



Full length article

Evaluating the legibility of decorative arabic scripts for *Sultan Alauddin* mosque using an enhanced soft-computing hybrid algorithm

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ABSTRACT

Ornamental calligraphy features sacred inscriptions in mosques as an integral part of its interior design. This study analyzes the legibility of these Arabic scripts for Malaysian users of mosques, implementing for the first time a quantitative tool for this effort, the ANFIS method. Our purpose is to identify the most influential parameters affecting the readability and understanding of various decorative Arabic scripts. Mosques have important roles in social life and in teaching the Islamic faith to Muslims. We conducted a questionnaire survey handed to the public attending the *Sultan Alauddin* mosque in Selangor, Malaysia. We subjected the data resulting from this survey to the ANFIS method (the adaptive neuro fuzzy inference system), to identify measurable parameters that play a role in the ability to read decorative Arabic scripts. The ANFIS process for *variable selection* was implemented in order to detect the predominant variables among the parameters identified. We analyzed how demographic aspects and cognitive skills relate to the ability to correctly interpret these scripts. The results indicated that of the parameters examined, the ability to read Arabic is the one that influences the most, the correct interpretation of ornamental inscriptions of mosques, and the best predictor of accuracy.

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1. Introduction

The word “mosque” derives from “*masjid*”, an Arabic utterance that literally derived from “*Sujud*” which means prostration (Hillenbrand, 1999; Hitam & Talib, 2005; Nasir, 1984). Although in the Quran the term *mosque* is equal to the place of *Allah*, it is defined as a building for Muslim worship. A mosque is the major religious core of Muslim culture for Friday and daily prayer. It facilitates communal functions such as teaching religious lessons, performing marriages, and a place for charitable donations (Zakat).

The provision of space and sitting in mosques must satisfy the religious needs of all Muslims, regardless of their gender, socio-cultural background or the mosque’s stylistic architectural parameters. Although the space for women is separated from men during daily prayers, both genders pray in the same prayer hall. However, observation indicates that the content of inscriptions varies based on its planned locations where the calligraphic ornamentations are to be displayed (Dilmi, 2014). During religious services, surrounding elements should not disturb the concentration of people during prayers. In spite of this reference, the beautification of mosques is not perceived as distracting. On the contrary, aesthetics and calligraphic ornamentations are considered integral to the architectural design of mosques to reflect the theory of Islam in practice (Anzar, 2003). Although aesthetic values and religious aspects are sometimes thought to contradict each other, if the legibility of inscriptions becomes an issue, aesthetics is ignored.

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