

A HEALTHCARE ENHANCEMENT FOR SENIOR
CITIZENS USING FOREST THERAPY (SHINRIN-
YOKU) CONCEPT AT HEATH FOREST OF
TERENGGANU

BY

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ABSTRACT

The growth of senior citizens is one of the most significant demographic trends all over the world. With the global growth of elderly populations, emphasizing the increasing needs of older people in consideration of the public interest presents a novel challenge for developing a park for senior citizens. In Malaysia, the population has almost quadrupled over the past five decades, growing from 7.4 million in 1957 to 27.4 million in 2010. The population has always been on the world's attention, especially fertility, birth, death, migration, education, poverty and ageing. Forest therapy, also known as Shinrin-Yoku, is also considered a form of nature therapy. It functions through exposure to natural stimuli that render a state of physiological relaxation. In this research, the concept of forest therapy is used to enhance the wellness of the senior citizen by implementing therapeutic recreational elements that are suitable for them. In order to achieve the objectives of this research, the methodology used for the study consists of in-depth interviews with two expert gerontologists, pilot study research, observation, conducting survey questionnaire with 200 respondents, and conducting fieldwork such as soil and water sampling at heath forest. This research's findings include the senior citizen's behaviour on their barrier and limitation in participating in physical activities, mainly because of their ageing sicknesses such as dementia, joint pain, and other elderly diseases. Other than body ailments, the elderly's limitations and barriers are lack of motivation, risk of getting injuries, and shyness of carrying activities in public areas. Their design preferences are identified according to their physical health needs and preferences that have been surveyed through questionnaires distributed to create a senior citizen's space preferred by this targeted group. Identifying their design preferences can motivate them to participate in physical activities hence, improving their wellbeing. Then, integrating the landscape character and environment of heath forest into forest therapy concept by identifying the forest's landscape and environmental quality index. The senses of senior citizen's stimulation, sight, sound, touch, and scent are discussed to integrate with the landscape character of heath forest, enhancing seniors' wellness by implementing therapeutic elements. Based on the data collected during the research, it is found that any form of natural attributes activities can help to enhance the wellness of the elderly society through implementing therapeutic recreational elements based on the user's limitations and preferences. It is recommended that the forest therapy concept emerges as an approach that helps enhance the wellness of the senior citizen. This recommendation is to ensure that this study achieved its aim to integrate a forest therapy (Shinrin-Yoku) concept in heath forest that helps enhance the senior citizen's wellness by implementing therapeutic recreational elements suitable for them.

Keywords: Senior citizens, Forest therapy, Wellness, Elderly, Heath Forest, Ageing society.

