

# New Zealand Index of Multiple Deprivation

Providing an Interactive Platform for Automated Creation of  
Regional Reports, Geocoding and Qualtrics Integration over  
Multiple Domains

# Deprivation

"A state of observable and demonstrable disadvantage relative to the local community or the wider society or nation to which an individual, family or group belongs."

Townsend P. Deprivation. Journal of social policy. 1987; 16(2):125–46.

## New Zealand Deprivation Index (**NZDep**)

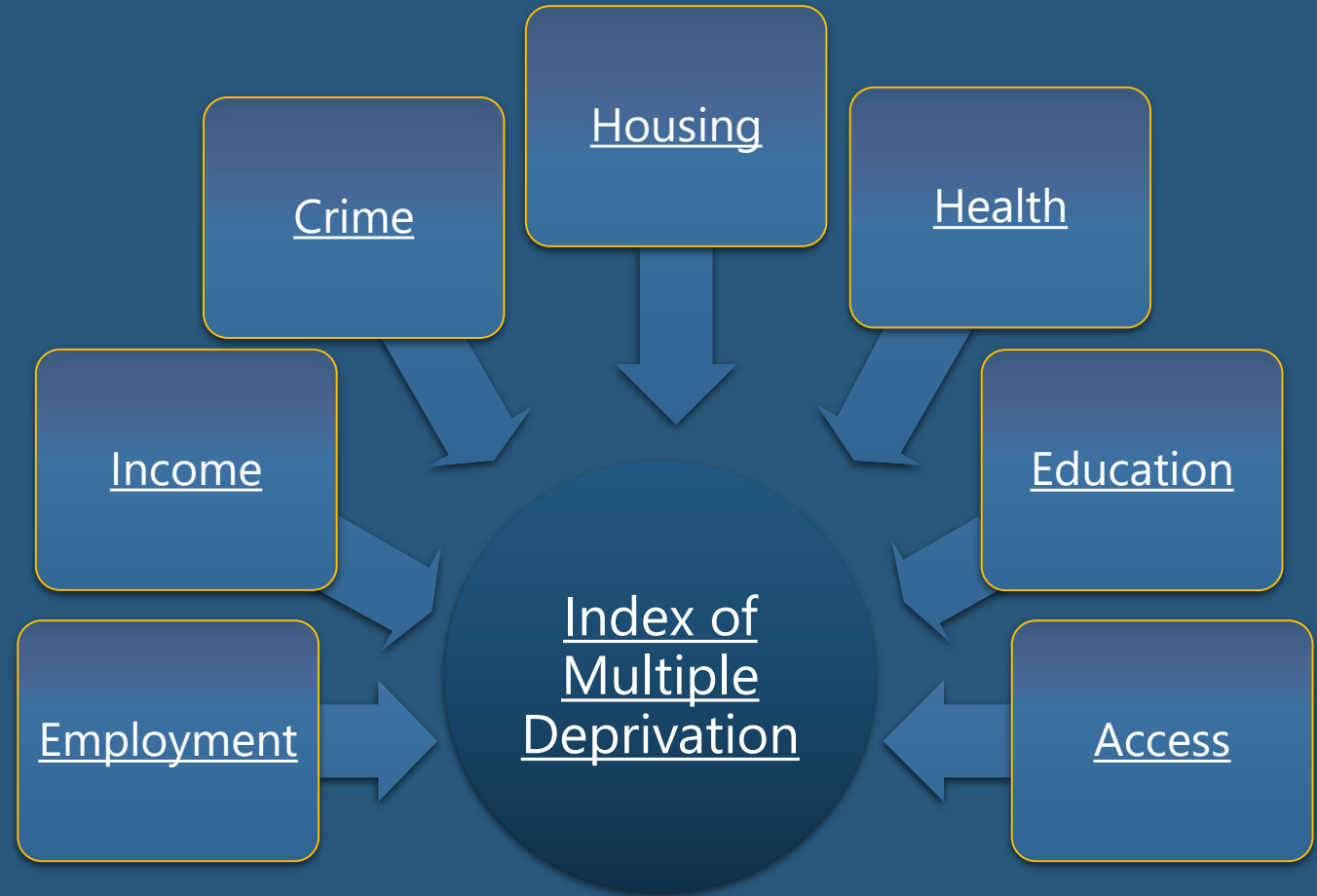
- Since 1990
- Census

## New Zealand Index of **Multiple** Deprivation (**NZIMD**)

- Census and administrative data
- 28 measurable indicators
- Grouped into 7 domains

