

Time Banking for Aging Society

ธนาคารเวลาสำหรับสังคมสูงวัย

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Abstract

In 2021, Thailand will become a full-scale aging society when 20% of the population will be over sixty years old. This will cause significant societal changes, and it is very important that the country is prepared to deal with problems arising from being an aging society. An effective social welfare system is needed. Time banking system may serve as a key tool for coping with aging society. This article investigates the possibility of establishing time bank in Bangkok and vicinity by conducting a large-scale survey in the areas and using descriptive statistics and chi-square test of significance to determine the interests in joining time bank. It was found that nearly all respondents (90.2%) had never heard about time bank, and more than half of them indicated that they would like to become members. In terms of service activities, there were matches between receiving and offering services in the areas of helping with household chores and escorting people to doctor visits. This reflected that members could fulfill the needs of one another. As for the underlying factors affecting the degree of interest in joining time bank, it was found that gender and income had no correlation with a desire to join time bank, whereas the age of respondents seemed to be a significant factor. People of different ages had different levels of interest in becoming members. There was a notably low interest among people over 60 years old. If time bank is to be used as a key tool for solving aging society problems, further strategy is needed to attract senior citizens. In general, the study reveals that it is possible to establish a time bank in the urban areas of Thailand.

Keywords: time bank, aging society, urban society, community engagement

บทคัดย่อ

ในปี 2564 ประเทศไทยจะกลายเป็นสังคมสูงวัยเต็มรูปแบบโดยประชากร 20% ของทั้งประเทศจะมีอายุมากกว่าหกสิบปี สังคมสูงวัยจะก่อให้เกิดการเปลี่ยนแปลงทางสังคมที่สำคัญ ประเทศไทยจำเป็นต้องเตรียมการรับมือปัญหาที่เกิดขึ้นโดยควรมีระบบสวัสดิการสังคมที่มีประสิทธิภาพ ธนาคารเวลาอาจเป็นเครื่องมือสำคัญในการรับมือกับสังคมสูงวัย บทความนี้ศึกษาความเป็นไปได้ในการจัดตั้งธนาคารเวลาในเขตกรุงเทพและปริมณฑลโดยการสำรวจในพื้นที่และใช้สถิติเชิงพรรณนาและสถิติการทดสอบไคสแควร์เพื่อวิเคราะห์ความสนใจในการเข้าร่วม ผลการศึกษาพบว่าผู้ตอบแบบสอบถามเกือบทั้งหมด (90.2%) ไม่รู้จักธนาคารเวลาและมากกว่าครึ่งหนึ่งระบุว่าต้องการสมัครเป็นสมาชิก ในแง่ของกิจกรรมการให้บริการพบว่ามีความสนใจตรงกันในการรับและให้บริการด้านการช่วยทำงานบ้านและพาสมาชิกไปพบแพทย์ ความสนใจที่ตรงกันนี้สะท้อนให้เห็นว่าสมาชิกสามารถสนองความต้องการของกันและกันได้ ในด้านปัจจัยที่มีผลต่อความสนใจในการเข้าร่วมธนาคารเวลา พบว่าเพศและรายได้ไม่มีความสัมพันธ์กับความต้องการเข้าร่วม ส่วนอายุเป็นปัจจัยที่ส่งผลต่อความต้องการเข้าร่วมธนาคารเวลา ทั้งนี้พบว่าผู้ที่อายุ 60 ปีขึ้นไปมีความสนใจเข้าร่วมธนาคารเวลามากกว่ากลุ่มอื่นอย่างมีนัยสำคัญ หากประเทศไทยจะใช้ธนาคารเวลาเป็นเครื่องมือสำคัญในการแก้ไขปัญหาสังคมผู้สูงอายุ จำเป็นต้องมีกลยุทธ์เพิ่มเติมเพื่อดึงดูดผู้สูงอายุให้เข้าร่วม ในภาพรวมสรุปได้ว่ามีความเป็นไปได้ที่จะจัดตั้งธนาคารเวลาในชุมชนเมืองของประเทศไทย

คำหลัก: ธนาคารเวลา สังคมสูงวัย สังคมเมือง การมีส่วนร่วมของชุมชน

1. Introduction

Population aging is occurring globally due to lower fertility rates, reduction in mortality due to better health care, and the longer life expectancy. The number of people over 60 was 962 million in 2017 as compared to 382 million in 1980. Aging populations are expected to double again by 2050, when the projected number is nearly 2.1 billion. Even though high-income nations tend to have the largest percentages of aging populations, two-thirds of the world's older people live in less developed countries. Aging populations in developing regions are growing faster than in OECD (developed) countries. It is predicted that nearly 8 in 10 of the world's older people will be living in developing countries in 2050 [1].

