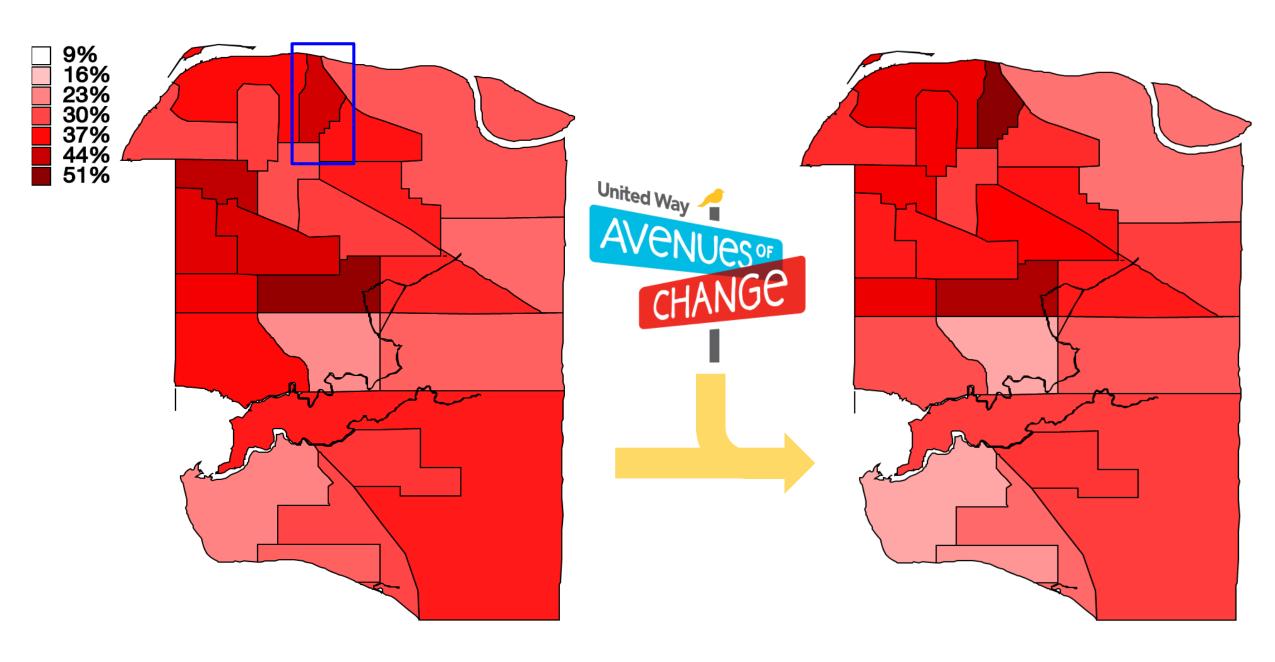# A data-driven approach to early childhood initiatives

