

Analyzing the Impact of School Count and Crime Rate on Housing Prices in Aotearoa

Group Members:

Emma MARIE (68268218)

Sarah OONG (96301834)

Huaipu (Levo) WANG (28629644)

Jingcheng (Jacci) ZHOU (82204407)





CONTENTS

01

**Introduction
+
Data Sources**

03

Data Wrangling

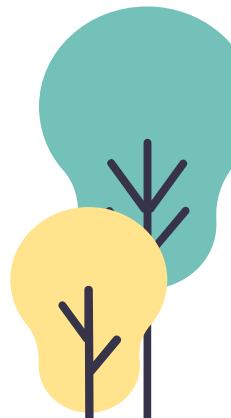


02

Relational Data Model

04

**Data Visualization
+
Conclusion**



INTRODUCTION



**Housing Price
High Housing Loan Rate**



Impact on Our Life



Factors: Crime Rate and School



Homebuyers Investors

DATA SOURCES

01

Crime data



02

**Housing
price data**



03

**Territorial
Authorities
Shapefile
data**



04

**School
directory
data**



05

**Population
data**



RELATIONAL DATA MODEL

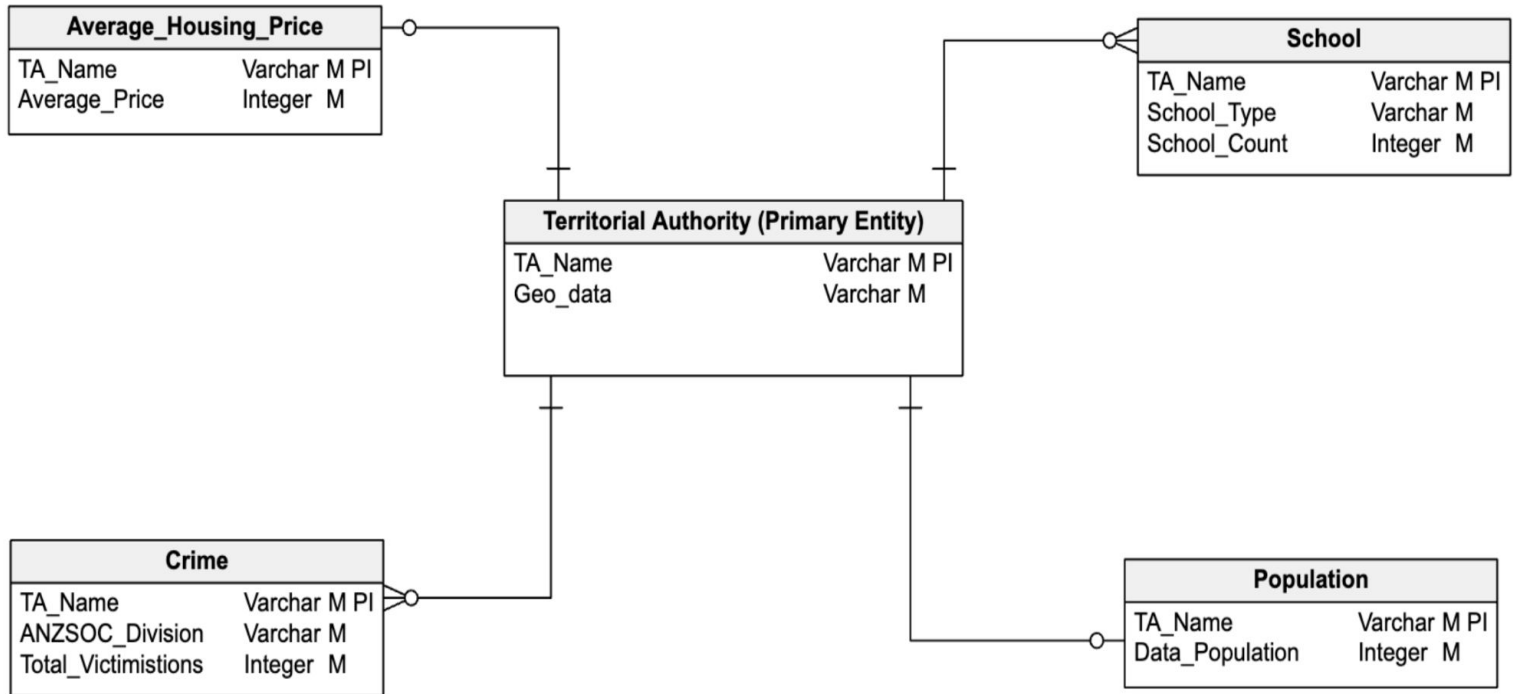
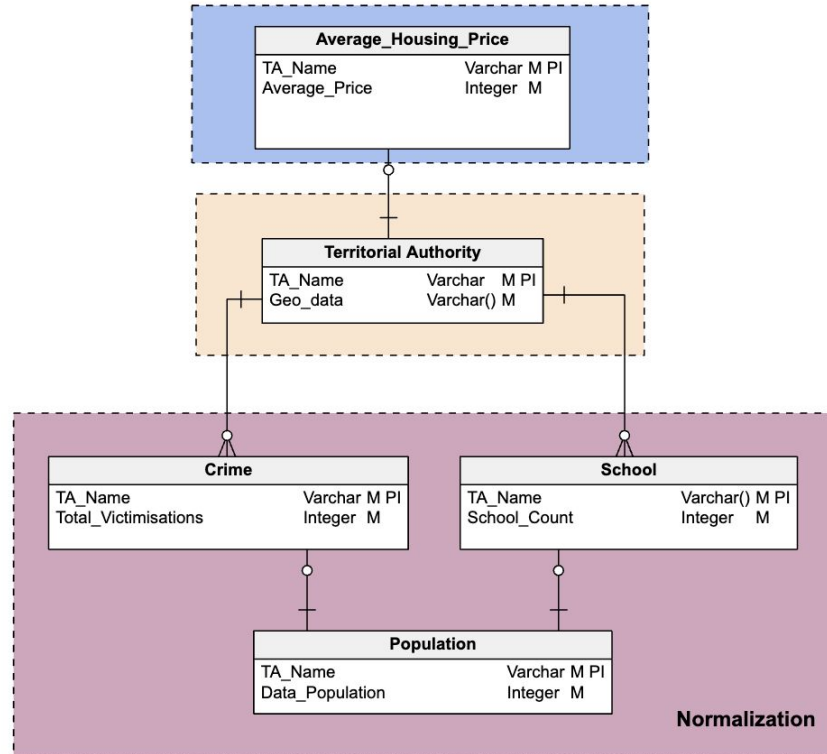


