

Urban Freight Logistics: What Do Citizens Perceive?

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Background



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Background

- Urban freight logistics is critical, but it generates externalities
- Collaborative planning is a must (Browne and Gomez, 2011; Oliveira et al., 2018).
- Stakeholders in urban areas have complex interactions and their perceptions are not always aligned (Vieira et al., 2015; Kiba-Janiak, 2016).
- When planning, Citizens are usually left out of the design of freight policies (Amaya et al 2020)

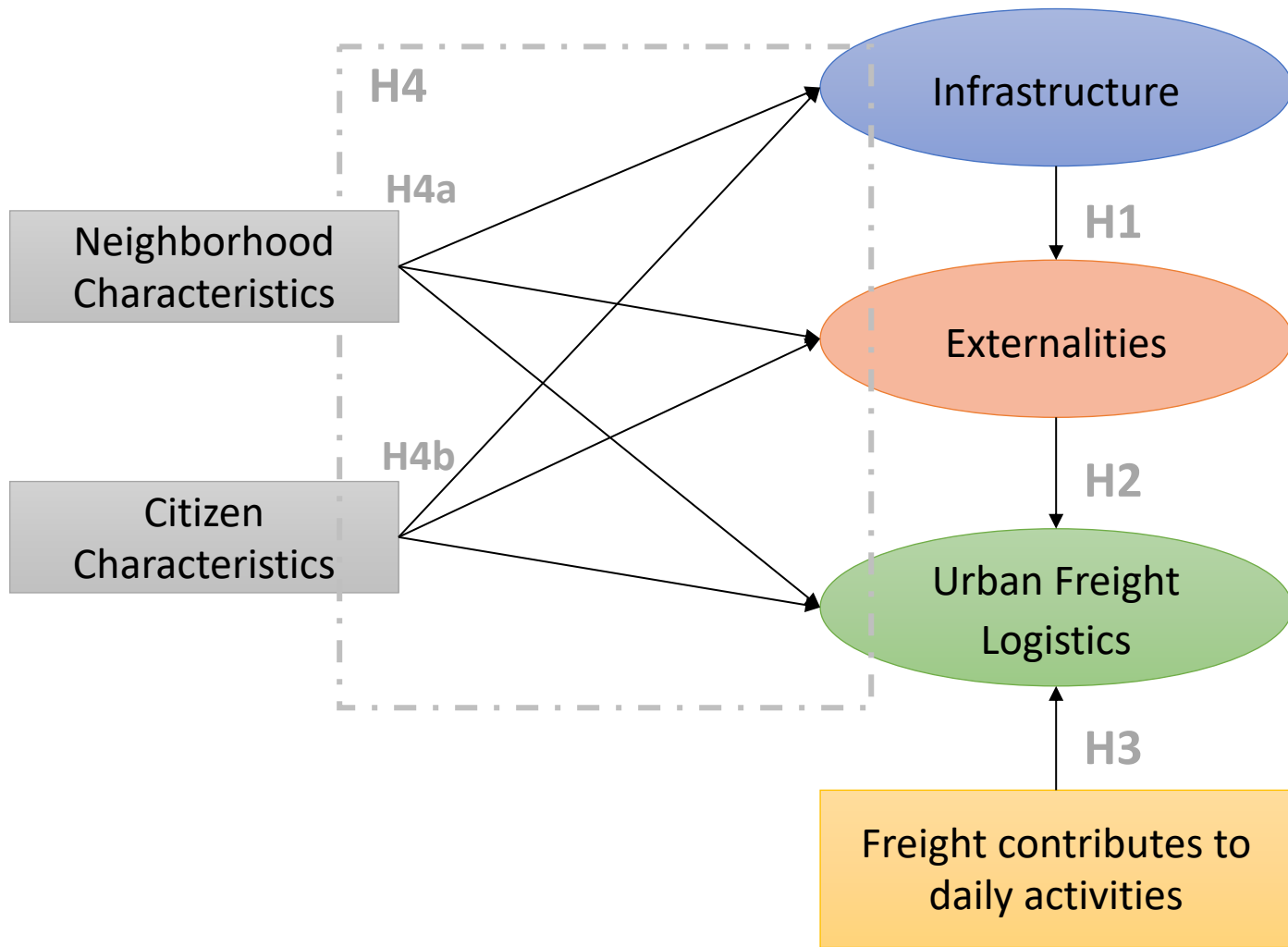


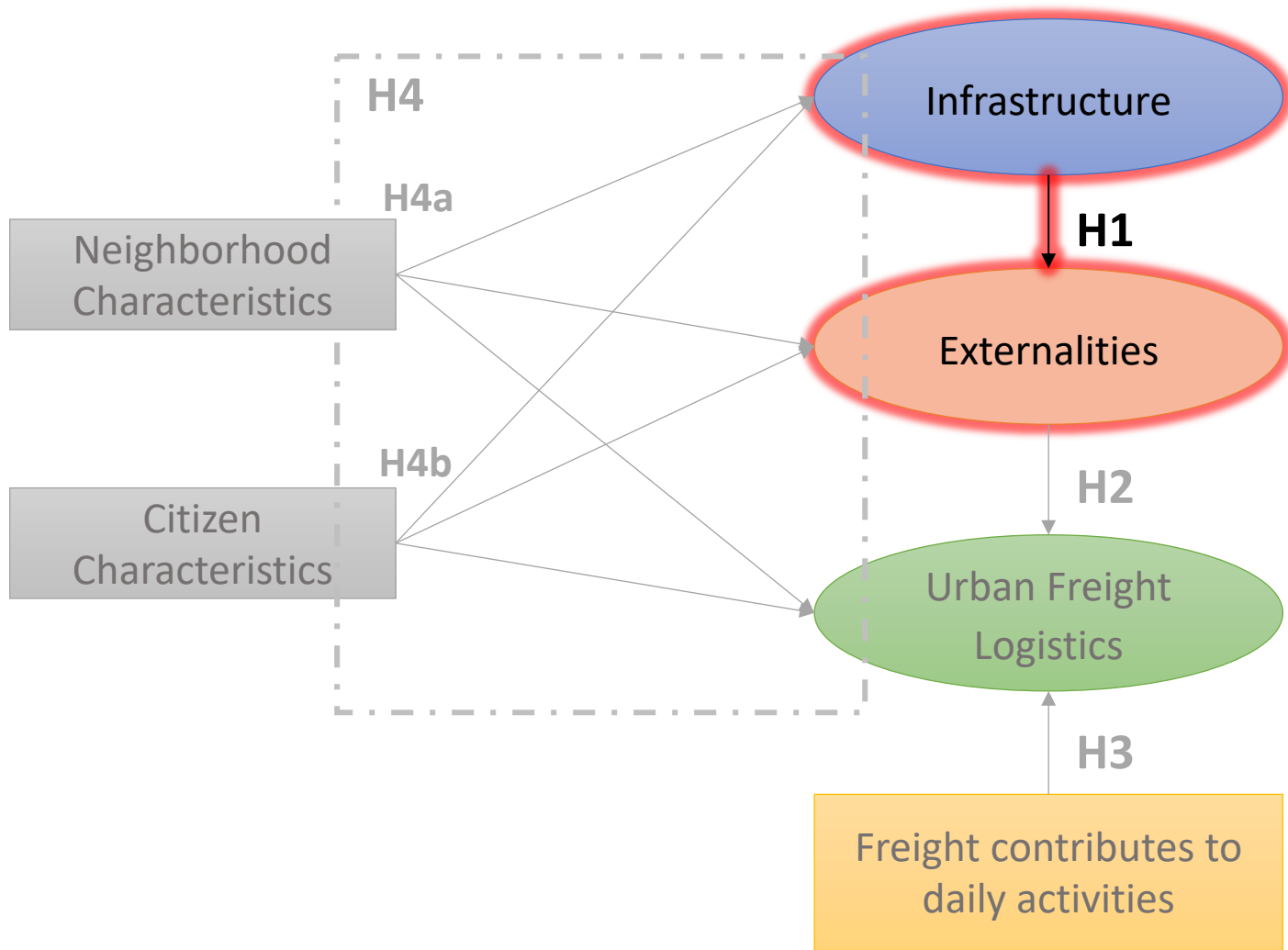
What do Citizens Perceive?

