ASSESSING AGE-FRIENDLY FEATURES AND NEEDS OF ELDERLY TOWARD AGE-FRIENDLY CITY IN AMPHOE MUANG RATCHABURI PROVINCE THAILAND

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จุฬาลงกรณ์มหาวิทยาลัย
Chulalongkorn University
บทคัดย่อและแฟ้มข้อมูลฉบับเต็มของวิทยานิพนธ์ตั้งแต่ปีการศึกษา 2554 ที่ให้บริการในคลังปัญญาจุฬาฯ (CUIR)
เป็นแฟ้มข้อมูลของนิสิตเจ้าของวิทยานิพนธ์ที่ส่งผ่านทางบัณฑิตวิทยาลัย
The abstract and full text of theses from the academic year 2011 in Chulalongkorn University Intellectual Repository (CUIR)
are the thesis authors' files submitted through the University Graduate School.

A Thesis Submitted in Partial Fulfillment of the Requirements
for the Degree of Master of Public Health Program in Public Health
College of Public Health Sciences
Chulalongkorn University
Academic Year 2014

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การประเมินองค์ประกอบของเมืองที่เอื้อต่อผู้สูงอายุและความต้องการของผู้สูงอายุ ในอำเภอเมือง จังหวัดราชบุรี ประเทศไทย

นางสาวหยู่ ฟ๋ง หวัง

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Chulalongkorn University

วิทยานิพนธ์นี้เป็นส่วนหนึ่งของการศึกษาตามหลักสูตรปริญญาสาธารณสุขศาสตรมหาบัณฑิต
สาขาวิชาสาธารณสุขศาสตร์
วิทยาลัยวิทยาศาสตร์สาธารณสุข จุฬาลงกรณ์มหาวิทยาลัย
ปีการศึกษา 2557
ลิขสิทธิ์ของจุฬาลงกรณ์มหาวิทยาลัย

Thesis Title	ASSESSING AGE-FRIENDLY FEATURES AND NEEDS OF ELDERLY TOWARD AGE-FRIENDLY CITY IN AMPHOE MUANG RATCHABURI PROVINCE THAILAND
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หยู่ ฟัง หวัง : การประเมินองค์ประกอบของเมืองที่เอื้อต่อผู้สูงอายุและความต้องการของผู้สูงอายุในอำเภอเมือง จังหวัดราชบุรี ประเทศไทย (ASSESSING AGE-FRIENDLY FEATURES AND NEEDS OF ELDERLY TOWARD AGE-FRIENDLY CITY IN AMPHOE MUANG RATCHABURI PROVINCE THAILAND) อ.ที่ปรึกษาวิทยานิพนธ์หลัก: รศ. ดร. ประเทือง หงสรานากร, อ.ที่ปรึกษาวิทยานิพนธ์ร่วม: ศ. คาร์ล เจ นีเซอร์, 115 หน้า.

การเติบโตของจำนาวนประชากรผู้สูงอายุและการพัฒนาสู่ความเป็นเมืองคือแนวโน้มในศตวรรษที่ 21 ดังนั้นองค์การอนามัยโลกจึงได้จัดทำคู่มือแนะนำการจัดเตรียมเมืองที่เอื้อต่อผู้สูงอายุขึ้นในปี 2550 เพื่อรองรับภาวะการเติบโตของประชากรผู้สูงอายุ และส่งเสริมการตรียมความพร้อมสำหรับการชราภาพที่ดี การวิจัยนี้จึงมีวัตถุประสงค์ที่จะประเมินลักษณะของเมืองที่เอื้อต่อผู้สูงอายุในอำเภอเมือง จังหวัดราชบุรี และศึกษาปัจจัยที่มีความเกี่ยวข้องกับโดเมนทั้ง 8 ด้านของเมืองที่เอื้อต่อผู้สูงอายุ การศึกษานี้เป็นการสำรวจแบบภาคตัดขวางโดยใช้การสัมภาษณ์เมื่อตอบแบบสอบถาม เก็บข้อมูลในกลุ่มประชากรที่มีอายุมากกว่า 60 ปีขึ้นไปที่อาศัยอยู่ในอำเภอเมือง จังหวัดราชบุรี จำนวนทั้งสิ้น 437 คน และวิเคราะห์หาค่าความสัมพันธ์ระหว่างตัวแปรอิสระและตัวแปรตามทางสถิติด้วยไค-สแควร์ (Chi-square Test) และการทดสอบของฟิชเชอร์ (Fisher's Exact Test) โดยมีนัยความสำคัญทางสถิติ p <0.05 ผลการศึกษาพบว่า ปัจจัยด้านสังคมมีความสัมพันธุ์กับโดเมนทั้ง 8 ด้านของเมืองที่เอื้อต่อผู้สูงอายุ โดยปรากฏความสัมพันธ์ระหว่างการทราบถึงสิทธิ์ในการรับบริการด้านสุขภาพจากรัฐกับโดเมนการขนส่ง (p<0.000) โดเมนที่อยู่อาศัย (p=0.046) โดเมนการมีส่วนร่วมทางสังคม (p=0.018) โดเมนการมีส่วนร่วมทางพลเมืองและการจ้างงาน (p<0.000) และโดเมนการสื่อสารและข้อมูล(p=0.004) นอกจากนี้ยังพบอีกด้วยว่า ความรู้เกี่ยวกับความเสี่ยงที่เกิดจากสิ่งแวดล้อมซึ่งอาจส่งผลกระทบต่อสุขภาพนั้น มีความสัมพันธ์กับโดเมนของที่อยู่อาศัย (p=0.035); การรับรู้ข้อมูลกิจกรรมชุมชนมีความสัมพันธ์กับโดเมนการมีส่วนร่วมในสังคม (p=0.022); ความถี่ในการเข้าร่วมกิจกรรมชุมชนมีความสัมพันธ์กับโดเมนการมีส่วนร่วมในสังคม (p=0.021) โดเมนการมีส่วนร่วมทางพลเมืองและการจ้างงาน (p<0.038) และโดเมนบริการชุมชนและบริการด้านสุขภาพ (p=0.01) กล่าวโดยสรุป ความรู้เกี่ยวกับสุขภาพ และการมีส่วนร่วมในกิจกรรมชุมชนมีความเกี่ยวข้องกับโดเมน ทั้ง 8 ของเมืองที่เอื้อต่อผู้สูงอายุ ซึ่งจะส่งผลต่อการส่งเสริมการชราภาพที่ดี ผลวิจัยครั้งนี้จะช่วยใน การวางแนวทางและพัฒนากลยุทธ์เพื่อพัฒนาให้อำเภอเมือง จังหวัดราชบุรีเป็นเมืองที่เอื้อต่อผู้สูงอายุมากขึ้นในอนาคต

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สาขาวิชา สาธารณสุขศาสตร์ ลายมือชื่อนิสิต .....

ปีการศึกษา 2557 ลายมือชื่อ อ.ที่ปรึกษาหลัก .....

ลายมือชื่อ อ.ที่ปรึกษาร่วม .....

5778821953 : MAJOR PUBLIC HEALTH
KEYWORDS: AGE-FRIENDLY FEATURES / NEEDS OF ELDERLY / AGE-FRIENDLY CITY / RATCHABURI PROVINCE / THAILAND

YU-FANG WANG: ASSESSING AGE-FRIENDLY FEATURES AND NEEDS OF ELDERLY TOWARD AGE-FRIENDLY CITY IN AMPHOE MUANG RATCHABURI PROVINCE THAILAND. ADVISOR: ASSOC. PROF. PRATHURNG HONGSRANAGON, Ph.D., CO-ADVISOR: PROF. KARL J. NEESER, Ph.D., 115 pp.

The growth of demographic ageing and urbanization is the global trend in the 21 century. As a result, WHO (2007) has initiated the age-friendly city guidelines to prepare and support active ageing and ageing in place. The purpose of this study is to assess the age-friendliness of Amphoe Muang, Ractchaburi Province, Thailand, and to describe the factors associated with eight domains of age-friendly city. This study was a cross-sectional study conducted with structured face-to-face interview questionnaire among 437 elders aged ≥ 60 years old living in Amphoe Muang, Ratchaburi Province, Thailand. Chi-square Test and Fisher's Exact Test were used to analyze association between independent and dependent variables with statistical significant of $p < 0.05$. The result revealed that there was an association between social factors and eight domains of age-friendly city in: knowledge on right to access to health with transportation ($p<0.000$), housing ($p=0.046$), social participation ($p=0.018$), civic participation and employment ($p<0.000$), and communication and information ($p=0.004$). In addition, there was an association between knowledge on environmental effect on health with housing ($p=0.035$); knowledge on community activity with social participation ($p=0.022$); and frequency in participating in community activity with social participation ($p=0.021$), civic participation and employment ($p= < 0.038$), and community support and health services ($p=0.01$). In conclusion, knowledge about health and participation in community activities was related to the eight domains of age-friendly city which promoted healthy ageing. The finding of this study will assist in planning and developing strategies for Amphoe Muang, Ratchaburi Province, to become a more age-friendly city in the future.

Field of Study: Public Health
Academic Year: 2014

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ACKNOWLEDGEMENTS

For this thesis to be able to be completed, I would like to acknowledge several people that has been helping me out and inspiring me throughout the course for Master of Public Health Program in Chulalongkorn University.

Firstly, I would like to sincerely express my gratitude and appreciation to the contribution of my thesis advisor, Assoc. Prof. Prathurng Hongsaranagon Ph.D. for her kindness, encouragement, valuable suggestions, and guidance during the entire course of study, thesis writing, and referring me to Asst. Prof. Dr. Tanapon Panthasen. This great appreciation and gratefulness is also addressed to Asst. Prof. Dr. Tanapon Panthasen for guidance in improving and condensing the thesis content and the questionnaire. I would also like to thank Piyalamporn Havanont, M.Sc. for the suggestions and advices on statistical analysis. A big gratefulness is also shown to my thesis co-advisor Dr.Karl Neeser, Ph.D. for guidance in my proposal. Furthermore, I am very thankful to Asst. Prof. Chitlada Areesantichai, Ph.D. to donate her time as my examination committee and given out many strong suggestion for improvement of my thesis.

Secondly, I would like to place my whole-hearted appreciation to the big family of College of Public Health Sciences, which includes all the professors who have taught me and guide me throughout the study period; the supporting and loving staffs from the office, library, and computer lab; all of my classmates and the seniors that have been very supportive, friendly, and warm to me.

Most importantly, I would like to offer my special thanks to all the participants who are living in Amphoe Muang, Ratchaburi Province and the local village health volunteers for allowing and helping me throughout the data collection period. This thesis would not be possible to be carried out without all of their kindness and participation.

Finally, I wish to express the deepest thanks and appreciation to my family, especially my parents for always being unconditionally supporting, believing, encouraging me in everything moment of my life. Thank you for everything you have done and this pride is always honored to both of you.

Yu-Fang, Wang

CONTENTS

Page
THAI ABSTRACT iv
ENGLISH ABSTRACT v
ACKNOWLEDGEMENTS vi
CONTENTS 1
LIST OF TABLES 3
LIST OF FIGURE 6
CHAPTER I INTRODUCTION 7
1.1 Background and rationale 7
1.2 Research Questions 10
1.3 Research Objectives 10
1.4 Hypothesis 10
1.5 Conceptual Framework 11
1.6 Operational Definitions 12
CHAPTER II 14
LITERATURE REVIEW 14
2.1 Age-friendly Cities 14
2.2 Age-friendly City Components 15
2.3 Active Ageing 18
2.4 Ageing in Place 19
2.5 Ageing and Thai society 19
2.6 Environment and Ageing 20
2.7 Mobility and Ageing 21
2.8 Theory: Social Ecological Model 22
2.9 Conclusion 23
CHAPTER III 25
RESEARCH METHODOLOGY 25
3.1 Research Design 25
3.2 Study Area & Study Period 25

จุฬาลงกรณ์มหาวิทยาลัย
Chulalongkorn University

Page

3.3 Study Population....25
3.4 Sampling Technique....25
3.5 Sample and Sample Size....26
3.6 Measurement Tool....27
3.7 Data Collection....29
3.8 Data Analysis....29
3.9 Ethical Consideration....33
3.10 Limitation....33
3.11 Expected Benefits and Application....33
3.12 Obstacles and Strategies to Solve the Problems....34
CHAPTER IV....35
RESULTS....35
4.1 Descriptive statistics....35
4.2 Inferential Statistics....56
CHAPTER V....78
DISCUSSION, CONCLUSION, AND RECOMMENDATIONS....78
5.1 General Discussion....78
5.2 Conclusion....85
5.3 Recommendations....86
REFERENCES....90
Appendix-I....94
Appendix II....98
Appendix III....104
VITA....115

จุฬาลงกรณ์มหาวิทยาลัย
CHULALONGKORN UNIVERSITY

LIST OF TABLES

Table 1 Distribution of Population Aged 60 and above in Ratchaburi in 2012 9

Table 2 Reliability of each criterion in dependent variables.....28

Table 3 Data scales and categorizing of independent variables.....30

Table 4 Socio-demographic characteristics of the participants] 36

Table 5 Social factors of the participants.....37

Table 6 Participants' satisfaction on outdoor spaces and building 38

Table 7 Satisfactory scores grouped to 3 level distributions of outdoor spaces and building 39

Table 8 Mean of satisfactory scores in outdoor spaces and building.....40

Table 9 Participants' satisfaction on transportation 41

Table 10 Satisfactory scores grouped to 3 level distributions of tranportation.....42

Table 11 Mean of satisfactory scores in transportation.....42

Table 12 Participants' satisfaction on housing.....43

Table 13 Satisfactory scores grouped to 3 level distributions of housing.....44

Table 14 Mean of satisfactory scores in housing 44

Table 15 Participants' satisfaction on social participation.....45

Table 16 Satisfactory scores grouped to 3 level distributions of social participation 46

Table 17 Mean of satisfactory scores in social participation 46

Table 18 Participants' satisfaction on respect and social inclusion 47

Table 19 Satisfactory scores grouped to 3 level distributions of respect and social inclusion.....48

Table 20 Mean of satisfactory scores in respect and social inclusion.....48

Table 21 Participants' satisfaction on civil participation and employment 50

จุฬาลงกรณ์มหาวิทยาลัย
CHULALONGKORN UNIVERSITY

Table 22 Satisfactory scores grouped to 3 level distributions of civil participation and employment....51

Table 23 Mean of satisfactory scores in civil participation and employment....51

Table 24 Participants' satisfaction on communication and information....52

Table 25 Satisfactory scores grouped to 3 level distributions of communication and information....53

Table 26 Mean of satisfactory scores in communication and information....53

Table 27 Participants' satisfaction on community support and health services....54

Table 28 Satisfactory scores grouped to 3 level distributions of community support and health services....55

Table 29 Mean of satisfactory scores in community support and health services....55

Table 30 Association of sociodemographic factors and outdoor spaces and buildings....57

Table 31 Association of sociodemographic factors and transportation....58

Table 32 Association of sociodemographic factors and housing....59

Table 33 Association of sociodemographic factors and social participation....60

Table 34 Association of sociodemographic factors with respect and social inclusion....62

Table 35 Association of sociodemographic factors with civil participation and employment....63

Table 36 Association of sociodemographic factors with communication and information....64

Table 37 Association of sociodemographic factors to community supporet & health service....65

Table 38 Association of social factors with outdoor spaces and buildings....67

Table 39 Association of social factors with transportation....68

Table 40 Association of social factors with housing....69

Table 41 Association of social factors with social participation....71

Table 42 Association of social factors with respect and social inclusion]....72

Table 43 Association of social factors with civic participation and employment....74

Table 44 Association of social factors with communication and information]....76

จุฬาลงกรณ์มหาวิทยาลัย
Chulalongkorn University

Table 45 Association of social factors with community support and health services.....77

LIST OF FIGURE

Figure 1 Conceptual framework 11

จุฬาลงกรณ์มหาวิทยาลัย
Chulalongkorn University

CHAPTER I
INTRODUCTION

1.1 Background and rationale

1.1.1 Ageing Population and Trend

The demographic ageing and urbanization are the trends that dominate the world in 21th century, especially in the developing countries. Globally, the proportion of the population aged 60 and above had increased from 8% in1950 to 12% in 2013, and it will rapidly increase to 21% by 2050 (United Nation Department of Economic and Social Affair, 2013). This growing trend of population ageing occurs even more rapidly in the developing countries, with the share of older people in urban communities multiplied by 16 times from about 56 million in 1998 to over 908 million in 2050 (WHO, 2007). By 2050, nearly 80% of the world's older population will be living in the developing countries (United Nation Department of Economic and Social Affair, 2013).

As one of the developing country, Thailand has experienced one of the fastest demographic transitions in its history of population structural shift from a young to ageing society. In 2006, the population of older people in Thailand was 6.4 million, and is estimated to reach to 9.0 million by 2015, 12.9 million in 2025, and exceed 20 million by 2050. This shown that the proportion of elderly dominating total population in Thailand is continuously increasing to 14% in 2015 and 30 % by 2050 (UNFPA Thailand, 2006).

The Royal Thai Government has been aware of this growing population ageing, and has formulated the National Long-term Plan of Action for the Elderly in 1986-2001. This plan has covered aspects such as health, income, education, employment, and social and cultural aspects. Then the Essence of Long-term Policies and Measures for the Elderly (1992-2011) was set up to help accelerating welfare action. By 1999, Royal Thai Government has set up Second National Plan for Older Persons (2002-2021) that

mainly focuses on the preparation for quality ageing and well-being in older people through researches supporting the policies and programs. The Ministry of Public Health in Thailand also has put the effort on encouraging community hospital to periodically run elderly clinics and provide home health services through home visiting(UNFPA Thailand, 2006).

Since the ageing population increase tremendously as a trend dominating Thai society, and the Second National Plan for Older Persons (2002-2021) has put the focus on well-being of older people, it is important to assess the current living environment for Thai elderly, and prepare suitable environment for answering the demands of the elderly for better quality of life. Therefore, it is crucial that Thai government and the Ministry of Public Health must work together to promote age-friendly living environment that supports the healthy ageing life and active ageing either through researches, policies, or initiatives.

1.1.2 Active Ageing and Age Friendly Cities

The WHO has set up a guideline for global age-friendly cities that has been implemented in 33 cities world-wide to promote active ageing. By definition of WHO, active ageing is a life-long process that promotes health, participation, and security of old adults through several factors that acting alone or together. Under this approach, concept of age-friendly cities is framed for structures and services to be accessible to older people with different needs and varied capacities. Thus, age-friendly city supports active ageing by optimizing opportunities for health, participation, and security in order to enhance quality of life in the ageing process.(WHO, 2007)

1.1.3 Ageing Situation in Ratchaburi Province

Ratchaburi, which is located in the central part of Thailand, has a humongous ageing population that dominates the second highest proportion in central Thailand, excluding Bangkok Metropolis, and second to Nontaburi Province (Ministry of Human Development and Social Security, 2012). Thai National Statistic Office has shown that population of age 60 or above in Ratchaburi Province has total number of 104,697 people, with 43,599 male and 55,330 female in year 2007(Thailand National Statistic Office, 2007). This proportion of ageing population is continuously increased each year.