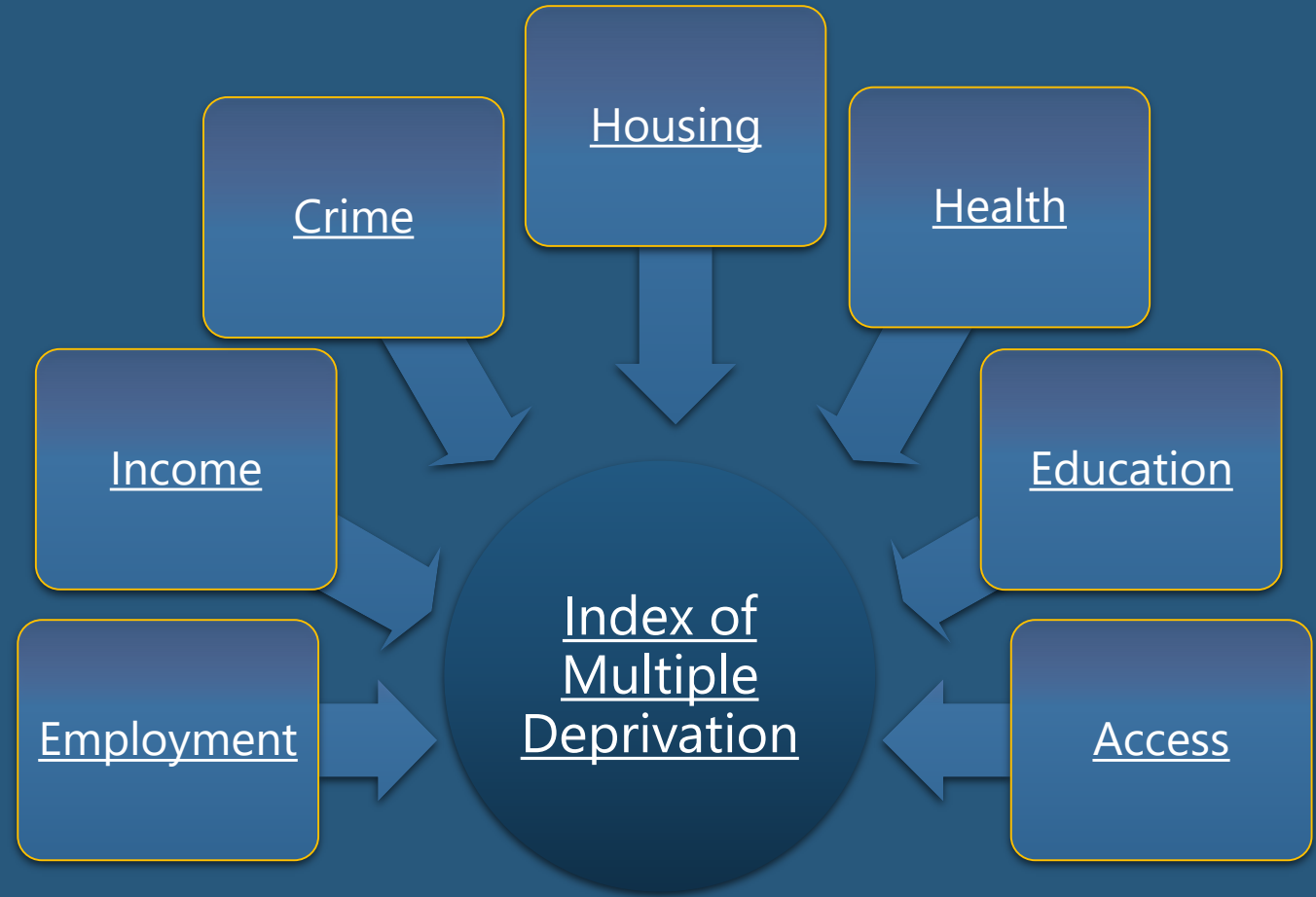
# Employment Indicators

- Sickness Benefit
- Unemployment Benefit



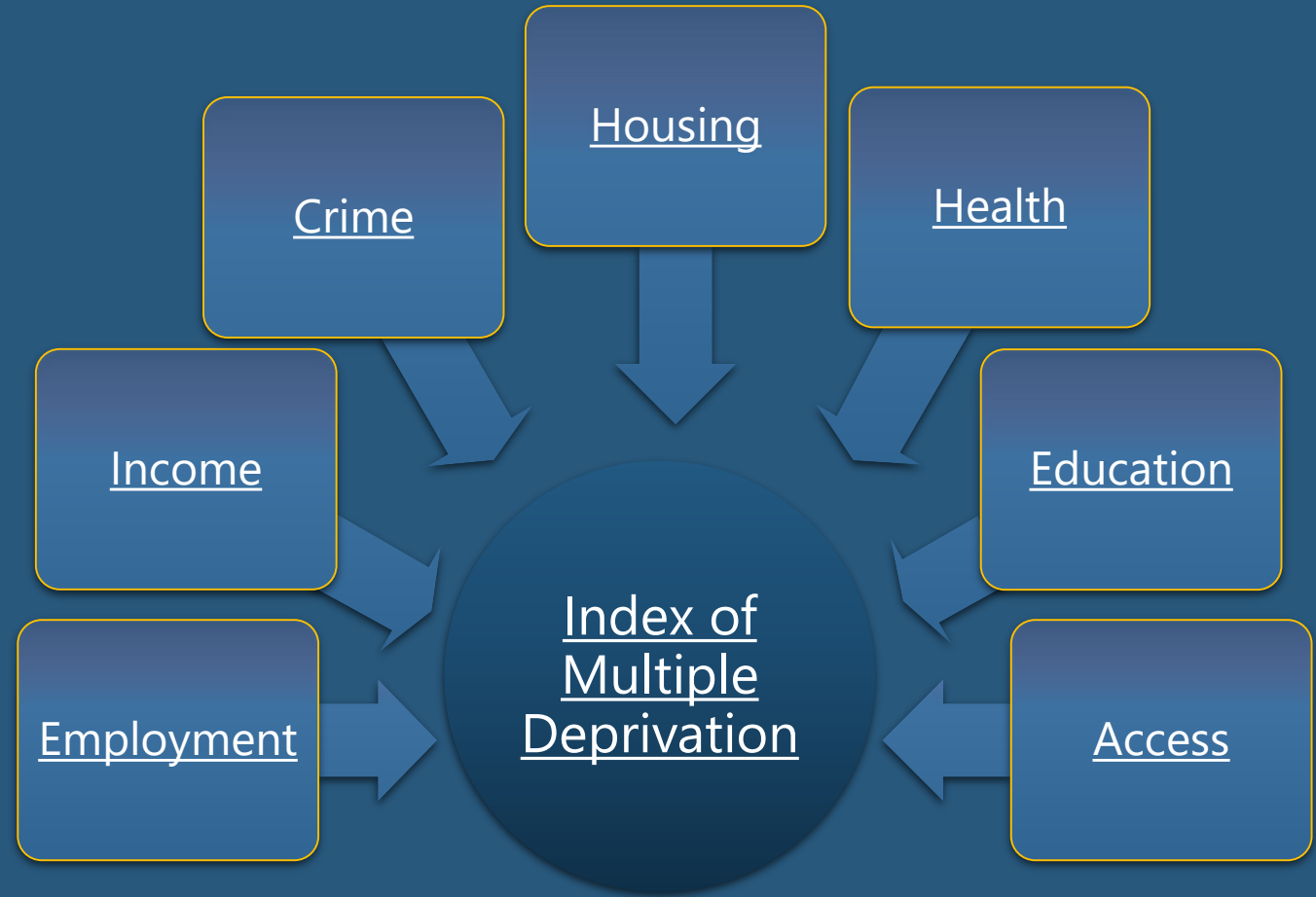
# Income Indicators

- Income-tested benefit
- Payments from Inland Revenue



# Crime Indicators

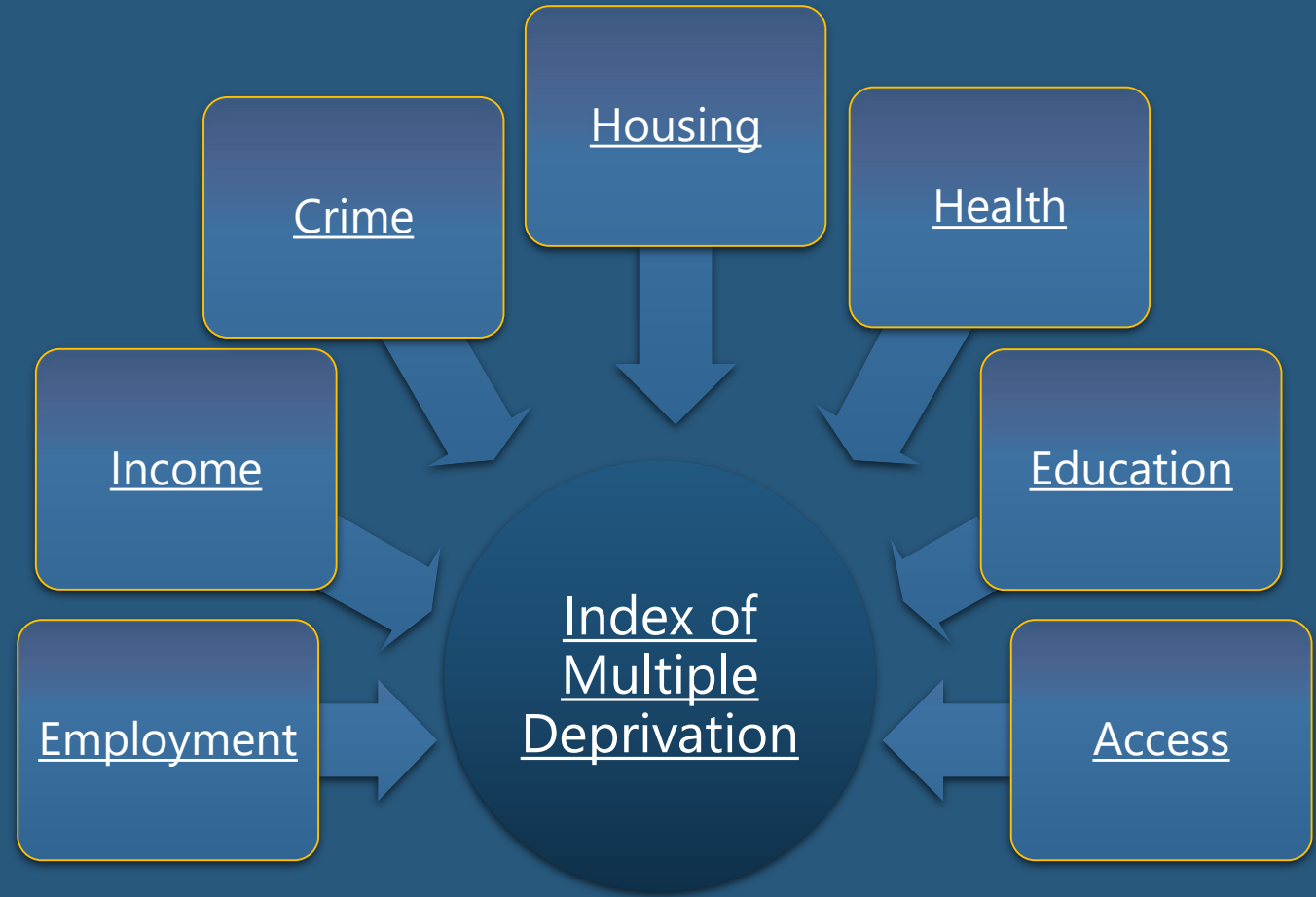
- NZ Police's recorded Crime Victimisation Statistics