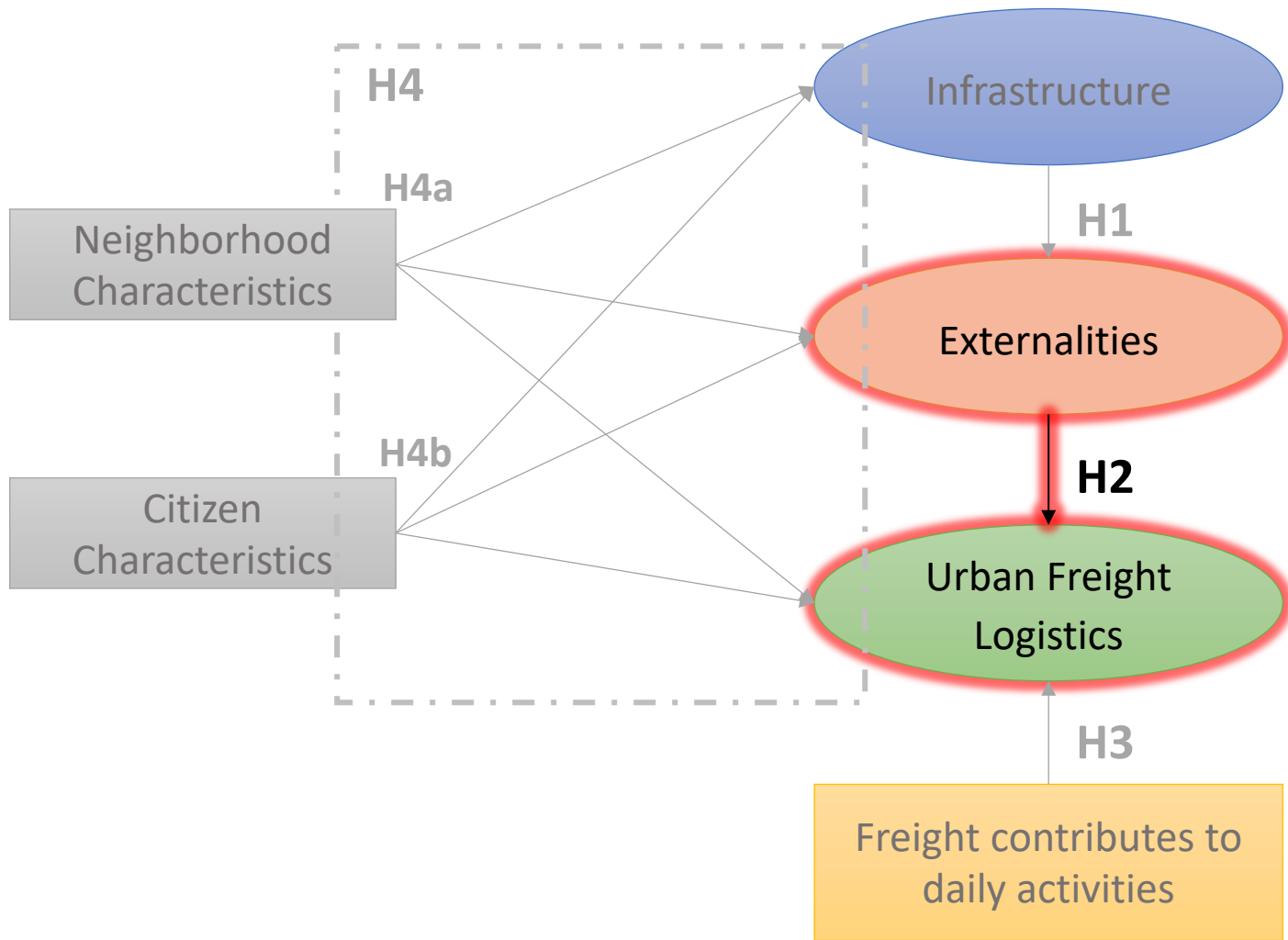


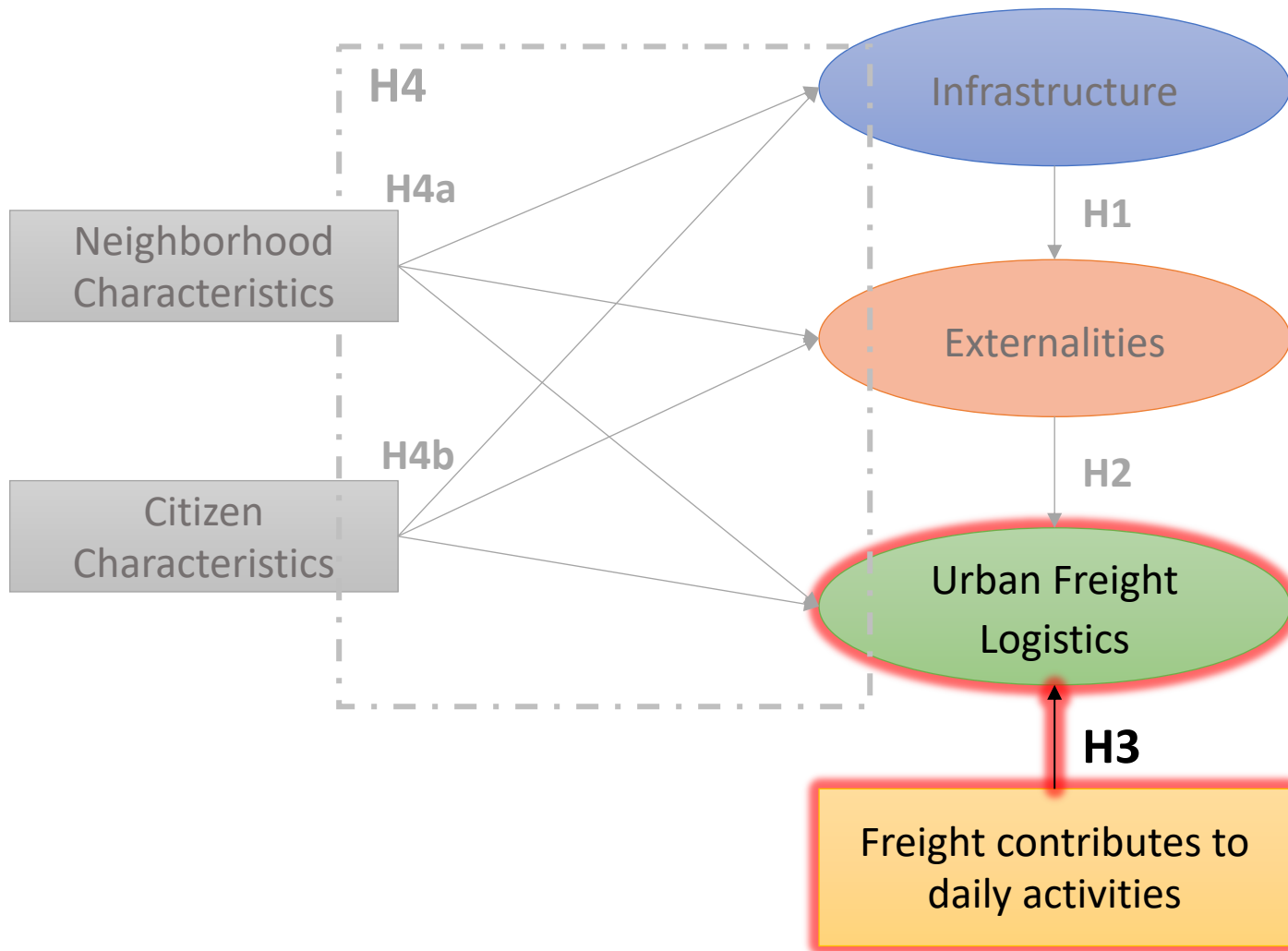
Conceptual Framework

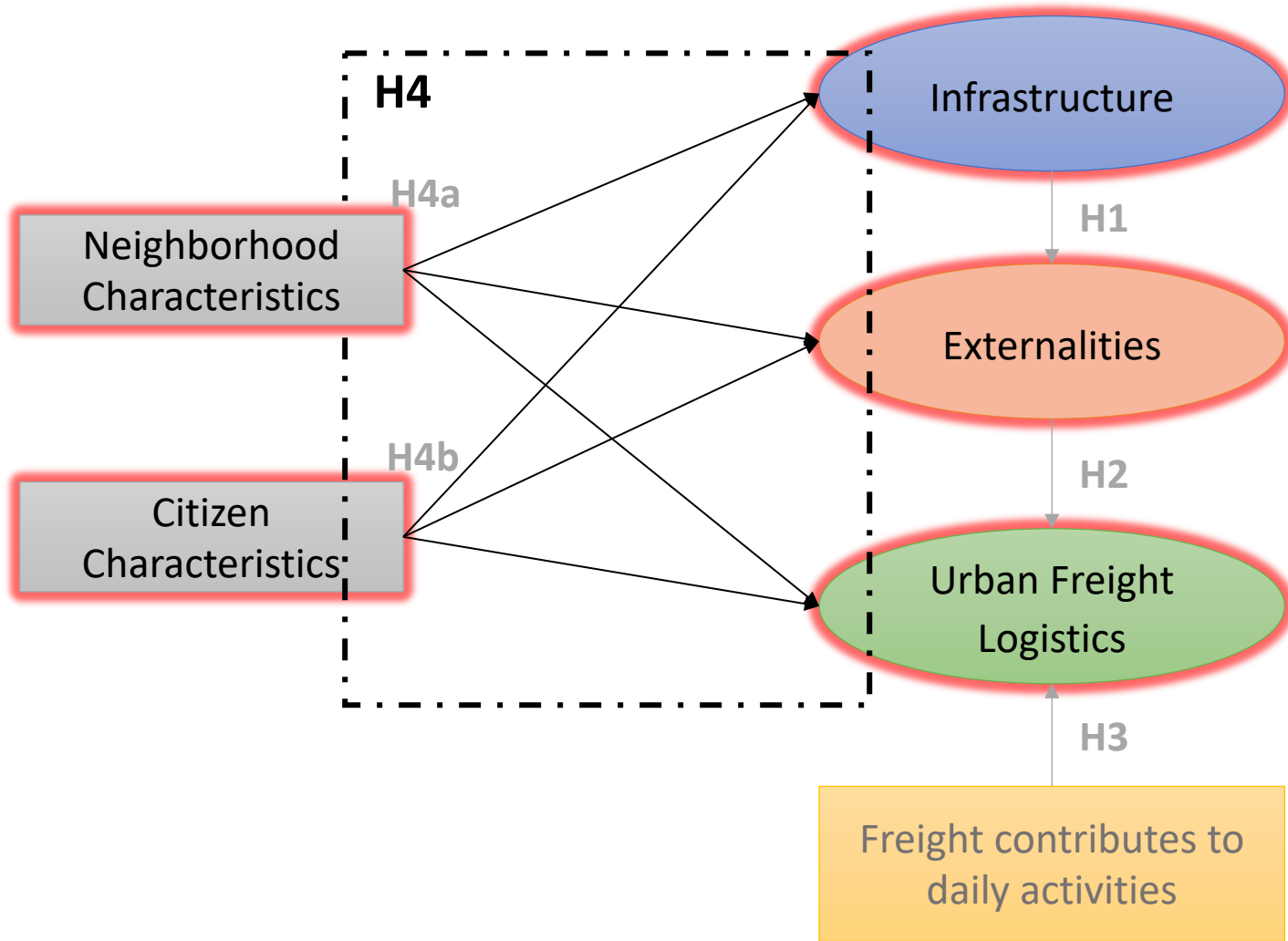












Survey Design and Implementation



Perception Indicators (14)

Socio-economic Information

- 43% Female, 57% Male
