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Qualitative evaluation study of urban shared spaces in New Zealand

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ABSTRACT

This paper presents the findings of a qualitative analysis using on-street perception and expert interview surveys of city centre streets that have been transformed into shared spaces in Auckland, New Zealand. The principal purpose was to investigate how well the shared streets performed, especially in relation to movement, access and place functions. The shared space sites at the Elliott, Lorne and Fort Street areas were measured against the performance criteria of Placemaking, Pedestrian Focus, Vehicle Behaviour Change, Economic Impetus and Safety for all users. On-street perception surveys totalling 360 responses (120 per site) were used in this study, together with an additional set of 40 responses from a survey of a control site in O'Connell Street that remained as a traditional street. Fifteen professionals with background in transportation and urban planning participated in semi-structured expert interviews. The main results of the Median Perception Ratings from the on-street surveys confirmed that the shared spaces generally performed positively. The statistical analysis revealed that the performance criteria of 'Pedestrian' and 'Safety' had a commanding influence over the other performance measures, and with the interconnectivity of the five objectives the perceived success of the urban shared spaces.

Introduction

There has been a surge in practice and literature of the use of the term 'Shared Space' and its applications in the past decade. This has been predominantly influenced by the work of European Shared Space projects and the UK's Department for Transport studies (Karndacharuk et al., 2013b). However, the concept of road user integration that forms an integrated part of the shared space principles is not new, with the broad philosophical perspective tracing back to the introduction of 'environmental areas' in the Traffic in Towns (Ministry of Transport, 1963).

In Karndacharuk et al. (2014a), the view observed by many shared space advocates and commentators that a certain profession of traffic engineering could single-handedly create a pervasively automobile-centric street environment is challenged, and as such the review discusses that it was the society as a whole in the mid-twentieth century that determined the function, design and use of a public road network predominantly for motor vehicles. The review inquiry is extended

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to the development timeline of the shared space concepts. While many are of an opinion that the idea of particular public streets designed to be shared by motorists, pedestrians and cyclists has been put into practice around the turn of the twenty-first century, the *Woonerf* shared streets were first implemented in the Netherlands (Hass-Klau, 1990), and formalised by the government in the 1970s with legal status and regulatory requirements. Shared streets can be distinguished from calmed streets (includes traffic calming, self-explaining roads, liveable streets and Local Area Traffic Management) based on the intended segregation between pedestrians and vehicles within a broad spectrum of street design approaches that are comparable to a Woonerf street. The comparative analysis of these concepts and terminologies reveals a wider scope and application of the idea of shared street and traffic calming over time since the 1960s, particularly the expansion towards activity centres and multi-modal considerations.

A multi-faceted evaluation framework was developed using both quantitative and qualitative data in order to thoroughly measure the performance of shared spaces (Karndacharuk et al., 2013a,b). The research was supported by Auckland Transport that is responsible for the operation and management of the public road network in the Auckland region. The findings from the study of the quantitative data provided operational design principles of shared spaces and shared zones in New Zealand (Karndacharuk, 2013; Karndacharuk et al., 2014c). These principles have since been incorporated into the Auckland Transport Code of Practice, which provides quality standards for new and upgraded transport assets and systems, taking into account whole-of-life design, value for money and robust engineering details and construction (Auckland Transport, 2014). A shared space has been defined in this study as "a public local street or intersection that is intended and designed to be used by pedestrians and vehicles in a consistently low-speed environment with no obvious physical segregation between various road users in order to create a sense of place, and facilitate multi-functions" (Karndacharuk et al., 2014a, p. 215).

The following paragraphs present a review of relevant qualitative evaluation of shared space schemes in the UK and New Zealand. Kaparias et al. (2012a) undertook on-street surveys to evaluate the street environment in South Kensington, London, UK. Forming part of the Exhibition Road project, the street has been redesigned to incorporate a shared, level surface, and recognised as a shared space in the UK. Adapted from the previous pedestrian auditing tools of 'Pedestrian Environment Review System (PERS)' (Allen, 2005) and 'Pedestrian Environment Data Scan' (Clifton et al., 2007), the survey questionnaire consisted of ten questions. The first three questions were designed to collect participants' demographic data (age, gender and frequency of visit) while the remainder assessed pedestrian experience. Consistent with the PERS system, a 7-point rating scale ranges between −3 (very bad) and +3 (excellent) with a middle point of 0 (neutral). Besides some interdependence among pedestrian crossing criteria, the research suggests that there is a strong positive correlation between 'comfort' and 'ease of movement' performance attributes. It is observed from the last three questions that the street design in the South Kensington area incorporated designated pedestrian crossing points whereas a genuine shared space design does not necessarily require a designation of pedestrian crossing areas. This is because pedestrians in a shared space should be able to comfortably cross the street at any location. In addition to these on-street pedestrian surveys, Kaparias et al. (2012b) also implemented web-based surveys to determine the factors contributing to driver's willingness to share and pedestrians' comfort in moving around a shared space. The outcome of the online surveys suggests, while the presence of children and elderly, pedestrian density and lighting level were most important for the willingness of drivers to share the space with pedestrians, the provision of safe zones, trees and seating as well as good lighting and higher pedestrian traffic positively affected the comfort of pedestrians in sharing the road space with vehicles.

In New Zealand, a preliminary evaluation of the Stage 1 Fort Street area, completed in 2011, was undertaken to provide the basis for continuing the shared space implementation into the next stage of the area upgrade of Fort Street between Custom Street East and Gore Street (Nazla and Williamson, 2012). The study included perception surveys of pedestrians, drivers and business owners, however the surveys were primarily based on 'after' implementation data with limited 'before' data. Relating to traffic and personal safety, the perception survey outcome indicated 83% and 53% of participants rated safety as either 'very good' or 'excellent' during the day and at night, respectively. The evaluation report also included the results of user perceptions on amenity, distinctiveness, cleanliness and willingness to work, visit and spend time within the street. Without more detailed information on the participant characteristics, especially the total number of participants, it is not known whether the data is statistically significant.

Conceptual evaluation framework

The methodological framework for this study was developed to evaluate the performance of the multiple aspects of public shared streets (Karndacharuk et al., 2013a). The performance of a shared space can be determined based on how successful the public space performs its functions of place, mobility and access (Karndacharuk and Wilson, 2010; Karndacharuk et al., 2011).

In general accordance with what was suggested in a report prepared for the UK Department for Transport (DfT, 2009), the performance criteria (variables) based on the following five shared space objectives can be discussed as follows:

- *Placemaking*: The street should provide better use of public space via a lively quality of the environment that attracts users to spend time within the space. It is also reflected in a wider range of street activities. Performance measures include number of users dwelling in the area and time spent in the area or user dwell time, use of facilities provided and type of activity occurring.