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Extending pedestrianization processes outside the old city center; conflict and benefits in the case of the city of Seville

José I. Castillo-Manzano*, Lourdes Lopez-Valpuesta, Juan P. Asencio-Flores

Applied Economics & Management Research Group, University of Seville, Avda. Ramón y Cajal, 1, 41018 Seville, Spain

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ABSTRACT

Pedestrianizing areas that are generally in the old part of town has been widely used in recent years in both developed and developing countries as a way to improve urban quality in cities traditionally designed for intensive vehicle use. This paper applies discrete demand models to examine the satisfaction of citizens or frequent visitors with these schemes in two streets that are not part of the urban center of the city of Seville (Spain) and the conclusions that are drawn can be easily extrapolated to other cities, irrespective of the country that they are in. These two pedestrianizations outside the traditional inner city are clearly positively valued by citizens, especially by people living in the vicinity of the pedestrianized streets and by the collectives that have more available free time or more flexible schedules. They have also been especially welcomed by citizens who are more aware of the need for environmental protection and calling for a more a more sustainable city. The results show that both pedestrianizations have resulted in significant changes in citizens' shopping and consumption habits in establishments located in the pedestrian zones, which have been turned into open air malls with improvements to their lively ambience. These findings are repeated in countries at different levels of development. These results are in stark contrast to the strong social rejection that existed during the period that the road works to pedestrianize the zones were being planned and executed. In fact, the results show the importance of the time variable, as the more time that has passed since the works were finalized, the better the variables that measure satisfaction with the pedestrianizations have become, and the less negative the perception of the negative externalities associated with the road works.

Introduction

For over thirty years, cities in developed countries have usually been designed to maximize traffic flow (Šeštokas, 1980) with a non-stop decrease in the number of pedestrians (Robertson, 1993; Southworth, 2005). Some authors go further still and consider the streets to be "dead places" from a social point-of-view, "killed" by the vehicles for which they were built (Appleyard, 1983). This trend has again been replicated in developing countries in general in recent times (Iranmanesh, 2008) and certain urban villages in China can be highlighted as an example in point (Liu, He, Wu, & Webster, 2010). This process is taking place belatedly compared to the more developed countries, but also at an accelerated rate as a consequence of rapid industrialization and urbanization in these countries (Chen, Liu, & Tao, 2013).

However, the beginnings of a turnaround can be seen in this process (Robertson, 1993) in both developed and developing countries, with growing concern for the adverse effects that cities designed to prioritize vehicle traffic are having on the environment (Sisiopiku & Akin, 2003; Wong & Lau, 2013). As part of this rising concern we can highlight a scheme that has acquired great importance in processes to redesign cities, pedestrianization. Pedestrianization can be defined as restricting or eliminating traffic in a street or streets for the use of pedestrians only (Hass-Klau, 1993). A differentiation should be made between pedestrianization processes and traffic calming, defined as the application of measures such as road humps, tree planting or speed cushions to impress upon the driver that the street is primarily for shopping or residential use (Slinn, Matthews, & Guest, 2005).

There is worldwide interest in analyzing pedestrianization and traffic calming processes and it is evidently a 'hot topic' in urban studies in both developed and developing countries. Studies in the EU can be cited in the first case, principally Germany, (Hass-Klau, 1984, 1993; Ward, 2010) and the UK (Turner & Giannopoulos, 1974; Whitehead, Simmonds, & Preston, 2006), and others in the

* Corresponding author. Tel.: +34 954 55 67 27.
E-mail addresses: jignacio@us.es (J.I. Castillo-Manzano), lolopez@us.es (L. Lopez-Valpuesta), contacto@asencio.es (J.P. Asencio-Flores).

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United States (Ahn & Rakha, 2009; Giuliani, Rose, & Lynn, 1997; Robertson, 1993). With regard to the developing countries, the studies that focus on Asia stand out mainly, those on Turkey (Dokmeci, Altunbas, & Yazgi, 2007), Iran (Iranmanesh, 2008), Hong Kong (Yiu, 2011), India (Samuel, 2013 Indonesia (Lo, 2010), Malaysia (Ghahramanpouri, Lamit, & Sedaghatnia, 2012) and Singapore (Yuen & Chor, 1998).

A joint analysis of all of these quickly leads to the conclusion that the lessons that can be learned from these studies are very similar, and that their conclusions can therefore be easily extrapolated from one city to another, irrespective of the country of origin.

The following conclusions stand out especially. Firstly, the impact on the environment stands out with respect to the positive effects of pedestrianization schemes in cities, including significant reductions in environmental and noise pollution after pedestrianization schemes have been implemented (Chiquetto, 1997; Sisiopiku & Akin, 2003). Secondly, the economic impacts of the pedestrianization processes that stand out include increases in retail turnover (Hass-Klau, 1993; Sandahl & Lindh, 1995) and in retail rent value (Yiu, 2011). Finally, the positive social impacts of pedestrianization schemes that can be highlighted are the increase of the speed and efficiency of pedestrian movement (Giuliani et al., 1997; Hass-Klau, 1993), reductions in the number of accidents (Ahn & Rakha, 2009) and the improved attraction of location and visitor attitudes (Sandahl & Lindh, 1995).

