KiCS
kids in communities study

Does the physical environment make a difference to early child development?

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ABSTRACT 4
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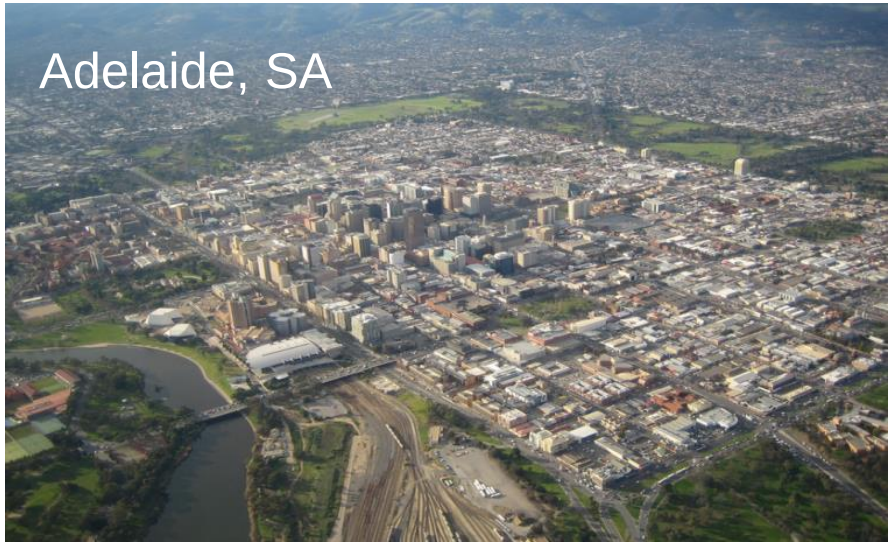
Why the built environment?

‘Liveable’

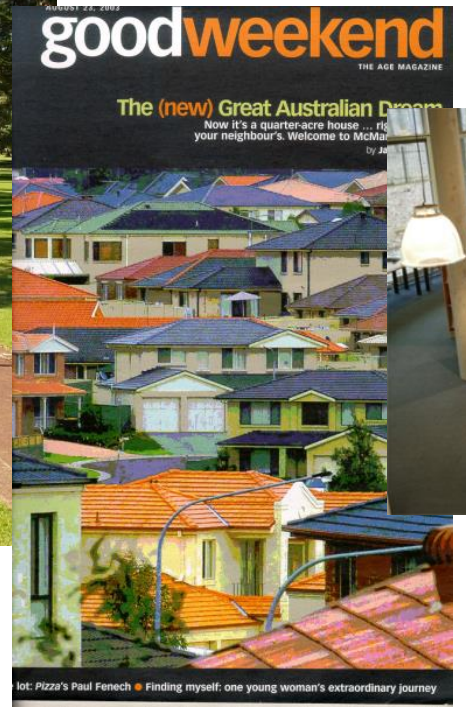
‘Child-friendly’

‘Family-friendly’



