Street Performance Assessment in Havana, Cuba

Overview

This note summarises the outcomes of a 'walkshop' conducted in May 2019 with local residents in Havana, Cuba, including practitioners from the national and municipal planning and transport authorities in Havana, researchers, and students. Participants walked along Galiano Street in the area of Centro Habana and assessed 20 attributes of the street environment.

Briefing workshop participants

Key Findings

- The main problems identified were a lack or poor quality of green space and plants; lack of resting places; and noise.

- The positive attributes related to the existence of colonnades providing shelter, wide pedestrian facilities with few obstacles, and acceptable quality surfaces.

- There were noticeable differences in the scores given by participants walking in the east and west sides of the street and in the scores given by the same participants in different points along the road.

- Scores differed by gender

Objectives

The aim of the 'walkshop' was to conduct a street performance assessment for Galiano Street, with each participant evaluating their perception of several features of the built environment including:

- Physical built environment features related to walking, such as pavement width, colonnade width, and easiness to cross

- Physical features of the built environment related to the quality of place, such as rest, shelter, green, and interestingness

- Street use and street conditions, such as traffic, noise, air quality, and cleanliness

Background

There are several audit tools to assess the quality of the built environment at the street level. Many are designed to be used by trained observers and are therefore considered "objective" assessments. Surveys or questionnaires which are completed by street users or participants provide assessment of people's perceptions of the built environment and are considered "subjective", or self-reported assessments.

We identified Transport For London's Healthy Streets Indicators as the most suitable tool to use in the Havana walkshop. The indicators focus on the overall health environment provided by the street. For example, regarding physical health, the survey assesses features such as air quality, traffic safety, places to rest and places for shelter from adverse weather conditions. The survey also included questions related to psychological wellbeing, such as level of satisfaction, level of relaxation (or stress) and level of interestingness.

Our questionnaire adapts the Healthy Streets approach to the case of Havana, and Galiano Street in particular. For example, we added items to assess the colonnades that ran alongside the main pedestrian pavements.

Methods

Galiano Street has a diversity of land uses, services and activities, and high levels of pedestrian demand. Historically, Galiano has been one of the main commercial streets in Havana, renowned by its shops and its heritage value. The street also connects Curita Park, an important intermodal transfer station and the Malecon, Havana's renowned seafront road. Galiano also connects to Old Havana via a pedestrian street.

The 22 walkshop participants were divided in two groups. Each participant scored 20 self-completed questions (shown in the tale below) on their perceptions of pedestrian conditions at 27 sites (13 on east side, 14 on west) along the street.

The questions where assessed using a 1-10 scale, where 10 represented the best conditions.

Satisfaction	Do you feel satisfied
Attractive	Do you find it attractive
Air	Do you think the air is clean
Free from Noise	Do you find it free from noisy
Relaxed	Do you feel relaxed being here
Interesting	Are there things to see and do
Easy Crossing	Do you think it is easy to cross
Rest	Is it easy to find a place to stop, sit or rest
Shade and Shelter	Is it easy to find shelter (from sun or rain)
Safe	Do you feel safe from crime and antisocial behaviour
Free from Traffic	Do you feel little intimidated by traffic
Clean	Do you find it clean (rubbish, dog mess)
Green	Is the quality of trees, plants and greenery good
Pavement width	Is the pavement width good
Pavement quality	Is the quality of the pavement's surface good
Pavement obstacles	Is the pavement free from obstacles
Collonade width	Is the collonade width good
Collonade quality	Is the quality of the collonade's surface good
Collonade obstacles	Is the collonade free from obstacles
Environment	Is there a good walking environment

Results

Mean scores by attribute

In general, the workshop participants' perception of the different attributes of the street was not positive. The highest mean score for any attribute (*Colonnade Width*) was 6.3, out of a maximum of 10. Other attributes with mean scores between 5 and 6 were *Shade and Shelter*, *Safe*, *Colonnade Obstacles*, *Colonnade Quality* and *Environment*.

The lowest mean scores were assigned to *Quality of Green* (1.3), *Places to Rest* (2.1) and *Free From Noise* (2.6). Global assessments of the street such as *Satisfaction* and *Attractiveness* were also assessed with low values (4 and 3.8, respectively).
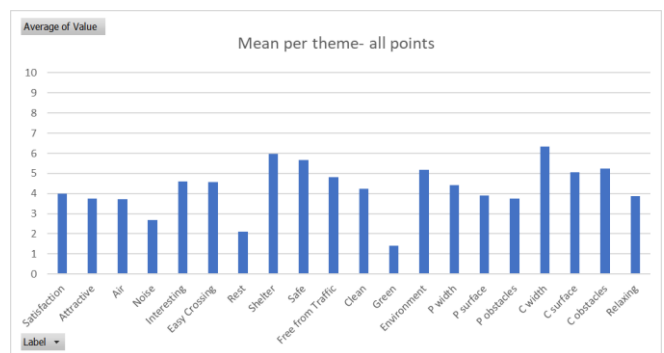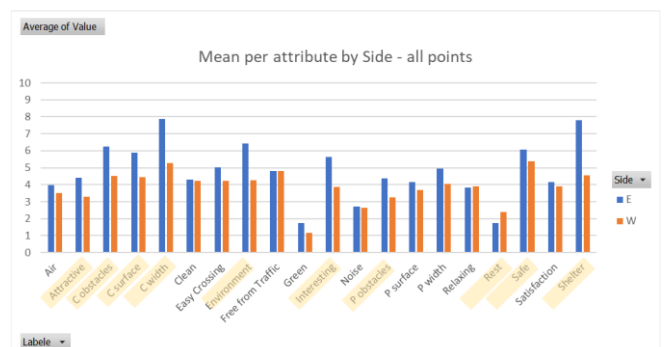

