CHAPTER 3

METHODOLOGY

3.1 INTRODUCTION

In order to achieve the aim and objectives of this thesis, there are several methods used, which are:

i. Site visit to understand the fundamental of seat belt design.

ii. Questionnaire/ surveys to get the level of comfort seat belt use from respective respondents.

iii. Design evaluation.

After the survey is finished, then from the data collected the data can be analysis to get the result. See Figure 3.1 to clear detail about this project thesis.
Site visit to PERODUA and Autoliv to understand the fundamental of seat belt and Anthropometrics data usage for seat belt design

Survey about seat belt’s comfort level by using questionnaire

Data analysis

Suggestion of a new design

Result and conclusion

Figure 3.1: Project methodology flow chart
3.2 SITE VISIT TO UNDERSTAND FUNDAMENTAL OF SEAT BELT AND ANTHROPOMETRIC DATA USAGE FOR SEAT BELT DESIGN

Before know detail about seat belt restraint system, the first thing to understand is about the fundamental of seat belt. All the information collected from the visit to PERODUA. Two important aspects of the seat belt’s fundamentals are design of the seat belt systems and the anthropometric data usage for the seat belt’s design. From the visit to PERODUA and AUTOLIV, the two important aspects are obtained.

PERODUA (Perusahaan Otomobil Kedua Sendirian Berhad), is Malaysia's second largest automobile manufacturer after Proton. It was established in 1992 and launched their first car, the Perodua Kancil in August 1994. The shareholders of Perodua are UMW Corporation Sdn Bhd with 38% stake, Daihatsu Motor Co. Ltd. (20%), MBM Resources Bhd (20%), PNB Equity Resources Corporation Sdn Bhd (10%), Mitsui & Co. Ltd (7%) and Daihatsu (Malaysia) Sdn Bhd (5%). Perodua mainly produces minicars and superminis and does not have models in the same market segments as Proton. They do not design or engineer their main components such as engine and transmission in house. Perodua cars have historically used Daihatsu component designs. Daihatsu held a 20% stake in Perodua at the company's launch, increasing this to 25% in 2001 and then to 35%.

While, AUTOLIV is a Swedish-American company with headquarters in Stockho, Sweden, that in 1997 sprung from the merger of the Swedish company Autoliv AB and Morton Automotive Safety Products, Inc., a division of the American firm Morton International. Autoliv develops and manufactures automotive safety systems for all major automotive manufacturers in the world. Together with its joint ventures Autoliv has over 80 facilities with 48,000 employees in 29 countries. In addition, the company has 17 development and engineering centers in nine countries around the world, including 20 test tracks, more than any other