

Big Data, New Technologies and Advancing Urban and Regional Development Strategies

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Development and Evaluation of Economic Development Measures

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Introduction

- Do economic development strategies and interventions – festivals etc – have an impact?
 - Large literature on the topic over a long period
 - most methods rely on surveys, Input Output analysis or other models to demonstrate impact
 - But questions of scale and time lag
 - Methods are not overly precise nor robust, can cost more to evaluate the program than implement it, especially in Australia
 - Data is available in Oz, but it is very imprecise
 - Does the Rise of Big Data provide new opportunities for researchers and practitioners?

The research question

- Is 'big data' a new tool for evaluating economic development programmes?
- Will it help...
 - identify priority areas and socio-economic problems?
 - monitor the performance progress and/or final impacts of economic development initiatives?
- Rising awareness of big data, 'Internet of Things' (IoT), smart connected devices, social media and other sources,
 - But, there is still a lot of confusion and no guidance on how these things can assist and enrich decision-making in economic development

What we did...

- **Round Table 1** (24 x face-to-face and on-line) discussion with economic practitioners
 - Review of the available literature on new and emerging data sources;
 - Investigated data sources and vendors, their pricing, availability and utility
 - limited interviews and on-line searching;
 - Developed a decision framework and applied it to two case studies
- **Round Table 2** (25 x face-to-face and on-line) with practitioners on our preliminary findings and the presentation of a decision framework

What we found...

- Most work in this field documents what is potentially available – Twitter, Inside AirBNB, Facebook etc
- But provides little guidance on how to apply these data to the real-world problems confronting cities and regions as they develop;



What we found...

- There are new data sources, including:
 - Spendmapp by Geografia
 - Neighbourlytics
 - Tourism Tracer
- potentially offer a stronger evidence base on outcomes

Name	Cost or Package Type	Website
Social Media		
Twitter – Standard	Free	https://twitter.com/
Hootsuite	Subscription costs for government and larger organisations available on request	https://hootsuite.com/
Twitonomy	A free version is available	http://www.twitonomy.com/
Discover Text	USD \$99 Professional, \$2000 Enterprise Add on packages for specific Twitter data analysis is available/	https://discovertext.com/solutions/
Sprout Social	Subscriptions start at \$99 per user month	https://sproutsocial.com/
Tourism		
Inside Airbnb	Price available on request	http://insideairbnb.com/
AirDNA	Free – limited locations available	http://insideairbnb.com/
Government		
BLADE	Not accessible at this stage	https://industry.gov.au/Office-of-the-Chief-Economist/Data/Pages/Business-Longitudinal-Analysis-Data-Environment.aspx
Other		
Spendmapp by Geographia	Minimum 12 month subscription, choice of four packages. Discounts available for smaller councils.	https://spendmapp.com.au/
Neighbourlytics	One off fixed price or reoccurring packages and custom dashboards available on request.	https://www.neighbourlytics.com/
Seek	Free via website search	https://www.seek.com.au/
Local Employment Sites – eg Adelaide Northern Jobs	Depending on council involvement, data may be readily available	https://www.northernadelaidejobs.com.au/

What we also found...

- Reports from the International Economic Development Council directly address new approaches to measuring impact but have a strong focus on government provided data sets;
- Importantly, US governments treat data collected by governments as belonging to the people,
 - while Australian governments work on the premise that data collected by governments belongs to the Crown
 - No simple solutions coming from US experience

Decision Framework

Need

Purpose – What is the priority need addressed by the project/activity/program?

Objective – What evidence is needed?

Data – What data types match this need?

Value

Access – Are the data accessible?

Scale – Are the data at the right geographical scale?

Unit – Are the data at the right unit of analysis?

Sources – Who provides those data sources and at what cost?

Time

Activity span – Does the data capture the right time span?

Timeliness – Is the data available in real or delayed time?

Repeated – does the data allow time series analysis with repeated collections?

Utility

Presentation – Is the presentation of the data appropriate?

Depth – can the data be cross-analysed?

Re-use - Are the data useful for other projects/activities/programs?

Case 1: Tourism event

- A city council is considering hosting the start and finish of the Tour Down Under in their council region
- The expression of interest specifies that the offer is by application and the council anticipates a bid of approximately \$35k.
- This bid cost does not include other organisational expenses (see next slide) estimated to be around \$600k
- Attendance to the event is usually in excess of 100,000 for a stage
- What data should be gathered to evidence the effectiveness of the \$635k investment?

