

Spatial patterns of labour absorption in the South African economy

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Content

- Background
 - Urbanisation, unemployment, labour absorption
- Data and methods
- Findings
- Recommendations and Conclusion

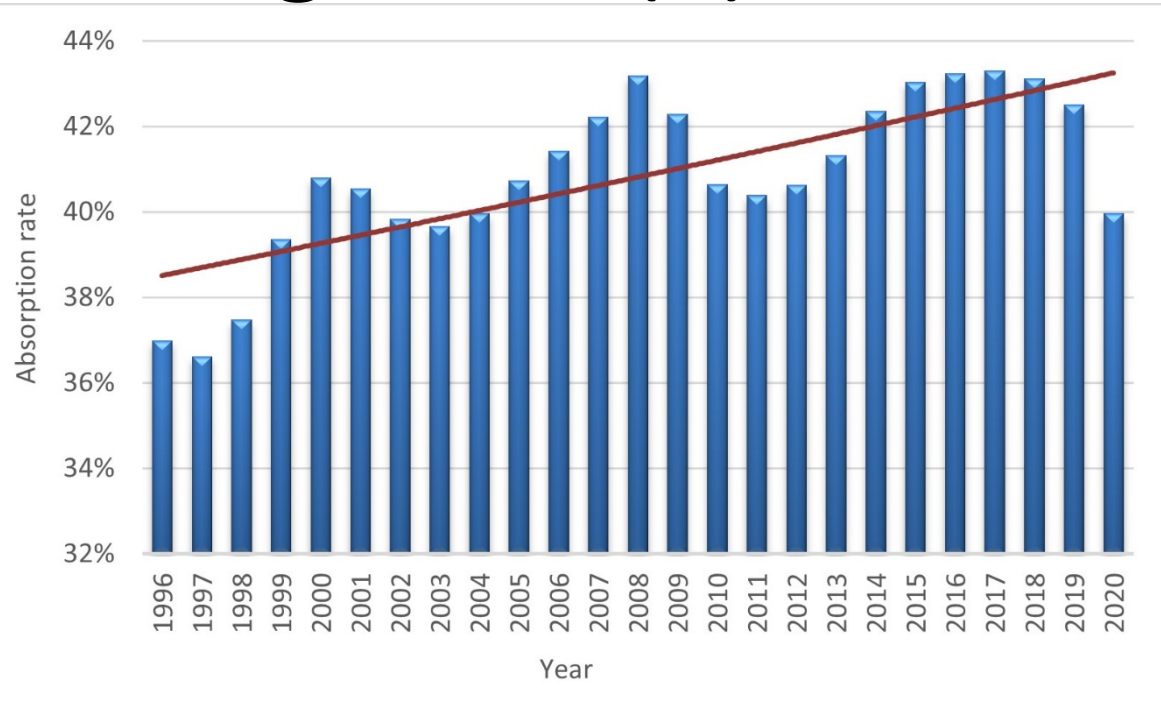
Background (1)

- Rapid urbanisation and increasing concentration of economic activity in major urban settlements
- Poor economic growth
 - 2008 global economic downturn
 - 2020 COVID
 - 2021 July unrest
- Increased numbers of unemployment – currently 34.5%
- Changes in labour market
 - Concentration in urban spaces
 - Increased labour absorption in Gauteng, KwaZulu-Natal, Western Cape and the Eastern Cape between 1996-2013
 - Depopulation of non-metros

