Using Urban Design Qualities for Building a New Composite Walkability Index for Cairo Streets

Dr. Manal Tawfik
Department of Architecture, Higher Institute of Engineering, El-Shorouk Academy, Cairo, Egypt

Abstract:
This paper aims to build a Composite Walkability Index (CWI) for Cairo Streets. It is based on the field manual of the study of Ewing and Clemente (2013) to determine the most relevant Urban Design Qualities (UDQs) and physical features of walkability. The CWI is constructed in two stages; the Benefit-of-the-Doubt (BOD) weighting scheme is applied to each one. The reason for applying this mathematical programming method is to endogenously determine the relative importance of all UDQ and physical features with respect to walkability. Therefore, to investigate the credibility of the BOD technique, it has been applied to a sample of 46 different paths from Cairo streets. The resulted CWI values are discriminated such that no two streets have the same score. This in turn helps decision makers to assess these streets by relying on the distinguishable ranks of CWI and UDQs.

Keywords:
Benefit-of-the-Doubt (BOD)
Composite Indicators (CIs)
Composite Walkability Index (CWI)
Urban Design Qualities (UDQs)
Physical features.

Paper received 5th August 2017, Accepted 13th September 2017, Published 1st of October 2017