Countries around the world are attempting to address the financial challenges of population aging. National campaigns are implemented to encourage private savings, especially in the developing world [2, 3]. In Thailand, it is estimated that the health care costs of senior citizens in 2022 will be 228,482.2 million baht and 10 years from now it will reach 6-

700,000 million baht [4]. Suwanrada et.al. [5] used activity-based costing to estimate the cost of health services for elderly people in a homecare facility in Chiangmai province. It was found that the average health care cost was 13,635 baht/person/month, and 17 % of this was supported by donations. At present the government pension for senior citizens is between 1,200-1,500 baht/month. Evidently this shows a large gap for elderly people who rely totally on that pension as their only source of income. As for those who can afford private care, their nursing demands still exceed existing supplies since there are only a little more than 800 private nursing services in Thailand.

According to the projection of long-term care services for older people in Thailand in the next 10-15 years, it is estimated that the government would need to spend 6-700,000 million baht/year in providing care for older people. To cover the costs, the government is preparing to use 2% of tobacco tax income. Retirement savings systems such as the Social Security Fund are being implemented to accommodate the needs of an aging society [6]. Due

to the large budgets required for social services, some form of support system would be greatly needed. Time banking may provide such complementary support. In fact, the Department of Older Persons hopes to use time bank as a key tool for Thailand to deal with aging population. This study aims to find out whether it is possible to set up a time bank in Thailand.

2. Literature Review

The time bank idea originated in Japan in the 1950s. It was called “Taimu Banku” when Teruko Mizushima, a housewife in Osaka, announced her idea to the public, stating that elderly people had been through tremendous hardship in World War II and that they deserved to be taken care of by society. Mizushima put her concept into action when her children had grown up, and her group had branches in all parts of Japan by 1979 [7].

In the United States, a time banking system was established in the 1980s by an American civil rights activist, Edgar S. Cahn, and his Time Dollar. It is seen as complementary rather than alternative to the mainstream economic system [8]. Traditionally money is used to buy products and services in the modern world so money serves as the media for exchange. In the time banking system, time serves as currency. Time credits are gained by contributing to others and can be used for services required from another person within the system. In this way, time serves as the exchange function in the economic system. However, the main benefit of time banking is in its social contribution [9] [10].

There are five main features of time bank. First, human beings are perceived as assets, which can always contribute in some way. Next, work is redefined and rewarded by time currency which pays people for helping each other. Thirdly, time banking is based on reciprocity in giving and receiving

support, which are basic human needs that help to build relationships and trust among people. Fourthly, time banking builds social capital as it brings people together in the form of social networking which is meaningful to people. Finally, time banking encourages respect among people in the community [11].

As a complementary economic system, time banks try to aid where the economy fails by preserving the true value of service exchange. Service is exchanged for service rather than for money, enabling people to help each other and build friendship and mutual trust. Time bank is different from most alternative community currencies such as local exchange trading system (LETS), which rewards services based on the nature of work done, so people must negotiate the price for their services [12]. Even though they are widespread phenomena, time banks are not as pervasive as they deserve to be for several reasons such as cultural conditions, lack of understanding by governmental institutions, unrealistic expectations from local activist founders, financial problems and others [13]. Time banks are mostly established by local activists or non-governmental organizations (NGOs) which may lack a realistic overview on the planning of crucial elements [14]. Thus, it may not be tied to practical expectations [15].

3. Research Objectives

Nowadays organized time banking system can be found in 34 countries including those in Europe, Africa, Asia, and America. It was introduced in Thailand in 2018 by the Department of Older Persons (DOP), Ministry of Social Development and Human Security. The initiative involves 2,300 elderly participants in 28 provinces. The type of services provided are mostly basic care and assistance such as taking the elderly to a hospital or

to a market, cleaning house, and repairing household appliances. These participants join time bank on a voluntary basis. According to DOP, training is provided to volunteers, and evaluated every three months. Participants will be able to use time credits when they get older and need assistance from others. The DOP hopes that time bank will grow into an important tool to help Thailand cope with an aging society.