TABLE JOIN



DATA WRANGLING



Four Important Steps We Follow

**DATA
DISCOVERY**

**STRUCTURE
and
CLEAN DATA**

**VALIDATE
and
CHECK DATA
CONSISTENCY**

**PUBLISH
and
OUTPUT**

HOUSING PRICE



Techniques Employed:

1. Scraping - using “HTTP” package
2. Data Cleaning - using “DataFrames” package
3. Save clean data to csv - using “CSV” package



Before

Row	Location String	Price String
1	New Zealand	907415
2	Far North District	700,402
3	Whangarei District	736,658
4	Kaipara District	818,262
5	Auckland	1,259,185
6	Thames-Coromandel District	1,157,623
7	Hauraki District	631,049
8	Hamilton City	800,437
9	Matamata-Piako District	704,001
10	Otorohanga District	519,134
11	South Waikato District	426,624
12	Taupo District	829,769
13	Waikato District	726,521



After

Row	Territorial_Authority String	Price Int64
1	Far North District	700402
2	Whangarei District	736658
3	Kaipara District	818262
4	Auckland	1259185
5	Thames-Coromandel District	1157623
6	Hauraki District	631049
7	Hamilton City	800437
8	Matamata-Piako District	704001
9	Otorohanga District	519134
10	South Waikato District	426624
11	Taupo District	829769
12	Waikato District	726521
13	Waipa District	871229

POPULATION



Before



After

Techniques Employed:

1. Load the data - using “readxl” package
2. Data Cleaning - using “tidyverse” package
3. Save clean data to csv - using “tidyverse” package

