

การตัดสินใจทำงานของผู้สูงอายุ: การวิเคราะห์ข้อมูลพาแนลโดยหลัก
เศรษฐศาสตร์ครอบครัวของเบคเกอร์
Elderly's Work Decisions: A Becker Family Economics
Analysis of Panel Data

ไพลิน สันติกุล และ ทองใหญ่ อัยยะวารากุล

คณะพัฒนาการเศรษฐกิจ สถาบันบัณฑิตพัฒนบริหารศาสตร์ 148 ถนนเสรีไทย แขวงคลองจั่น
เขตบางกะปิ กรุงเทพฯ 10240

Pailin Suntigul* and Tongyai Iyavarakul**

Graduate School of Development Economics

National Institute of Development Administration 148 Serithai Road Klong-Chan
Bangkapi Bangkok Thailand 10240

Email: pailin.sunt@gmail.com, tongyai@gmail.com

Received: August 13, 2024

Revised: October 9, 2024

Accepted: October 10, 2024

บทคัดย่อ

การศึกษาปัจจัยที่มีอิทธิพลต่อการตัดสินใจทำงานของผู้สูงอายุในครอบครัวขยายในสังคมไทย ให้ความสำคัญกับการจัดสรรทรัพยากรระหว่างสมาชิกต่างรุ่นในครอบครัว การศึกษาใช้วิธีการถดถอยลอจิสติกแบบคงที่ (Fixed Effects Logistic Regression) โดยใช้ข้อมูลพาแนล (Panel Data) จากการสำรวจสุขภาพ การสูงอายุ และการเกษียณอายุในประเทศไทย (HART NIDA) (ปี 2558, 2560, 2564) จำนวน 936 ครัวเรือน ผลการศึกษาพบว่า เมื่อผู้สูงอายุ (ปู่ ย่า ตา ยาย) ต้องเลือกระหว่างการทำงานในบ้านที่ไม่ได้รับค่าจ้าง (ดูแลบ้านและคนในครอบครัว การเลี้ยงหลาน) กับการทำงานที่ได้รับค่าจ้างในตลาดแรงงาน ผู้สูงอายุไม่ได้ตัดสินใจโดยอิงจากปัจจัยส่วนบุคคลเพียงอย่างเดียวตามที่เสนอในทฤษฎีเศรษฐศาสตร์แรงงานแบบดั้งเดิม แต่การตัดสินใจจะได้รับอิทธิพลจากสถานะความเป็นปู่ ย่า ตา ยาย ที่มีหน้าที่ต่อครอบครัวในฐานะสมาชิกคนหนึ่ง ผลลัพธ์จากการตัดสินใจชี้ให้เห็นถึงความซับซ้อนของปฏิสัมพันธ์ระหว่างลักษณะส่วนบุคคล ภาระผูกพันต่อครอบครัว และการจัดสรรทรัพยากรระหว่างสมาชิกต่างรุ่นในการตัดสินใจเลือก

* Graduate School of Development Economics, National Institute of Development Administration

** Ph.D., Assistant Professor, Graduate School of Development Economics, National Institute of Development Administration

ทำงาน ปัจจัยที่ส่งผลต่อการตัดสินใจทำงานหลังเกษียณของผู้สูงอายุไทย ประกอบด้วย อายุ สุขภาพ ระดับการศึกษา ค่าจ้าง รายได้ที่ไม่ได้มาจากการทำงาน ลักษณะอาชีพ เงินบำนาญ โครงสร้างครอบครัว บรรทัดฐานทางวัฒนธรรม และภาระหน้าที่ที่บุคคลมีต่อครอบครัว ผลการศึกษาจะช่วยสร้างความเข้าใจการตัดสินใจเลือกทำงานของผู้สูงอายุในบริบทของประเทศกำลังพัฒนา และเป็นข้อมูลสำหรับการกำหนดนโยบายสวัสดิการสังคมแก่ผู้สูงอายุรวมทั้งสมาชิกอื่น ๆ ในครอบครัว

คำสำคัญ: แรงงานผู้สูงอายุ, เศรษฐศาสตร์ครอบครัวของเบคเกอร์, งานที่ได้รับค่าจ้าง, การจัดสรรเวลา, งานที่ไม่ได้รับค่าจ้าง, การตัดสินใจ

