rights, and specific policies to assist survivalists in coping better with their business.

3.1.2 Validity of causal mechanisms

Since one of the intended contributions of the UEMF is to embed systematic, evidence-led tools and practice into allocative decision-making processes within cities, it is necessary to interrogate the validity of the causal mechanisms applied to the UEMF (see table below):

- **Internal validity:** Do these causal mechanisms accurately describe the relationship between observed intermediate (i.e., sector-level) and high-level outcomes at the scale of the city? Are there significant confounding factors not discussed here that may disproportionately influence the result? For example, Hausmann has found strong links between political developments and South Africa's economic growth performance[24].

- **External validity:** Are the causal mechanisms representative of the general economic dynamics in South Africa and across all South African metros? Alternatively, are conditions and constraints per city simply too idiosyncratic?

Given the scope of this exploratory research, it is neither possible nor realistic for it to assume unqualified internal and external validity with respect to the six causal mechanisms. However, one of the intended benefits of OMFs is to stimulate debate and structure scholarly research into the underlying dynamics that govern our metro economies. To develop a proof-of-concept for the UEMF, the project team drew on literature and published empirical findings (conducted, ideally, in similar contexts). In economics, theoretical and empirical work regarding the relationship between variables is often embodied in what is referred to as "stylised facts". These refer to empirical regularities and patterns observed in data consistently found across different studies and contexts, providing a foundation for developing models to explain the underlying mechanisms. Since stylised facts simplify complex phenomena, the causal mechanisms in the UEMF (as a living framework) should remain subject to ongoing empirical and theoretical scrutiny.

[24] Hausmann, "South Africa's Macroeconomic Risks after a Decade of Microeconomic Turbulence."

Table 4. Causal mechanisms

Causal mechanism	*Description*	*Domains impacted*
Business operating conditions	Economic infrastructure enhances the efficiency and productivity of small businesses, allowing businesses to produce and grow more with fewer private resources. When combined with good urban management, an enabling business operating conditions increases aggregate economic growth and the probability of MSME survival and growth.	Formal economy Growth-oriented entrepreneurs
Regulatory and tax conditions	Regulatory and tax conditions impose constraints and administrative costs on economic actors. When fiscal multipliers are negative, tax burden crowds out economic growth. Excessive business regulations reduce the probability of MSME survival and growth.	Formal economy Growth-oriented entrepreneurs
Spatial efficiency of urban system	The density of labour markets is a key driver of economic growth in cities. Commuting costs not only imposes costs on workers, but - with access to fewer potential recruits - reduces the profitability of firms, thereby reducing economic growth and job creation.	Formal economy Growth-oriented entrepreneurs Economic mobility of households
Human capital productivity	Educational attainment, health and psycho-social conditions all shape the productive potential of individuals, and hence their prospects for employment and wage-earning potential. While the production of skills falls within provincial and national mandates, city governments may seek to retain and attract scarce skills by ensuring a high-quality living environment.	Economic mobility of households Growth-oriented entrepreneurs Formal economy
City competitive-ness	Long-run economic growth depends on ability of cities to generate inward flows of export earnings, skilled workers, tourists, and capital. Trade competitiveness requires natural advantage and cost efficiencies, skilled workers and tourism requires residential and cultural amenities, and capital requires business confidence and financial governance.	Formal economy
Effectiveness in providing public goods and services	A key role of the public sector is to provide those goods and services which cannot be provided affordably, efficiently, or equitably to households and businesses. When city governments are effective in providing such public goods, the probability of households realising upward economic mobility is less dependent on their starting conditions in terms of resources. This is locally referred to as the “social wage”.	Growth-oriented entrepreneurs Economic mobility of households

3.4 Ideal set of intermediate (sector) outcome indicators

	Intermediate outcome indicator	Causal mechanism						Economic actor*		
		Business operating conditions	Regulatory/ tax burden	Spatial efficiency	Human capital productivity	Regional competitive ness	Effective public goods and services	HH	GE	FB
1	% of grant-funded capital budget spent by metro	X					X	X	X	X
2	Aggregate value of metro property, plant and equipment	X					X	X	X	X
3	Aggregate value of fixed capital stock per capita	X					X	X	X	X
4	Frequency of unplanned water mains failure per 100km of pipeline	X					X	X	X	X
5	Number of potholes reported per 10km of municipal road	X					X	X	X	X
6	Robberies reported at business premises per 100 000 persons per year	X					X		X	X
7	Non-Eskom power generation capacity as % of citywide consumption	X					X		X	X
8	Number of solar panels	X	X				X		X	X
9	Aggregate expenditure on City Improvement Districts	X								X
10	Average days taken to register title deed		X					X		
11	Average time to finalise business license application		X						X	X
12	Effective rates burden on residential property		X					X		
13	Effective rates burden on commercial property		X							X
14	Access to jobs (distance to nearest thousand jobs)			X	X			X		X
15	Average travel time per 10 km			X	X			X	X	X
16	Percentage of households < 10 minutes from scheduled public transport			X				X		
17	Percentage of monthly income spent on public transport			X				X		
18	% of adults covered by private credit bureau				X				X	
19	% of adults with access to internet				X				X	
20	Number of EPWP work opportunities				X			X		
21	Number of international visitor arrivals					X				X
21	Value of export earnings					X				X
22	Value for Foreign Direct Investment					X				X