By the year 2012, population aged 60 and above has made up 15.07% of the total population in Ratchaburi. The number of people aged 60 and above has increased from 104,697 in 2007 to 374,100 in 2012, with 165,004 male and 209,096 female. In this body of ageing population in Ratchaburi Province, Amphoe (Distrist) Muang dominates the lead with total of 87,126 elders living in the district [Table-1 Distribution of Population Aged 60 and above in Ratchaburi] (Ministry of Human Development and Social Security, 2012).

Rank	**Amphoe (District)**	**Population aged 60 and above**				
		All age range	**Male**	**Female**	**Total**	**%**
	Total	**2,482,467**	**165,004**	**209,096**	**374,100**	**15.07**
1	Muang	532,508	38,138	48,988	87,126	16.36
2	Jombueng	148,771	8,655	10,135	18,790	12.63
3	Suanpueng	77,838	4,235	4,348	8,593	11.04
4	Damnuen Saduak	299,958	21,492	29,255	50,747	16.92
5	Banphong	545,830	36,098	45,304	81,402	14.91
6	Bangpae	129,820	8,454	10,970	19,424	14.96
7	Potaram	368,154	24,378	32,715	57,093	15.51
8	Phaktor	216,315	13,096	15,506	28,602	13.22
9	Wadplaeng	39,201	3,057	4,279	7,336	18.71
10	Banka	124,036	7,401	7,586	14,987	12.08

Table 1 Distribution of Population Aged 60 and above in Ratchaburi in 2012

1.2 Research Questions

1. How age friendly is Amphoe Muang, Ratchaburi Province, Thailand?
2. What is the association of socio-demographic factors and social factors with the 8 domains of age-friendly city?
3. What are the possible suggestions to make Ratchaburi Province more age-friendly for the elderly to live?

1.3 Research Objectives

1. To assess, determine and describe components of age-friendly city in Amphoe Muang, Ratchaburi Province, Thailand.
2. To assess and describe the association of socio-demographic factors and social factors to the 8 domains of age-friendly city.
3. To offer possible suggestions to make Ratchaburi Province more age-friendly for the elderly to live.

1.4 Hypothesis

1. There is association of sociodemographic factors to the 8 domains of age-friendly city.
2. There is association of social factors to the 8 domains of age-friendly city.
3. There is association of environmental domains (Outdoor spaces, and building, transportation, and housing) of age-friendly city to the other domains of age-friendly city

1.5 Conceptual Framework

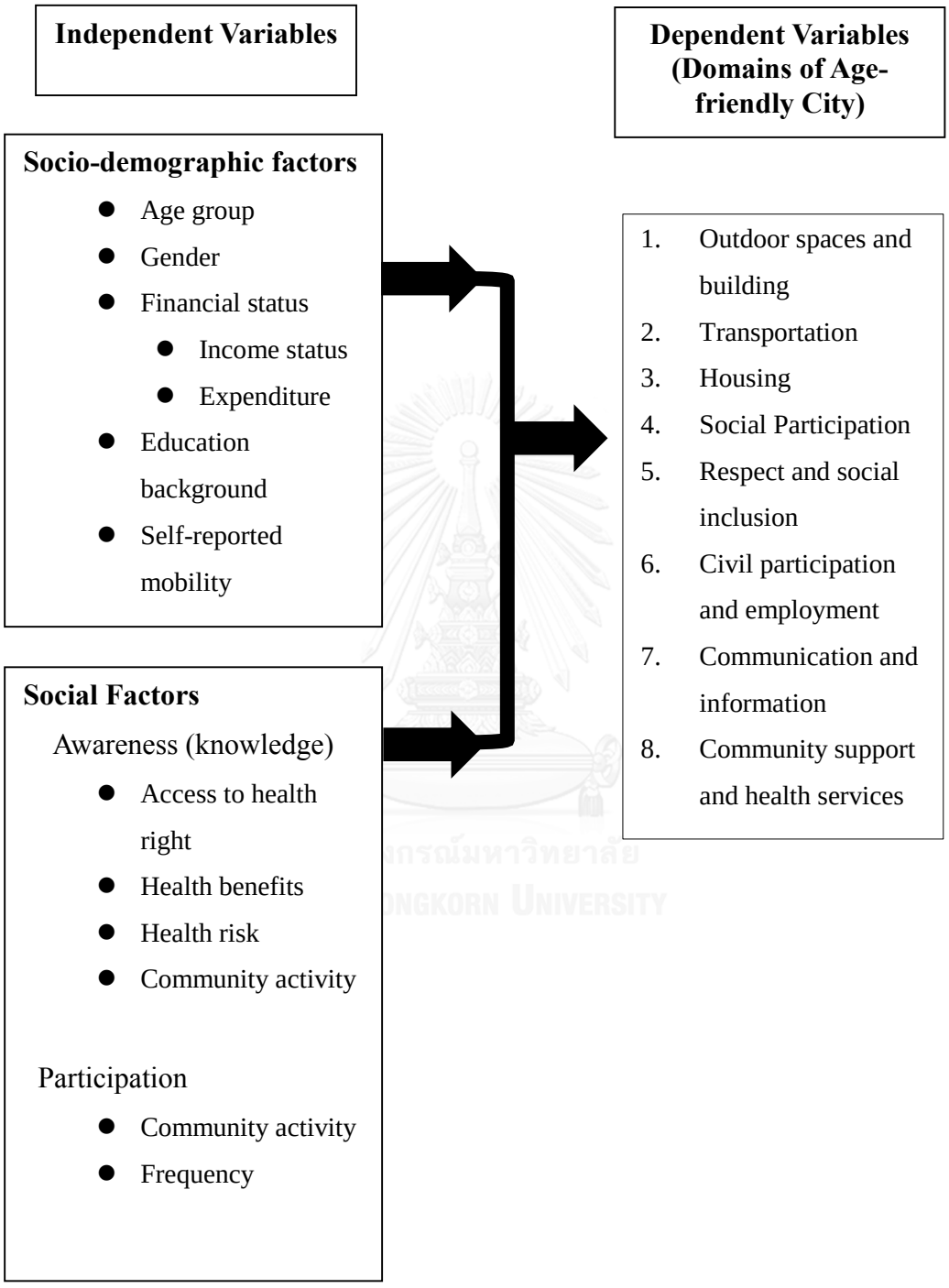

Figure 1 Conceptual Framework

1.6 Operational Definitions

The following terms are used in the study of accessing age-friendliness in Ratchaburi province, Thailand. They will be defined for better understanding according to the classification into independent and dependent variables as followed:

1.6.1 Thai Elderly: refers to any Thai people whose age is above 60 years old.

1.6.2 Independent Variables:

Income Status: refers to the money that the participant gained in person in Thai baht per month; in this study, income is then leveled into no income; below 5,000; 5,000-9,999; 10,000-14,999; 15,000- 19,999; 20,000-24,999; and 25,000 and above.

Expenditure: refers to the money that the participant spend in person in Thai baht per month; in this study, expenditure is categorized into below 5,000; 5,000-9,999; 10,000-14,999; 15,000- 19,999; 20,000-24,999; and 25,000 and above.

Education Background: refers to the educational level of the participants; in this study, education background is categorized into primary school, high school, vocational school, bachelor's degree, master's degree or above, and not educated.

Self-reported mobility: refers to the ability of the participant to move from one place to another place; self-reported mobility is classified into independent, with assistive device, and dependent.

Access to health right: refers the awareness and knowledge of the participant on knowing their rights to aces to health, for example universal coverage.

Health benefits: refers to the knowledge of the participants to know the benefits they can gain if they stay healthy.

Health risks: refers to the knowledge of the participants to know the risk factors that might cause them to be unhealthy.

Community activity: refers to the activity set up under community's agenda available for the participants to join, for example: daily yoga session, aerobic exercise session, crafting, etc.

Frequency: refers to how often the participants join the community activity; frequency in this study is classified into always, occasionally, and never.

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1.6.3 Dependent Variable

Outdoor spaces and building: refers to the landscape and built environment that contributes to age-friendliness.

Transportation: refers to the accessibility and affordability of the public transport that contributes to age-friendliness

Housing: refers to the safety and well-being structure, design, location and choices that supports and comforts the lives of the older people.

Social participation: refers to the participation in leisure, social, cultural, and spiritual activities in the community, as well as the participation in the family that contributes to good health and well-being in life.

Respect and social inclusion: refers to the behavior and consideration imposed on the elderly from the community and the family members.

Civil participation and employment: refers to the options to contribute through paid employment or voluntary works of the elderly to community and family.

Communication and information: refers to the way that information is passed onto the elderly through different medias that keeps older people connected to the community and family; examples of medias include television, radio, and newspaper, etc.

Community support and health services: refers to the services that provide the maintenance of health and independency in older people, such as caregiver, community health service providers, etc.

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CHAPTER II

LITERATURE REVIEW

As the ageing population is increasing and the society structure is moving toward an ageing society (UNFPA Thailand, 2006), it is important to plan and implement an environment that is friendly to the ageing population (Liu, Everingham, Warburton, Cuthill, & Barlett, 2009) which includes the improvement in provision of health-care system and the linkage to social care services to the ageing population (Lin, Chou, Liang, Peng, & Chen, 2010).

2.1 Age-friendly Cities

The concept of Age-friendly Cities is to promote the active ageing through environmental and social supports (WHO, 2007) that view ageing as a positive process and emphasis the play of active role of elderly in the society(Liu et al., 2009). An important feature of the age-friendly city and community is to support the active involvement and values of the elderly with infrastructure and services that can effectively accommodate their needs (Fitzgerald & Caro, 2014).

To engage and assist the cities on this growing population of ageing, the WHO has proposed a Global Age Friendly Guideline with a Checklist of Essential Features of Age-Friendly Cities that determines the 8 domains of urban life: outdoor spaces and building, transportation, housing, social participation, respect and social inclusion, civil participation and employment, communication and information, community support and health services (Plouffle & Kalache, 2010).

In 2008, Canada has introduced age-friendly initiatives in several of their provinces. One of them is the Manitoba province that has launched Age-Friendly Manitoba Initiatives (AFMI) with the aim to supports seniors in leading active, socially engaged, independent lives that contribute to healthy ageing. The 44 communities in this study examined the factors that can either facilitate or confound the communities'

progress in a wide range of contexts. The result shown that there were many positive developments for age-friendly environment, but the membership within the age-friendly committee was too diverse and was difficult to identify the priorities for action. Most of the action taken was under small scale, for example, adding handicap parking area, benches, and autonomic doors. The conclusion suggests that in planning and implementing for an age-friendly environment, leadership among policy makers is essential, especially at the local level (Menec, Novek, Veselyuk, & McArthur, 2014).

In a case study from Brussel and Manchester identifies some barriers to formulating an age-friendly city. These include the policy makers' attitudes and stereotypes that disregard the older people in policy making process; the barriers of economic and politics; and the potential of limitation to age-friendliness imposed by the society (Buffel et al., 2014).

In a study of competing framework planning in Melbourne states that the local government has unique role of creating sustainable environment for elderly and involving in strategic planning and managing local transportation, health and community care services. Yet, it is recommended that the local government should also be leading in facilitating social participation and inclusion and ensuring the positive public policy context (Ozanne, Biggs, & Kurowski, 2014).

However, WHO has suggested that the assessment and policy implied should engage the older people in assessing procedure and decision making (WHO, 2007) in a conventional ways through focus group meetings(Liu et al., 2009).

2.2 Age-friendly City Components

2.2.1 Outdoor spaces and buildings

Outdoor spaces and building describe the characteristics of landscape and built environment of the area (WHO, 2007). It is an important contributor that can affect and mediate the mobility of the elderly in a community (Handy, Boarnet, Ewing, & Killingsworth, 2002; Shumway-Cook et al., 2002; Tucker-Seeley, Subramanian, & Sorensen, 2009). A pleasant and clean environment with adequate green spaces and resting areas(Sugiyama & Thompson, 2008); safe pedestrian; smooth walkways and

cycle path with adequate lighting(Lehning, 2014); age-friendly buildings with elevator, wide doors, ramp, toilets for handicap, escalator, comforting seats, stair with handrail and suitable height, and non-slip flooring; adequate number of public toilets; and accessible physically are recommended by WHO (WHO, 2007). Hence, the design of the outdoor spaces and building should be mixed-use and walkable neighborhood based. This will allow alternative development and promotes physical activity that can potentially help in reducing rates of chronic disease (Lehning, 2014).

2.2.2 Transportation

Transportation is another key factor that has influence on active ageing. This includes the availability, accessibility, affordability, safety, and reliability and frequency of the public transportation (WHO, 2007). An evaluation of age-friendly guidelines for public buses suggests that an age friendly approach by prioritizing the importance of older people in public transportation such as having priority seats can bring more satisfaction to the elderly, and potentially keep the older people for continuing using public transportation. This promotes the maintenance of social participation as the elderly aged (Broome, Worrall, Fleming, & Boldy, 2013).

2.2.3 Housing

In recommendation of WHO, housing and it's linkage to access to community and social services are crucial in influencing the independence and quality of life of the elderly. Yet it is very important for older people to have sufficient space and privacy at home with appropriate design or modification that promotes comfortability and safety at home (WHO, 2007). In a study of effects of home living environment on falls in Thai elderly shown that slippery floors, location of bathroom, adequate lighting, and living with spouse are related the falling of elderly at home. Falling experience and fear can potentially prohibit the elderly's willingness to move from place to place. Therefore adequate home environment modification is suggested to prevent the elderly from falling (Sophonratanapokin, Sawangdee, & Soonthorndhada, 2012).

2.2.4 Social Participation

Social participation, interaction and support are strongly associated with well-being as people aged (Keyes et al., 2014; WHO, 2007). The participations in community activities can help establish caring and supporting relationship among people (Fitzgerald & Caro, 2014; WHO, 2007). Factors that have influence directly on social participation are functional mobility level, financial status and self-rated health (Nummela, Sulanderr, Rahkonen, Karisto, & Uutela, 2008) of the individual, and indirectly through the cultural context, and gender that in turn affect the mobility of a person (Webber, Porter, & Menec, 2010). However, social participation relies a lot on the transportation, facilities, and information flow of the community (WHO, 2007).

2.2.5 Respect and Social Inclusion

Respect and social inclusion rely a lot on societal change of elderly in health and economic status, culture, and gender of the individual. The level of participation in social, civic, and economic life of the older people affects the respect and social inclusion experience as they aged (WHO, 2007). Meanwhile, the fast-changing society often suggests the reason to conflict between older people and younger generation in terms of norm and cultural changes (Coleman, 1993; WHO, 2007).

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2.2.6 Civic Participation and Employment

WHO suggests that older people would like to work or be employed and be involved in civic participation such as volunteering even if they retired from their jobs. In some of the society, older people are often seen in senior board and have voice to speak. These types of participation are crucial especially for the older people to bind in and feel respect from the society. Hence, staying active as they aged (WHO, 2007).

2.2.7 Communication and Information

It is noted that the getting tuned to the information is vital for managing active ageing. Accessibility to the information through different channel of communication easily is important to the elderly. It is suggested that providing information targeting to

old people through newspaper, television program, word of mouth, and radio broadcast help in making communication more age-friendly. Furthermore, if the information is given out in visual context, it is crucial to have simple layout and bigger and clear font size (WHO, 2007).

2.2.8 Community Support and Health Service

There are evidence that health and supporting services are vital for maintaining of health and independency of older people in the community. These services are prompted to be accessible and affordable with wide range of services, especially on health care (WHO, 2007). A qualitative study on age-friendly primary health care in Thailand mentioned that the older people perceive age-friendly primary health care more as sociocultural services rather than biomedical care. The result of this study suggests primary health care unit should provide respect to elders, deliver direct service within community, regulate service equity, provide care as family based, promote good health and deaths, and maintain an age-friendly environment. Therefore, the integration of sociocultural aspects and biomedical care must be taken into account when developing age-friendly primary care (Hoontrakul, 2007).

2.3 Active Ageing

The concept of active ageing is determined by interacting of personal, social, economic, and environmental factors that affects the individual life span. The functional capacity of an older adult varies widely as a result of the combined and accumulative effects of the factors described above (Plouffle & Kalache, 2010).

Active ageing also has relied a lot on the economic factor. Old age poverty is a burden to live active as aged. (Barrientos, Gorman, & Heslop, 2003) Factors that influence socioeconomic health outcomes are age, education, managing stress, and health behaviors. A study from Clarke, 2009 showed that lower income elders who live in high income area have worse health condition when compare to lower income older people who live in the lower income area (Clarke & Nieuwenhuijsen, 2009). Nummela et al., suggests that high social capital measured at individual level has positive influence on health (Nummela et al., 2008).

In a study of old age poverty in developing country shown that the incidence of

poverty is higher in the younger age group and the older age group. This study suggested that older people's access to paid work, basic services, and social network determines their well-being and independency in later lives. Furthermore, the access to paid work and civil participation is a good indicator of older adult's distance from financial, housing, health, and insurance markets, and an important strategy to avoid old age poverty (Barrientos et al., 2003).

2.4 Ageing in Place

From the domain of housing in WHO Age-friendly Cities Guideline, ageing in place is an important aspect to be taken into account. Ageing in place policy emphasizes on the support and resources to help the elders to remain comfortable in their home and community settings (Means, 2007). Ageing in place also resonates the preferences of many elders who wished to stay in their own homes (Wiles, 2005).

An in-depth report in 2014 suggests that the elderly perceives healthy ageing as an active achievement. Healthy ageing is created through individual's personal effort and supported by social ties, despite the decline in financial and social independency associated with growing older. The physicality and the spatiality of home are the notion for establishing and evaluating healthy ageing (Sixsmith et al., 2014).

In an article that compares the expectation to ageing in place in low and high income Detroit elders found that, the low-income elders were more likely to expect ageing in place than the high income elders. However, regardless of income level, the other issues that elders concern about on expected age in place is the neighborhood environment (Lehning, Smith, & Dunkle, 2013).

2.5 Ageing and Thai society

Thailand is now dominating the second highest old age population in South-east Asia region just below Singapore. The population aged 60 and above in Thailand has increased from 5% of the total population in 1950 to 10% in 2006; and is continuously increasing to 14% in 2015 and 30 % by 2050 (UNFPA Thailand, 2006).

The hierarchical tradition with ranked social position dominates Thai society. The social relationship in Thailand is marked by superiority and inferiority. Thai

children are taught to respect the older people and people of higher social status such as elders, teachers, and priest (Choowattanapakorn, 1999).

Thailand is also a Buddhist country that believes in chain of rebirth. The preaching of Buddhism has a huge effect on Thai culture. One aspect in Thai culture is the "parent repayment" in which the children are expected to pay back the merits of the parents that have gave birth and nurtured them. Under this aspect, old people are valued and honored by their children (Choowattanapakorn, 1999).

In Thailand, most elders live at home and care giving between partners is common. There is evidence showing that if the caregivers are of age 60 and about, there will be a better understanding of the need of the elderly (Sophonratanapokin et al., 2012). Traditionally, old Thai adults are took care by their own children, and mostly the Thais refused to send their parents to institutions for elderly. However, there is still conflict among Thai elders themselves that the elderly will live happier with their peers but yet do not want to move into institutions for elderly such as nursing home (Choowattanapakorn, 1999).