The built environment…

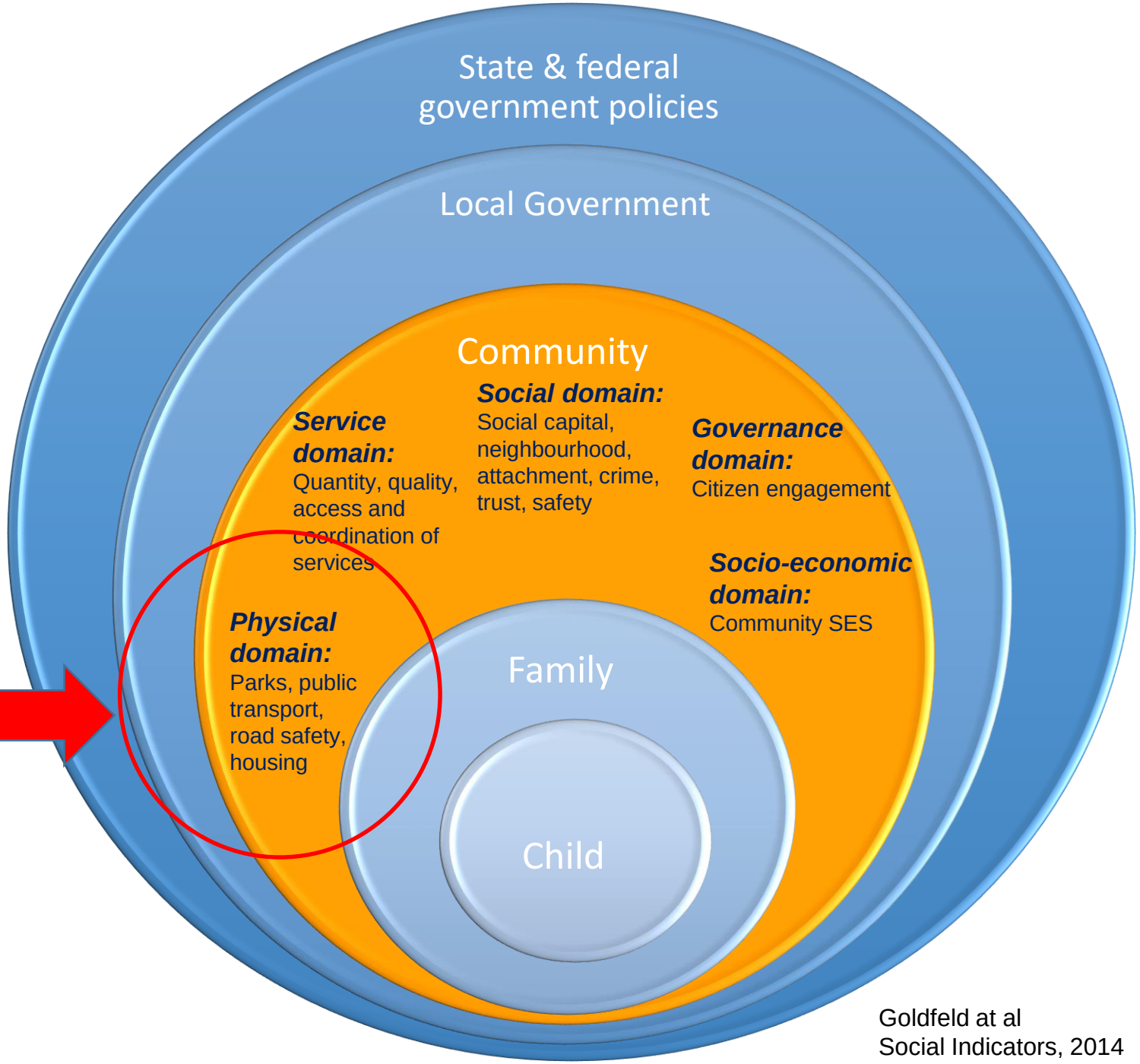
“Part of the physical environment that is constructed by human activity”



Saelens, 2008

Physical sub-domains

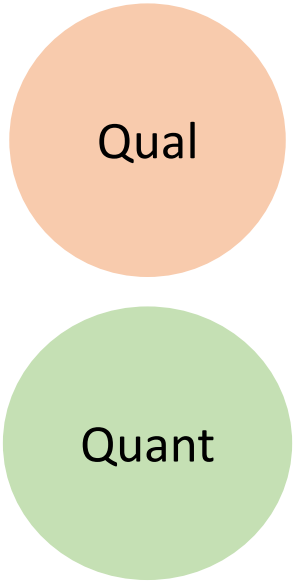
1. Housing
2. Public open space
3. Destinations and services
4. Public transport
5. Walkability
6. Traffic exposure
7. Crime and incivilities