The possible adverse effects on the environment include the fact that pedestrianization tends to worsen accessibility to car users, and often generates an increase in the traffic flow in the surrounding areas, which represents increased travel time and fuel consumption for travelers (Chiquetto, 1997). In the economic and social aspect, access to pedestrianized zones is a subject of utmost importance. If pedestrian streets are not easily accessible to a large segment of the local population their activity levels will steadily diminish (Robertson, 1993). Furthermore, pedestrianization can discourage car users to travel to the traffic-free area and induce changes to other more accessible destinations, usually situated out-of town (Chiquetto, 1997). Consideration should also be given to the fact that pedestrianization can result in the replacement of some retail shops for chain stores due to rent increases in central pedestrianized areas, and also cause pedestrianized streets to be empty at certain hours of the night due to a lack of specialized local or traditional businesses, or hospitality businesses with longer opening hours (Robertson, 1993).

Anti-pedestrianization groups find their justification in these possible negative effects. The first of these groups worth highlighting is drivers due to limitations on car access to these areas; secondly, some residents in the area find access to their homes by vehicle impeded or public transport stops moved further away (Castillo-Manzano & Sánchez-Braza, 2013a); thirdly, workers in the area experience a possible increase in the amount of time that it takes them to reach their places of work (Whitehead et al., 2006); and finally, retailers and their associations due to the possible fall in sales that would be brought about by making pedestrian access difficult on account of the lack of parking space and public transport. This opposition from retailers is repeated again and again in both developed countries (Del Campo Tejedor, 2009; Hass-Klau, 1993; Salman, 2000) and in developing countries (Samuel, 2013; Segawa, 2013), which once more shows the great similarity between cities in the two country categories for this topic. The same can be said of the need to include information campaigns, studies and modelizations prior to a pedestrianization or traffic calming scheme being implemented to try to overcome resistance to change from these interest groups (Biddulph, 2011; Davies, 2012; Samuel, 2013).

In view of the conflict linked to many pedestrianization processes, the objective of this paper is to analyze citizens' or frequent visitors' satisfaction with a city where pedestrianization schemes have been implemented in certain streets that are not located in the urban city center. The specific case analyzed is that of the city of Seville (Spain) and San Jacinto and Asunción streets, which are situated in neighborhoods near the city center but physically separated from it by the Guadalquivir River (see Fig. 1).

This study presents two novelties. On the one hand, the areas under study are outside the historical city center, where pedestrianization schemes are more accepted or tolerated as, amongst other things, they preserve the historical heritage and contribute to local residents and tourists being able to gain more enjoyment from it. In fact, the pedestrianization processes and their effects on urban quality have long been studied in city centers in developed countries (Hass-Klau, 1984, 1993; Robertson, 1991) and in developing countries (Dokmeci et al., 2007), although the same cannot be said when the same processes have been undertaken outside the city center.

On the other hand, the factors that determine public satisfaction with the pedestrianization process are analyzed in an original way from two points-of-view, firstly, by scoring citizens' subjective opinions of these processes, and, secondly, by a more objective analysis of the frequency with which these same citizens visit the pedestrianized streets. This second analysis will be used to show the determinants of people's preferences as revealed by their behavior compared to the first study, which analyzes a described, more subjective satisfaction and that might, therefore, be affected by people's political viewpoints, for example, as these pedestrianization processes have been a highly controversial topic of debate between the local government and the political opposition in Seville.

Pedestrianization processes in the city of Seville

Seville, with a population of 702,355 inhabitants possesses the largest historical city center in Spain and one of the largest in all Europe, covering an area of 394 Has (974 acres) within the boundaries of the old city walls (see Fig. 1).

From 2002, Seville's Municipal Government has rolled out a range of policies aimed at combining the protection of the city's heritage with substantially improving the sustainable mobility of its citizens. This series of measures envisaged the pedestrianization of a number of areas of the city, developing alternative transport systems to the private automobile, such as the subway, the tram and the bicycle (see Castillo-Manzano & Sánchez-Braza, 2013b on the development of cycling in Seville), and also creating specific urban bus lanes. This array of actions has substantially reduced the emission of fumes (Seville Municipal Government, 2010) and the deterioration of the various monuments and emblematic buildings in Seville's historical old city center caused by the traffic (Del Campo Tejedor, 2009).

Focusing on pedestrianization, the first phase was implemented in the old city center (2006–2008) before being extended to other areas outside the center (2009–2010) and it is these areas that are analyzed in this paper. These actions are shown in Fig. 1.

This paper specifically analyzes Asunción and San Jacinto Streets (see Fig. 1). Asunción Street is 875 m long with 520 m pedestrianized. Before pedestrianization there was a clash between the right of transit and retailers, resulting in permanent traffic congestion. The daily transit amounted to 8922 vehicles which emitted 160 tonnes of CO_2 per annum. Meanwhile, San Jacinto Street is 655 m long with 210 m pedestrianized. Before pedestrianization it was used by 15,000 vehicles daily, which clashed with the strong retail nature of the street. The part that has been pedestrianized was classified as one of the noisiest in the city of Seville (Seville Municipal Government, 2010).