Urban clusters: case of São Paulo

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Motivation / Background

Freight transport generates negative impacts to cities, but it is necessary for its development

→ Conflict: Comercial Interests vs Urban Environment

→ Current Solutions: Development of Urban Logistics Best Practices

Similar policy measures in different urban áreas: different associated impacts

→ Motivation: Potential to incorporate infraestructure, demographic and socioeconomic Data

→ Better logistics for cities; Better cities for logistics

Key Question / Hypothesis

The objective of the project is to apply a data-driven methodology in the city of São Paulo, to identify logistics clusters that will help drive the implementation of urban logistics best practices.

With a better understanding of the city's sub-areas, the study was instrumental to guide the selection of solutions that match with São Paulo's urban logistics characteristics and that rationalize city planning by clusters.

Relevant Literature

Dablanc, L. (2009). Freight transport for development toolkit: Urban Freight. Transport Research Support.

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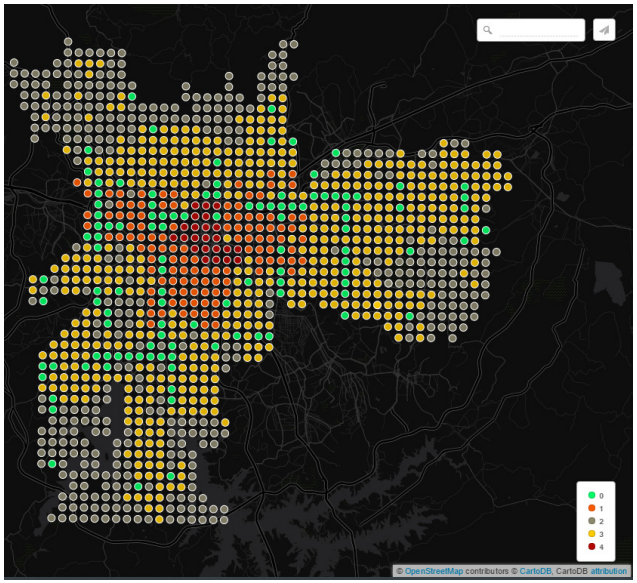
Porter, M.E (1998). Clusters and the new economics of competition, Harvard Business Review, November/December 1998.

Sheffi, Y. (2012), Logistics Clusters: Delivering Value and Driving Growth, The MIT Press, Cambridge, MA.



Methodology

Collection and Processing Information
Demographic data | Socioeconomic data | Regulation | Infrastructure data

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Statistical Analysis
Principal Component Analysis | K-means Clustering

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Results
Logistic clusters identification

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Conclusion
General recommendations for public policy aiming contributions for freight mobility

Initial Results

Cluster (0)	Residential Zone	Very high population concentration. Low establishments concentration. Urban lockers can improve last mile delivery assertiveness (B2C).
Cluster (1)	Critical zone for urban logistics	Lack of accessibility due to low road density and low road capacity with high establishments concentration. Inside restriction zone. Urban distribution centers can aid on freight consolidation.
Cluster (2)	Peripheral zone	Necessity of public policies aiming the economic development of the region. Infrastructure development is also required. Slums concentration.
Cluster (3)	Growth potential zone	No infrastructure constraints. Low establishments and population concentration. High growth potential for commercial activities.
Cluster (4)	Central zone	Very high concentration of commercial establishments and population. Inside restriction zone. A satellite platform can be a great solution for freight consolidation. Further studies are needed.

Expected Contribution

The methodlogy allowed the segmentation of the city into five different clusters, aiding on the provision of insights that contribute to city logistics planning and last mile delivery (B2B and B2C).

Solutions as urban lockers, urban distribution centers, satellite platforms have been suggested according to the cluster characteristics.

Further, zone-specific analyses are needed to test the effectiveness of ech of those solutions.