# Housing Indicators

## 2013 Census

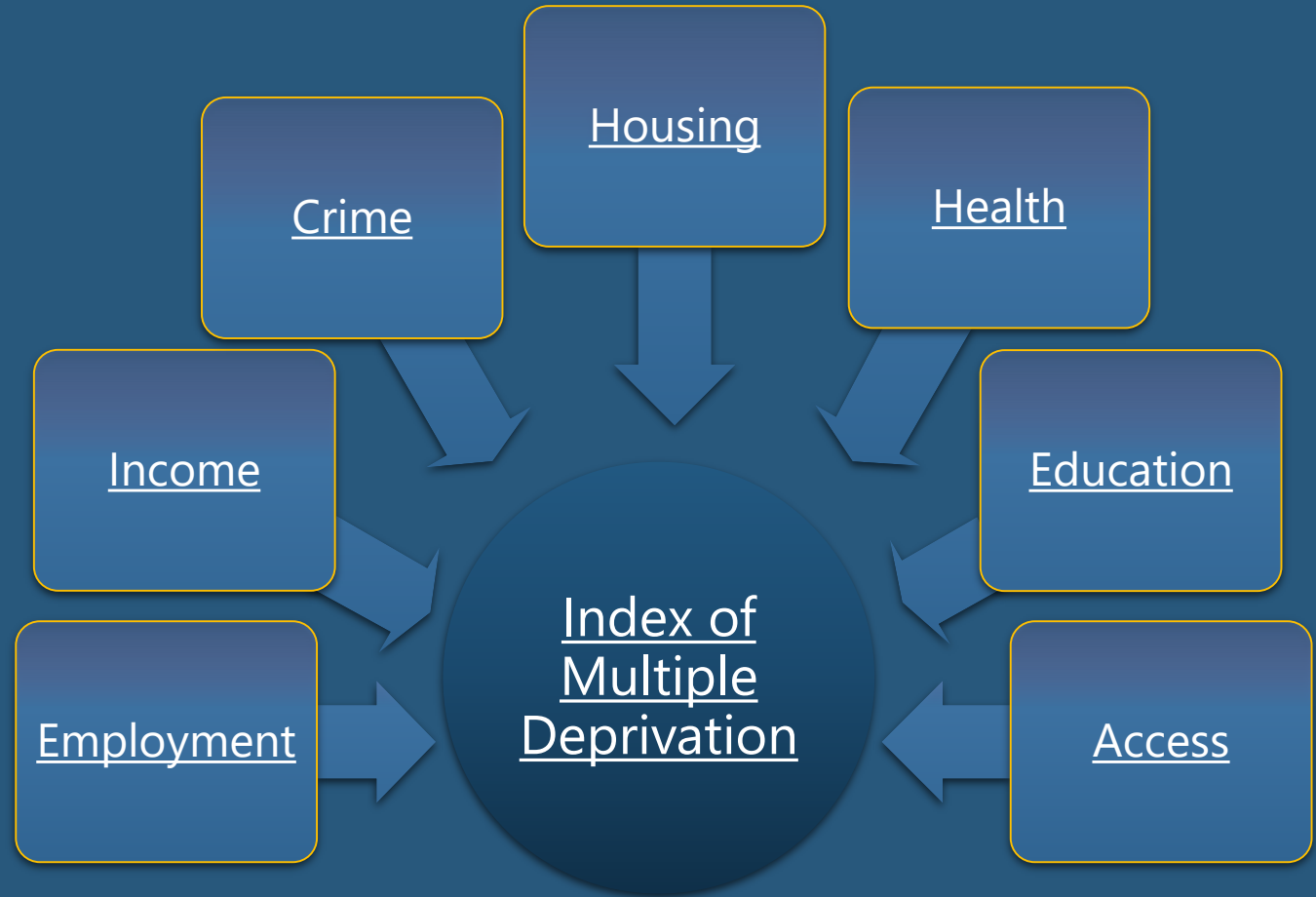
- Overcrowded housing
- Rented Accommodation



# Health Indicators

- Emergency Department admissions
- Acute Hospitalisations related to respiratory disease\*
- Acute Hospitalisations related to infectious disease\*
- Standardised Mortality Ratios
- Registration for cancers\*