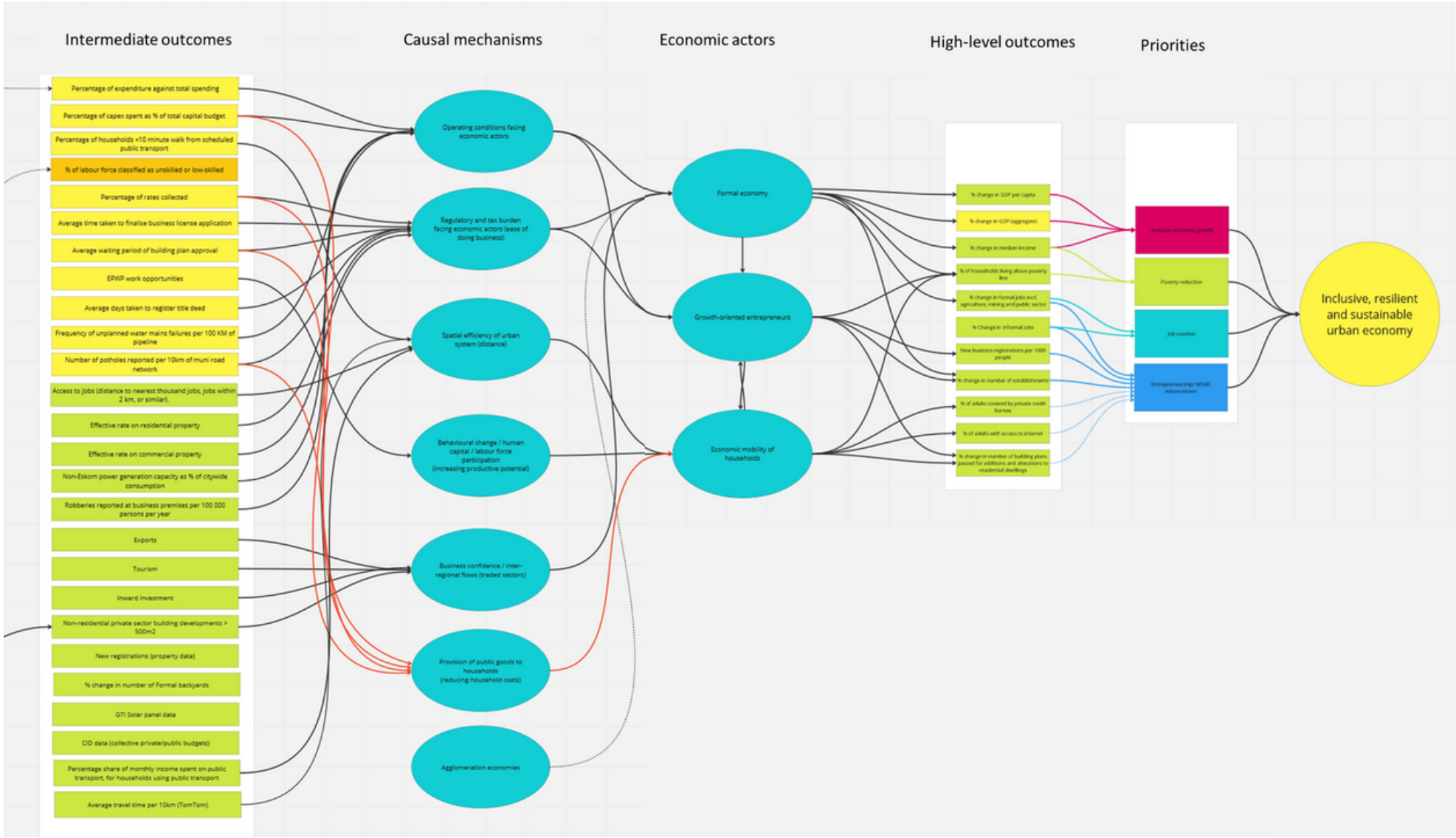
Note: * HH – households; GE – growth-oriented entrepreneurs; FB – formal businesses

3.5 Ideal set of high-level (aggregate) outcomes

	*Economic actor**			*High-level outcome indicator (ideal set)*	*Priorities***			
	HH	*GOE*	*FB*		*EG*	*JC*	*PR*	*EN*
1	X	X	X	**GVA per capita**	X			
2	X	X	X	**Aggregate GVA (R billions)**	X			
3	X			**Number of households living above poverty line**			X	
4			X	**Number of formal jobs (excl. agri., mining and public sector)**		X		
5		X		**Number of informal jobs**		X		X
6		X	X	**New business registrations per 1000 people**				X
7			X	**Value of non-residential private sector building development > 500m2**	X			
8	X	X	X	**Number of building plans passed for additions and alterations to residential dwellings**	X		X	
9			X	**Value of export earnings**	X	X		
10			X	**R-value of investment inflows**	X	X		
11	X			**Assessed value of residential properties**			X	
12			X	**Assessed value of commercial and industrial properties**	X			
13		X	X	**Number of tax-registered establishments**			X	X
14	X	X		**Number of formal backyards**			X	X
15	X		X	**New property registrations**	X	X	X	

Note: * HH – households; GE – growth-oriented entrepreneurs; FB – formal businesses. ** EG – economic growth; JC – job creation; PR – poverty reduction; EN - entrepreneurship

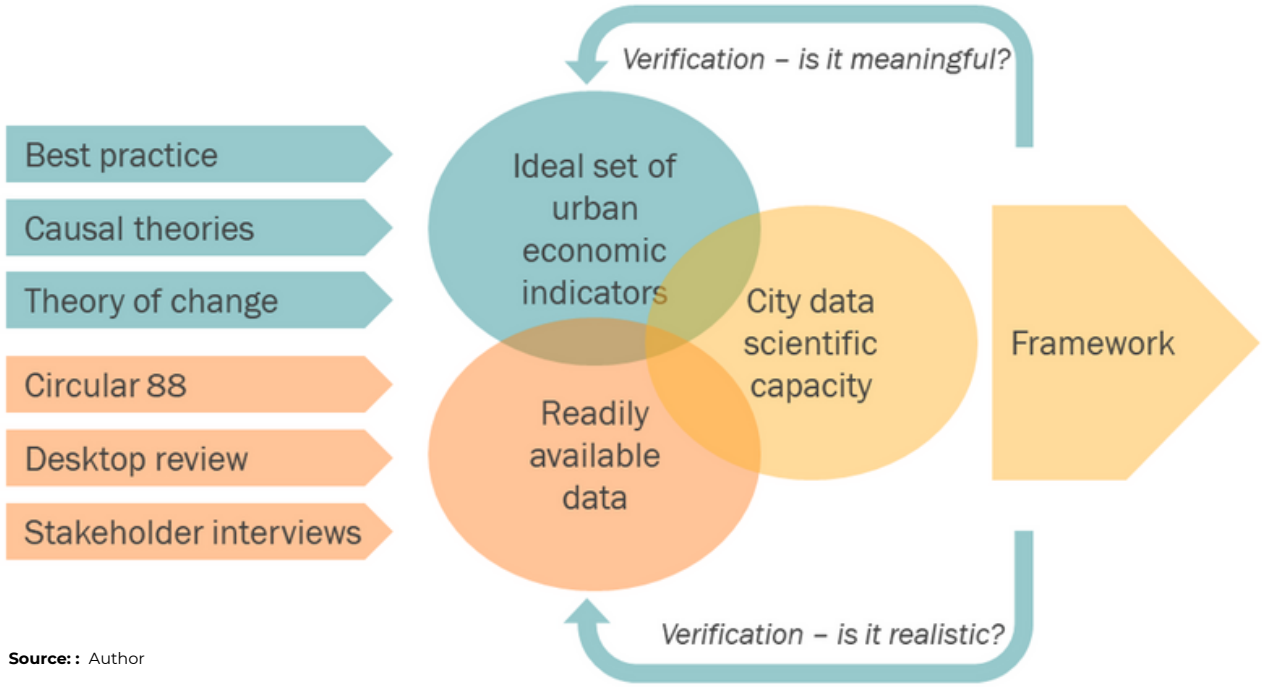
Figure 13 A3 Graphic impression of overall UEMF structure



4. INDICATORS

The literature review in Section 2 and the development of a conceptual framework in Section 3 suggest an ideal set of indicators informed by best practice and theoretical causal mechanisms driving economic outcomes. This section reports on pragmatic considerations of this ideal set, auditing existing data, providing criteria for inclusion, and ultimately refining the list of indicators based on an assessment of what is not only meaningful but what is realistic in terms of data availability and city data scientific capacity. This pragmatic approach is a necessary final verification step before linking the conceptual framework to specific indicators.

