QUALITY OF LIVING ENVIRONMENT IN RESIDENTIAL AREAS IN SHIJIAZHUANG, CHINA

LI TENG

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DEDICATION

To my beloved parents and wife
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Many people have contributed greatly to the completion of this master project, without them this would not have been possible. First of all, I would like to thank my master’s project’s supervisor, Assoc. Prof. Dr. Foziah binti Johar. I sincerely appreciate her kindness, patience, full support and confidence in me, her on-going guidance, feedback, and encouragement in the undergraduate project. Special thanks to Assoc. Prof. Dr. Nooraini binti Yusoff; who guided the right way for my master’s study.

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ABSTRACT

With the growth of economy in China, residential quality became one of the serious issues in the contemporary urban society. Not only bad quality residential brings trouble in life to people, but also causes the economic dispute. The quality issue is increasingly becoming outstanding, especially in the metropolis. Nowadays, people put more emphasis on the quality of life and prefer to purchase a high quality property. This is due to fact that the issue on residential living environment quality may bring long-time troubles. However, modern design of residential mainly focuses on the economic and aesthetic values and more often than not, ignore the other aspects that may impact the residential quality; such safety, privacy, density, accessibility, environment, and so on. The purpose of the study is to find a proper evaluation indicator system to assess the residential living environment quality in Shijiazhuang. And give suggestion and potential solution based on the study findings for future residential area planning and design in Shijiazhuang, China. The study identified the indicators that can be applied in the residential area planning and design, as well as the perception of residential quality among the local residents. Researcher of this study selected 9 residential areas in Shijiazhuang as the examples to get the real scenario of living environment quality condition. Quantitative method was the tool to carry out the survey, while descriptive analysis was adopted in the data analysis. The result suggested that planner and designer should pay more attention on nature environment planning which is much harder than physical environment planning. The indicator system and suggestions are helpful in planning good living environment quality for residential area and offer a better perception of residential environment for the local residents.

Key words: Quality, Living environment, Residential, Evaluation indicator system

Kata kunci: Kualiti, Persekitaran kehidupan, Kediaman, Sistem indikator penilaian
# TABLE OF CONTENT

<table>
<thead>
<tr>
<th>CHAPTER</th>
<th>DESCRIPTION</th>
<th>PAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>DECLARATION OF SUPERVISOR</td>
<td></td>
<td>ii</td>
</tr>
<tr>
<td>TITLE PAGE</td>
<td></td>
<td>iii</td>
</tr>
<tr>
<td>DECLARATION OF WRITER</td>
<td></td>
<td>iv</td>
</tr>
<tr>
<td>DEDICATION</td>
<td></td>
<td>v</td>
</tr>
<tr>
<td>ACKNOWLEDGEMENT</td>
<td></td>
<td>vi</td>
</tr>
<tr>
<td>ABSTRACT</td>
<td></td>
<td>vii</td>
</tr>
<tr>
<td>ABSTRAK</td>
<td></td>
<td>viii</td>
</tr>
<tr>
<td>TABLE OF CONTENT</td>
<td></td>
<td>ix</td>
</tr>
<tr>
<td>LIST OF TABLE</td>
<td></td>
<td>xiv</td>
</tr>
<tr>
<td>LIST OF FIGURE</td>
<td></td>
<td>xvi</td>
</tr>
</tbody>
</table>

## 1.0 INTRODUCTION

<table>
<thead>
<tr>
<th>SUBCHAPTER</th>
<th>DESCRIPTION</th>
<th>PAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>1.1</td>
<td>Introduction</td>
<td>1</td>
</tr>
<tr>
<td>1.2</td>
<td>Problem Statement</td>
<td>3</td>
</tr>
<tr>
<td>1.3</td>
<td>Research Questions</td>
<td>5</td>
</tr>
<tr>
<td>1.4</td>
<td>Goal and Objectives</td>
<td>6</td>
</tr>
<tr>
<td>1.5</td>
<td>Methodology</td>
<td>6</td>
</tr>
<tr>
<td>1.5.1</td>
<td>Study Area</td>
<td>6</td>
</tr>
<tr>
<td>1.5.2</td>
<td>Data Collection</td>
<td>7</td>
</tr>
<tr>
<td>1.5.3</td>
<td>Data Analysis</td>
<td>8</td>
</tr>
</tbody>
</table>
1.6 Significance of the Study 8
1.7 Organization of Thesis 9