خلاصة البحث

يعد نمو المسن أحد أهم الاتجاهات الديموغرافية في جميع أنحاء العالم. مع النمو العالمي للسكان المسنين، فإن التأكيد على الاحتياجات المتزايدة لكبار السن مع مراعاة المصلحة العامة يمثل تحديًا جديدًا لتطوير حديقة لكبار السن. في ماليزيا، تضاعف عدد السكان أربع مرات تقريبًا على مدار العقود الخمسة الماضية، حيث ارتفع عدد سكانه من 7.4 مليون في عام 1957 إلى 27.4 مليون في عام 2010. لطالما كانت قضية السكان محل اهتمام العالم، وخاصة الخصوبة والولادة والوفاة والهجرة، والتعليم والفقر والشيخوخة. يعتبر علاج الغابات، المعروف أيضًا باسم Shinrin-Yoku، شكلاً من أشكال العلاج الطبيعي حيث يعمل من خلال التعرض للمنبهات الطبيعية التي تؤدي إلى حالة من الاسترخاء الفسيولوجي. في هذا البحث، يتم استخدام مفهوم العلاج بالغابات لتعزيز عافية كبار السن من خلال تنفيذ عناصر علاجية ترفيهية تناسبهم. من أجل تحقيق أهداف هذا البحث، تتكون المنهجية المستخدمة في الدراسة من مقابلات متعمقة مع اثنين من خبراء الشيخوخة، والبحث بدراسة تجريبية، والملاحظة، وإجراء استبيان مسحي مع 200 مستجيب، وإجراء نشاط ميداني مثل عينات التربة والمياه في غابة صحية. تتضمن نتائج هذا البحث سلوك المواطن المسن في حاجته ومحدودية مشاركته في الأنشطة البدنية التي ترجع بشكل أساسي إلى أمراض الشيخوخة مثل الخرف وآلام المفاصل وأمراض المسنين الأخرى. بخلاف معاناتهم من أمراض الجسم، تتمثل قيود كبار السن والعوائق من وجهة نظرهم في الافتقار إلى الحافز، وخطر التعرض للإصابات، والحجل من ممارسة الأنشطة في الأماكن العامة. لإنشاء مساحة لكبار السن مفضلة من قبل هذه المجموعة المستهدفة، يتم تحديد تفضيلات التصميم الخاصة بهم وفقًا لاحتياجاتهم الصحية البدنية وتفضيلاتهم التي تم مسحها من خلال الاستبيانات التي تم توزيعها. يمكن أن يؤدي تحديد تفضيلات التصميم الخاصة بهم إلى تحفيزهم على المشاركة في الأنشطة البدنية وبالتالي تحسين رفاههم. بعد ذلك، يتم دمج طبيعة المناظر الطبيعية والبيئة للغابات الصحية في مفهوم العلاج بالغابات من خلال تحديد مؤشر جودة البيئة والمناظر الطبيعية للغابات. كما تتم مناقشة حواس تحفيز كبار السن وهي البصر والصوت واللمس والرائحة لتتكامل مع طبيعة المناظر الطبيعية للغابات الصحية،

وبالتالي تعزز عافية كبار السن من خلال تنفيذ عناصر علاجية. بناءً على البيانات التي تم جمعها أثناء البحث، وجد أن أي شكل من أشكال أنشطة السمات الطبيعية يمكن أن يساعد في تعزيز عافية مجتمع المسنين من خلال تنفيذ عناصر ترفيهية علاجية بناءً على قيود المستخدم وتفضيلاته. من المستحسن أن يظهر مفهوم العلاج بالغابات كنهج يساعد على تعزيز عافية كبار السن. هذه التوصية هي التأكيد من أن هذه الدراسة قد حققت هدفها في دمج مفهوم العلاج بالغابات (Shinrin-Yoku) في الغابة الصحية الذي يساعد على تعزيز عافية كبار السن من خلال تنفيذ عنصر ترفيهي علاجي مناسب لهم.

الكلمات المفتاحية: مواطن كبير السن، علاج الغابات، العافية، كبار السن، غابة الصحة، مجتمع الشيخوخة.

APPROVAL PAGE

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DECLARATION

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TABLE OF CONTENTS

Abstract	ii
Arabic Abstract	iii
Approval page	v
Declaration	vi
Copyright Page.....	vi
Acknowledgement	viii
List of Tables	xii
List of Figures	xiv
CHAPTER ONE: INTRODUCTION	1
1.1 Research background.....	1
1.2 Problem statement and issues	4
1.2.1 The increasing number of the senior citizen age group is a sign of increasing people that need health care support	4
1.2.2 The elderly that lives with an unhealthy lifestyle are shifted away from being healthy and active	4
1.2.3 Negative environment effects the participation of outdoor activities	5
1.3 Research questions.....	6
1.4 Research aim and objectives.....	6
1.5 Research hypothesis.....	6
1.6 Research scope.....	7
1.7 Organization of thesis	7
1.8 Summary of chapter.....	8
CHAPTER TWO : LITERATURE REVIEW	9
2.1 Introduction.....	9
2.2 Senior Citizen in Malaysia.....	9
2.2.1 Environmental Implications on Senior Citizen	11
2.2.2 Needs on Open Space for Healthcare Enhancement.....	12
2.2.3 Summarization of Senior Citizen	14
2.3 Forest therapy (shinrin-yoku)	14
2.3.1 Recent Trend Worldwide	16
2.3.2 Effects on Human Health	21
2.3.3 Summarization of Forest Therapy	26
2.4 Heath forest, terengganu	26
2.4.1 Comparison of Forest in Malaysia	27
2.4.2 Character of Heath Forest	28
2.5 Summary of chapter.....	30

