

	<h2>Urban Logistics in Belo Horizonte</h2> <p>- some research -</p>
	
<p>Sixth CLI Academic Workshop</p>	<p><i>Leise Kelli de Oliveira – leise@etg.ufmg.br</i></p>
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Some researches

- Economical and Environmental Analysis of an Urban Distribution Center for Belo Horizonte City (Brazil)
- The investigation of overnight delivery in Belo Horizonte

Economical and Environmental Analysis of an Urban Distribution Center for Belo Horizonte City (Brazil)

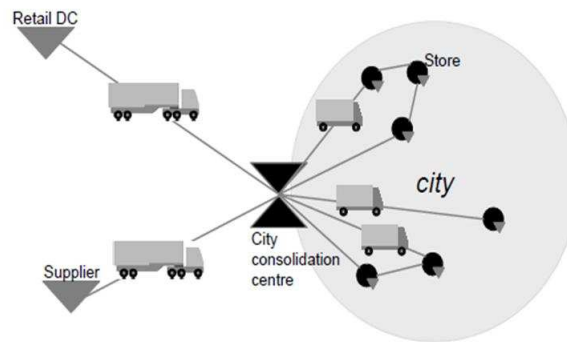
Economical and Environmental Analysis of an Urban Distribution Center for Belo Horizonte City (Brazil)

Motivation

- Analyzing the urban environment and its relationship to freight transport can be highlighted some negatives externalities such as noise, road safety, traffic congestion and pollutant emission that cause serious problems to economical and environmental efficiency of a city and, consequently, to supply chain.
- This way, Urban Distribution Center Scheme (UDC) is seen as an important solution to mitigate these problems by consolidating products from different shippers in the same vehicle.
- The idea that involve the UDC concept is to separate logistics activities inside and outside the city.

Economical and Environmental Analysis of an Urban Distribution Center for Belo Horizonte City (Brazil)

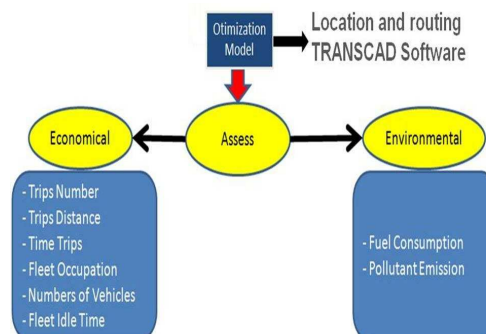
Motivation



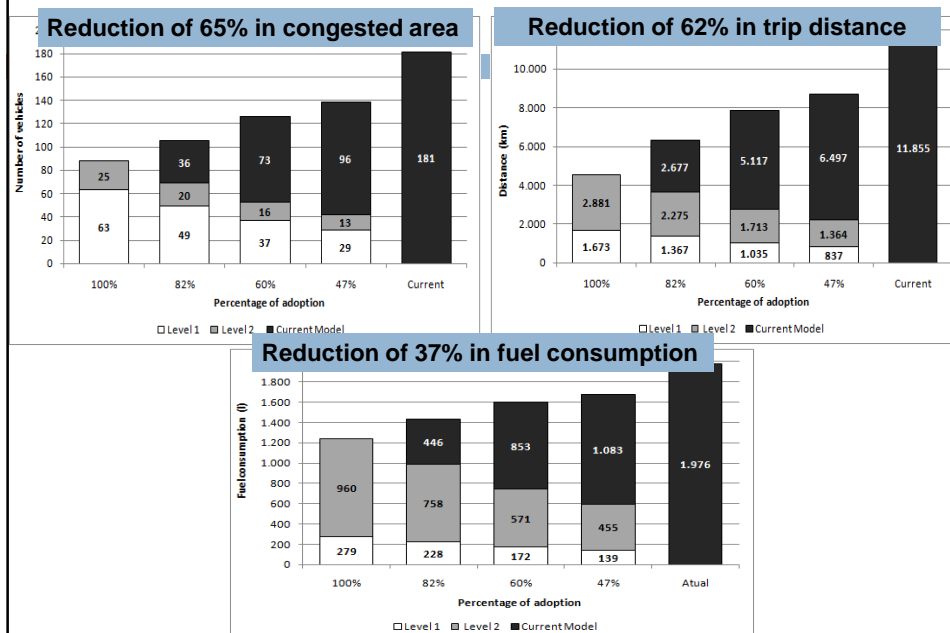
Economical and Environmental Analysis of an Urban Distribution Center for Belo Horizonte City (Brazil)