2.0 LITERATURE REVIEW

2.1 Introduction 11

2.2 Understanding of Living Environment 11
  2.2.1 Definition of Living Environment 11
  2.2.2 Study of Living Environment at International Level 13
    2.2.2.1 Planning Concept on Living Environment 13
    2.2.2.2 Protect Our Living Environment 15
    2.2.2.3 Sustainable Development for Human Settlement 16
    2.2.2.4 Evaluation Methods on Living Environment 18
  2.2.3 Study of Living Environment in China 19
    2.2.3.1 Research and Case Study on Living Environment Evaluation 20
    2.2.3.2 Trend of Future Living Environment Study and Development 23
    2.2.3.3 Conclusion of Living Environment Study in China 23

2.3 Evaluation of Living Environment Quality in China 24
  2.3.1 Significance of Living Environment Quality Evaluation 25
  2.3.2 The Principle of Establishing Living Environment Quality Evaluation Indicator System 26
    2.3.2.1 People Oriented Principle 26
    2.3.2.2 Hierarchy Principle 26
    2.3.2.3 Comprehensiveness Principle 27
    2.3.2.4 Operability Principle 27
3.0 RESEARCH METHODOLOGY AND STUDY AREA

3.1 Introduction 29
3.2 Methodological Framework 30
3.3 Study Area 31
  3.3.1 Survey of Shijiazhuang City 31
  3.3.2 Current Development Condition of Private Residential Area 31
  3.3.3 Site Selection 34
  3.3.4 Survey 35
3.4 Data Collection and Respondents 36
3.5 Indicator Weight Method 39
  3.5.1 Existing Weight Methods 39
    3.5.1.1 Statistical Analysis Method 39
    3.5.1.2 Fuzzy Math Method 40
    3.5.1.3 Analytic Hierarchy Process 41
  3.5.2 The Mathematic Model of AHP 43
  3.5.3 Calculation of Weight Coefficient 44
  3.5.4 Consistency Check 44
3.6 Living Environment Quality Evaluation 45
  3.6.1 Evaluation System for Living Environment Indicators 45
    3.6.1.1 Evaluation Indicator System Hierarchy 45
    3.6.1.2 Indicator System Establishment 46
    3.6.1.3 Natural Environment 47
    3.6.1.4 Physical Environment 49
  3.6.2 Weight Determination 51
  3.6.3 Determination on Indicator Classification 53
3.6.4 Comprehensive Evaluation Method and Model 55

4.0 DATA ANALYSIS AND FINDINGS

4.1 Introduction 57
4.2 Profile of Respondents 57
4.3 Natural Environment 60

4.3.1 Analysis of Eco-environment Quality 60

4.3.1.1 Air Quality 60
4.3.1.2 Noise Level 61
4.3.1.3 Water Quality 62

4.3.2 Analysis of Greening Condition 64

4.3.2.1 Green Coverage Ratio 64
4.3.2.2 Green Area per Capita 65
4.3.2.3 Vertical Greening 65
4.3.2.4 Green Species Variety 66
4.3.2.5 Greening Growth 66

4.4 Physical Environment 67

4.4.1 Analysis of Planning and Design 68

4.4.1.1 Residential Appearance 68
4.4.1.2 Landscape Design 69
4.4.1.3 House Design 70
4.4.1.4 Building Density 71
4.4.1.5 Floor Area per Capita 72

4.4.2 Analysis of Health and Safety 72

4.4.2.1 Sunshine Exposure 72
4.4.2.2 Residential Facilities 73
4.4.2.3 Neighbourhood Relationship 74
4.4.2.4 Building Safety 76

4.4.3 Analysis of Location 77
4.4.3.1 Accessibility 77
4.4.3.2 Shopping Facilities 78
4.4.3.3 Parking Facilities 78
4.4.3.4 Medical Facilities 78
4.4.3.5 School Facilities 79
4.4.4 Analysis of Real Estate Management 79
   4.4.4.1 Security 79
   4.4.4.2 Sanitation 80
   4.4.4.3 Efficiency 81
4.5 Comprehensive Evaluation 81
   4.5.1 Natural environment 81
   4.5.2 Physical Environment 82
   4.5.3 General Condition 83
4.6 Summary 86

