

 **MONASH University**



Medicine, Nursing and Health Sciences

# Food Justice in the City

Using economics to engage decision-makers

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## Session outline

- What are our data sources?
- Economics of food choice theory
- Considerations within an economic analysis/evaluation



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## ABS: Australian Health Survey (2011-2012)

<http://www.abs.gov.au/ausstats/abs@.nsf/Lookup/4364.0.55.009main+features12011-12>

Single item question does not adequately measure the true extent of food insecurity in Australia

*“In the last 12 months did you run out of food and couldn’t afford to buy more” Yes/No*

- 4% of Australians living in a household are food insecure – approx. 1 million Australians – VERY CONSERVATIVE ESTIMATE
- 1 in 5 (22%) Aboriginal and Torres Strait Islander households are food insecure (Up to 30% in remote areas)
- Much higher in other population groups (people seeking asylum up to 71%) Gallegos, Ellies & Wright 2008

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## Victorian Population Health Survey 2012

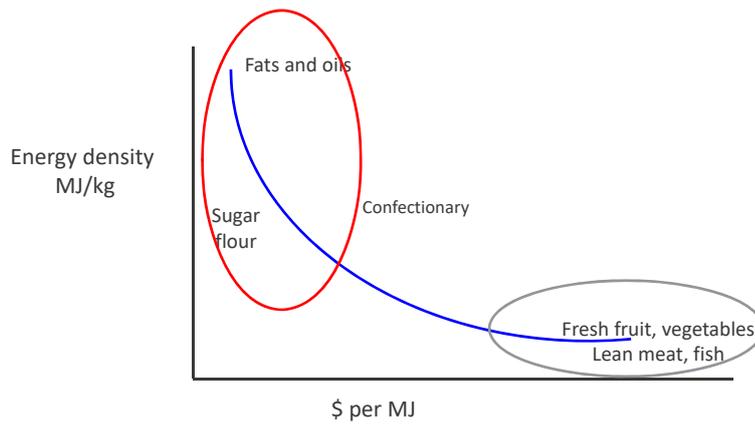
<https://www2.health.vic.gov.au/public-health/population-health-systems/health-status-of-victorians/survey-data-and-reports/victorian-population-health-survey>

- Random sample of 7533 people across all 79 LGAs
- 3.4% of people reported that they had run of food in the previous 12 months and had been unable to afford to buy more
- Also looked at socio-demographic characteristics (unemployed, not in the labour force, total annual household income of less than \$40,000, high levels of psychological distress) and frequency of running out of food
- 2011-2012 survey – 4.6% responded yes, respondents asked if the following statements applied to them:
  - Some foods are too expensive, in particular, fresh fruit and vegetables (21.3%)
  - I can’t get food of the right quality (19.8%)
  - I can’t get a variety of food, for example, a mixture of meat, vegetables, fruit, dairy, bread and pasta (9.3%)
  - Culturally appropriate foods aren’t available such as kosher or ‘halal’ (4.2%)
  - Inadequate and unreliable public transport makes it difficult for me to get to the shops (5.8%)

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## The “Economics of Food Choice” Theory



## Victorian Healthy Food Basket Survey



Palermo, C., McCartan, J., Kleve, S., Sinha, K. and Shiell, A. (2016). A longitudinal study of the cost of food in Victoria influenced by geography and nutritional quality. *Australian and New Zealand Journal of Public Health*, 40: 270–273.

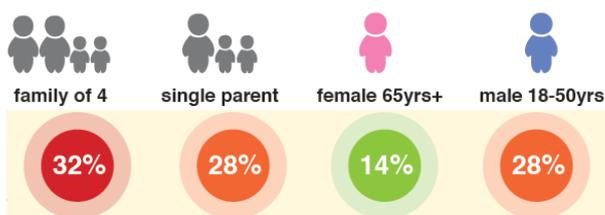
## Longitudinal study of food cost in Victorian communities



### Key points:

- Cost of healthy food basket increased by \$27.13 over six time points (about 6% increase)
- The cost of a healthy food basket for a family of four was mostly stable from July 2012 to December 2014, except for a rise of \$21 between July and December 2013