- Income Level: 43% Low, 40% Medium 17% High

Data Collection

- Downtown (86)
- Manga (89)
- Bocagrande (94)



SEM Modeling



Modeling Results

As perception of infrastructure conditions increases, perception of negative externalities decreases

H1 → Confirmed



Modeling Results

Higher perception of negative externalities **decreases** the freight logistics performance perception in the city

H2 → Confirmed



Modeling Results

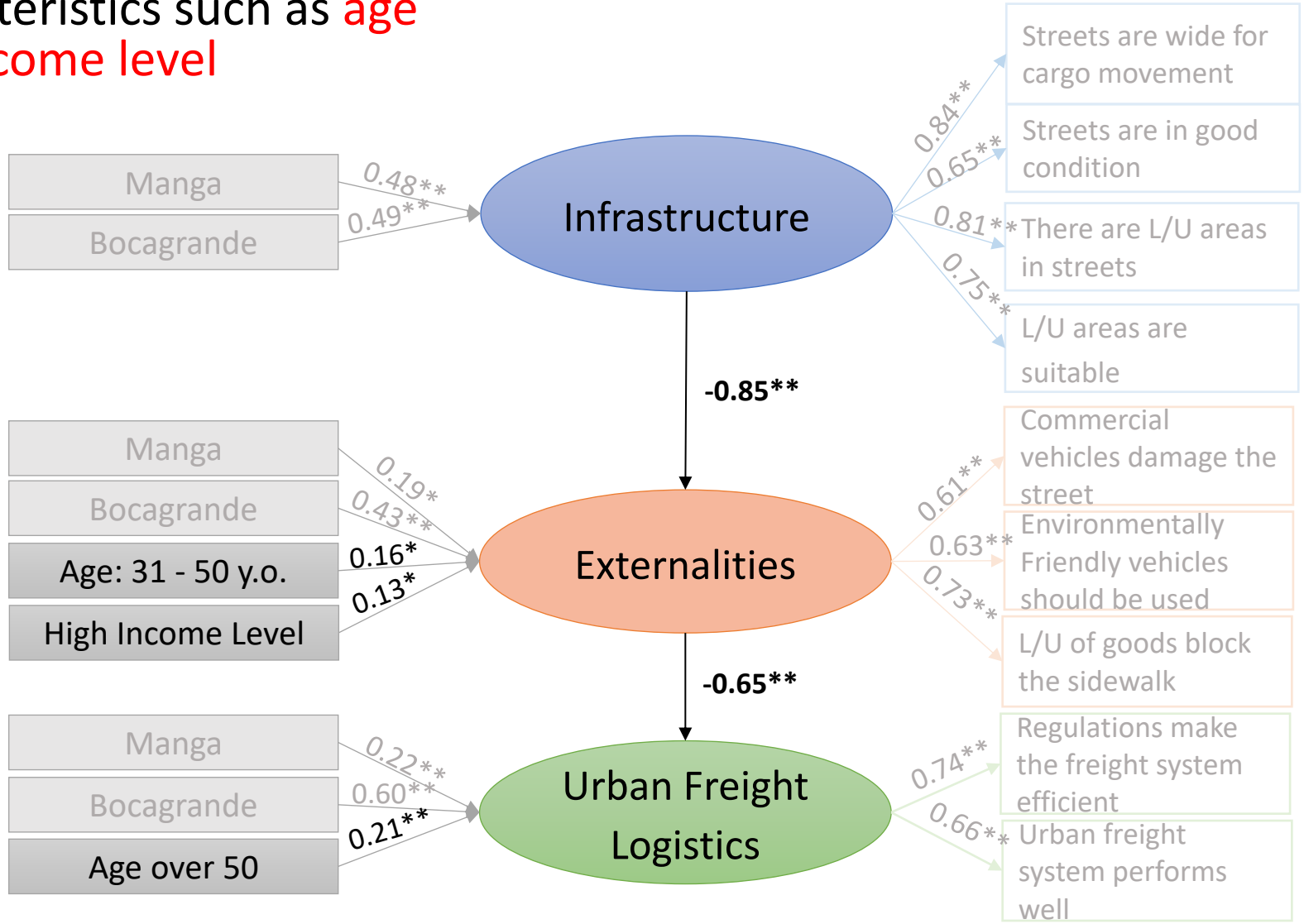
Awareness of freight in daily activities **reduces** the perception of urban freight logistics.