Independent of DOP, this research was conducted at about the same time period as when the initiative began in 2018. The objective was to explore the feasibility of establishing time bank by conducting a preliminary survey regarding interest in joining time bank among people in Bangkok and vicinity. It was also aimed at finding the factors influencing interests in joining a time bank. Since Thailand is becoming an aging society, the change in population demographics makes it difficult to predict how and which group of people would like to join time bank and benefit from it. Therefore, the findings of this research can be beneficial for time bank organizers who wish to formulate appropriate strategies to attract participants and to run it effectively.

4. Methodology

As a form of social innovation, different forms of time bank are addressed in the literature as case studies. Most of the existing research methodology qualitatively explores how it impacts the social and economic system [16, 17]. The survey approach is also found in the literature. For example, [18] used a questionnaire survey to identify the general background of workshop participants and continued with a study on developing a time bank application on mobile phones. [19] discussed the results of a questionnaire survey on the benefits that members gained from the time bank system.

This article utilizes survey research to address interest in participating, as well as factors influencing the desire to join time bank. Once the motivating factors have been identified, they can be used to develop an appropriate strategy for setting up time bank in urban areas.

In order to reduce variation, the research scope was limited to people living in Bangkok and its suburbs, where the population is 10,831,988 [20]. A questionnaire survey of 400 people living in Bangkok and its suburbs was conducted via online and personal interviews. The research tool consisted of background data about respondents, questions about satisfaction with the social security service, satisfaction with daily life, and involvement in social activities. Areas where the respondents wish to give and take services from time bank were also identified, and matching of interests was performed using mode data. Chi-square test was also performed to identify factors which affect interest in joining a time bank. Figure 1 shows the research framework.

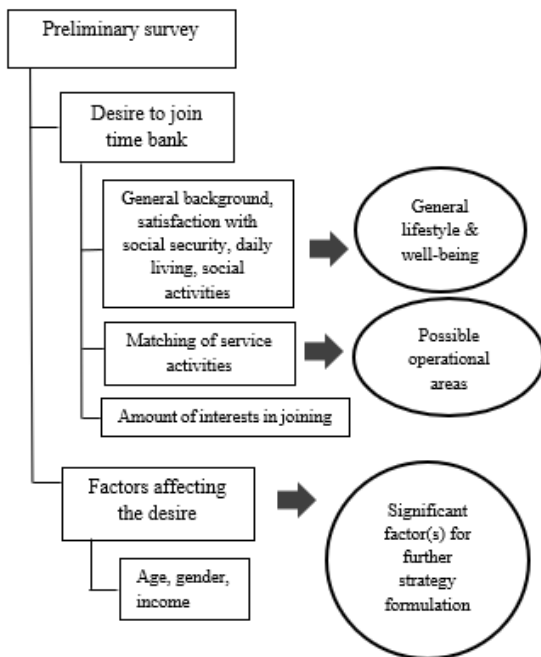


Figure 1 Research framework

5. Results and Discussion

As previously shown in Figure 1, the findings will be explained along the research framework. For general background information, this research divided the ages of respondents into 6 groups: less than 18 (teenagers), 18-23 (young adults, still in education), 24-30 (young adults, job starters), 31-45 (adults), 46-59 (middle-age adults), and 60 years old or more (senior citizens). In this research 'senior citizens' refer to people over 60 which is different from the definition given by the World Health Organization which defines people over 70 as senior citizens. This is because in Thailand the retirement age in government organizations is 60, and 55 in some large private organizations.

The profile of respondents is shown in Figure 2. It can be seen that a majority of respondents (37%) are between the age of 18-23, and the rest of the respondents are equally distributed among other

age groups. It was found that 75.78% of the respondents have never heard of the time banking system.

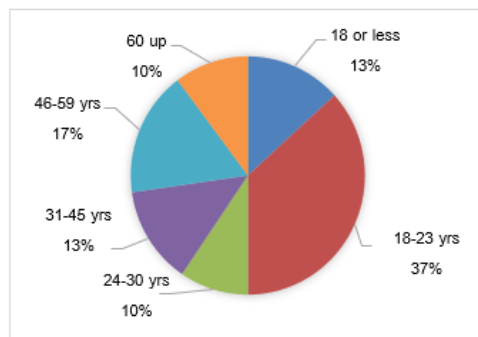


Figure 2 Respondent profile.

