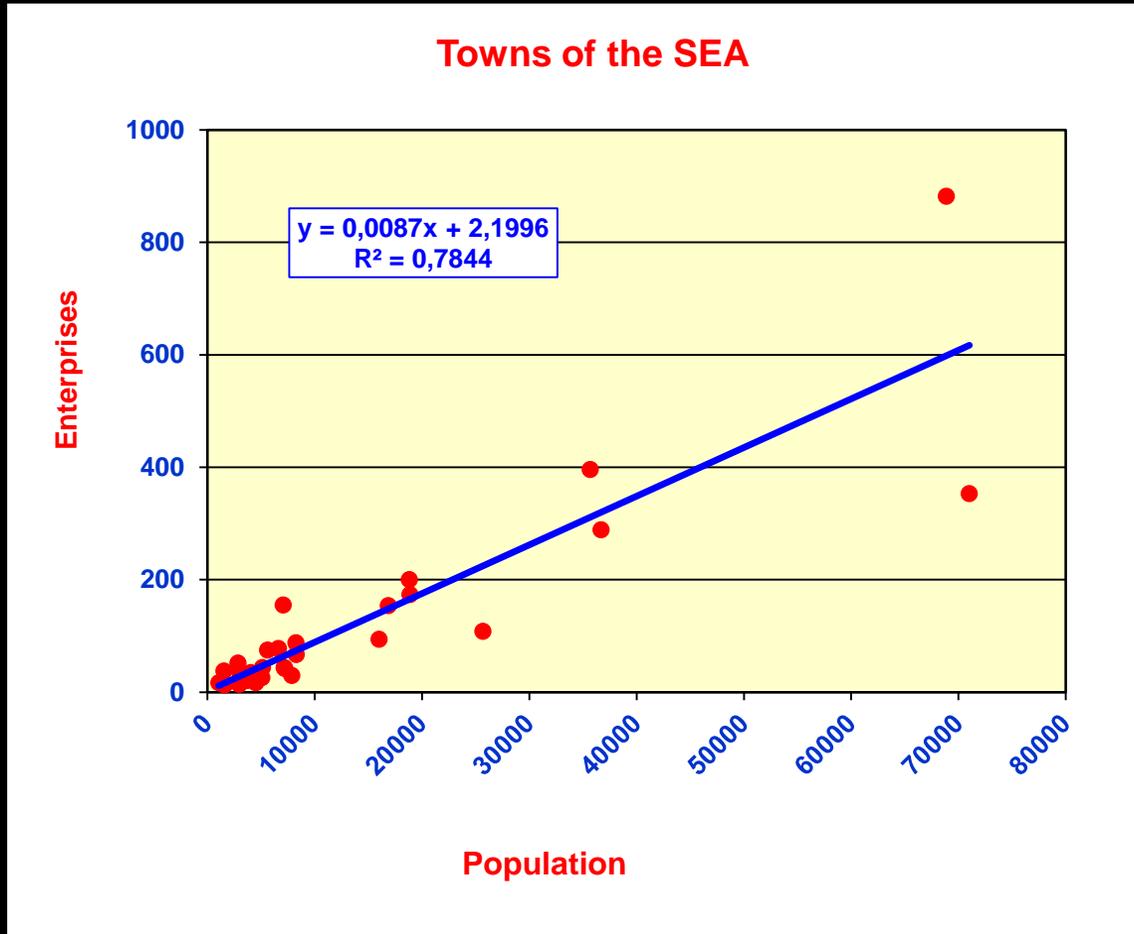


**The demographic, entrepreneurial and
poverty nexus of the Karoo towns of
the CSIR's Strategic Environmental
Assessment**

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Centre for Environmental Management
University of the Free State**

**SBI Conference, Prince Albert,
September 2018**

A Story of Regularities



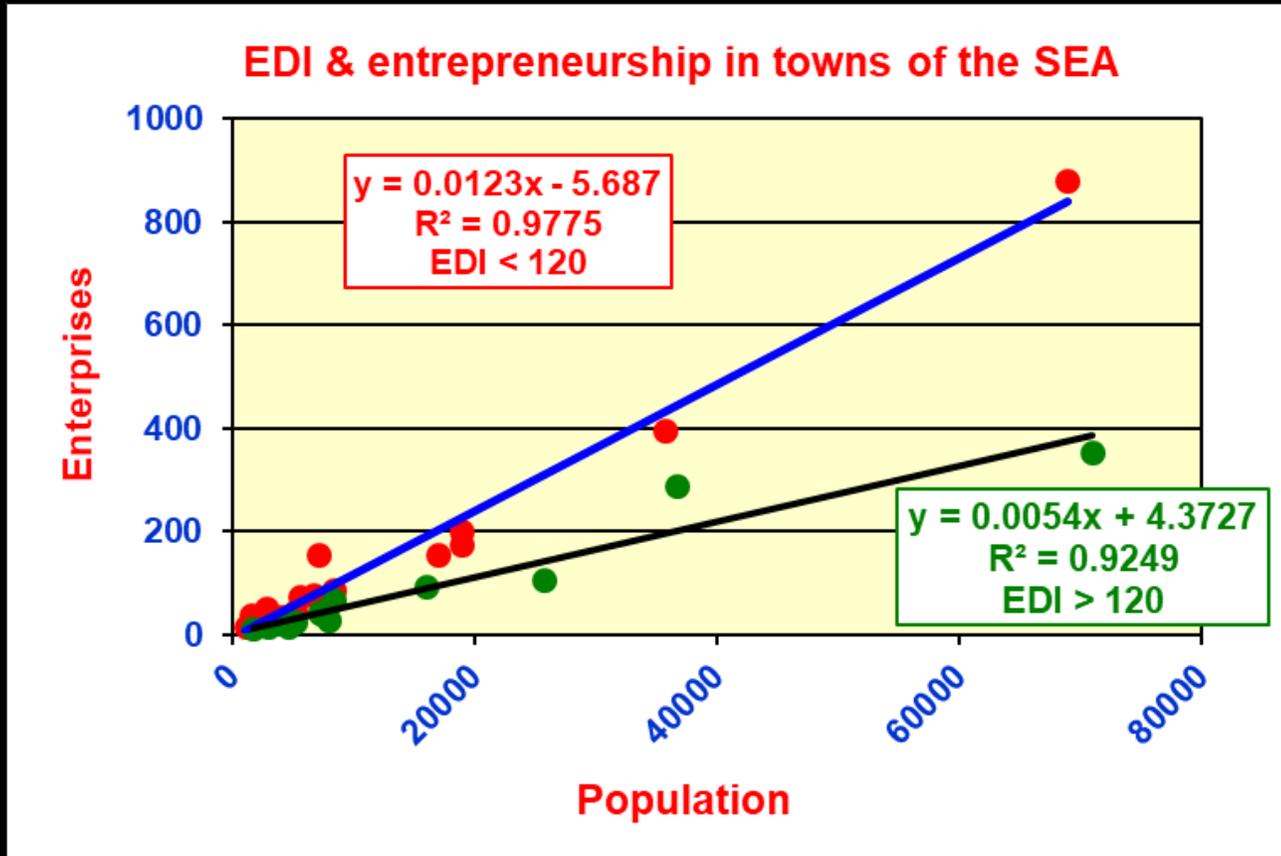
In general larger towns have more enterprises