For Thai elderly, capacity in physical functions marks for independency in later life. Retirement is seen as the process of reducing life independency emotionally and financially in Thai elders but the caring relationship either within family or from the society supports them emotionally; however the financial support from the descendants does not support the positive subjectivity of Thai elders toward ageing (Fox, 2005). Therefore it is crucial to create an environment supporting the ageing process of the elders in order for them to be able to age actively in place.

2.6 Environment and Ageing

Environment composes of the physical environment which are built environment and social environment which are the attitudes and supports toward the elderly, as well as the social and policy system of the society (Ozanne et al., 2014). In physical environment, the connectivity of housing, basic services, and community infrastructure is crucial to well-being of the elderly (Keyes et al., 2014), whereas in social environment, the neighborhood characteristic can substantially affect the infrastructure and community development which can further put impacts on the social participation and the later life independency of the elderly (Clarke & Nieuwenhuijsen,

2009).

In urban setting, the physical environment mainly concern with the built environment. Built environment comprises three dimensions which are urban design, land used, and transportation (Handy et al., 2002). Several studies have shown that built environment plays a significant role in promoting the mobility of the elderly (Handy et al., 2002; Shumway-Cook et al., 2002; Sugiyama & Thompson, 2008; Tucker-Seeley et al., 2009). A review article suggests that the major environmental barriers pointed by the elder adults includes poor transportation, discontinue or uneven sidewalks, curbs, noise, and inadequate lighting (Clarke & Nieuwenhuijsen, 2009).

In the article that reports for framework planning for ageing in Melbourne, Australia pointed out that there is association of urban environment with ageing body with evidence that the physical environment is an important indicator affecting well-being in later life (Ozanne et al., 2014). The physical environment of the neighborhood has great impact on the physical activity, mobility, and quality of life of the elderly living in that particular area (Handy et al., 2002; Ozanne et al., 2014; Webber et al., 2010).

2.7 Mobility and Ageing

Mobility in elderly mainly refers to the ability for oneself to move from one place to another (Shumway-Cook et al., 2002). In the WHO's International Classification of Functioning, Disability, and Health has broadly define mobility as the movement indoor and outdoor, using of assistive device, and transportation. The determination of mobility includes cognitive, psychosocial, physical, environmental, and financial influences (Webber et al., 2010). It has been suggested that physical environment has an important role in mediating the functional limitation related walking and mobility disability of the elderly (Shumway-Cook et al., 2003; Shumway-Cook et al., 2002).

Maintaining physical activity level in elderly helps preserving the mobility of elders, which is an important indicator of later life independency and well-being of the elderly (Shumway-Cook et al., 2002). Mobility disability in elders are characterized by unwilling to encounter environmental challenges, which further leads to lacking of motivation to move. This is likely to lead to the deterioration in physical activity and

social participation in ageing life (Shumway-Cook et al., 2003). Sugiyama T., 2008 pointed out that that the pleasant open spaces such as green parks community gardens effectively promotes the physical activity of the older people (Sugiyama & Thompson, 2008). With an increase of physical activity, social participation which includes the interactions among neighbors and friends are also enhanced (Sugiyama & Thompson, 2008; Tucker-Seeley et al., 2009).

2.8 Theory: Social Ecological Model

Social Ecological Model is the model often used in public health practice. It points out that the effects of environment and social level to the individual mutually affect each other, and are all interconnected to each other (Wendel & McLeroy, 2012). It helps us to understand the interactive effects from individual level to environmental level that can determine the behavior. Through this framework, it helps us to identify behavioral and organizational leverage points, and intermediaries for health promotion within an organization or area (Victorian and Assessment Authority, 2010).

This Model consists of 5 levels, which are individual level, interpersonal level, organizational/ institutional level, community level, and public policy/ enabling environment level, where the individual level is considered as the center for this model which can be altered by the social and environmental factors from all other levels; yet affect the impact of the perception and capability of other levels on the individual level (McLeroy, Bibeau, Stecker, & Glanz, 1988; Wendel & McLeroy, 2012).

Individual level consists of characteristics of an individual that have impact on behavioral change, which include the demographic characteristics, knowledge, attitudes, self-concept, developmental history, religious identity, racial/ethnic identity, sexual orientation, economic status, financial resources, values, goals, expectations, literacy, stigma, and others (McLeroy et al., 1988).

For interpersonal level, formal (and informal) social networks and social support systems that can influence individual behaviors, including family, friends, peers, co-workers, religious networks, customs or traditions are described (Wendel & McLeroy, 2012).

Organizational/ institutional level refers to social institutions with organizational characteristics and formal (and informal) rules and regulations for

operations, which includes the campus climate (tolerance/intolerance), class schedules, financial policies, competitiveness, lighting, unclean environments, distance to classes and buildings, noise, availability of study and common lounge spaces, air quality, safety (Wendel & McLeroy, 2012).

For community level, the relationships among organizations, institutions, and informational networks within defined boundaries, including the built environment (e.g., parks), village associations, community leaders, businesses, and transportation are mentioned (Wendel & McLeroy, 2012).

For public policy/ enabling environment level, local, state, national, and global laws and policies are described. These includes polices that allocate resources to establish and maintain a coalition that serves a mediating structure connecting individuals and the larger social environment to create a healthy campus, etc (Wendel & McLeroy, 2012).

2.9 Conclusion

From all of the literature review above, the socio-demographic characteristic studied by several researchers had found that the association of socio-demographic characteristics such as income status, educational background, and mobility status of the individual; and social factors such as the knowledge and participation of health and community activities were closely associated with the demand and perception for age-friendly city. While the domains of age-friendly city were stated by several studies and by the guideline of WHO that they were all interconnected to one another; and these interconnections between each domain worked together to create an better environment that can potentially promote the active ageing and ageing in place process of the elders.

Hence the creation and preparation for age-friendly city is important for supporting active and ageing in place of the elders, assessing “how age-friendly a city is”, is a crucial step and basis for giving insights into building age-friendly city referencing the components stated by WHO and in the context of Thailand. The process for assessing and evaluating the age-friendliness of the city is complex and need to consider several factors such as the governmental factors, current policies, and inclusion of the target group which is the elders into the accessing process. Therefore this research aimed to assess the age-friendliness of Amphoe Muang, Ratchaburi

Province, Thailand focusing on the consideration of how the elders perceive their area to be age-friendly to them.

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CHAPTER III

RESEARCH METHODOLOGY

3.1 Research Design

This study is a quantitative study using cross sectional study design aiming to examine and describe the current situation and components of age-friendliness in Amphoe Muang, Ratchaburi Province, Thailand.

3.2 Study Area & Study Period

The study area of this research is in Amphoe Muang, Ratchaburi Province, Thailand. The study period is during May 27- June 5, 2015.

3.3 Study Population

The target population of this study is the elderly aged 60 or above, both male and female, who live in Amphoe Muang, Ratchaburi Province, for more than 6 months.

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3.3.1 Inclusion Criteria

1. Participants aged 60 or above.
2. Males and females who live in Amphoe Muang, Ratchaburi Province, for more than 6 months.
3. Participants who agree to join the study with signed informed consent.

3.3.2 Exclusion Criteria

1. Participants who have dementia and cognitive impairment.
2. Participants with vision or hearing impairment.

3.4 Sampling Technique

This study uses proportion to size probability sampling and followed by simple

random sampling to select the elderly aged 60 or above, both male and females, who live in Amphoe Muang, Ratchaburi Province, Thailand.

3.5 Sample and Sample Size

This part states the sample size calculation for the samples to be used in cross-sectional quantitative questionnaire. The sample includes elderly aged 60 or above, both male and female, who meet the inclusion criteria of the study. The sample size is calculated by Yamane formula:

$$\text{Sample size (n)} = \frac{N}{1 + (Ne^2)}$$

Where n = sample size

N= the number of elderly in Amphoe Muang, Ratchaburi Province

e = the level of precision or relative error of estimation (=0.05)

In this study, the total number of elderly in Amphoe Muang, Ratchaburi Province is 87,126 people. (Ministry of Human Development and Social Security, 2012) This amount represents N in the following equation for calculating sample in this research.

$$\text{Sample size (n)} = \frac{87{,}126}{1 + [87{,}126\ (0.05)^2]} = 398.17 \approx 398$$

The sample size for this study is 398 elders from population of 87,126 elders. After plusing additional 10% in case of non-response, not-complete response, thus the final sample size is about 434 elders in total.

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3.6 Measurement Tool

The measurement tool used in this study is a structured questionnaire developed from in-depth literature review designed for assessment of age-friendliness in Amphoe Muang, Ratchaburi Province. The questionnaire consists of 3 parts and has total of 53 questions.

1. Part I: General Personal Information: 6 questions
    - The general personal information collects the data of participants that includes age, gender, income status, expenditure, educational background, and self-reported mobility status. These data represents the socio-demographic factors of the research.
2. Part II: Awareness (Knowledge) and Participation: 6 questions.
    - This part consist of the questions regarding the knowledge of the elderly to know their rights to access to health service, benefits they can gain from being healthy, health risks affected by the environment, community activities exists their participation in community activities, and frequency in joining the community activities. For this part of the questionnaire, if the elderly is not aware of any activity in the community, they can skip the questions on the participation and frequency of joining the community activity.
3. Part III: Aspects of age-friendly city rated by the elderly: 41 questions.
    - In this part of the questionnaire, the participants have to rate the satisfaction scores on the scale from strongly agree, agree, neutral, disagree, strongly disagree, and don’t know based on their opinion toward the environment they experienced in Amphoe Muang, Ratchaburi Thailand. The questions are being divided into 8 domains as below:
        - Outdoor space and building (6 items)
        - Transportation (7 items)
        - Housing (4 items)
        - Social participation (4 items)
        - Respect and social inclusion (4 items)

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- Civic participation and employment (5 items)
- Communication and information (5 items)
- Community support and health service (6 items)

3.6.1 Validity

The researcher has sent the questionnaire to three external experts for thorough review and check for validity of the questions. The researcher had improved the questionnaire after the experts' review based on the comments and recommendation from the experts. This questionnaire gained the OIC score of 0.844. The OIC > 0.5 indicates that the questionnaire is valid. Detailed OIC scores and recommendation from the experts can be found in appendix- I

3.6.2 Reliability

The researcher conducted a try-out of 40 sets of the questionnaire for reliability test. This pre-test has been tested in Amphoe Muang, Kanchanaburi Province during 29-30 April, 2015. The Cronbach's Alpha >0.7 indicates the reliability for the item. The result of the reliability for each criterion of the dependent variables is listed as below:

Item Criterion	**Cronbach's Alpha**
Outdoor spaces and building (6 items)	0.695
Transportation (7 items)	0.712
Housing (4 items)	0.870
Social Participation (4 items)	0.713
Respect and Social Inclusion (4 items)	0.703
Civil Participation and Employment (5 items)	0.717
Communication and Information (5 items)	0.702
Community Support and Health Services (6 Items)	0.711

Table 2 Reliability of each criterion in dependent variables

3.7 Data Collection

The researcher develops Thai version of questionnaire and consent form for the participants in the study. The research assistants/ interviewers (local health volunteers at Nongree Local Hospital) are trained under the same purpose in interviewing the participants. There are 10 interviewers in total including the researcher. The 3 hours training session for the research assistants is carried out at Nongree Local Hospital. The data collection is done during day time through home visits with face-to face interview of structured questionnaire for the elders living in study area. The participants must be clearly explained on the purpose of this study by the researcher or interviewers, and the consent form must be carefully read and signed for approval before proceeding to the focus group or interview. During the face- to face interview of the structured questionnaire, the questions in the questionnaire will be asked and filled-in by the researcher or the interviewers in case the elder need help in reading and understanding the questions. The record of note and tape also will be taken by the researcher interviewing the elders during the interview period. After interviewing, the interviewers and the researcher need to make sure that every questions in general-personal information is answered and the modified checklist of age-friendly city is checked completely.

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3.8 Data Analysis

The quantitative data analysis will be done by using SPSS for window version 17 licensed for Chulalongkorn University using descriptive statistics.

The data obtained from the parts of personal general information and awareness (knowledge) and participation is analyzed using descriptive statistics and presented with frequency (n) and percentage (%). These independent variables are categorized into nominal and ordinal scale as shown in [Table-3].

The data obtained from the dependent variables are nominal scale based satisfactory rating (strongly agree, agree, neutral, disagree, strongly disagree, and don't know), and is presented by descriptive statistics with percentage (%) and frequency (n). The data in the dependent variables is as well transformed from 5 scales of satisfactory

rating into 3 levels of grouped scores distribution (good, fair, poor) by criterions of the dependent variables. The transformed data is presented by percentage (%), frequency (n), mean, standard deviation, minimum, and maximum.

Variable	Data Scale	Categories
Age	Ordinal Scale	60-64; 65-69; 70-74; 75-79; ≥80
Gender	Nominal Scale	Male; female
Education Background	Ordinal Scale	Not educated; primary school; secondary school; and ≥Bachelor's degree
Income status	Ordinal Scale	No income; <5,000; 5,000-9,999; 10,000-14,999; 15,000-19,999; ≥20,000
Expenditure	Ordinal Scale	<5,000; 5,000-9,999; 10,000-14,999; 15,000-19,999; ≥20,000
Self-reported mobility	Nominal Scale	Independent; dependent; and with assistive device
Access to health right	Nominal Scale	Yes, no
Health benefits	Nominal Scale	Yes, no
Health risk	Nominal Scale	Yes, no
Know community activity	Nominal Scale	Yes, no
Participation in community activity	Nominal Scale	Yes, no
Frequency	Ordinal Scale	Always; occasionally and never

Table 3 Data scales and categorizing of independent variables

The conversion from 5 satisfactory rating and one scale of don't know to 3 grouped satisfactory score level distribution is shown as followed:

Satisfactory rating	**Scores**
• Strongly agree	5
• Agree	4
• Neutral	3
• Disagree	2
• Strongly disagree	1
• Don't know	0

The transformed 5 scales of satisfactory rating with one scale of don't know were grouped into 3 scores level distribution (good, fair, poor) by criterions of the dependent variables are interpret as followed:

- Outdoor spaces and building; community support and health services (each criteria contains 6 items, 30 points in total for each criteria):

Levels	**Score range**	**Percentage**
Good	24~30	80~100%
Fair	18~23	60-79%
Poor	1~17	< 60%

- Transportation (7 items, 35 points in total):

Levels	**Score range**	**Percentage**
Good	28~35	80~100%
Fair	21~27	60-79%
Poor	1~20	< 60%

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Chulalongkorn University

- Housing; social participation; respect and social inclusion (each criteria contains 4 items, 20 points in total for each criteria):

Levels	**Score range**	**Percentage**
Good	16~20	80~100%
Fair	12~15	60-79%
Poor	1~11	< 60%

- Civil participation and employment; communication and information (each criteria contains 5 items, 25 points in total for each criteria):

Levels	**Score range**	**Percentage**
Good	20~25	80~100%
Fair	15~19	60-79%
Poor	1~14	< 60%

Then inferential statistics of chi-square test and Fisher's exact test is used to find the association of the independent variables and the dependent variables that has been grouped into 3 satisfactory scores distribution by criteria. The chi-square will be used to address the association of each independent variable with each criterion of the dependent variable. The Fisher's exact test is used to describe the association of each independent variable with criterion based 3 grouped satisfactory scores of the dependent variable when the cell count in chi square is more than 5 and N is >20% of the cells with 2x2 matrix. Where in the 2x2 matrix, the 3 grouped satisfactory scores are merged into 2 level groups by merging fair and poor into one group, and good stands on its own.

3.9 Ethical Consideration

Before conducting the research, the researcher needs to obtain the approval from the Ethical Committee of Chulalongkorn University. At time of conducting research, the researcher must clearly explain and inform the participants on the purpose and procedure of the study. Before any face-to-face survey questionnaire, the researcher should obtain the informed consent from the participants, and the participants in the study are voluntary and can withdraw or refuse to participate at any time during the study without losing any benefits for the rights they have.

The information of each elderly participant is kept confidentially and is used only in this research.

3.10 Limitation

The researcher acknowledges 4 main limitations in this study. Firstly, the sample size selected due to the last available data on elderly population by Ministry of Human Development and Social Security was recorded on year 2012. The population at time of conducting the research might projected a larger group of elderly as the trend of older people is increasing tremendously in Thailand from 6.4 million in 2006 to 9.0 million by 2015. (UNFPA Thailand, 2006) Second limitation is that the physical development of the environment expertise is not included in evaluating and assessing the age-friendliness of the city. Third is the questionnaire does not contain the questions to access the governmental factor, which might influence a lot on the component of the age-friendly city. This will need to be further discussed and described in the discussion session of this research. Lastly, the sample size is drawn from the population of Amphoe Muang Ratchaburi, therefore, the result can only be projected to the city of Ratchaburi Province.

3.11 Expected Benefits and Application

This study may provide an insight to the current situation that describes how age friendly Amphoe Muang, Ratchaburi Province is, and point out the missing components that can make Ratchaburi a better place for the elderly to live. This

information can be used for further policy development to improve the living quality of the elderly that supports active ageing.

3.12 Obstacles and Strategies to Solve the Problems

The first possible obstacle that might occur in conducting this research might be that some of the elder participants in the study is unable to read or uncertain on the meaning of some of the checklist items. The strategy to solve this problem is to have the researcher and interviewers properly trained as the first step. Then, asking the interviewers to read it out for the old people or clearly explain the meaning of each item contents in the age friendly city checklist.

The second possible problem might be over spending from the estimated budget and large size of sample to be collected. The solution to this problem is to look for some funds or scholarship that may support the research on ageing-friendly city; or researcher need to be well organized on the tasks to be done in this research and concern the importance of prioritization of the tasks.

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Chulalongkorn University

CHAPTER IV

RESULTS

4.1 Descriptive statistics

4.1.1 Independent variables

4.1.1.1 General personal information (socio-demographic characteristics)

The data obtained in the personal general information represents the socio-demographic charateristics of the partricipants. Data shows that most of the participants age between 60-69 years old (n=262; 60%) and participants aged ≥70 makes up 40% (n=175) of the total participants. Majority of the participant in the study is female (n=260; 59.5%) while 177 (40.5%) are male. The education background of the participants shows that 356 (81.5%) of the participants has finished primary school, while only 12 (2.7%) has Bachelor's degree or higher. In monthly personal income, 96 (22%) of the participants do not have any income while those who has income shows that majority of them has income less than 10,000 baht per month with 138 (31.6%) of them has income less than 5,000, and 96 (22%) of them has income reign in 5,000-9,999 baht per month. For monthly personal expenditure, 246 (56.3%) of the participants spend less than 5,000 baht per month, while only 11 (2.5%) has the monthly expenditure ≥20,000 per month. Most of the participants in the study reported their mobility status as independent (n=403; 92.2%) with only 4 (0.9%) reported that they walk with assistive device, where 3 of them using walker and 1 of them use quadricane to support their gait.