Abstract

This study examines determinant factors influencing elderly work decisions in extended Thai families, focusing on how intergenerational transfers and family dynamics shape these choices. Using fixed effects logistic regression on panel data from the Health, Aging, and Retirement in Thailand (HART NIDA) survey (2015, 2017, 2021) of 936 extended household units. Our findings reveal that when grandparents choose between unpaid work in family and paid work in labor market, the elderly do not make decisions based solely on personal factors, as suggested in traditional labor economics. Instead, they are influenced by their status as grandparents who have obligations to the household as family members. These results highlight the complex interplay between individual characteristics, family obligations, and intergenerational transfers in shaping elderly work decisions in Thai extended families. The factors that affect Thai elderly decision-making to work after retirement include age, health condition, education, wage, non-labor income, occupational characteristics, pension, family structure, cultural norms (co-residential), and family obligations. The study contributes a broader understanding of elderly labor participation in developing country contexts and informing policies on elderly welfare and family support.

Keywords: Elderly worker, Becker's family economics, Paid work, Time allocation, Unpaid work, Decision-making

1. Introduction

Thailand is experiencing significant demographic changes, particularly an aging population, with the elderly over 60 years expected to comprise 29.9% of the total population by 2037. Extended family with members of three generations living together under the same household is the biggest group in Thai society¹. Extended families remain the primary household structure, comprising 33.6% of households, followed by nuclear families at 26.6%.

Initiatives to encourage post-retirement employment among elderly are gaining traction, acknowledging their continued health and capacity to work. These efforts, however, tend to focus exclusively on individual factors. Notably, the existing literature on retirement patterns among Thai elderly lacks sufficient investigation into how extended family relationships affect older adults' decisions to engage in post-retirement employment, although this factor potentially carries equivalent weight to personal determinants. This study examines how familial dynamics shape elderly's employment choices on post-retirement, aiming to deepen our understanding and inform more effective policy development."

This study applies Becker's theory and economic principles to examine elderly employment in Thailand, offering a perspective that challenges the traditional notion of "household chores" and "childcare" as unpaid work in the family. In extended families, especially in Eastern societies, grandparents often take on unpaid work in the family after reaching retirement age, due to family ties and obligations. In this case, grandparents reallocate their time from paid work in labor market to unpaid work in family.

The objective of this study is to examine how the elderly in extended Thai families allocate their time between paid work in the labor market and unpaid work in the family, considering the influence of family dynamics and intergenerational assistance that are indicative of cultural norms in Eastern society.

¹ United Nations Population Fund, "Annual Report 2015," 2015, https://www.unfpa.org/modules/custom/unfpa_global_annual_reports/docs/UNFPA_2015_Annual_Report.pdf, accessed December 8, 2023.

2. Literature Review

There are several determinant factors influencing engagement in the labor market. These factors include demographic factors (age², marital status³, physical and mental status⁴), socioeconomic factors (educational attainment^{5 6}, income and pension⁷), occupational characteristics (physical demands⁸, full-time and part-time options), institutional factors (government policies⁹, laws^{10 11}).

Becker's Family Economics: Becker introduced a novel perspective on the division of labor among household members that challenged the notion of biological differences which solely determined roles^{12 13}. Becker's Family Economics emphasized the crucial role of time as a limited resource in household economics. Time allocation among household members should be based on their

² Kwanchit Kantachote and Nattaya Wiroonsri, "Do Elderly Want to Work? Modeling Elderly's Decision to Fight Aging Thailand," *Quality & Quantity* 57, No.1 (February 2023): 509-539.

³ Zafar Mueen Nasir, and Syed Mubashir Ali, "Labour Market Participation of the Elderly," *The Pakistan Development Review* 39, No.4 (December 2000): 1075-1086.

⁴ Sasiwimon Warunsiripaweenawa, and Lusi Liao, " Labor Supply of Older Workers in Thailand: The Role of Co-Residence, Health, and Pensions1." *Demographic Transition and Its Impacts in Asia and Europe* 1224, (March 2021): 1-26.

⁵ Kornkanok Wattanasaovaluk, " The Economic Significance of Work Experience for Elderly Employment in Thailand," *Journal of Population and Social Studies* 29, No.1 (October 2021): 82-99.

⁶ Giang Thanh Long and Ly Thi Hai, "Determinants of Labor Force Participation of Older People in Vietnam," *Journal of Economics and Development* 17, No.2 (August 2015): 28-52.

⁷ Juan Jacobo Velasco, Gerhard Reinecke and Jürgen Weller, *Employment Situation in Latin America and the Caribbean. Labour Market Participation of Older Persons: Needs and Options*, (Santiago: United Nations, 2018), 1-44.