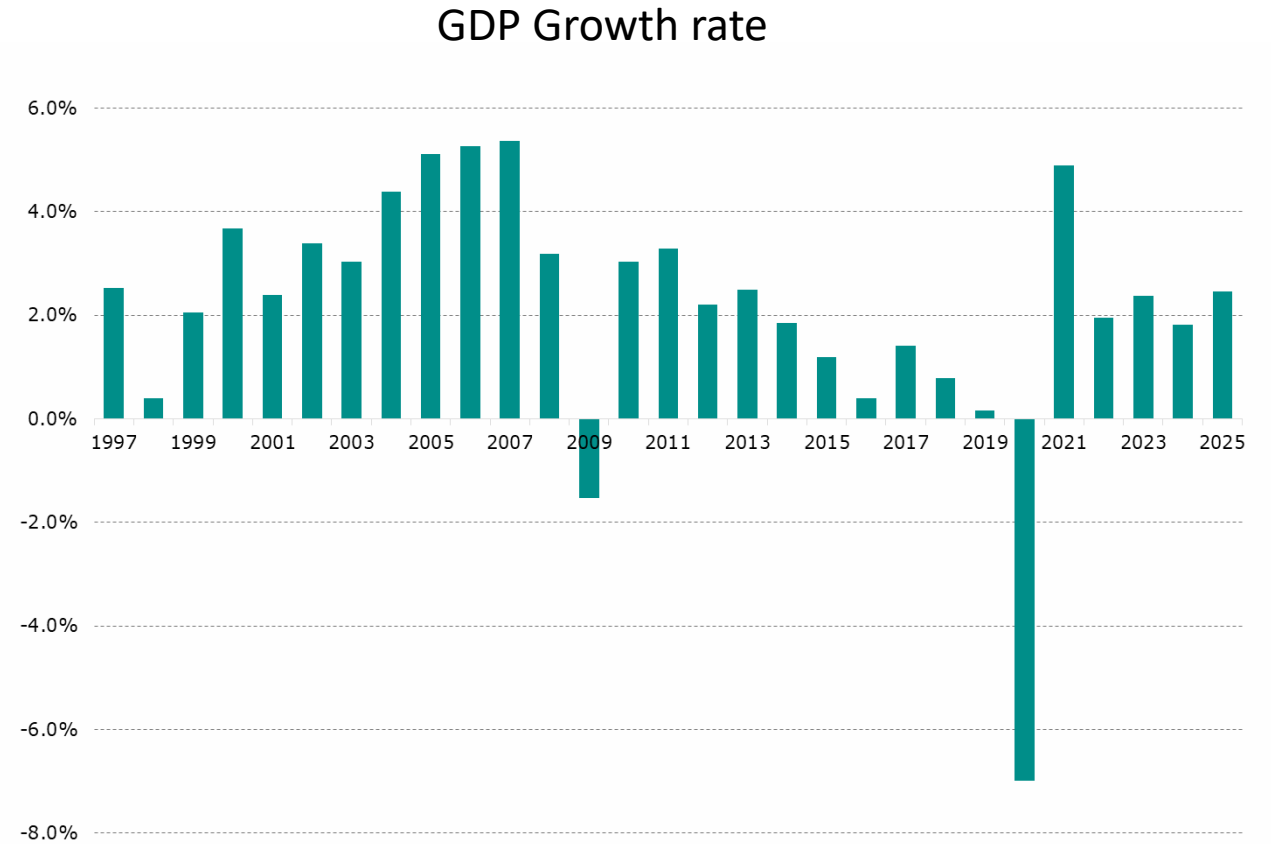
Background (2)

- National GDP growth (overleaf)
 - Average growth below 4%
 - Challenge to address regional imbalances
- In developing world context
 - Temporal change in labour absorption rates - additional indicator of labour market health
 - Unemployment can be under-estimated
 - Labour absorption = proportion of the working-age population that is employed
 - Reflects the ability of an economy to create employment
- Objective: to explore spatial patterns of labour absorption as an indicator of a healthy economy

Background (3)



Labour absorption rate



GDP Growth rate

Data and methods (1)

- Secondary socio-economic data
 - Longitudinal data from 1996 to 2020
 - Variables of labour absorption, unemployment, GDP growth, Gini-coefficient, percentage urban population, functional literacy
- Exploratory spatial data analysis
 - Scatterplots
 - Thematic mapping



Data and methods (2)

- Spatial Grouping
 - Cluster features (N=213) based on specific variables
 - Labour absorption rate of 2020 only
 - Non-satisfactory return
 - Low R^2
 - Labour absorption rate of 6 time periods between 1996 and 2020
 - Spatial constraints = K_Nearest_Neighbors. To ensure groups are not spatially far apart
 - Distance method = Euclidean
 - Minimum number of neighbors = 5
 - High R^2

Findings (1)

- Longitudinal trends

| Labour force absorption rate | Mean | Std. Deviation | Min | Max |
|------------------------------|------|----------------|------|------|
| 1996 | 34.2 | 15.2 | 5.7 | 66.2 |
| 2001 | 38.2 | 15.0 | 8.3 | 68.7 |
| 2007 | 37.9 | 13.4 | 12.2 | 67.5 |
| 2011 | 35.4 | 13.1 | 10.8 | 66.0 |
| 2016 | 39.1 | 13.1 | 12.1 | 70.5 |
| 2020 | 35.5 | 12.0 | 10.2 | 63.7 |