\*with social gradient

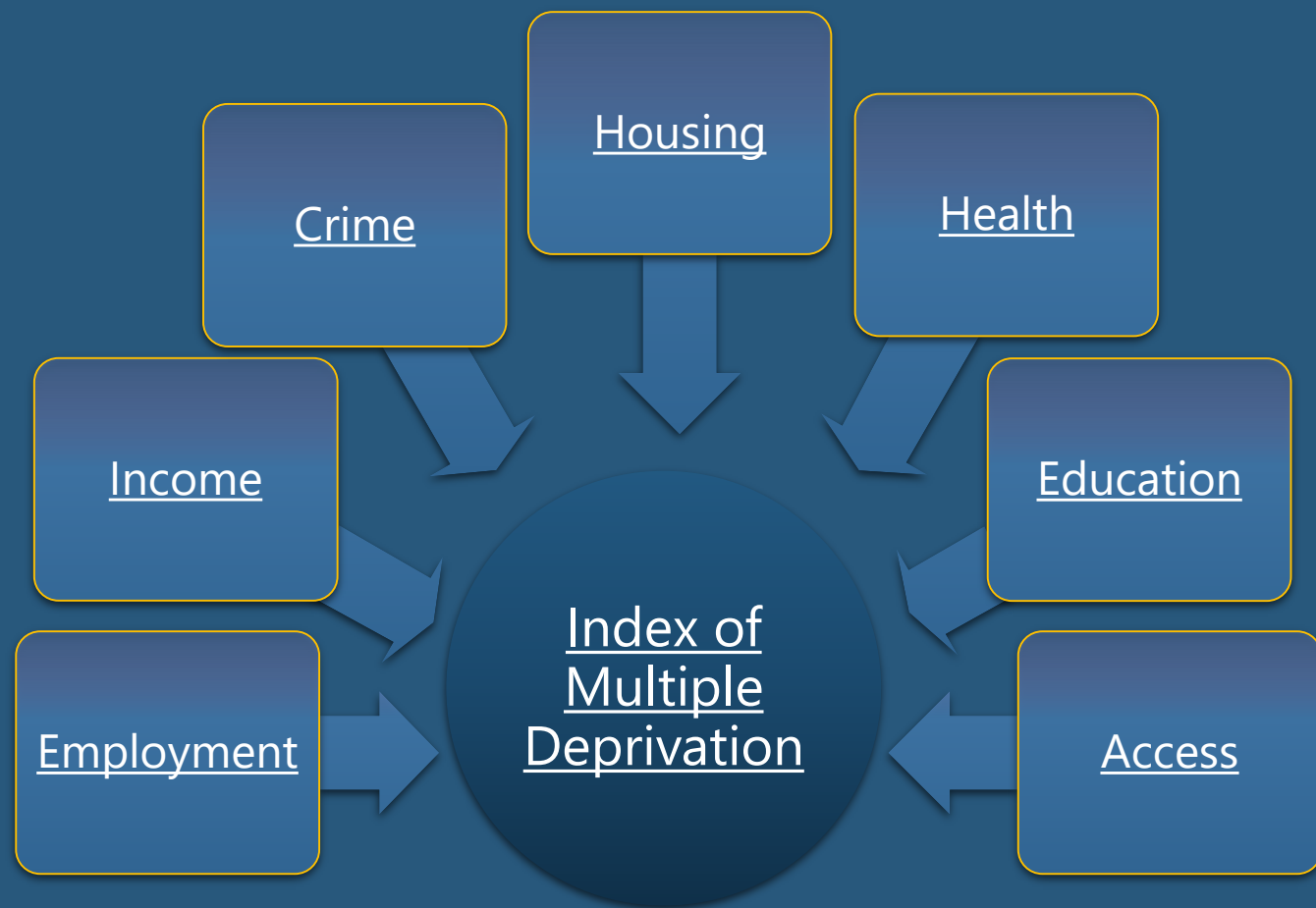




# Education Indicators

School leavers who

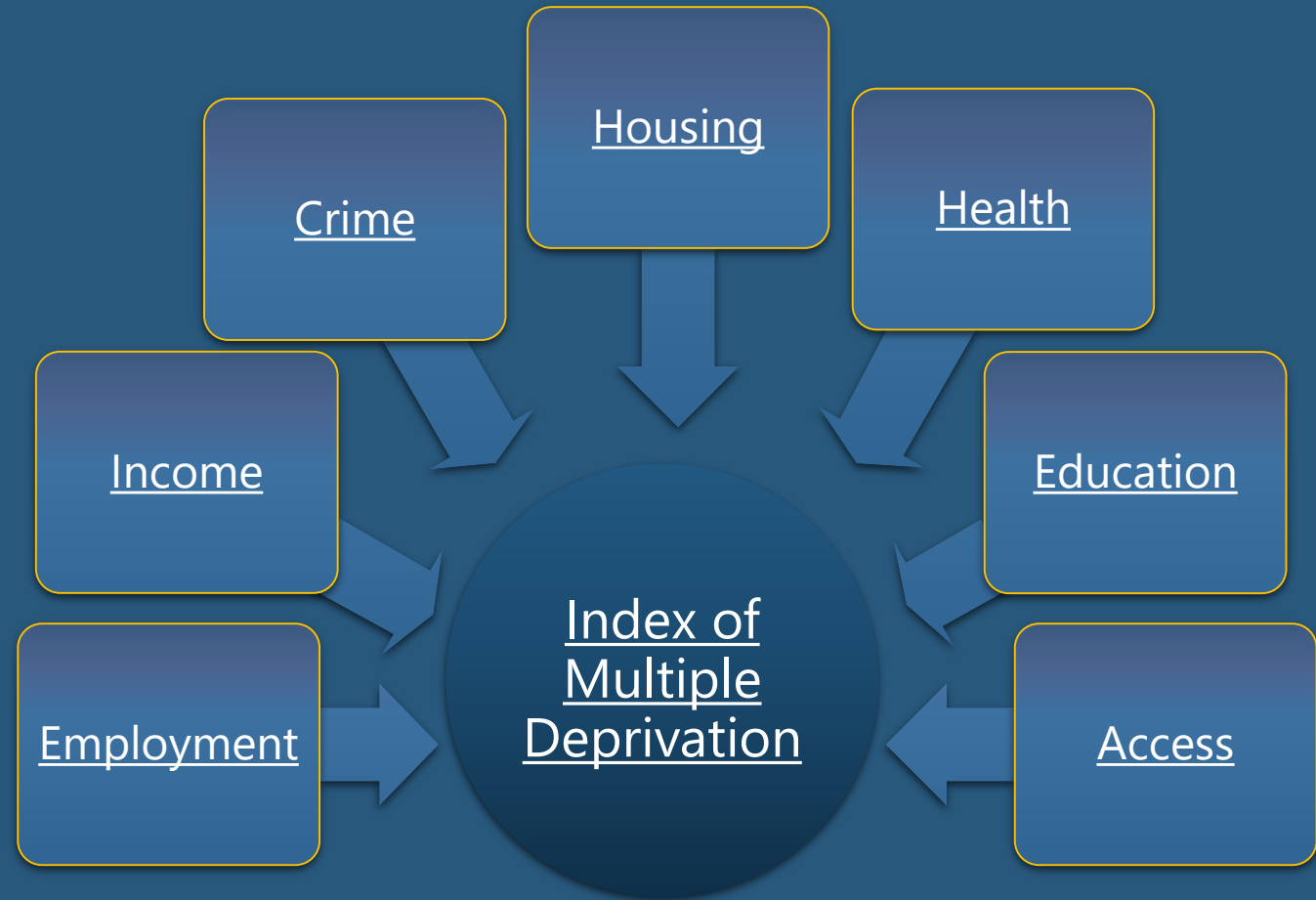
- Left before age 17
- Left without NCEA level 2
- Did not enrol in tertiary study within 3 years
- Youth not in Education, Employment or Training
- Working age population without formal qualification



