ISWA 2014
#São Paulo-Brasil
Congresso Mundial de Resíduos Sólidos

THE STATE OF INNOVATION IN THE SOUTH AFRICAN WASTE SECTOR

OUTLINE OF PRESENTATION

- Introduction
- Materials and Method
- Results and Discussion
  - Status quo of technological and non-technological innovation in South Africa
  - Constraints to waste innovation
- Conclusions

INTRODUCTION

- South Africa
  - Landfills ~90% of all waste generated
  - Landfills ~75% of all MSW generated
- Goal of the Waste Research, Development and Innovation Roadmap of "*20% reduction in industrial waste and a 60% reduction in domestic waste to landfill by 2024*" (DST)
- Through R&D and innovation
- Lead to sector growth and job creation

INTRODUCTION

- Ministry Science & Technology initiated the First South African Waste Sector Survey (2012)
- Assess the status quo of the waste sector
- Benchmark against which to track growth
  - Employing a ~29,833 people
  - Financial value of ~US$1.53 billion (or 0.51% of GDP)
  - Potential to grow to 1.0-1.5% of GDP
- Recognises role innovation can play in growing the waste sector

MATERIALS AND METHOD

- Self-administered questionnaires
- Emailed to >500 private companies and >280 municipalities (and posted)
- Questions on –
  - Employment, skills, finances
  - Waste sector and technologies
  - Product-, Process- *(Technological)*, Marketing- and Organisational- *(Non-technological)* innovation

DEFINING THE WASTE SECTOR

Private Sector	Waste revenue [US$ million] *
Large enterprises	> 5.1
Medium enterprises	1.3 – 5.1
Small enterprises	0.5 – 1.3
Very small enterprises	0.02 – 0.5
Micro enterprises	< 0.02

At an exchange rate of US$1 = ZAR10

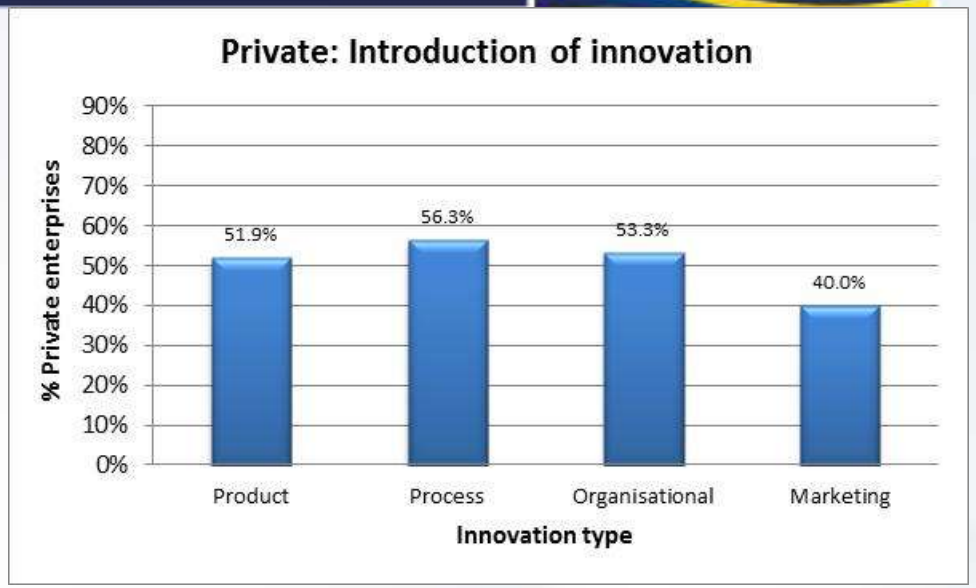
Public Sector	Description
A	Metropolitan municipalities (metros)
B1	Secondary cities, local municipalities with the largest budgets
B2	Local municipalities with a large town as core
B3	Local municipalities with small towns, with relatively small population and significant proportion of urban population but with no large town as core
B4	Local municipalities which are mainly rural with communal tenure and with, at most, one or two small towns in their area
C	District municipalities