As awareness increases, there is a higher expectation that freight operations will be conducted efficiently

H3 → **Confirmed**



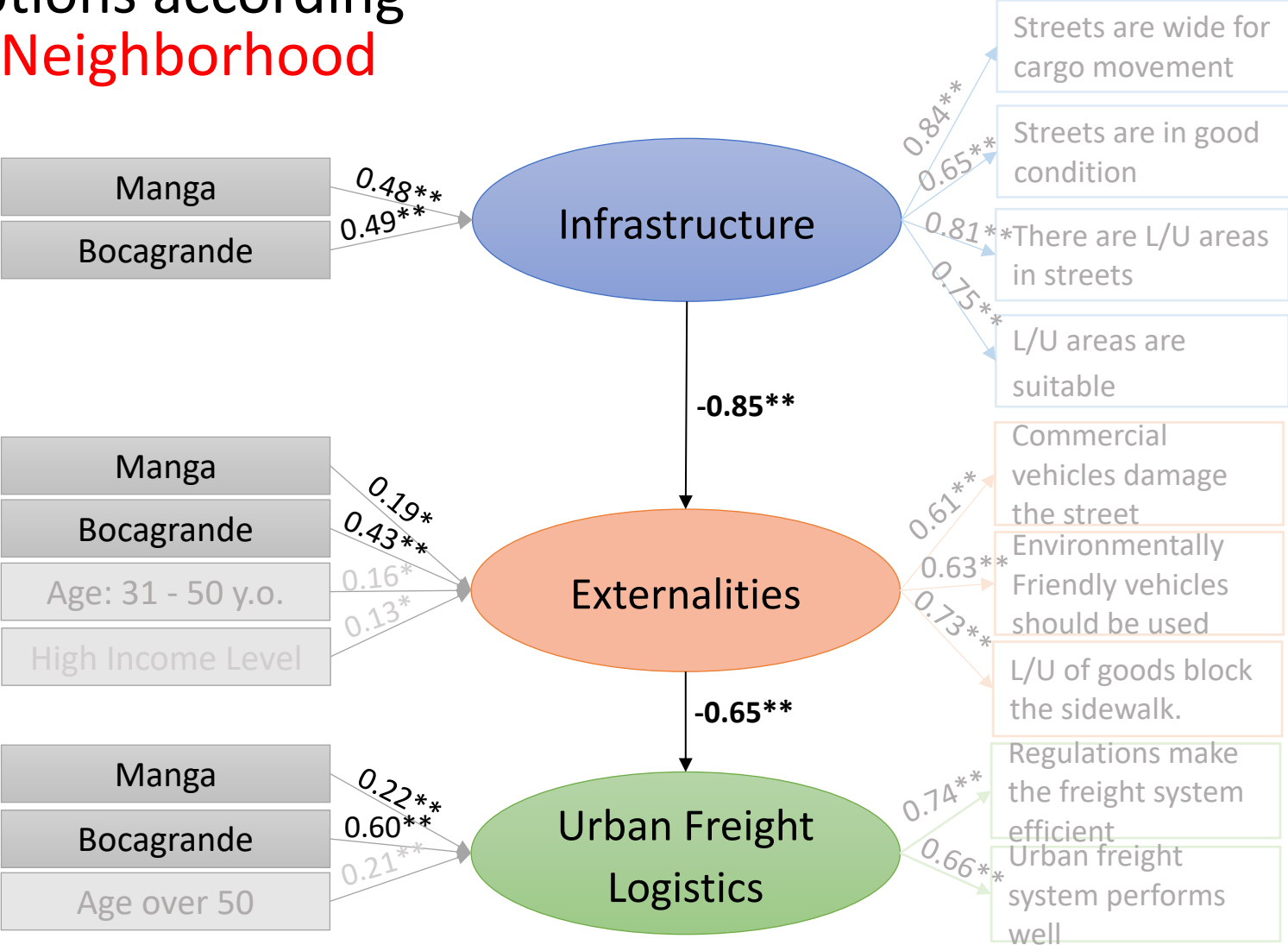
There are variations in perceptions according to characteristics such as **age** and **income level**