(N=437)

Sociodemographic Characteriatics		**n**	**%**
Age	60-64	148	33.9
	65-69	114	26.1
	70-74	65	14.9
	75-79	55	12.6
	≥80	55	12.6
Gender	Male	177	40.5
	Female	260	59.5
Educational Background	Not educated	31	7.1
	Primary school	356	81.5
	Secondary school	38	8.7
	≥Bachelor degree	12	2.7
Personal income per month	No income	96	22.0
	<5,000	138	31.6
	5,000-9,999	96	22.0
	10,000-14,999	52	11.9
	15,000-19,999	15	3.4
	≥20,000	40	9.2
Personal expenditure per month	<5,000	246	56.3
	5,000-9,999	129	29.5
	10,000-14,999	39	8.9
	15,000-19,999	12	2.7
	≥20,000	11	2.5
Self-reported mobility status	Independent	403	92.2
	Dependent	30	6.9
	With Assistive device	4	0.9

Table 4 Socio-demographic characteristics of the participants

จุฬาลงกรณ์มหาวิทยาลัย
Chulalongkorn University

4.1.1.2 Awareness (knowledge) and participation (social factors)

The data obtained in the awareness (knowledge) and participation represents the social factors in the independdent variables of the partricipants. The results show that majority of the participants has the knowledge regarding their right to access to health, benefit of being healthy, and environmental effects on health with n=392,420,401 (89.7%, 96.1%, 91.8%) respectively. For community activity, the results show that majority 367 (84%) of the participants are aware of the information of community activity whereas only 70 (16%) is unaware of community activity information. The results also shows that 347 (79.4%) of the elders participates in the community activity with majority 292 (66.8%) of them participate occasionally and 55 (12.6%) always participate in community activity; while 90 (20.6%) of the elders never participate in the community activity.

(N=437)

Social Factors Items		**n**	**%**
Know the right to access to health	Yes	392	89.7
	No	45	10.3
Know the benefit of being healthy	Yes	420	96.1
	No	17	3.9
Know the environmental effects on health	Yes	401	91.8
	No	36	8.2
Know the community activity information	Yes	367	84.0
	No	70	16.0
Participate in community activities	Yes	347	79.4
	No	90	20.6
Frequency in paticipating community activities	Always	55	12.6
	Occasionally	292	66.8
	Never	90	20.6

Table 5 Social factors of the participants

4.1.2 Dependent variables

4.1.2.1 Outdoor spaces and buildings

(N=437)

Items		Strongly Agree	Agree	Neutral	Dis-agree	Strongly Disagree	Don't know
		n (%)	n (%)	n (%)	n (%)	n (%)	n (%)
1	Public areas are clean, pleasant, and safe.*	153 (35.0)	170 (38.9)	108 (24.7)	5 (1.1)	1 (0.2)	0 (0.0)
2	Pedestrian pathway is clean, safe, and with smooth pavement.	139 (31.8)	175 (40.0)	97 (22.2)	18 (4.1)	6 (1.4)	2 (0.5)
3	Pedestrian crossing is safe and easy to cross.	113 (25.9)	164 (37.5)	115 (26.3)	34 (7.8)	6 (1.4)	5 (1.1)
4	Night time safety is promoted by enough street lightening.	148 (33.9)	148 (33.9)	123 (28.1)	12 (2.7)	1 (0.2)	5 (1.1)
†5	Buildings are well-designed inside and outside, and is easy to access with ramp pathways, stairs with habdrails, and elevators.	114 (26.1)	191 (43.7)	107 (24.5)	16 (3.7)	6 (1.4)	3 (0.7)
6	Public toilets are enough in number and are clean and located at easy and safe accessible area.	130 (29.7)	173 (39.6)	93 (21.3)	19 (4.3)	20 (4.6)	2 (0.5)

*Public area refer to park, temple, road, local hospitals, clinics, and government buildings.

† Incicates the item that is most wanted to be improve for this domain.

Table 6 Participants' satisfaction on outdoor spaces and building

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Chulalongkorn University

The results shown by item with the satisfactory level rated from strongly agree, agree, neutral, disagree, strongly disagree, and don't know address that the item with highest strongly satisfactory level is item 1- public areas are clean, pleasant, and safe- with 153 (35.0%) of the elders; while item 5- buildings are well-designed inside and outside, and is easy to access with ramp pathways, stairs with habdrails, and elevators- is rated the most with 191 (43.7%) in the satisfactory (agree) level. For item 4- night time safety is promoted by enough street lightening- marks the majority of 123 (28.1%) elders in neutral level. Whereas item 3- pedestrian crossing is safe and easy to cross- and item 6- public toilets are enough in number and are clean and located at easy and safe accessible area- are rated the most in disagree and strongly disagree level with 34 (7.8%) and 20 (4.6) respectively. There is no elder rated don't know for item 1. [Table-6]

The result of satisfactory scores grouped to 3 level distributions- good, fair, poor- shows that the majority 235 (53.8%) of the elders rated this criterion of outdoor spaces and building good for the elders to live in, while 159 (36.4%) rated fair, and only 43 (9.8%) of the participants rated poor in this criterion [Table-7]. The mean score for outdoor spaces and buildings is 23.5 with Standard devistion of 4.9 [Table-8].

The result of item with most wanted to be improved in this criteria is item 5- buildings are well-designed inside and outside, and is easy to access with ramp pathways, stairs with habdrails, and elevators- with 158 (38.0%) rated for it. [Appendix-I]

(N=437)

Criteria	**Level**	**n**	**%**
Outdoor spaces and buildings	Good	235	53.8
	Fair	159	36.4
	Poor	43	9.8

Table 7 Satisfactory scores grouped to 3 level distributions of outdoor spaces and building

(N=437)

Outdoor spaces and buildings	n	Mean	S.D.	Min	Max
	437	23.5	4.9	5.0	30.0

Table 8 Mean of satisfactory scores in outdoor spaces and building

4.1.2.2 Transportation

The results shown by item with the satisfactory level rated from strongly agree, agree, neutral, disagree, strongly disagree, and don't know address that the item with highest strongly satisfactory level is item 7- parking areas are located at safe and easily accessible areas, with enough numbers of car parks- with 115 (26.3%); while item 4- Road is well-maintained for the safety of road users.- is rated by the majority of elders with 153 (35.0%) in the satisfactory (agree) level and 32 (7.3) in dissatisfactory (disagree) level. For item 5- Traffic is low and well-regulated - is marked by the majority of 179 (39.4%) elders in neutral level. Whereas item 3- there is transportation services for disbles- represents the majority of elders who rated strongly dissatisfied (disagree) and don't know by 82 (18.8%), and 117 (26.8%) respectively. [Table-9]

The result of satisfactory scores grouped to 3 level distributions- good, fair, poor- shows that the majority 195 (44.6%) of the elders rated this criterion of transportation poor for the elders, while 122 (27.9%) rated fair, and only 118 (27.0%) of the participants rated good in this criterion [Table-10]. The mean score for tranportation is 22.2 with standard deviation of 7.2. [Table-11].

The result of item with most wanted to be improved in this criteria is item 4- road is well-maintained for the safety of road users - with 122 (27.9%) elders rated for it. [Appendix-I]

(N=437)

Items		**Strongly Agree**	**Agree**	**Neutral**	**Dis-agree**	**Strongly Disagree**	**Don't know**
		n (%)	n (%)	n (%)	n (%)	n (%)	n (%)
1	Public transport is available in the area.	80 (18.3)	107 (24.5)	121 (27.7)	13 (3.0)	50 (11.4)	66 (15.1)
2	Public transport has a clear directions and path and is easily accessible by the elderly.	67 (15.3)	114 (26.1)	108 (24.7)	18 (4.1)	61 (14.0)	69 (15.8)
3	There is transportation service for disables.	73 (16.7)	82 (18.8)	61 (14.0)	22 (5.0)	82 (18.8)	117 (26.8)
† 4	Road is well-maintained for the safety of road users.	90 (20.6)	153 (35.0)	143 (32.7)	32 (7.3)	13 (3.0)	6 (1.4)
5	Traffic is low and well-regulated.	90 (20.6)	148 (33.9)	172 (39.4)	14 (3.2)	9 (2.1)	4 (0.9)
6	Traffic signs and intersections are visible and well-placed.	80 (18.3)	149 (34.1)	145 (33.2)	13 (3.0)	29 (6.6)	21 (4.8)
7	Parking areas are located at safe and easily accessible areas, with enough numbers of car parks.	115 (26.3)	113 (25.9)	152 (34.8)	22 (5.0)	24 (5.5)	11 (2.5)

† Incicates the item that is most wanted to be improve for this domain.

Table 9 Participants' satisfaction on transportation

(N=435)*

Criteria	Level	n	%
Transportation	Good	118	27.0
	Fair	122	27.9
	Poor	195	44.6

*Statistics exclude 2 participants who answered “don’t know” for every item in transportation (score= 0).

Table 10 Satisfactory scores grouped to 3 level distributions of transportation

(N=437)

Transportaion	n	Mean	S.D.	Min	Max
	437	22.2	7.2	0.0	35.0

Table 11 Mean of satisfactory scores in transportation

4.1.2.3 Housing

The results shown by item with the satisfactory level rated from strongly agree, agree, neutral, disagree, strongly disagree, and don’t know address that the item with highest strongly satisfactory level and neutral is item 1- housing areas are located near service areas- with 136 (31.1%) and 111 (25.4%) respectively.While item 2- housing areas are appropriate for living under different condition of weather - is rated the most with 209 (47.8%) in the satisfactory (agree) level. Whereas majority of 44 (33.0%), 56 (12.8%), and 22 (5.0%) of the elders rated don’t know, strongly disagree, and disagree for satisfactory level in item 4-that dominates the majority of satisfactory level of disagree and strongly disagree is item 4- Local government has provided enough affordable shelter and housing for frail and disabled elderly with good and appropriate services- respectively. [Table-12]

The result of satisfactory scores grouped to 3 level distributions- good, fair, poor- shows that the majority 182 (41.6%) of the elders rated this criterion of housing good for the elders to live in, while 149 (364.1) rated fair, and 106 (24.3%) of the

participants rated poor in this criterion [Table-13]. The mean score for outdoor spaces and buildings is 14.3 with standard devistion of 3.4 [Table-14].

The result of item with most wanted to be improved in this criteria is item 4-local government has provided enough affordable shelter and housing for frail and disabled elderly with good and appropriate services - with 202 (46.2%) elders rated for it. [Appendix-I]

(N=437)

Items		**Strongly Agree**	**Agree**	**Neutral**	**Dis-agree**	**Strongly Disagree**	**Don't know**
		n (%)	n (%)	n (%)	n (%)	n (%)	n (%)
1	Housing areas are located near service areas.	136 (31.1)	182 (41.6)	111 (25.4)	4 (0.9)	1 (0.2)	3 (0.7)
2	Housing areas are appropriate for living under different condition of weather.	123 (28.1)	209 (47.8)	94 (21.5)	8 (1.8)	0 (0.0)	3 (0.7)
3	House is clean, safe, and promotes freedom of movements in elderly.	153 (35.0)	182 (41.6)	85 (19.5)	10 (2.3)	4 (0.9)	3 (0.7)
† 4	Local government has provided enough affordable shelter and housing for frail and disabled elderly with good and appropriate services.	70 (16.0)	92 (21.1)	53 (12.1)	22 (5.0)	56 (12.8)	144 (33.0)

† Incicates the item that is most wanted to be improve for this domain.

Table 12 Participants' satisfaction on housing

(N=437)

Criteria	**Level**	**n**	**%**
Housing	Good	182	41.6
	Fair	149	34.1
	Poor	106	24.3

Table 13 Satisfactory scores grouped to 3 level distributions of housing

(N=437)

Housing	n	Mean	S.D.	Min	Max
	437	14.3	3.4	6	20

Table 14 Mean of satisfactory scores in housing

4.1.2.4 Social Participation

The results shown by item with the satisfactory level rated from strongly agree, agree, neutral, disagree, strongly disagree, and don't know address that the item with highest strongly satisfactory level is item 4- there are gatherings and meeting of older people such as elderly clubs, etc - with 102 (23.3%) of the elders; while it is also the higest rating for disagree level with 12 (2.7%) from the elders when compare to other items in this criteria. Whereas item 2- activities and events are appropriate for the elderly - is rated by the majority of 209 (47.8%) elders in the satisfactory (agree) level. For item 1- there are activity centers for the community – is rated most in neutral level with 158 (36.2%) elders and don't know 15 (3.4%) when compare to other items in this criteria. There is only few elders rated this criteia with strongly disagree. Among 4 items in this criteria, item - activities and events are appropriate for the elderly –is rated most by 7 (1.6%) when compare to other items.[Table-15]

(N=437)

Items		Strongly Agree	Agree	Neutral	Dis-agree	Strongly Disagree	Don't know
		n (%)	n (%)	n (%)	n (%)	n (%)	n (%)
†1	There are activity centers for the community.	83 (19.0)	174 (39.8)	158 (36.2)	3 (0.7)	4 (0.9)	15 (3.4)
2	Activities and events are appropriate for the elderly.	79 (18.1)	209 (47.8)	126 (28.8)	5 (1.1)	7 (1.6)	11 (2.5)
3	Information regarding the activities and events can be reached through several ways, such as radio, broadcast, TV, etc.	95 (21.7)	177 (40.5)	146 (33.4)	11 (2.5)	4 (0.9)	4 (0.9)
4	There are gatherings and meeting of older people such as elderly clubs, etc.	102 (23.3)	208 (47.6)	98 (22.4)	12 (2.7)	5 (1.1)	12 (2.7)

† Incicates the item that is most wanted to be improve for this domain.

Table 15 Participants' satisfaction on social participation

(N=437)

Criteria	**Level**	**n**	**%**
Social participation	Good	198	45.3
	Fair	203	46.5
	Poor	36	8.2

Table 16 Satisfactory scores grouped to 3 level distributions of social participation

(N=437)

Social participation	n	Mean	S.D.	Min	Max
	437	15.0	3.3	3	20

Table 17 Mean of satisfactory scores in social participation

The result of satisfactory scores grouped to 3 level distributions- good, fair, poor- shows that the majority 203 (46.5%) of the elders rated this criterion of outdoor spaces and building fair for the elders, while 198 (45.3%) rated good, and only 36 (8.2%) of the participants rated poor in this criterion [Table-16]. The mean score for social participation is 15.0 with standard devistion of 3.3 [Table-17].

The result of item with most wanted to be improved in this criteria is item 1- there are activity centers for the community - with 196 (44.9%) elders rated for it. [Appendix-I]

4.1.2.5 Respect and Social Inclusion

The results shown by item with the satisfactory level rated from strongly agree, agree, neutral, disagree, strongly disagree, and don't know address that the item with highest strongly satisfactory level is item 3- older people receive respect and acceptance from their family and the society - with 177 (40.5%) of the elders; while item 2- service providers are polite and helpful - is rated by the majority of elders with 206 (47.1%) in

the satisfactory (agree) level. For item 4- older people can access to all the public and private services – is rated the most in neutral level by 106 (24.3%) elders. Whereas only minority of elders rated disagree to don't know, with item 4 showing 10 (2.3%) elder rated dsagree; item 2 with 10 (2.3%) elders rated strongly disagree; and 9 (2.1%) of the elders marked don't know. [Table-18]

(N=437)

Items		**Strongly Agree**	**Agree**	**Neutral**	**Dis-agree**	**Strongly Disagree**	**Don't know**
		n (%)	n (%)	n (%)	n (%)	n (%)	n (%)
1	Older people are being visited regularly.	143 (32.7)	189 (43.2)	85 (19.5)	6 (1.4)	5 (1.1)	9 (2.1)
†2	Service providers are polite and helpful.	151 (34.6)	206 (47.1)	67 (15.3)	2 (0.5)	10 (2.3)	1 (0.2)
3	Older people receive respect and acceptance from their family and the society.	177 (40.5)	184 (42.1)	67 (15.3)	4 (0.9)	4 (0.9)	1 (0.2)
4	Older people can access to all the public and private services.	149 (34.1)	164 (37.5)	106 (24.3)	10 (2.3)	2 (0.5)	6 (1.4)

† Incicates the item that is most wanted to be improve for this domain.

Table 18 Participants' satisfaction on respect and social inclusion

จุฬาลงกรณ์มหาวิทยาลัย
Chulalongkorn University

(N=437)

Criteria	**Level**	**n**	**%**
Respect and social inclusion	Good	270	61.8
	Fair	152	34.8
	Poor	15	3.4

Table 19 Satisfactory scores grouped to 3 level distributions of respect and social inclusion

(N=437)

Respect and social inclusion	n	Mean	S.D.	Min	Max
	437	16.3	3.2	3	20

Table 20 Mean of satisfactory scores in respect and social inclusion

The result of satisfactory scores grouped to 3 level distributions- good, fair, poor- shows that the majority 270 (61.8%) of the elders rated this criterion of respect and social inclusion good for the elders, while 152 (34.8%) rated fair, and only 15 (3.4%) of the elders rated poor in this criterion [Table-19]. The mean score for respect and social inclusion is 16.3 with standard devistion of 3.2 [Table-20].

The result of item with most wanted to be improved in this criteria is item 2- service providers are polite and helpful- with 172 (39.4%) elders rated for it. [Appendix-I]

4.1.2.6 Civil Participation and Employment

The results shown by item with the satisfactory level rated from strongly agree, agree, neutral, disagree, strongly disagree, and don't know address that the item with highest strongly satisfactory and satisfactory level is item 5- older people are included for elections and all decision makings in the organization either public or private in which they belong to - with 129 (29.5%) and 174 (39.8%) of the elders respectively. While item 3- workplace is appropriate for the employees of older people and the disables – is rated by the majority of 155 (35.5%) elders in neutral level and 33 (7.6%) elders in the disagree level. Whereas item 4- there is preparation guide in retiring for older people- is rated most in strongly disagree and don't know with 51 (11.7) and 95 (21.7) elders respectively. [Table-21]

The result of satisfactory scores grouped to 3 level distributions- good, fair, poor- shows that the majority 180 (41.2%) of the elders rated poor on the environment for civil participation and employment of the elders, while 144 (33.0%) rated fair, and 110 (25.2%) of the participants rated good in this criterion [Table-22]. The mean score for civil participation and employment is 14.8 with standard devistion of 5.9 [Table-23].

The result of item with most wanted to be improved in this criteria is item 4- there is preparation guide in retiring for older people - with 203 (46.5%) elders rated for it. [Appendix-I]

จุฬาลงกรณ์มหาวิทยาลัย
Chulalongkorn University

(N=437)

Items		**Strongly Agree**	**Agree**	**Neutral**	**Dis-agree**	**Strongly Disagree**	**Don't know**
		n (%)	n (%)	n (%)	n (%)	n (%)	n (%)
1	There are a lot of alternative options for older volunteers available, with training, recognition, guidance, and compensation for personal costs..	32 (7.3)	153 (35.0)	139 (31.8)	26 (5.9)	21 (4.8)	66 (15.1)
2	Older employees receive appropriate jobs and wages.	43 (9.8)	116 (26.5)	140 (32.0)	25 (5.7)	39 (8.9)	74 (16.9)
3	Workplace is appropriate for the employees of older people and the disables.	40 (9.2)	103 (23.6)	155 (35.5)	33 (7.6)	46 (10.5)	60 (13.7)
†4	There is preparation guide in retiring for older people.	58 (13.3)	102 (23.3)	112 (25.6)	19 (4.3)	51 (11.7)	95 (21.7)
5	Older people are included for elections and all decision makings in the organization either public or private in which they belong to.	129 (29.5)	174 (39.8)	116 (26.5)	4 (0.9)	5 (1.1)	9 (2.1)

† Incicates the item that is most wanted to be improve for this domain.

