

# Conceptual Framework for Environmental Design and Management of Residential Community for Enhancing Elderly Well-Being

Porntip Ruengtam

*Faculty of Architecture Urban and Creative Arts, Mahasarakham University, Thailand*

**Abstract:** This article presents the modeling of a conceptual framework related to factors of the environmental residential community for enhancing elderly well-being in Thailand by using the Delphi technique. Research method began with observations and interviewing management teams at three case studies in terms of management processes and environment designs of existing residential community projects in Thailand. The interview results were taken to summarize with related theories and literature. A group of experts (7 people) in the related field were employed to confirm the framework. The result found factors of elderly characteristics have a positive direct effect on elderly's requirements in a residential community. The elderly's requirements comprised of three factors including (1) location, (2) facility, and (3) activity. Each factor of the elderly's requirements has effects on the willingness of the elderly to join the residential community. The framework will be used for quantitative analysis and the outcome will be a policy for environmental design and management of the residential community for enhancing elderly well-being in Thailand.

**Key words:** elderly, environmental design, residential community, conceptual framework

## 1. Introduction

The United Nations reported the number of people more than 60 years old will be two billion by 2050, making global aging a concern for countries both rich and poor. Thailand is a country facing the problem of increasing senior population. In the yearly report of Thai elderly situation, 2012 [1] resulted that Thai elderly (60 years and above) will be 19.1%, 26.6% and 32.1% of the Thai population in 2020, 2030, and 2040 respectively. The result led to a question how can the Thai government handle when the situation is reached. However, the National Committee for the Elderly under the Ministry of Social Development and Human

Security Thailand [2] defined a policy for Thai elderly as follows:

- “The elderly persons with good living standards are: physically and mentally healthy; happy family, social care, enabling and friendly environment; stable security, access to appropriate welfare and service; lead a valuable life with dignity, independence, and autonomy, and serve as central reliability and participate in the family, community, and social activities; keep access to data, information and news.
- The family and the community serve as a strong institution and key sector of efficient support for the elderly.
- The welfare and service systems shall ensure a high-quality life and full participation of the elderly both in their family and community.

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**Corresponding author:** Porntip Ruengtam, Doctor of Architecture, Associate Professor; research areas/interests: interior architecture, environmental design, research for design, environmental design for aging. E-mail: porntip.r@msu.ac.th.

- All parties and sectors shall take part in the welfare and service system accessible and usable by the elderly where safeguards are needed to protect the elderly as a group of consumers.
- The proper undertakings and settings shall be performed to enable the elderly persons who face difficulties and in need of care to be recognized and included as members of their community in all areas”.

The policy led to a next question that where a big number of the elderly will live after their retirement while they have to face degeneration of their body inevitably. They need assistance from their children or others when they have to go hospital or clinic. By these reasons, residential community for enhancing elderly well-being is the answer. The researcher was committed to studying that “a place where has all facilities for Thai elderly living and needs, there are people taking care when they get sick, there is good social environmental management, a place can be part of society with happiness, and a place where is convenient and safe until their final day of life”. How the place should be like? Therefore, the objective of this research is to study and formulate a conceptual research framework of Thai elderly’s characteristics and their requirements to environmental design and management of the residential community. In order to achieve this objective, this research had done the following: identifying components of the Thai elderly’s requirements and their measurement; developing a conceptual framework that demonstrates the relationships between the elderly’s characteristics, the elderly’s requirements, and the elderly’s willingness to join the residential community. The framework will be proved by collecting empirical data and used for quantitative analysis. The outcome will be a policy for environmental design and management of the residential community for enhancing elderly well-being in Thailand.

## **2. Material and Methods**

### *2.1 Literature Review*

The National Committee for the Elderly under the Ministry of Social Development and Human Security Thailand [2] defined “the elderly is not a vulnerable nor social burden, but able to take part in the social development resources, so they shall be entitled to recognition and support by the family, community and the state to lead a valuable life with dignity and sustain their healthiness and living standards as long as possible”. World Health Organization [3] has stated on their website that most developed world countries have accepted the chronological age of 65 years as a definition of elderly or older person, but like many westernized concepts, this does not adapt well to the situation in Africa. While this definition is somewhat arbitrary, it is many times associated with the age at which one can begin to receive pension benefits. At the moment, there is no United Nations (UN) standard numerical criterion, but the UN agreed cut off is 60 years up to refer to the older population. In this research, Thai elderly was defined by age of 60 years and above, together with health condition of the elderly were classified to 5 levels including (1) strong, can help themselves everything, (2) sometimes need some assistance, (3) mainly need assistance, (4) need assistance all the times, and (5) unable to move and need assistance all the times.

