

How Smart City Policy Influences Bandung City Quality of Life

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Background

World population increases by 1.1% or about 75 million annually and more than half population live in urban areas. Huge urbanization cause variety of risks, concerns, and problems from both hard such as deteriorating infrastructure conditions and soft, e.g. social segregation (Nam & Pardo 2011).

Smart city enables improvement of citizen quality of life (QoL) through services and local wisdoms (Saphiro 2005).

However, there are limited number of academic research have concerned the dynamics of the smart city phenomenon (Chourabi+ 2012).

Objectives

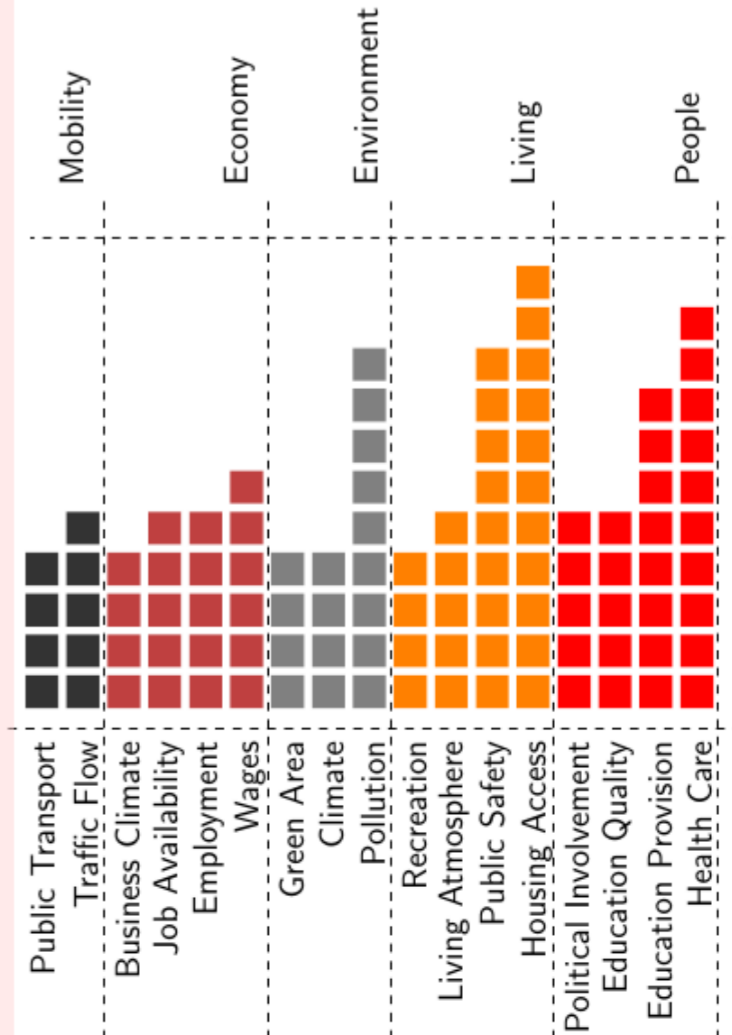
- + To study the general conditions of Bandung smart city
- + To explain the influence of smart city policy to the QoL
- + To identify and estimate the difference of city QoL before and after the implementation of the policy
- + To identify the policy that affects the QoL effectively

Methods

- + Identify appropriate variables involved in the city model that also emphasizes the leading QoL variables
- + Build default urban dynamics model that mimics Bandung City, accounting those identified variables.
- + Define smart city intervention.
- + Simulate the dynamics of the city from aggregate QoL perspective.