Table 21 Participants' satisfaction on civil participation and employment

(N=434)*

Criteria	Level	n	%
Civil participation and employment	Good	110	25.2
	Fair	144	33.0
	Poor	180	41.2

*Statistics exclude 3 participants who answered "don't know" for every item in transportation (score= 0).

Table 22 Satisfactory scores grouped to 3 level distributions of civil participation and employment

(N=437)

Civil participation and employment	n	Mean	S.D.	Min	Max
	437	14.8	5.9	0	25

Table 23 Mean of satisfactory scores in civil participation and employment

จุฬาลงกรณ์มหาวิทยาลัย
Chulalongkorn University

4.1.2.7 Communication and Information

The results shown by item with the satisfactory level rated from strongly agree, agree, neutral, disagree, strongly disagree, and don't know address that the item with highest strongly satisfactory level and don't know is item 1- communication and flow of information is good and efficient - with 119 (27.2%) and 7 (1.6%) of the elders. While item 2- regular information and broadcast of interests to older people are offered - is rated the most with 179 (41.0%) in the satisfactory (agree) level. For item 3- information can be received through several ways - marks the majority of 148 (33.9%) elders in neutral level. Whereas item 4- printed and visual information are printed in big and clear front and wording that can be easily read -is rated the most in disagree and strongly disagree level with 34 (7.8%) and 7 (1.6%) respectively. [Table-24]

(N=437)

Items		Strongly Agree	Agree	Neutral	Dis-agree	Strongly Disagree	Don't know
		n (%)	n (%)	n (%)	n (%)	n (%)	n (%)
1	Communication and flow of information is good and efficient.	119 (27.2)	155 (35.5)	145 (33.2)	9 (2.1)	2 (0.5)	7 (1.6)
2	Regular information and broadcast of interests to older people are offered.	105 (24.0)	179 (41.0)	132 (30.2)	14 (3.2)	4 (0.2)	6 (1.4)
3	Information can be received through several ways.	107 (24.5)	162 (37.1)	148 (33.9)	16 (3.7)	1 (0.2)	3 (0.7)
† 4	Printed and visual information are printed in big and clear front and wording that can be easily read.	90 (20.6)	153 (35)	135 (30.9)	18 (4.1)	34 (7.8)	7 (1.6)
5	Oral and printed communication use words that can be easily understood.	103 (23.6)	154 (35.2)	133 (30.4)	31 (7.1)	11 (2.5)	5 (1.1)

† Incicates the item that is most wanted to be improve for this domain.

Table 24 Participants' satisfaction on communication and information

จุฬาลงกรณ์มหาวิทยาลัย
Chulalongkorn University

The result of satisfactory scores grouped to 3 level distributions- good, fair, poor- shows that the majority 192 (43.9%) of the elders rated this criterion of communication and information good for the elders, while 179 (41.0) rated fair, and only 66 (15.1%) of the participants rated poor in this criterion [Table-25]. The mean score for outdoor spaces and buildings is 18.6 with standard devistion of 4.3 [Table-26].

The result of item with most wanted to be improved in this criteria is item 4- printed and visual information are printed in big and clear front and wording that can be easily read - with 157 (35.9%) elders rated for it. [Appendix-I]

(N=437)

Criteria	**Level**	**n**	**%**
Communication and information	Good	192	43.9
	Fair	179	41.0
	Poor	66	15.1

Table 25 Satisfactory scores grouped to 3 level distributions of communication and information

จุฬาลงกรณ์มหาวิทยาลัย
Chulalongkorn University

(N=437)

Communication and information	n	Mean	S.D.	Min	Max
	437	18.6	4.3	5	25

Table 26 Mean of satisfactory scores in communication and information

4.1.2.8 Community Support and Health Services

(N=437)

Items		Strongly Agree	Agree	Neutral	Dis-agree	Strongly Disagree	Don't know
		n (%)	n (%)	n (%)	n (%)	n (%)	n (%)
† 1	Health services and community services cover all people living in the community.	127 (29.1)	200 (45.8)	97 (22.2)	7 (1.6)	2 (0.5)	4 (0.9)
2	Health service centers are located in safe and easily accessible areas.	144 (33.0)	194 (44.4)	95 (21.7)	3 (0.7)	0 (0.0)	1 (0.2)
3	Health service information is well-provided and easily accessible.	128 (29.3)	190 (43.5)	109 (24.9)	6 (1.4)	1 (0.2)	3 (0.7)
4	Health and community service providers are polite and helpful to the elderly.	135 (30.9)	232 (53.1)	60 (13.7)	8 (1.8)	1 (0.2)	1 (0.2)
5	Volunteers are promoted in the community.	129 (29.5)	209 (47.8)	82 (18.8)	7 (1.6)	3 (0.7)	7 (1.6)
6	There is emergency plan in the community with consideration of all age-range at time of planning.	109 (24.9)	124 (28.4)	95 (21.7)	23 (5.3)	17 (3.9)	69 (15.8)

† Incicates the item that is most wanted to be improve for this domain.

Table 27 Participants' satisfaction on community support and health services

จุฬาลงกรณ์มหาวิทยาลัย
Chulalongkorn University

(N=437)

Criteria	**Level**	**n**	**%**
Community support and health service	Good	224	51.3
	Fair	178	40.7
	Poor	35	8.0

Table 28 Satisfactory scores grouped to 3 level distributions of community support and health services

(N=437)

Community support and health service	n	Mean	S.D.	Min	Max
	437	23.4	4.8	6	30

Table 29 Mean of satisfactory scores in community support and health services

The results shown by item with the satisfactory level rated from strongly agree, agree, neutral, disagree, strongly disagree, and don't know address that the item with highest strongly satisfactory level is item 2- health service centers are located in safe and easily accessible areas - with 144 (33.0%) of the elders; while item 4- health and community service providers are polite and helpful to the elderly - is rated the most with 232 (53.1%) in the satisfactory (agree) level. For item 3- health service information is well-provided and easily accessible- marks the majority of 109 (24.9%) elders in neutral level. Whereas item 6- there is emergency plan in the community with consideration of all age-range at time of planning - is rated the most in disagree, strongly disagree, and don't know with 23 (5.3%) , 17 (3.9%), and 69 (15.8) respectively. There is no elder rated strongly disagree for item 2. [Table-27]

The result of satisfactory scores grouped to 3 level distributions- good, fair, poor- shows that the majority 224 (51.3%) of the elders rated this criterion of community support and health service good for the elders to live in, while 178 (40.7%) rated fair, and only 35 (8.0%) of the participants rated poor in this criterion [Table-28]. The mean score for outdoor spaces and buildings is 23.4 with standard devistion of 4.8 [Table-29].

The result of item with most wanted to be improved in this criteria is item 1-health services and community services cover all people living in the community - with 180 (41.2%) elders rated for it. [Appendix-I]

4.2 Inferential Statistics

4.2.1 Association of sociodemographic factors to dependent variables

4.2.1.1 Association of sociodemographic factors to outdoor spaces and building.

Table 30 shows that there is no association of any socio-demographic characteristics to the satisfication score levels to the criterion of outdoor spaces and building (p>0.05).

(N=437)

Sociodemographic Characteriatics	**n**	**Satisfactory Score Level**		**p-value**
		Good n(%)	**Fair+Poor n(%)**	
Age				**0.543**
60-69	262	144 (55.0)	118 (45.0)	
≥ 70	175	91 (52.0)	84 (48.0)	
Gender				**0.873**
Male	177	96 (54.2)	81 (45.8)	
Female	260	139 (53.5)	121 (46.5)	
Educational Background				**0.973**
≤ Primary school	387	208 (53.7)	179 (46.3)	
≥ Secondary school	50	27 (54.0)	23 (46.0)	

จุฬาลงกรณ์มหาวิทยาลัย
Chulalongkorn University

Sociodemographic Characteriatics	n	Satisfactory Score Level		p-value
		Good n(%)	Fair+Poor n(%)	
Personal income per month				**0.687**
< 5,000	234	125 (53.4)	109 (46.6)	
5,000-9,999	96	49 (51.0)	47 (49.0)	
≥ 10,000	107	61 (57.0)	46 (43.0)	
Personal expenditure per month				**0.857**
< 5,000	246	130 (52.8)	116 (47.2)	
5,000-9,999	129	72 (55.8)	57 (44.2)	
≥ 10,000	62	33 (53.2)	29 (46.8)	
Self-reported mobility status				**0.919**
Independent	403	217 (53.8)	186 (46.2)	
Dependent or with devices	34	18 (52.9)	16 (47.1)	

** $p < 0.05$*

Table 30 Association of sociodemographic factors and outdoor spaces and buildings

จุฬาลงกรณ์มหาวิทยาลัย
CHULALONGKORN UNIVERSITY

4.2.1.2 Association of sociodemographic factors to transportation.

(N=435)

Sociodemographic Characteriatics	n	Satisfactory Score Level		p-value
		Good n(%)	Fair+Poor n(%)	
Age				**0.264**
60-69	262	66 (25.2)	196 (74.8)	
≥ 70	173	52 (30.1)	121 (69.9)	
Gender				**0.824**
Male	177	47 (26.6)	130 (73.4)	
Female	258	71 (27.5)	187 (72.5)	

Sociodemographic Characteriatics	n	Satisfactory Score Level		p-value
		Good n(%)	Fair+Poor n(%)	
Educational Background				**0.499****
≤ Primary school	385	107 (27.8)	278 (72.2)	
≥ Secondary school	50	11 (22.0)	39 (78.0)	
Personal income per month				**0.501**
< 5,000	232	68 (29.3)	164 (70.7)	
5,000-9,999	96	25 (26.0)	71 (74.0)	
≥ 10,000	107	25 (23.4)	82 (76.6)	
Personal expenditure per month				**0.685**
< 5,000	244	68 (27.9)	176 (72.1)	
5,000-9,999	129	36 (27.9)	93 (72.1)	
≥ 10,000	62	14 (22.6)	48 (77.4)	
Self-reported mobility status				**0.314****
Independent	401	106 (26.4)	295 (73.6)	
Dependent or with devices	34	12 (35.3)	22 (64.7)	

* *p< 0.05;* ** Obtain from fisher's exact test

Table 31 Association of sociodemographic factors and transportation

Table 31 suggests that there is no association of any socio-demographic characteristics to the satisfication score levels to the criterion of transportation (p>0.05).

4.2.1.3 Association of sociodemographic factors to housing.

Table 32 shows that there is no association of any socio-demographic characteristics to the satisfication score levels to the criterion of housing (p>0.05).

(N=437)

Sociodemographic Characteriatics	n	Satisfactory Score Level		p-value
		Good n(%)	Fair+Poor n(%)	
Age				**0.108**
60-69	262	101 (38.5)	161 (61.5)	
≥ 70	175	81 (46.3)	94 (53.7)	
Gender				**0.397**
Male	177	78 (44.1)	99 (55.9)	
Female	260	104 (40.0)	156 (60.0)	
Educational Background				**0.093****
≤ Primary school	387	167 (43.2)	220 (56.8)	
≥ Secondary school	50	15 (30.0)	35 (70.0)	
Personal income per month				**0.466**
< 5,000	234	93 (39.7)	141 (60.3)	
5,000-9,999	96	39 (40.6)	57 (59.4)	
≥ 10,000	107	50 (46.7)	57 (53.3)	
Personal expenditure per month				**0.721**
< 5,000	246	106 (43.1)	140 (56.9)	
5,000-9,999	129	50 (38.8)	79 (61.2)	
≥ 10,000	62	26 (41.9)	36 (58.1)	
Self-reported mobility status				**0.721****
Independent	403	169 (41.9)	234 (58.1)	
Dependent or with devices	34	13 (38.2)	21 (61.8)	

* *p< 0.05;* ** Obtain from fisher's exact test

Table 32 Association of sociodemographic factors and housing

4.2.1.4 Association of sociodemographic factors to social participation

(N=437)

Sociodemographic Characteriatics	n	Satisfactory Score Level		p-value
		Good n(%)	Fair+Poor n(%)	
Age				**0.737**
60-69	262	117 (44.7)	145 (55.3)	
≥ 70	175	81 (46.3)	94 (53.7)	
Gender				**0.411**
Male	177	76 (42.9)	101 (57.1)	
Female	260	122 (46.9)	138 (53.1)	
Educational Background				**0.917**
≤ Primary school	387	175 (45.2)	212 (54.8)	
≥ Secondary school	50	23 (46.0)	27 (54.0)	
Personal income per month				**0.941**
< 5,000	234	107 (45.7)	127 (54.3)	
5,000-9,999	96	42 (43.8)	54 (56.2)	
≥ 10,000	107	49 (45.8)	58 (54.2)	
Personal expenditure per month				**0.674**
< 5,000	246	116 (47.2)	130 (52.8)	
5,000-9,999	129	55 (42.6)	74 (57.4)	
≥ 10,000	62	27 (43.5)	35 (56.5)	
Self-reported mobility status				**1.000****
Independent	403	183 (45.4)	220 (54.6)	
Dependent or with devices	34	15 (44.1)	19 (55.9)	

* *p< 0.05;* ** Obtain from fisher's exact test

Table 33 Association of sociodemographic factors and social participation

Table 33 shows that there is no association of any socio-demographic characteristics to the satisfication score levels to the criterion of social participation (p>0.05).

4.2.1.5 Association of sociodemographic factors to respect and social inclusion.

Table 34 shows that there is no association of any socio-demographic characteristics to the satisfication score levels of respect and social inclusion. (p>0.05).

(N=437)

Sociodemographic Characteriatics	**n**	**Satisfactory Score Level**		**p-value**
		Good n(%)	**Fair+Poor n(%)**	
Age				**0.860**
60-69	262	161 (61.5)	101 (38.5)	
≥ 70	175	109 (62.3)	66 (37.7)	
Gender				**0.785**
Male	177	108 (61.0)	69 (39.0)	
Female	260	162 (62.3)	98 (37.7)	
Educational Background				**0.783**
≤ Primary school	387	240 (62.0)	147 (38.0)	
≥ Secondary school	50	30 (60.0)	20 (40.0)	
Personal income per month				**0.521**
< 5,000	234	142 (60.7)	92 (39.3)	
5,000-9,999	96	57 (59.4)	39 (40.6)	
≥ 10,000	107	71 (66.4)	36 (33.6)	
Personal expenditure per month				**0.930**
< 5,000	246	153 (62.2)	93 (37.8)	
5,000-9,999	129	78 (60.5)	51 (39.5)	
≥ 10,000	62	39 (62.9)	23 (37.1)	

Sociodemographic Characteriatics	n	Satisfactory Score Level		p-value
		Good n(%)	Fair+Poor n(%)	
Self-reported mobility status				**1.000****
Independent	403	249 (61.8)	154 (38.2)	
Dependent or with devices	34	21 (61.8)	13 (38.2)	

** $p < 0.05$; *** Obtain from fisher's exact test

Table 34 Association of sociodemographic factors with respect and social inclusion

4.2.1.6 Association of sociodemographic factors to civil particapation and emplyment.

(N=434)

Sociodemographic Characteriatics	n	Satisfactory Score Level		p-value
		Good n(%)	Fair+Poor n(%)	
Age				**0.052**
60-69	259	57 (22.0)	202 (78.0)	
≥ 70	175	53 (30.3)	122 (69.7)	
Gender				**0.120**
Male	174	51 (29.3)	123 (70.7)	
Female	260	59 (22.7)	201 (77.3)	
Educational Background				**0.973**
≤ Primary school	384	98 (25.5)	286 (74.5)	
≥ Secondary school	50	12 (24.0)	38 (76.0)	
Personal income per month				**0.242**
< 5,000	234	66 (28.2)	168 (71.8)	
5,000-9,999	93	18 (19.4)	75 (80.6)	
≥ 10,000	107	26 (24.3)	81 (75.7)	

จุฬาลงกรณ์มหาวิทยาลัย
Chulalongkorn University

Sociodemographic Characteriatics	n	Satisfactory Score Level		p-value
		Good n(%)	Fair+Poor n(%)	
Personal expenditure per month				**0.433**
< 5,000	246	68 (27.6)	178 (72.4)	
5,000-9,999	126	29 (23.0)	97 (77.0)	
≥ 10,000	62	13 (21.0)	49 (79.0)	
Self-reported mobility status				**0.840****
Independent	400	101 (25.2)	299 (774.8)	
Dependent or with devices	34	9 (26.5)	25 (73.5)	

** $p < 0.05$; *** Obtain from fisher's exact test

Table 35 Association of sociodemographic factors with civil participation and employment

Table 35 shows that there is no association of any socio-demographic characteristics to the satisfication score levels of civil participation and employment ($p>0.05$).

4.2.1.7 Association of sociodemographic factors to communication and information.

Table 36 shows that there is no association of any socio-demographic characteristics to the satisfication score levels of communication and information ($p>0.05$).

Chulalongkorn University

(N=437)

Sociodemographic Characteriatics	n	Satisfactory Score Level		p-value
		Good n(%)	Fair+Poor n(%)	
Age				**0.540**
60-69	262	112 (42.7)	150 (57.3)	
≥ 70	175	80 (45.7)	95 (54.3)	
Gender				**0.285**
Male	177	72 (40.7)	105 (59.3)	
Female	260	120 (46.2)	140 (53.8)	
Educational Background				**0.359**
≤ Primary school	387	167 (43.2)	220 (56.8)	
≥ Secondary school	50	25 (50.0)	25 (50.0)	
Personal income per month				**0.488**
< 5,000	234	109 (46.6)	125 (53.4)	
5,000-9,999	96	39 (40.6)	57 (59.4)	
≥ 10,000	107	44 (41.1)	63 (58.9)	
Personal expenditure per month				**0.579**
< 5,000	246	113 (45.9)	133 (54.1)	
5,000-9,999	129	52 (40.3)	77 (59.7)	
≥ 10,000	62	27 (43.5)	35 (56.5)	
Self-reported mobility status				**0.477****
Independent	403	175 (43.4)	228 (56.6)	
Dependent or with devices	34	17 (50.0)	17 (50.0)	

** $p < 0.05$; *** Obtain from fisher's exact test

Table 36 Association of sociodemographic factors with communication and information

4.2.1.8 Association of sociodemographic factors to community support and health service

(N=437)

Sociodemographic Characteriatics	n	Satisfactory Score Level		p-value
		Good n(%)	Fair+Poor n(%)	
Age				**0.301**
60-69	262	129 (49.2)	133 (50.8)	
≥ 70	175	95 (54.3)	80 (45.7)	
Gender				**0.595**
Male	177	88 (49.7)	89 (50.3)	
Female	260	136 (52.3)	124 (47.7)	
Educational Background				**0.624**
≤ Primary school	387	200 (51.7)	187 (48.3)	
≥ Secondary school	50	24 (48.0)	26 (52.0)	
Personal income per month				**0.455**
< 5,000	234	122 (52.1)	112 (47.9)	
5,000-9,999	96	44 (45.8)	52 (54.2)	
≥ 10,000	107	58 (54.2)	49 (45.8)	
Personal expenditure per month				**0.183**
< 5,000	246	128 (52.0)	118 (48.0)	
5,000-9,999	129	59 (45.7)	70 (54.3)	
≥ 10,000	62	37 (59.7)	25 (40.3)	
Self-reported mobility status				**0.860****
Independent	403	206 (51.1)	197 (48.9)	
Dependent or with devices	34	18 (52.9)	16 (47.1)	

* *p< 0.05;* ** Obtain from fisher's exact test

Table 37 Association of sociodemographic factors to community support & health service

จุฬาลงกรณ์มหาวิทยาลัย
Chulalongkorn University

Table 37 shows that there is no association of any socio-demographic characteristics to the satisfication score levels of community supporet & health service (p>0.05).