Goldfeld at al
Social Indicators, 2014

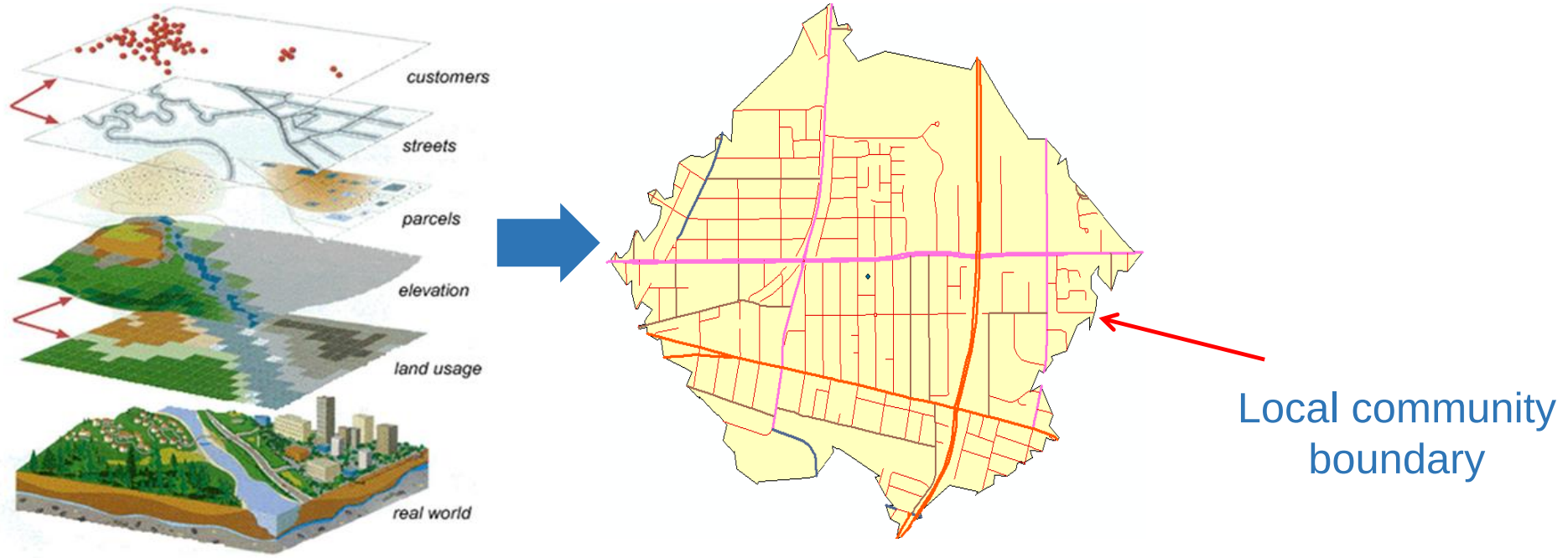
Physical domain methods

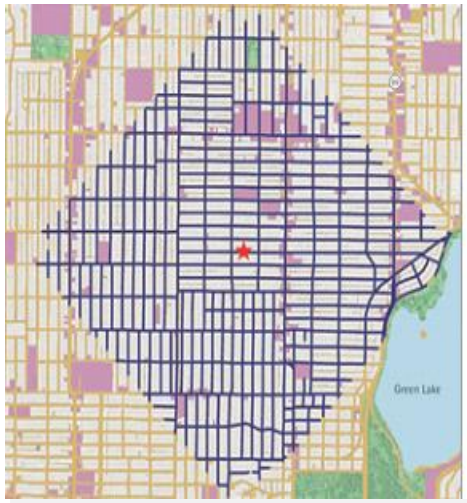
	Method	Source/s	Physical
1	Stakeholder interviews	Primary data	x
2	Parent focus group	Primary data	x
3	Practitioner focus group	Primary data	x
4	Policy documents	Primary data	x
5	Community survey	Primary data	x
6	GIS and park audits	Primary data, Existing data	x



Spatial measures of the built environment

- Geographic Information Systems (GIS) software
- Integrates geographically referenced data to objectively capture built features within an area
- AEDC (Australian Early Development Census) ‘local community’ (approx. 10,000 persons/area, on average)





Walkability and cyclability

Traffic

Destinations

Greenness

Connectivity

Housing

Density

Crime

Aesthetics

Desktop park auditing

Attributes of Parks

Note: Pocket Parks have only those attributes in red. Other parks have been audited for all attributes