Mean score per attribute (all survey points)

Scores by side of the street

The west side of the street had consistently lower mean scores than the east side in all points and for all attributes except *Rest* and *Relaxing*. The largest difference (3.2 points) was for *Shelter*. This suggests that the difference in all other scores might be related with the fact that the west side of the street received direct sunshine throughout the survey time at an angle for which the colonnades did not provide shelter (see photo overleaf).

Colonnade Width, E*nvironment* and *Interestingness* also had important differences in mean scores for each side.

Mean score per attribute and side (all survey points)

Colonnade and pavement on the west side of Galiano Street

Differences by gender

The assessment of the mean scores by gender showed that female mean scores were lower than male mean scores for 15 attributes. This included attributes directly related to health, such as *Air Quality*, *Free from Noise* and *Greenery*, and global assessments such as *Satisfaction* and *Attractive*.

These results highlight the importance of considering the diversity of street users and their needs when evaluating street environment improvements. Street environments are perceived differently by different people and the 'do-nothing' option might have a higher cost for certain population groups (e.g. females), therefore solutions need to be designed for equity to address everyone needs.

Differences by point along the street

We also investigated if there were observable trends in participants' assessments as they moved along the street.

We found that the lowest scores (in red in the next figure) were given in points where refurbishment works were taking place. This implied that the walking environment was non-existent and that pedestrians were forced to walk on the street. This also implied that this is a temporary issue and that the perceptions of the street environment can improve once those works are completed.

Mean score per survey point

Worst overall scores also occurred where pavement and colonnades were completely blocked, and higher values were identified close to green areas or 'blue' areas (the sea).

Similarly, when analysing the differences in scores the East side which was sheltered from the sun, had more continuous colonnades, and more shop fronts, was scored as more interesting, more attractive, with better walking environment and more shelter than the west side.

Relationships between attributes

To better understand the relationship between the scores given to the different attributes, we estimated a correlation matrix.
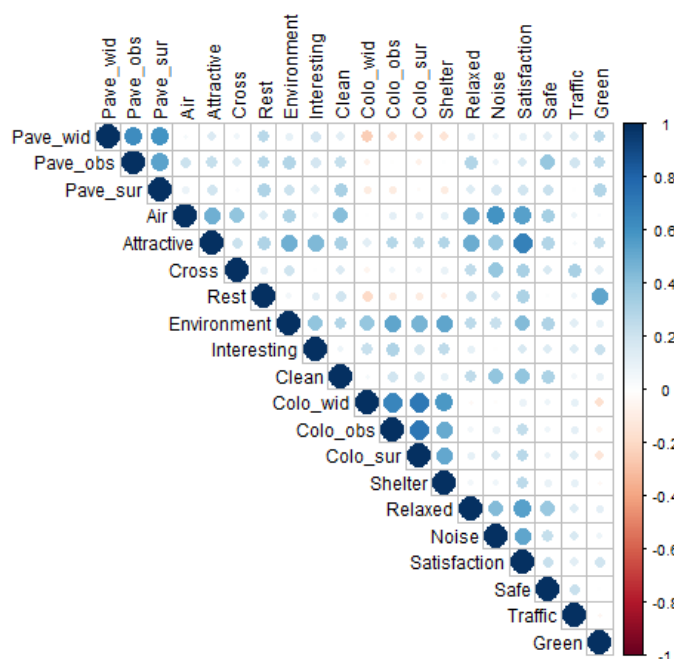
Correlations between survey attribute scores

For the adaptation of the survey to Havana's street conditions, the question related to the pavement was subdivided into 6 items differentiating the pavement from the colonnade and the different attributes (width, obstructions and surface quality). However, we found that the scores of the 5 items were highly correlated. The correlation between pavements and colonnades is negative, which reflects the fact that the street section is fixed and if there is more space assigned to colonnades, then the pavement tends to be narrower.

Scores for *Greenery* and *Rest* are also correlated as there are very few benches and trees or plants along the corridor apart from those located on two specific parks in which both features are present.

Scores for *Satisfaction* and *Attractive* are highly correlated. *Environment (for walking)* is mostly related with the colonnade attributes and with *Shelter. Satisfaction* scores were correlated with *Attractive* and *Relaxed*, *Air Quality*, *Free from Noise* and *Environment*. *Easy to Cross* was correlated with *Not Intimidated by Traffic*.

Future Research Areas

As part of the city's development of its Sustainable Urban Mobility Plan, Galiano Street will be a pilot project where the street environment will be improved, and other interventions will take place. The results from this study provide a baseline for the street highlighting important areas for improvement.

Moreover, the street environment quality can be reassessed following the survey explained in this note once the interventions have taken place to measure the impact of the project on people's experiential wellbeing.

Authors

Adriana Ortegon-Sanchez, Paulo Anciaes, Adrian Gonzalez, Joiselen Cazanave, Ashley Dhanani, Emily Morris and Jenny Mindell