MODELLING SELF-DRIVE TOURIST TRAVEL PATTERNS IN DESERT AUSTRALIA

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Outline

- Tourism and Desert Australia
- Modelling Tourist Activity
- National and International Tourist Surveys
- VRUM™
- Modelling Examples
- Conclusions
Tourism and Desert Australia

Desert tourism over the past 10 years has seen a 10% reduction in domestic and 8% reduction in international tourists.

Reflected in reduction in transport services (air, coach).

Refer to Carson and Taylor (2009)
Self-Drive Tourists

In 2006, more than 74% of Australian tourism trips were self-driven.

Self-driven tourists are far more common for trip involving multiple destinations over a single destination.

Four wheel drive tourists have higher repeat visit rates. They include travellers who are explorers, activity seekers, thrill seekers and the novice.
Modelling Tourist Activity

Leiper’s (1979) – tourism system framework, but limited by allowing only one destination as an attraction point with other visited locations relegated to the role of a ‘transit region’.

Lui, Crompton and Fesenmaier (1993), Mings and McHugh (1992) and Lew and McKercher (2002) - typologies of trip patterns investigating how different destinations to play different roles within the tourism journey.

Prideaux’s (2000b) - behaviour of travellers to multiple destinations.

Wu and Carson (2008) - GIS which showed how locations of overnight stops changed according to the length of stay of visitors in Tasmania, and the clusters of destinations visited on multiple destination trips to South Australia.

Becken, Vuletich and Campbell (2004) - GIS showing the most popular routes for air travel on multiple destination trips. Outside the academic research sphere in New Zealand

Tourism Queensland has developed a GIS estimating the number of tourist vehicles who use specific road segments.
Modelling Tourist Activity

Process Area and Application Examples

• Marketing and the evaluation of marketing campaigns,
• Developing strategies for information distribution,
• Tourism products and packaging these with multiple destinations,
• Product development (nodes with different functions in itineraries may require or benefit from different types of product. Nodes which are, or may become hubs, for example, will require accommodation, food and beverage, and service products),
• Transport options and accessibility issues,
• Regional tourism policy development and multi-regional collaboration (local government, tourism region, and State borders),
• Assisting in effective research (eg. guiding data collection activities).
NVS and IVS

- National and International Visitor Surveys,
- Each survey included approximately 25,000 respondents each year from 2000 to 2004 and 40,000 respondents in 2005 and 2006,
- The unit record files in these datasets provide information concerning travel made by domestic and international travellers within Australia,

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<td>Expenditure</td>
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VRUM™

Visualising Relatively Unpredictable Movements
VRUM™ Processes

- Accepts ‘raw’ IVS and NVS unit records into and SQL environment
- Market filtering possible based on trip/traveller characteristics (*road-based, self-drive, desert region*),
- Derives origin-destination trip matrices and stopover summaries from the tour-based information,
- OD matrices provided to subsequent TransCAD based assignment routines,
- Various GIS-based visualisations possible.
• Australian road network only (at this stage),
• 475 UCL’s, 121 within desert,
• UCL and network range in density.
VRUM™ – Output Examples

Self-drive tourist travel flows and stopovers for desert journeys in Australia.
VRUM™ – Output Examples

Kununurra filtered tourist activity.
VRUM™ – Output Examples

Intersection diagram example.
Conclusions

• VRUM™ provides a tool for representing tourist behaviour,
• Assist in developing successful policy, business and other strategies,
• Beyond road-based flows,
• Policy analysis (eg. fuel pricing influence).