

Method to Assessing Aspect of Sustainable Development-Walkability

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Abstract : Need to generate objective communication between researchers, Practitioners and policy makers are top concern of sustainability. Despite the fact that many places have successes in achieving some aspects of sustainable urban development, there are no scientific facts to convince policy makers in the rest of the world to apply their guides and manuals. This is because each of them was developed to fulfill the need of specific city. The question is, how to learn the lesson from each case study? And how distinguish between the potential criteria and negative one? And how quantify their effects in the future development? Walkability has been found as a solution to achieve healthy life style as well as social, environmental and economic sustainability. Moreover, it is complicated as every aspect of sustainable development. This research is stand on quantitative- comparative methodology in order to assess pedestrian oriented development. Three Analyzed Areas (AAs) were selected. One site is located in Oman in which hypothesises as motorized oriented development, while two sites are in Japan where the development is pedestrian friendly. The study used Multi-Criteria Evaluation Method (MCEM). Initially, MCEM stands on Analytic Hierarchy Process (AHP). The later was structured into main goal (walkability), objectives (functions and layout) and attributes (the urban form criteria). Secondly, the GIS were used to evaluate the attributes in multi-criteria maps. Since each criterion has different scale of measurement, all results were standardized by z-score and used to measure the correlations among cr iteria. Different scenario was generated from each AA. After that, MCEM (AHP- OWA) based on GIS measured the walkability score and determined the priority of criteria development in the non-walker friendly environment. As results, the comparison criteria for z-score presented a measurable distinguished orientation of development. This result has been used to prove that Oman is motorized environment while Japan is walkable. Also, it defined the powerful criteria and weak criteria regardless to the AA. This result has been used to generalize the priority for walkable development.

Keywords : walkability, sustainable development, multi- criteria evaluation method, gis

Conference Title : ICSR2020 : International Conference on Scientific Research and Development

Conference Location : Chicago, United States

Conference Dates : December 12-13, 2020