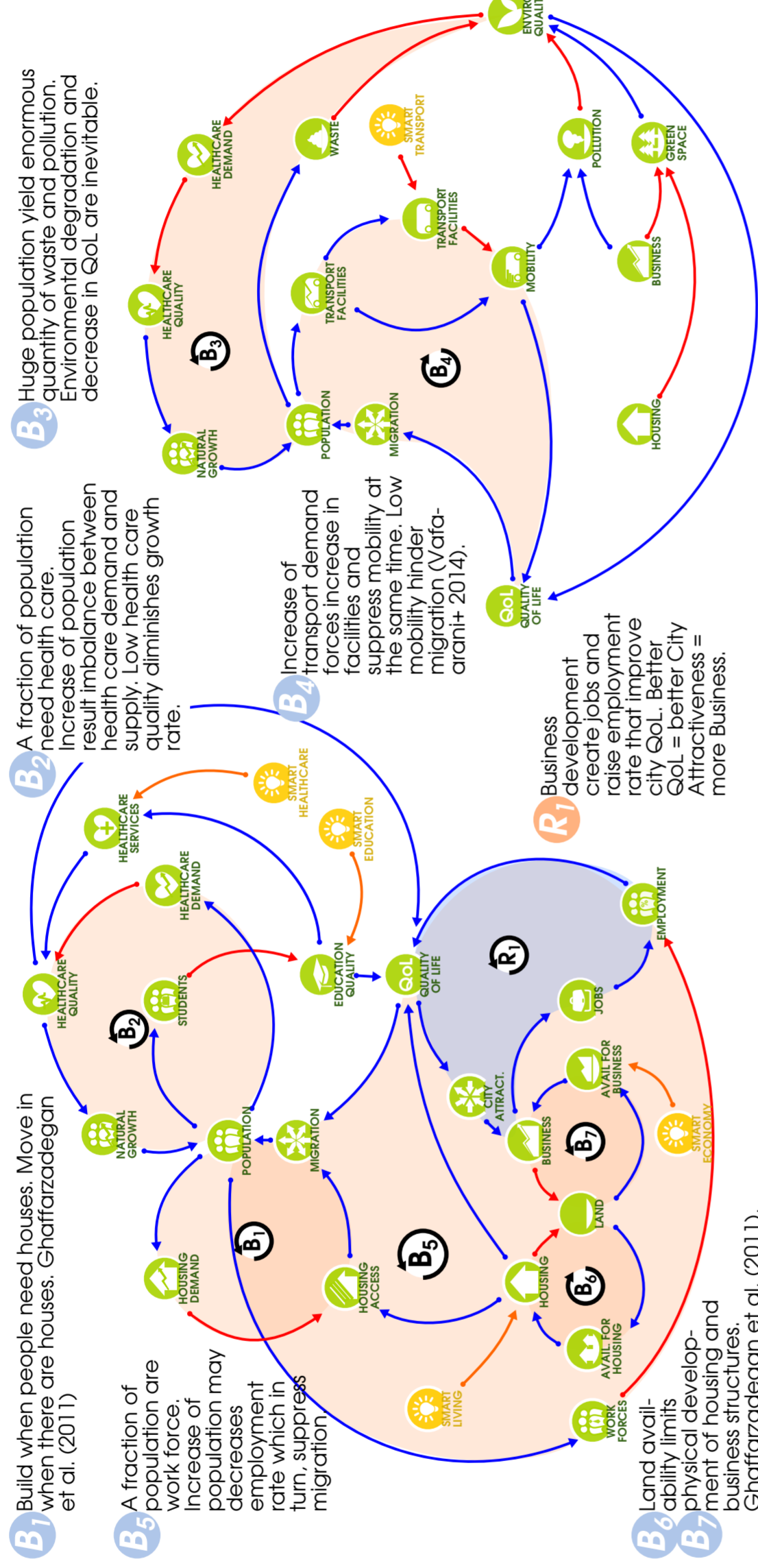
QoL Variables

Important QoL variables to consider according to fifteen published works starting from Smith (1973) to the latest ISO no. 37120:2014 about Sustainable development of communities - indicators for city services and QoL.



Smart City Intervention

Following LAPI (2014), there are several smart city policy to be accounted: **Smart Education, Smart Transport, Smart Healthcare, Smart Government, Smart Economy, Smart Living.**