but

the spread is large

Regularities present but further examination needed

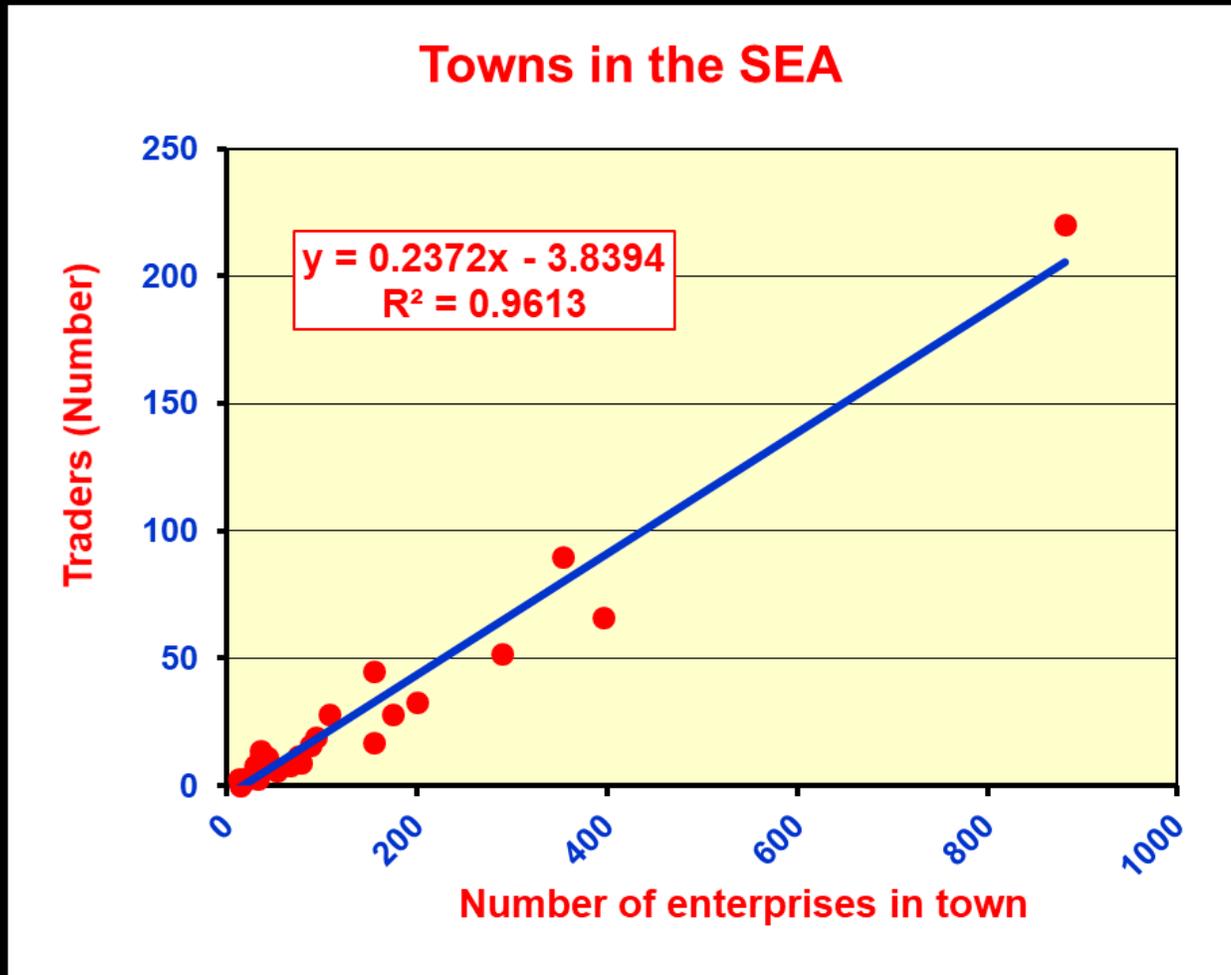
Wealth/poverty matters



If we bring
wealth/poverty
status (measured by
EDI) in then the
spread is much
reduced

Wealth/poverty
matters

Regularities in the Entrepreneurial Domain

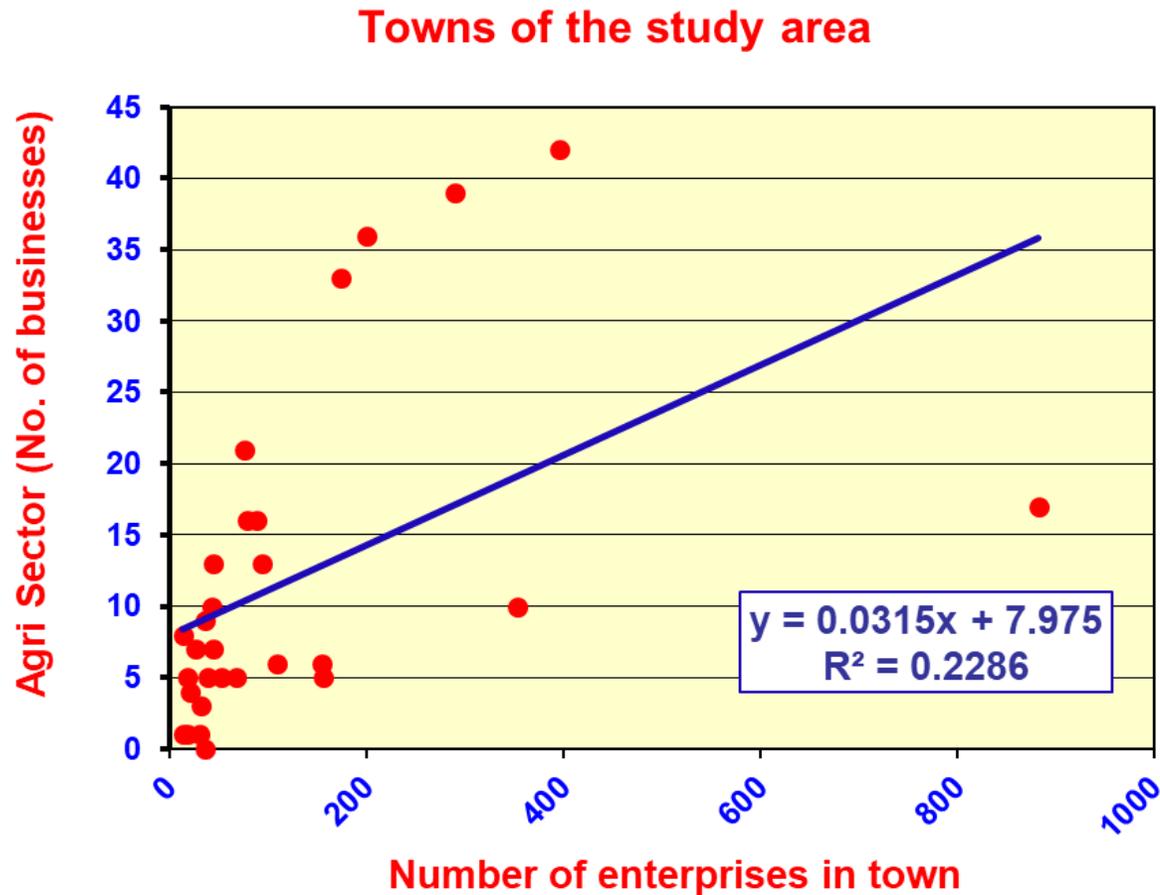


Most business sectors show tight regularities here illustrated for the trading sector

This suggests that there is no shortage of entrepreneurs in these sectors

No lack of entrepreneurs in most business sectors!

Irregularities in the Entrepreneurial Domain



Some business sectors do not show strong regularities
This is explained later

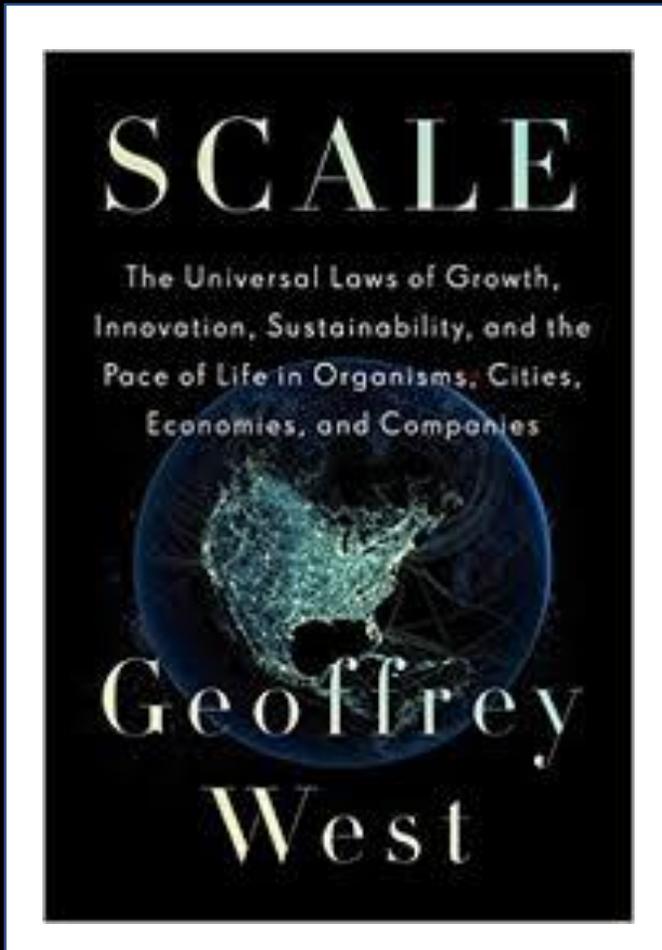
This is an unexpected finding - needs explanation

The value of per capita comparisons

Cities have traditionally been compared on a per capita basis. The per capita approach is, however, not suitable for the universal characterization and comparison of cities **because it ignores the phenomenon of agglomeration resulting from non-linear interactions in social dynamics and organization as cities grow (Bettencourt et al. 2010).**