5.0 CONCLUSION AND RECOMMENDATIONS
5.1 Introduction 88
5.2 Living Environment Evaluation Practices in China 88
5.3 Recommendations 89
   5.3.1 Eco-environment Quality 89
   5.2.2 Greening Condition 92
   5.2.3 Design 93
5.4 Main Findings 94
5.5 Study Limitations 97
5.6 Study Prospects 97

REFERENCES 99
APPENDIX 105
# LIST OF TABLES

<table>
<thead>
<tr>
<th>TABLE NO.</th>
<th>TITLE</th>
<th>PAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Table 3.1</td>
<td>Basic Information of the 9 Private Residential Areas in Shijiazhuang</td>
<td>35</td>
</tr>
<tr>
<td>Table 3.2</td>
<td>Sample Size Table</td>
<td>37</td>
</tr>
<tr>
<td>Table 3.3</td>
<td>Calculation of Sample Size for Each Residential Area</td>
<td>38</td>
</tr>
<tr>
<td>Table 3.4</td>
<td>Judgment Matrix for Relative Importance Of A</td>
<td>43</td>
</tr>
<tr>
<td>Table 3.5</td>
<td>Evaluation Rule</td>
<td>43</td>
</tr>
<tr>
<td>Table 3.6</td>
<td>Summary of RI Value</td>
<td>44</td>
</tr>
<tr>
<td>Table 3.7</td>
<td>Indicators with Weight for Living Environment in Shijiazhuang</td>
<td>52</td>
</tr>
<tr>
<td>Table 3.8</td>
<td>Evaluation Standard of Living Environment for Private Residential Area in Shijiazhuang</td>
<td>54</td>
</tr>
<tr>
<td>Table 4.1</td>
<td>Profile of Respondents- Gender &amp; Age</td>
<td>58</td>
</tr>
<tr>
<td>Table 4.2</td>
<td>Profile of Respondents- Housing Floor Area &amp; Family Member</td>
<td>58</td>
</tr>
<tr>
<td>Table 4.3</td>
<td>Profile of Respondents- Tertiary Level</td>
<td>59</td>
</tr>
<tr>
<td>Table 4.4</td>
<td>Amount of Pollutants in the 3 Locations (μg/ m³)</td>
<td>60</td>
</tr>
<tr>
<td>Table 4.5</td>
<td>Noise Volume in the 9 Residential Areas (dB)</td>
<td>62</td>
</tr>
<tr>
<td>Table 4.6</td>
<td>Satisfaction with Water Quality in the 9 Residential Areas</td>
<td>63</td>
</tr>
<tr>
<td>Table 4.7</td>
<td>Proportion of Green Coverage Ratio and Green Area per Capita</td>
<td>64</td>
</tr>
</tbody>
</table>
Table 4.8  Vertical Greening and Growth Condition of Green Land  65
Table 4.9  Residents’ Satisfaction on Residential Appearance  65
Table 4.10 Building Density and Floor Area per Capita in the 9 Residential Areas  71
# LIST OF FIGURES