Methodology

- According an adoption model to evaluating retailer's demand and variations in network configuration, 64 scenarios were developed. To each scenario, economical and environmental parameters were assessed.



Results: Details from Each Level of Analysis in the Best Logistic Configuration



Main results

- The methodology could be applied in Belo Horizonte city showing interesting potential results;
- Investment analysis and city traffic analysis are important issues to future researches in relation to UDC scheme;
- Cooperation and partnership are relevant aspects for a successful implementation;
- UDC Structure X Retailers' Adoption using State Preference Technique

The investigation of overnight delivery in Belo Horizonte

Overnight Goods Delivery

- It is the delivery to retailers and shops in the urban area during the night hours when the city is usually quiet and inactive.
- In Brazil, the typical time is between 8p.m. and 7a.m.
- Principal aspects (Forkert and Eichhorn, 2004):
 - ▣ Delivery during night time with specially equipped low-noise vehicles;
 - ▣ Permission for larger trucks to enter the city centre, which are restricted during the day time.

Overnight Goods Delivery

- Benefits (Forkert and Eichhorn, 2004):
 - ▣ Reduces delays for logistic service providers by using free road capacities at night;
 - ▣ Shorter travel time for all vehicles;
 - ▣ Reduces emissions and energy consumption (less congestion during night time, direct access to shops);
 - ▣ Increases logistic efficiencies in terms of deployment of heavy goods vehicles and manpower;
 - ▣ Consolidation and clustering of shipments;
 - ▣ Positive contribution to road safety.

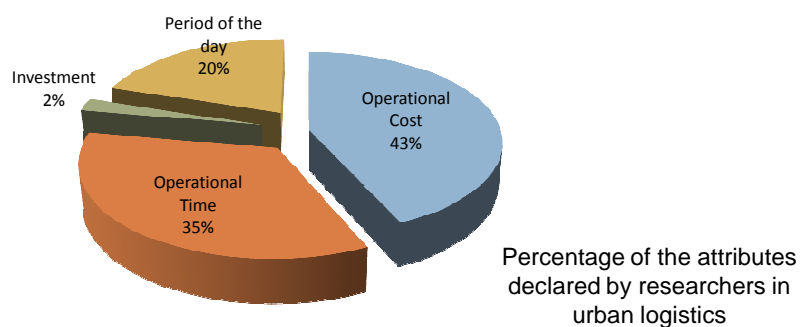
Overnight Goods Delivery

- Success factors (Forkert and Eichhorn, 2004):
 - ▣ Quality label indicating that quiet equipment is used;
 - ▣ Cooperation of city authorities concerning alternative delivery schemes;
 - ▣ Research to develop low-noise equipment and improve organization;
 - ▣ Shops able to receive the goods during night time;
 - ▣ Infrastructure around ramps, quiet loading and unloading locations, quiet pavement;
 - ▣ Training of drivers and ramp personnel;
 - ▣ Contracts between retailer/receivers and shippers ensuring that goods are transported with quiet equipment;
 - ▣ Cooperation between shippers and transporters ensuring that the transporters use quiet equipment.