⁸ Jakub Fodor, Oliver Roehn and Hyunjeong Hwang, "Determinants of labour market exit of older workers in the Slovak Republic," *OECD Economic Department Working Papers* 1700 (February 2022): 1-37.

⁹ Ayako Kondo, " Effects of Increased Elderly Employment on Other Workers' Employment and Elderly's Earnings in Japan," *IZA Journal of Labor Policy* 5, No. 2 (December 2016): 1-23.

¹⁰ David Neumark, "Alternative Labor Market Policies to Increase Economic SelfSufficiency: Mandating Higher Wages, Subsidizing Employment, and Raising Productivity," *Institute of Labor Economics (IZA)* 3355, (February 2008): 1-63.

¹¹ Bernhard Ebbinghaus and Dirk Hofäcker, "Reversing Early Retirement in Advanced Welfare Economies: A Paradigm Shift to Overcome Push and Pull Factors," *Comparative Population Studies* 38, No.4 (December 2013): 807-840.

¹² Gary S Becker, "Human capital, effort, and the sexual division of labor," *Journal of labor economics* 3, No.1, Part 2 (January 1985): S33-S58.

¹³ Gary S. Becker, "A Theory of the Allocation of Time," *The Economic Journal* 75, No.299 (September 1, 1965): 493-517.

expertise, following the principle of comparative advantage. In Becker's economic framework, time allocation encompassed working and non-working hours, including leisure. The decision-making on time allocation of the elderly in extended families aged 60 years and over that the decision is not solely influenced by personal preferences but is heavily influenced by their role as grandparents and familial obligations. The options include continuing to participate in labor market (paid work) or dedicating their time entirely to household chores and caring for grandchildren (unpaid work)¹⁴.

3. Elderly Decision-Making Framework for Work Engagement

The study utilizes Becker's family economics model, which offers a more comprehensive approach to understanding labor market decisions than the traditional labor supply model for analyzing family dynamics, specialization, and interdependencies.

The Becker family economics model, developed by Nobel laureate Gary Becker¹⁵, applies economic analysis to family behavior and decision-making, including labor supply choices. Becker's labor supply model treats the family as an economic unit, incorporating household production, joint utility maximization, and complex interactions among family members. It considers wages of all family members, household technology, and market prices, allowing for the allocation of time between paid work in the labor market, unpaid work as household production, and leisure. The labor supply function shows how changes in wages, prices, technology, and preferences can affect time allocation between market work and household production across different activities. The labor supply curve is derived from utility maximization subject to a budget constraint as:

Utility function:	$U = U(Z_1, Z_2, \dots, Z_n)$	(1)
Production Functions:	$Z_i = f_i(X_i, T_i); i=1, 2, \dots, n$	(2)
Full Income constraint:	$\sum p_i X_i + wT_i = wT_i + V$	(3)

¹⁴ Hao Bai, Mengjie Li and Yanping Hong, "Grandparental Childcare and Maternal Labor Supply in Chinese Families with Young Children: Evidence from the China Family Panel Studies," *International Sociology* 39, No.4 (May 28, 2024): 486-509.

¹⁵ Gary S. Becker, "A Theory of the Allocation of Time," *The Economic Journal* 75, No.299 (September 1, 1965): 493-517.

$$\text{Time constraint:} \quad T = \sum T_i + T_w \quad (4)$$

$$\text{Maximization:} \quad \text{Max } U(Z_1, Z_2, \dots, Z_n) \quad (5)$$

$$\text{Subject to:} \quad Z_i = f_i(X_i, T_i) \quad (6)$$

$$\sum p_i X_i + \sum T_i = wT + V \quad (7)$$

$$\text{Labor supply function:} \quad H^* = \sum h_i = \sum (T_i - t_i) \quad (8)$$

where; Z_i denotes commodities produced and consumed within the household with the use of market goods (X_i) and time (T_i). (X_i) denotes vector of market goods used to produce commodity i . T_i denotes total time allocated to activity i . p_i denotes price of market good i . h_i denotes hours worked in the market for activity i . t_i denotes time spent in household production for activity i .

4. Identification Criteria Framework

Becker's family economics suggested that the decision of work engagement by the elderly is influenced not only by individual and market-related factors as in traditional labor economics framework, but also by family dynamics and cultural contexts. Becker considered time allocation (paid work, unpaid work), family structure (number of children and grandchildren), family obligations (intergenerational transfers of monetary and non-monetary resources), cultural norms (intergenerational co-residence), institutional factors (pension eligibility), and family-related laws and policies that affect the elderly's employment decisions.