4.2.2 Association of social factors and participation to dependent variables

4.2.2.1 Association of social factors with outdoor spaces and buildings

Table 38 shows that there is no association of any social factors to the satisfication score levels of outdoorspaces and buildings (p>0.05).

(N=437)

Social factors		**Satisfactory Score Level**		
	n	**Good n(%)**	**Fair+Poor n(%)**	**p-value**
Know the right to access to health				**0.156****
Yes	392	206 (52.6)	186 (47.4)	
No	45	29 (64.4)	16 (35.6)	
Know the benefit of being healthy				**0.806****
Yes	420	225 (53.6)	195 (46.4)	
No	17	10 (58.8)	7 (41.2)	
Know the environmental effects on health				**0.162****
Yes	401	220 (54.9)	181 (45.1)	
No	36	15 (41.7)	21 (58.3)	
Know the community activity information				**0.723**
Yes	367	196 (53.4)	171 (46.6)	
No	70	39 (55.7)	31 (44.3)	

จุฬาลงกรณ์มหาวิทยาลัย
Chulalongkorn University

Social factors	n	Satisfactory Score Level		p-value
		Good n(%)	Fair+Poor n(%)	
Participate in community activities				**0.184**
Yes	347	181 (52.2)	166 (47.8)	
No	90	54 (60.0)	36 (40.0)	
Frequency in paticipating community activities				**0.060**
Always	55	36 (65.5)	19 (34.5)	
Occasionally	292	146 (50.0)	146 (50.0)	
Never	90	53 (58.9)	37 (41.1)	

** $p < 0.05$; *** Obtain from fisher's exact test

Table 38 Association of social factors with outdoor spaces and buildings

4.2.2.2 Association of social factors with transportation

Table 39 suggests that there is association of social factors to the satisfication score levels of tranportation in knowledge on rights to access to health ($p<0.000$). The majority of 75.4% of the elders who knows the right to access to health rated transportation fair-poor, while 24.6% rated good. Whereas for 44 elders that do not know the right to access to health, 50% rated good, and 50% rated fair-poor.

(N=435)

Social factors	n	Satisfactory Score Level		p-value
		Good n(%)	Fair+Poor n(%)	
Know the right to access to health				***< 0.000****
Yes	391	96 (24.6)	295 (75.4)	
No	44	22 (50.0)	22 (50.0)	

Social factors	n	Satisfactory Score Level		p-value
		Good n(%)	Fair+Poor n(%)	
Know the benefit of being healthy				**0.574****
Yes	419	115 (27.4)	304 (72.6)	
No	16	3 (18.8)	13 (81.2)	
Know the environmental effects on health				**0.172****
Yes	399	6 (16.7)	30 (83.3)	
No	36	112 (28.1)	287 (71.9)	
Know the community activity information				**1.000****
Yes	366	99 (27.0)	267 (73.0)	
No	69	19 (27.5)	50 (72.5)	
Participate in community activities				**0.194**
Yes	346	89 (25.7)	257 (74.3)	
No	89	29 (32.6)	60 (67.4)	
Frequency in paticipating community activities				**0.119**
Always	55	19 (34.5)	36 (65.5)	
Occasionally	291	70 (24.1)	221 (75.9)	
Never	89	29 (32.6)	60 (67.4)	

* *p< 0.05;* ** Obtain from fisher's exact test

Table 39 Association of social factors with transportation

4.2.2.3 Association of social factors with housing

(N=437)

Social factors	n	Satisfactory Score Level		p-value
		Good n(%)	Fair+Poor n(%)	
Know the right to access to health				***0.046****
Yes	392	157 (40.1)	235 (59.9)	
No	45	25 (55.6)	20 (44.4)	
Know the benefit of being healthy				**0.627****
Yes	420	176 (41.9)	224 (58.1)	
No	17	6 (35.3)	11 (64.7)	
Know the environmental effects on health				***0.035*/ ******
Yes	401	173 (43.1)	228 (56.9)	
No	36	9 (25.0)	27 (75.0)	
Know the community activity information				**0.451**
Yes	367	150 (40.9)	217 (59.1)	
No	70	32 (45.7)	38 (54.3)	
Participate in community activities				**0.071**
Yes	347	137 (39.5)	210 (60.5)	
No	90	45 (50.0)	45 (50.0)	
Frequency in paticipating community activities				**0.138**
Always	55	26 (47.3)	29 (52.7)	
Occasionally	292	112 (38.4)	180 (61.6)	
Never	90	44 (48.9)	46 (51.1)	

** $p < 0.05$; *** Obtain from fisher's exact test

Table 40 Association of social factors with housing

จุฬาลงกรณ์มหาวิทยาลัย
Chulalongkorn University

Table 40 suggests that there is association of social factors to the satisfication score levels of housing in knowledge on rights to access to health (p=0.046) and knowledge of the environmental effects on health (p=0.035). Where in knowledge on rights to access to health, the majority of 59.9% of the elders who knows the right to access to health rated housing fair-poor, while 40.1% rated good. Whereas for 45 elders that do not know the right to access to health, 55.6% rated good, and 44.4% rated fair-poor. While in knowledge of the environmental effects on health, 56.9% of elders who knows the environment effects on health rated housing fiar-poor, and 43.1% of the elders rated good. For 36 elders who do not know the environmental effects on health, only 5% of them rated good, and 75% of them rated fair-poor.

4.2.2.4 Association of social factors with social participation

Table 41 below suggests that there is association between social factors to the satisfication score levels of social participation in knowledge on rights to access to health (p=0.018), knowing the community activity information (p=0.022), and frequency in participating community activities (p=0.021). Where in knowledge on rights to access to health, the majority of 56.6% of the elders who knows the right to access to health rated social participation fair-poor, while 43.4% rated good. For 45 of the elders that does not know the rughts to access to health, 62.2% of them rated good, and 37.8% rated fair-poor.

For knowing the community activity information, 52.3% of the elders that knows the community activity information rated social participation poor-fair, and 47.7 % of them rated good. Whereas for 70 elders who do not know the community activity information, 67.1% of them rated fair-poor, with only 32.9% rated good.

Data on frequency in participating community activities shows that majority of 292 elders attend the activity occasionally; where 55.8% of those who attends the activity occasionally rated social participation poo-fair, and 44.2% rated good. While for 55 elders who always participate in community activity, 61.8 % rated good, and 38.2% rated fair-poor. For 90 elders who never participate in community activity, only 38.9% rated good, while majority 65.1% rated fair-poor.

(N=437)

Social factors		**Satisfactory Score Level**		
	n	**Good n(%)**	**Fair+Poor n(%)**	**p-value**
Know the right to access to health				***0.018*/ ******
Yes	392	170 (43.4)	222 (56.6)	
No	45	28 (62.2)	17 (37.8)	
Know the benefit of being healthy				**1.000****
Yes	420	190 (45.2)	230 (54.8)	
No	17	8 (47.1)	9 (52.9)	
Know the environmental effects on health				**0.296****
Yes	401	185 (46.1)	216 (53.9)	
No	36	13 (36.1)	23 (63.9)	
Know the community activity information				***0.022****
Yes	367	175 (47.7)	192 (52.3)	
No	70	23 (32.9)	47 (67.1)	
Participate in community activities				**0.256**
Yes	347	162 (46.7)	185 (53.3)	
No	90	36 (40.0)	54 (60.0)	
Frequency in paticipating community activities				***0.021****
Always	55	34 (61.8)	21 (38.2)	
Occasionally	292	129 (44.2)	163 (55.8)	
Never	90	35 (38.9)	55 (61.1)	

** $p < 0.05$; *** Obtain from fisher's exact test

Table 41 Association of social factors with social participation

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4.2.2.5 Association of social factors with respect and social inclusion

(N=437)

Social factors	n	Satisfactory Score Level		p-value
		Good n(%)	Fair+Poor n(%)	
Know the right to access to health				**0.335****
Yes	392	239 (61.0)	153 (39.0)	
No	45	31 (68.9)	14 (31.1)	
Know the benefit of being healthy				**0.803****
Yes	420	260 (61.9)	160 (38.1)	
No	17	10 (58.8)	7 (41.2)	
Know the environmental effects on health				**0.152****
Yes	401	252 (62.8)	149 (37.2)	
No	36	18 (50.0)	18 (50.0)	
Know the community activity information				**0.093**
Yes	367	233 (63.5)	134 (36.5)	
No	70	37 (52.9)	33 (47.1)	
Participate in community activities				**0.380**
Yes	347	218 (62.8)	129 (37.2)	
No	90	52 (57.8)	38 (42.2)	
Frequency in paticipating community activities				**0.054**
Always	55	42 (76.4)	13 (23.6)	
Occasionally	292	176 (60.3)	116 (39.70	
Never	90	52 (57.8)	38 (42.2)	

* *p< 0.05;* ** Obtain from fisher's exact test

Table 42 Association of social factors with respect and social inclusion

Table 42 above suggests that there is no association of any social factors to the satisfication score levels of respect and social inclusion ($p>0.05$).

4.2.2.6 Association of social factors with civil participation and employment

Table 43 below suggests that there is association between social factors to the satisfication score levels of civil participation and employment in knowledge on rights to access to health ($p<0.000$), participation in community activities ($p=0.012$) and frequency in participating community activities ($p=0.038$). Where in knowledge on rights to access to health, the majority of 77.6% of the elders who knows the right to access to health ratedcivil participation and employment fair-poor, while only 27.4% rated good. In 45 of those who do not know the rights to access to health, 51.1% rated good, and 48.9% rated fair-poor.

For participation in community activities, majority 77.3% from 334 elders that participate in community activity rated civil participation and employment good, while only 22.7 % of them rated fair-poor. Whereas for 90 elders who do not participate and never participate in community activities, 64.4% of them rated fair-poor, and 35.6% rated good.

Data on frequency in participating community activities shows that majority of 292 elders attend the activity occasionally; where 77.9% of those who attends the activity occasionally rated civil participation and employment fair-poor, and only 22.1% rated good. While for 55 elders who always participate in community activity, 74.5 % rated fiar-poor, and only 25.5% rated good.

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(N=434)

Social factors	**n**	**Satisfactory Score Level**		**p-value**
		Good n(%)	**Fair+Poor n(%)**	
Know the right to access to health				***< 0.000****
Yes	389	87 (22.4)	302 (77.6)	
No	45	23 (51.1)	22 (48.9)	
Know the benefit of being healthy				**0.578****
Yes	417	107 (25.7)	310 (74.3)	
No	17	3 (17.6)	14 (82.4)	
Know the environmental effects on health				**0.112****
Yes	398	105 (26.4)	293 (73.6)	
No	36	5 (13.9)	31 (86.1)	
Know the community activity information				**0.201**
Yes	364	88 (24.2)	276 (75.8)	
No	70	22 (31.4)	48 (68.6)	
Participate in community activities				***0.012****
Yes	334	78 (22.7)	266 (77.3)	
No	90	32 (35.6)	58 (64.4)	
Frequency in paticipating community activities				***0.038****
Always	55	14 (25.5)	41 (74.5)	
Occasionally	289	64 (22.1)	225 (77.9)	
Never	90	32 (35.6)	58 (64.4)	

** p< 0.05; *** Obtain from fisher's exact test

Table 43 Association of social factors with civic participation and employment

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4.2.2.7 Association of social factors with communication and information

Table 44 above shows that there is association between social factors to the satisfication score levels of communication and information in rights to access to health (p=0.004). Where the majority of 58.4% of the elders who knows the right to access to health rated communication and information fair-poor, while only 41.6% rated good. For 45 of those who does not know the rights to access to health, 64.4% rated good, and 35.6% rated fair-poor.

(N=437)

Social factors		**Satisfactory Score Level**		
	n	**Good n(%)**	**Fair+Poor n(%)**	**p-value**
Know the right to access to health				***0.004*/ ******
Yes	392	163 (41.6)	229 (58.4)	
No	45	29 (64.4)	16 (35.6)	
Know the benefit of being healthy				**0.456****
Yes	420	183 (43.6)	237 (56.4)	
No	17	9 (52.9)	8 (47.1)	
Know the environmental effects on health				**0.601****
Yes	401	178 (44.4)	223 (55.6)	
No	36	14 (38.9)	22 (61.1)	
Know the community activity information				**0.324**
Yes	367	165 (45.0)	202 (55.0)	
No	70	27 (38.6)	43 (61.4)	
Participate in community activities				**0.558**
Yes	347	150 (43.2)	197 (56.8)	
No	90	42 (46.7)	48 (53.3)	

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Social factors	n	Satisfactory Score Level		p-value
		Good n(%)	Fair+Poor n(%)	
Frequency in paticipating community activities				**0.187**
Always	55	30 (54.5)	25 (45.5)	
Occasionally	292	121 (41.4)	171 (58.6)	
Never	90	41 (45.6)	49 (54.4)	

** $p < 0.05$; *** Obtain from fisher's exact test

Table 44 Association of social factors with communication and information

4.2.2.8 Association of social factors with community support and health services

In table 45 below suggests that there is association between social factors to the satisfication score levels of community support and health services in frequency in participating in community activities (p=0.001). Majority of 292 elders attend the activity occasionally; where 53.1% of those who attends the activity occasionally rated social participation poo-fair, and 46.9% rated good. While for 55 elders who always participate in community activity, 74.5 % rated good, and only 25.5% rated fair-poor. For 90 elders who never participate in community activity, 51.1% rated good, while majority 48.9% rated fair-poor.

(N=437)

Social factors	n	Satisfactory Score Level		p-value
		Good n(%)	Fair+Poor n(%)	
Know the right to access to health				**0.082****
Yes	392	195 (49.7)	197 (50.3)	
No	45	29 (64.4)	16 (35.6)	

Social factors	n	Satisfactory Score Level		p-value
		Good n(%)	Fair+Poor n(%)	
Know the benefit of being healthy				**1.000****
Yes	420	215 (51.2)	205 (48.8)	
No	17	9 (52.9)	8 (47.1)	
Know the environmental effects on health				**0.163****
Yes	401	210 (52.4)	191 (47.6)	
No	36	14 (38.9)	22 (61.1)	
Know the community activity information				**0.311**
Yes	367	192 (52.3)	175 (47.7)	
No	70	32 (45.7)	38 (57.3)	
Participate in community activities				**0.975**
Yes	347	178 (51.3)	169 (48.7)	
No	90	46 (51.1)	44 (48.9)	
Frequency in paticipating community activities				***0.001****
Always	55	41 (74.5)	14 (25.5)	
Occasionally	292	137 (46.9)	155 (53.1)	
Never	90	46 (51.1)	44 (48.9)	

* *p< 0.05;* ** Obtain from fisher's exact test

Table 45 Association of social factors with community support and health services

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CHAPTER V

DISCUSSION, CONCLUSION, AND RECOMMENDATIONS

The study aims to study assess and describe the age-friendliness of Amphoe Muang, Ratchaburi Province, Thailand, as well as determining the association of socio-demographic and social factors with the 8 domains of age-friendly city.

5.1 General Discussion

5.1.1 General discussion on socio-demographic characteristics

The majority 60% of the elders in this study aged between 60-69 years old, This result is congruent with the population distribution of Thailand presented by the United Nations (2007) suggesting that the population of age 60-69 years old covered 59.8% of the elders in 2000 and is estimated to covered 56.5% in 2050 (United Nation, 2007)and Samrongthong (2011) describing that early elderly age (60-69 years old) has made up 58.8% of the elder population (Samrongthong & Yamarat, 2011). Female makes up 59.5% of the study population, whereas 40.5% of the elders are male. This gender ratio is similar to the statistical data presented by Samrongthong (2011) that 55% of the elderly aged 60 and above are female (Samrongthong & Yamarat, 2011).

For the results of educational background of this study find out that majority 88.6% of the elders have education level below or equivalent to primary school, and 11.4% of the elders in this study received education of secondary school or higher. This result is also aligned with the statistic records from Labor Force Survey (2007) suggesting that 88.7% of Thai people aged 60 and above received education lower or at primary school level (John Knodel & Chayovan, 2008).

The results of personal income per month in this study that shows 53.5% of the elders have income less than 5,000 baht per month, 22% has income per month ranges between 5,000-9,999 baht, and 24.5% has income per month more than 10,000 baht. This finding is similar to the result suggested by Samrongthong (2011) that majority 67.8% of the elders has income per year between 10,000-99,999 baht and 16.8% has

income per year less than 10,000 baht per year (Samrongthong & Yamarat, 2011). However, this result suggests that most of the elders in the study have personal income less than average of the personal monthly income of Thai elders in central region of Thailand, which is reported by the National Statistics Office (2010) to be 6,198.4 baht/ month in the year 2010(Foundation of Thai Gerontology Research and Development Institute, 2010). Personal expenditure in this study show that 56.3% has expenditure less than 5,000 baht per month, 29.5% between 5,000-9,999 baht, and only 14.2% of the elders has expenditure more than 10,000 baht per month. The results of personal expenditure and income from the study suggest that most of the elders have sufficient-sometimes sufficient financial status, which is in-line to the data from National Statistics Office (2008) that 56.5% of and 20.7% of the elders have sufficient and sometimes sufficient income status (National Statistics Office, 2008).

Results of self-reported mobility status, 92.2% of the elders in this study can move independently with only 6.9% dependent and 0.9% move with assistive device. With majority of the study population aged between 60-74 years old [Table-4], the result of the self-reported mobility, is somewhat coherent to the reports by Foundation of Thai Gerontology Research and Development Institute (2011) on functional limitation in ADL of elders suggesting that 15% of the elders aged more than 80 years old have difficulties performing ADL, and this drop in function starts to increase after 75 years old (Foundation of Thai Gerontology Research and Development Institute, 2011). This result is also congruent with the qualitative study by Thanakwang et., al (2012) that shows functional independence is one of Thai's perspective for healthy ageing is in Thai perspective (Thanakwang, Soonthorndhada, & Mongkolprasoet, 2012)

5.1.2 General discussion on social factors

From the results of this study that shows that majority of the elders are aware of their rights to access health (89.7%) and know the importance of staying healthy (96.1%), as well as knowing the effects of environment that can place impact on health (91.8%). This finding suggests that almost all of the elders have adequate knowledge in issue regarding to health. In results of knowing the information of community activity shows that 84% of the participants know the information of community participation, but only 79.4% of the elders participate in community activity. To this

proportion, 12.6% of the elders always attend community activity and 66.8 attend occasionally. This result of the social factors is a good indicator of healthy ageing and the success of Second National Plan for Older Person in Thailand that aimed to promote health in older people through community activities, as well as is prompted by this plan in the other way round (Jitapunkul & Wivatvanit, 2009).