Patrick Laflamme, Patricia Angkiriwang, Elba Gomez, Shenyi Pan

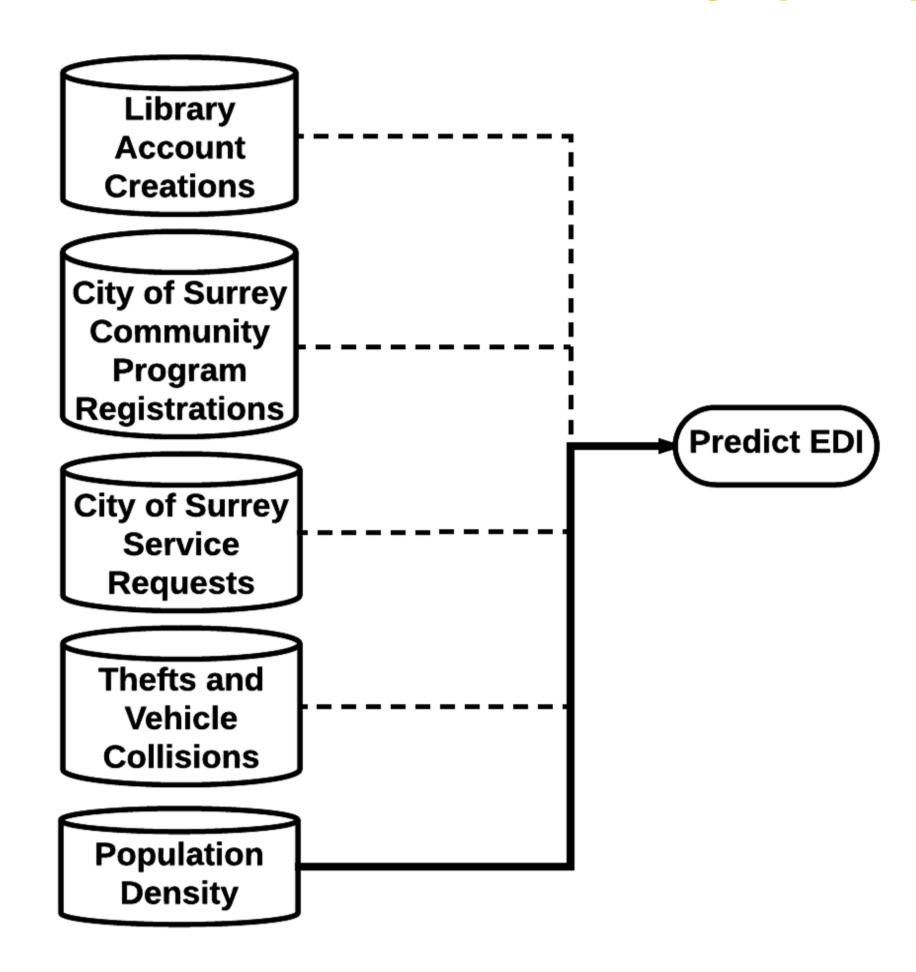## CASCADIA URBAN ANALYTICS COOPERATIVE
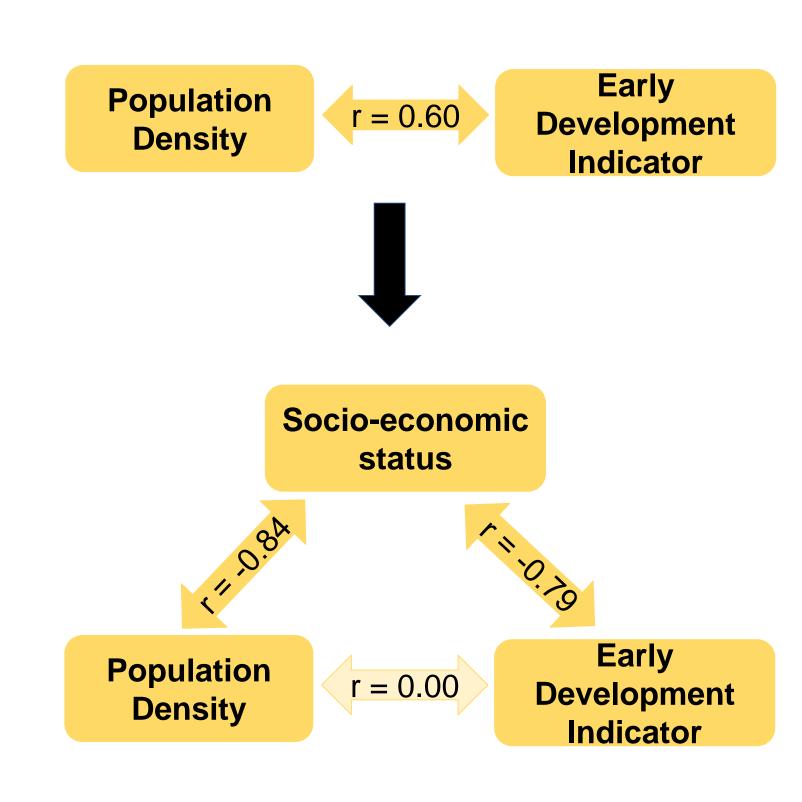
Microsoft

What is Avenues of Change?