Plunz [4] stated that environment design is the process of addressing surrounding environmental parameters when devising plans, programs, policies, buildings, or products. Environmental design can also refer to the applied arts and sciences dealing with creating the human-designed environment. These fields include architecture, geography, urban planning, landscape architecture, and interior design. Environmental design studies the physical surroundings that provide the setting for human activity, ranging in scale from buildings and parks, green space to neighborhoods, the local community. Environmental design is defined as the physical and constructed environment in which people live, work,

and recreate on a day-to-day basis. In addition, environmental design is concerned with the way these places are experienced and used, as well as other aesthetic elements that contribute to the quality of community environments. The environmental design would be considered in this research in terms of the Thai elderly's requirements.

Jonas and Chez [5] believed an emphasis on healing is a key to the future medical management of chronic illness and the establishment of sustainable approaches in health care. Defined as the process of recovery, repair, and return to wholeness, healing is the foundation for a vision of medicine that integrates diverse approaches from around the world for the alleviation of suffering, the enhancement of well-being and the treatment of chronic illness. Healing is facilitated through the development of proper attitudes and intentions in both the provider and the recipient, use of personal self-care practices, creating healing relationships, applying the knowledge of health promotion and maintenance, and the appropriate integration of complementary and conventional medicine practices. Nelson et al. [6] described that "healing environment" is synonymous with the therapeutic environment. The therapeutic environment is one that is "designed to not only support and facilitate state-of-the-art medicine and technology, patient safety, and quality patient care but to embrace the patient, family and care providers in a psychosocially therapeutic environment". The healing environment would be checked and compared between the mentioned literature and existing cases in Thailand. Then, the concluded result would be used in the questionnaire design.

Paul et al. [7] stated that a community is a social unit of any size that shares common values, or that is situated in a given geographical area (e.g., a village or town). It is a group of people who are connected by durable relations that extend beyond immediate genealogical ties, and who mutually define that relationship as important to their social identity and

practice. WHO Regional Office for Europe [8] defined "a community residential health facility as a non-hospital, community-based mental health facility that provides overnight residence for people with mental disorders". The facilities include supervised housing unstaffed group homes; group homes with some residential or visiting staff; hotels with day and night staff; hostels and homes with 24-hour nursing staff; halfway houses; and therapeutic communities. Both public and private not-for-profit and for-profit facilities are included. Perkins et al. [9] stated in a textbook of "building type basics for senior living" that common facilities within a skilled-nursing facility serving all of the nursing units may include: multipurpose room, coffee shop/snack bar, gift shop, library, outdoor terraces and recreation areas, art/activity, clinic, rehabilitation. In the textbook also stated that, in adult communities, landscaped and natural areas should be developed for walking, contemplation, golf, lawn sports, shuffleboard, gardening activities, fishing, and other recreational activities.

Jabareen [10] defined a conceptual framework as a network or a plane of interlinked concepts that together provide a comprehensive understanding of a phenomenon or phenomena. Each concept of a conceptual framework plays an ontological or epistemological role in the framework. Jabareen [10] also suggested that 8 phases in procedure of conceptual framework analysis including (1) mapping the selected data sources, (2) extensive reading and categorizing of the selected data, (3) identifying and naming concepts, (4) deconstructing and categorizing the concepts, (5) integrating concepts, (6) synthesis, re-synthesis, and making it all make sense, (7) validating the conceptual framework, and (8) rethinking the conceptual framework. In this article, for the phase (1) to (4) would be the literature review and observing the three case studies. And then, a group of experts would be employed in the phase (5) to (8) through the Delphi technique.

## 2.2 Methods

Research method in this article comprised of two main parts including:

### (1) Case Studies

This part began with observations and interviews at three case studies in terms of management processes and environment designs. The three cases are existing elderly community projects and still operating in Thailand. The three cases included:

- A private project: 600 single houses, 3 condominium buildings, and facilities related to the elderlies. The project is suitable for elderlies with family, patients with chronic diseases, people who need special care or need rehabilitation. The project is located in Chang-Lek, Bangsai, Ayutthaya.
- A governmental foundation project: 163 rooms of a building (8-story), 300 rooms of 8 buildings (6-story), and facilities. This project is suitable for the elderlies at the beginning of their retirement, living alone, strong, can help themselves everything. The project is located in Pathumwan, Bangkok.
- A religion foundation project: 164 rooms/beds of 5 buildings (2-story), facilities related to the elderlies, nursing wards. The project is suitable for low-income elderlies, elderlies with amnesia, elderlies are unable to help themselves. The project is located in Sampran, Nakhon Pathom.

Managers or management staffs of the three case studies were appointed and interviewed at their own community places in the topics of managements, environments, facilities, and activities in their community. After the three case studies had been observed and interviewed, facilities and activities in the cases were classified and defined as an item list. The item list result of this part was taken to summarize with the related theories and literature in the next section.