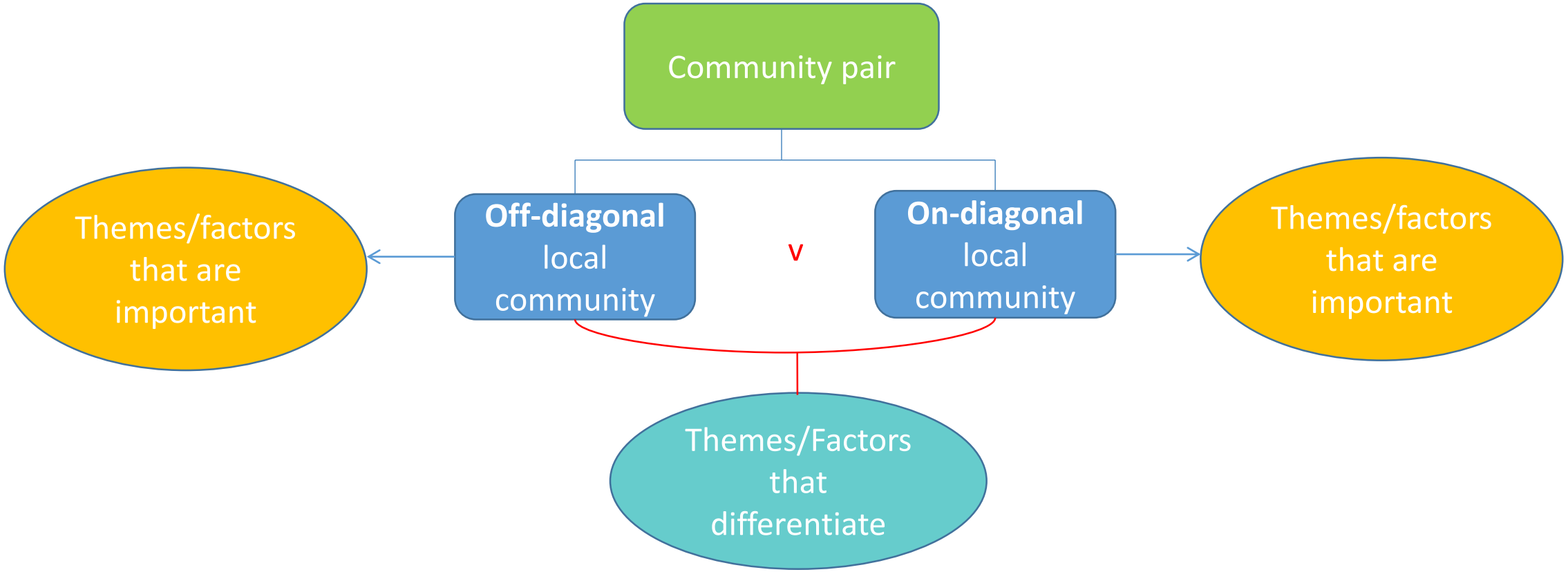
Activities	Environmental Quality	Amenities	Safety
• Tennis • Soccer • Football (AFL) • Netball or basketball courts • Cricket • Baseball • Hockey • Athletics • Rugby • Skateboarding/BMX • Childs playground • Other • Are dogs allowed	• On river or foreshore • Adjacent to bushland • Lake or Pond • Water fountain • Stream • Wetlands • Waterbirds • Wildlife • Gardens • Number of trees • Placement of trees • Paths present • Shade along paths • Playground shade • Playground fenced • Reticulated grass	• Barbeque facilities • Seating • Picnic tables • Toilets • Public art • Car parking	• Lighting

Courtesy of Paula Hooper

Using established methodology combining ArcGIS and Google Earth, and local government websites, each park within each local community was audited to capture park attributes

Giles-Corti et al. *Giles-Corti, B., Broomhall, M., H., Knuiman, M., Collins, C., Douglas, K., Ng, K., Lange, A. & Donovan, R., J. 2005. Increasing walking: How important is distance to, attractiveness, and size of public open space? Am. J. of Prev. Med., 28, 169-176.*

Qualitative and quantitative analyses



How ‘different’ is different?

- Qualitative: Themes consistently emerging from participants
- Quantitative: Descriptives and assessment of magnitude of ‘difference’ (Community survey = Statistically significant; ABS, GIS etc. >1SD from mean)

What are some preliminary findings so far?