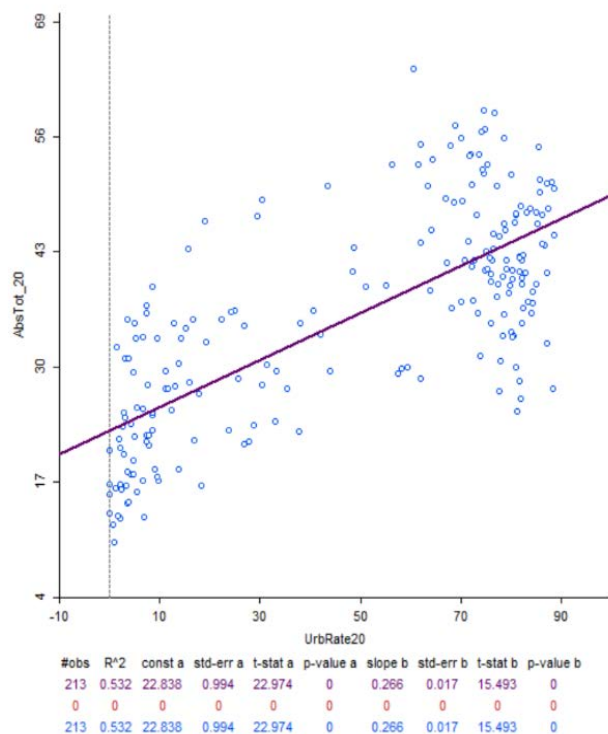
- Exploratory spatial data analysis

- Scatterplots
- Thematic mapping

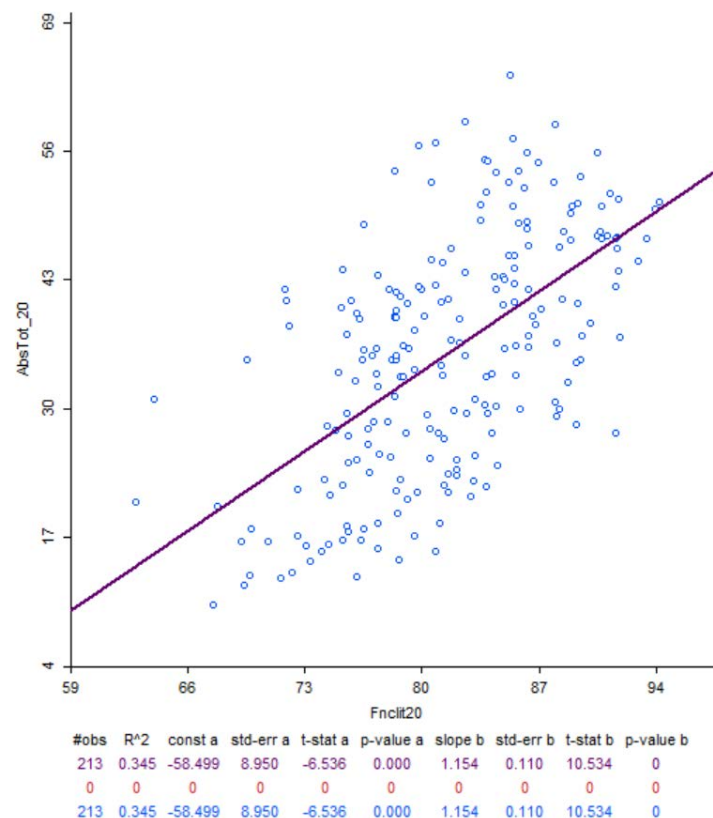
| GDP growth | Average annual | Mean | Std. Deviation | Min | Max |
|------------|----------------|------|----------------|-------|------|
| 1997 | | 2.6 | 3.9 | -6.4 | 21.7 |
| 2001 | | 1.4 | 4.2 | -10.8 | 13.1 |
| 2007 | | 4.2 | 3.9 | -7.1 | 18.4 |
| 2011 | | 2.6 | 2.7 | -5.5 | 8.9 |
| 2016 | | -0.8 | 3.0 | -11.0 | 6.1 |
| 2020 | | -6.2 | 3.5 | -20.7 | 2.3 |