Standardized Coefficient
 ** P-value <0.05
 * P-value <0.10

H4b → Confirmed

There are variations in perceptions according to the **Neighborhood**

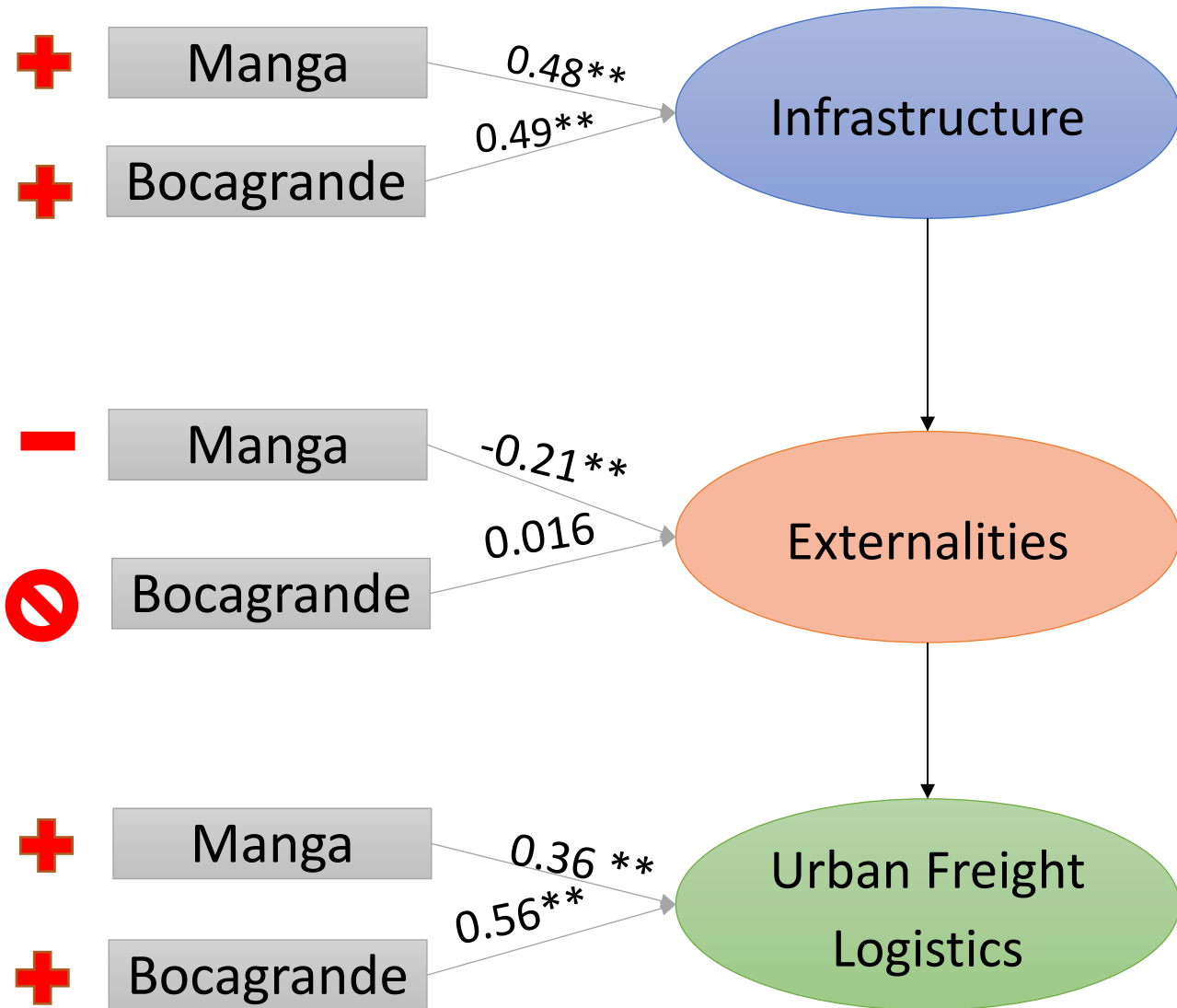


Standardized Coefficient
 ** P-value < 0.05
 * P-value < 0.10

H4a → Confirmed

Mediation Analysis

Total Effects of Neighborhoods on the Latent Variables



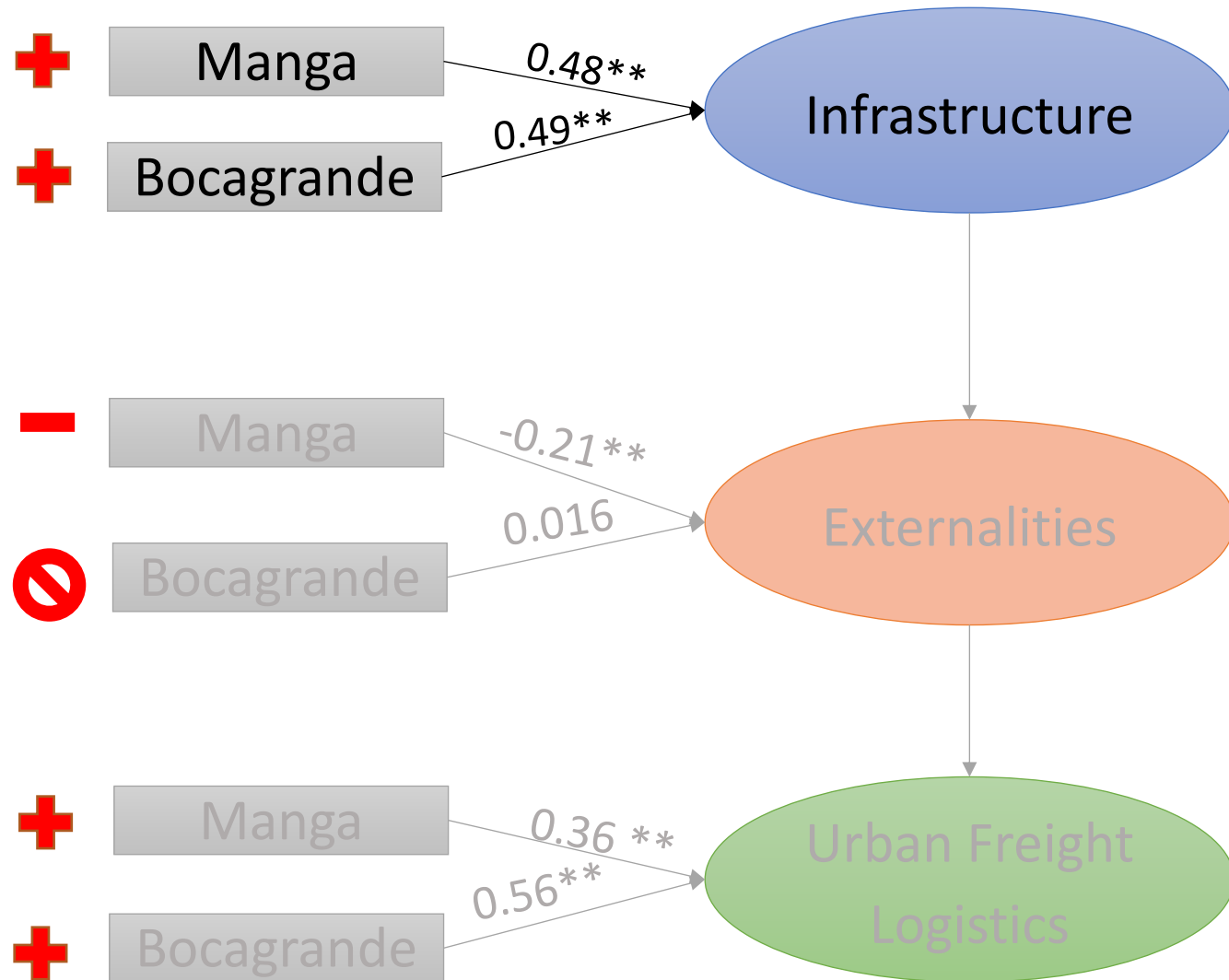
Standardized Coefficient

** P-value < 0.05

* P-value < 0.10

Mediation Analysis

In Manga and Bocagrande citizens perceive **better infrastructure** compared to Downtown.



