


Chapter 10

A Comprehensive Assessment Model for Examining Sustainable Practices and Green Economy Criteria: An Examination of Egypt's NAC

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ABSTRACT

The Administrative Capital is emerging as a prominent urban center in the Middle East, prompting the need for significant expansion projects to achieve balanced urban growth. This research examines the urban renaissance using evaluation methodologies that incorporate sustainability criteria, focusing on environmental, social, and green economy aspects. Employing the ETE method, the study established evaluation criteria and their weights through the Delphi method. Experts engaged in two rounds of questionnaires, refining their evaluations based on anonymous feedback from prior responses. The TOPSIS applied to create an integrated evaluation model with particular emphasis on the iconic tower project. Data collection involved extensive site visits, comprehensive project documentation, and expert evaluations through structured questionnaires. aimed to deliver a nuanced understanding of architectural needs concerning sustainability, with findings designed to inform future development initiatives in line with sustainability objectives.

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1- INTRODUCTION

Construction refers to the inventions of social development around the quality of life of people (Cohen, 2016). A measure of the advanced economic performance of both commercial and promotional progress, with major contributors to these countries' local and international advertising. The outputs emerging from this industry are “buildings,” which are among the most important necessities of life (Kibert, 2016). The rapid urban expansion witnessed by Egypt, including the New Administrative Capital, follows an example and is representative of parts of global urban development and its commitment to different sustainability practices among the criteria of the green economy, see the recent literature review on “urban development” to the transitions towards adopting sustainability and its development in the urban context and examining the different dynamics in the transition of sustainability (Wheeler, 2013). Sustainability has been evaluated as one of the tools used to enhance social development, with participation from the design and construction to the management stages (Al-Holaibi et al., 2015).

At present, many countries refer to the study of building a single community or shared cities (UN-Habitat, 2016). The analysis of the current development environment in Riyadh explains many complexities through the lens of globalization (Bekhradnia, 2019).

For a long time, different architectural approaches have been presented, which, under different names and with synchronized elements, refer to the same errors (modernity) in everything, including technological advances. In most cases, they have focused on integrating the principles, characteristics, and elements of sustainable design but not through collaboration in the comprehensive assessment (Zhang et al., 2020). A global application and sustainable practices may be quite useful, as collaboration in the use of materials and features that are not compatible with the local context has become very exciting (Atoyán & Kagan, 2015), thus putting its heart into the implementation of advanced architecture that is still successful and not successful (de Groot et al., 2017). There are differences in research on sustainable development planning at the community level from a green economy perspective, and this is done in a subjective and one-sided way when it comes to choosing and weighing options, as most studies on sustainability assessment and consistency with certification organizations such as LEED or others are taken only with a limited energy budget, varying the economic and social dimensions of sustainability (Dempsey et al., 2011).

Their buildings are often applied technically and quantitatively without considering other sustainability measures. Hence, the idea of research attempts to propose an integrated assessment model.

2- METHODOLOGY

The literature review is the beginning of identifying the most important sustainability indicators worldwide. These indicators will then be refined and integrated to avoid duplication, and a model will be proposed that includes environmental, economic, and social criteria. It consists of basic and sub-criteria under which the indicators fall. The current study relied on the expert judgment method to evaluate the proposed model and assign weights to each indicator.

This is a recognized and valid approach, especially when empirical data is limited or difficult (Hsu & Sandford, 2007). Examples of expert evaluations, including weights, were collected from 8 out of 13 experts contacted in the fields of architecture, economics, sustainability, urban renewal, construction project management, and officials of some major projects in Egypt.

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