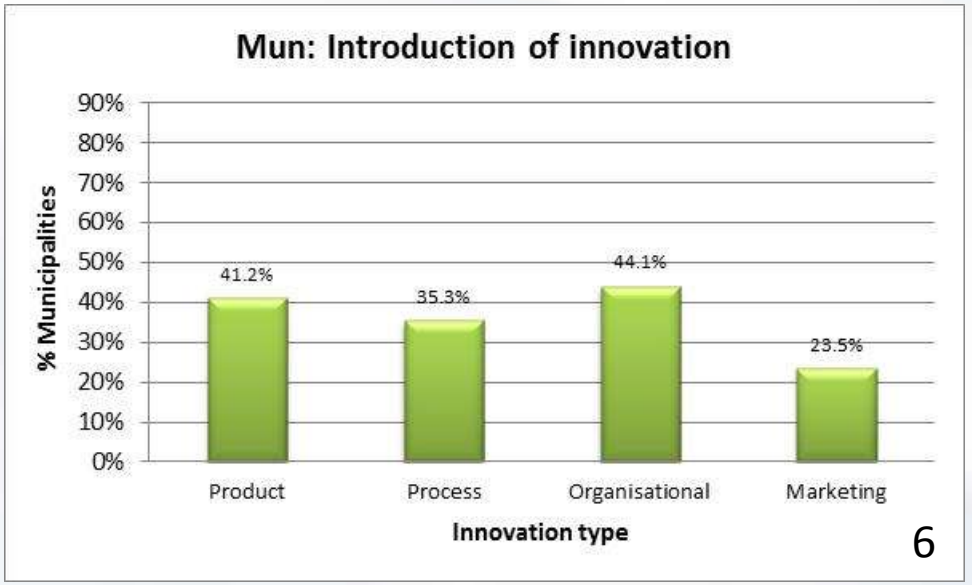
** Category definitions similar to the Manufacturing sector, and the Electricity, Gas and Water sector*

INTRODUCTION OF WASTE INNOVATION

- Greater innovation activity (technological and non-technological) amongst the private waste sector than amongst municipalities

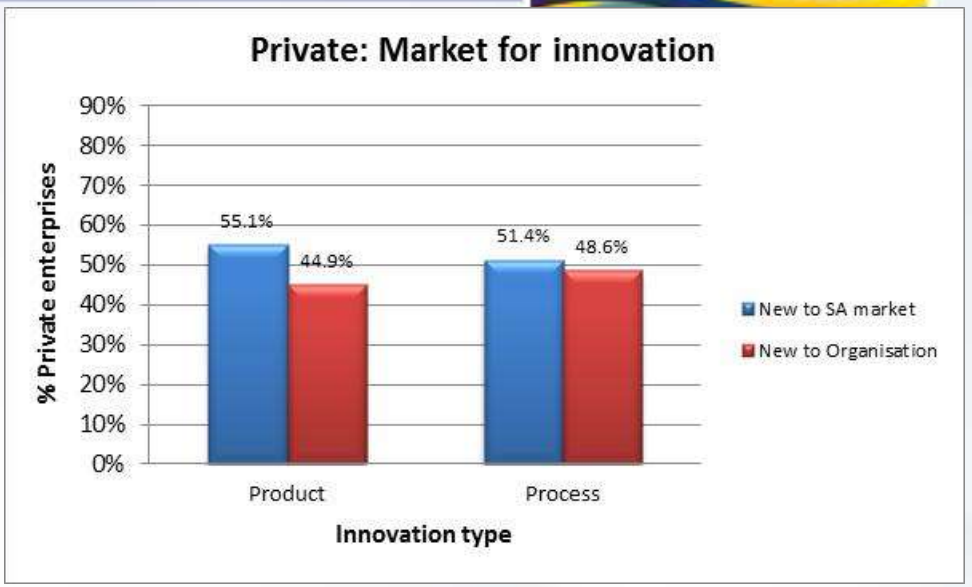
- Higher technological innovation activity than non-technological for both private and public sector