Figure 14. Programmatic approach to indicator selection



Source: : Author

4.1 Review of Existing Data

An audit of existing potential data sources is presented below.

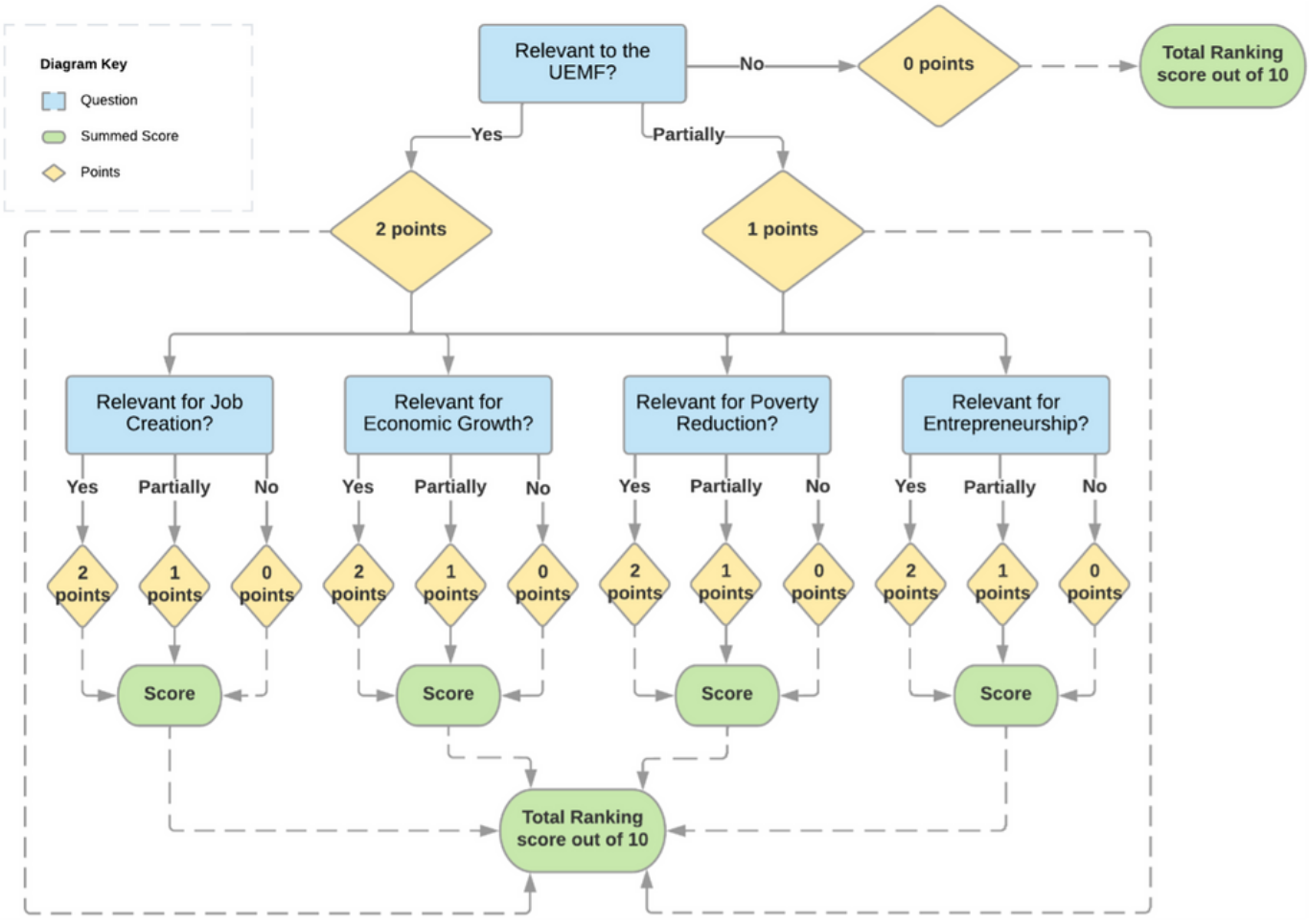
4.1.1 Circular 88 Indicators

Where possible MFMA Circular 88 (C88) data was preferentially considered for the framework. Municipalities are placed under a considerable reporting burden, and one of the primary goals of C88 is to reduce this burden by centralising and focusing the reporting requirements. This aligns well with the framework's purpose, which aims to supplement the cities' understanding of economic factors without presenting complexity and burden to them. Despite this, there is a fundamental mismatch in the nature of Circular 88 indicators and the needs of this framework. Since the Circular 88 indicators prioritise monitoring municipal function, provision of services, and compliance, they are not meant to measure the outcomes of a city's economy.

A further challenge is that Circular 88 is largely self-reported and possibly collected and formatted in a fashion that may make comparisons difficult. The extent of this varies as some indicators, such as financial reporting, are audited externally, and some are gathered through external mechanisms. Using the data in the context of beneficial tools and frameworks will act as a driving force for the quality of that data to improve over time.

A high-level audit of the potential relevance of C88 indicators was conducted in accordance with Figure 15 below. In this framework, each indicator gets scored in relation to the four priority areas, receiving a higher score if relevant to multiple areas.

Figure 15. Flow diagram for scoring of potential Circular 88 indicators



Source: : Author

A shortlist of the top 25 ranked indicators was compiled. This list was then compared to the needs of the theoretical framework, and the final list of 11 potential C88 indicators was compiled.

Table 5 Selected C88 indicators based on relevance to the four priority areas.

C88 Code	*Description*
FM1.11	Total Capital Expenditure as a percentage of Total Capital Budget
LED1.21	Number of work opportunities created through Public Employment Programmes (incl. EPWP, CWP and other related employment programmes), EPWP work opportunities
LED1.3	Percentage of the labour force classified as unskilled or low-skilled
LED1.4	Income per capita within the municipal area
LED3.11	Average time taken to finalise business license applications
LED3.13	Average number of days taken to process building applications of 500 square meters or more
LED3.3	R-value of investment inflows
TR2.1	Percentage share of monthly income spent on public transport, for households using public transport
TR5.1	Percentage of households less than 10 minutes' walk from scheduled public transport
TR6.2	Number of potholes reported per 10kms of municipal road network
WS3.2	Frequency of water mains failures per 100 KMs of pipeline

These indicators are discussed in more detail under the "Data Availability" section below.