<table>
<thead>
<tr>
<th>FIGURE NO.</th>
<th>TITLE</th>
<th>PAGE</th>
</tr>
</thead>
<tbody>
<tr>
<td>Figure 1.1</td>
<td>Image of Shijiazhuang City Centre (2013)</td>
<td>7</td>
</tr>
<tr>
<td>Figure 1.2</td>
<td>Flow Chart of Thesis</td>
<td>9</td>
</tr>
<tr>
<td>Figure 3.1</td>
<td>Flow Chart of Research Methodology</td>
<td>30</td>
</tr>
<tr>
<td>Figure 3.2</td>
<td>Supply and Demand of Private Residence in Shijiazhuang during 2009-2013</td>
<td>32</td>
</tr>
<tr>
<td>Figure 3.3</td>
<td>Levels and Basic Prices of Land Used For House of Suburb in Shijiazhuang</td>
<td>34</td>
</tr>
<tr>
<td>Figure 4.1</td>
<td>Water Quality Satisfaction Rate in the 9 Residential Areas</td>
<td>63</td>
</tr>
<tr>
<td>Figure 4.2</td>
<td>Satisfaction on Greening Growth in the 9 Residential Areas</td>
<td>67</td>
</tr>
<tr>
<td>Figure 4.3</td>
<td>Degree of satisfaction on Residential Appearance</td>
<td>69</td>
</tr>
<tr>
<td>Figure 4.4</td>
<td>Landscape in Hengda and Guangan</td>
<td>70</td>
</tr>
<tr>
<td>Figure 4.5</td>
<td>Degree of Satisfaction on Residential Landscape</td>
<td>70</td>
</tr>
<tr>
<td>Figure 4.6</td>
<td>Degree of Satisfaction on House Design</td>
<td>71</td>
</tr>
<tr>
<td>Figure 4.7</td>
<td>Degree of Satisfaction on Sunshine Exposure</td>
<td>73</td>
</tr>
<tr>
<td>Figure 4.8</td>
<td>Degree of Satisfaction on Residential Facilities</td>
<td>74</td>
</tr>
<tr>
<td>Figure 4.9</td>
<td>Residential Facilities Management Office in Hengda</td>
<td>74</td>
</tr>
<tr>
<td>Figure 4.10</td>
<td>Degree of Satisfaction on Neighbourhood Relationship</td>
<td>75</td>
</tr>
<tr>
<td>Figure 4.11</td>
<td>Neutrality Perception on Neighbourhood Relationship</td>
<td>75</td>
</tr>
</tbody>
</table>
Figure 4.12  Degree of Satisfaction on Building Safety  76
Figure 4.13  Degree of Satisfaction on Location  77
Figure 4.14  Degree of Satisfaction on Real Estate Management  79
Figure 4.15  Evaluation on Eco-environment quality and Greening Condition  81
Figure 4.16  Evaluation on Design, Health and Safety, Location and Estate Management  82
Figure 4.17  Evaluation on Natural Environment and Physical Environment  83
Figure 4.18  Total Scores of the 9 Residential Areas  84
Figure 5.1  Environmental Friendly Vehicle Use Clean Energy  89
Figure 5.2  Application of Grass Planting Brick and Spatial Greening  92
CHAPTER 1

INTRODUCTION

1.1 Introduction

After the establishment of China, there have been tremendous changes in terms of economy, culture and social development. In recent years, these changes created a sense of need for the development of residential quality. This is because there is a growing concern on the deteriorating state of housing in urban areas of developing countries. Therefore, residential quality has become crucial to the contemporary urban society as it influences the quality of live in terms of well-being of the human beings, and their daily activities. Consequently, the quality of housing can be considered as an important health element that affects the manner of living and their productivity.

The rapid development of economy leads to the growth of population. Therefore, the needs for the living standards and life quality has become a vital concern of a population. Many people prefer to live in a high quality residential area since people are able to involve socially and physically with their surroundings in the residential environments. China has allocated 150,800 hectares of land for the residential areas in 2013. The residential area totalled about 4.4 million hectares, providing 31 square meters for per person. Furthermore, the use of land for residential area continues rising at 0.2 million hectares every year. However, today in China, the
aesthetic and economic value of the residential areas are the primary even though safety, privacy, density and accessibility are more essential to planning the good quality of housing. Such being the case, the low quality of residential area occurs even though it promotes reasonable and aesthetics in the overall built-up environment.

Shijiazhuang being the capital city of Hebei Province plays important role in terms of technology, education and trade as well as politics. Therefore, Shijiazhuang is becoming the largest city due to the convenient traffic and a busy commercial trade in the northern China. The rapid population growth and sharp increases in rents require more housing to be built in order to fulfil the needs of the people. Not only increases in population demands for housing, but also steady increases in newlyweds who are looking for rental homes create demands for residential areas. Consequently, many attractive and affordable residential areas were built with low quality. However, Wang (2013) in 2012 found that, there were 135 complaints with regards to residential quality in 29 residential areas. It was reported that residents mainly complained about building distance, short sunshine exposure, poor environment, housing density and insufficient parking spaces which may affect the health, privacy, safety and life quality of the residents. Thus, these issues are rapidly becoming the main concerns of the residents in Shijiazhuang.

Residential environment quality is the main issue that should be considered in the planning process. Marans (1976) states that “the residential environment is viewed as the place where an individual can relate himself socially and functionally to the complex world around him”. It is considered to be richly diverse, both physically and socially, and constantly changing in terms of an aging landscape and a mobile population. Furthermore, it should enable the planners to improve the quality of the physical surroundings and to create liveable environments for the residents.