In contrast, traditional labor economics frameworks consider demographic factors (age, gender, marital status), socioeconomic factors (education level, wage and non-labor income, residential area), occupational characteristics (full-time or part-time job), health conditions (physical health, mental health, physical disability), and income and institution factors directly related to the elderly's employment.

Preferences of the elderly after retirement on work-time allocation can be categorized into three distinct groups based on the chosen primary activities, as follows:

Group 1 Paid work: The elderly who primarily engage in the labor market to maintain jobs or careers that provide them with a regular income, a desire to stay active, or a passion for their work. If an elderly person's decision on work-time allocation after retirement aligns with this pattern, then they are grouped into the 'paid-work' category.

Group 2 Unpaid work: The elderly who primarily engage in family and household activities such as providing childcare for grandchildren, household chores, and taking care of other family members without monetary compensation. This work is driven by love, familial ties, and obligation within family. If the elderly persons after retirement's decision on work-time allocation aligns with this pattern, then they are grouped into 'unpaid work'.

Group 3 Both paid and unpaid work: The elderly who engage in both labor market and household activities due to necessity to participate in paid work in labor market while also engaging in unpaid family work. If the elderly person's decision on work-time allocation after retirement aligns with this pattern, then they are grouped into 'both paid and unpaid work' category.

5. Data

This study employed a panel dataset on multidisciplinary dimensions of ageing in Thailand. The data set is from the HART project conducted under the Center for Aging Society Research (CASR), National Institute of Development Administration. The data was collected from national surveys in 2015 (Wave 1), 2017 (Wave 2), and 2021 (Wave 3), represent the samples of 5,616 household in Thailand. The primary respondent is a member of selected Thai household with an age of 45 years and over¹⁶. The sample is balance panel data of 936 households accounted for 312 extended households with 3 generations in each wave. The extended family consists of grandparents, adult children, and grandchildren. Grandparents are the parents of adult children and grandparents of grandchildren.

Dependent variables are grandparents' work engagement decision (participate or not participate) on types of work engagement (paid or unpaid). There is 3.0% of grandparents only engage in paid work, 68.0% only in unpaid work, 25.0% engage in both paid and unpaid work, and 4% neither paid nor unpaid work.

Independent variables are grandparents aged 60 to 69 years (35.3%), 70 to 79 years (34.1%), and 80 years or more (30.6%) which are evenly distributed across age groups 60-69, 70-79, and 80 years and over. Most of grandparents is female (60.0%), and 56% are currently married. Their average physical health score is 7.07

¹⁶ National Institute of Development Administration, "HART, – NIDA IIC," 2019, http://iic.nida.ac.th/main/?page_id=564, accessed December 14, 2023.

out of 10, while their mental health score is slightly higher at 8.26. The majority (88.0%) have a primary school education level.

Regarding financial aspects, the data shows considerable variation in wage and non-labor income of grandparents, 4.0% of grandparents engage in full-time jobs, and most of them are eligible for old age allowance (47.0%).

Family dynamics are represented by the number of children and grandchildren, monetary and non-monetary transfers between generations, and living arrangements. Grandparents typically have 3 children and 4 grandchildren, and most live in the same house as their adult children. The monetary and non-monetary transfer from adult child to grandparents (62.0% and 78.0%) which is higher than monetary and non-monetary transfer from grandparents to adult child (17.0% and 74.0%), whereas non-monetary transfer from grandparents to grandchild is 32.0%. Adult children's age is 40 years in average, equivalents for male and female, employment status (71.0% employed), and education levels, which are more varied and generally higher than their parents' generation (37.0% undergraduate).

6. Empirical Model

This study employs logistic regression with fixed effects on panel data from the HART project to examine relationships between binary dependent variables and various predictors¹⁷, with control of time-invariant characteristics in panel data¹⁸. The model is defined as:

$$\begin{aligned} \Pr(G1WORK_{kit}=1) = & \Lambda(\alpha_{it} + DEMOGRAPHIC_{it}\beta_1 + HEALTH_{it}\beta_2 + \\ & SOCIOECONOMICS_{it}\beta_3 + INSTITUTION_{it}\beta_4 + \\ & FAMILY_{it}\beta_5 + OBLIGATION_{it}\beta_6 + NORM_{it}\beta_7 + \\ & OTHERCONTROL_{it}\beta_8) \end{aligned} \quad (9)$$

where; $\Lambda(z) = 1 / (1+e^{-z})$ is the logistic cumulative distribution function (CDF). α_{it} represents the fixed effect for grandparents in household i at period t .

¹⁷ Michael Lechner, "Testing Logit Models in Practice," *Empirical Economics* 16, No.2 (June 1991): 177-198.