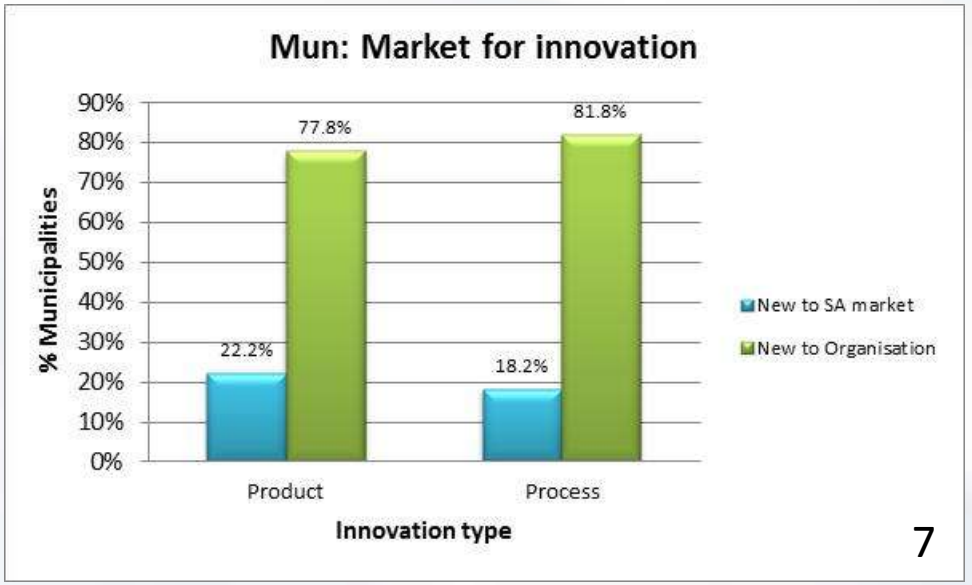




MARKET FOR THE INNOVATION

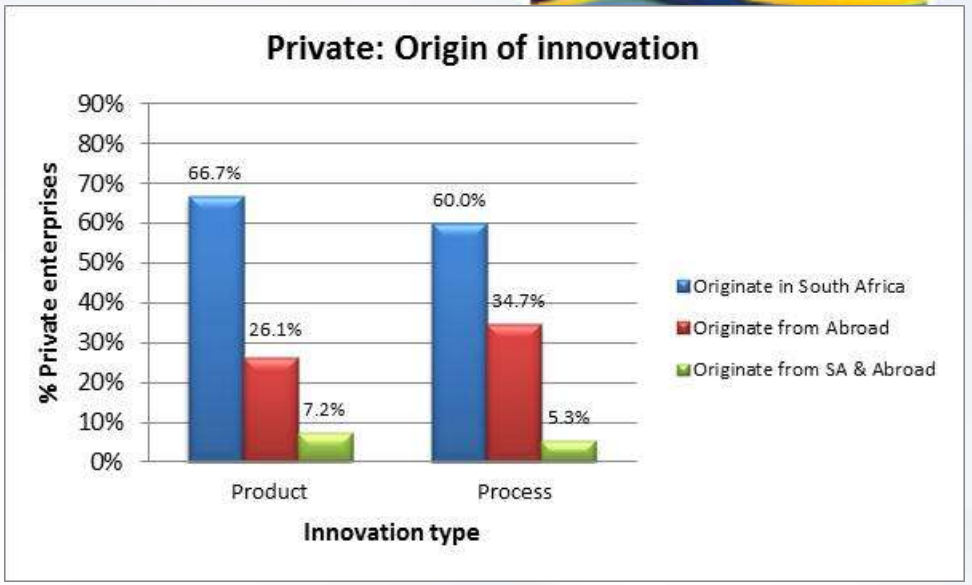
- Levels of innovation
  - New to organisation
  - New to SA market
- Private sector showed greater tendency to introduce new technological innovations to the South Africa waste market, compared to municipalities who introduced technological innovations to their own operations
- Nature of the private sector (competitive advantage)