On the left, the proportion of children considered vulnerable in each neighbourhood is shown for 2013 (before Avenues of Change began). Guildford West is located in the blue box. On the right, the same information is displayed for 2016 (after Avenues of Change began). Guildford West is one of the most vulnerable neighbourhoods in the region.

Predicting Early Childhood Vulnerability (EDI)

From all the datasets we analysed, none except for neighbourhood population density had a strong relationship with the Early Development Indicator (EDI), a measure of a population's childhood vulnerability.
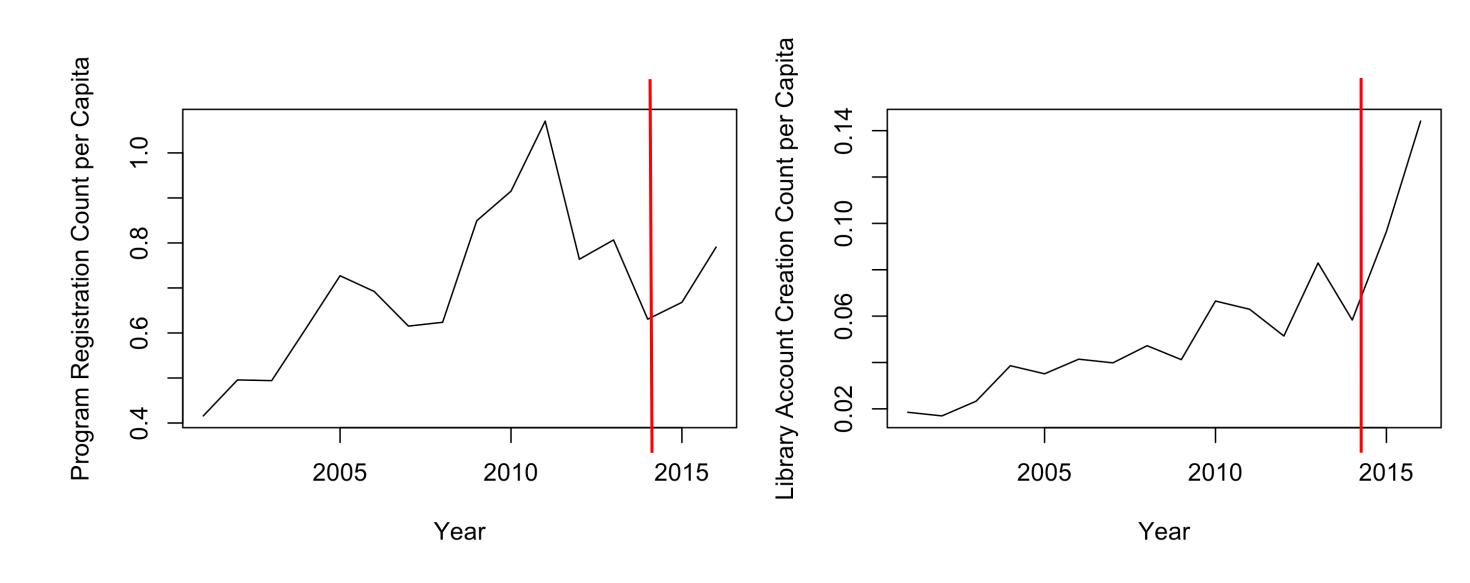
Why does population density impact EDI?

Population density appears to predict the Early Development Indicator (EDI) on the surface, but a mediation analysis suggests that this relationship is mediated by socio-economic status.

