

**UNIVERSITI TEKNOLOGI MARA**

**FACIAL PROFILING AND PILOT  
HIJAB SIZING OF MALAYSIAN  
WOMEN BASED ON  
ANTHROPOMETRIC SURVEY**

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## ABSTRACT

Through the years, hijab making industries in Malaysia have witnessed rapid growth due to several factors such as increase awareness among Malaysian Muslim women, the level of income, and technology advancement in the manufacturing, trading, and delivery system. Ready-to-Wear (RTW) hijab has been among the preferences of today's women due to its easy-to-wear character and variety of styles offered. This study aims at investigating several issues pertaining hijab sizing. Consumer's problems and preferences regarding hijab sizing, and size variations of RTW in the existing Malaysian market were investigated by means of questionnaire survey and online interview. The study revealed that comfort plays the most important aspect in selecting hijab, with the hijab face opening parts as the main part that determine consumer's satisfaction. The consumers and retailers agreed that Malaysia should establish a standardize hijab sizing system. The survey also revealed the non-standardized hijab sizing issue between different brands in the existing Malaysian market. Following the survey findings, a method of measuring facial dimensions for the use of facial anthropometric survey was developed. Data obtained from the anthropometric survey on 150 human subjects were used to establish facial profiling and to develop pilot hijab sizing for Malaysian women aged 18 to 30. Using Principal Component Analysis (PCA) and K-means clustering, the physiognomical facial height and the facial width were found to be the key dimensions of the facial profiling. The pilot hijab sizing was successfully developed, with the size range from S to XL, and was validated by means of wear test on prototype hijabs, made up based on the established sizing. The wear test was conducted on 20 human subjects. It was found that the hijab pilot sizing system was able to satisfy the wearer. The study can serves as a reference in the methodology of measuring the head and preliminary study towards the establishment of the actual anthropometric survey for RTW hijab sizing for the Malaysian market.

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# CHAPTER ONE

## INTRODUCTION

### 1.1 Introduction

Hijab symbolises the Muslim woman's commitment towards Islamic principles. Nowadays, there are many types of hijab available in market, with the ready-to-wear (RTW) hijab being the most popular hijab of choice in Malaysia. The RTW hijab is convenient and easy-to-wear, especially for working women, where time is of utmost important. The availability of RTW hijab in many retail outlets plays an important role in maintaining the popularity of RTW hijab. Hijab manufacturing for Malaysian local market is being dominated by the small-medium enterprise (SME) companies. Statistic shows that SME contributed 32 % in Gross Domestic Product (GDP) in Malaysia where *Bumiputera* SME being the major contributor of Malaysia's economy (Sharif, 2012; SME Corporation Malaysia, 2012). Often, people purchase hijab based on general sizes as indicated by the sizes of small (S), medium (M), large (L), and extra-large (XL). Although it is common to find these hijab sizes in market, the size differs in dimension between different hijab manufacturers due to the unavailability of standardized hijab sizing system, particularly in Malaysia. Often, consumer experienced frustration when size of the hijab that they intend to purchase differs between one outlet to another. This problem resulted in dissatisfaction among consumers. Compared with other ready-made apparels, fit of hijab is the most crucial in ensuring the consumers' satisfaction.

In order to overcome dissatisfaction among consumers in sizing issues, updated sizing system plays an important role to ensure comfort satisfaction to wearers. Anthropometric survey is a method for collecting data of sample population before a sizing system is established, while anthropometric sizing system is a table of numbers created based on the anthropometry survey that presents the value of body dimension of a target population (Zakaria, 2010). Process of establishing a sizing system involves many stages to ensure proper and systematic development of the sizing system.