# Access Indicators

Geographic co-ordinates of nearest three

- Supermarkets
- Primary health care providers
- Service stations
- Early-childhood centres
- Primary and intermediate schools





Data



Interactive  
Map

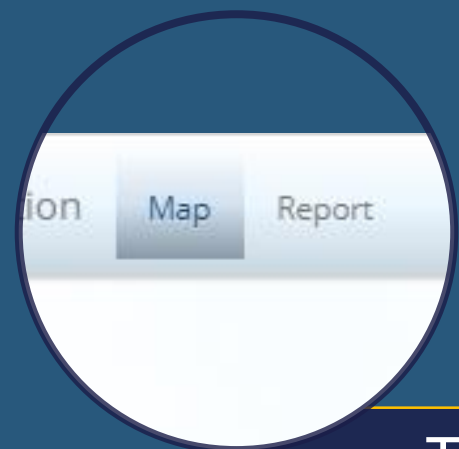


Automatic  
Reports

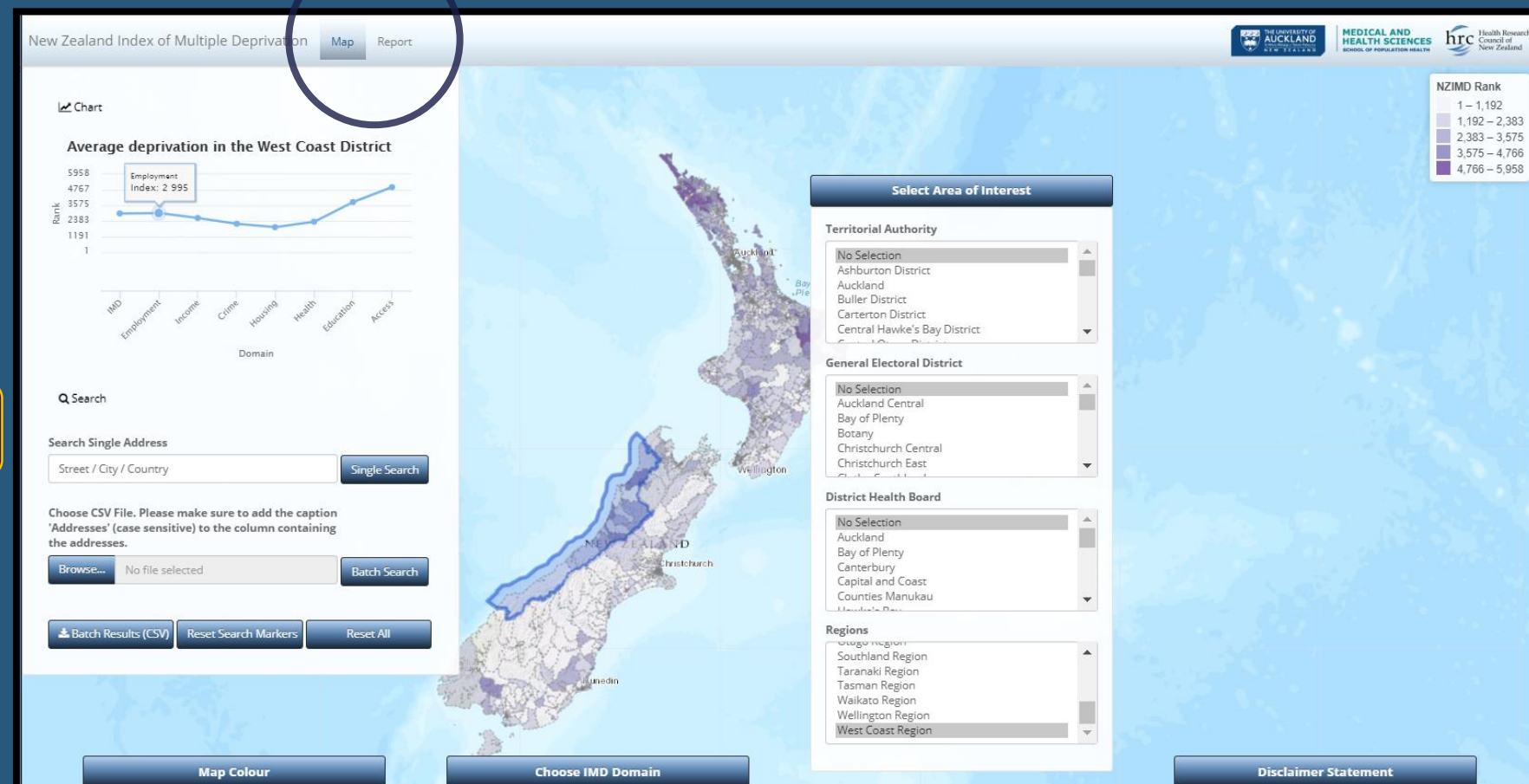
# Interactive Web Page

IMD2013\_4326\_simp0.0001 :: Features total: 5958, filtered: 5958, selected: 0

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284	1200020	666	12	Hauraki District	7	Coromandel	5	Waikato	4879	5494	5224	4036	3176
285	1200021	774	12	Hauraki District	7	Coromandel	5	Waikato	5057	4912	5435	4801	3242
286	1200022	879	12	Hauraki District	7	Coromandel	5	Waikato	5609	5463	5587	5484	3320
287	1200024	789	12	Hauraki District	7	Coromandel	5	Waikato	5516	5277	5712	5414	3697
288	1200025	696	12	Hauraki District	7	Coromandel	5	Waikato	5224	5290	5004	3883	3218
289	1200026	528	12	Hauraki District	7	Coromandel	5	Waikato	3051	2746	3142	3770	2315
290	1300001	753	13	Waikato District	56	Waikato	4	Counties Manukau	2137	2872	1444	3059	226
291	1300002	615	13	Waikato District	56	Waikato	4	Counties Manukau	4810	4571	4691	4415	4510
292	1300003	657	13	Waikato District	56	Waikato	4	Counties Manukau	1737	1282	1855	3144	1569
293	1300004	783	13	Waikato District	50	Taranaki-King Co...	5	Waikato	3882	4724	3554	4209	2262
294	1300005	537	13	Waikato District	56	Waikato	4	Counties Manukau	2270	3843	1561	2874	1182
295	1300006	504	13	Waikato District	56	Waikato	4	Counties Manukau	3009	1546	3559	1247	3564
296	1300007	645	13	Waikato District	50	Taranaki-King Co...	5	Waikato	4811	4995	5168	4652	4092
297	1300008	627	13	Waikato District	50	Taranaki-King Co...	5	Waikato	4878	4764	4886	5298	4479
298	1300009	828	13	Waikato District	50	Taranaki-King Co...	5	Waikato	4750	5192	5045	3618	3932
299	1300010	639	13	Waikato District	50	Taranaki-King Co...	5	Waikato	4386	4378	4794	1846	3671
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301	1300013	522	13	Waikato District	50	Taranaki-King Co...	5	Waikato	1640	1529	2103	544	2567
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304	1300015	678	13	Waikato District	56	Waikato	4	Counties Manukau	2394	2429	2362	688	1586
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311	1300022	588	13	Waikato District	56	Waikato	4	Counties Manukau	3805	4319	3165	2585	1767
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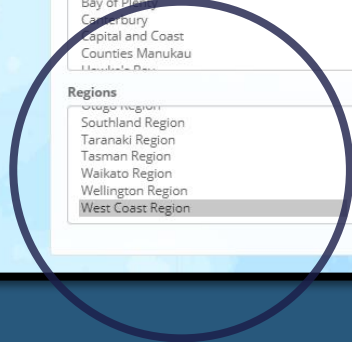