More people lead to more interactions, ideas and actions

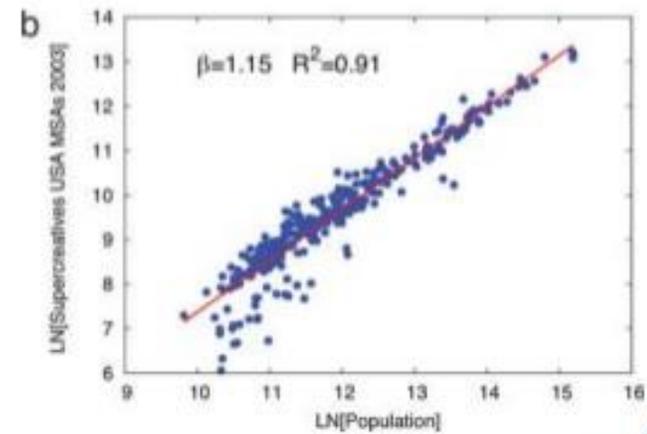
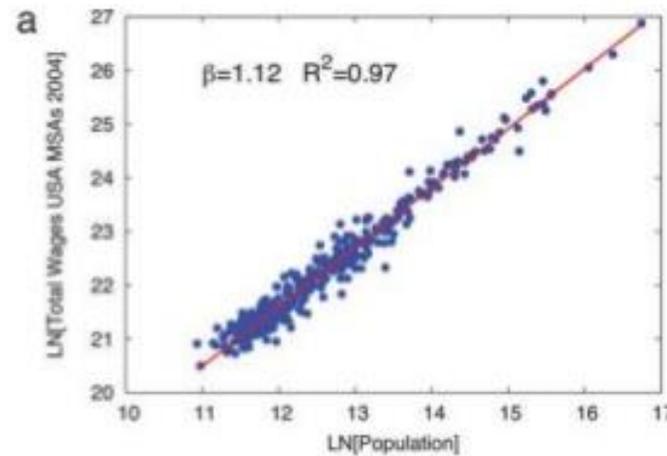
Scalability in Cities



Cities & Scalability

All the socio economic quantities

The bigger we are the more we have per capita



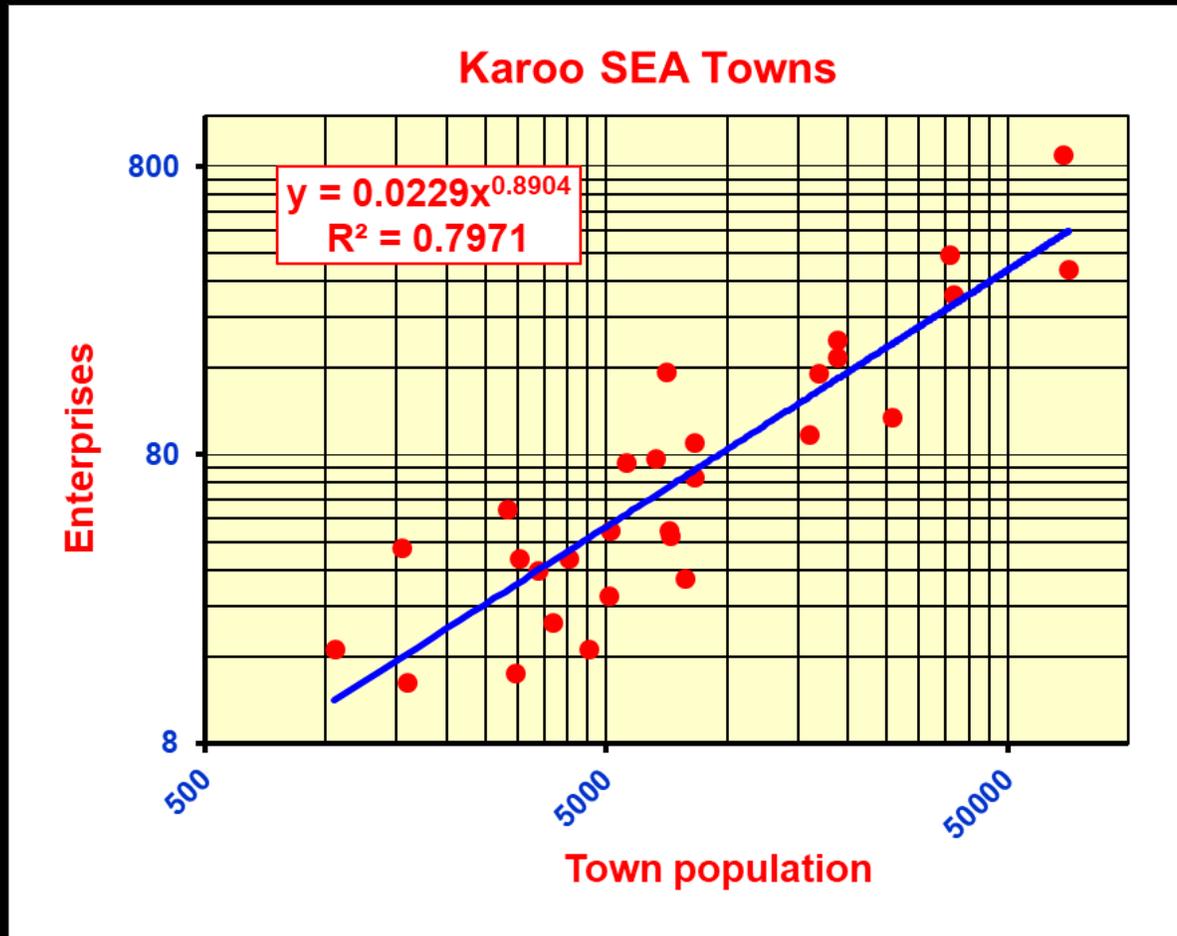
03-02-2015

Source - West Geoffrey, *Growth, innovation, scaling, and the pace of life in cities*, PNAS, (2007)

Super-linear

Economies of scale and also increasing returns to scale

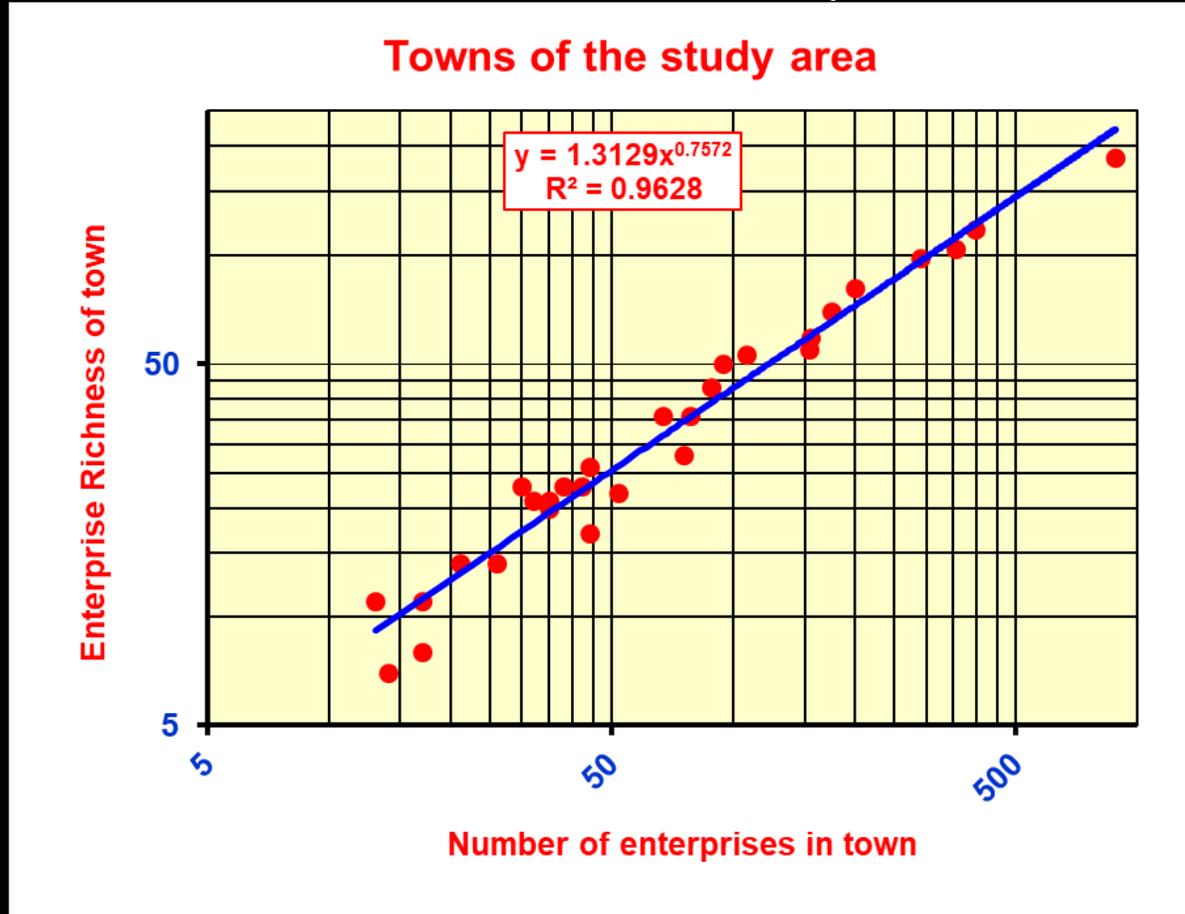
Scalability in Karoo Towns



Power laws reveal scaling phenomena in the demographic-entrepreneurial nexus of Karoo towns
This is not reflected in LED planning and implementation

Enterprises scale sub-linearly with population.
Infrastructure ?