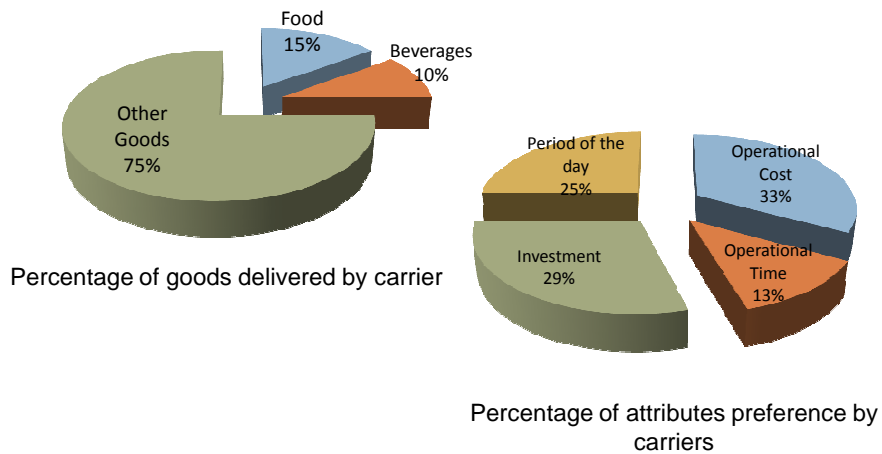
Methodological Procedures

- **Stated choice preference technique**
- This research was applied *in loco*.
- To transporters and retailers from the inner-city of Belo Horizonte (MG) and to researchers in city logistics in Brazil.

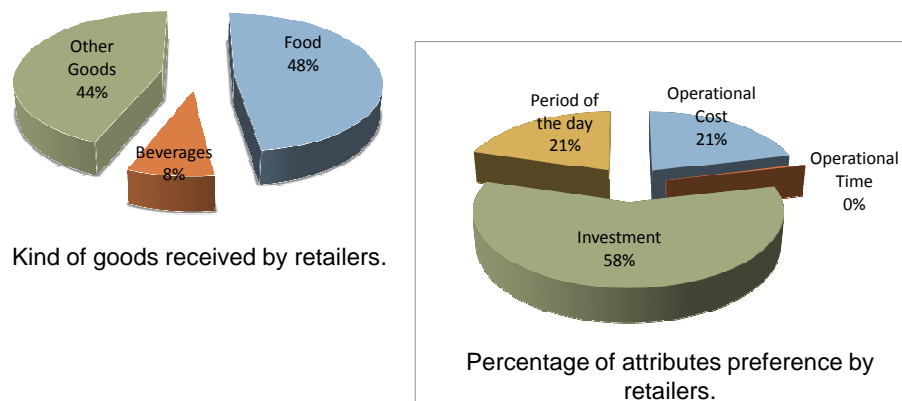
Researchers' preference



Transporters' preference



Retailers' preference



Conclusions

- Generally, the society is resistant in adopting new ideas.
- To apply the stated choice preference technique, it is important to identify the attributes that are factors of success for a new idea.
- The overnight goods delivery is an innovative solution to reduce the number of load vehicles in inner-cities.
- Belo Horizonte is one of the cities where this solution is being implemented in its central region, seeking to reduce the high levels of congestion and accidents.

