

Addressing the New Pragmatic Methods in Urban Design Discipline

Hisham Abusaada

 <https://orcid.org/0000-0001-6530-7714>

Housing and Building National Research Center (HBRC), Egypt

Abeer Elshater

 <https://orcid.org/0000-0002-5061-6861>

Ain Shams University, Egypt

INTRODUCTION

Almost three decades before the beginning of the third millennium, the impacts of the “digital age” appeared and dominated most areas such as theories of journalism, teaching, foreign language education, new epistemologies, digital media, and digital fluency. Consequently, before the beginning of the twenty-first century, there were impacts on things like the faces of buildings, the design of public urban spaces, urban industry, urban mobility, urban policy, and integrating telecommunications. These effects have been apparent in most studies in the areas of planning and urban design and have become influential in the accuracy or weakness of the results, mainly in developing the cyber-cities, smart cities, smart growth, and digital urbanism. These influences have reached the point where most of the scientific forums have begun insisting on the application of new, innovative methods that rely on digital technologies along with developed conventional methods.

The primary goal will be to understand the importance of using research methods appropriate to the subject matter of the research and the desired results. Also, it intends to drive the researchers to develop their vision by using the traditional methods and seeking to integrate them with advanced technology research methods in their related work. This goal includes two objectives. The first is to highlight the importance of using both new and conventional methods together. The second is to present these selected analytical methods in a way that allows the readers to search for the other purposes associated with their research.

This chapter addresses new methods that display research problems which are strongly linked with two issues: urban form (UF) and spatial analysis (SA). It focuses on how to use these methods in an urban design discipline (UD), based on the dominant science and new analytical approaches, such as “virtual world design,” “spatial planning,” “geoinformatics,” “urban sensing,” and “a three-dimensional model of the city.” It reveals the methods that help the designer to measure people’s sensation in cities. These methods try to balance between two fundamental issues. The first is collecting data about city places in each survey about people’s behavior. The second is exploring the reliability and validity of these methods and measures by pragmatically applying them to the analysis of real-world problems.

The research methodology focuses on a bibliographic study, including application examples, based on a considerable number of academic research papers and official reports, publications dealing with some conventional and new pragmatic methods in urban planning and design discipline, as well as in the area of environment design. This study will first display the background theoretical approaches related

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to the areas of planning and design, as an introduction to clarify the research methods that underpin the central theme.

Notably, this study is a bibliographic review of some new pragmatically methods in urban planning and design discipline. The organization of this chapter starts with a background for the key issues, and one episode has a connected view that includes six methods in two stages. The first displays two methods for measuring the visual aesthetic dimension, and the second consists of four methods for measuring the affective response approach. The conclusion states the definitive view and includes a proposal for future research.

BACKGROUND AND SETTINGS OF URBAN FORM AND SPATIAL ANALYSIS

Urban form is one of the most critical concerns of urban design. It focuses on the relationship between people and place in the built environment, with particular attention to the relationship between built-up mass and urban spaces. For decades, the specialists have devised several dimensions which govern these bilateral relations people-place and built-up mass-spaces. They are functional, social, economic, environmental, behavioral, aesthetic-visual, cognitive-perceptual, and temporal dimensions. Spatial analysis of urban spaces is one of the conventional analytical methods that urban design has used for measuring and analyzing the urban form, which was extended, based on Kevin Lynch's (1960) famous theory "the Image of the City".

In 1960, Kevin Lynch focused on the concept of the 'cognitive map' and conducted his first real-life experiments in Boston and Los Angeles, when he asked the residents to sketch out and bring back their daily routes from their memories. He presented the "way-finding" strategy, legibility and imageability to be a theoretical base for various studies. Afterwards, this strategy is transformed to be a tool, an approach, a quantitative analytical method, and a methodology. In these, they examine the spatial system and the configuration of the layout of the city. Furthermore, it explores the effects of this configuration on the organization of the uses within the city and the relations with the entire system.

Jerry Weisman (1981) and GD Weisman (1987) used the term of legibility based on the wayfinding method, to identify the ability of users to find their ways in the layout of the student' building and in housing for elderly people. John Peponis, Craig Zimring, and Yoon Kyung Choi (1990) developed this method to achieve a *more rigorous analytic description of building layout and exploration paths that exhibit their own pattern* (Peponis, Zimring, & Kuang Choi, 1990, p. 550). The wayfinding method has been used to study the structural properties of the building layout depends on developed the techniques of syntactic analysis, at University College London. Distinctly, the most common studies starting from Kevin Lynch's (1960) *The Image of the City*, Jerry Weisman's (1981) *Evaluating Architectural Legibility Way-Finding in the Built Environment*, Romedi Passini's (1984) *Wayfinding in Architecture*, GD Weisman's (1987) *Improving Wayfinding and Architectural Legibility in Housing for the Elderly*, John Peponis, Craig Zimring, and Yoon Kuang Choi's (1990) *Finding the Building in Wayfinding*, Paul Arthur and Romedi Passini's (1992) *Wayfinding: People, Signs, and Architecture*, Susan Hunter's (2010) *Design Resources: Spatial Orientation, Environmental Perception, and Wayfinding*, Gesine Marquardt's (2011) *Wayfinding for People With Dementia: The Role of Architectural Design..*

In the vein, according to Michael Mehaffy (2008), Christopher Alexander is one of the pioneers of the design method movement that aims to move systematically through sequential steps in an organized design process. The movement's response to the complexity of technical problems in the post-World War II era is fuelled by the development of computer science and programs. Instead, the new method should

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