4.1.2 Additional Sources

A high-level audit of potential data sources outside of C88 was conducted. This section lists several sources of data and indicators, some of which may overlap with C88 indicators. These sources include open and proprietary datasets that exist at different scales. The section briefly introduces the datasets, including relevant links and references. Only data sources that can be reported at the municipal level or lower are included, with exceptions where the data may be able to supplement other disaggregated data. "Addressing the Gaps in the Availability of Economic Data in South Africa", prepared for the National Treasury's Cities Support Programme, 2021[25] was the primary source for this section.

[25] Bezuidenhout, Malindi and Rankin, 2021

National Statistical Releases

- **Statistics SA:** regularly releases statistical reports; a comprehensive list is available on their website[26].
- **Mid-year population estimates:** released yearly at a national, provincial, and municipal level. This data is disaggregated by sex and age.
- **Gross Domestic Product (GDP):** produced by Stats SA. While it used to be disaggregated by geographic areas, it is now only available at the national level. It is available quarterly.
- **Employment / Unemployment:** the Quarterly Labour Survey (QLFS) survey is carried out by Stats SA and provides employment data at metro, non-metro, provincial and national scales.
- **Building Statistics:** This is obtained from municipalities and reported by Stats SA yearly and is available at national, provincial and metro levels (including some other larger municipalities that are not metros). The data only reflects formal buildings and relies on the systems of collection and monitoring in municipalities, which is not always consistent as different building plan by-laws and systems are used.

National Administrative datasets

- **Spatialised Tax data:** In 2023, spatialised tax data was made retrospectively available going back to 2013, at a sub-municipal level. The dataset includes the number of full-time employees, median income and number of establishments. The data is available on the new online portal.
- **Unemployment Insurance Fund (UIF):** This is a potentially valuable data source but is not currently publicly available (Bezuidenhout, Malindi and Rankin, 2021).
- **Companies and Intellectual Property Commission (CIPC):** This is a potentially valuable data source but is not currently publicly available (Bezuidenhout, Malindi and Rankin, 2021).
- **Deeds Data:** The deeds office manages South Africa's property registry. This data can be accessed publicly. Municipalities have access to this data for valuation and rates purposes.

Existing Surveys

- **Census:** The Census, conducted by Stats SA, is arguably the best source of information for fine grain demographic and economic information in South Africa. The Census is conducted approximately every 10 years, with the previous release having taken place in 2011. The 2022 Census was released in 2023. While this data is not annual, it forms the basis of data modelled for the interim periods.
- **Community Survey:** The community survey, conducted by Stats SA, is similar to the Census but has a much smaller sample and is available at metro, provincial and national scales. It provides valuable demographic information about the population (for example, poverty levels). It can supplement census data, as it is undertaken between censuses and every ten years. The most recent survey was conducted in 2016 and is available here.
- **Stats SA Provincial Travel Surveys:** Stats SA produces travel surveys for provinces at 5-year intervals, with the most recent released in March 2022. The surveys provide municipal-level data, which provides insights about travel frequency, modes, reasons (i.e., for work, etc) and time.
- **Quality of Life Survey, Gauteng City-Region Observatory:** While it only covers Gauteng Province, the Quality-of-Life Survey (QoL)conducted by the Gauteng City-Region Observatory (GCRO) is a potentially valuable data source. The survey is representative at a ward level and is conducted every two years; the most recent and sixth survey was conducted in 2020-21. The survey has a broad temporal and spatial scale; it covers a wide range of questions and indicators.

[26] http://www.statssa.gov.za/publications/catalogue/Catalogue_of_products_and_publications_Latest.pdf

Municipal Administrative Datasets

Municipalities produce rich sets of administrative data based on their core competencies and functions. However, these vary between municipalities and departments/entities within municipalities based on capacity, system design, by-laws or stage of development. This section refers to four common and useful data sources; it focuses on the CoJ's datasets. More research would be required to interrogate the level of readiness of other metros in the country to report the same data.

- **Town Planning Applications:** Town planning applications (or land development applications) are a sole function of municipalities. They involve awarding land use rights to develop on land and are a prerequisite to submitting building plans. Common applications include new township establishments, rezoning applications (increasing or changing land use rights on zoned land) or sub-divisions and consolidations.
- **Building Applications:** Building application data is similar to the planning application above but relates to the structure rather than the land use rights. As such, there is often a lag between the planning and building applications; these applications can be useful for showing the pipeline of buildings in cities.
- **Valuation Rolls:** The Local Government Municipal Property Rates Act No. 6 of 2004 (Republic of South Africa, 2009) requires all municipalities to produce and publish a valuation roll every four to five years. This includes the Rand value of each property and may include differential rates based on use, permitted use or geographic area of the property.
- **Rates (billed and received):** Derived from the valuation roll, municipalities are required to keep a record of rates billed and received in their jurisdiction. This can give valuable insights into the economic status in different parts of the city, including areas that can afford to pay and those that can't. Municipalities will likely treat the rates billed and received data as sensitive and private information, as property owners are their customers.

Remotely Sensed Data

Remotely sensed data is gaining momentum and traction for collecting data on urban and other phenomena. The data generally has a wide geographic coverage.

- **Night lights as an indicator of GDP:** Several studies have shown the possibility of deriving GDP or GVA from night light data (e.g., Keola, Andersson and Hall, 2015). Night lights are captured by the VIIRS (Visible Infrared Imaging Radiometer Suite), among others, and is free to download and analyse. In the past few years, studies in eThekwini (Matarutse, 2021) and Johannesburg (Naidoo et al., 2022) have used night-light data to determine GDP or GVA at the sub-metro level.
- **Land Use and Land Cover:** One of the more established uses for remote sensing is detecting different land uses and covers. This is applied widely in cities, and increasing amounts of open data products are becoming available, for example, the "The Earth Observations Toolkit for Sustainable Cities and Human Settlements". One of the most established providers of this data is the commercial provider GeoTerraImage (GTI). GTI's data is widely used by government and researchers in South Africa.
- **Population Estimates:** several sources for estimating population based on underlying trend data on population (e.g., from censuses) and aerial photography are available, for example, WorldPop and LandScan (opensource). While GTI produces commercially available datasets for South Africa.

[26] http://www.statssa.gov.za/publications/catalogue/Catalogue_of_products_and_publications_Latest.pdf

Private Data Sources

- **Night-time and daytime populations (GTI):** Daytime and nighttime populations in small areas are derived using various data sources, including cell phone data; GTI provides this data. The nighttime data should be the same as population data, and it shows where people live (where they sleep).
- **Business and Point of Interest Datasets:** Several online datasets contain the location of amenities and points of interest (parks, hospitals, schools, etc) and businesses. Some are open source, and some proprietary, providing paid access through API's. Three such services are Google Maps API – Proprietary, AfriGIS – Proprietary, OpenStreetMap – Free to Download

4.2 Data availability

The final pragmatic consideration for inclusion of an indicator is data availability and ease of access. A total of 40 indicators, 11 C88 indicators, and 29 indicators from other sources were selected for inclusion in the final framework. Indicators were collected for all eight metropolitan municipalities for the years 2020, 2021 and 2022. Each indicator was classified as either easily available, partially available (either by year or by municipality), likely available, or not available. Likely available indicators are indicators we could not access through desktop research but are likely available to metropolitans as part of their regular operation.