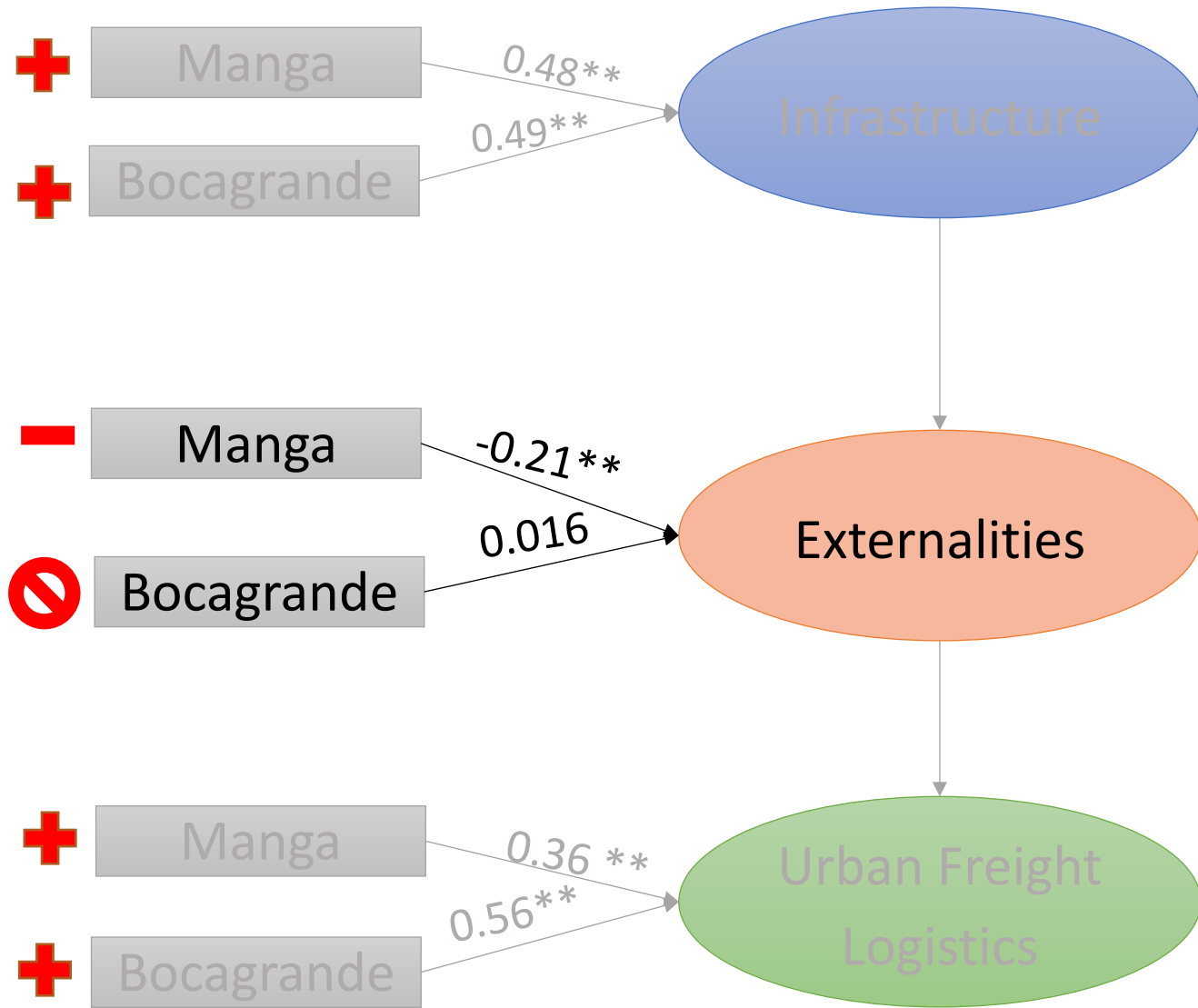
Standardized Coefficient

** P-value <0.05

* P-value <0.10

Mediation Analysis

Citizens in Manga have a **lower/negative** perception of externalities compares to those in Downtown



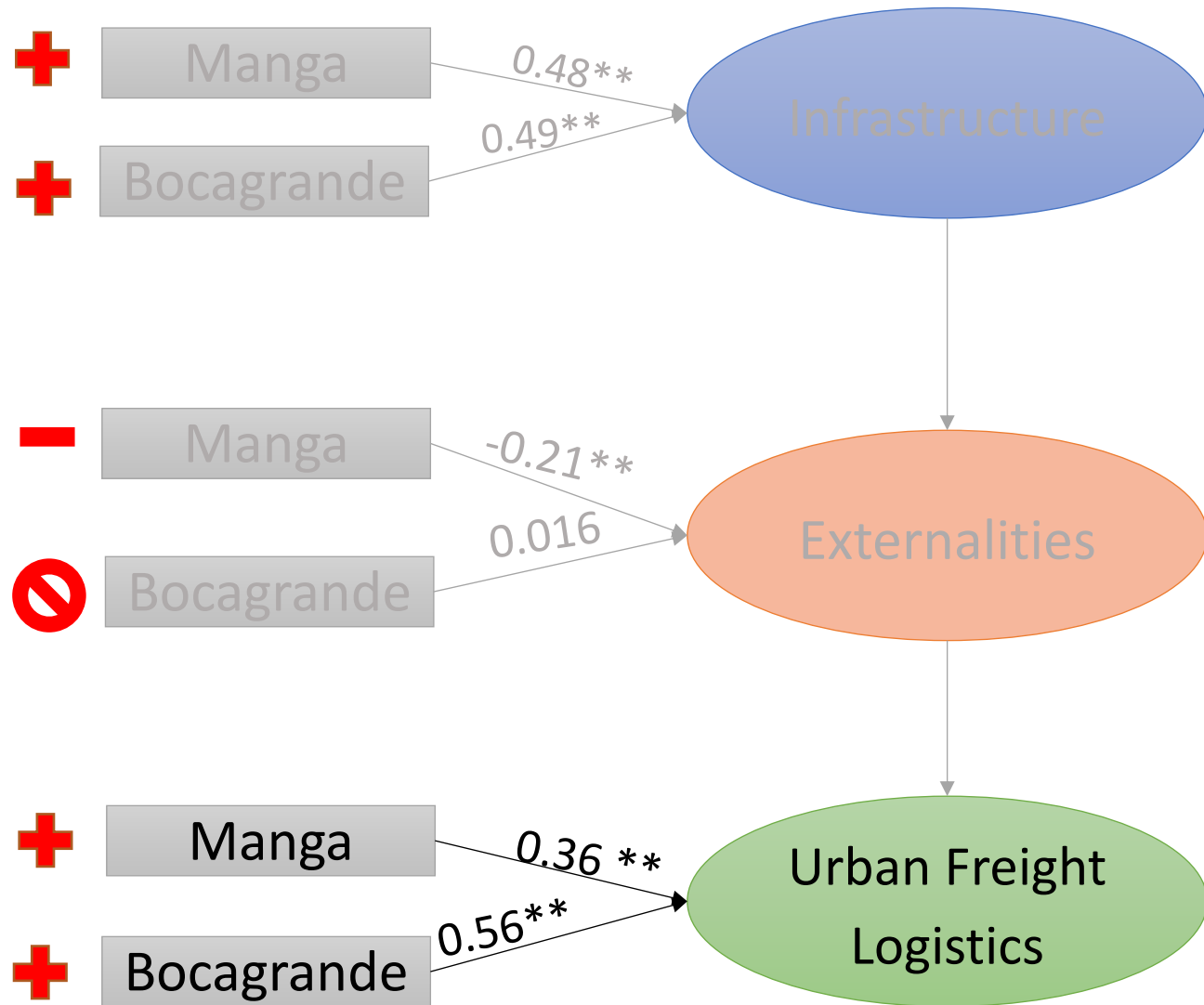
Standardized Coefficient

** P-value <0.05

* P-value <0.10

Perception of freight operations is **lower/negative** in Downtown

Citizens perceive **poor infrastructure, high externalities, and low performance of urban freight logistics** in Downtown



Standardized Coefficient

** P-value <0.05

* P-value <0.10

Conclusions



Conclusions

- Citizens perceive the negative **externalities** produced by freight operations
- The more **aware citizens** are on the importance of cargo, the **stricter** they are **in evaluating** the performance of **urban freight logistics**
- **Policies and initiatives** must be developed based on the different **land uses** and the availability of **infrastructure** in the areas of interest



Conclusions

- Citizens do have a perception of urban freight logistics. Decision makers should grant citizens participation in the planning process
- Planners should take action to improve freight operations in the area of study



Thanks! Questions?

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