Tab menu



☐ Otago Region  
☐ Southland Region  
☐ Taranaki Region  
☐ Tasman Region  
☐ Waikato Region  
☐ Wellington Region  
☒ West Coast Region

# Area of Interest









### Search Single Address

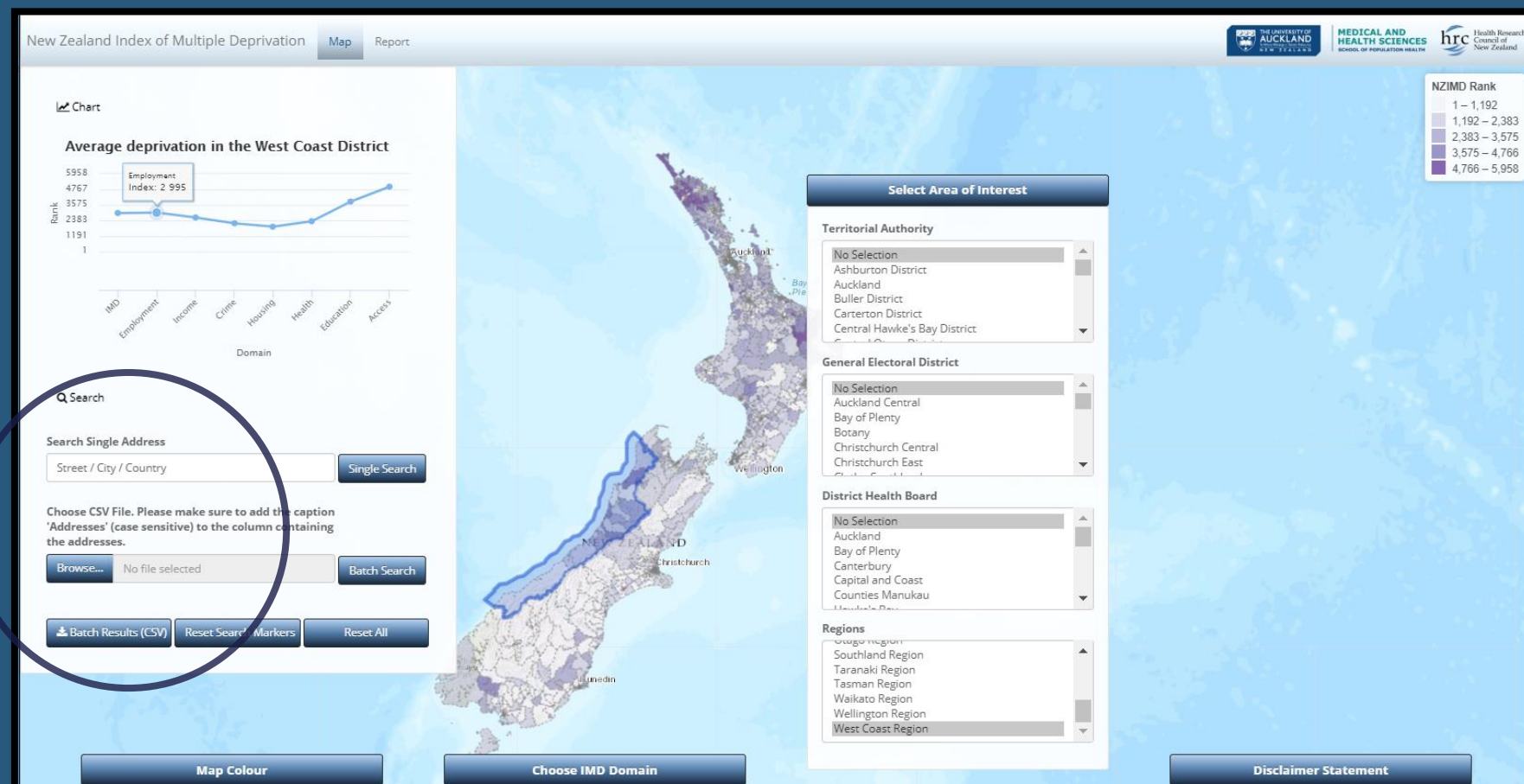
Street / City / Country

Choose CSV File. Please make sure to add the caption 'Addresses' (case sensitive) to the column containing the addresses.