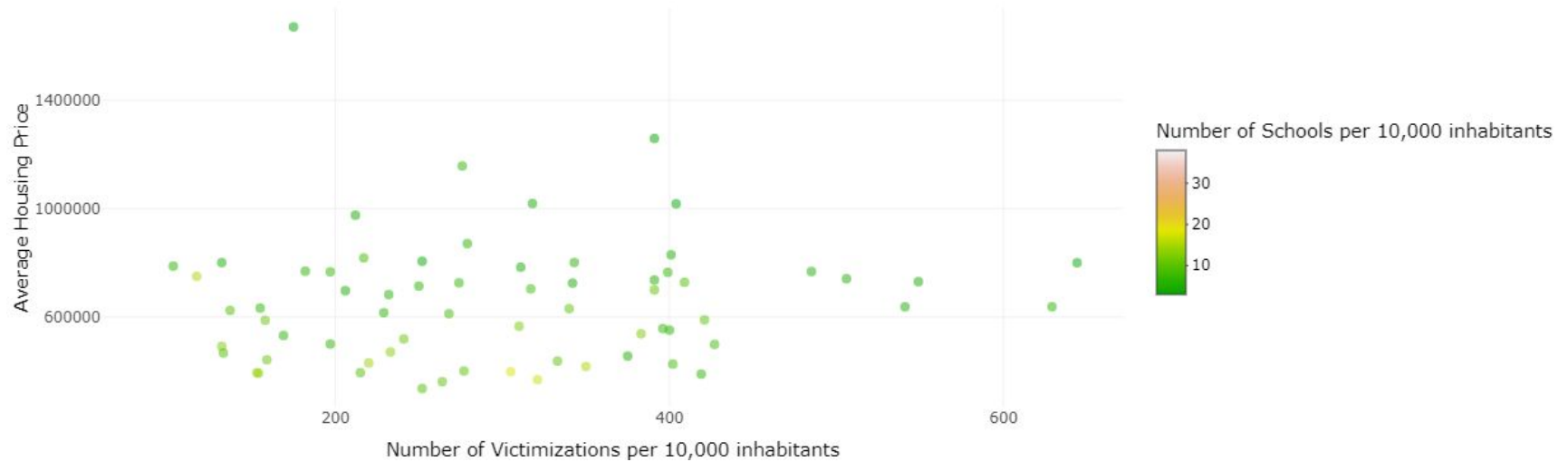


Estimated resident population ⁽¹⁾ by broad age group												
Territorial authority and Auckland local board areas												
At 30 June 2018–2022												
Territorial authority and Auckland local board area ⁽²⁾	At 30 June	Population by age group (years)										Median age ⁽³⁾ (years)
		0–14	15–39	40–64	65+	Total	0–14	15–39	40–64	65+		
		Number					Percent					
Far North district	2018	14,500	17,600	22,800	13,000	67,900	21	25.9	33.6	19.1	42.8	
Far North district	2020	14,900	18,900	23,500	14,200	71,400	21	26.4	33.0	19.8	42.9	
Far North district	2021 P	15,100	19,300	23,800	14,800	73,000	21	26.4	32.6	20.3	43.1	
Far North district	2022 P	15,100	19,500	23,900	15,300	73,800	20	26.5	32.4	20.7	43.2	
Whangārei district	2018	19,500	26,600	30,300	17,800	94,100	21	28.2	32.2	18.9	41.1	
Whangārei district	2020	19,800	28,100	30,900	19,000	97,800	20	28.7	31.6	19.4	41.0	
Whangārei district	2021 P	20,000	28,400	31,100	19,900	99,300	20	28.6	31.3	20.0	41.2	
Whangārei district	2022 P	20,000	28,800	31,200	20,500	100,500	20	28.7	31.1	20.4	41.3	
Kaipara district	2018	4,600	5,900	8,100	5,200	23,700	19	24.8	33.9	22.1	45.7	
Kaipara district	2020	4,800	6,300	8,400	5,900	25,400	19	24.8	33.0	23.2	46.2	
Kaipara district	2021 P	5,000	6,600	8,700	6,300	26,500	19	24.9	32.7	23.6	46.4	
Kaipara district	2022 P	5,100	6,700	8,800	6,600	27,200	19	24.7	32.5	24.2	46.7	
Auckland	2018	324,100	630,300	503,400	197,000	1,654,800	20	38.1	30.4	11.9	34.6	
Auckland	2020	332,600	646,900	520,400	214,200	1,714,200	19	37.7	30.4	12.5	35.2	
Auckland	2021 P	331,400	632,400	520,200	220,100	1,704,100	19	37.1	30.5	12.9	35.6	
Auckland	2022 P	328,800	619,800	520,900	225,700	1,695,200	19	36.6	30.7	13.3	36.0	
Rodney local board area	2018	13,600	19,400	24,700	11,400	69,100	20	28.0	35.8	16.6	42.0	
Rodney local board area	2020	14,400	21,300	26,200	12,600	74,500	19	28.6	35.2	16.9	41.7	
Rodney local board area	2021 P	15,000	22,200	27,000	13,200	77,300	19	28.7	34.9	17.1	41.5	
Rodney local board area	2022 P	15,300	22,900	27,500	13,700	79,400	19	28.9	34.6	17.3	41.5	
Hibiscus and Bays local board area	2018	20,000	32,900	36,600	18,900	108,500	18	30.4	33.7	17.4	41.0	
Hibiscus and Bays local board area	2020	21,100	33,600	38,300	20,400	113,500	19	29.6	33.8	18.0	41.3	