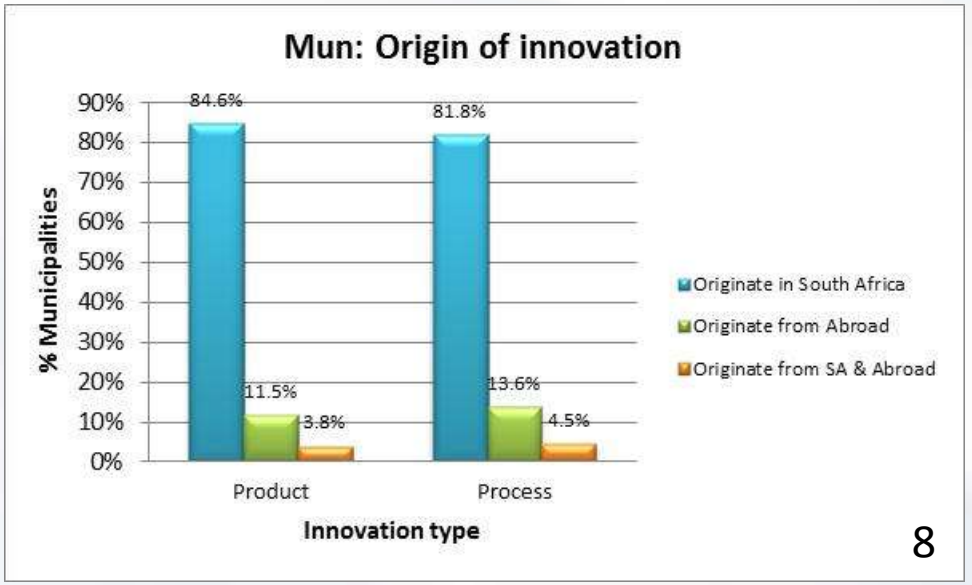




ORIGIN OF THE INNOVATION

- Private sector showed higher tendency than municipalities to introduce technological innovations from overseas
  - Potential partner to support the transfer of technological innovations from supplier (local and abroad) into municipalities
- Private sector important role in transferring waste innovations into the public sector
  - Mechanisms to support public-private partnerships

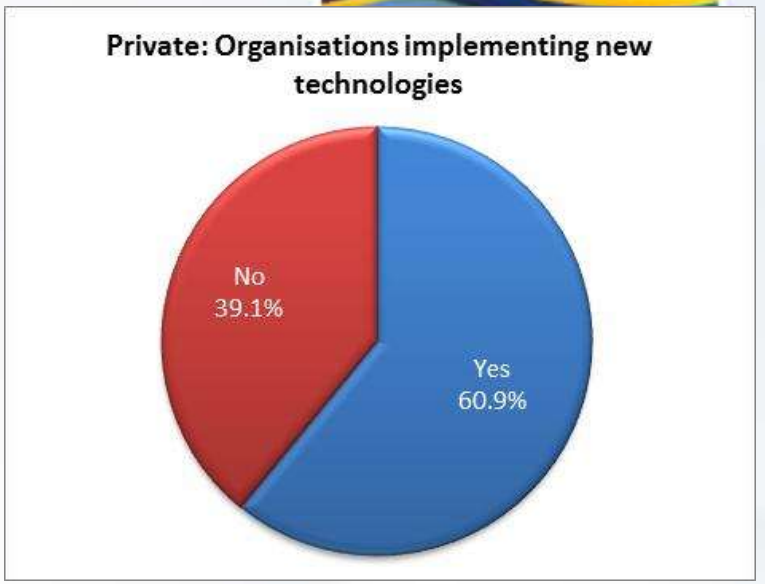


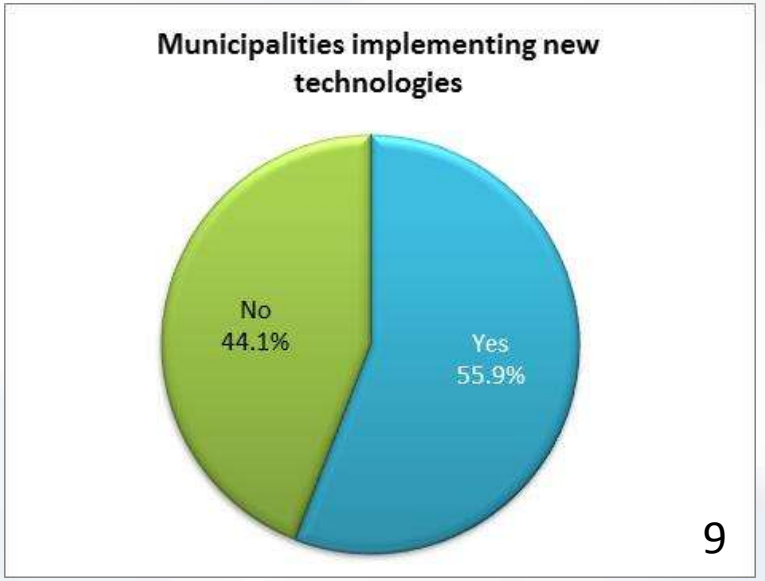


PLANNED TECHNOLOGICAL INNOVATION

- 60.9% of private waste companies and 55.2% of municipalities indicated that they would be introducing new innovations