¹⁸ Bernhard Brügger, "A Guide to Panel Data Regression: Theoretics and Implementation with Python," *Towards data science* 6, (June 2021): 1-24.

Dependent variable represents group of variables for decision to engage work type k of grandparents in household i at period t ($G1WORK_{kit}$), consists of paid work ($G1PAID_{it}^D$); unpaid work ($G1UNPAID_{it}^D$); and both paid and unpaid work ($G1BOTH_{it}^D$).

Independent variables include $DEMOGRAPHIC_{it}$, represents group of variables for demographic factors of grandparents in household i at period t , consists of ($G1AGE_{it}^D$) age interval of 60 to 69 years, 70 to 79 years, and 80 years and over; gender ($G1Male_{it}^D$); and marital status ($G1Married_{it}^D$). $HEALTH_{it}$ represents group of variables for health condition of grandparents in household i at period t , consists of physical health ($G1PhysicalHealth_{it}$); physical disability ($G1Disability_{it}^D$); and mental health ($G1MentalHealth_{it}$). $SOCIOECONOMICS_{it}$ represents group of variables for socioeconomics factors of grandparents in household i at period t , consists of highest education attainment level ($G1Education_{it}^D$); habitat in municipal area ($G1Municipal_{it}^D$); log of total wage ($G1LNWage_{it}$); log total non-labor income ($G1LNIncome_{it}$), occupation characteristic of a full-time job ($G1FulltimeJob_{it}^D$). $INSTITUTION_{it}$ represents group of variables for institutional factors of grandparents in household i at period t , consists of log of eligible pension including old age allowance ($G1LNPension_{it}^{OldAge}$), war's veteran welfare ($G1LNPension_{it}^{Veteran}$), civil servant pension ($G1LNPension_{it}^{Civil}$), and other types of pensions that is neither old age allowance, war's veteran welfare, nor civil servant pension ($G1LNPension_{it}^{Other}$). $FAMILY_{it}$ represents family structure of grandparents in household i at period t , consists of total number of children ($G1Children_{it}$); total number of grandchildren ($G2Children_{it}$); and employment status of adult children ($G2LFP_{it}^D$). $OBLIGATION_{it}$ represents obligation among family members of grandparents in household i at period t , consists of intergenerational assistance monetary and non-monetary resources among grandparents and adult children ($G1toG2Monetary_{it}^D$, $G2toG1Monetary_{it}^D$, $G2toG1NonMonetary_{it}^D$). $NORM_{it}$ represents the cultural norm in Thai extended families where grandparents reside in household i at period t ($CoResG1\&G2_{it}^D$). $OTHERCONTROL_{it}$ represents other control variables of grandparent in household i at period t , consists of grandparents' log of total expense ($G1LNExpense_{it}$); adult children's age ($G2Age_{it}$); adult children's gender ($G2Male_{it}^D$); and adult children's highest education attainment level ($G2Education_{it}^D$).

7. Research Result

This study employs Becker's principles of family economics (1991), which view the family as an institution bound by blood ties, with each member having obligations based on their status within the family unit. The study results find that:

Table 1 Fixed Effects Logit Result

Variable	(A) Paid	(B) Unpaid	(C) Both
DEMOGRAPHIC			
<u>Age</u>			
Grandparent's age is 60 to 69 years	214.894 (0.000)	-0.463 (1.170)	-1.232 (3.047)
Grandparent's age is 70 to 79 years	-46.418 (0.000)	1.400 (1.709)	-15.023** (6.565)
Grandparent's age is 80 years and over	84.707 (0.000)	3.356 (2.390)	-23.353*** (8.948)
<u>Gender</u>			
Grandparent is male	423.175 (0.000)	-2.336 (3.134)	12.186 (1783.065)
<u>Marital</u>			
Grandparent is currently married	425.699 (0.000)	1.032 (0.843)	-0.591 (1.357)
HEALTH			
Grandparent's physical health score	-126.466 (0.000)	-0.274 (0.235)	1.510*** (0.586)
Grandparent is disabled person	(omitted)	409.106 (0.000)	-59.946 (0.000)
Grandparent's mental health score	-40.605 (0.000)	0.305 (0.214)	-1.075* (0.607)

Table 1 (Continue)