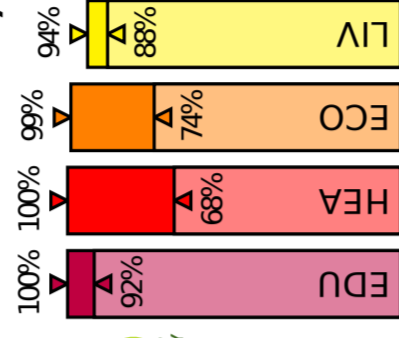


Results

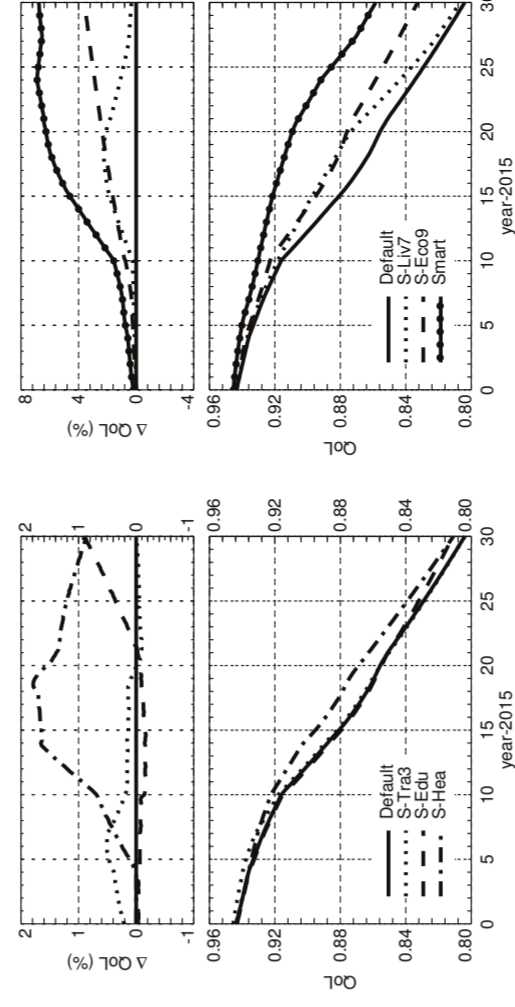
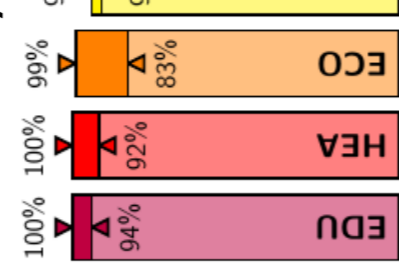
As the result of increasing population, all QoL measures decrease with time. Initial (t=0) and final (t=30 year) QoL in every sector is displayed in figure on the right.

The city QoL estimated prior to the smart policy intervention and the one afterward the simulation has a slight difference in a positive way (upto 8%), although generally the city QoL declines through time.

Without Smart City



With Smart City



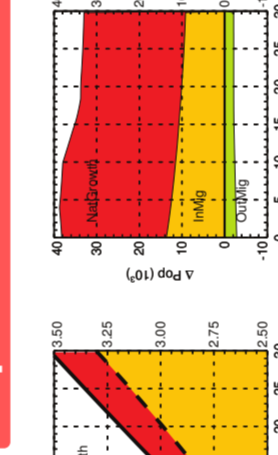
Conclusions

- (1) The relation between QoL and dimensions of the city are represented by quality measures. Weighted average of these measures determine the aggregate city QoL.
- (2) Smart city policy influences related dimensions which in turn influences overall QoL.
- (3) Smart living and economy have more effect on the improvement of city QoL.
- (4) In general, smart city programs can be prioritized according to:
 - (a) the declining rate of quality measure in that sector prior to smart city intervention
 - (b) the importance of that sector from the perspective of citizen.

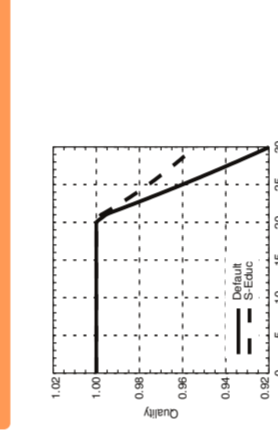
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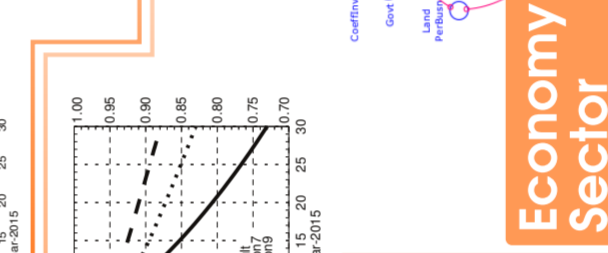
Population Sector



Education Sector



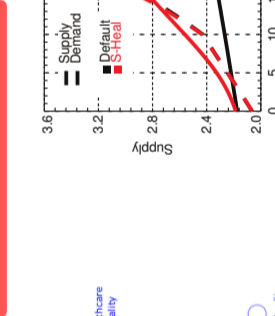
Economy Sector



Living Sector



Health Care Sector



Transp. Sector