1. Housing
2. Public open space
3. Destinations and services
4. Public transport
5. Walkability
6. Traffic exposure
7. Crime and incivilities

Housing

Supports hypothesis

Does not differentiate

Supports hypothesis in opposite direction

RAW RESULTS — For each pair

SUMMARY TRIANGULATION — >4 pairs — Of qual and quant

	Type of measure	Theme/theory/hypothesis (Or > in OnAdv than Off-)	VIC 1	NSW 2	NSW 3	NSW 4	SA 5	QLD 6	QLD 7	ACT 8	=	▲
Public housing	**Qual** (FG, Int)	Presence of public housing is greater in OnDis than Off+										✓
	Quant (ABS)	Proportion of public renters is higher in OnDis than Off+										
Housing type	**Qual** (FG, Int)	There is more high-rise density housing in OnDis than Off+										✗
	Quant (GIS)	There is a higher proportion of high density housing (3 or more storeys) in OnDis than Off+										
Public housing type	**Qual** (FG, Int)	More public housing classified as separate houses in Off+ than town houses/apartments										✗
	Quant (GIS)	Higher proportion of separate houses in Off+ compared with OnDis										
	Quant (GIS)	Higher proportion of townhouses or apartments in OnDis than Off+										✗

✗ No match

✓ Match

Public Open Space (POS)

RAW RESULTS — For each pair

SUMMARY — >4 pairs

TRIANGULATION — Of qual and quant

	Type of measure	Theme/theory/hypothesis (Or > in OnAdv than Off-)	VIC 1	NSW 2	NSW 3	NSW 4	SA 5	QLD 6	QLD 7	ACT 8	=	▲
POS quality	**Qual** (FG, Int)	Quality of POS and parks is perceived to be better in Off+ than OnDis										✗
	Quant (Survey)	A higher proportion of residents in Off+ perceive better quality local parks										
	Quant (Park Audit)	Off+ has more attractive parks than OnDis										✗
POS access	**Qual** (FG, Int)	Better local access to POS in Off+ than OnDis										✓
	Quant (GIS)	More parks (per area/km2) in Off+ than OnDis										
	Quant (GIS)	Shorter distance to POS in Off+ than OnDis										✓