## Basket Cost – Percentage of Income

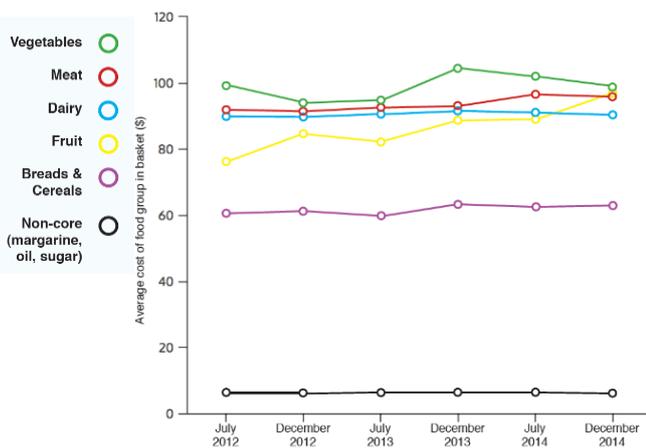


% income refers to the proportion of the Centrelink government income at the time of the data collection that would be required to purchase the basket. If food costs are over 30% of income it is classed as 'unaffordable.'

A healthy diet costs around 30% of family government benefit income making healthy eating unaffordable for some.

'Food stress' occurs if more than 25% of household disposable income is spent on food.

## Basket Cost – Food groups



- Fruit and vegetable prices were the most varied over the six time points
- Fruit and vegetables contribute a large proportion of the costs of the basket (approximately \$80 for fruit and \$100 for vegetables per fortnight)
- Household expenditure survey reports that households spend on average \$27 on vegetables and \$19 on fresh fruit per fortnight which falls significantly short of the required spend shown in this study for the modelled family
- The cost of fruit and vegetables increased by 12% over the 3 years compared to non-core foods which decreased by 3%

## Basket cost – Geography

Time Point	variance explained by model	Standardised Beta Coefficient	p value
Winter 2012	6.9%		
SEIFAD		0.188	0.062
Dist. from city		0.255	0.012
Summer 2012	11.9%		
SEIFAD		0.303	0.002
Dist. from city		0.289	0.003
Winter 2013	11.5%		
SEIFAD		0.296	0.002
Dist. from city		0.286	0.003
Summer 2013	8.8%		
SEIFAD		0.286	0.003
Dist. from city		0.212	0.028
Winter 2014	6.0%		
SEIFAD		0.184	0.060
Dist. from city		0.232	0.018
Summer 2014	11.5%		
SEIFAD		0.188	0.048
Dist. from city		0.349	0.000

- Multiple regression analysis (family of 4 data)
- Store distance from Melbourne largest contribution to variance in cost (statistically significant across all time points)
- Association between basket cost and socio-economic status of the location of the store (SEIFA index) was not as strong a predictor nor statistically significant over time

## Australian Dietary Guidelines Price Indexes

- Consumer Price Index (CPI) – measure of changes over time in retail prices of a basket of goods and services typically acquired by Australian households
  - Food, alcohol and tobacco, clothing and footwear, housing, household contents and services, health, transportation, communication, recreation, education and financial and insurance services.
- Applies to metropolitan private households only
- Base period assigned a value of 100 (1989-90)
- CPI data has been analysed with reference to food groups to construct Australian Dietary Guidelines (ADG) Price Indexes

## Australian Dietary Guidelines Price Indexes

<http://www.abs.gov.au/AUSSTATS/abs@.nsf/Previousproducts/6401.0Feature%20Article1Dec%202015?opendocument&tabname=Summary&prodno=6401.0&issue=Dec%202015&num=&view=>

Table 1 - ADGPI food group weights

	2001 (%)	2014 (%)
Grains & cereals	7.6	6.3
Vegetables	7.4	9.4
Fruit	7.2	7.5
Milk & alt.	7.4	6.0
Meats & alt.	13.0	11.5
Discretionary	56.5	58.2
Oils & fats	0.9	0.9

Table 2 - Average Annual Rates of Price Change

	2001-14 Rate (%)
Grains & cereals	2.4
Vegetables	3.8
Fruit	3.0
Milk & alt.	2.5
Meats & alt.	2.2
Discretionary	3.0
Oils & fats	2.5
CPI	2.7
CPI Food group	2.5

## Australian Dietary Guidelines Price Indexes

<http://www.abs.gov.au/AUSSTATS/abs@.nsf/Previousproducts/6401.0Feature%20Article1Dec%202015?opendocument&tabname=Summary&prodno=6401.0&issue=Dec%202015&num=&view=>

