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If you build it who will come? The effects of changing the urban environment in the walking behavior

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Summary

Cities worldwide are investing in infrastructural interventions towards the promotion of pedestrian-friendly, walking conducing urban environments. On one hand, walking has been associated with numerous social, health and economic benefits, being the most elementary mean of people moving around, integrating and living the urban space and accomplishing salutary physical activity. On the other hand, current challenges cities face regarding sustainability goals and affirmative action on the climate crisis have called for a shift in the urban mobility paradigm towards active travel. Making cities more walkable has been put forward as a mean to achieve such goals. The rationale for it is that a friendlier walking environment can positively influence walking behaviour, increasing pedestrian activity, hence making more people walk more. There is solid evidence on the benefits of walking and on the influence of the built environment in shaping walking behaviour. However, there is a lack of clear evidence on a causal relation between built-environment interventions and walking behaviour change. As a result, planning –and implementation- of environmental interventions to promote walking seems to be made on the reasonable expectation of "if you build it they will come". The effectiveness of such interventions in walking behaviour has been addressed only in few studies, which in turn and have provided mixed evidence. Other current literature gaps include the lack of longitudinal walkability analysis and the identification of relevant factors in triggering walking behaviour change. This study aims is to deepen the understanding of how built environment interventions towards the promotion of walking can influence walking behaviour. A relational model of the influence of built environment change in walking behaviour change was developed drawing from various travel theoretical behaviour frameworks, leading to the formulation of the following hypothesis: 1) Positive association between walkability and pedestrian activity and walking experience; 2) Exposure, Perception and Experience to be significant predictors of behavioural change; 3) Pedestrian segments are associated to different outcomes; and 4) Intervention results bear distinct "success" levels in relation to the type of walking behaviour of interest. A comprehensive longitudinal analysis was performed in a real world case study - the Eixo Central street improvement project in Lisbon. Data on walkability, pedestrian activity and walking behaviour was collected before and after the intervention, by performing respectively walkability audits, pedestrian counts and a survey.

The results confirmed the existence of a significant and positive association between improving walkability and increasing pedestrian activity. Moreover the actual use of the improved environment, the perception of improvement in a few attributes and satisfaction with the walking experience were found to be significant predictors of increasing walking for five different purposes, namely utilitarian, recreational, walking for public transport, walking for exercise and route change. Another finding was that attitudes towards the role of the car in the city vs. public space were the main differentiator of pedestrian segments and that attitudes played a role in how the individual perceived the environment. Findings of this study suggest that the magnitude of environmental improvements are determinant in the behavioural response. Small scale interventions may produce effects in well being, but are not effective in increasing walking levels. Larger scale interventions which de facto change walkability levels significantly may produce desired, yet moderate, effects in increasing physical activity levels and modal shift towards walking. However, larger scale interventions are more prone to public and political opposition especially if road space is reallocated. Integrated land use-transport planning with clearer goal setting is key to achieve urban sustainability goals.

Keywords

Walkability, walking behaviour, longitudinal, before-after, street improvement.