✗ No match

✓ Match

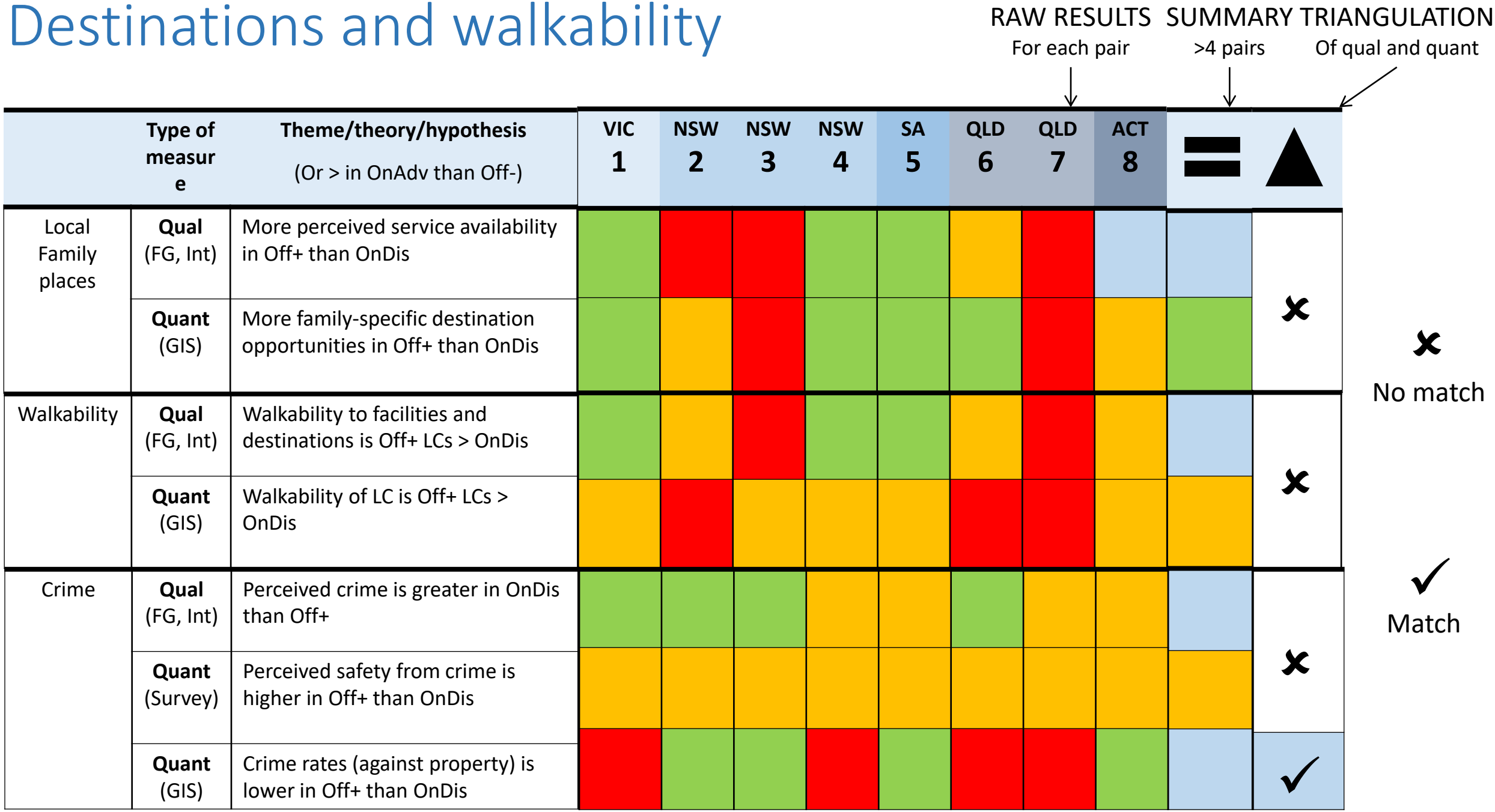
Supports hypothesis

Does not differentiate

Supports hypothesis in opposite direction

Unsure

Destinations and walkability



Public Transport (PT) & Traffic

RAW RESULTS — For each pair

SUMMARY — >4 pairs

TRIANGULATION — Of qual and quant

	Type of measure	Theme/theory/hypothesis (Or > in OnAdv than Off-)	VIC 1	NSW 2	NSW 3	NSW 4	SA 5	QLD 6	QLD 7	ACT 8	=	▲
PT Access	**Qual** (FG, Int)	PT access and availability is perceived as better in Off+ than OnDis										✓
	Quant (Survey)	Distance (access to PT) is shorter in Off+ than OnDis										✗
	Quant (Park Audit)	A higher proportion of Off+ (than OnDis) is within a PT stop										✓
Traffic exposure	**Qual** (FG, Int)	Perceived lower traffic exposure in Off+ than OnDis										✓
	Quant (Survey)	Perceived lower traffic (TrafficSafety score) in Off+ than OnDis										✓ Match
	Quant (GIS)	Lower traffic exposure ratio in Off+ than OnDis										✓

✗ No match

✓ Match

Supports hypothesis

Does not differentiate

Supports hypothesis in opposite direction

Unsure

Summary

Most promising…

- Housing (high-rise density living)
  - Related to public housing? More the residents living there rather than built environment *per se*
  - Housing has been linked with parent mental health, neighbourhood satisfaction and perceptions of safety

'The same' in matched local communities…

- Public open space (green space and parks), public transport, and traffic exposure

Mixed findings…

- Services and local destinations, walkability and crime
  - Use of services and places within suburb or beyond? (e.g. near work, in other suburb)

More unpacking needed to understand 'how' and 'why'?

- Not necessarily 'unimportant' for young families and children, it is not differentiating between Off+ and OnDis
- Complex mechanisms in which BE features may influence ECD – how does it interact with the social, socioeconomic, service, and governance domains?

Challenges and limitations

- Are we measuring quantitative measures differently?
- Urban measures applied to regional areas
- Sample size is small
- Finer-grained data is required for further modelling

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Thank you!

Please contact us if you have any other comments

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