4.2.1 Availability of Circular 88 indicators

A review of C88 definitions and the C88 data submitted by the City of Johannesburg and Nelson Mandel Bay Metropolitan Municipality showed that four factors influence C88 data availability:

1. **Requirements:** not all indicators are required by all municipality types. Typically, metropolitan municipalities are required to produce the most indicators of all municipality types.
2. **Reporting responsibility:** each indicator is listed as either required to be reported at a municipal or a national level. Only municipal-level data will have been collated as part of the C88 indicators provided.
3. **Readiness:** each indicator for each municipality type received a readiness rating. Tier 1 and Tier 2 readiness are expected to be supplied. Tier 3 indicators are not yet available.
4. **Compliance:** despite being required, not all indicators are reported by all municipalities.

Further, many indicators were only implemented for collection from 2021/2022 onward, and no data was collected prior to this.

Based on the theoretical factors and the data collected, only six of the 11 indicators would be theoretically available directly from metropolitan reporting of C88 under current readiness. Further, the collected data showed that financial data designated with FM codes has not yet been reported through this mechanism. This reduced the number of indicators available through C88 directly to five. Fortunately, a number of these indicators are available through alternative sources. The table below shows the final source used for each of the 11 C88 indicators selected.

Table 6. Circular 88 indicators and their sources

C88 Code	Description	Source
FM1.11	Total Capital Expenditure as a percentage of Total Capital Budget	National Treasury Municipal Financials
LED1.21	Number of work opportunities created through Public Employment Programmes (incl. EPWP, CWP and other related employment programmes), EPWP work opportunities	Circular 88 Collated Metropolitan Data
LED1.3	Percentage of the labour force classified as unskilled or low-skilled	Quantec modelled data - Labour - Employment and unemployment
LED1.4	Income per capita within the municipal area	Median Income data released by SARS
LED3.11	Average time taken to finalise business license applications	Circular 88 Collated Metropolitan Data
LED3.13	Average number of days taken to process building applications of 500 square meters or more	Circular 88 Collated Metropolitan Data
LED3.3	R-value of investment inflows	Not available
TR2.1	Percentage share of monthly income spent on public transport, for households using public transport	Not available
TR5.1	Percentage of households less than 10 minutes' walk from scheduled public transport	Not available
TR6.2	Number of potholes reported per 10kms of municipal road network	Circular 88 Collated Metropolitan Data
WS3.2	Frequency of water mains failures per 100 KMs of pipeline	Circular 88 Collated Metropolitan Data

4.2.2 Availability of Additional Indicators

In addition to the 11 C88 indicators, 29 additional indicators were also sourced for all metropolitan municipalities for the years 2020, 2021, and 2022.

Primarily, these indicators were retrieved from four main sources which provide the data in user-friendly formats so as to reduce the collation burden on municipalities making use of the framework:

- **National Treasury local government data:** including municipal budgeted capital expenditure, budgeted financial position, annual financial statements, and local government equitable share data.
- **SARS Tax data release on a municipal level by year:** including median income and number of establishments registered each year.

- **Tomtom Travel survey:** Tomtom release an annual travel survey giving travel times for cities around the world. Six South African metros are included in the survey presented for 2021 and 2022.
- **Quantec supplied and modelled data:** a significant portion of the indicators were sourced through Quantec's Easydata platform. Quantec sources its data from various official sources and, in some cases, models additional parameters on the data.

The tables below list these 29 indicators, their sources and availability rating.

Table 7 Intermediate outcome indicator sources and availability

Indicator	*Source*	*Availability*
% of grant-funded capital budget spent	National Treasury, Table A5 Budgeted Capital Expenditure	Easily available
Aggregate value of metro property, plant and equipment	National Treasury, Table A6 Budgeted Financial Position	Easily available
Aggregate value of fixed capital stock per capita	Quantec - Fixed capital formation and capital stock	Partially available (only up to 2021)
Average days taken to register title deed	Deeds office	Likely available
Effective rates burden on residential property	Annual Financial Statements	Easily available
Effective rates burden on commercial property	Annual Financial Statements	Easily available
Access to jobs (distance to nearest thousand jobs)	SARS Tax data	Not available – see footnote[27]
Average travel time per 10 km	Tomtom travel survey	Partially available (only 2022 and 2021 for 6 metros)
Non-Eskom power generation capacity as % of citywide consumption	No source	Not available at metro scale
Number of international visitors per year	No source	Not available at metro scale
New property registrations	Deeds office	Likely available
Number of formal backyards	GeoTerraImage Building Count	Available
Number of solar panels	GeoTerraImage Solar Power Analytics Dataset	Available
Collective budget of CIDs	City budgets	Available
Number of tax-registered establishments	SARS Tax data	Available
% of adults covered by private credit bureau	No source	Not available
% of adults with access to internet	No source	Not available

[27] Distance to jobs could be estimated through various means, including the spatial SARS data released in 2023. However, we regard this level of calculation to present too large of a burden for inclusion in this framework.

Table 8 High level outcome indicator sources and availability

Indicator	*Source*	*Availability*
GVA per capita	Quantec - Income & Production - Regional Output and GVA	Partially available (up to 2021 only)
Aggregate GVA (R billions)	Quantec - Income & Production - Regional Output and GVA	Partially available (up to 2021 only)
Number of households living above poverty line	National Treasury local government equitable share data	Easily Available
Number of formal jobs (excl. agri, mining and public sector)	Quantec - Labour - Employment and compensation	Partially available (up to 2021 only)
Number of informal jobs	Labour - Employment and unemployment	Partially available (up to 2021 only)
New business registrations per 1000 people	SARS Tax data	Available
Value of non-residential private sector building development > 500m2	Quantec – StatsSA - P50413—Building statistics	Partially available (up to 2021 only)
Number of building plans passed for additions and alterations to residential dwellings	Quantec – StatsSA - P50413—Building statistics	Partially available (up to 2021 only)
Value of exports	Quantec - International Trade by industry	Partially available (up to 2021 only)
Assessed value of residential properties	Annual Financial Statements	Easily available
Assessed value of commercial and industrial properties	Annual Financial Statements	Easily available

In addition to these indicators, mid-year population estimates were collected for 2020, 2021 and 2022 from Quantec's easy data platform, sourced from Stats SA - 2022 Mid-year population estimates.

4.2.3 Framework data availability

Table 9 below presents an overview of data availability for the framework.