CHAPTER THREE : METHODOLOGY31

3.1 Introduction..... 31
3.2 Research methodology..... 31
3.3 Data collection approach 33
3.4 Research design 34
3.5 Qualitative Data 35
 3.5.1 Literature review 35
 3.5.2 In- depth interview with experts 36
 3.5.3 Data analysis: Thematic Analysis 38
3.6 Quantitative Data 40
 3.6.1 Pilot Study Selection 41
 3.6.2 Questionnaires Survey 46
 3.6.3 Observation 48
 3.6.4 Data analysis II: Descriptive analysis 65
 3.6.5 Data analysis III: Statistical analysis..... 65
3.7 Summary of chapter..... 65

CHAPTER FOUR: FINDINGS AND DISCUSSIONS67

4.1 Introduction..... 67
4.2 Understanding of elderly behaviour 68
 4.2.1 Senior Citizen’s constraint 69
 4.2.2 Senior citizen’s pattern and preferences about open space 74
 4.2.3 Key features in maintaining senior citizen’s physical and
 mental health ability 77
 4.2.4 Discussions..... 78
4.3 Summary of the results 80
4.4 Creating forest therapy park for senior citizen 81
 4.4.1 Senior citizen’s limitation and barrier 81
 4.4.2 Respondent’s profile 82
 4.4.3 Participation constraint and concern 86
 4.4.4 Design preferability..... 97
 4.4.5 Discussions..... 104
 4.4.6 Summary of the results 105
4.5 Integration of forest therapy concept into heath forest..... 106
 4.5.1 Landscape character of heath forest 108
 4.5.2 Soil physical properties 121
 4.5.3 Water Quality index of heath forest 123
 4.5.4 Discussions..... 125
 4.5.5 Summary of the results 126
4.6 Summary of chapter..... 127

CHAPTER FIVE: RECOMMENDATIONS AND CONCLUSIONS	128
5.1 Design guidelines and recommendations for integration of forest therapy concept into heath forest.....	128
5.1.1 Concept 1- Sustainable and accessible design elements for senior citizen	128
5.1.2 Concept 2- Design integration with elderly’s stimulation	132
5.2 Design recommendations.....	134
5.2.1 Proposed Design	134
5.3 Conclusion	137
REFERENCES.....	139
APPENDIX I	146
APPENDIX II.....	150
SITE OBSERVATION FORM.....	151
APPENDIX III	151
IN-DEPTH INTERVIEW	152

LIST OF TABLES

Table 2.1 Environmental implication that effects senior citizens	12
Table 2.2 Ministry of Natural Resources and environment Malaysia (2016)	14
Table 2.3 Results of laboratory experiment for each sensory analysed by Tsunetsugu et al., (2013)	23
Table 2.4 Psychological effects in engaging with nature	25
Table 2.5 Characteristic of heath forest	28
Table 3.1 Methods that will be used to achieve the objectives	34
Table 3.2 List of experts	37
Table 3.3 Sampling technique by Taherdoost (2016)	46
Table 3.4 Questionnaire survey structure	47
Table 4.1 Constraints of the elderly from each of the experts and its relationship with elderly's mental and physical ability	70
Table 4.2 Elderly's pattern and preferences about open space from both experts	75
Table 4.3 Key features for elderly's pattern and preferences about open spaces	78
Table 4.4 Variables in the survey questionnaire and the purpose of the variables	81
Table 4.5 Summarisation of the demographic data of the respondents	85
Table 4.6 Results for the senior's constraint and their concern in recreational activities	88
Table 4.7 Summarised and discussed the results for senior citizen's concern in using recreational park provided	95
Table 4.8 Senior citizen's preferred park	97
Table 4.9 Summarised results for the senior citizen's design preferability in park	102
Table 4.10 Integration of forest therapy concept into heath forest	108
Table 4.11 Plant species and their stimulation	117
Table 4.12 Results for soil physical properties analysis	122