Other studies

Current Surveys

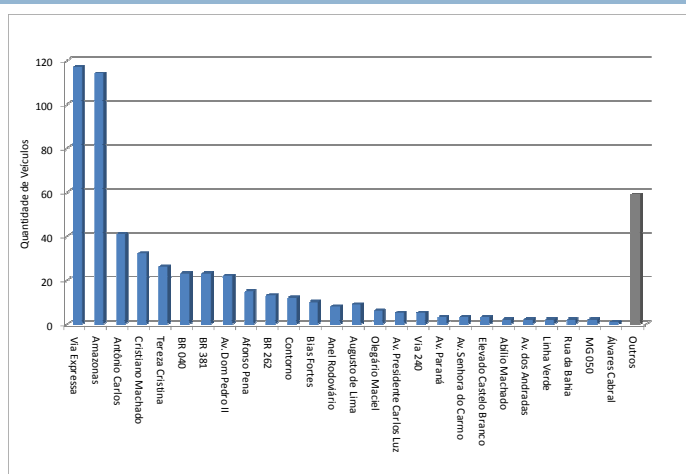
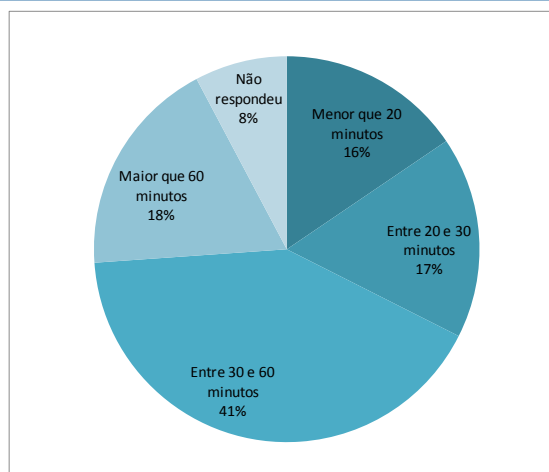
- The investigation of overnight delivery in Belo Horizonte and Fortaleza;
- What is better: overnight delivery or small freight vehicle?
- Diagnosis urban freight transport system in Belo Horizonte;
- Origin-Destination Matrix for Urban Freight Transport in Belo Horizonte;

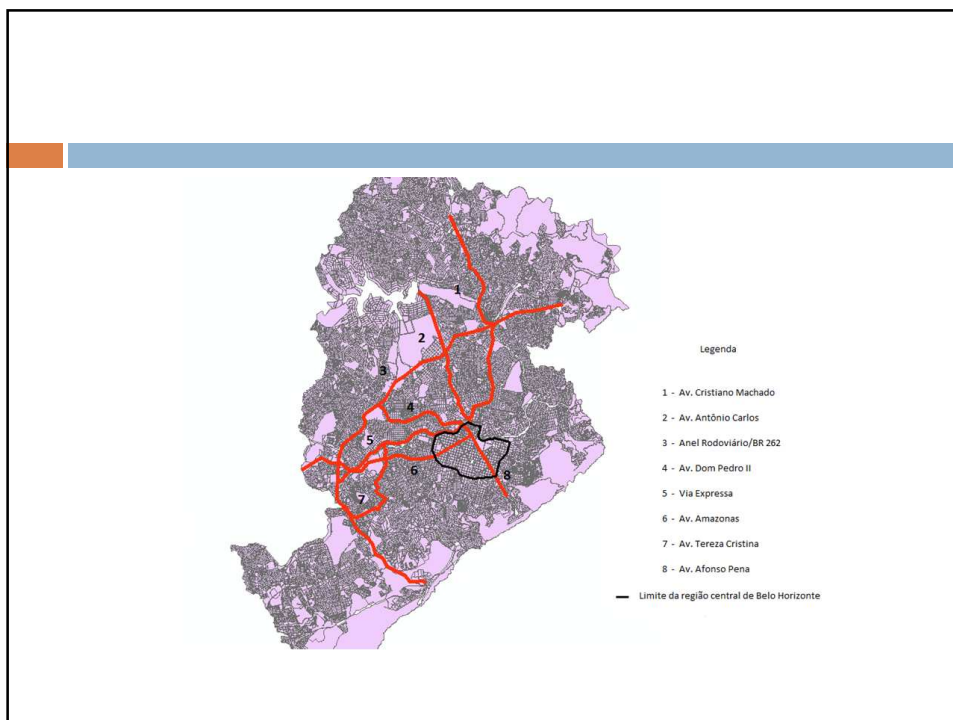
Current Researches

- Simulating urban underground delivery areas;
- Assess the impact of flooded in Traffic: case study in BH;
- Assess the implementation of UCC in BH;
- Definition of assess control strategies in restrict areas;
- Assess the impact of freight vehicle in traffic using simulation.

Diagnosis urban freight transport system in Belo Horizonte







We are open to cooperative researches!





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THANK YOU!

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