# All industries across all years

## Transport distances

* **Dist to port**: Predominantly negatively correlated (max 0.0005678)
* **Dist to airport**: Predominantly negatively correlated (3rd Q and Max pos)
* **Dist to railway**: Predominantly negatively correlated (max 0.0004389)
* **Hwy per area**: Predominantly positively correlated (only min neg)

In general, business facilities are located away from major “ugly” transport infrastructures like ports, airports and railways, but close to highways. The affinity for highways can be described from two angles: commuters and truck traffic. Most tonne-km (transport activity) in NZ is in tonne-km.

**Follow-ups thoughts**:

What is the sector split for “total industries” – how many facilities are in freight moving sectors (primary and secondary) and how many are in tertiary sector (predominantly service).

## People

* **Total people**: Predom positive (from median up positive)
* **Perc affluence**: Predom positive (only min neg)
* **Perc Maori**: ONLY negative
* **Perc Immigrant**: Predom positive (from median up)

In general, more business facilities occur in more highly populated areas, presumably due to proximity to the labour force. It seems that business facilities are also collocated in more affluent areas. The direction of the causality is not known. Could it be because communities who are more affluent tend to establish more businesses? Or can wealthier people afford to live closer to economic centres? Or do affluent communities represent a better workforce / better customer base? There are many facets to the affluence-all industry question that could be further explored.

The relationship with perc Maori and Pasifika is noteworthy. Fewer businesses are located in communities that have higher percentage of Maori/Pasifika populations. Contrast this with the predominantly positive correlation with immigrant communities. Is this an intersection with the employment question? Could the immigrant relationship be explained by the fact that most immigrants “come for work” and “cannot stay without work”, whereas Maori and Pasifika are NZ citizens and therefore do not need to leave when they don’t have work?

**Follow-up thoughts**

Correlation of unemployment and percM and percImmigrant categories, contrast with correlation of “everyone else”

There are many more questions here…. This raises a troubling question.

## 2006-2018 changes

## Transport distances

* **Dist to port**: No change in sign. Broadest distrib of values in 2018. Is that significant?
* **Dist to airport**: No change in sign. Broadest distrib of values in 2018
* **Dist to rail**: No change in sign. Broadest distrib of values in 2018
* **Hwy per area**: No change in sign. Shift to “more positive” coefficients over time. Meaning that this relationship is becoming MORE important.

## People changes

* **Total people**: The distribution did move a bit over time. In 2006, Median was actually negative. In 2013 and 2018 only the 1st Q is negative, but the longest left tail is in 2018. The 2013 distribution is more positive than the 2018 distribution on all quartiles. Could this indicate a move of the population “towards” business facilities between 2006 and 2013 and then slightly “away” again between 2013-2018? Could that be because of land prices around business facilities? Urban sprawl?
* **Perc affluence**: Broadest distribution in 2018. Even though the right tail stretches out from 2006-2013-2018, other quartiles are far less positive in 2013 and 2018 is more positive than 2013 but lower than 2006. Does this mean that although the relationship is always positive, it seems to have less of an influence in 2018 than 2006 and much less of an influence in 2013 than 2006 and 2018 for most of the population. What does that mean ito demographic trends? Is this an effect of “as things get more crowded and available space less, the relationships have less of an influence”?
* **Perc Maori**: This is becoming decidedly more negative over time for all quartiles. So the negative relationship is strengthening over time.
* **Perc Immigrant**: 2013 decidedly more positive than 2006 on all fronts. 2018 shifted more negative than 2013 but still more positive than 2006. Only exception is the right tail (max). What does that mean?

**Follow-up questions**:

* What has urban sprawl been compared to business facility sprawl?

# Retail

## Transport distances

* **Dist to port**: Predom negative (Q3 and max positive) – more pos than “all”
* **Dist to airport**: Predom negative (Max positive) – less pos than “all”
* **Dist to rail**: Predom negative (Max positive) – more neg than “all”?
* **Hwy per area**: All positive

One expects retail shopping to be closer to customers than any other facilities in the supply chain. Correlation with Hwy makes sense – more accessible to private vehicles that generally bring customers. Noteworthy that the distr of coefficients is shifted right (more positive) than for all industries. It aligns with the “customer centric” nature of these facilities.

The results for distance to port and airport compared to the distributions for “all” are interesting. Don’t really have much to say about that right now.

**Follow-on thoughts**:

What is public transit vs private vehicle usage in NZ?

## People

* **Total people**: Predom negative (only pos in max)
* **Perc affluence**: Predom negative (only max is pos)
* **Perc Maori**: Predom negative (only 3rd Q and max pos)
* **Perc Immigrant**: Only pos

These results are not what I expected. I expected that retail centers would be in more affluent areas. It looks like these are established in less affluent areas

**Follow-on thoughts:**

How suburban is NZ? Are retail spaces mainly concentrated in business districts or in suburban areas?

## 2006-2018 changes

## Transport distances

* **Dist to port**: No change in sign. Based on central measures – more negative over time
* **Dist to airport**: No change in sign. Broadest distrib of values in 2018
* **Dist to rail**: No change in sign. Shift to more pos in the tails but not noteworthy in the centrality
* **Hwy per area**: No change in sign. Shift to “less positive” coefficients over time. Meaning that this relationship is becoming LESS important. But slight…

## People

* **Total people**: No change in sign. Central measures more negative over time.
* **Perc affluence**: Changed to all negative in 2013 & 2018.
* **Perc Maori**: Sign change moves around a bit – but back and forth.
* **Perc Immigrant**: No sign change. No convincing movement in any one direction.

# Total people

Total industries

Retail

Wholesale

Trans & Stor

Combined