Case Study 1 - Discussion

- Pre, post and during event spending (Spendmap)
- Employment positions advertised (Seek etc)
- Increased fitness levels (MapMyRun and Strava)
- Sponsor investment in the region
- Direct and indirect measures
- Objectives were generally
 - Economic
 - Regional Profile
 - Relationship and funding
 - Arts, culture, heritage, community

Objective Type	Direct	Indirect	New Measures	Current Measures
Economic	<ul style="list-style-type: none"> Local Spending 	<ul style="list-style-type: none"> Local Business Participation & Diversification 	<ul style="list-style-type: none"> Spendmapp Neighbourlytics 	<ul style="list-style-type: none"> ABR
	<ul style="list-style-type: none"> Employees 	<ul style="list-style-type: none"> Number of new businesses 	<ul style="list-style-type: none"> Seek 	<ul style="list-style-type: none"> Local Business Survey ABR
Regional Profile	<ul style="list-style-type: none"> Visitation 		<ul style="list-style-type: none"> AirDNA, Inside Airbnb 	<ul style="list-style-type: none"> Local Tourism Centre SA Tourism Commission
	<ul style="list-style-type: none"> Attendance 	<ul style="list-style-type: none"> Perceptions and sentiment 	<ul style="list-style-type: none"> Social Media Monitoring Tools 	
	<ul style="list-style-type: none"> Media Exposure 	<ul style="list-style-type: none"> Perceptions and sentiment 	<ul style="list-style-type: none"> Social Media Monitoring Tools 	
Relationships & Funding		<ul style="list-style-type: none"> Attraction of investment – private & government 		



Case 2: Retail Business Anchor

- Council is approached by a bulk retailer with a proposition to establish a new store in the main street.
- They seek a \$50k grant or rate holiday to help them establish the venture
- Assuming the council is inclined to agree, what data should be gathered on the effectiveness of the \$50k investment?

Objective Type	Direct	Indirect	New Measures	Current Measures
Economic	<ul style="list-style-type: none"> Local Spending 		<ul style="list-style-type: none"> Spendmapp 	<ul style="list-style-type: none"> ABR
	<ul style="list-style-type: none"> Investment Value 		<ul style="list-style-type: none"> Spendmapp 	<ul style="list-style-type: none"> Cost defrayments – in part, joint venture Gap Analysis
	<ul style="list-style-type: none"> Employees 	<ul style="list-style-type: none"> Number of new businesses Skills & human capital 	<ul style="list-style-type: none"> Seek Local employment sites (eg. Northern Adelaide Jobs) 	<ul style="list-style-type: none"> Local Business Survey ABR Registered Training Organisations
	<ul style="list-style-type: none"> Changes in business 	<ul style="list-style-type: none"> Economic Cluster effects Displacement Issues Local Business Participation & Diversification 	<ul style="list-style-type: none"> Spendmapp Neighbourlytics 	<ul style="list-style-type: none"> ABR Local Business Survey Planning & development applications Analysis from previous examples

Findings

- Availability
 - Many of the questions asked by practitioners and their councils can be investigated using ‘big data’
 - And some councils have done so
 - Potential benefits
 - Virtually a real time analysis
 - Data at a spatial scale not available elsewhere
 - Commercial providers keen to meet the needs of clients
 - Relatively sophisticated software packages and unique data sources
 - » Eg Mastercard spending data
 - Capacity to generate the knowledge key governmental decision makes want

Findings

- But
 - Lack of skills in handling/assessing such data
 - Practitioners not 'digital natives'
 - High cost of data
 - \$50k pa for Spendmapp when budget is \$20k
 - The sorts of activities that can be measured by such data are not the only development activities
 - And many practitioners put their priorities elsewhere
 - The data is indicative, does not establish causality
 - Other established products in the market – eg systems based on Census data
 - Limited appetite for a regional/state or national approach to purchasing, analysing and disseminating the data
 - Big data is continually changing
 - Lock in to a soon to be redundant product/system
 - Potential for data to no longer be available

Conclusion

- To date, big data is not the solution for gaining better insights into economic development in Oz
 - May change in the near future
 - May provide a solution in jurisdictions where economic development is organised on larger geographic scales and is better funded
 - Offers a potential role for academic institutions
 - Needs to be driven by established and well developed data sources
 - Some role for peak organisations – eg Economic Development Australia – to provide a facilitation/co-ordination role

There are some impediments...

- **Cost:**
 - With limited evaluation budgets (the roundtables suggested \$20,000 annually) some new data sources are unaffordable
- **Expertise/skills:**
 - Some of the emerging data sources require analytical skills – and available time;
- **Uncertainty:**
 - Applications in big data are changing and evolving rapidly
 - New data sets and commercial packages are increasing in availability
 - Some though also disappear or change availability or accessibility
 - The choices today may be restrictive compared to the near future