Table 4.13 Results for physicochemical and nutrient analysis for water heath forest based on Water Quality Index (WQI)	124
Table 5.1 The element that is needed in creating a sustainable and accessible design for ageing societies based on the recommendations and suggestion by the respondents and gerontologists.	129
Table 5.2 Recommendations of designs to integrate elderly's stimulation	132

LIST OF FIGURES

Figure 2.1 Concept of Shinrin-Yoku	16
Figure 3.1 Methods that will be used to achieve the objectives	33
Figure 3.2 Data collection technique	35
Figure 3.3 Generated codes	39
Figure 3.4 Location plan of FRIM (3.235339, 101.634269)	43
Figure 3.5 Route map FRIM	43
Figure 3.6 Figure 3.6.1.2 Location plan of Taman Rimba Komanwel (3.2962°N, 101.6117°E)	44
Figure 3.7 Route map of Taman Rimba Komanwel (3.2962°N, 101.6117°E)	45
Figure 3.8 Key plan and location plan of Rantau Abang, Terengganu (4°55'N, 103°21'E)	50
Figure 3.9 Soil auger (Eijkelkamp Agrisearch)	51
Figure 3.10 Soil texture analysis procedure	52
Figure 3.11 Soil colour analysis procedure	53
Figure 3.12 Base Map	54
Figure 3.13 Water sample collection equipment	55
Figure 3.14 YSI 5556 MPS	57
Figure 3.15 Biochemical Oxygen Demand (BOD) preparation	59
Figure 3.16 Dilution Water preparation	60
Figure 3.17 Ammoniacal Nitrogen test preparation	62
Figure 3.18 Total suspended solid test preparation	64
Figure 4.1 Initial codes from Atlas t.i	69
Figure 4.2 Constraints of the senior citizen (generated from Atlas t.i)	72
Figure 4.3 Network that shows constraints of the elderly and its relationship with mental and physical ability (generated from Atlas t.i)	73

Figure 4.4 Recommendation and design preferences codes (generated from Atlas t.i)	74
Figure 4.5 Network that shows elderly's pattern and preferences about open space and their relationship with recommendations and design preferences(generated from atlas t.i)	77
Figure 4.6 Gender and age of respondents	83
Figure 4.7 Race and marital status of respondent	84
Figure 4.8 Employment status of respondents	84
Figure 4.9 Participation constraint of respondents	86
Figure 4.10 Body ailment and physical limitation of respondents	86
Figure 4.11 Lack of motivation	87
Figure 4.12 fear of injury	87
Figure 4.13 Shy of carrying activities in public places	88
Figure 4.14 Concern in using recreational park	90
Figure 4.15 Concern of safety and security	90
Figure 4.16 Fear of crime	91
Figure 4.17 Concern in bad lighting of recreational area	91
Figure 4.18 Unsafe Park facilities	92
Figure 4. 19 Concern of ergonomic features	92
Figure 4.20 Bad toilet facilities	92
Figure 4.21 Bad accessibility	93
Figure 4.22 Fear of going alone	93
Figure 4.23 No safety design	93
Figure 4.24 Far travelling distance	94
Figure 4.25 Bad scenery and landscape	94
Figure 4.26 Preferred Park of respondents	97
Figure 4.27 Preferences of good accessibility and navigation	98
Figure 4.28 Preferences of design that have physical health needs and facilities	99