Figure 1: Total Price Change 2001-2014

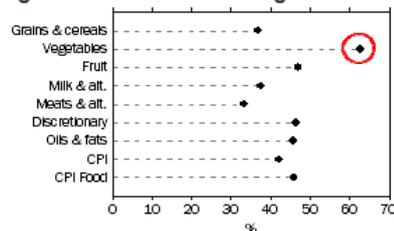
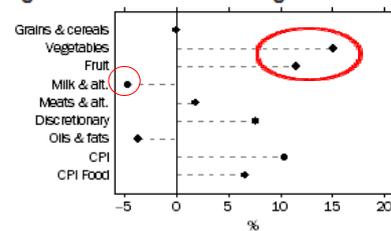


Figure 3: Total Price Change 2010-2014



## Other data sources

- Root causes of food insecurity relate to volatility in income and financial stresses/income shocks
  - DSS Payment Demographic Data – LGA level  
<https://data.gov.au/dataset/dss-payment-demographic-data>
  - ABS Census data (e.g. household income, education, unemployment, rental and mortgage repayments) – LGA level  
<http://stat.abs.gov.au/itt/r.jsp?databyregion>
  - Household, Income and Labour Dynamics in Australia (HILDA) Survey (17,00 Australians – Release 15 2017)  
<http://melbourneinstitute.unimelb.edu.au/hilda>
  - Vulnerability analysis of mortgage, petroleum and inflation risks and expenditure (VAMPIRE) index 2011 (score 0-9 minimal vulnerability to score 19-30 very high vulnerability)  
<https://map.aurin.org.au/>
  - Community Indicators Victoria – LGA level  
<http://www.communityindicators.net.au/>
  - Statistical Data for Victorian Communities  
[www.socialstatistics.com](http://www.socialstatistics.com)

## Economic evaluations

- Cost benefit analyses compare
  - Inputs/costs to
  - Value/impact of a program or intervention

### Inputs

- Time – staff wages and volunteer time (+ oncosts), costs of program consumables, transport (vehicles, petrol, tolls), overhead costs etc.

### Value/impact

- Value of any product provided, improvements in dietary intake, health and wellbeing, changes in employment status (need to determine such indicators at beginning of program)
- A program may be deemed 'efficient' if the benefits outweigh the costs
- To determine cost-effectiveness, need to perform the evaluation relative to a comparison (e.g. another intervention or doing nothing)

## Economic evaluations

- Can be difficult, time consuming and resource-intensive to quantify dietary, health and wellbeing indicators (AQoL, ICE CAP questionnaires – valid with 100+ participants and control group)
- Important to consider mixed methods research (transformative worldview):
  - Quantitative data describes patterns of outcomes
  - Qualitative data can understand why a phenomenon occurs particularly when exploring benefits/impacts
- Emerging evidence about 'realist' approaches to economic evaluation – considers what works for whom, under what circumstances and why.

Anderson R, Hardwick R. Realism and resources: Towards more explanatory economic evaluation. *Evaluation*. 2016;22(3):323-41.

## Greater attention needed

- More Australian evidence needed on the cost-effectiveness of food security interventions
- Some existing evidence by US health economists, e.g.

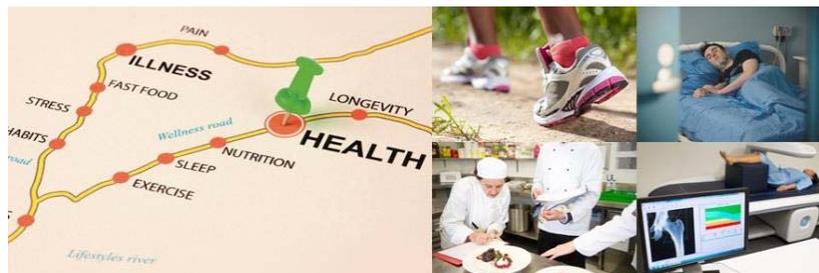
Just, R. E., and Q. Weninger. 1997. Economic evaluation of the Farmers' Market Nutrition Program. *American Journal of Agricultural Economics* 79:902–917.

Gundersen C, Kreider B, Pepper J. The Economics of Food Insecurity in the United States. *Applied Economic Perspectives and Policy*. 2011;33(3):281-303.

- Should consider 'opportunity cost' – what alternatives are missing out on funding?
- Social return on investment analyses can be a powerful tool for measuring impact of public health interventions (can quantify social, economic and environmental value 'triple bottom line')

Banke-Thomas AO, Madaj B, Charles A, van den Broek N. Social Return on Investment (SROI) methodology to account for value for money of public health interventions: a systematic review. *BMC Public Health*. 2015;15(1):582.  


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