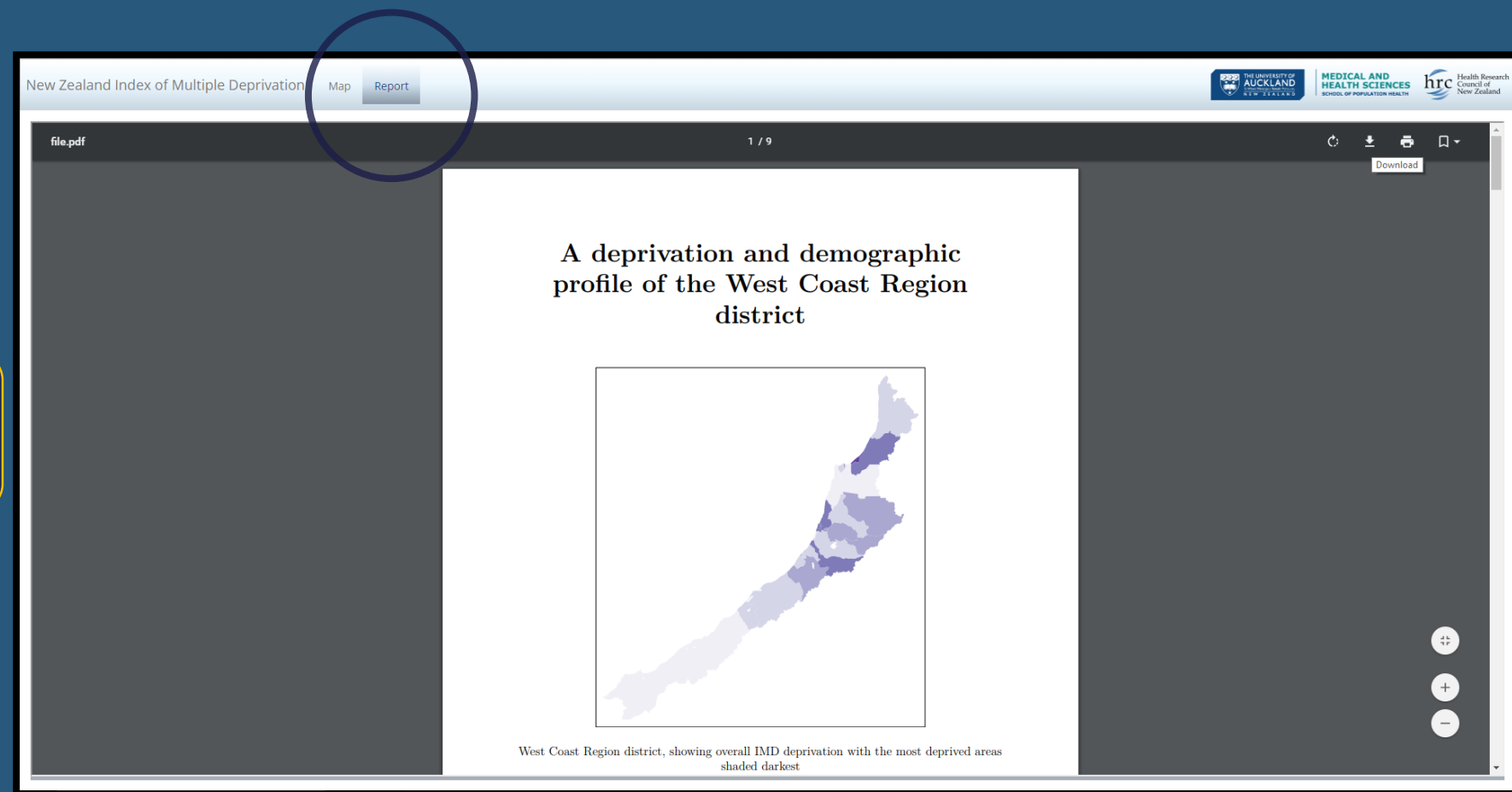
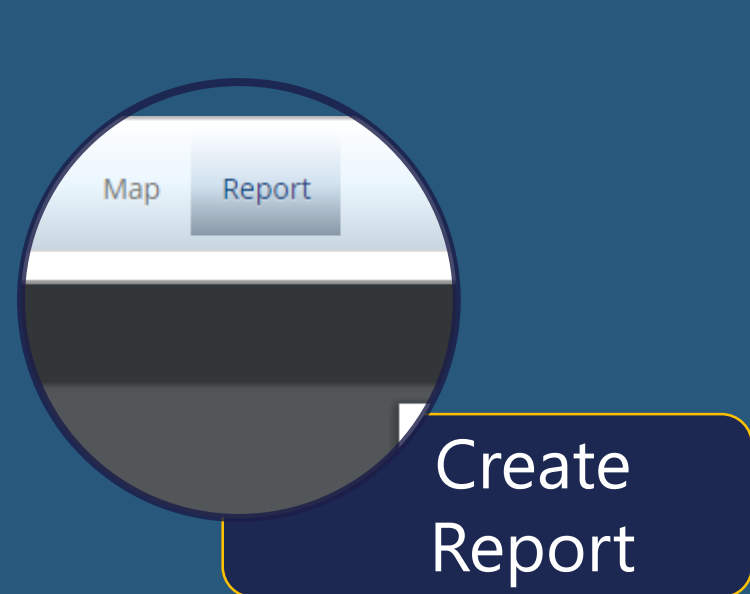
Browse...

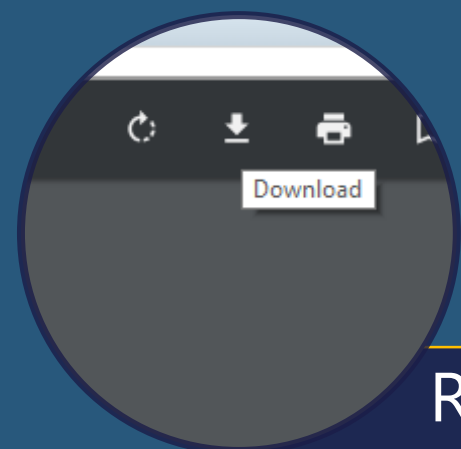
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## Geocoding



# Reports





Report  
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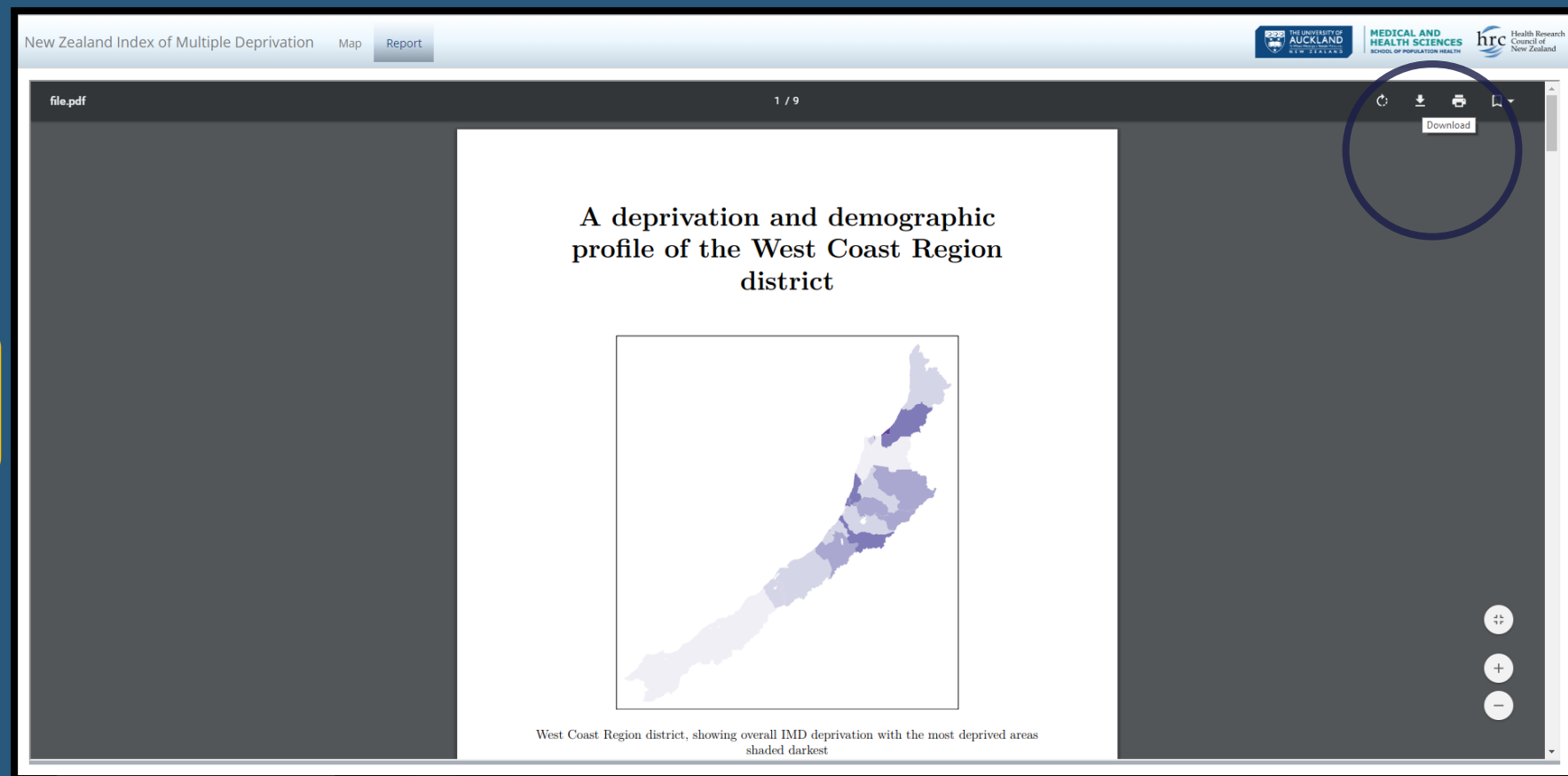




Figure 2: Stacked bar chart showing overall deprivation and seven domains in the West Coast Region district.