5.1 General Background

The respondents' opinions were evaluated based on Likert's rating scale. In interpreting results, the following criteria are used: 4.50-5.00 strongly agree; 3.50-4.49 agree; 2.50-3.49 neutral; 1.50-2.49 disagree; 1.00-1.49 strongly disagree [21].

When asked about satisfaction with social security service, it was found that on average people of all age groups were moderately satisfied with the government's social security service as shown in Table 1. They felt that the government should actively promote health knowledge among its citizens. In terms of attention from medical personnel, respondents felt that they received medium attention during doctor's interview. Even though Thailand's medical care service is known to be among the best in the world, there is still a lack of medical personnel, as reflected by exceptionally long waiting times in government hospitals.

Table 1 Satisfaction with social security service

	18 or less	18-23	24-30	31-45	46-59	60 up
1. You feel that the government provides good social security service.	3.35	2.97	3.47	3.22	3.41	3.41
2. You feel that the Government should promote health knowledge among its citizens.	3.72	3.97	3.58	3.49	3.40	3.85
3. You feel that medical personnel take time to inquire about your health problems.	3.26	3.50	3.26	3.13	3.08	3.21

To evaluate the general well-being of the respondents, questions about satisfaction with daily living were given as shown in Table 2. From the table, it can be seen that senior citizens were the most satisfied with their roles in the family (4.04), as compared with the other groups which were on the high end of moderate satisfaction (3.62-3.88). At this age, senior citizens tend to have a greater sense of accomplishment in their family roles.

Table 2 Satisfaction with daily living

AGE OF RESPONDENTS	18 or less	18-23	24-30	31-45	46-59	60 up
4. You are satisfied with your family roles e.g. doing household chores, raising kids, taking care of the elderly.	3.62	3.81	3.73	3.62	3.88	4.04
5. Close relatives give you pocket money for daily expenses.	3.51	3.34	3.60	2.94	2.29	3.00
6. Family members help you when needed.	4.00	4.42	4.23	3.50	3.61	4.04
7. When feeling down, you consult family and friends.	3.90	4.14	4.05	3.22	3.38	3.24

Item (5) in Table 2 assesses the reliance on close relatives for daily expenses. Most age groups were neutral, except for those between 46-59 years old who disagreed. This is because people at this age are mostly settled and have become head of the family.

According to item (6) in Table 2, most age groups felt that family members helped them out when needed, with particular emphasis found in the young adults aged between 18-30 who almost strongly agreed to this question. This reflects relatively close ties in Thai urban families.

In addition, Table 2 evaluates emotional attachment with family and friends as shown in item (7). When feeling down, people aged less than 30 tended to consult with family and friends while the other groups were neutral about it. That is, young people have high emotional dependence on their close social circles. Thus, it may be possible to attract young generation to join time bank for the benefits of their families. For example, credit-transfer scheme may be implemented so that young people can transfer their time credits to older relatives who need help.

The level of social involvement can influence the success of a time bank. Even though people are interested in becoming members, low level of social involvement can be an obstacle. That is, members can become inactive due to their low social involvement lifestyle.

Table 3 illustrates the level of social involvement or social lifestyle. All age groups agreed that they usually spent holiday time with their family. They were neutral regarding spending free time doing leisure activities with other people in the community. They were also neutral toward joining community events such as attending a New Year's party or a merit-making ceremony. This is due to the fact that the target population for this study are those

living in urban areas, so they tend to be more individualistic/independent rather than group-oriented. This indifferent attitude towards community engagement may indicate some difficulties in setting up time bank in urban areas in the future.

Table 3 Social involvement

	18 or less	18-23	24-30	31-45	46-59	60 up
8. You spend holiday time with your family.	3.80	3.97	3.94	3.90	3.61	3.85
9. During free time, you engage in leisure activities with others, e.g. dancing, singing, partying.	2.80	3.31	3.26	2.64	2.64	2.63
10. You join community events, e.g. New Year's party, merit-making ceremony.	2.74	3.04	3.13	3.15	2.88	3.04

5.2 Matching of activities

If a time bank is to be established, there is a need to assess whether there are matches of interests in a community. Respondents were asked about the type of services they desired to give and receive in the time banking system, and the responses were given in Table 4-Table 5. By using modes to identify popular responses, it was found that there were matches between receiving and offering services in the areas of helping with household chores and escorting people to doctor visits. These two activities attained high interest in both receiving and offering.

Other types of activities which gained medium interest on both supply and demand sides were cutting the lawn, help lifting heavy objects, and escorting people to physical exercise.