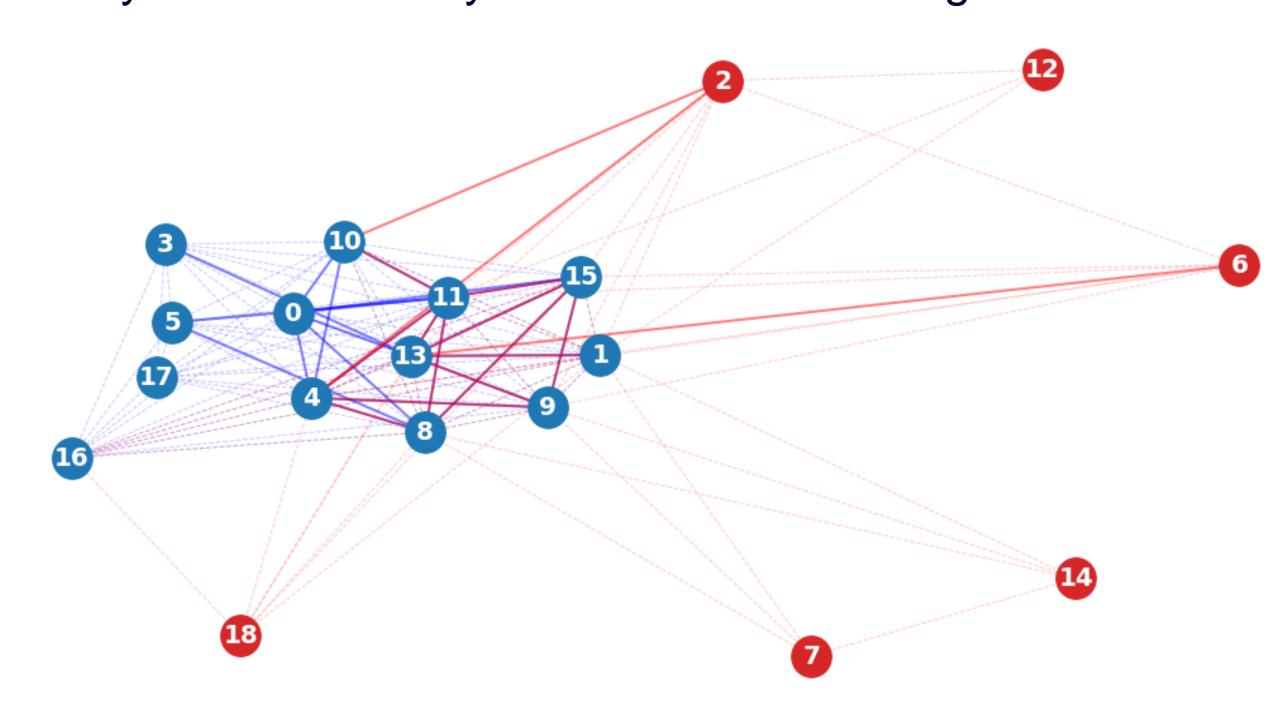## Avenues of Change *did* have an impact

The Early Development Indicator (EDI) may be too complex to detect the impact of the Avenues of Change Guildford West initiative

Avenues of Change may have influenced engagement in neighbourhood resources among young children. **Left**: Program registration counts per capita over time in Guildford West. **Right**: Library account creations per capita over time in Guildford West. Red Lines mark the beginning of the initiative.

Quantifying Network Structure

- Catalyse systems-level conversations between agencies
- Improve understanding of the network in its current form
- Establish an analytical framework to quantitatively analyse the efficiency of the network moving forward

A visual representation of the network of agencies working on early childhood issues as part of Avenues of Change. Solid lines show edges connecting two agencies that both co-attend meetings and have a cited collaboration; faded lines show co-attendances without cited collaborations. Red nodes and edges indicate data generated from auxiliary working group attendance, while blue nodes and edges indicate data generated from the core leadership meeting attendance.

Future Directions

Quantifying impact on childhood vulnerability:

- Collect data on variables other than EDI that will be more meaningful when studying the impact of community-level initiatives

Inter-agency network analysis:

- Conduct a city-wide survey of collaborations to gain a more comprehensive view of all agencies working on early childhood vulnerability, not just those involved in Avenues of Change

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