Figure 4.29 Preferences of design that have safe environment	99
Figure 4. 30 Preferences of having good toilet facilities	100
Figure 4.31 Preferences of design that have safe environment	100
Figure 4.32 Preferences of design that have good lighting	100
Figure 4.33 Preferences of design that have good safety and security	101
Figure 4.34 Have recreational opportunities	101
Figure 4.35 Offer social interaction and gathering spaces	101
Figure 4.36 Offer nature and greenery scenery	102
Figure 4.37 Base plan of Rantau Abang, Terengganu (4°55'N, 103°21'E)	107
Figure 4.38 Shows the landform of the heath forest where it run parallel to the seacoast	109
Figure 4.39 Shows the cross-section A-A'	110
Figure 4.40 Shows the engagement of nature (wind)	111
Figure 4.41 shows the engagement of nature (vision)	112
Figure 4.42 Shows the area that is surrounded with matured trees area	113
Figure 4.43 Shows the matured tree of Melaleuca cajuputi where the height of this matured trees can reach up to 35m	114
Figure 4.44 Shows the matured tree of Melaleuca cajuputi where the height of this matured trees can reach up to 35m	114
Figure 4. 45 Views of semi-matured trees area	114
Figure 4.46 Shows the cross-section A-A'	115
Figure 4.47 Seedling/ young plants area	116
Figure 4. 48 Mature plant area	116
Figure 4.49 Shows the sandy texture of heath forest's soil	121
Figure 5.1 Proposed design at rest area station near water bodies	135
Figure 5.2 Proposed design at gathering area	136

CHAPTER ONE

INTRODUCTION

1.1 RESEARCH BACKGROUND

The growth of the older population is one of the most significant demographic trends worldwide. With the global development of elderly folks, emphasizing older people's increasing needs in public interest considerations presents a novel challenge for developing a park for senior citizens (Suhairi et al, 2017). The population has always been on the world's attention, especially fertility, birth, death, migration, education, poverty and ageing. According to Malaysia's Public Service Delivery and Local Government, senior citizens are defined as individuals aged 60 years and above. This definition is in line with the definition given by the World Assembly on Ageing 1982 in Vienna. The definition of senior citizens in Malaysia as defined by Jabatan Perkhidmatan Awam, the concept of "old" in the National Policy on Senior Citizens are those above the age of 60 years. "Old" may be in the form of physiological, biology or functional aspects. For example, in his 90s, Dr. Mahathir thinks and acts like a young visionary and creative person.

Based on Malaysia's Population and Housing Census, the population has almost quadrupled over the past five decades, growing from 7.4 million in 1957 to 27.4 million in 2010. The number of people aged 65 years and over in Malaysia has increased steadily since the 1970s, and it is projected that the number will triple from 2.0 million today to more than 6.0 million by 2040. Although much smaller in total size, the number of people ages 80 and over is projected to grow more than fourfold from 0.3 million today to nearly 1.4 million by 2040. While the youngest member of the baby boomer

generation is not yet entering the ageing boomers, the recent decline in fertility has accelerated the older population's share. In 1970, only 3.3 percent of the population was aged 60 years, and over half of the population (44.5%) was under 14. By 2017, children make up less than one-fourth of the total population (24.1%).

Meanwhile, those aged 60 years and over comprise 6.2 percent of the total population. Malaysia will have a nearly equal share of the young (18.6%) and older population (14.5%) in 2040. By this time, there will be three older persons for every 20 people. It shows that the population age structure in future has changed with a more elderly population (Population and Housing Census Peninsular Malaysia 1957/ Population and Housing Census Malaysia 1970/ Population Projections Malaysia 2010-2040).

Apart from an increase in the aged population, the aged of the elderly also increase their life expectancy (Mafauzy, 2000). It is also expected that the proportion of the aged population is higher in the urban than the rural area. This change in the aged population's demographic pattern will also influence the distribution of health care resources. Furthermore, it is noticeable that the elderly are less healthy than the youngster. Hence an increase in the population associated with ill health is the aged group.

Malaysia's health care system is primarily geared toward short-term care and hospitalisation, while the ill elderly with chronic diseases may require long-term care health. About the prevention of diseases and disabilities of the elderly, healthy lifestyle promotion would benefit them. Starting from the young adult, they would generally continue to become healthy elderly citizens if healthy lifestyles are continuing. Other than minimising the illness and disabilities, this would enhance their independence in their daily activities.