### (2) Delphi Technique

The Delphi technique was developed by Olaf Helmer and Norman Dalkey in the 1950s. The technique is a widely used and accepted method for achieving convergence of opinion concerning real-world knowledge solicited from experts within certain topic areas [11]. The technique is designed as a group communication process of the experts that aims at conducting detailed examinations and discussions of a specific issue, the process can be continuously iterated until a consensus is determined to have been achieved. This research used this technique for confirming the factors and the framework of the environmental residential community for enhancing elderly well-being in Thailand. Steps of the Delphi technique were:

Step 1. Identifying the factors: From the observations and interview (section 3.1) at the three case studies in terms of management processes and environment designs, the interview results were taken to summarize with related theories and literature (such as textbooks research articles (in the emerald insight and science direct database) and the related annual reports in Thailand). All factors were summarized and listed for the next step.

Step 2. Confirming the factors: The listed factors would be confirmed by experts through the Delphi technique. A group of 7 experts in the related field was employed. The 7 experts were selected by their experienced professions including:

- 3 experts in managements of the residential community for elderly from government and the private sector.
- 2 experts in elderly studies from academic institutions.
- 2 experts in designs of the residential community from private companies.

The listed factors were confirmed consensus from opinions of the 7-experts directly and individually started from the expert 1, 2, 3..., 7 and returned to the expert 1 circularly (Fig. 1). All experts were carefully and individually considered the listed factors without

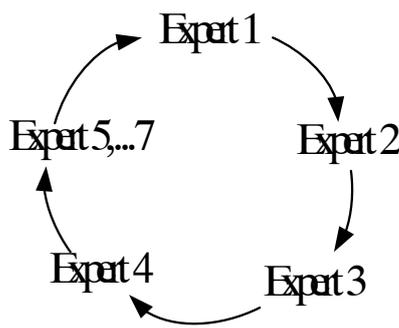


Fig. 1 Circulating the experts.

meeting at least 3 times/expert until the consensus were saturated. Once the listed factors were confirmed and

categorized by the 7-experts, the listed factors would be constructed the conceptual framework in the next section.

Step 3. Drafting the conceptual framework: According to the expert opinions, the confirmed factors were categorized and arrows were drawn between the factors in a draft conceptual framework. The draft conceptual framework would be confirmed by the 7-experts through the Delphi technique as step 2 again. The final framework would be the conceptual framework for this research.

Table 1 Factors for Thai elderly’s requirements and their measurement items

Factors		Items	
Elderly’s characteristics		CH1: Age	
		CH2: Health	
Elderly’s requirements	Location	Q1: Calm and natural place	
		Q2: Near religious places	
		Q3: Near hospitals	
	Facility	Q4: Health food shop	
		Q5: Convenience shop	
		Q6: Beauty salon	
		Q7: Laundry service	
		Q8: Cleaning service	
		Q9: Building maintenance service	
		Q10: 24-hour security guards	
		Q11: 24-hour medical center	
		Q12: care center for the elderly	
		Q13: Sauna and spa	
		Q14: Training center for improving quality of life	
		Q15: Library	
		Q16: Computer and internet room	
		Q17: Karaoke lounge	
		Q18: Swimming pool	
		Q19: Fitness	
		Q20: Outdoor stadium	
		Q21: Garden and outdoor patio	
		Q22: Indoor activities	
		Q23: Religious place	
		Q24: Sidewalks and bike lanes	
		Q25: Fence and gate guards 24-hour	
		Activity	Q26: Religious activities
			Q27: Recreational activities
	Q28: Important day activities		
	Q29: Training activities		
	Q30: Excursions programs		
Willingness		W1: Interesting in the community	
		W2: Willingness to live in the community	
		W3: Willingness to recommend the community to others	

### 3. Results and Discussion

According to the three case studies (section 3.1) and opinions of the 7-experts, the confirmed factors and items/their indicators for the Thai elderly’s requirements and their measurement items in environmental design and management of residential community were listed in Table 1.

In Table 1. The factor of the elderly’s characteristics comprised of 2 items CH1 and CH2). The factor of elderly’s requirements comprised of three subfactors

including 1) location; 3 items (Q1 to Q3), 2) facility; 21 items (Q4 to Q25), and 3) activity; 5 items (Q26 to Q30) respectively. Finally, the willingness comprised of 3 items (W1 to W3).

Once the factors for Thai elderly’s requirements and their measurement items were listed, the conceptual framework was constructed and the result frameworks were shown in Fig. 2. Moreover, the framework was extended in detail of the items or their indicators as shown in Fig. 3.

