

UNIVERSITI TEKNOLOGI MARA

**TECHNO-SPIRITUAL DESIGN
MODEL (TSDM): A CASE STUDY OF
PRAYER PRACTICE AMONG THE
ELDERLY POPULATION**

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ABSTRACT

There are wide ranges of interventions available to compensate the elderly with functional impairments that accompany aging, yet this research argues that most of the technology designers focused primarily on physical, emotional, and social needs of the elderly, and overlooked their spiritual needs. Besides, less attention is given to the approach of designing the applications that support spiritual needs. Hence, this study seeks to propose the use of technology to support the Islamic spirituality as the study context. Thus, Islamic perspective is needed for the technology assessment. However, there is no model proposed by Islamic scholars to direct the technological endeavor and set appropriate technological goals in Muslim societies. Hence, there is a need of a model for Muslims that is bound by the religious rulings. Accordingly, this study explores the techno-spirituality space through the development of the proposed aid, the Smart Prayer Mat. Three main studies were conducted, following the design science approach, with each having a different and specific aim. The first is qualitative and exploratory, aiming to understand the artefact context of use, design, and implication within the spiritual context. Hence, to attain a thorough understanding of the techno-spiritual context, key informant interviews were conducted with prominent Islamic scholars and a user experience expert. Thematic analysis was performed on the interview transcripts, and it shows significant themes emerged from the study context. The findings of the first study led us to draw a conceptual model of techno-spiritual that can be used as design informant of designing techno-spiritual artefacts. The second study aims to design an artefact, which then be evaluated by our targeted end users, the elderly. The third study aims to verify the proposed model among the users and the experts. User evaluation is achieved by the mean of user testing where the data were collected based on sensor data and post-experience interview. 20 elderly responses were used in the data analysis. The instrument for artefact evaluation was constructed, which contains two main dimensions: technological and Islamic spiritual context. For expert evaluation, descriptive and qualitative analysis were conducted in gaining a deeper understanding of each expert, including their opinions and perspectives of the proposed model. The results from both the analyses enable us to construct the Techno-Spiritual Design Model (TSDM), comprising three constructs; (1) permissible, (2) non-intrusive and (3) evoke spiritual experience. This model will serve as design informant, which regulates and facilitates the design of Muslims' techno-spiritual application. Accordingly, it will benefit future researchers and designers toward better development of techno-spiritual artefact.

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CHAPTER ONE

INTRODUCTION

1.1 Chapter Overview

This chapter serves as an introductory section which provides a synopsis to the thesis and introduces the readers to the research domain and other area of concern investigated by this research. The research objectives and related research questions are then presented, followed by brief descriptions of the research scope and approach. The chapter concludes with an overview of the significance of the research and presents the outline of the thesis.

1.2 Research Background

1.2.1 Aging Population

The world's population is constantly aging. Globally, as reported by United Nations Population Division, it is estimated that the number of elderly (aged 60 or over) is expected to more than double, from 841 million people in 2013 to more than 2 billion in 2050 (Farage et al., 2012; Joseph & Ahmed, 2016; World population ageing 2017 - Highlights, 2017). Even more dramatic, the elderly people are projected to outweigh the number of children for the first time in 2047. Malaysia, one of the developing countries, is also experiencing a steady increase in the aging population. It has been forecasted that by 2030, 15 per cent of the Malaysian population will be classified as elderly (Mara, 2013). Accordingly, age-related issues are becoming more critical to be addressed from different points of view: clinical, political, social, and technological.

Maintaining one's independence is the preference of an elderly and a critical component to successful aging (Farage et al., 2012; Mihailidis et al., 2008). Hence, the elderly people seek for more options and control over the services and support that they rely in their own lives (Tetley, 2013). Prior studies indicated that helping the elderly to remain independent and age in place is widely recognized as significant to the quality of life for them (Eccles et al., 2013; K. Halicka & Surel, 2020; Lima et al.,