Forest therapy, also known as Shinrin-Yoku, is also considered nature therapy (Hansen et al., 2017). They define nature therapy as “a set of practices aimed at achieving ‘preventive medical effects’ through exposure to natural stimuli that render a state of physiological relaxation and boost the weakened immune functions to prevent diseases.”

The users are engaged with all their senses during forest bathing through the forest's fragrance, green colours of the plants, the murmuring of streams and birds singing, eating forest food and touching the bark of the trees. The concept of Shinrin-yoku starts with a stressed state of the user at the top. It is pointed out to the restorative effects where the uses of nature such as trees, forests, flowers, chirping of birds help give out relaxation and recovery.

According to L. S. Lawrence (2003), Forest was classified into several types according to its unique characteristics. Such as tropical forests, subtropical, montane, heath forests and others. The forest's natural environment is considered essential in promoting health models as it is closely associated with human health issues. Climate, soil, and water are the main factors influencing the environmental factors in distributing plants and vegetations in the country. Saw (2010) also mentioned that Peninsular Malaysia is generally regarded as per-humid (i.e. wet throughout the year) with short dry periods with a relatively uniform climate. However, northwest Peninsular Malaysia only experiences a few dry months each year.

Heath forest is fragile and sensitive towards its environment and human disturbance (Hussein, 2014). Therefore, creating a recreational forest environment at heath forest must be strategised carefully in order to achieve the goal of this study which is to integrate a forest therapy (Shinrin-Yoku) concept in heath forest that helps to enhance the wellness of the elderly society by implementing therapeutic recreational

element that is suitable for them while conserving the character of the forest. Furthermore, such as nature appreciation can help stimulate and increase users' awareness of natural environments (Hussein & Noorizan, 2007).

1.2 PROBLEM STATEMENT AND ISSUES

1.2.1 The increasing number of the senior citizen age group is a sign of increasing people that need health care support

The world population represent 12% of the senior citizen, and it is expected to double by 2015 and triple in 2100 (Tavares et al., 2017). The increase of this population age group is a sign of increasing people who need health care for various diseases. The existing health care institutions for the aged will not be adequate to meet the demand in the future. More hospitals or other healthcare institutes would be needed to build and services that need to be introduced or further developed, especially concerning the elderly. The increase is inevitable. They will have their unique problems and generate new challenges and demands on health and social services (Mafauzy, 2000).

Physical activity was considered as one key element in maintaining health status. Being active throughout the majority of one's lifetime can influence overall health and well-being. Lower mortality rates occur among those who become physically active late in life compared to those who were active in early life (Singh & Kiran, 2014).

1.2.2 The elderly that lives with an unhealthy lifestyle are shifted away from being healthy and active

Researchers show that the elderly with active lifestyles are often as healthy as fewer active people aged 15 years younger (Singh & Kiran, 2014). Having a healthy lifestyle through physical exercise is the best way to live a healthy and long life. Regular physical activity reduces the effects of ageing in muscle strength, balancing, mobility and

flexibility. Other than that, it also reduces the risk of heart problems while keeping the elderly happy and healthy.

Regular physical activity comes in many forms, such as light walking, doing housework chores, and gardening. As people get old, their participation in leisure and recreation activities changes because of life cycle transitions such as retirement from paid work to the “empty nest” experienced by parents as children grow up and leave the house. Hence, the elderly have enough time to do what they want and access leisure and physical activity opportunities. Therefore, recreation plays a vital role in keeping the well-being of the elderly and enhancing their quality of life and increasing the opportunities in socializing among them.

1.2.3 Negative environment effects the participation of outdoor activities

Participating in outdoor activities is one of the critical roles in maintaining the well-being of the elderly. Involvement in various recreation can satisfy a variety of needs, according to one person. Apart from having opportunities to socialising, the elderly would use their skills and talents developed throughout their lifetime or learn new skills (Singh & Kiran, 2014).

Hence, having a good and positive environment would boost elderly participation in doing outdoor activities. Numerous studies overseas, especially in Japan, prove the impact of having the right environment such as forest would boost people's physiological and psychological health (J. Lee, Q. Li, et al. 2012). On the other hand, the hostile environment of the surrounding such as noise and air pollution, could affect the participation of the elderly.