The stacked bar chart in Figure 2 shows the proportion of data zones in the West Coast Region district that belong to each deprivation quintile for overall IMD deprivation and the seven domains in 2013. If the deprivation circumstances were the same for all of NZ, we would see 20% of the West Coast Region's 48 data zones in each quintile. However, Figure 2 shows that the proportion of data zones with Q5 overall IMD, income, crime, housing, health deprivation was less than 20%, while the proportion with Q5 employment, education, access deprivation was greater than 20%. The West Coast Region district has lower than average overall IMD deprivation, with 39.6% (19/48) of its data zones either in Q4 or Q5.

Table 1: Min, max and median deprivation ranks by domain for 5 data zones with Q5 IMD

	IMD	Employment	Income	Crime	Housing	Health	Education	Access
Min	4809	5040	3500	2496	1925	2226	3320	1002
Max	5110	5682	4863	5721	3897	5194	5843	5875
Median	5011	5395	4556	3703	3485	4522	5556	4462

Table 1 shows summary statistics by domain for 5 data zones that were among NZ's most deprived (Q5) for the overall IMD and reveals the contributions of different domains. In descending order, high (Q5) median deprivation ranks for Education (5556), Employment (5395), Income (4556) and Health (4522) were contributing to high overall deprivation in these 5 data zones in 2013, bearing in mind that these domains carry different weights in the IMD (see Figure 1).

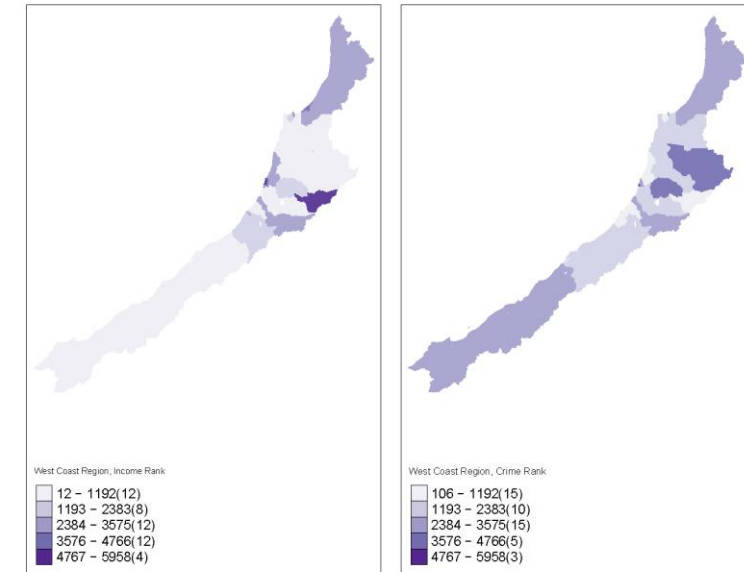
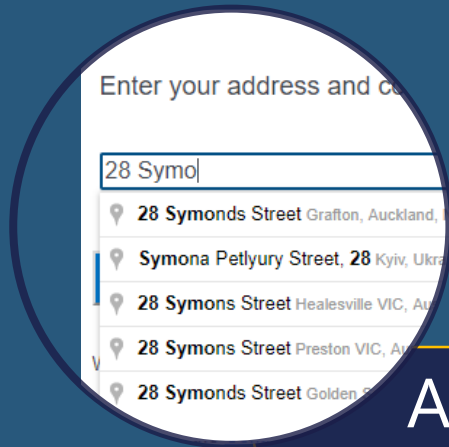


Figure 4: Distribution of income and crime deprivation in the West Coast Region district.

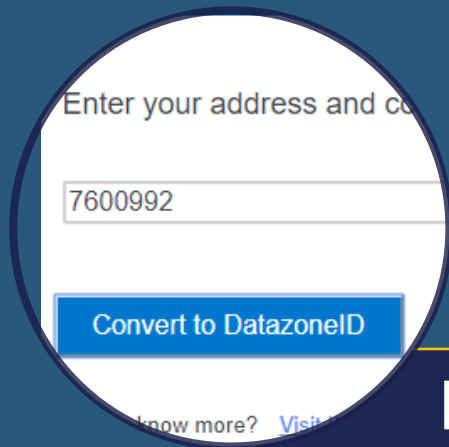
The Income Domain measures the amount of money per person paid by the government in the form of Working for Families payments and income-tested benefits. In the West Coast Region district, 8.3% (4/48) of data zones were in NZ's 20% most income deprived, while 25% (12/48) were in the 20% least income deprived. The median income deprivation rank in the West Coast Region district was 2666, 5.3% (314 ranks) better than the NZ median. There were less Q5 data zones in the Income Domain than for the IMD overall in the West Coast Region district.

The Crime Domain measures victimisations per 1000 people and is largely driven by thefts (55%), burglaries (24%) and assaults (18%). In the West Coast Region district, 6.2% (3/48) of data zones were among NZ's 20% most deprived for the Crime Domain, while 31.2% (15/48) were among NZ's 20% least deprived. The median crime deprivation rank in the West Coast Region district was 2332, 10.9% (647 ranks) better than the NZ median.


# Qualtrics Survey Module



## Address Search



## Data Zone ID



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NEW ZEALAND

Enter your address and convert to data zone ID for IMD deprivation information

Convert to DatazoneID

Want to know more? [Visit IMD Website](#)

Created by the [Centre for eResearch, University of Auckland](#).

→

Embedded Data

ImdRankD: 5  
EmpRankD: 5  
IncRankD: 2  
CriRankD: 7  
HouRankD: 10  
HlthRankD: 5  
EduRankD: 1  
AccRankD: 2

Survey Result

Single Response

Q2. Enter your address and convert to DatazoneID

Convert to DatazoneID

Embedded Data

ImdRankD: 5  
EmpRankD: 5  
IncRankD: 2  
CriRankD: 7  
HouRankD: 10  
HlthRankD: 5  
EduRankD: 1  
AccRankD: 2

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Health Research  
Council of  
New Zealand

# Thank You

## Questions?

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# References

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- <https://github.com/Leaflet/Leaflet/blob/master/src/images/logo.svg>
- <https://www.analyticsvidhya.com/blog/2016/10/creating-interactive-data-visualization-using-shiny-app-in-r-with-examples/>
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- <https://www.docker.com/legal/brand-guidelines>
- <https://nectar.org.au/>
- <https://www.fmhs.auckland.ac.nz/en/soph/about/our-departments/epidemiology-and-biostatistics/research/hgd/research-themes/imd.html>
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