Utrecht University

Applied Data Science Master's degree programme

Spatial Data Analysis and Simulation Modelling

Short Paper Assignment Outline

Submitted by

Rosen Drumev (6863337)

Niharika Chawla (2924978)

Anne de Wildt (5851726)

Amsterdam Walkability Index

INTRODUCTION

The benefits of walking are increasingly becoming more recognized, since there are many different aspects to it. First of all, walking is a better mode of transportation for the environment than for example taking a car or a bus. Walking has a much lower emission rate of greenhouse gasses. Secondly, walking has a positive effect on both the physical and mental health of the subject. Therefore, promoting citizens to walk in a city has a rewarding effect on both citizens and the city itself. Lastly, walking is also a leisure activity that can always be done.

For the reasons mentioned above, cities should look into creating a walkability index of their city, which can be used to improve the walkability and promote walking under its citizens. Accordingly, the problem this short paper wants to answer is: "*What are essential elements of a novel walkability index?*"

DEFINITION

Walkability is a measure of how friendly an area is to walking; walkability supports community health, safety, livability, and reduced car dependence. The walkability index score is derived from physical characteristics of the urban environment that support walking including residential density, sidewalk presence and completeness, land use mix, retail floor space ratio, and intersection density.

BACKGROUND

To date, nearly all research on physical activity and the built environment is based on self-reported physical activity and perceived assessment of the built environment. Over the years Netherlands has emerged as a leader in terms of incorporating active modes of transport (Cycling and Walking) within Urban infrastructure planning. Still, only Walking as a mode of transport is an area that requires more research.

OBJECTIVE

To compare different walkability indices built for measurement by various researchers and ciphering out relevant parameters which can be adopted in case of Amsterdam & surrounding areas.

We have elicited out following list of important papers / research that we intend to review further and use to make our Walkability Index.

Paper I : Focus on Walkability from Device Measurement perspective

Frank, L. D., Schmid, T. L., Sallis, J. F., Chapman, J., & Saelens, B. E. (2005). Linking objectively measured physical activity with objectively measured urban form: findings from SMARTRAQ. American journal of preventive medicine, 28(2), 117-125

Paper II: Focus on Walkability from existing Indices

Maghelal, P. K., & Capp, C. J. (2011). Walkability: A Review of Existing Pedestrian Indices. Journal of the Urban & Regional Information Systems Association, 23(2)

Paper III: Focus on Walkability from existing city based deployment perspective

Development of a novel walkability index for London, United Kingdom: cross-sectional application to the Whitehall II Study | BMC Public Health | Full Text (biomedcentral.com)