Of enterprises and enterprise types

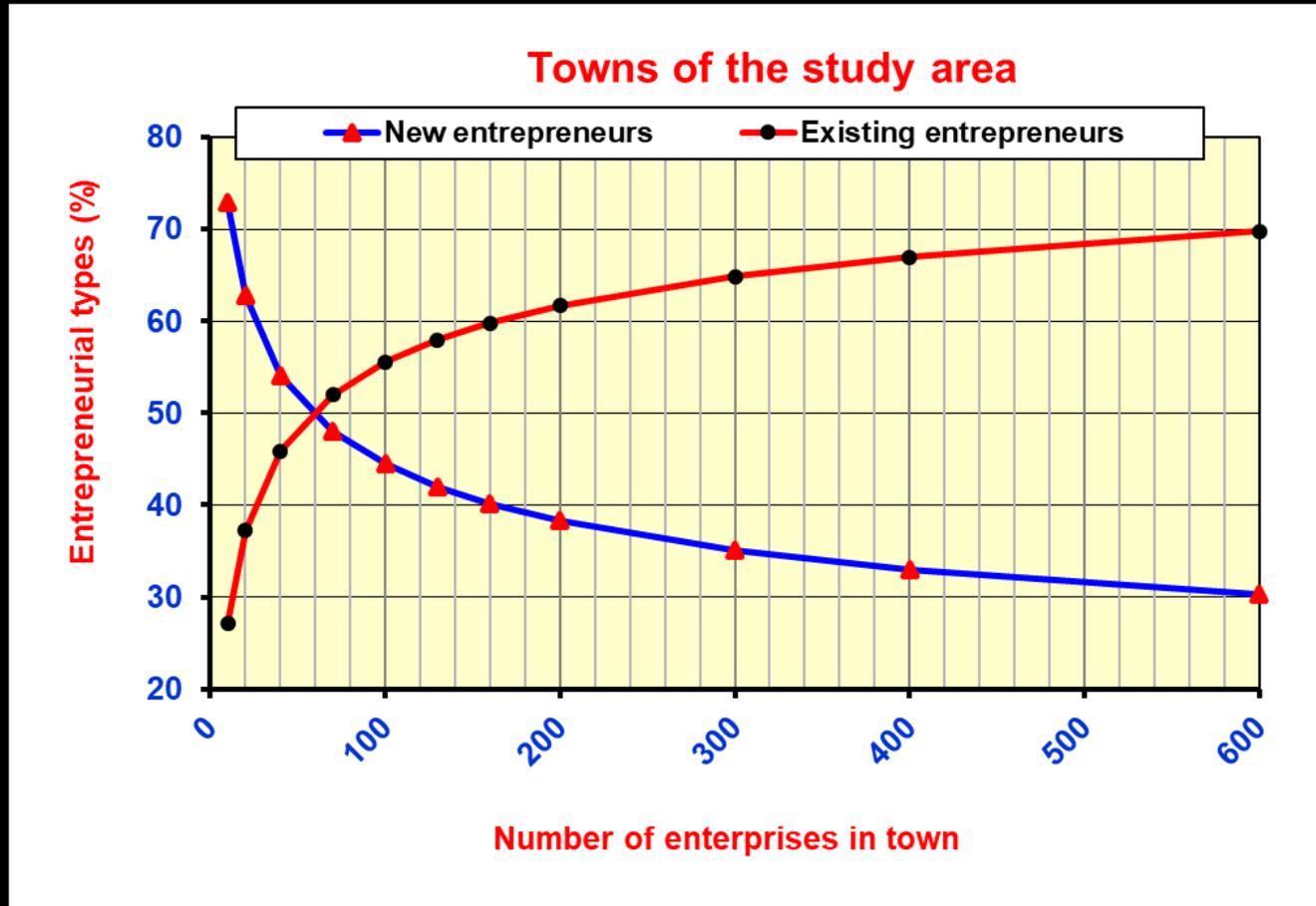


There is a tight log-log relationship between the number of enterprises and the number of enterprise types

There is scalability with consequences

Extremely important regularity in South African and Karoo towns

A Story of Regularities

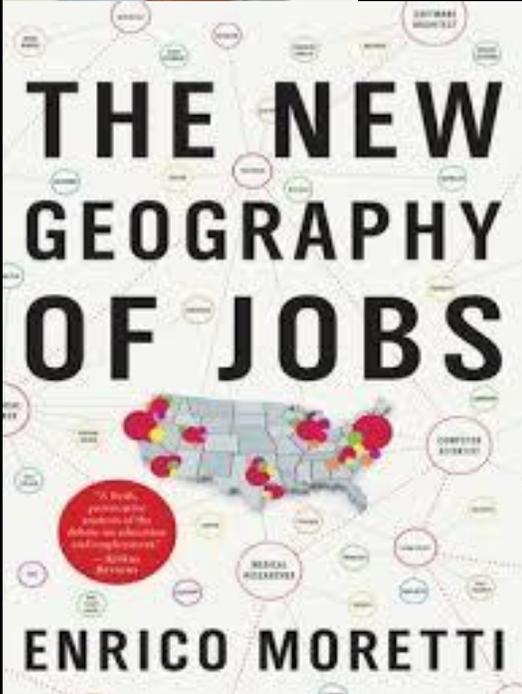


New entrepreneurs =
able to conceive &
implement new types of
enterprises - tradable
products & services
Existing entrepreneurs
- they are repeaters -
non-tradable products
& services

Huge challenges in small towns but also in large towns -
There are spill-overs!

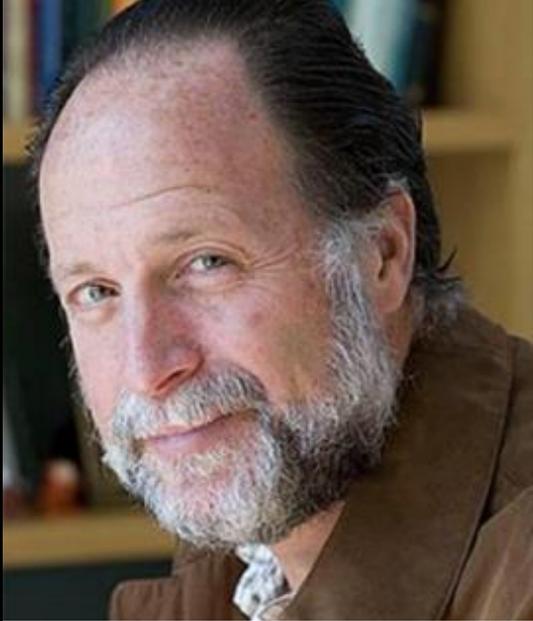
New insights about jobs

The vast majority of jobs in a modern society are in local services, e.g. people that work as waiters, plumbers, nurses, teachers, etc. They offer services that are produced and consumed locally, in other words, in the non-traded sector. The jobs in innovative industries belong to the traded sector, together with jobs in traditional manufacturing, some services, and the agricultural and extractive industries. They produce goods or services that are mostly sold outside a region. The paradox is that while the vast majority of jobs are in the non-traded sector, **the traded sector is the driver of prosperity in the U.S. cities.**



Differentiate between tradable and non-tradable products/services

The importance of Productive Knowledge



Hausmann et al. (2017) - The differential accumulation of productive knowledge distinguishes between rich and poor countries. These differences are expressed in the diversity and sophistication of the things that each of these nations makes. The productive knowledge to create new products or services is key to economic success and wealth. It is more than book knowledge or searches on the Internet. It is embedded in brains and human networks and is tacit and hard to transmit and acquire. It comes more from years of experience than from years of schooling