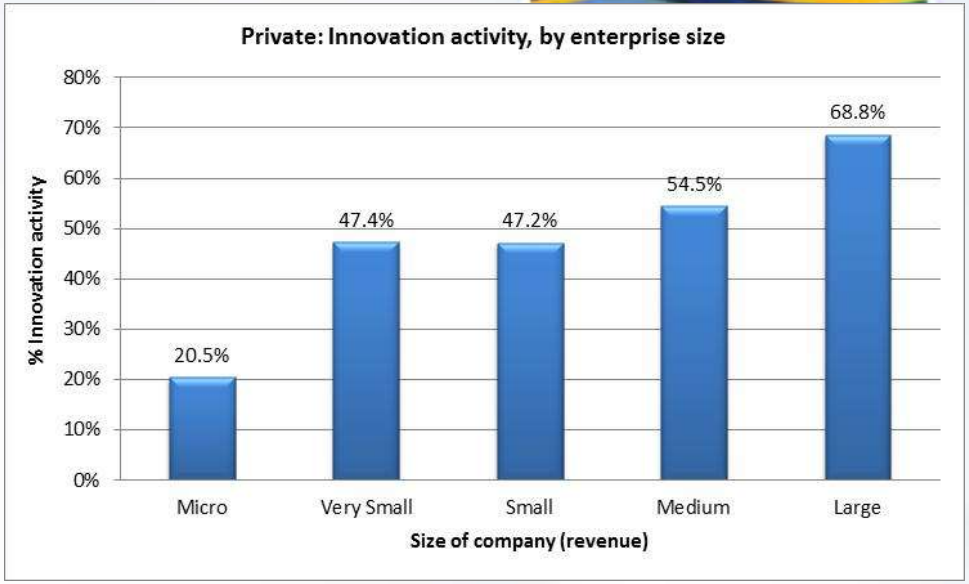
- Encouraging from the perspective of innovation activity (suggests sector change, growth, conducive environment)