The data selected is regarded as mostly available, but there is a significant challenge with respect to timing. C88 data is not meaningfully available prior to 2022. This reduces the framework's capacity to assess trends. However, this will change as C88 compliance improves, likely driven by the creation of frameworks such as this. The second challenge is that much of the data is reported a year or more after the current date. This reduces the ability of the tool to respond to more recent trends. We hope that metros that find the tool useful will be able to populate it for use with data before its public release on platforms like Quantec. Again, a meaningful tool will likely drive the availability and quality of data.

Table 9 Availability of C88 and Additional indicators

	Fully/Partially/Likely Available	Not available	Total
C88	8	3	**11**
Additional	24	5	**39**
Total	**32**	**8**	**40**

4.3 Indicator Scoring and Weighting

4.3.1 Indicator Scoring

Once the data for all metropolitan municipalities is collected, any metropolitan municipality can establish a set of indicator scores. Each indicator is scored in three categories:

- **Compliance:** Whether an indicator has been reported by the municipality. Compliance in itself is an important metric for municipalities to monitor. Not reporting in the year of interest and the previous year is scored zero, reporting in one of the two years is scored 50% and reporting in both years is scored 100%.
- **City performance:** This score compares the data for the city against the mean of the reported values from all the metros. Below average gives a score of zero, average gives a score of 50%, and above average gives a score of 100%.
- **City trend:** This score compares the data for the city to the previous year. Declining performance scores by zero, maintaining performance scores by 50% and improving performance scores by 100%

It is important to note that not all indicators have a positive relationship with performance. For example, an increase in the number of EPWP work opportunities is seen as positive, whereas an increase in unplanned water main failures is negative. This factor is taken into account when assessing city performance and trends.

4.3.2 Indicator Weighting

Once each indicator is scored in the three categories specified above, the scores are multiplied by weightings specific to each indicator and the four priority areas. The weightings are based on the strength of the relationship defined by the theory of change framework outlined in Section 3.

Each indicator receives a weighting toward each category from 0-3, where zero means that the indicator is irrelevant to that category, and three means highly relevant and important. The scores for each priority area are summed and converted to a percentage of the maximum potential score.

These calculations are all performed using the draft Urban Economies Measurement Framework dashboarding tool. An example of the tool's output is provided in the section below, which details the weightings used for each indicator and each priority area.

4.4 Indicator Dashboard

Once all the indicators have been collected and tabulated for the current and preceding year, the Framework's calculations and the data display can be viewed using the Urban Economies Measurement Framework dashboard tool. An example of the tool's output for the City of Johannesburg is presented in Figure 16.

Because C88 data was only available for the 2021-2022 financial year, and many of the indicators collected using the Quantec Easydata platform are not reported beyond 2021, these particular indicators are regarded as part of the 2021-2022 year to improve the overlap in the timing of the available indicators. Indicators that were not available are not included in the current dashboard. These include "likely available" indicators such as data from the Deeds Registry.

The final priority area scores are a weighted sum of each indicator's score. For example, if "Time taken to finalise a business licence application" was reported in only one of the last two years, that indicator receives a score of 50% for the reporting compliance category. The weightings for this particular indicator toward the four priority areas are 2 for Economic Growth, 1 for Poverty Reduction, 2 for Job creation, and 3 for Entrepreneurship. Consequently, the contribution towards the final score of each priority area for this indicator is 100 for Economic Growth, 50 for Poverty Reduction, 100 for Job creation, and 150 for Entrepreneurship. The final priority area score for each of the three performance categories is the sum of these scores divided by the theoretical maximum possible score.