Variable	(A) Paid	(B) Unpaid	(C) Both
SOCIOECONOMICS			
<u>Grandparents' Education</u>			
Grandparent 's education level is primary school	66.307 (0.000)	-0.106 (1.191)	4.743* (2.632)
Grandparent 's education level is secondary school	-68.120 (0.000)	0.862 (1.883)	12.255 (31.903)
Grandparent 's education level is high school	(omitted)	32.892 (100500000.0)	-666.475 (0.000)
Grandparent 's education level is under	(omitted)	19.422 (765500000.0)	13.772 (0.000)
Grandparent 's education level is graduate	(omitted)	-20.328 (0.000)	-12.924 (0.000)
RESIDENTIAL AREA			
Grandparents live in municipal area	(omitted)	6.091 (4.442)	-14.937 (20.995)
<u>Wage</u>			
Log of grandparent's total wage	13.324 (0.000)	-0.344*** (0.073)	0.938*** (0.297)
<u>Non-Labor Income</u>			
Log of grandparent's total income	14.811 (0.000)	-0.062 (0.042)	0.532*** (0.176)
<u>Occupation Characteristic</u>			
Grandparent is currently participating in full-time job	-185.474 (0.000)	-45.663 (1002000000.0)	5.057*** (1.868)

Table 1 (Continue)

Variable	(A) Paid	(B) Unpaid	(C) Both
INSTITUTION			
<u><i>Pension</i></u>			
Log of grandparent's eligible is old age allowance	-11.762 (18561851.72)	-0.025 (0.049)	0.457** (0.179)
Log of grandparent's eligible is war veteran's welfare	(omitted)	-341.420 (0.000)	(omitted)
Log of grandparent's eligible is civil servant pension	(omitted)	-0.012 (0.178)	-0.258 (0.281)
Log of grandparent's eligible is others pension	6.541 (0.000)	0.080 (0.067)	-0.383** (0.164)
FAMILY			
<u><i>Grandparent</i></u>			
Grandparent's total number of children	709.149 (0.000)	-1.288* (0.679)	-1.751 (1.804)
<u><i>Adult Child</i></u>			
Adult child 's total number of children	2.756 (37123703.44)	0.156 (0.168)	0.177 (0.373)
Adult child is currently employed	-43.617 (0.000)	-1.580*** (0.574)	4.714** (2.257)
OBLIGATION			
<u><i>Monetary Transfer</i></u>			
Monetary transfer from grandparent to adult child	-321.712 (0.000)	-0.275 (0.495)	-0.900 (1.018)
Monetary transfer from adult child to grandparent	-289.676 (0.000)	-0.146 (0.486)	2.160** (1.042)

Table 1 (Continue)

Variable	(A) Paid	(B) Unpaid	(C) Both
<i>Non-Monetary Transfer</i>			
Non-monetary transfer from adult child to grandparent	-415.934 (0.000)	0.431 (0.554)	7.706*** (2.646)
CULTURAL NORMS			
Grandparent and adult child live in the same house	-137.712 (0.000)	0.176 (0.565)	3.253** (1.478)
OTHER CONTROL			
Grandparents' log total expense	Yes	Yes	Yes
Adult child's age	Yes	Yes	Yes
Adult child is male	Yes	Yes	Yes
Adult child's education level	Yes	Yes	Yes
STATISTICS			
Number of observations	69	423	390
Number of groups	23	141	130
<i>Model Fitting Criteria</i>			
Dev ₀	50.540	309.811	285.636
Dev _M	0.000	117.671	45.626
chi2	50.540	192.140	240.010
d.f.	2	33	31
Prob>chi2	0.000	0.000	0.000
R-square	1.000	0.620	0.840
Log-likelihood	0.000	-58.835	-22.813

*p<.010, two-tailed. **p<0.05, two-tailed. ***p<0.01, two-tailed.

Note: The standard errors are in parentheses. There are no other variables included in the regressions.

7.1 Demographic factors

Age as a determinant factor in grandparents' decision to work. Grandparents aged 70 years and over are less likely to engage in both paid work and unpaid work. This finding is consistent with the HART (Health and Retirement Transitions) study (Table 3), which showed a decline in both paid and unpaid work participation over time. In the first wave of the survey, grandparents had the highest rate of unpaid work (52.6%) and combined paid and unpaid work (42.6%). The second and third waves showed a decline in both paid and unpaid work, accompanied by an increase in unpaid work alone during the same period.

The data from HART show the characteristics of grandparents and their decisions regarding work. Only a few grandparents are not engaged in any work at all. This is likely because most grandparents in the HART data receive an old-age allowance, which is insufficient for their needs. Therefore, they continue working even after reaching retirement age.