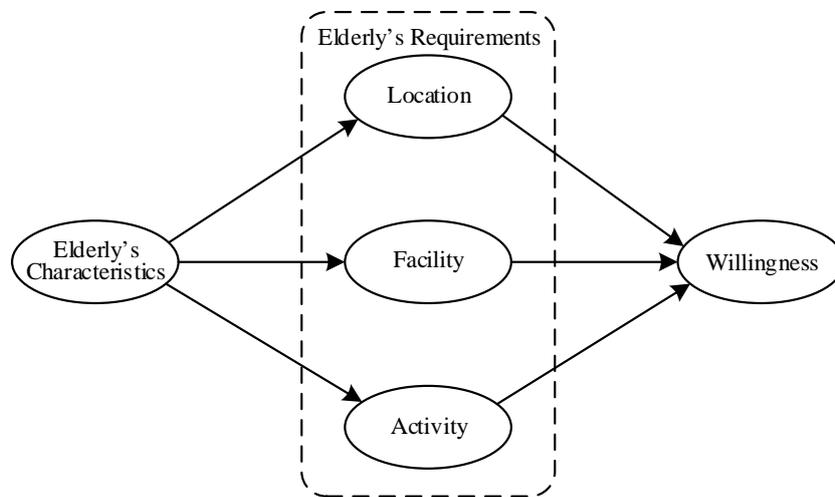


Fig. 2 The conceptual framework.

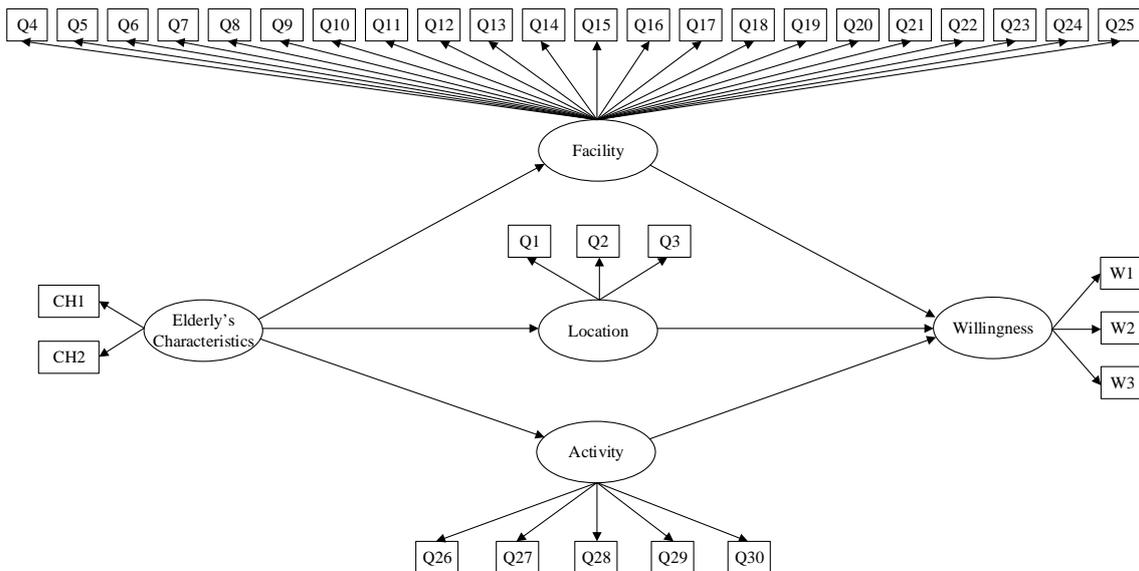


Fig. 3 The conceptual framework in details.

#### 4. Conclusion

This research studied factors related to elderly's requirements of the environmental residential community and modeling of a conceptual framework to study the factors for enhancing the elderly well-being in Thailand. The three case studies were observed and interviewed in terms of environmental design and management. A group of factors was listed from the three case studies and confirmed a by the experts using the Delphi technique. According to the results of this research, it could be concluded that the factors related to elderly's requirements of environmental residential community including the factor of elderly's characteristics (CH1 and CH2), the factor of elderly's requirements which were location (Q1-Q3); facility (Q4-Q25); and activity (Q26-Q30), and the factor of willingness (W1-W3) as shown in Table 1. The outcome from the Delphi technique was the conceptual framework (Fig. 2). The framework showed the factors of elderly characteristics have a positive direct effect on elderly's requirements in a residential community. The elderly's requirements comprised of three factors including 1) location, 2) facility, and 3) activity. Each factor of the elderly's requirements has effects on the willingness of the elderly to join the residential community. Finally, the framework in Fig. 2 was extended in detail of the items or variables or indicators as shown in Fig. 3. The framework will be used for quantitative analysis and the outcome will be a policy for environmental design and management of the residential community for enhancing elderly well-being in Thailand.

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