1.3 RESEARCH QUESTIONS

1. What are the elderly's barriers and limitations limiting them to be less or less involved in physical activities?
2. What are the elderly's concerns and preferences in participating in physical activities in the park?
3. How is the forest therapy concept model being applied in the design?

1.4 RESEARCH AIM AND OBJECTIVES

This research aims to integrate a forest therapy (Shinrin-Yoku) concept in heath forests that enhances the wellness of the senior citizen by implementing therapeutic recreational elements suitable for them. To achieved this, the following objectives are formulated:

1. To understand the **behaviour of the senior citizen** on their **barrier and limitation** related to being less or not involved in physical activities.
2. To study the **design preferences of the senior citizen** in creating an elderly's space according to their physical health needs.
3. To **integrate forest therapy concept in heath forest** suitable for the senior citizen based on the design guidelines.

1.5 RESEARCH HYPOTHESIS

With the global trend of population ageing, the need to integrate the health of older people with the environment is vital by integrating the concept of Shinrin-Yoku into heath forest as a model to create a space that can enhance users' wellness. Based on the design guidelines that have been extracted during the methodology phase.

1.6 RESEARCH SCOPE

This study is based on objective 1 and 2, which is to study the behaviour of the elderly on their barrier and limitation and their design preferences in creating elderly's space. Therefore, 200 samples of the questionnaire that focuses on senior citizens that are currently experiencing their pre-elderly phase (50-60 years old) and elderly that are achieving their elderly's phase (60 years and above) in Malaysia will be taken to understand their behaviour, limitation and barrier to create a space that is meant to reach within their capabilities.

Next, based on objective three, which is to integrate the forest therapy concept in heath forest suitable for the elderly, the landscape character of heath forest is studied and analysed to understand their nature and environment. Lastly, the concept of forest therapy (Shinrin-Yoku) is applied by developing a design guideline based on the character of the heath forest and the elderly's behaviour.

1.7 ORGANIZATION OF THESIS

This thesis comprises 5 chapters. This section provides a brief review of the thesis structure. The arrangement of chapters in this research thesis is as follows:

Chapter 1 (Introduction) is vital to identify the issues and methods used in the research. The background study of this research was briefly discussed. The problem statement, research questions, aim, objectives, hypothesis and scope were clarified.

In chapter 2 (Literature Review), the discussion is focused on the study of the research topic, healthcare enhancement for elderly using forest therapy to establish continuous health improvement strategies towards a sustainable and healthy ageing society. This chapter will guide the researcher as a resource that can give a deep understanding of the research topic.

In chapter 3 (Data collection and Analysis), it was mainly focused on data collection methodology. More precise techniques and approaches will be discussed in this chapter. It would act as a guideline to the researcher on collecting data for the topic. Different methods were used to achieve the proposed aim and objectives outlined in this research, as mentioned in chapter 1.

In chapter 4 (Findings and discussion), data analysis and results were inserted in this chapter. The collected data had been analysed and presented in graphs to show clear distinctions between one data and another. At the end of the analysed data, the parallel with the research aim and objectives would be a solving tool that rises from the study. In the end, the conclusion and recommendations for the topics would be based on the data analysis.

In chapter 5 (recommendations and conclusion), a design recommendation was given to solve the rising issue mentioned in chapter 1. Therefore, all the steps and flows taken from chapter 1 to chapter 4 were concluded into one chapter, which is chapter 5. In this chapter, the research topic should have achieved the proposed aim and objective outlined in chapter 1. Therefore, all the issues that are rising will hopefully be solved.

1.8 SUMMARY OF CHAPTER

To summarise, this chapter acts as an outline for overall research prepared by the researcher before going into the details of each study. These could lead the researcher to be more structured while conducting the studies and lead the researcher to be more knowledgeable. Thus, further study needs to be done by looking more at the literature review and discussing it in the next chapter to better understand this matter.