THE ATLAS
OF ECONOMIC COMPLEXITY

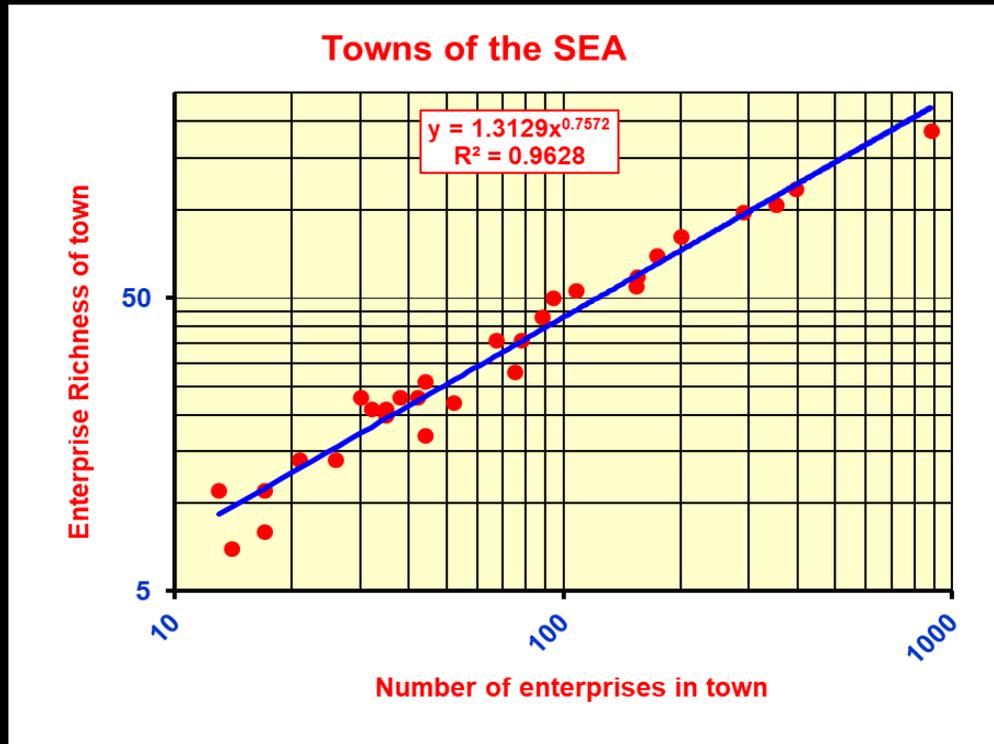
Link youth unemployment to increases in productive knowledge

Linking productive knowledge & enterprise richness

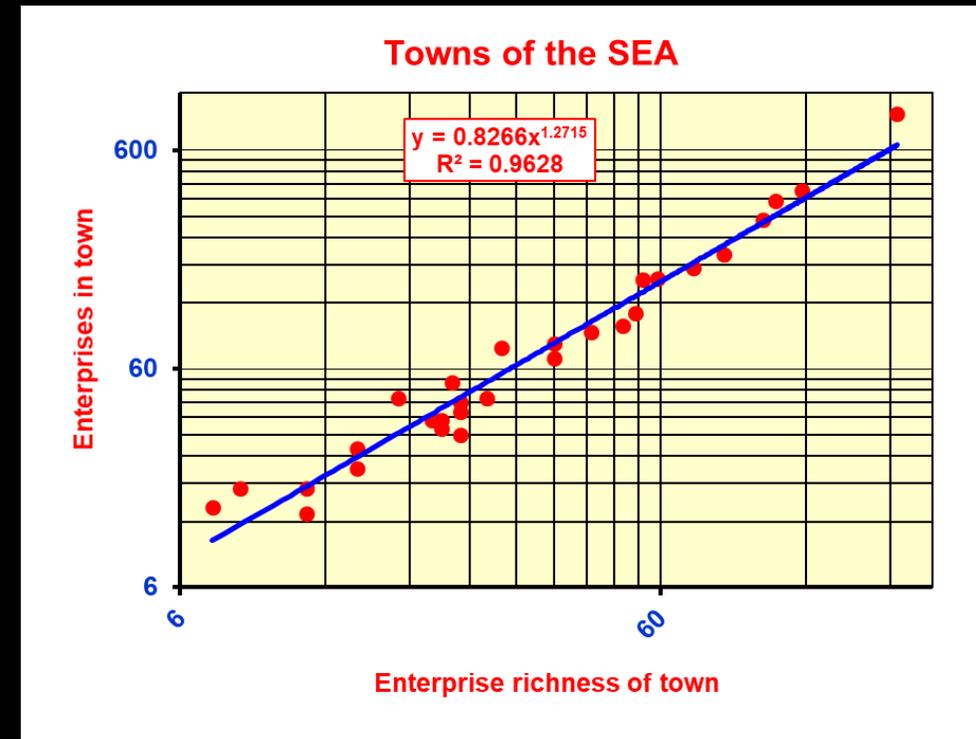
The entrepreneurial wellbeing of South African towns is clearly connected to the ability of their residents to conceive and make new products and/or deliver new services. In other words, their entrepreneurial wellbeing is dependent on the level of their productive knowledge and Enterprise Richness (ER) can be used as a proxy measurement of the productive knowledge. The concepts of ER and productive knowledge provide new ways to examine the socio-economic dynamics of South African towns.

Enterprise Richness (ER) is a proxy for productive knowledge

Measuring Productive Knowledge



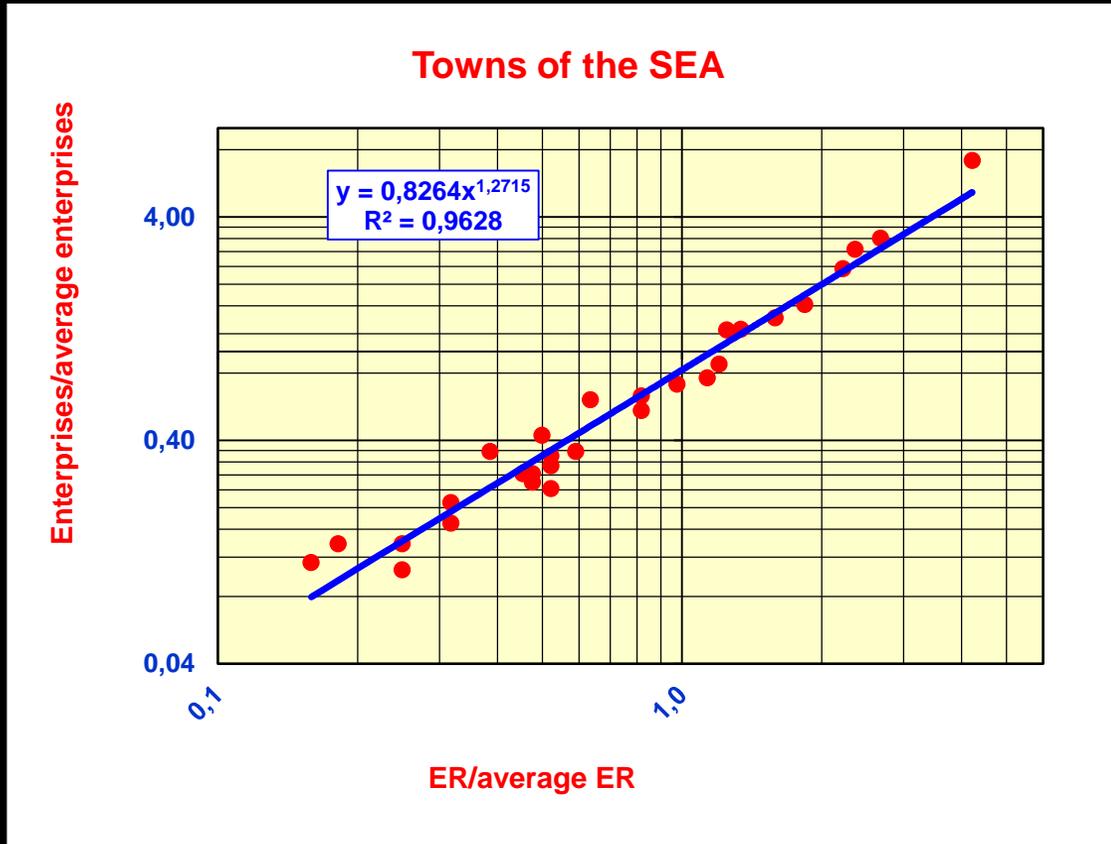
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The relationship can be inverted and ER be considered as driver

