DEFINING AND MEASURING EQUITY IN ALEXANDRIA, VA

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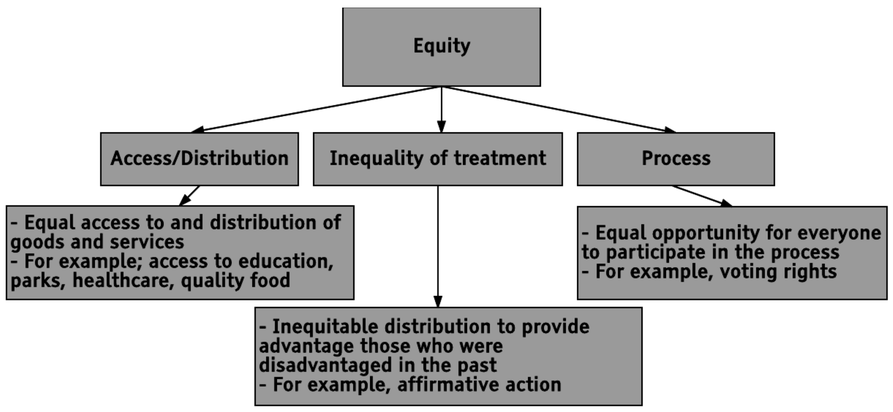
Introduction

Equity is imperative to the well-being of citizens, and hence an important policy consideration. The City of Alexandria is striving towards combating inequity in their community. We conducted a literature review to better understand how equity is defined and measured. Our goal is to explain how these definitions and indicators of inequity manifest themselves in Alexandria. We wish to provide recommendations to the city about forming an actionable definition of equity, and collecting the most pertinent data to measure it.

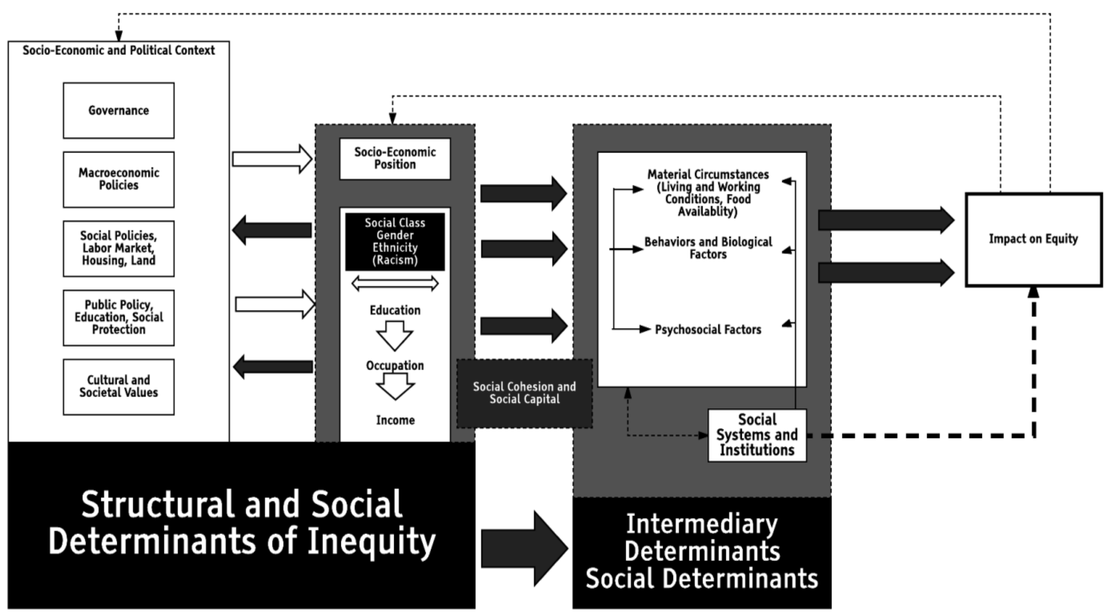


Various ways of understanding equity

Literature review

- Recent (2013 onwards) academic literature with international scope:
  - Sociology and Demography
  - Public Health
  - Economics
  - Public Policy
- Government reports:
  - County and state level reports
    - King's county, WA
    - Dane county, WI
    - San Francisco, CA
    - Multnomah county, OR
    - Boston, MA
- Academic resources:
  - http://nationalequityatlas.org
  - http://thrivingcities.com

Generalization of WHO's Conceptual Framework on the Social Determinants of Health: (WHO 2010, 6)

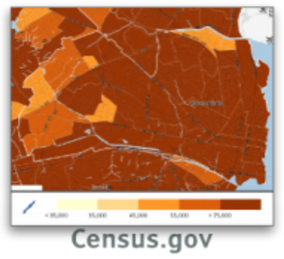


Measuring equity

SIMPLE COMPARISON OF VARIABLES

The pattern on these maps that provides a tangible insight into systemic imbalance. The southwest corner of Alexandria is the most densely populated, has the lowest income, yet has the least amount of parks and trails in Alexandria.

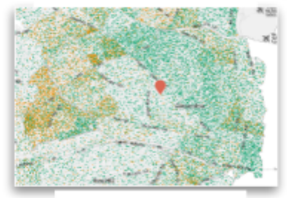
Median Household Income



Census.gov

Maps for Alexandria

Black and White Population Distribution



Socialexplorer

Parks in Alexandria

Google Maps

Bike Trail Distribution

Alexandria Government

Population Density

Socialexplorer

COMPOSITE INDICES

Gini Coefficient: Measures inequity on 0-1 scale, where 0 = perfectly equal, and 1 = completely unequal
- 2011-2015 ACS 5-Year Estimates for Alexandria = 0.4378

Wustemann et al, 2017:
This paper uses green space area and distribution data along with the Gini Coefficient to view inequity through green space provisions.

Many others such as Duncan dissimilarity index, Herfindahl index, Blau index

Theil Statistic, Theil (1972): "Sum of the ratio of each person's/group's income to average income, multiplied by the natural log of the ratio" - Wang & Mastracci (2014)

STATISTICAL AND ECONOMETRIC MODELS

Index of Concentration at the Extremes: Measures economic polarization by analyzing how the population is concentrated in the extremes of wealth or poverty.
For example, racial segregation

Bailey et al, 2017:
This paper used ICE briefly to discuss how it can indicate various mortality rates, particularly when focusing on income and race

Expected Inequality-Averse model, Saiko (2013): "This model measures individual's inequality aversion under risk that captures a preference for equality of opportunity v/s equality of outcome"

Principle of proportional shortfall, Wetering et al (2013): Priority should be given to those who stand to lose the most
For example, priority healthcare to those suffering the most/have the highest risk of death from a disease