Figure 16. Proof-of-concept

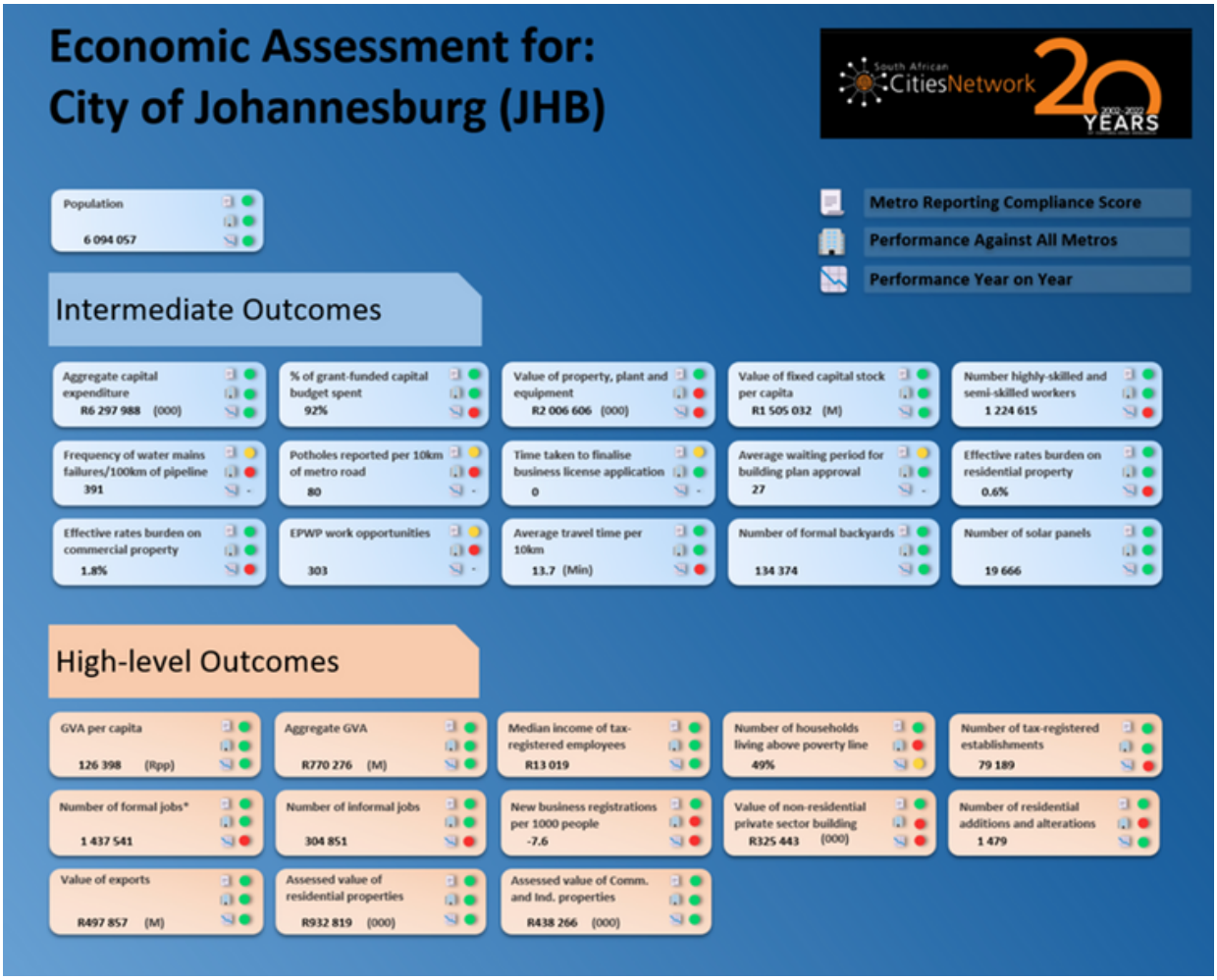
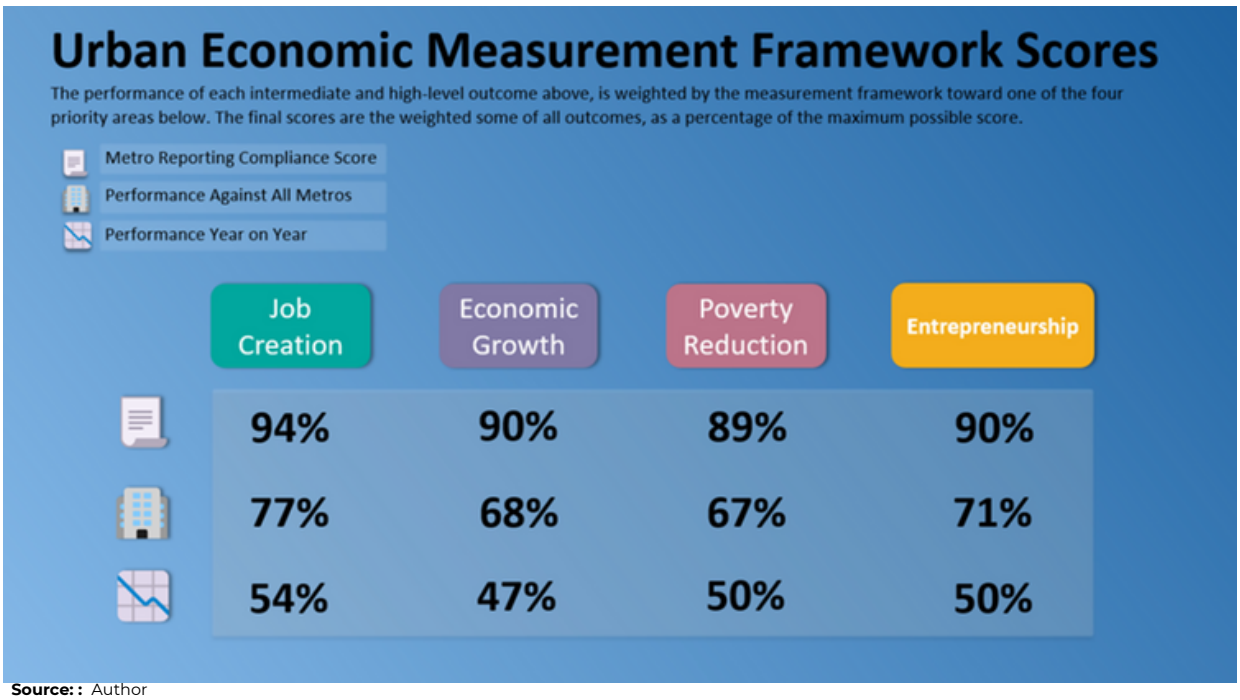


Figure 16. Proof-of-concept (continued)



Source: : Author

5. CONCLUSION

As South African cities grow, metro governments need evidence-based tools to identify and address constraints to inclusive and resilient economic growth and the ability of metro governments to contribute to structural change.

The starting point for the UEMF was to draw on best practice to establish a typology of approaches regarding Outcomes Measurement Frameworks (OMF). It was concluded that the OMF would have two complementary roles – one conceptual, the other practical:

As a conceptual model, the UEMF links measurable intermediate (i.e., sector-level) outcomes to aggregate citywide outcomes through causal mechanisms. These causal mechanisms reflect well-documented empirical regularities observed in cities across the world, with a particular emphasis on case studies in developing countries. The conceptual model applies a systems-based approach, viewing the city economy as a system of interrelated parts, and emphasises the importance of understanding the relationships and interactions between them. It involves looking at the city as a whole rather than focusing on individual components or issues in isolation. This approach aims to identify the underlying dynamics governing aggregate and long-term economic performance with a view towards developing integrated solutions. The envisaged value-add of this exploratory research is to clarify the causal mechanisms by which intermediate outcomes (i.e., sector outcomes directly affected by City actions) are linked to high-level outcomes that are either positively or negatively associated with the realisation of the aggregate citywide outcomes identified above.

As a practical tool, the UEMF is tasked with collecting, displaying and disseminating information for prioritisation, learning, advocacy, prioritisation, sharing, benchmarking and experimentation. The proof-of-concept UEMF dashboard has been provisionally implemented in an Excel workbook.

The Urban Economic Measurement Framework introduced in this document is presented as a step towards developing and systematising such a tool. With the UEMF being tasked with being both practical and conceptual, we define its purpose as a tool to report on goals and progress while providing a means to interrogate assumptions about city economies[28].

This paper concludes by reflecting on the insights emerging from the conceptual development of the tool, followed by an exploration of the possibilities around its practical application.

5.1 Emerging Insights

In keeping with the typology established in international best practice and ensuring that the tool is fit for purpose, the UEMF aims to harmonise the analytical rigour of a systems-based approach with the growth and equity imperatives that metro governments are tasked with as it relates to custodianship of their economies.

5.1.1 UEMF and the growth imperative

Interconnectedness in city-level outcomes

Since economic growth, job creation and poverty reduction are mutually reinforcing priority outcomes, pursuing these goals is—from a policy perspective—naturally aligned with metro governments' growth imperative. From a normative perspective, economic growth, poverty reduction, job creation and entrepreneurship are priority outcomes that help realise the superordinate goal of inclusive and resilient city economies. However, these priority outcomes are sometimes presented as discrete goals rather than mutually reinforcing. One of the key insights emerging from this exploratory analysis is the interconnectedness between the four priority outcomes: in other words, there is significant theoretical and empirical evidence to suggest that each of these four priorities are broadly positively associated with each other. In other words, economic growth has been shown to have significant poverty-reducing effects[29]. Similarly, given that the social grant system has reached the fiscal limits of its ability to alleviate poverty, rapid job creation is required to further combat poverty. In the long-run, economic growth is required to shift those fiscal limits.