A good living environment includes the good accessibility of services and facilities, such as schools and grocery stores with walking distance from the home.
The workplace does not, however, have to be in the immediate vicinity. Hence, the residents do not have to depend on their private transportations if the public transport system is convenient.

A good place to live is that made up of single-family homes. For example, multi-storey apartment buildings with lift-equipped is also considered desirable for the residents. Residential areas should also be close to nature and provide safety in terms of tidiness, appropriate lighting and well-tended pedestrian traffic lanes. A good living environment also contains collective responsibility both for children and other adults (Tuorila, 2012).

Residential quality is not only about design and planning, but also quality evaluation plays an important role as well. Well planned and good management of residential areas provide satisfactory perception of living environment to the residents. Quality evaluation makes the user, planner and manager involve in the residential area much deeper. Chinese scholars did not start off the residential quality evaluation until 1980s. Although there are several studies on the subject today, such as the ‘Study of Living Environment in Urban Settlement’ (Chen, 2000), ‘Living Environment Evaluation and Optimization in Metropolis- A Case Study In Shanghai, China’ (Ning and Shi, 1999) etc., but the research objectives are mainly focus on macroscopic level, and lack of reach on private residential area which has been built widely in China (Hu, 2007). This study attempts to assess the quality of living environment in private residential areas in Shijiazhuang city, China.

1.2 Problem Statement

Better quality of life is the aim of everyone, and for generations to come (DETR, 1996). The spatial distance and living environment in residential areas may impact the quality of life (Yang, 1997). Most Chinese spend more than 1/3 of their life time in the residential area. Therefore, it is only fair that the plan of residential
areas should focus on the residential quality. Chunhua Song, the Minister of The Ministry of Construction of China said that “residential area is one of our important spatial living environment, it not only mirrors the current local social culture and development of science and technology, but also the features of residents’ life model, income, education and social status, thus, the residents require that the living environment be fit for human health with beautiful landscape” (Song, 2008).

In recent years, the requirement for living environment is increasing; many unique residential areas has been built all over China. There has generally been an improvement in the quality of residential areas. Recent developments show that some issues may easily be ignored in planning and design, such as inadequate function of community, unreasonable layout, lack of service facilities, dirty living environment, monotonous pattern of residential areas, lack identity, etc. Thus, the issues of planning a good living environment, complete function community and local characteristics of residential area are the major problems to be resolved (Yu and Wang, 2008).

In Shijiazhuang, the aesthetics, cost, and floor space are taken into consideration in the planning and design of the residential areas. Nevertheless, other aspects that may also influence the quality of residential living environment have been neglected such as building distance and setback, sunshine exposure, spatial relationship of building, population density, greening, service facilities and energy efficiency. These elements are generally termed the natural environment and the humanistic environment. The planning guideline in China is published in 2012 contains the detailed limitation on these planning aspects. Although some planners are trying to consider all the aspects regarding the residential quality during the planning process, the current residential quality is still not sufficient to fulfil the needs of people. Even though the environment has a great impact on the happiness and well-being of individuals, urban planners and designers have not taken much actions to shape the environment into communities where people can live comfortably and enjoy the highest possible quality of life (Matthew, 2003).
Although the Chinese planning bureaus have the stage where the drawings of residential planning and design are checked, there is no clear monitoring of residential quality. In addition, the National Development and Reform Commission of China also does not have any criteria on residential quality grade evaluation. So, the issues of residential quality were not taken into consideration until complaints about the construction has been made. Some of the conditions cannot be modified or improved after construction, such as the building distance and setback, and residential location.

An evaluation of the living environment needs to be tested and measured. In 1999, Song and Liu established an indicator evaluation system for urban living environment based on the analytic hierarchy process (AHP). The quality of living environment in Chinese residential areas can be calculated by using the system. It is the first system that takes the quality of living environment into account for Chinese. This study uses the AHP to evaluate the quality of living environment of nine private residential areas in Shijiazhuang, China.

### 1.3 Research Questions

Currently, people in urban areas more concerned with residential quality, because bad residential living environment has negative impacts on the residents’ life. Thus, this study should identify the indicators which may influence the quality of residential living environment quality.