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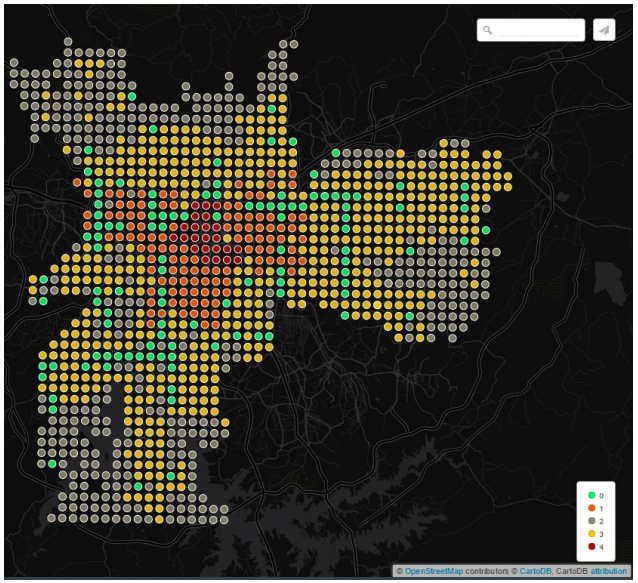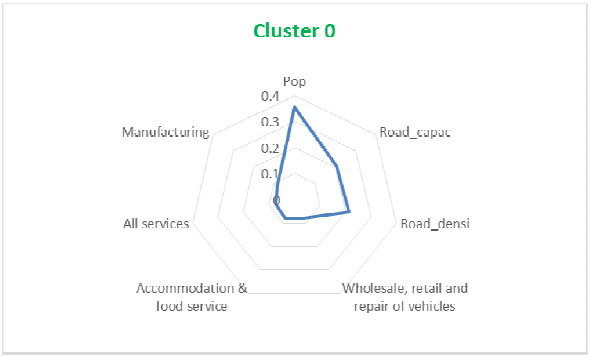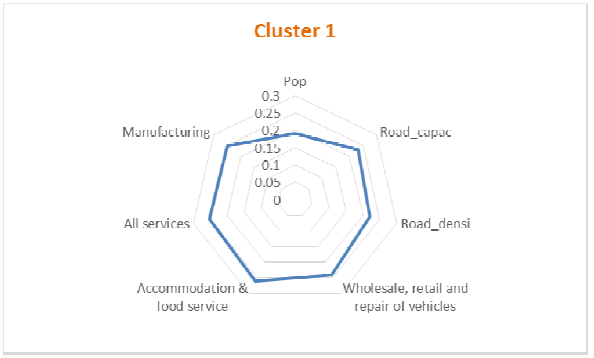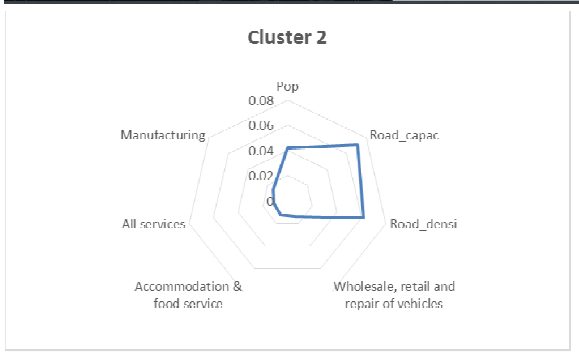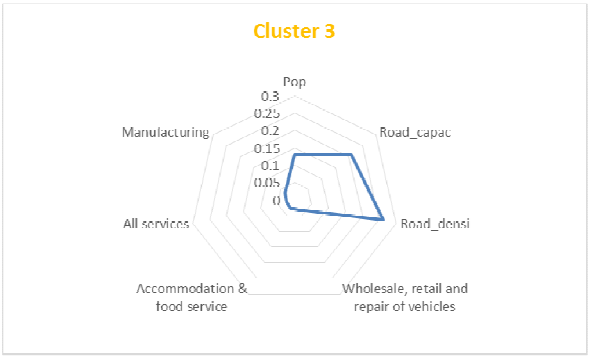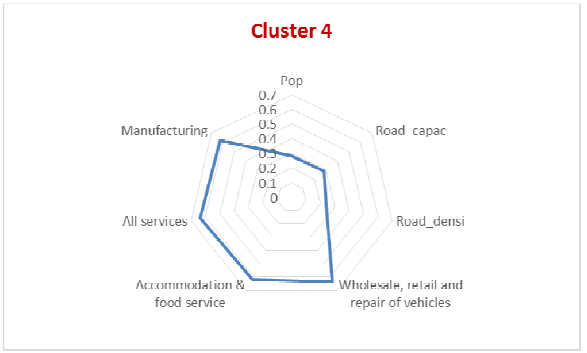
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