Productive knowledge (ER) has scalable
entrepreneurial impacts

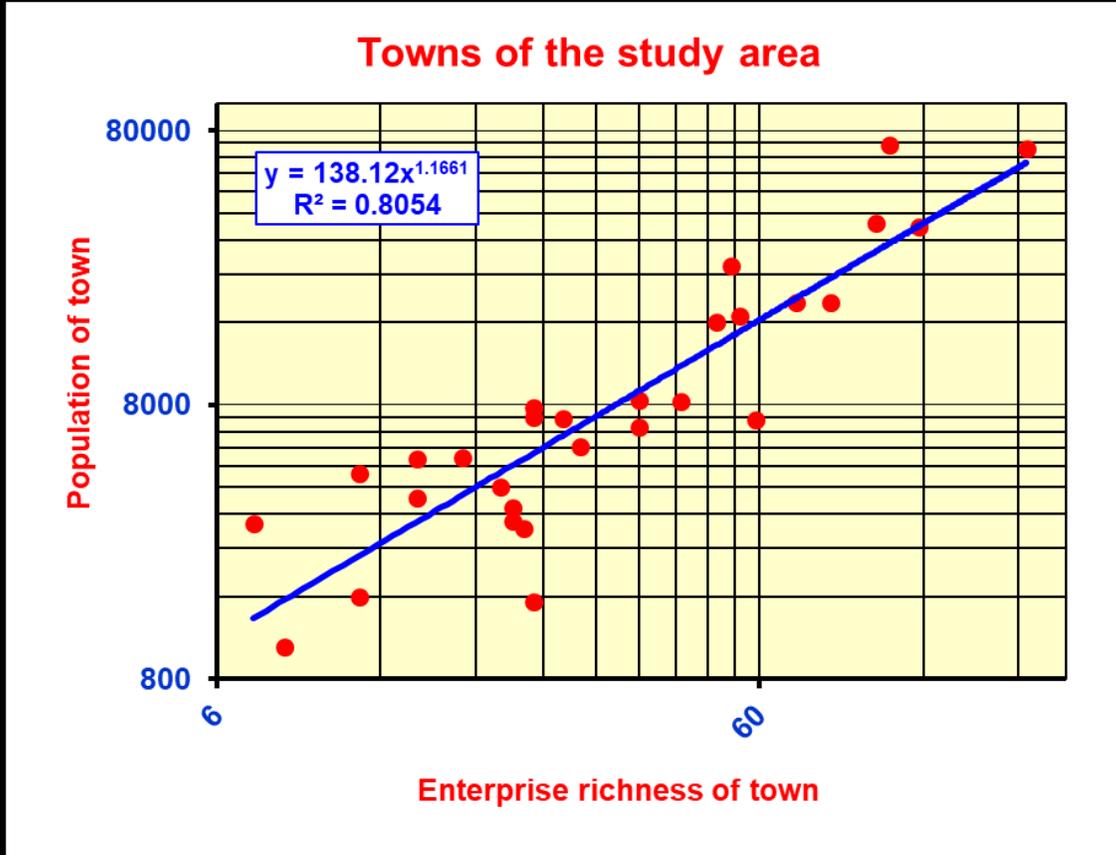
Use of normalized data



The exponent of 1.27 indicates that Karoo towns have increasing returns from scale in respect of their productive knowledge.

Key challenge – how to increase the productive knowledge of towns

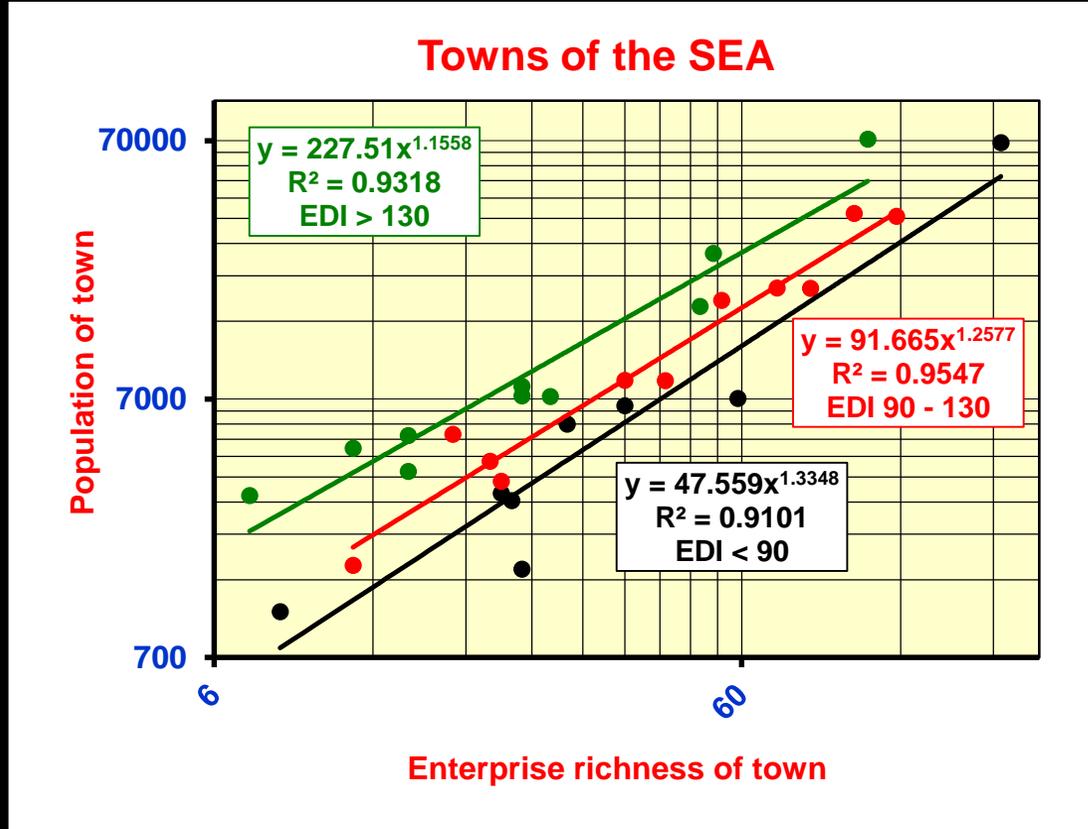
Productive knowledge & populations



There are scalability impacts but the data spread is large. Could wealth/poverty play a role?

Scalability but the spread is large - Wealth/poverty play role?