5.1.3 Discussion on domains of age-friendly city

The findings of this study suggests that 53.8% (N=437) rated good in satisfactory level toward the domain of outdoor spaces and building, which is similar to the finding from Age Friendly London (2014) that reported 57% (N=670) good or excellent in this domain (Age Friendly London, 2014). While the finding from transportation in this study shows that only 27% (N=435) of the elders rated good. This is conctrast to the result shown from Age Friendly London Network (2014) that reported 71% (N=670) rated this domain good or excellent and that the 2 main items with the most poor response rate are easing traffic for cars and bus (Age Friendly London, 2014); where as in this study, the 3 main items with the poor satisfaction are availability for public transport, direction and path of public transport, and transportation service for disables.

For finding on satisfactory level on housing from this study, 45.3% (N=437) of the elders rated good, while having the majority of the poor response and don't know rate concentrating in item 4 that says local government has provided enough, affordable shelter and housing for frail and disabled elders to live with good and appropriate service. This result is congruent to the finding on housing domain in Age Friendly London (2014) which suggested that the affordable housing for low income elders received poor responses from the elders (Age Friendly London, 2014). The reason for domain of housing in this research suggested majority of the elders rated poor is due to a large body of elderly that rated don't know for item 4 which stated about the shelters for disables, elders, and frails. This can be explained by the Thailand's governmental system that separate the housing arrangement and properties to be under the control of National Housing Authority(National Housing Authority, 2013), which is not related with the duties carried by the local government and the municipality; and there is no proper co-orporation and communication between these governmental units. Therefore

the local people or the people within the community do not know about this type of shelter, causing the rating for poor in housing high. Nevertheless, the pilot test for reliability had stated that the housing domain gained relatively high reliability when compare to the other domains, but the research result does not match with the high reliability stated for this domain. This can be explained by the limitation of the study that the area of Amphoe Muang Kanjanaburi Province, where the pilot test was carried out, has the policy of the local government and municipality aiming to develop this area into a tourism industry place (Kanjanaburi Provincial Office, 2015); therefore, the people living in this community was aware of the shelter provided by the government and NHA. Whereas in Amphoe Muang, Ratchaburi Province, the strategy of the area is to promote increasing of income through intelligency in industrial, cultural and agricultural development(Ratchaburi Provincial Office, 2015).

The results of this study on the domains of social participation, respect and social inclusion, civil participation and employment, communicaton and information, and community and health services are rated good in satisfactory level with 45.3%, 61.8%, 25.2%, 43.9%, and 51.3% respectively. Where the results from these domains of age-friendly city suggested by this research, aside from domain of respect and social inclusion (good or excellent response rate= 66%) stated in the research of Age Friendly London (2014), have the finding in contrast which suggesting that the response rate for good or excellent are 81% in social participation; 69% in civil participation and employment; 72% for communication and information; and 72% for community support and health services (Age Friendly London, 2014).

Domain of respect and social inclusion has similar finding with Age Friendly London (2014) that both are having good response rate. The finding of high satisfactory level in good for this domain from this research is also supported by the Thai culture of respecting, caring, and having a place for elders, especially for the seniors in the family(Pussayapibul, Srithamrongsawat, & Bundhamcharoen, 2011). Yet, there is evidence showing that the respect to older people declines overtime due to increase of educational level in younger persons, modern living, and individualistic thinking (UNESCAP, 2001). Hermalin (2000) also pointed out that the status of the elders are decreasing due to increasing of education background in younger generation, industialization, urbanization, and mordern technology on health (Hermalin, 2000).

For the finding on civil participation and employment from this study shows a relatively low satisfacory rate for good with only 25.2%. The finding also pointed out that the majority of the elders do not know about if there is the preparation guide for retiring and if older employees receive appropriate job or wages. This can be explained by the statistic data of Thailand that shows 62.1% of the elders are self-employed with own business without recruiting employees (Samrongthong & Yamarat, 2011).

5.1.4 Association of socio-demographic characteristics to domains of age friendly city

This is a very first quantitative study that tries to explain the association between socio-demographic characteristics to all 8 domains of the age friendly city. The result of this study suggests that there is no statistical significant ($p>0.05$) in determining association between socio-demographic characteristics to the satisfactory score rating levels of all 8 indicators of age-friendly city. Other studies had tried to explain the association of socio-demographic factor to health or some of the domain of age-friendly city toward health. Such that in the study that relates outdoor spaces and building, and transportation to mobility suggests that the mobility of elders with independent and dependent functional level has association with the environmental demand on outdoor spaces and building, and transportation of the community. To which the different demand to environment from functional dependent and independent individuals include temporal factors- traffic, busy street, walking speed-, and terrain factors- stairs, curbs, ramps, elevators, uneven surfaces, obstacles. In the study of Sophonratanapokin that studies on the fall of the Thai elders in their household points out that the arrangement of household environment and housing spaces are associated with health by explaining that the housing spaces and arrangement affects the mobility ability and willingness to move, to which will further place impact on health (Sophonratanapokin, Sawangdee, & Soonthorndhada, 2012).

For study that relates social participation to health by Nummela et. al.,(2007) which studied the social capital- social participation, trust and self-rated health- among ageing people in Finland suggests that high social capital can potentially promote the health in elders (Nummela, Sulanderr, Rahkonen, Karisto, & Uutela, 2008).

5.1.5 Association of social factors to domain of age friendly city

The results of this study shows that there is no association between social factors to the domains of outdoor spaces and buildings, and social inclusion and respect. This result is not consistent with the study of Tucker-Seeley (2009) that suggests the neighborhood environment safety has the influence on physical activities of older people (Tucker-Seeley et al., 2009). It is also not consistence with the findings from recent researches that suggested that the elders wish to be recognized, welcomed and included in the society(WHO, 2007) through caring, (Hoontrakul, 2007)knowing what is happening and maintaining their roles in the family and the society(Pussayapibul et al., 2011).

This research finding suggests that there are association of knowledge on right to access to health with transportation ($p<0.000$), housing ($p=0.046$), social participation ($p=0.018$), civic participation and employment ($p<0.000$), and communication and informmation ($p=0.004$). This means that the knowlegde of the rights to access to health affects the perceptions of the elderly on satisfactions toward domains of the age-friendly city in transportation, housing, social participation, civic participation and emplyment, and communication and information.

The result also shows that the knowledge on environmental effect on health will affect the interpretation of satisfaction in domain of housing that is suitable for ageing population, with statistically significant of $p=0.035$. This is consistence with the study on home modification that suggests environmental midification of home towards the physical condition of the elders and household arrangement help facilitaes ageing in place (Kim, Ahn, Syeinhoff, & Lee, 2014)

For knowledge on community activity information is associated with domain of social participation, with statistically significace of $p=0.022$. This is aligned with the data mentioned by WHO (2007) that social participation depends on the accessibility and capacity of the physical environment to promote healthy ageing; besides, getting information about community activity is another important contributor to particaipation in socail life (WHO, 2007). Whereas participation in community activity is associated with civic participation with statistical significant of $p=0.012$. This finding is congruent with the guideline of age-friendly city that supports the retired elders to continuously

taking parts in civic participation or employment through devoting in community activities or volunteering(WHO, 2007).

The result of this study also suggests that the frequency in participating in community activity is related to the domains of social participation, civic participation and employment, and community support and health services. This result is consistent to the age-friendly city guideline that suggests that more engaging in community activities through community support and participating in either formal or informal social life can build the competence and enjoyment to life, and the caring relationship among the elders, which further leads to good health (Nummela et al., 2008; WHO, 2007).

5.1.6 Demand of the elders toward age-friendly city based on 8 domain

The demand of the elders toward age-friendly city suggests the priority for improvement to take action. However, eventhough some of the items are rated with good and fair satisfaction, but the result on demand for most wanted item to be improved in some domain does not consistent with the result of satisfaction from the study. The result shows that the item with most wanted to be improved in outdoor spaces and building is item 5- buildings are well-designed inside and outside, and is easy to access with ramp pathways, stairs with habdrails, and elevators- with 158 (36.2%) of the elders rated for it. While item 4- road is well-maintained for the safety of road users - in transportation is the most wanted to be improved with 122 (27.9%) of the elders. For Housing, item 4- local government has provided enough affordable shelter and housing for frail and disabled elderly with good and appropriate services – is rated the most with 202 (46.2%) of the elders. Majority of 44.9% (n=196) rated most wanted to be improved item for item 1- there are activity centers for the community- in domain of social participation. For Item 2 in domain of respect and social inclusion - service providers are polite and helpful- is rated with 172 (39.4%) elders as most wanted to be improved item. Item 4- there is preparation guide in retiring for older people - with 203 (46.5%) elders rated for it in domain of civic participation and employment. In communication and information, item 4- printed and visual information are printed in big and clear front and wording that can be easily read - with 157 (35.9%) elders rated for it. Whereas, for community support and health service, item 1- health services

and community services cover all people living in the community – received the most rate for improvement with 180 (41.2%).

The complete priotization of demand of the elders toward age-friendly city based on 8 criteria are shown in Appendix I.

5.2 Conclusion

This research was conducted during April-May 2015 at Amphoe Muang, Ratchaburi Province, Thailand. The data analysis was done by Chi square and fisher's exact test with significant of p value<0.05. The majority of 59.5 the participants are female 60% and most of the elders are aged between 60-69 years old. For social factors, majority of the participant has the knowledge regarding to health and participates in the community activity. Among those, majority of 66.8% of the elders attend the community activity occasionally. For domains of the age-friendly city, domain that is rated with majority of the elder in "good" level is respect and social inclusion receiving 61.8%, outdoor spaces and building 53.8%, community and health services 51.2%, social participation 45.3%, communication and information43.9%, and housing 41.6%; whereas the least rating for "good" level falls at civic participation and employment with only 25.2%, and transportation with 27%.

The finding of this research on describing asscoation of socio-demographic factors and 8 domains of age-friendly city addresses that no statistical significant (p>0.05) of association is found between these 2 groups variables.

However, there is association of the social factors with the 8 domains of age-friendly city, excluding outdoor spaces and buildings, and respect and social inclusion. The statistically significant association was found in knowledge on right to access to health with transportation (p<0.000), housing (p=0.046), social participation (p=0.018), civic participation and employment (p<0.000), and communication and information (p=0.004); knowledge on environmental effect on health and housing (p=0.035); knowledge on community activity with social participation (p=0.022); and frequency in participating in community activity with social participation (p=0.021), civic participation and employment (p=0.038), and community support and health services (p=0.01).

The finding of this study suggests that social factors on knowledge regarding to health and participation is associated with 8 domains of age-friendly city, excluding outdoor spaces and building, and respect and social inclusion. Despite the social factors, the domains of the age-freindly city are interconnected to one another (WHO, 2007), especially the domains under environmental scope such as outdoor spaces and buidling, transportation, and housing build a important basis for the other domains of age-friendly city.

5.3 Recommendations

5.3.1 Suggestions for application from the research

The purpose of this study is to assess and describe the age-friendliness of Amphoe Muang, Ratchaburi Province, Thailand, as well as determining the association of socio-demographic and social factors with the 8 domains of age-friendly city, and to draw possible suggestions for improving the age-friendly situation. According to the finding of the research and the aim to suggest possible solution to improve the age-freindliness, the followings are general recommendations according to the demands from the 8 domains of age-friendly city:

1. According concerns on the safety and demand of the elders from domains of outdoor spaces and buildings and trasportation, barrier free environment and smooth path are suggested to be build at the puclic spaces, government buildings and the places where the elders visit rountinely or at the crowded area. The maintenance after built is also suggested.
2. From the results and demand of housing domain, providing shleter or homes for elders, disables, or frail voluntary individuals at a affordable price with adequate amount of care-giver and health professional to take care of the place is recommended. However, since the housiong arrangement and policy in Thailand is held by National Housing Authority or NHA (National Housing Authority, 2013), it is crucial that the central government and the local government, including the municipality or even the local stakeholders such as some private sectors to work hand in hand with NHA to initiate and implement the project of providing shelters for elders, disables, or frail voluntary individuals, with adequate channels for the people in community

to get the information on the existence of this type of shelter available within the community.

3. From the demand shown from domain of social participation, to construct and provide a multi-purpose community activity center that suite the usage for all age-range with the consideration of barrier free environment, budget, and usage rate before construction is suggested. Maintenance of the facility and outcome indicators such as report of usage and satisfaction survey should be done after the center is contructed.
4. For respect and social inclusion that shown the demand of improvement for polite and helpful services from the services providers, suggestions in promoting good quaility of services through trainings, building good working environment with reasonable wages, providing clear working prescirption with supportive career planning for the employess, and comepition campanges with reinforcement and pride recognition for the employees working in service field in to provide pleasure services to the customers or patients of all age in both public and private center is crucial. The outcome indicator such as service satisfactory level rated by the users should also be implemented to see the feedback on improvement of services.
5. In domain of civil participation and emploment shown that the majority of the elders did not know about the preparation guideline for retirement. This suggestion that the development and provision of a guide for retirement preparation to the baby boomers before the retirement age or setting up a unit that helps in guiding retirement preparation in public and private sector is important. This action might even indicates that the project on a clear career path or plan in employment is needed to be imposed to Thai society.
6. From demand in the domain of communication and information, the spread of printing or visual medias such as spreadsheet, newspaper, etc., is suggested to be designed with big and clear font and wording for the elderly to easily access, read, and understand.
7. For demand for improvement from the domain of community support and health services that stated a need of coverage of health and comminuty services in the comminity, suggestions for providing more choices, courses

and training to recruit more local village health volunteers or other types of volunteer to assure the quality and expand the scopes of service toward health and community.

However, besides the demend for improvement from the 8 domains, the results of the study suggests that knowledge in the elder population is a crucial factor that can influence their perspective and understanding of their living environment and health. Therefore the prelimenary tasks for the local government and municipality, including the private sectors to improve, despiting the limitation on time, budget and current governmental policy in implementing the improvement of environmental factors on the facilities and constructions, is to work hand in hand to eudcate the local people on the importance of health, participation in community, and how can they get access to the services to the all the people living or workin in the community.Nevertheless, social movement with information exchange is also a crucial key to involve the community to be actively educated.

5.3.2 Suggestion for furthur study

This study is a quantitative cross-sectional study that aimed to describe the age-friendly situation and components contributing to the 8 indicators of age-friendly city based in Amphoe Muang, Ratchaburi Province, Thailand through face- to face interview of the structured questionnaire to the elders. Therefore:

1. A qualitative or mixed method of the study is suggested to be conducted to have more precise investigation on the demand of elders living in Amphoe Muang, Ratchaburi, Thailand toward age-friendly city.
2. Eventhough the insights from the elders are important for determining and planning age-friendly city; the government sectors including the general officers and the division for urban planning with experts for built environment, and the community leaders must be taken into account for age-friendly city research. Furthermore, the governmental factors on current policy, laws and budget must as well be considered.
3. Other socio-demographic factors such as marital status, employment status, and pattern of living arrangement need to be included in future study for finding the association with indicators of age-friendly city in Thai context.

4. Conducting more researches to the other cities in Thailand would better describe and determine the suitable age-friendly city componenets under Thai context.
5. A larger sample size and up-to-date amount of population would be better for determining the association between factors and 8 indicators of age-friendly city.

จุฬาลงกรณ์มหาวิทยาลัย
Chulalongkorn University

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APPENDIX

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Appendix-I

Table showing the demand of the elders toward age-friendly city based on 8 domains of age-friendly city

Domain/ Item	n	%
Outdoor spaces and buildings (N=437)		
1. Public areas are clean, pleasant, and safe.	101	23.1
2. Pedestrian pathway is clean, safe, and with smooth pavement.	32	7.3
3. Pedestrian crossing is safe and easy to cross.	55	12.6
4. Night time safety is promoted by enough street lightening	50	11.4
5. Buildings are well-designed inside and outside, and is easy to access with ramp pathways, stairs with handrails, and elevators.	158	36.2*
6. Public toilets are enough in number and are clean and located at easy and safe accessible area.	41	9.4
Transportation (N=437)		
1. Public transport is available in the area.	70	16.0
2. Public transport has a clear directions and path and is easily accessible by the elderly.	63	14.4
3. There is transportation service for disables.	109	24.9
4. Road is well-maintained for the safety of road users.	122	27.9*
5. Traffic is low and well-regulated.	12	2.7
6. Traffic signs and intersections are visible and well-placed.	50	11.4
7. Parking areas are located at safe and easily accessible areas, with enough numbers of car parks.	11	2.5

Domain/ Item	n	%
Housing (N=437)		
1. Housing areas are located near service areas.	112	25.6
2. Housing areas are appropriate for living under different condition of weather.	33	7.6
3. House is clean, safe, and promotes freedom of movements in elderly.	90	20.6
4. Local government has provided enough affordable shelter and housing for frail and disabled elderly with good and appropriate services.	202	46.2*
Social participation (N=437)		
1. There are activity centers for the community.	196	44.9*
2. Activities and events are appropriate for the elderly.	28	6.4
3. Information regarding the activities and events can be reached through several ways, such as radio, broadcast, TV, etc.	86	19.7
4. There are gatherings and meeting of older people such as elderly clubs, etc.	127	29.1
Respect and social inclusion (N=437)		
1. Older people are being visited regularly.	31	7.1
2. Service providers are polite and helpful.	172	39.4*
3. Older people receive respect and acceptance from their family and the society.	93	21.3
4. Older people can access to all the public and private services.	141	32.3

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Domain/ Item	n	%
Civic participation and employment (N=437)		
1. There are a lot of alternative options for older volunteers available, with training, recognition, guidance, and compensation for personal costs..	75	17.2
2. Older employees receive appropriate jobs and wages.	91	20.8
3. Workplace is appropriate for the employees of older people and the disables.	43	9.8
4. There is preparation guide in retiring for older people.	203	46.5*
5. Older people are included for elections and all decision makings in the organization either public or private in which they belong to.	25	5.7
Communication and Information (N=437)		
1. Communication and flow of information is good and efficient.	98	22.4
2. Regular information and broadcast of interests to older people are offered.	39	8.9
3. Information can be received through several ways.	103	23.6
4. Printed and visual information are printed in big and clear front and wording that can be easily read.	157	35.9*
5. Oral and printed communication use words that can be easily understood.	40	9.2

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Domain/ Item	n	%
Community Support and Health Services (N=437)		
1. Health services and community services cover all people living in the community.	180	41.2*
2. Health service centers are located in safe and easily accessible areas.	31	7.1
3. Health service information is well-provided and easily accessible.	33	7.6
4. Health and community service providers are polite and helpful to the elderly.	90	20.6
5. Volunteers are promoted in the community.	84	19.2
6. There is emergency plan in the community with consideration of all age-range at time of planning.	19	4.3

* Most rated item in the domain.

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Appendix II

Questionnaire in English (Structured in-depth face-to-face Interview)

NO._____ DATE:_____

INTERVIEWER:_____

Part I: General Personal Information

1. Current Age: □ 60-64 □65-69 □*70-74* □75-79 □80 and above
2. Gender: □ Male □ Female
3. Educational Background

   □ Primary school □ Secondary school □ Vocational School

   □ Bachelor degree □ Master degree or above □ Not educated
4. Income Status (Baht/ month):

   □ No income □ Below 5,000 □ 5,000-9,999 □10,000-14,999 □15,000-19,999 □20,000-24,999 □25,000 and above
5. Expenditure (Baht/ month):

   □ Below 5,000 □ 5,000-9,999 □10,000-14,999 □15,000-19,999 □20,000-24,999 □25,000 and above
6. Self-reported mobility status

   □ Independent □ Dependent □ With assistive device, mention:_____

Part II: Awareness(Knowledge) and Participation

1. Do you know the rights to access to health service?

   ☐ No ☐ Yes
2. Do you know the benefits gain from health? ☐ No ☐ Yes
3. Do you know the health risk affected by the environment? ☐ No ☐ Yes
4. Do you know any community activity? ☐ No ☐ Yes

   (If no, please skip number 5 and 6)
5. Do you participate in any community activity? ☐ No ☐ Yes

   (If no, please skip number 6)
6. How often do you participate in community activity?