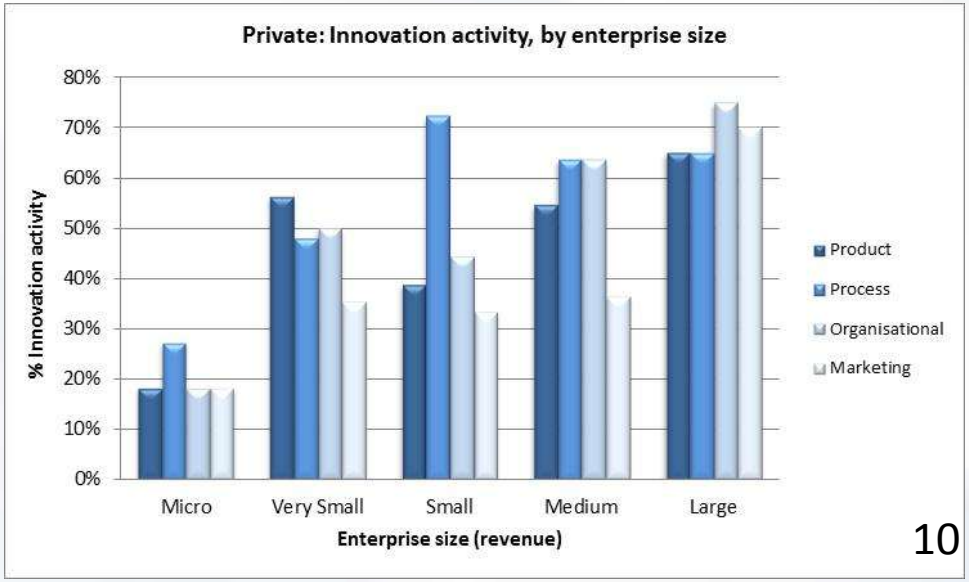




INNOVATION ACTIVITY - PRIVATE

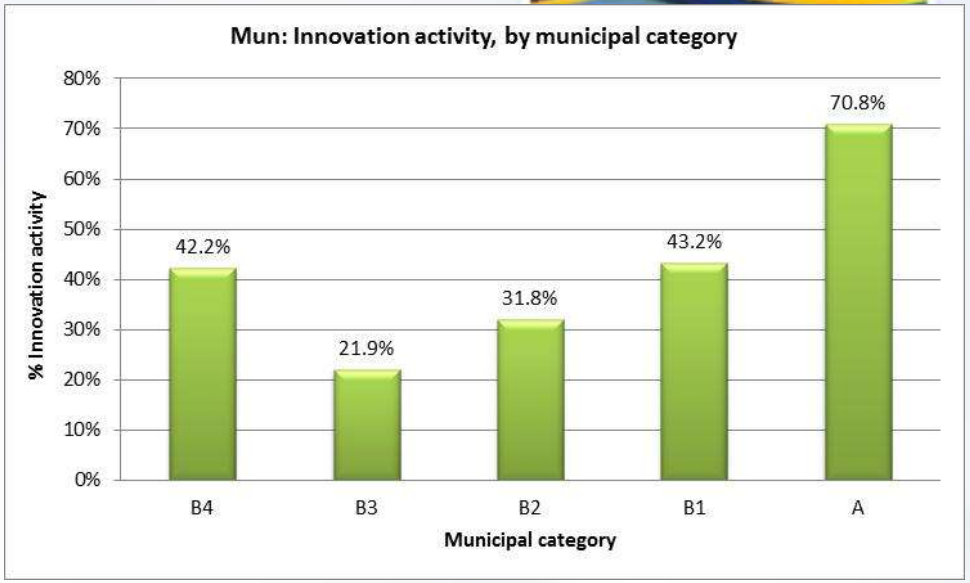
- Correlation between enterprise size (financial) and the adoption of innovation
  - Larger the organization (financially), greater the likelihood of innovation activity
  - Financial risk absorbed by larger, more financially secure companies
- Need to encourage innovation in SMMEs