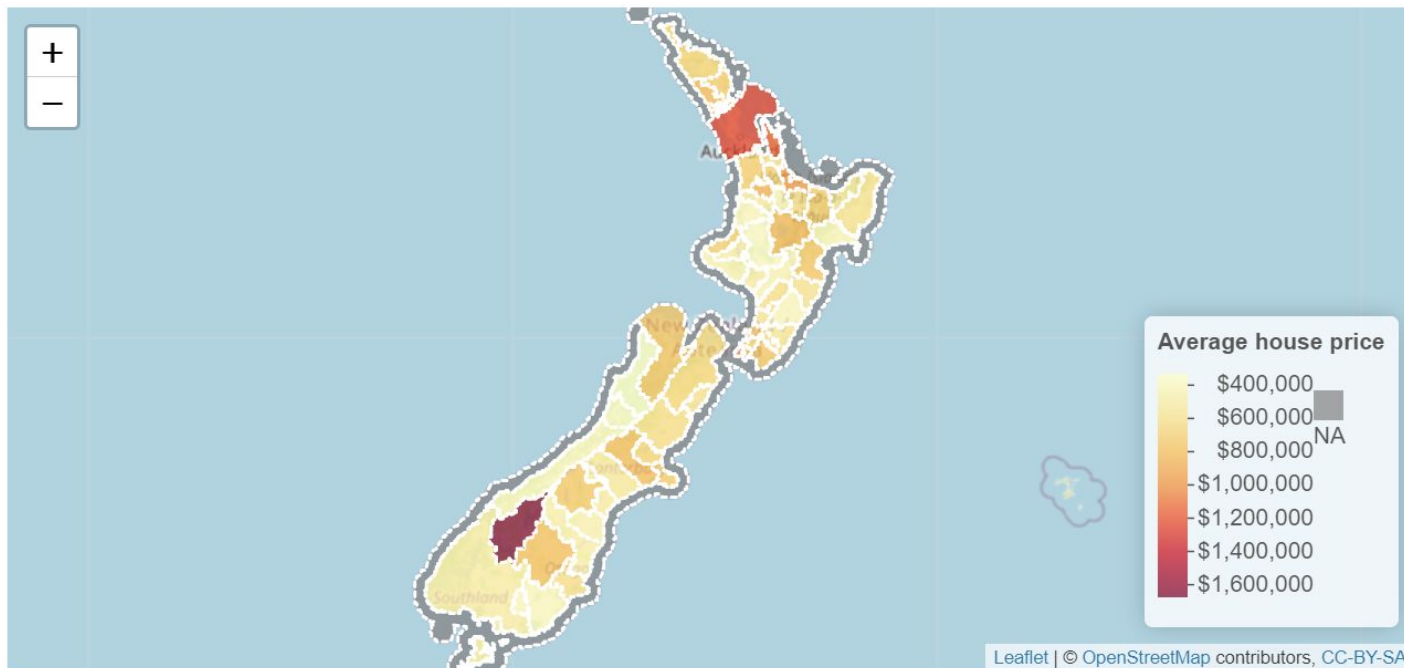
Territorial_Authority	Total_Population
Far North District	73800
Whangarei District	100500
Kaipara District	27200
Auckland	1695200
Thames-Coromandel District	33700
Hauraki District	22200
Waikato District	88900
Matamata-Piako District	37100
Hamilton City	179900
Waipa District	60500
Otorohanga District	10850
South Waikato District	25900
Waitomo District	9670
Taupo District	41400
Western Bay of Plenty District	59700
Tauranga City	158300
Rotorua District	76800
Whakatane District	38300
Kawerau District	7760
Opotiki District	10500
Gisborne District	52100
Wairoa District	9190
Hastings District	90600
Napier City	66800



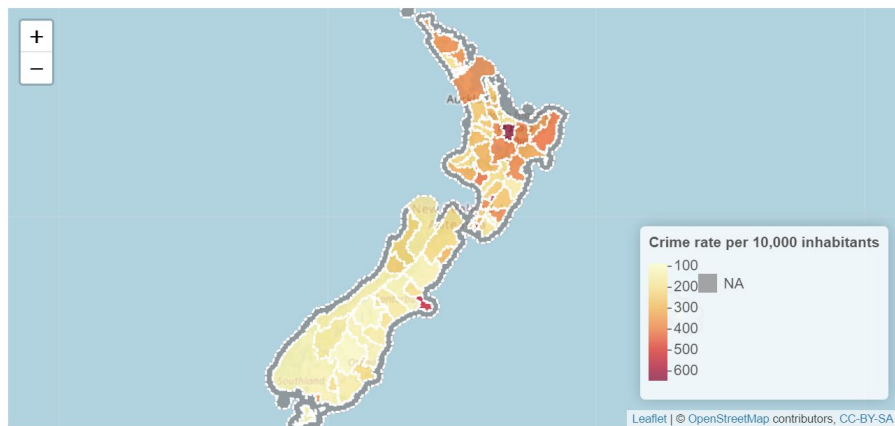
Impact of Crime Rate and Number of Schools on Housing Price



