Perceptions of retailers and carriers involved with urban goods distribution in Belo Horizonte (Brazil)
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Extended abstract

Objectives and motivation

The purpose of this study is to identify the perception of retailers and carriers involved in urban distribution of goods in Belo Horizonte (Brazil), regarding the effectiveness of practices related to city logistics. In addition, we evaluate the disposition of retailers and carriers in taking part in city logistics schemes or pay to join.

Within this context, it is important to identify solutions to improve and rationalize of urban freight distribution and consider the consequences and results for the stakeholders. The government acts as responsible for establishing rules for the movement of freight vehicles, usually without assessing the causes and consequences. With purpose of promoting the welfare of the population, the government usually consider social benefits, disregarding, for example, the increase in operating costs for carriers and retailers (QUAK, 2012).

The solutions that reduce or mitigate the impacts caused by the negative externalities and urban goods distribution are searched extensively worldwide. In Brazil, most of the strategies adopted by public managers of the major cities in relation to urban freight distribution is restricting the movement of freight vehicles, often practiced by the lack of knowledge of other measures or tools to minimize these impacts (MACARIO et al., 2008). Also as emphasized Dablanc (2009), these restrictions are not always interesting or effective, increasing costs and externalities, contributing to a worsening of the service level of the distribution of goods and affecting entire distribution process for all involved.

The adoption of more than one solution to urban goods distribution problems is eliminated or decreased is extremely important (TANIGUCHI et al., 2001). The study of these solutions and their consequences for all involved should be considered to reduce the impacts from the urban freight transport through effective solutions in order to improve urban mobility and consequently the quality of life.

General description and methodology

In this research, we used survey to collect data about two stakeholders in the urban goods distribution: the retailers and carriers. For carriers, the survey includes collecting information on vehicle characteristics, the logistic operator and operation, with questions such as manufacture year and vehicle length, operator category (company or autonomous), number of deliveries in the central area of Belo Horizonte, route used and average travel time. Considering best practice, the issues consider about the perception of the efficiency of the measures and, if operators were willing to pay for participation in some solutions like UDC, truck lanes, technologies such as loading/unloading booking system and real-time traffic information system and off-peak delivery.

For retailers, the survey collects data about the delivery such as amount and times of deliveries, weight and dimensions of the products received and urban goods delivery problems. Similarly to the carriers, the questionnaire has questions about the perception of retailers about good practice and the willingness to pay for services such as booking system to loading and unloading spaces. In addition, the questionnaire investigates the acceptability in relation to subsidies such as tax exemption and cooperative system for off-peak delivery.

To evaluate the perception of the good practices of urban freight distribution, we used the Likert scale, with the options of (i) totally agree, (ii) partially agree, (iii) neither agree nor disagree, (iv) disagree partially and (v) strongly disagree. The perception of good practice efficiency was carried out using the classification (i) very efficient, (ii) efficient (iii) efficiently or inefficiently, (iv) inefficient and (v) very inefficient.

Results and conclusions

We interviewed 283 carriers in Belo Horizonte Central Area, between June-August 2014. The results indicate that carriers for the truck lanes help improve the distribution urban (3.73), but the increase in the number of traffic lanes has a better efficiency (3.78) than truck lanes. The consolidation of goods in UDC (3.34) and the payment for the use of loading/unloading spaces (3.17) may not be as efficient. Despite the fact that loading/unloading spaces be a problem for 92% of carriers, a booking system received a positive evaluation (3.58), but that can be considered low. The off-peak delivery is not well evaluated by respondents (2.94) and elctric or GNC freight vehicle is good (3.70). The congestion affects urban distribution for 75% of respondents. In line with this problem, the solution that best evaluated was the use of a real-time traffic information system (4.22).

We interviewed 335 retailers in the central area of the city of Belo Horizonte, between June and August, carried out through visits and invitation to participate in the interviews in the establishments. The results indicate that the consolidation of goods in UDC (1.55), off-peak
delivery (1.50) and the payment for use loading/unloading spaces (2.69) are no good solutions for the delivery of goods. The retailers believe that a booking system for loading/unloading spaces (3.67) and truck lanes (3.49) can improve the distribution of goods.

The difference between the results indicate the need for open discussion with stakeholders to implement a urban logistics plan in Belo Horizonte. Carriers were willing to participate in certain practices and even pay to participate, since the time lost in transit and in the search for loading and unloading places influences directly to their final cost. Because they are the most interested in a quick and efficient delivery and also in avoiding time wasted in traffic jams and rationalizing the load and unloading operations, this stakeholder believes that such practices are aimed at these objectives and therefore, they are willing to pay for participating. It is possible to highlight in the work the high acceptability, by the carriers, about the use of communication and location technologies, through equipment installed in vehicles.

On the other hand, the retailers did not show similar behaviour as the carriers did – they did not consider the measures effective and they were not willing to participate in programs. Besides not consider the measures effective, some kind of payment to participate in the programs is not well accepted, since they do not perceive a reduction in costs by streamlining, only increase.

Although studies and papers indicate cost reductions by the implementation of urban freight centers and overnight delivery (Holguín-Veras, 2008; Quak, 2008; Van Duin et al., 2009; Correia et al., 2010; Fisher et al., 2010; Palmer e Piecyk, 2010; Verlinde et al., 2010; Oliveira e Correia, 2014), retailers do not understand that these practices leads to reductions costs and neither that they can reduce the shipping value. Information campaigns and meetings including all the stakeholders can reverse this situation, as attested by Maes e Vanelslander (2012). In this sense, the aggregate role of the governemnts is essential.

References

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Keywords: stakeholders; perception; carriers; retailers; Brazil (min = 3; max = 5).