It is interesting to note that there is high demand on cleaning air conditioners but low supply

interest in this area due to technical skill required. Coincidentally, respondents who express great interest in offering this service are young people under 18. Thus, there is the possibility of filling this gap by attracting vocational school students (normally between the ages of 15-20) who are capable of performing such a task. This would increase the variety of services that time bank can offer.

There was a strong interest among young adults (18-30) in tutoring school children. This is not surprising because most people in this age group have fairly recently completed their education, so they may feel confident in teaching. However, there is only medium interest in receiving tutoring services. This may be because tutoring schools are very popular in Thailand and parents like to rely on professional tutoring rather than hiring a private tutor.

Other services mentioned by respondents were as follows. On the receiving end, those between 18-23 wanted someone to take care of old relatives ("elderly sitters"). On the giving end, this same group offered to give rides to other members. Those between 24-30 are willing to escort other members to supermarkets. Those between 31-45 mentioned serving as tourist escorts.

It is interesting to note that senior people have low interests in offering services but high interests in receiving help as seen in Table 4-Table 5.

Table 4 What type of services would you like to receive if you are a member of time bank?

	18 or less	18-23	24-30	31-45	46-59	60 up	Mode
1. Change light bulbs	4	4	4	4	4	4	4
2. Clean air conditioners	3	4	4	4	4	4	4
3. Help with household chores	4	3	3	4	4	4	4
4. Cut the lawn	3	3	2	3	4	2	3
5. Tutor school children	4	3	2	3	2	1	3
6. Babysit	3	3	2	1	1	1	3
7. Help lifting heavy objects	3	3	2	3	3	3	3
8. Escort to banks	2	3	2	2	2	1	2
9. Escort to physical exercise	3	3	3	3	2	3	3
10. Escort to doctors	3	4	4	3	2	4	4

Table 5 What type of services would you like to offer if you are a member of time bank?

	18 or less	18-23	24-30	31-45	46-59	60 up	Mode
1. Change light bulbs	1	3	2	3	2	1	2, 3
2. Clean air conditioners	4	3	2	1	2	1	2
3. Help with household chores	3	4	4	3	3	1	4
4. Cut the lawn	4	3	3	2	3	2	3
5. Tutor school children	1	4	4	3	1	1	4
6. Babysit	2	3	2	1	2	1	2
7. Help lifting heavy objects	3	4	3	3	4	2	3
8. Escort to banks	4	4	4	3	3	1	4
9. Escort to physical exercise	3	4	3	3	3	1	3
10. Escort to doctors	4	4	4	3	3	1	4

5.3 Factors affecting interests in joining time bank

As for the factors influencing intention to join a time bank, chi-square tests were used since the responses were based on nominal scale. To identify whether age had significant effect on the interest in joining a time bank, the following hypotheses were formulated.

H_0 : Age is independent of the respondent's interest in joining time bank.

H_a : Age is not independent of the respondent's interest in joining time bank.

Table 6 shows the responses on intention to join time bank as classified by age of respondents.

Table 6 Number of respondents who are interested in joining time bank, classified by age

Ages	Interested	Not interested
18 or less	31(58.5%)	22(41.50%)
18-23	105(71.4%)	42(28.6%)
24-30	25(65.8%)	13(34.2%)
31-45	35 (66.0%)	18(34.0%)
46-59	43(63.2%)	25(36.8%)
60 up	14(34.1%)	27(65.9%)
Total	253	147

When chi-square test was conducted, the following formula was used to identify the chi-square value.

$$\chi^2 = \sum_{i=1}^r \sum_{j=1}^c \frac{(O_{ij} - E_{ij})^2}{E_{ij}} \quad \text{----- (1)}$$

where O_{ij} = observed frequency in row i and column j

E_{ij} = expected frequency in row i and column $j = (r_i * c_j) / n$

n = total frequency

r_i = row sum, c_j = column sum

Table 7 shows the calculated table for the chi-square test. From the table, $\chi^2 = 19.953$ which was greater than $\chi^2_{0.05,5} = 11.07$. Therefore, the main hypothesis was rejected, and it was concluded that age had significant influence on the desire to join a time bank. Similar tests were conducted on other factors (i.e. gender, income). It was found that they had no effects on the decision to join time bank.