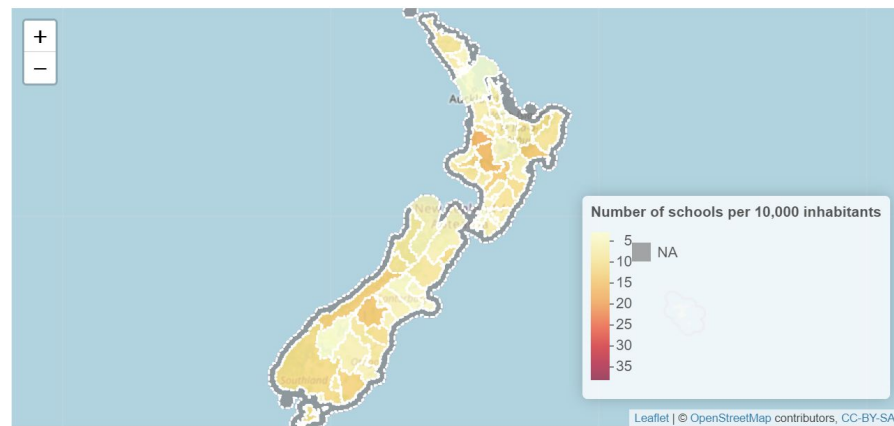
AVERAGE HOUSE PRICE



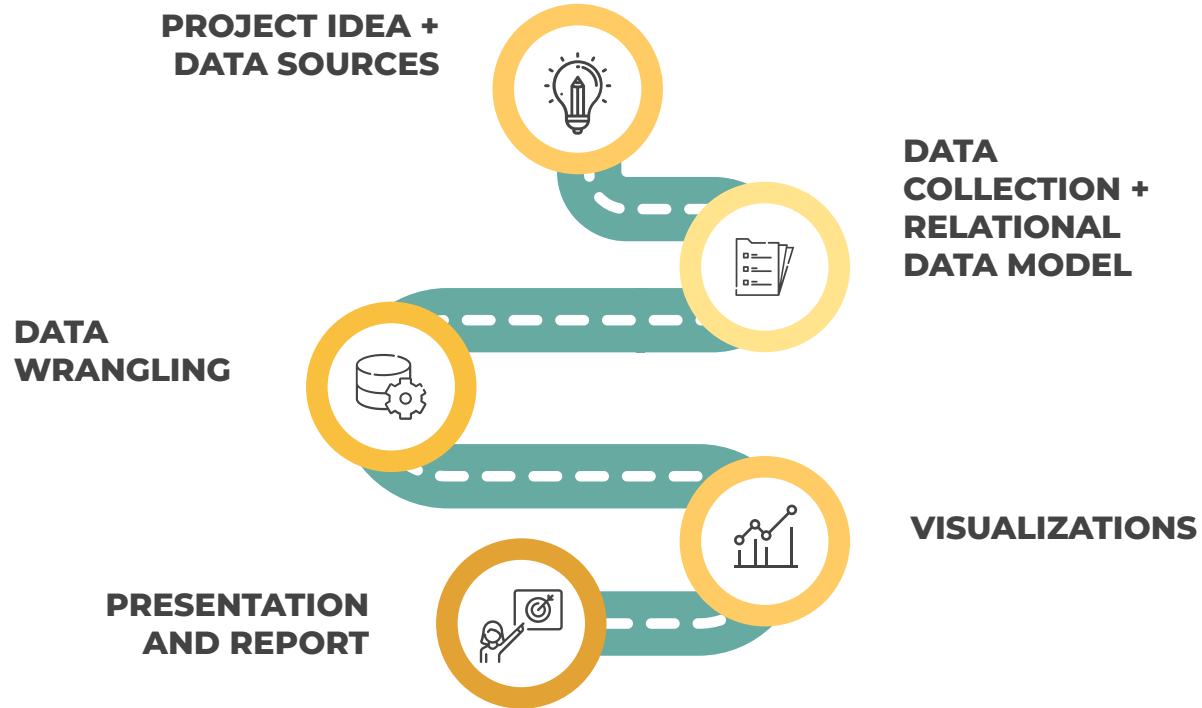
CRIME RATE PER 10,000 INHABITANTS



NUMBER OF SCHOOLS PER 10,000 INHABITANTS



CONCLUSION





THANK YOU

Does anyone have any questions?

CREDITS: This presentation template was created by **Slidesgo**, including icons by **Flaticon**, and infographics & images by **Freepik**.

Please keep this slide for attribution.