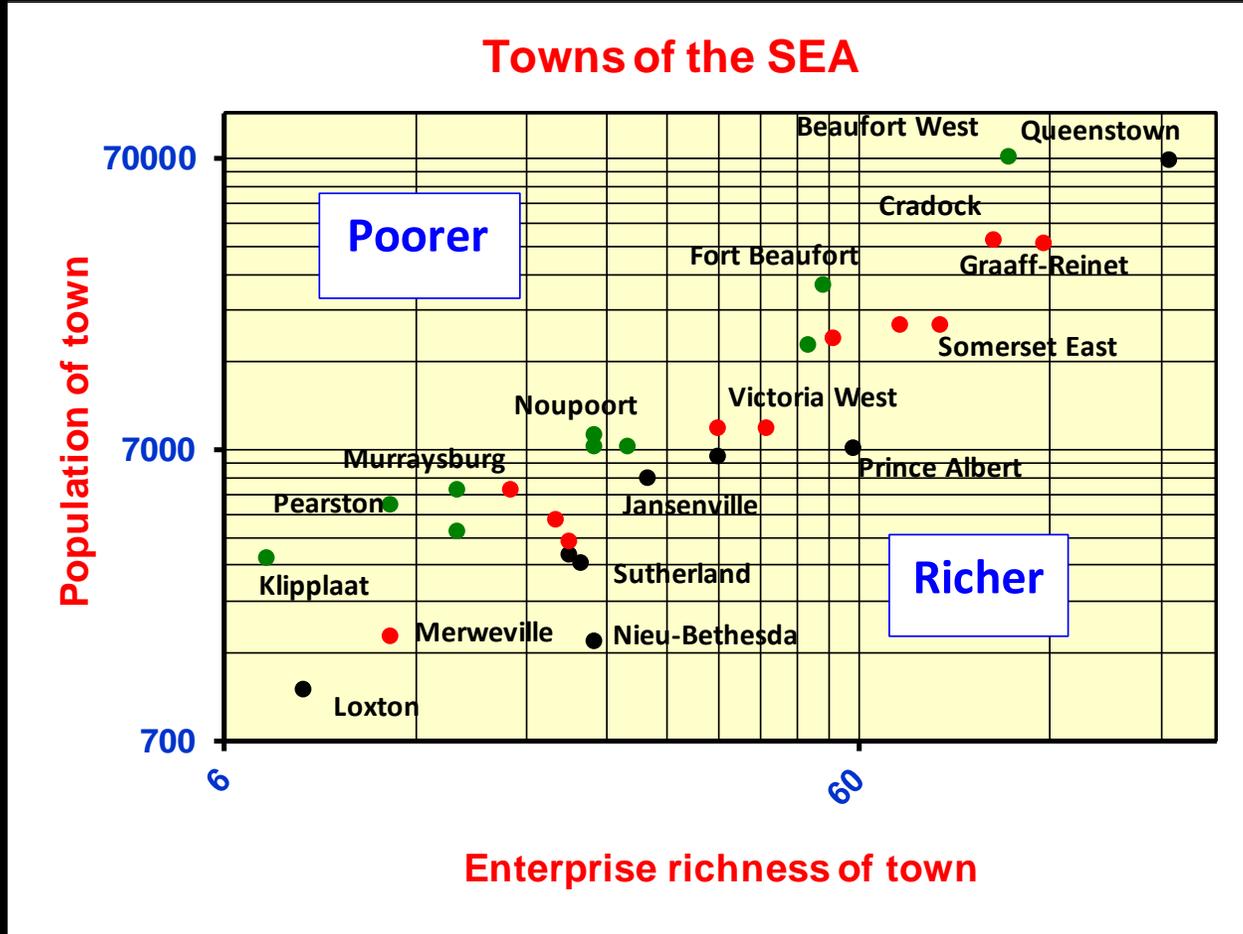
Impact of wealth/poverty states



Relationships exhibit returns to scale but increasing poverty moves the lines progressively higher. Richer populations 'carry' more enterprises for a given level of productive knowledge

Government's LED policy is pro-poor. Debatable if it is defensible

Who in the Karoo is richer and who poorer?

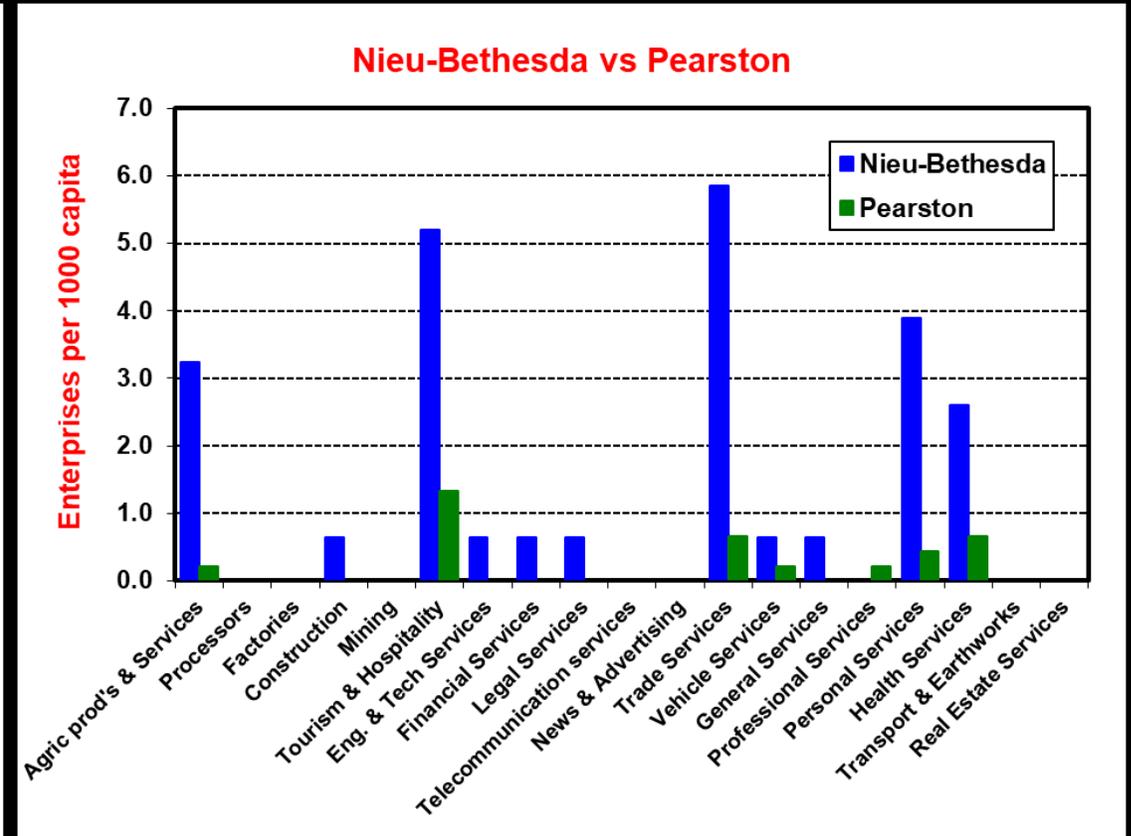
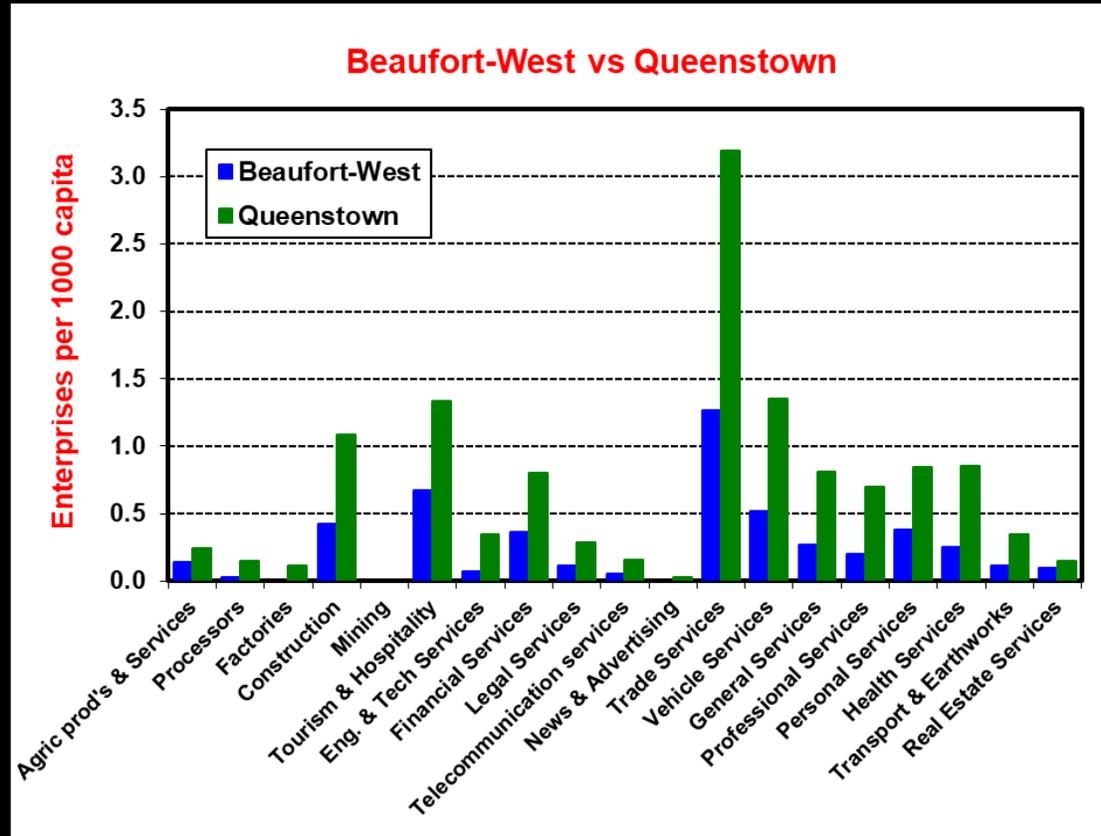


Richer (EDI < 90; black dots)
- Intermediate (EDI 90 - 130; red dots);
Poorer (EDI > 130; green dots) Karoo towns.
Note size does not matter.
There are richer small towns and larger poor towns.
EDI is a valuable measure of wealth/poverty states of towns