Findings (2) - Exploratory spatial data analysis

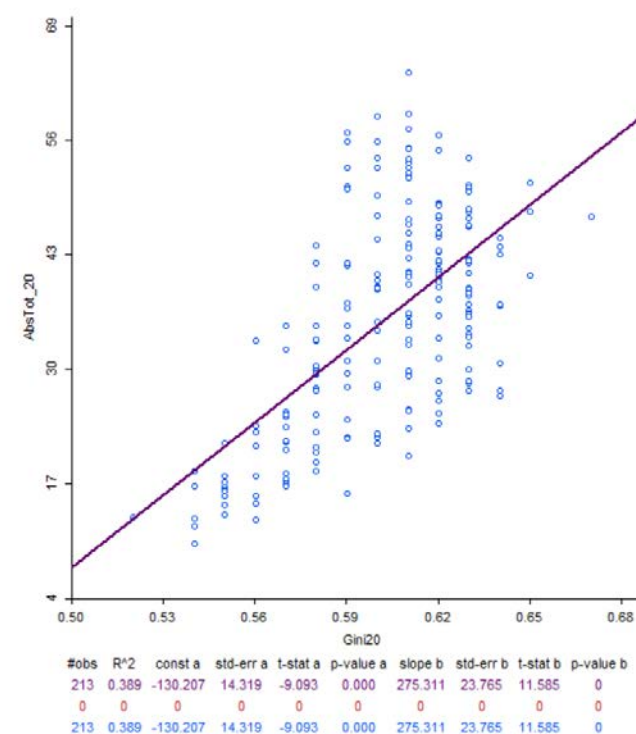
- Scatterplots



Share of people who lives in an urban area relative to the total (urban + rural) population within a municipality