The research questions that the study will address are:

1. How to evaluate the residential living environment quality?
2. Which indicator plays the major role in residential living environment quality?
3. What is the perception of residential living environment quality?
4. What aspects should be considered during residential planning?
5. How to improve the insufficient of human living environment quality?
1.4 Aim and Objectives

The aim of this study is to identify a system to evaluate the quality of residential living environment. It hopes to provide a high quality of residential living environment for the urban residents. The study makes an assessment of planning and design in nine residential areas. Base on the study aim, three objectives as follows were identified:

1. To identify the indicators or elements that can be applied in the residential area evaluation system.

2. To evaluate living environment using the indicators or elements identified in current in different residential areas.

3. To identify indicators or elements that should be taken into consideration in the planning and design of residential areas.

1.5 Methodology

A mixed method approach was used in this study. The methodology includes data collection and data analysis. The methodology of the study is elaborated in Chapter 3.

1.5.1 Study Area

Shijiazhuang is selected for the study. Shijiazhuang is the capital city of Hebei Province. It is the third largest city in northern part of China with total area of 15848 kilometre square, and the area of city centre is 455.81 kilometre square. In 2013, the
total population of Shijiazhuang was 12.764 million, and GDP per capita was 21,393RMB. The existing residential area in the city centre of Shijiazhuang is 608 kilometre square (Soufun, 2012) where the average house price is 8502RMB/ square meter, (402.97 RMB/square foot) (Baidu, 2014). Nine different private residential areas are specifically selected for this study to investigate the house price, size, age and property. Private residential is a project developed by private developers.

![Image of Shijiazhuang City Centre (2013)](image)

**Figure 1.1**: Image of Shijiazhuang City Centre (2013)

### 1.5.2 Data Collection

The data collection includes the questionnaires, observation, and literature review. The research instrument is a questionnaire which consist questions that intends to collect the perception, opinions and needs of residents. It includes the demographic information of the respondents, satisfaction of living environment indicator index, and the perception of the quality of residential living environment. The questionnaires were distributed to the residents in the 9 residential areas.
1.5.3 Data Analysis

The study used the sampling method to identify the respondents for the study. AHP as the basic theory is used to weight the indicators. The AHP is a structured technique for organizing and analysing complex decisions, based on mathematics and psychology. It was developed by Thomas L. Saaty in the 1970s and has been extensively studied and refined since it was released. The study established the hierarchy model and judgment matrix based on the various indicator and the importance of the indicator, and followed by ranking the hierarchies to calculate the importance of natural and physical environment, and the importance of each indicator. The data from questionnaire and survey is calculated with analysis model and weight of the indicators. The score of each residential area is shown as results of the calculation in Chapter 4.

1.6 Significance of the Study

The significance of this study are:

1. The evaluation system of private residential living environment quality can describe and measure the condition and development trend of living environment, it is a standard.

2. It is beneficial to compare private residential areas and to find existing issues in living environment, and to control the development direction in the future.

3. The evaluation system will form a basis for the planners to plan for future development of residential living environment.
1.7 Organisation of Thesis

In order to accomplish the study objectives, the study is divided into 5 stages: identify the issues and study questions, literature review, data collection, questionnaire and methods, data analysis and conclusion.

![Flow Chart of Thesis](image)

**Figure 1.2: Flow Chart of Thesis**

Chapter 1 Introduction

The first stage of this study is to identify the problems related to the residential areas. Based on the problem statement, the researcher of the study came up with various questions.

Chapter 2 Literature Review

The second stage is literature review which is based on the subject that has been chosen. In this stage, information and instrument that can help in evaluating the residential quality of living environment is studied. The study also consists of AHP
practice in China; meanwhile, the study also covers the current situation of residential development in Shijiazhuang.

**Chapter 3 Research Methodology**

The methodology explains the methods and instruments used to achieve the aim and objectives of the study. It covers the method for data collection, and data analysis.

**Chapter 4 Data Analysis**

The data analysis stage focus on the analysis and synthesis of the findings. The analysis contribute to the future recommendations and suggestions.

**Chapter 5 Conclusion and Recommendation**

In this stage, the output from data analysis is concluded and discussed in in-depth. The result is summarised with the future recommendation. Limitations of the study is discussed in this section.
REFERENCE


