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Housing Occupants' Motivational Drivers for Energy-Saving in the United Arab Emirates: An Exploratory Study

by

Monaya Muhammed Syam

Faculty Advisor

Dr. Kheira Anissa Tabet Aoul, Department of Architectural Engineering
College of Engineering

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Online, BBCU session link:

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Abstract

The built environment in the United Arab Emirates (UAE) accounts for 70% of energy consumption compared to the global average of 40%, primarily driven by cooling needs to alleviate the country's extremely hot climate. The residential sector is the second highest energy consuming with a share of almost 27%; an inclination expected to keep increasing, urgently calling for strategies to control. Such strategies are, nonetheless a worldwide agenda that encompasses global and local actions. For instance, energy efficient housing developments under hot climatic conditions have been extensively researched in terms of design, construction materials and building systems, resulting in the establishment of building energy codes as well as green building rating systems. However, an energy performance gap still exists and has been recognized as a result of occupants' behavior, catalyzing need for further research. Identifying opportunities for changing occupants' practices into pro-environmental behavior has been proved to achieve high energy-savings. Understanding the housing occupants' motivation and impetus to save energy is of high relevance as it can feed into adequate measures that may lead to resources and cost savings. Studying this topic in the context of UAE is a challenging task because of its unique characteristics as a fast-growing country, its harsh hot climate and its distinctive population composition made of a relatively small national group and a much larger congregation of expatriates from diverse origins. There are major differences between the two groups, including energy tariffs, financial and non-financial subsidies, house ownership, as well as culture, that result in different impacts on each group's behavior towards energy use and saving. Yet, this topic has not been explored in the conventional housing sector in the UAE. Hence, this study aims to explore housing occupants' motivational drivers to save energy and compare the motivational drivers among local and expatriate groups.

This exploratory qualitative study is based on semi-structured interviews developed from informal conversational interviews and tested through a pilot. Interviews were conducted with 32 housing occupants (14 locals and 18 expatriates) all living in the city of Al Ain in the UAE. The thematic analysis revealed that motivation is bound by two antagonistic elements: motivational drivers and obstacles. The findings reveal that housing occupants' motivation to save energy is influenced by local policies, cognitive, emotional, contextual social and cultural factors. Occupants' level of education, field of study, lack of awareness, habits, emotions and climate are the common factors shared by locals and expatriates as well compliant with the existing literature. Conversely, house ownership, incentives, and energy costs were found to be the main motivational drivers for local occupants, whereas social network, social image, norms and culture, as well as house physical size were factors acting as obstacles for energy-savings. On the other hand, the increased energy cost, fines and the comparatively lower income levels of the expatriate occupants were found to entice energy-saving, while the lack of home ownership, and the inability to control usage separately in each space prevented and deterred from saving energy as house tenants. In addition to the religious teachings and moral values promoting the preservation of scarce resources, social media influencers emerged as prospectively having a significant effect on driving local and expatriate occupants' motivation and behavior.

The study offers ample relevant data to guide the development of effective and targeted energy-saving policies, strategies, incentives and awareness campaigns focused on residential occupants' motivation, with a special attention to the subtleties, as revealed by this study, between the two groups that constitute the general population of the UAE.

Keywords: Housing Occupants, Motivational Drivers, Energy-saving, Obstacles, Behavior, Locals, Expatriates, Exploratory Qualitative Study, Semi-Structured Interviews, United Arab Emirates.