Functional literacy: percentage people aged 15+, completed grade 7 or higher

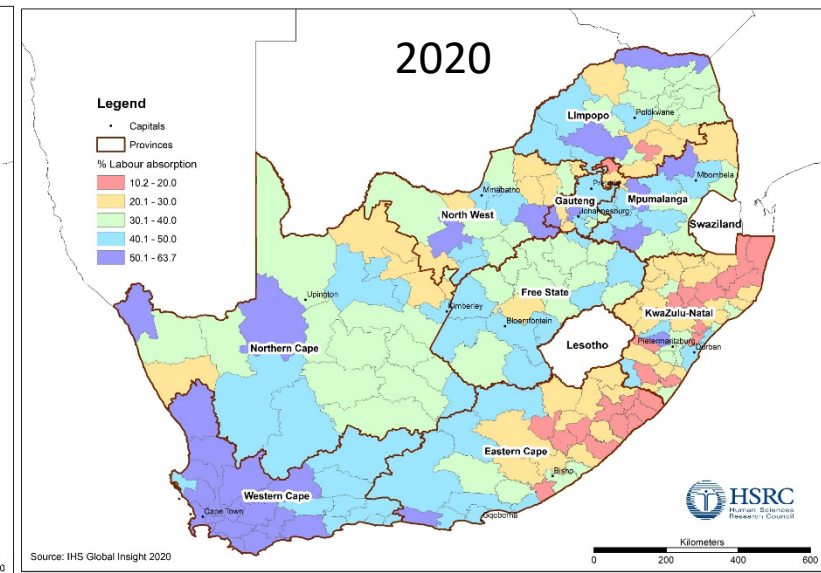
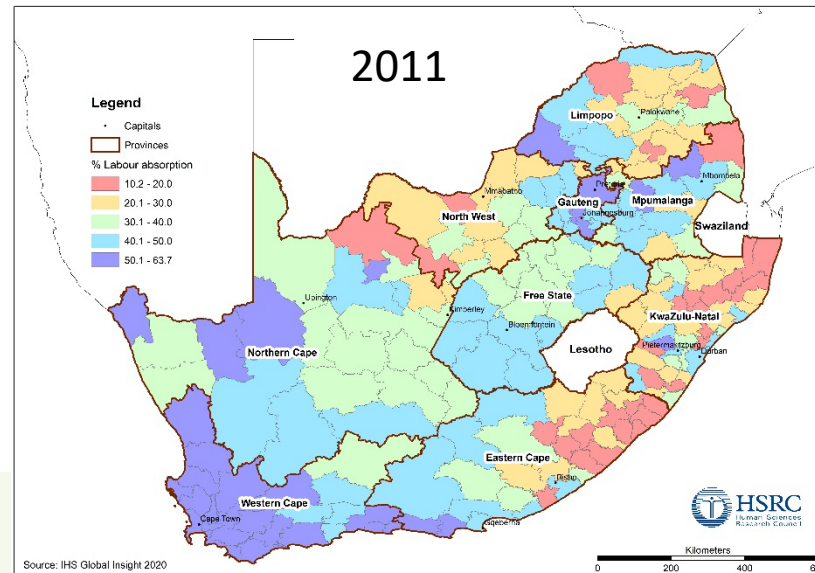
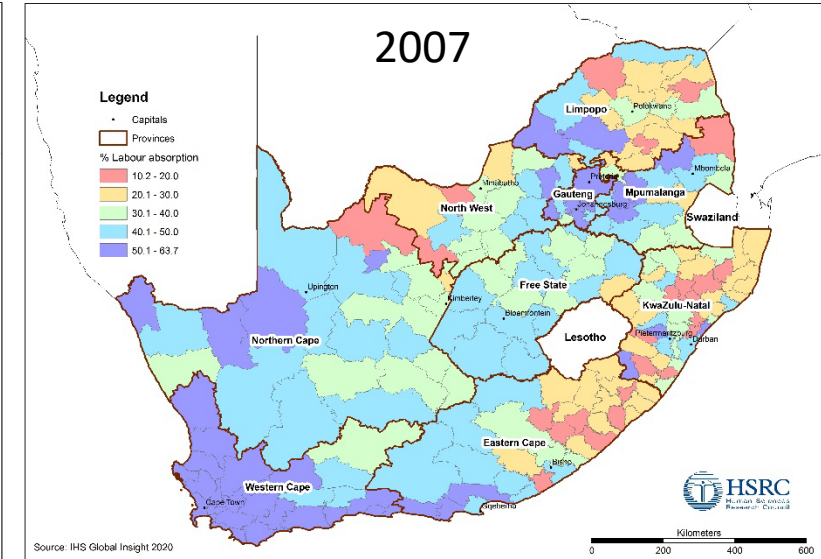
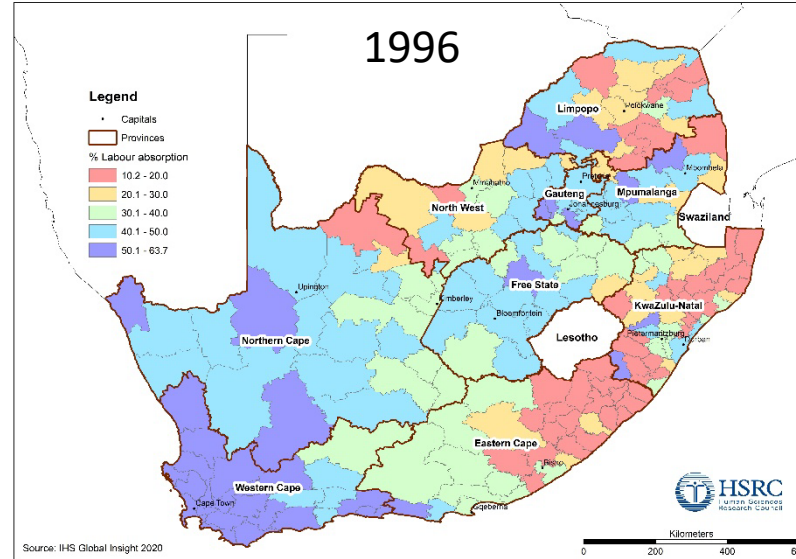


Gini coefficient

Findings (3) - Exploratory spatial data analysis

- Thematic mapping

- Pattern in 1996 -2020
- Lowest absorption (below 20%) in Eastern Cape and KwaZulu-Natal
- But improved since 1996
- Very high absorption in Western Cape