Table 7 Table for the chi-square test

Order	O_{ij}	E_{ij}	$(O_{ij} - E_{ij})$	$(O_{ij} - E_{ij})^2$	$\frac{(O_{ij} - E_{ij})^2}{E_{ij}}$
1	31	33.520	-2.520	6.350	0.189
2	22	19.480	2.520	6.350	0.326
3	105	92.980	12.020	144.480	1.554
4	42	54.000	-12.000	144.000	2.687
5	25	24.035	0.965	0.931	0.039
6	13	13.970	-0.970	0.941	0.067
7	35	33.520	1.480	2.190	0.065
8	18	19.480	-1.480	2.190	0.112
9	43	43.010	-0.010	0.000	0.000
10	25	24.970	0.030	0.001	0.000
11	14	25.930	-11.930	142.325	5.489
12	27	15.070	11.930	142.325	9.444
Sum	400	400	-	-	19.953

Because age had significant influence on the desire to join a time bank, age should be further investigated. It can be seen that half of the respondents in all age groups, except those over 60,

expressed interest in becoming members of time bank. Greatest interest was found among the younger generation aged between 18-23 (71.4%). This may be explained by the fact that they are not financially obligated to help others in the family. They have more freedom to explore new things and contribute to others. Therefore, they can be the target group in the initial establishment of time bank.

About two-thirds of people between 31-59 showed interest in joining time bank. This is a good sign because they are from the working generation and their time credits can be useful in their future retirement. This will reduce the future burden of hiring caregivers as well as the burden on government healthcare budgets. This finding reinforces the importance of attracting younger generations to become members so that they can offer services and collect time credits for their future benefit.

It should be noted that even though senior people should benefit most from time bank, only one-third of them were interested in becoming time bank members. Some of them may have already been financially well-prepared. Some of them may feel that they are not in the best condition to contribute. Even if they join time bank, they would rather receive help than offer services. This emphasizes the importance of joining time bank at a younger age so that senior people can use their time credits when they become older and more fragile.

If time bank is to serve as a key tool for dealing with the aging population, further studies should be conducted on how to motivate senior people to join a time bank. A strategy such as the 4 Ps of the marketing mix can be useful. The first P is "product". The benefits or selling points of time bank should be established so that they are in line with the lifestyles and needs of senior people. The benefits should be clearly announced to them in order to draw their

attention. The second P is “price”. In this case, the price may involve initial fees which should be free or reasonable. The third P is “place” which concerns the location of time bank. Should it be in the city or in rural area? This study has already shown that it is possible to set up a time bank in urban area as reflected by the amount of interest and the possible service areas. Should it involve a large community or a small community? These are questions which may be addressed in future studies. The fourth P is “Promotion” which should be done through the media that senior people can easily access.

6. Summary

This research is based on the idea of exploring the possibility of setting up a time bank in urban areas of Thailand. It investigates the interest in joining a time bank and the potential areas of services. The findings reveal that more than half of the respondents expressed interest in becoming members of time bank, with the greatest interest among the young generation (between 18-23) . Some overlapping areas have been identified on the giving and receiving ends of service. Thus, it seems possible to operate a time bank in Bangkok and vicinity. However, there may be some obstacles in the actual practice since this study reveals only a moderate level of social engagement among the respondents.

The findings of this study are limited to the context of urban areas in Thailand only. Since urban people tend to be individualistic, time bank will be useful in weaving together the whole community. Other regions have different environments and conditions; thus, the findings may not be applicable. For example, people in the rural areas of Thailand tend to have a more collectivist attitude, so they like to help each other without the need for a time bank mechanism. In the rural areas of Thailand there is a

common situation that working-age people leave their family to work in the cities. Thus, there are often only school-age children/teenagers and senior people living in rural homes. If time bank were to be established in the countryside, it could be an effective mechanism for bridging the generation gap that exists, while providing assistance to senior people. In fact, this topic could well be the subject of another study.

The time bank system may not work effectively in countries where people have a dynamic lifestyle. For example, people in Singapore tend to move upscale and do not remain in one place for a long duration. Time bank may not be effective in such a setting due to the instability of the community and the lack of established relationships.

This study has answered important questions regarding the introduction of a time bank system in Thai urban areas. The results are useful for further studies on the establishment of a time bank. Since the time bank system is very new to Thailand, this research has opened up a whole new area for investigation and consideration. It has also raised questions which are outside the research scope discussed earlier. Finally, this article can serve as a basis for discussion on finding effective ways of dealing with the growing dilemma of how to best serve the needs of the global phenomenon of rapid growth in aging societies.

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