Feedback loops in city-level outcomes

Whereas the causal mechanisms linking sector-level outcomes with high-level outcomes are presented as linear (i.e., monocausal), the long-term economic trajectory of cities is powerfully influenced by self-reinforcing positive or negative feedback loops. While metro governments may influence intermediate, sector-level outcomes, economic actors respond to sudden or year-on-year systems-level changes to economic performance. These feedback loops may be positive or negative self-reinforcing impacts on aggregate outcomes. An example of a positive feedback loop is the relationship between urban infrastructure development and attracting businesses and skills. When the city invests in economic infrastructure, it creates a more attractive environment for businesses to establish operations. This improved infrastructure enables businesses to operate more efficiently, access markets, and connect with customers and suppliers. As the number of businesses increase, they create jobs and raise incomes, resulting in increased consumer spending and demand for goods and services. As the city's economy grows, it generates additional tax revenues for local government, which can be reinvested in further economic infrastructure. However, these feedback loops are conditional on proper planning to manage the negative feedback loops associated with economic growth, e.g., failing infrastructure, rising house prices and deepening inequality.

[28] Van der Berg et al.
[29] Van der Berg et al.

5.1.2 UEMF and the equity imperative

While the UEMF makes explicit the role of metro governments in influencing changes to the city economy, it recognises that—unlike the private sector—metro governments are tasked with balancing the growth imperatives against the need to alleviate unequal economic opportunities across groups and neighbourhoods[30].

Whereas the positive association between economic growth, job creation, poverty reduction and entrepreneurship is uncontroversial, the relationship between, for example, economic growth, poverty and income inequality is less clear and often conditional upon factors beyond the control of city governments. For example, it has been shown that inequality in South Africa is driven by wage inequality rather than high unemployment, driven by deep inequality in educational attainment and the productive potential of workers[31].

However, that is not to suggest that the growth imperative is axiomatically at odds with the equity imperative. The systems-based view of the city economy suggests that this tension is often overstated. For example, problem statements informing the local economic development discourse are often premised on a dichotomous conceptualisation of the urban economy as consisting of two halves – the formal and the informal sector. Suggesting that city governments prioritising the equity imperative are obligated to focus on the growth of the informal sector while the formal sector will 'take care of itself'. While prioritisation of both is essential, statistical evidence has proven that the prospects of job creation in the informal sector are (in aggregate) fundamentally driven by growth in the formal economy.

The tension between growth and equity is more keenly felt in the spatial realm, where competition over desirable locations is played out between economic actors in the land market. Urban economists argue that, in the long run, such competition is resolved through spatial sorting across neighbourhoods. For example, stimulating upmarket residential

development in one neighbourhood would reduce the demand for upmarket housing elsewhere in the city, thus precipitating a drop in house prices, which results in more households being able to afford to live in high-quality housing.

5.2 Pratical Application

Our starting point is an Outcomes Measurement Framework with a dual role: firstly, a conceptual model linking measurable intermediate (i.e., sector-level) outcomes to aggregate citywide outcomes through a set of causal mechanisms, and secondly, a tool to collect, display and disseminate the information for learning, advocacy, prioritisation, sharing, benchmarking and experimentation. How could these look in practice?

5.2.1 Evaluation / prioritisation of interventions

The UEMF has the potential to provide metro governments with a strategic view of how sectors operating on the causal mechanisms are performing relative to the previous year and the observed average for South African metros. This will assist the cities in identifying sectors that are particularly problematic and merit additional effort. The strength of the UEMF is that it provides the city government with a predefined theory of change justifying the allocation of additional resources on the grounds of its expected impact on both sector-level and aggregate outcomes. Similarly, the UEMF creates a framework for interrogating the effectiveness and strategic value of existing policy initiatives. Taken together, the UEMF serves as a means to have a systematic, theoretically sound, evidence-led approach to prioritisation and evaluation.

[30] For example, a policy-based distinction is made between formal businesses and growth-oriented entrepreneurs.
[31] Servaas Van der Berg et al., "Trends in Poverty and Inequality since the Political Transition," 2006.

5.2.2 Learning

In making explicit the assumed relationships between the root causes of economic performance, sector-level outcomes, high-level outcomes and aggregate economic priorities, the UEMF provides a common language through which assumptions, relationships and objectives can be discussed and debated. In this way, the UEMF could be mainstreamed as a learning tool for experienced and recently recruited city officials.

5.2.3 Advocacy

The UEMF can be used as a tool for city officials and other stakeholders in the built environment to advocate for the elevation of particular issues within departments, across departments or between agencies. It may also prove useful in assisting political heads in developing the business case for particular policies or programmes.

5.2.4 Sharing

The UEMF provides a clear structure and common language to describe observable trends and their assumed causal relationships. By not being aligned to the policy language of one metro or another, the UEMF remains sufficiently agnostic of particular metros' policies and associated languages. By drawing on Circular 88 data and data that is generally available across all metros, the UEMF provides a common framework that does not preclude the involvement of metros on the grounds of data availability or capacity.

5.2.5 Benchmarking

The UEMF avoids ranking the performance of metros against one another; the dashboard allows metros to compare their performance in relation to the metro average. This will enable metros to benchmark their performance against broader trends.

5.2.6 Guiding future research into causal mechanisms

As previously described, the causal relationships linking sector-level and high-level outcomes are premised on causal mechanisms related to stylised facts. Notwithstanding the pragmatic need for policymakers to make decisions based on the most credible information currently available, the UEMF also provides a broad structure to guide future research. In particular, the validity of causal mechanisms can be scrutinised through (31) meta-reviews of multiple individual studies on a particular mechanism, where existing studies are selected and critically analysed to provide an overview of existing evidence, draw robust conclusions and identify patterns across the literature; (32) quasi-experimental studies which analyse the effects of events or policies on city economies to determine causal mechanisms (e.g. analysing the economic effects of changes in zoning regulations across different neighbours).

[31] For example, a policy-based distinction is made between formal businesses and growth-oriented entrepreneurs.
[32] Servaas Van der Berg et al., "Trends in Poverty and Inequality since the Political Transition," 2006.

6. REFERENCES

- Department of Cooperative Governance and Traditional Affairs. “Integrated Urban Development Framework: A New Deal for South African Cities and Towns,” 2016.
- Hausmann, Ricardo. “South Africa’s Macroeconomic Risks after a Decade of Microeconomic Turbulence.” Working Paper Series 404. Cambridge, Mass.: Centre for International Development, 2022. https://growthlab.cid.harvard.edu/publications/macroeconomic-risks-after-decade-microeconomic-turbulence-south-africa-2007.
- Perkins, Peter, Johann Fedderke, and John Luiz. “An Analysis of Economic Infrastructure Investment in South Africa.” South African Journal of Economics 73, no. 2 (2005): 211–28. https://doi.org/10.1111/j.1813-6982.2005.00014.x.
- SACN. “State of City Finances Report.” Johannesburg, 2022.
- Van der Berg, Servaas, Ronelle Burger, Rulof Burger, Megan Louw, and Derek Yu. “Trends in Poverty and Inequality since the Political Transition,” 2006.

www.sacities.net
info@sacities.net