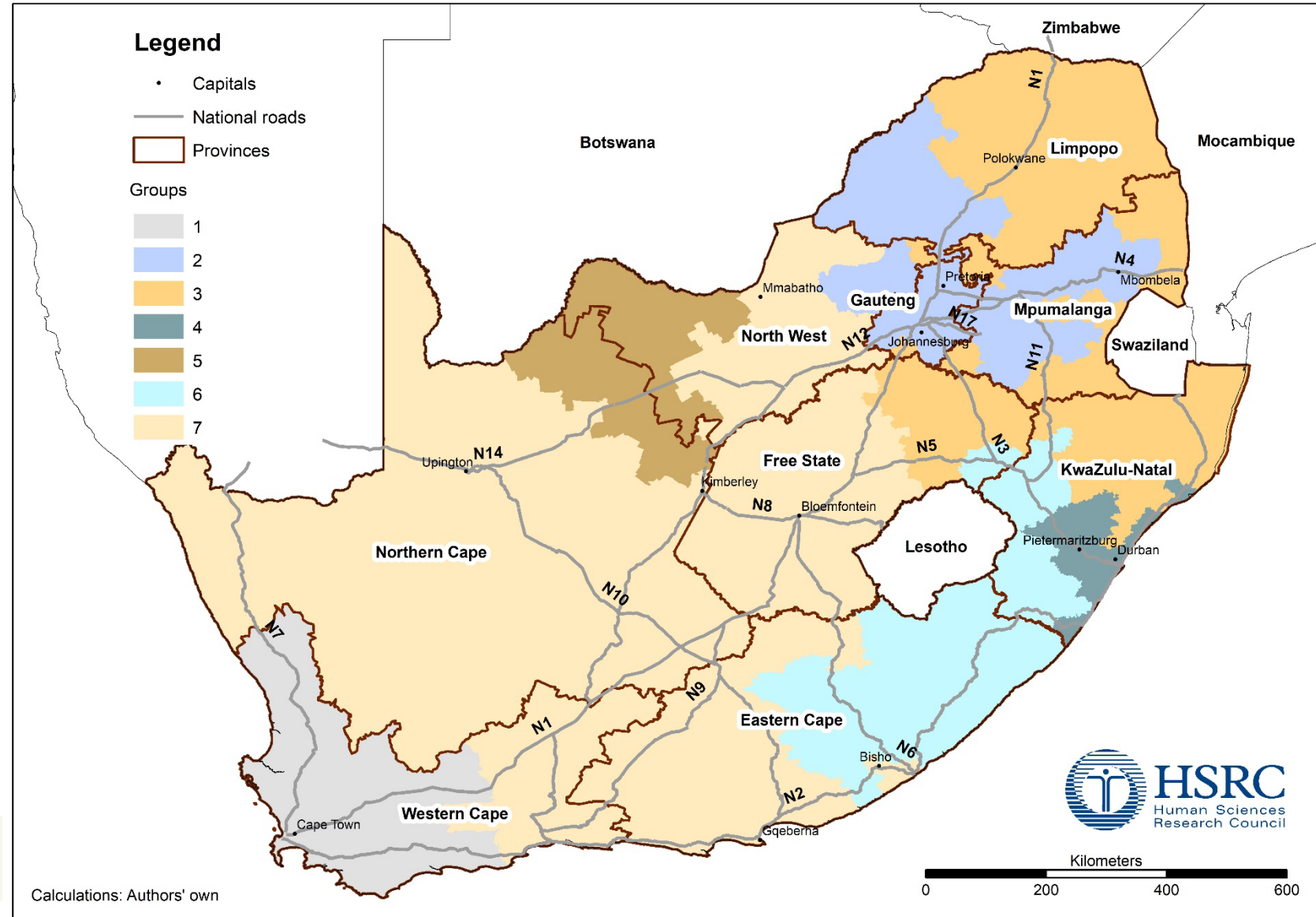


Findings (4) - Spatial Grouping

- Ran 6 models
- Highest $R^2 = 0.72$ (labour absorption in 1996)
- Grouping effectiveness (Pseudo F-statistic)
 - Reflects within-group similarity and between-group difference
 - Highest at 11 groups
 - However, 7 groups illustrated results easier to interpret
- Clear patterns along
 - National roads
 - Metros
 - Low GDP growth provinces

Findings (5) - Spatial Grouping

- Largest number of municipalities in Group 7 (N = 64)
- Unique groups
 - 4 and 5
- Metros in
 - Group 1, 2 and 4



Recommendations and Conclusion

- Implications for regional development
 - Focus development along national roads
 - Boost the “Second economy”
 - Cluster towns that are in a similar group
- Implications for labour absorption
 - Connect second-economy operators to the formal economy through productive investments
 - Create effective linkages between emergent entrepreneurs and formal businesses and investments
 - Skills development related to regional strengths

Thank you
Merci

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