   □ Always □ Occasionally

Part III: Aspects of Age-friendly Cities

Direction: *Please put "v" in the box that most suite your opinion*

1= strongly agree 4= disagree

2= agree 5= strongly disagree

3= neutral 6= don't know

1. Outdoor Spaces and Building (6 items)

Item	Description	1	2	3	4	5	6
1.	Public areas are clean pleasant, and safe. *Public area example: park, temple, road, pedestrian path etc.						
2.	Pedestrian pathway is clean, safe, and with smooth pavement.						
3.	Pedestrian crossing is safe and easy to cross.						
4.	Night time safety is promoted by enough street lightening.						
5.	Buildings are well-designed inside and outside, and is easy to access with ramp pathways, stairs with handrails, and elevators.						
6.	Public toilets are enough in number and are clean and located at easily and safe accessible area.						

Which item from above do you wish to have or improve the most?

_____

Other Suggestions:-

_____

2. Transportation (7 items)

Item	Description	1	2	3	4	5	6
1.	Public transport is available in the area. (If no public transport, please skip number 2)						
2.	Public transport has a clear directions and path and is easily accessible by the elderly.						
3.	There is transportation service for disables.						
4.	Road is well-maintained for the safety of road users.						
5.	Traffic is low and well-regulated						
6.	Traffic signs and intersections are visible and well-placed.						
7.	Parking areas are located at safe and easily accessible areas, with enough numbers of car parks.						

Which item from above do you wish to have or improve the most?

_____

Other Suggestions:-

_____

3. Housing (4 items)

Item	Description	1	2	3	4	5	6
1.	Housing areas are located near service areas.						
2.	Housing areas are appropriate for living under different condition of weather.						
3.	House is clean, safe, and promotes freedom of movements in elderly.						
4.	Local government has provided enough affordable shelter and housing for frail and disabled elderly with good and appropriate services.						

Which item from above do you wish to have or improve the most?

_____

Other Suggestions:-

_____

4. Social Participation (4 items)

Item	Description	1	2	3	4	5	6
1.	There are activity centers for the community						
2.	Activities and events are appropriate for the elderly.						
3.	Information regarding the activities and events can be reached through several ways, such as radio, broadcast, TV, etc.						
4.	There are gatherings and meeting of older people such as elderly clubs, etc.						

Which item from above do you wish to have or improve the most?

_____

Other Suggestions:-

_____

5. Respect and Social Inclusion (4 items)

Item	Description	1	2	3	4	5	6
1.	Older people are being visited regularly.						
2.	Service providers are polite and helpful.						
3.	Older people receive respect and acceptance from their family and the society.						
4.	Older people can access to all the public and private services.						

Which item from above do you wish to have or improve the most?

_____

Other Suggestions:-

_____

6. Civil Participation and Employment (5 items)

Item	Description	1	2	3	4	5	6
1.	There are a lot of alternative options for older volunteers available, with training, recognition, guidance, and compensation for personal costs.						
2.	Older employees receive appropriate jobs and wages.						
3.	Workplace is appropriate for the employees of older people and the disables.						
4.	There is preparation guide in retiring for older people.						
5.	Older people are included for elections and all decision makings in the organization either public or private in which they belong to.						

Which item from above do you wish to have or improve the most?

_____

Other Suggestions:-

_____

7. Communication and Information (5 items)

Item	Description	1	2	3	4	5	6
1.	Communication and flow of information is good and efficient.						
2.	Regular information and broadcast of interests to older people are offered.						
3.	Information can be received through several ways.						
4.	Printed and visual information are printed in big and clear front and wording that can be easily read.						
5.	Oral and printed communication use words that can be easily understood.						

Which item from above do you wish to have or improve the most?

_____

Other Suggestions:-

_____

8. Community Support and Health Services (6 items)

Item	Description	1	2	3	4	5	6
1.	Health services and community services cover all people living in the community.						
2.	Health service centers are located in safe and easily accessible areas.						
3.	Health service information is well-provided and easily accessible.						
4.	Health and community service providers are polite and helpful to the elderly.						
5.	Volunteers are promoted in the community.						
6.	There is emergency plan in the community with consideration of all age-range at time of planning.						

Which item from above do you wish to have or improve the most?

_____

Other Suggestions:-

_____

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The End of Questionnaire

☺ Thank You for Your Cooperation ☺

Appendix III

Questionnaire in Thai

แบบสอบถาม

วัตถุประสงค์ของการสำรวจ : เพื่อประเมินองค์ประกอบของเมืองที่เอื้อต่อผู้สูงอายุและความต้องการของผู้สูงอายุในอำเภอเมือง จังหวัดราชบุรี ประเทศไทยโดยนิสิตมหาบัณฑิต วิทยาลัยวิทยาศาสตร์สาธารณสุข จุฬาลงกรณ์มหาวิทยาลัย

เลขที่แบบสอบถาม :.....

วันที่...../...../.....

คำชี้แจง:

แบบสอบถามชุดนี้จัดทำขึ้นเพื่อศึกษาการประเมินองค์ประกอบของเมืองที่เอื้อต่อผู้สูงอายุและความต้องการของผู้สูงอายุในอำเภอเมือง จังหวัดราชบุรี ประเทศไทย โดยข้อมูลที่ได้จากการตอบแบบสอบถามจะใช้ในการเสนอคำแนะนำต่อโครงการของมหาวิทยาลัยที่เกี่ยวข้องกับสุขภาพและการวางแผนของเมืองที่เอื้อต่อผู้สูงอายุ

ข้อมูลที่เกี่ยวข้องกับท่านจะเก็บเป็นความลับ หากมีการเสนอผลการวิจัยจะเสนอเป็นภาพรวม ข้อมูลใดที่สามารถระบุถึงตัวท่านได้จะไม่ปรากฏในรายงาน

แบบสอบถามมีทั้งหมด 6 หน้า แบ่งออกเป็น 3 ส่วนดังนี้

ส่วนที่ 1	ข้อมูลทั่วไปของผู้สูงอายุ	จำนวน 6 ข้อ
ส่วนที่ 2	ความรู้และการมีส่วนร่วม	จำนวน 6 ข้อ
ส่วนที่ 3	แบบประเมินความเห็นในเมืองที่เอื้อต่อผู้สูงอายุ	จำนวน41 ข้อ

ขอบพระคุณทุกท่านสำหรับเวลาและสำหรับข้อมูลในแบบสอบถาม

เลขที่_____

วันที่_____

ผู้สัมภาษณ์_____

แบบสอบถามโดยสัมภาษณ์

ส่วนที่ -1ข้อมูลทั่วไปของผู้สูงอายุ

1. อายุปัจจุบัน: □ 60-64 □65-69 □70-74 □75-79 □80หรือมากกว่า

2. เพศ : □ชาย □ หญิง

3. ระดับการศึกษา

□ ไม่ได้รับการศึกษา □ ประถมศึกษา □ มัธยมศึกษา

□ ปวช .ปวส /. □ ปริญญาตรี □ ปริญญาโทหรือสูงกว่า

4. รายได้ต่อเดือน (บาท)

□ไม่มีรายได้ □ ต่ำกว่า 5,000 □ 5,000-9,999 □10,000-14,999 □15,000-19,999 □20,000-24,999 □25,000 หรือสูงกว่า

5. ค่าใช้จ่ายต่อเดือน(บาท)

□ ต่ำกว่า 5,000 □ 5,000-9,999 □10,000-14,999 □15,000-19,999 □20,000-24,999 □25,000 หรือสูงกว่า

6. ความสามารถในการพึ่งพาตนเอง

□ พึ่งพาตนเองได้ □ ต้องพึ่งพาผู้อื่น □ใช้สิ่งอำนวยความสะดวก โปรดระบุ:

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ส่วนที่ -2ความรู้และการมีส่วนร่วม

7. ท่านทราบนสิทธิ์การรับบริการด้านสุขภาพจากรัฐบาลหรือไม่ □ไม่รู้ □รู้

8. ท่านทราบถึงประโยชน์ของการมีสุขภาพดีหรือไม่ □ไม่รู้ □รู้

9. ท่านทราบหรือไม่ว่าความเสี่ยงที่เกิดจากสิ่งแวดล้อมส่งผลกระทบต่อสุขภาพ □ไม่รู้ □รู้

10. ท่านทราบหรือรู้ในกิจกรรมชุมชนหรือไม่ **(**หากไม่รู้ให้ข้ามไปส่วนที่3) □ไม่รู้ □รู้

11. ท่านมีส่วนร่วมหรือเข้าร่วมในกิจกรรมชุมชนหรือไม่ **(**หากไม่มีให้ข้ามไปส่วนที่3) □ไม่มี □มี

12. ท่านเข้าร่วมกิจกรรมชุมชนบ่อยแค่ไหน □ตลอดเวลา □ บางครั้ง

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ส่วนที่ -3แบบประเมินความเห็นในเมืองที่เอื้อต่อผู้สูงอายุ

<u>คำชี้แจง :</u> กรุณาใส่เครื่องหมาย v ลงในช่องที่ตรงกับความคิดเห็นของท่านมากที่สุด

1= เห็นด้วยมากที่สุด 2= เห็นด้วยมาก 3= เห็นด้วยปานกลาง

4= ไม่เห็นด้วย 5= ไม่เห็นด้วยมาก 6= ไม่รู้

1. พื้นที่ภายนอกและอาคาร (ข้อ 6)

ข้อที่	รายการ	1	2	3	4	5	6
1.	พื้นที่สาธารณะสะอาด ร่มรื่นน่าอยู่ และปลอดภัย *พื้นที่สาธารณะเช่น สวน วัด สถานที่ราชการ ถนนทางเดินเท้า ฯลฯ						
2.	มีทางเดินเท้าที่ สะอาด ราบเรียบและปลอดภัย						
3.	มีทางข้ามถนนปลอดภัยและง่ายสำหรับคนเดินข้าม						
4.	ถนนและทางเดินมีแสงไฟเพียงพอและปลอดภัยในเวลากลางคืน						
5.	อาคารต่างๆได้รับการออกแบบและสร้างเป็นอย่างดีทั้งภายนอกและภายใน ง่ายต่อการเข้าถึง เช่นมีทางลาดบริเวณทางเข้าออกอาคาร บันไดขึ้นลงง่ายไม่สูงเกินไปและมีราวจับ หรือมีลิฟท์สำหรับขึ้นลงอาคาร						
6.	มีห้องน้ำสาธารณะที่เพียงพอ สะอาด และตั้งอยู่ในที่ๆเข้าถึงได้ง่าย						

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ความคิดเห็นหรือข้อแนะนำอื่นๆ:-

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2. การขนส่ง (7ข้อ)

ข้อที่	รายการ	1	2	3	4	5	6
1.	มีรถสาธารณะให้บริการในพื้นที่อำเภอเมือง (หากไม่มีให้ข้ามไปข้อ3) *รถสาธารณะเช่นรถเมย์ รถประจำทาง รถสองแถว ฯลฯ						
2.	รถสาธารณะมีเส้นทางชัดเจน และสะดวกในการใช้สำหรับผู้สูงอายุ						
3.	มีรถบริการรับส่งพิเศษสำหรับผู้พิการและผู้สูงอายุ						
4.	ถนนมีการบำรุงรักษาอย่างดี ปลอดภัยสำหรับผู้ขับขี่						
5.	การจราจรคล่องตัวและมีการจัดการเป็นอย่างดี						
6.	ป้ายสัญญลักษณ์จราจรและทางแยกสามารถมองเห็นได้ชัดและตั้งอยู่ในตำแหน่งที่เหมาะสม						
7.	มีพื้นที่จอดรถเพียงพอ ปลอดภัยและตั้งอยู่ในพื้นที่ที่สะดวกต่อการเข้าถึง						

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ความคิดเห็นหรือข้อแนะนำอื่นๆ:-

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3. ที่อยู่อาศัย (4รายการ)

ข้อที่	รายการ	1	2	3	4	5	6
1.	สถานที่ให้บริการต่างๆในชุมชนอยู่ใกล้บ้าน *สถานที่ให้บริการเช่น โรงพยาบาลหรือคลีนิกต่างๆ ร้านค้า วัด ศูนย์กิจกรรมชุมชน ฯลฯ						
2.	พื้นที่ภายในบ้านและรอบบ้านเหมาะแก่การอยู่อาศัยในทุกสภาพอากาศ						
3.	บ้านเรือนสะอาด ปลอดภัย และสะดวกต่อการใช้งานของผู้สูงอายุ						
4.	ส่วนท้องถิ่นได้จัดเตรียมบ้านพักในจำนวนที่เพียงพอและราคาไม่แพงสำหรับผู้สูงอายุที่อ่อนแอหรือไม่มีผู้ดูแล และพิการ และมีการให้บริการที่เหมาะสม						

จากรายการข้างต้น ข้อใดที่ท่านอยากให้มีการพัฒนาหรือปรับปรุงมากที่สุด?: (ระบุ(ข้อ1

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ความคิดเห็นหรือข้อแนะนำอื่นๆ:-

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4. การมีส่วนร่วมทางสังคม (4 รายการ)

ข้อที่	รายการ	1	2	3	4	5	6
1.	มีศูนย์กิจกรรมสำหรับชุมชน						
2.	มีงานและกิจกรรมต่างๆที่จัดขึ้นเหมาะสมสำหรับผู้สูงอายุ						
3.	สามารถรับรู้ข้อมูลเกี่ยวกับงานและกิจกรรมต่างๆผ่านหลายช่องทาง เช่นวิทยุ โทรทัศน์ การกระจายเสียง ใบปลิว						
4.	มีการรวมตัวหรือพบปะของผู้สูงอายุในชุมชน เช่นชมรมผู้สูงอายุ						

จากรายการข้างต้น ข้อใดที่ท่านอยากให้มีการพัฒนาหรือปรับปรุงมากที่สุด?: (ระบุ(ข้อ1

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ความคิดเห็นหรือข้อแนะนำอื่นๆ:-

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5. ความเคารพและการยอมรับเข้าถึงในสังคม (4 รายการ)

ข้อที่	รายการ	1	2	3	4	5	6
1.	ผู้สูงอายุได้รับการเยี่ยมเยือนอย่างสม่ำเสมอ						
2.	พนักงานผู้ให้บริการสุภาพและยินดีช่วยเหลือ						
3.	ผู้สูงอายุได้รับความเคารพ และการยอมรับจากครอบครัวและชุมชน						
4.	ผู้สูงอายุทุกคนสามารถเข้าถึงบริการของสาธารณะ และเอกชนได้						

จากรายการข้างต้น ข้อใดที่ท่านอยากให้มีการพัฒนาหรือปรับปรุงมากที่สุด?: (ระบุ(ข้อ1

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ความคิดเห็นหรือข้อแนะนำอื่นๆ:-

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6. การมีส่วนร่วมทางพลเมืองและการจ้างงาน (5 รายการ)

ข้อที่	รายการ	1	2	3	4	5	6
1.	มีทางเลือกหลากหลายสำหรับงานอาสาสมัครแก่ผู้สูงอายุ และมีการฝึกสอน ยอมรับ ชี้นำ และให้ค่าตอบแทนแก่อาสาสมัคร						
2.	ลูกจ้างผู้สูงอายุได้รับงานและค่าตอบแทนที่เหมาะสม						
3.	สถานที่ทำงานมีสภาพเหมาะสมกับลูกจ้างทุกวัยทำงาน และลูกจ้างผู้พิการ						
4.	มีการจัดเตรียมความพร้อมชีวิตหลังเกษียณให้สำหรับคนทำงานสูงอายุ						
5.	ผู้สูงอายุมีส่วนร่วมในการเลือกตั้ง หรือการตัดสินใจต่างๆ ทั้งในภาครัฐและเอกชน						

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ความคิดเห็นหรือข้อแนะนำอื่นๆ:-

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7. การสื่อสารและข้อมูล (5รายการ)

ข้อที่	รายการ	1	2	3	4	5	6
1.	เมืองของท่านมีระบบการสื่อสารที่ดีและมีประสิทธิภาพ						
2.	มีการเตรียมข้อมูลและกระจายเสียงในเรื่องที่ผู้สูงอายุสนใจอย่างสม่ำเสมอ						
3.	ท่านสามารถได้รับข้อมูลข่าวสารได้ง่ายและสะดวกผ่านช่องทางต่างๆ						
4.	สื่อตีพิมพ์มีตัวหนังสือที่ใหญ่และชัดเจน ง่ายต่อการอ่าน						
5.	การสื่อสารในการพูดและการเขียนใช้คำที่เข้าใจง่าย						

จากรายการข้างต้น ข้อใดที่ท่านอยากให้มีการพัฒนาหรือปรับปรุงมากที่สุด?: (ระบุ(ข้อ1

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ความคิดเห็นหรือข้อแนะนำอื่นๆ:-

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8. บริการชุมชนและบริการสุขภาพ (6 รายการ)

ข้อที่	รายการ	1	2	3	4	5	6
1.	บริการสุขภาพและบริการชุมชนทั่วถึงในทุกระดับ						
2.	ศูนย์บริการสุขภาพและชุมชนตั้งอยู่ในบริเวณที่สะดวก ปลอดภัยและง่ายแก่การเข้าถึง						
3.	มีข้อมูลเกี่ยวกับบริการด้านสุขภาพและสังคมที่ชัดเจนและเข้าถึงได้ง่าย						
4.	ผู้ให้บริการมีความเคารพ ยินดีให้ความช่วยเหลือ และให้บริการผู้สูงอายุ						
5.	มีการส่งเสริมอาสามัครด้านบริการสุขภาพและชุมชน						
6.	มีการวางแผนฉุกเฉินสำหรับชุมชนที่คำนึงถึงทุกกลุ่มอายุ						

จากรายการข้างต้น ข้อใดที่ท่านอยากให้มีการพัฒนาหรือปรับปรุงมากที่สุด?: (ระบุ(ข้อ1:

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ความคิดเห็นหรือข้อแนะนำอื่นๆ:-

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VITA

Ms. Yu-Fang, Wang was born on April 13, 1990 in Taipei, Taiwan. She graduated from Department of Physical Therapy, College of Medicine, National Taiwan University. After her Bachelor Degree, she worked in Costar Everluck Co., Ltd., Taiwan as marketing /PR personnel for one year. Then she had proceeded her career to educational field, working as English teacher in American Curriculum Program of HESS English Learning Institute, Taipei, Taiwan before moving to Thailand and start working as marketing manager in Costar Wooden & Forest Co., Ltd., Thailand. She is now studying her Master degree in Master of Public Health, College of Public Health Sciences, Chulalongkorn University, Bangkok, Thailand and will be graduating in July, 2015.

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