2019

13th International Conference on Industrial Engineering and Industrial Management

XXIII Congreso de Ingeniería de Organización

Organizational Engineering in Industry 4.0

BOOK OF ABSTRACTS

Gijón, 11th-12th July 2019

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I.S.B.N.: 978-84-17445-38-6
DL AS 1875-2019

Imprime: Servicio de Publicaciones. Universidad de Oviedo

13th International Conference on Industrial Engineering and Industrial Management
XXIII Congreso de Ingeniería de Organización
Gijón, Spain, July 11-12, 2019

The daily odyssey of the delivery workers in pedestrianized zones

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Keywords: urban freight distribution, logistics flows, sustainable transport, distribution area, city centre.

1 Introduction

In Urban Logistics, the loading and unloading activities, together with the limited spaces for parking and the increasing number of people visiting the centre, prompted a lot of conflicts between them (Taniguchi & Thomson, 2014). Nevertheless, the delivery of goods has experienced a boom due to the growth of the trade sector in urban centres, especially due to the increasing electronic commerce (Russo et al., 2008; Herrera, 2016). The centre of Cartagena, requires that the distribution should be according to the level of demand. However, the pedestrianization of the city centre has led to the appearance of numerous problems that not only affect the users of this area, but also for transporters (Browne et al, 2008; Bugno et al, 2008).

2 Objectives

The purpose of this research is to propose new areas in order to minimize the costs for logistics companies, according to Aiura & Taniguchi (2005). The research team proposed the following hypotheses:

1. The loading and unloading areas are well located.
2. The loading and unloading areas have an adequate size to the required service.
3. The loading and unloading areas can not be used for other purposes because they are occupied all the time.

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3 Methods

A work plan has been proposed applying the methodology of Taniguchi et al. (1999). Considering the current loading and unloading areas, the urban centre has been divided into two measurement zones, one includes the pedestrianized streets (inner zone) and the other one includes points with relevant logistic activities (external zone). Between both zones, a total of 28 measuring points have been established by the research group.

4 Results

We can determine that the city is characterized by having poor accesses to the urban centre. After delimiting two different areas under study, the work team has suggested a set of alternatives: a huge modification of the legal regulations; the implementation of car technology for delivering, and a proposal of complementary loading and unloading zones. According to the obtained results, small vehicles require a lesser amount of time for staying in loading and unloading zones. In order to improve the rotation, new areas have been proposed due to the urban centre needs 500 m at least.

5 Conclusion

The logistics of Cartagena is influenced by the policies implemented by the local administration and the initiatives of the private sector, which have a negative impact on freight transport. The loading and unloading operations, the scarce spaces available for parking, together with the huge number of people who use these areas in the city centre, give rise to a continuous appearance of conflicts between them. This paper shows the results on urban distribution flows in the centre of Cartagena, due to the large number of pedestrian areas and the existing services located in them. The data analysis have allowed to define the behavior model of the loading and unloading areas, in order to solve daily conflicts in the city centre.

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