In the first wave of the survey, when these grandparents were below 70 years of age, the rate of those engaging in paid work (52.6%) was close to the rate of those engaging in both paid and unpaid work (42.6%). In the second and third waves of the survey, as the grandparents' ages increased, they tended to move away from engaging in both paid and unpaid work, choosing instead to engage only in unpaid work.

Grandparents' physical and mental health condition impact the decision to engage in both paid and unpaid work. Both physical and mental health conditions are typically influenced by a combination of biological and environmental factors. Mental disorders are particularly complex, resulting from multiple influences and having physiological foundations in brain function. The World Health Organization¹⁹ notes that individuals' mental health status can significantly impact their capacity to engage in the workforce^{20 21}. Research on grandparents

¹⁹ World Health Organization, *The World Health Report 2001: Mental Health: New Understanding, New Hope*, (Geneva: World Health Organization, 2001), 1-169.

²⁰ Gwenith G. Fisher et al., "Cognitive functioning, aging, and work: A review and recommendations for research and practice," *Journal of occupational health psychology* 22, No.3 (July 2017): 314.

²¹ Claire J. McCartan et al., "Factors that influence participation in physical activity for anxiety or depression: a synthesis of qualitative evidence," *Cochrane database of systematic reviews* 2020, No.3 (March 1996): CD013547.

has revealed an interesting pattern: better physical health is associated with an increased likelihood of participating in paid employment^{22 23}. Conversely, improved mental health shows an inverse relationship with paid work and both paid and unpaid work participation among grandparents.

This study's results show that grandparents who have good physical health conditions are more likely to engage in both paid and unpaid work, while grandparents with good mental health conditions are less likely to engage in both paid and unpaid work.

7.2 Socioeconomic factors

Education as a form of human capital affect work availability. Grandparents with higher education levels often have greater access to job opportunities and the increase in financial obligations to their extended family, potentially leading to higher rates of participation in paid work²⁴. Education enhances grandparents' employment rate and market demand²⁵, with more educated elderly workers typically remaining in the workforce longer²⁶. This study aligns with previous findings, revealing a positive effect of grandparents' educational attainment, even at the primary level, on their decision to engage in paid work.

²² Lisa Schur, Douglas Kruse, Joseph Blasi and Peter Blanck, "Is disability disabling in all workplaces? Workplace disparities and corporate culture," *Industrial Relations: A Journal of Economy and Society* 48, No.3 (July 2009): 381-410.

²³ Sasiwimon Warunsiripaweenawa and Lusi Liao, "Labor Supply of Older Workers in Thailand: The Role of Co-Residence, Health, and Pensions1," *Demographic Transition and Its Impacts in Asia and Europe* 1224, (March 2021): 1-26.

²⁴ Christine Ho, "Grandchild care, intergenerational transfers, and grandparents' labor supply," *Review of Economics of the Household* 13, No.2 (June 2015): 359-384.

²⁵ Kornkanok Wattanasaovaluk, "The Economic Significance of Work Experience for Elderly Employment in Thailand," *Journal of Population and Social Studies* 29, (October 2021): 82-99.

²⁶ Giang Thanh Long and Ly Thi Hai, "Determinants of Labor Force Participation of Older People in Vietnam," *Journal of Economics and Development* 17, No.2 (August 2015): 28-52.

Wage as an opportunity cost of paid work. High wages positively influence the elderly's likelihood to work after retirement^{27 28 29}. Earning high wages allows grandparents to choose between assisting their families with household chores or participating in the labor market for paid work. This choice becomes significant when the opportunity cost of choosing household chores exceeds the potential earnings from labor market participation. Additionally, earning higher wages give them the ability to opt out of both paid and unpaid work entirely.

This study's results show that wages are a determinant factor affecting grandparents' decisions to engage in work. Grandparents who have high wages are more likely to engage in both paid and unpaid work and less likely to engage in 'unpaid work' alone.

Occupation characteristics significantly influence the elderly's participation decisions in the labor market. Employment type (full-time or part-time) also plays a crucial role in labor force participation decisions³⁰. This study's results show that grandparents who have full-time jobs are more likely to engage in both paid and unpaid work.

7.3 Income and institution

Non-labor income as a substitution for paid work. Income and pension systems significantly influence elderly labor participation in the labor market. In Latin America, insufficient income and inadequate pension systems often lead the elderly to work after retirement age³¹. In contrast, Thai pensions reduce labor force

²⁷ Chuanchuan R. Khandker, Hussain A. Samad and Zahed H. Khan, " Income and Employment Effects of Micro-credit Programmes: Village-level Evidence from Bangladesh," *The Journal of Development Studies* 35, No.2 (December 1998): 96-124.