EDI is a valuable measure of the wealth/poverty states of towns

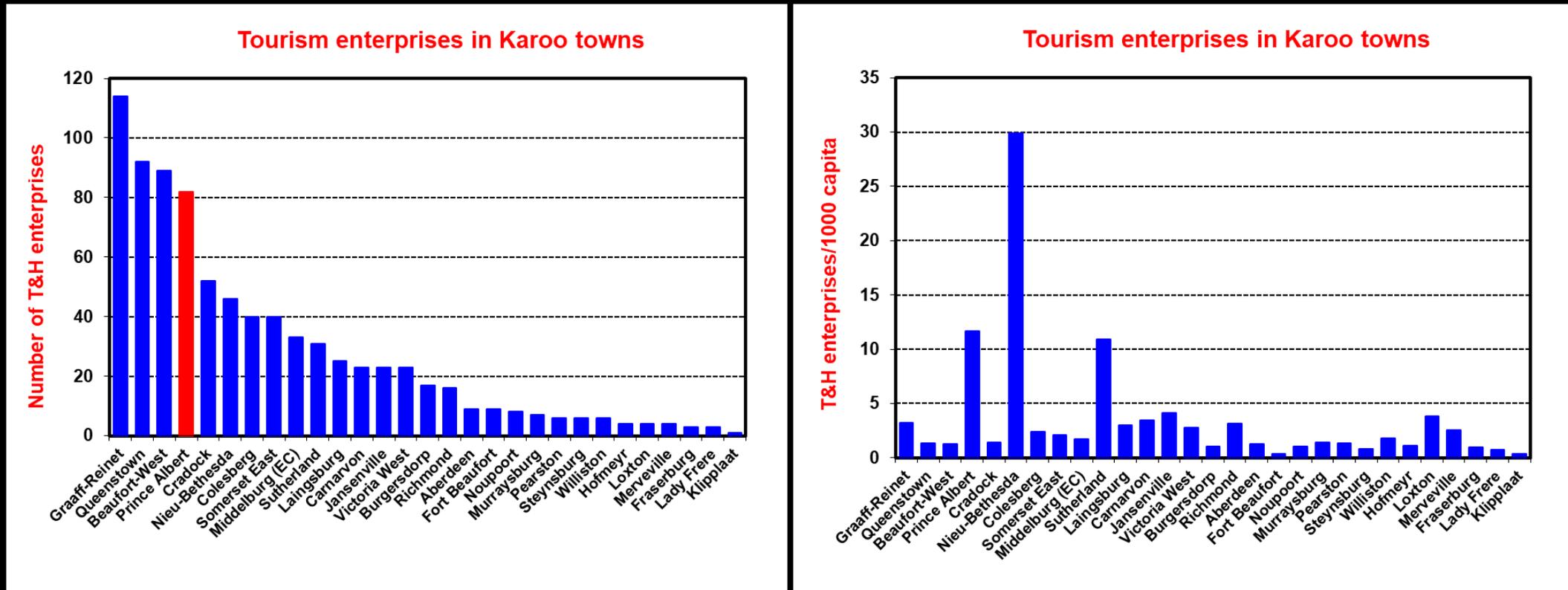
Town versus town comparisons

Enterprises per 1000 residents useful parameter



All kinds of questions arise from comparisons like these

Can tourism save towns?

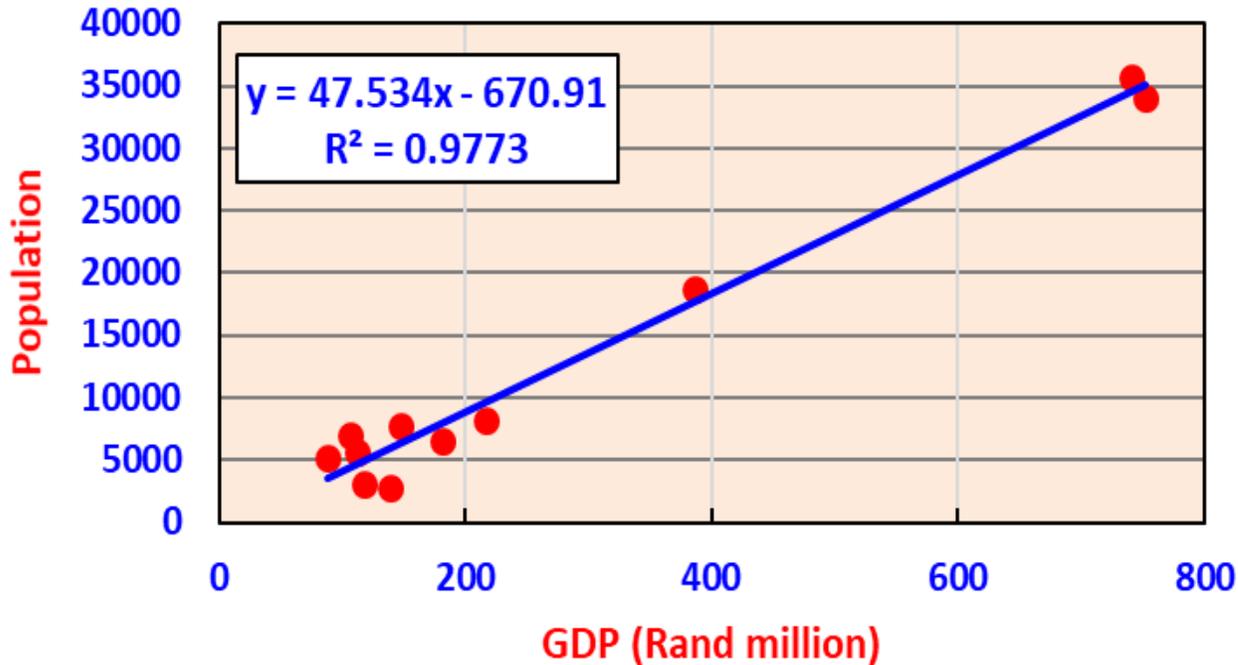


Prince Albert (red) is in the same league as the large towns!

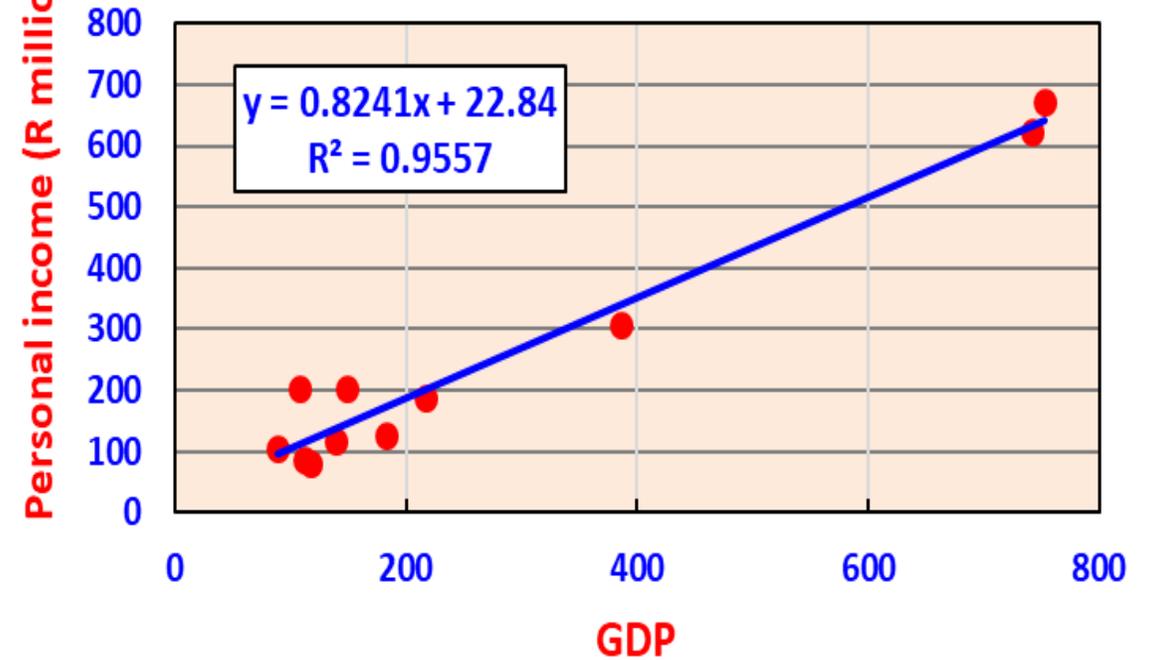
Yes, it can but remember the state of the economy

GDP as a source of income for Karoo towns

Relationship between GDP and Population



Relationship between GDP and Personal Income



GDP is an important source of income and determines population sizes

Tradeables vs non-tradeables

Municipalities should heed Moretti's advice about the difference between sectors that deliver tradeable products & services to external markets and non-tradeable products & services to local markets. If they want to solve their unemployment problems, including that of the youth, they have to know which sectors are involved in tradeables and should consider how they can increase entrepreneurship in these sectors. In other words, municipalities need to understand the flow of money into their local economies and what this means for the multiple towns they are responsible for.

Quantification of monetary inflows is important

Tradeable and other sources of income

Agriculture, processing of agricultural products, manufacturing of many goods, construction driven by external investments (e.g. holiday homes), tourist spending, extraction enterprises (e.g. mines), all welfare payments (e.g. child support, old age pensions, etc.), many transfers from central government (e.g. to municipalities), salaries of civil servants and officials, private pensions (e.g. retired people), external investments (e.g. for holiday homes)

Most municipalities do not have the figures for all of these