

Towards Conceptual Understanding for the Adoption of Building Environmental Sustainability Assessment Methods in the UAE Built Environment

Dr Amna Shibeika

Tasneem Abdelrahim, Batoul
Hittini



Background to the UAE

- Rapid development in buildings and infrastructure for the last 30 years or so, propelled by an oil-rich economy.
- Globally, UAE has one of the highest energy consumptions per capita.
- Commitment to the sustainable development goals (SDGs) set out by the United Nations for 2030.
 - Examples of policy: UAE Vision 2020, the UAE Centennial 2071, and the UAE Energy Strategy 2050.



Environmental Sustainability Timeline

1996

***Environmental Agency-Abu Dhabi (EAD)** was established with the aim to protect biodiversity; provide cleaner environment and sustainable development; and decrease energy, water use, waste and carbon footprint.*

2006

***Emirates Green Building Council (EmiratesGBC)** was established with the goal of advancing green building principles for protecting the environment and ensuring sustainability in the UAE.*

2007

***Emirates LEED** was adopted, giving a higher weight to water conservation according to the region's climate.*

2008

***Gulf BREEAM** was adopted. The weight of the water category in Gulf BREEAM was increased to 30% compared to 6% in BREEAM.*

2009

***Estidama framework** launched. which is a framework for sustainable built environment addresses the three main pillars of sustainability: environment, economy and society, this is in addition to a fourth pillar "**culture**".*

2010

***Pearl Building Rating System** launched, based on Estidama Framework and in parallel to Abu Dhabi Building Codes.*

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2010

***Dubai Green Building Regulations** launched initially as mandatory requirement for construction of new government buildings. And from **2014** as mandatory to all new buildings in the Emirate of Dubai.*

2016

***Al Sa'fat** building rating system launched in the Emirate of Dubai, which is a reestablishment of the Dubai Green Building Regulations.*

2019

***Barjeel** Green Building Regulations launched by the Ras Al Khaimah (RAK) Municipality under the RAK Energy Efficiency and Renewable Energy Strategy 2040.*

Focus of the research

- The aim of this research is to investigate the adoption process of available local UAE assessment methods for development projects.



breeam



Research Aim

- Diffusion of innovations lens and process approach for understanding
 - Diffusion is defined to be “*the process in which an innovation is communicated through certain channels over time among the members of a social system*” (Rogers 2003)
 - Innovation adoption is more concerned with the behavior of the adopting unit towards the innovation, and how decisions are made to either adopt or reject the innovation.

The focus of this research is on the dynamics of the adoption process rather than the decision itself.

- **The adoption of PBR and Al Sa’fat assessment systems in the UAE is mandatory for all buildings with opportunities for voluntary adoption for higher ratings.**

Diffusion of Innovations Theory

- **Innovation attributes:**

- Inherent in the innovation: complexity and trialability.
- Adopter related: competitive advantage, compatibility and observability.

- **Social system for diffusion:**

- *“a set of interrelated units that are engaged in joint problem solving to accomplish a common goal”* Rogers 2003
- Formal + informal.

Conceptual themes for empirical investigation

PBR and Al Sa'fat assessment methods as innovation

(Innovation attributes: inherit in the innovation+ relevant to the adopter)

- Structural elements for PBR and Al Sa'fat systems, and their effect on the assessment process.
- Project characteristics which influence the assessment process and the alignment of PBR and Al Sa'fat methods with the development process.

Development projects as the social system for adoption

Formal structure

Informal structure

- Project delivery method and (supply chain management and stakeholder engagement).
- People issues: leadership, assessors' involvement, sustainability literacy, and culture of engagement.
- Knowledge management and learning mechanisms for sustainable practices.

Contribution and next steps

- Focus for environmental sustainability of the built environment in an emerging economy such as the UAE which is unique due to its climatic, social, cultural, and economic conditions.
- So far ,,,
 - 18 interviews conducted between June 2018- may 2019
- Next steps ,,,
 - Analysis.
 - Survey.



Thank you.
Any questions ?

Dr Amna Shibeika
a.shibeika@uaeu.ac.ae