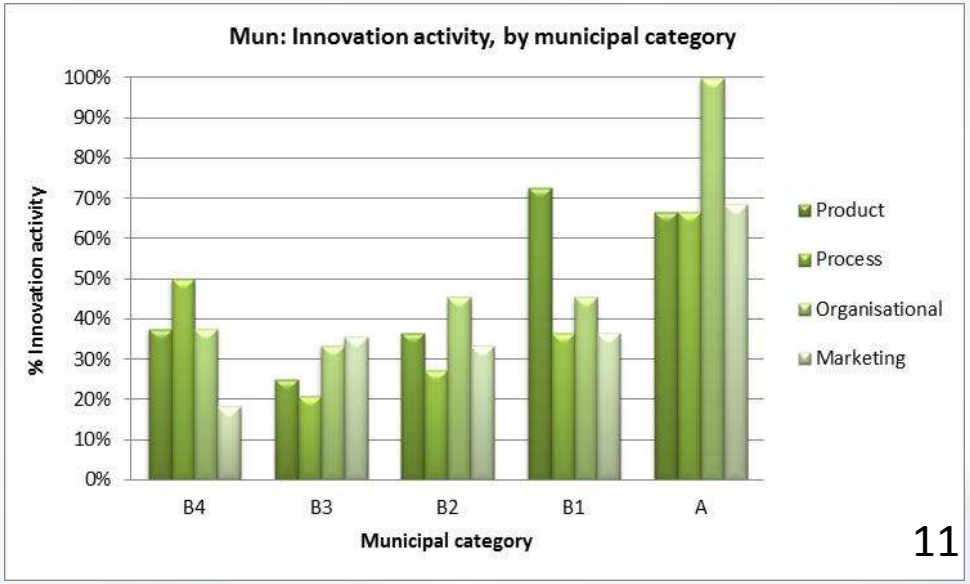




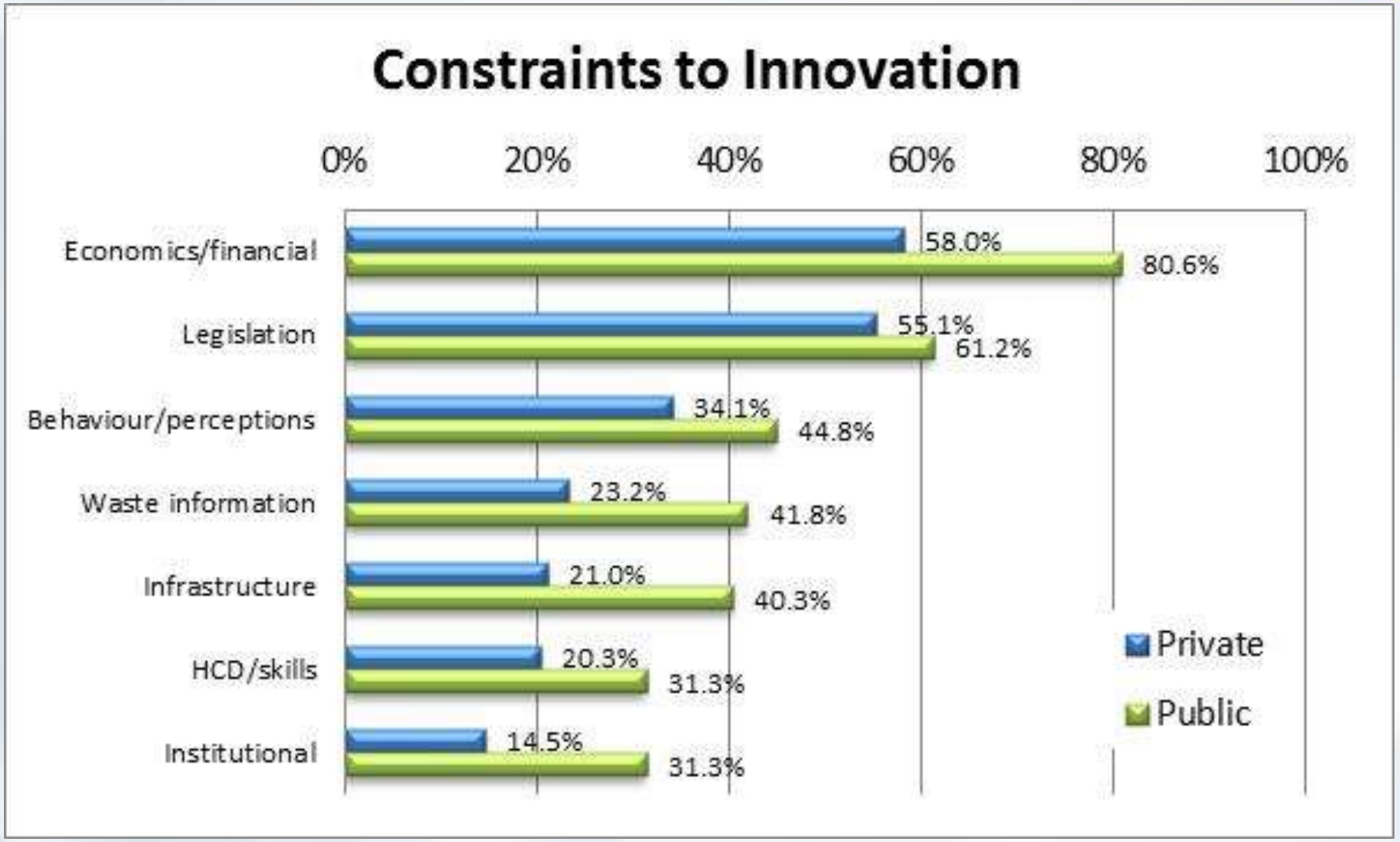
INNOVATION ACTIVITY - PUBLIC

- Increasing levels of innovation activity with increasing municipal size (with exception of small B4 municipalities)
- Innovation not only a world first, ground-breaking technology
- Start from low base, simple product or process, new to the organisation considered innovation





CONSTRAINTS TO INNOVATION



CONCLUSIONS

- Positive response by the waste sector to introduce new technological and social innovations to South African waste market
- Private waste sector is an important partner to support the transfer of technological innovations from supplier (local and abroad) into municipalities
- Recognised need for –
  - Mechanisms to support partnerships between the public and private sectors *(support transfer)*
  - Mechanisms to address slow uptake of innovation by micro-, very small- and small- enterprises in the waste sector
- Government must continue to encourage the introduction of technological innovation across the waste sector *(Roadmap)*
- With the aim of shifting waste away from landfilling towards alternative waste management options

FOR MORE INFORMATION

www.wasteroadmap.co.za

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