²⁸ Chuanchuan Zhang, *The Relationship between Elderly Employment and Youth Employment: Evidence from China*, (German: University Library of Munich, 2012), 1-25.

²⁹ Juan Laura Crespo and Pedro Mira, "Caregiving to Elderly Parents and Employment Status of European Mature Women," *Review of Economics and Statistics* 96, No.4 (October 2014): 693-709.

³⁰ Long, Giang Thanh and Ly Thi Hai, "Determinants of Labor Force Participation of Older People in Vietnam," *Journal of Economics and Development* 17, No.2 (August 2015): 28-52.

³¹ Juan Jacobo Velasco, Gerhard Reinecke and Jürgen Weller, *Employment Situation in Latin America and the Caribbean. Labour Market Participation of Older Persons: Needs and Options*, 1-44.

participation among the elderly^{32 33}. This study reveals that grandparents' income positively affects their engagement in both paid and unpaid work. The eligible pension of grandparents, even the lowest old age allowance, positively influences their engagement in both paid and unpaid work. However, grandparents who have other pensions are less likely to engage in 'both paid and unpaid work'.

7.4 Family structure

Grandparental role as a supporter in large family. Grandparental childcare plays an essential role in supporting families, especially in large families with grandchildren³⁴. It supports and influences working women's fertility decisions. When grandparents care for their grandchildren, it reduces their availability for paid work, while simultaneously allowing the children's parents more time to engage in employment.³⁵ This study found that grandparents in large families are more likely to engage in paid work and unpaid work.

7.5 Cultural norms

Multigenerational living is a prominent point of cultural traditions in Eastern societies. Grandparents in extended family who reside in the same house with their adult children are more likely to engage in 'unpaid work' while decrease grandparents' labor force participation, than those who is not. Results of this study align with

³² Sasiwimon Warunsiripaweenawa and Lusi Liao, "Labor Supply of Older Workers in Thailand: The Role of Co-Residence, Health, and Pensions1," *Demographic Transition and Its Impacts in Asia and Europe* 1224, (March 2021): 1-26.

³³ Khandker, Shahidur R., Hussain A. Samad and Zahed H. Khan, "Income and Employment Effects of Micro-credit Programmes: Village-level Evidence from Bangladesh," *The Journal of Development Studies* 35, No.2 (December 1998): 96-124.

³⁴ Gu, Huiqin, Fang Bian and Ehsan Elahi, "Impact of Availability of Grandparents' Care on Birth in Working Women: An Empirical Analysis Based on Data of Chinese Dynamic Labor Force," *Children and Youth Services Review* 121, (February 2021): 105859.

³⁵ Hao Bai, Mengjie Li and Yanping Hong, "Grandparental Childcare and Maternal Labor Supply in Chinese Families with Young Children: Evidence from the China Family Panel Studies," *International Sociology* 39, No.4 (May 28, 2024): 486-509.

Ho³⁶, Settle³⁷, and Maurer-Fazio³⁸ found that co-residence reduced grandparents' participation in 'paid work', particularly when intensive childcare was involved or in urban areas. Simultaneously, Chen³⁹ and Albertini⁴⁰ found that co-resident grandparents spent more time on unpaid work in family compared to their non-co-resident counterparts.

In multigenerational households, each family member is typically assigned their own responsibilities as a family obligation. A study focusing on Latino families in the United States found that role distributions in multigenerational households often reflect cultural values of familism, with grandparents playing a central role in family solidarity and passing down cultural traditions⁴¹. The results of this study show that grandparents who live with their adult children are more likely to engage in both paid and unpaid work.

7.6 Family obligation

Monetary and non-monetary assistance, which is an obligation of grandchildren to their parents in Thai society, increases grandparents' engagement in both paid and unpaid work. This can be explained by the mix of altruistic and bargaining preferences of adult children. Although providing non-monetary assistance to their parents (grandparents) is considered an obligation and norm in Thai society, adult children also need their grandparents to help them with household chores and childcare. Moreover, the engagement of grandparents in both paid and unpaid work represents socialization within Eastern culture, as well as love and blood ties.

³⁶ Christine Ho, "Grandchild care, intergenerational transfers, and grandparents' labor supply," *Review of Economics of the Household* 13, No.2 (June 2015): 359-384.

³⁷ Settles, Barbara H., Jia Zhao, Karen Doneker Mancini, Amanda Rich, Shawneila Pierre and Atieno Oduor, "Grandparents Caring for Their Grandchildren: Emerging Roles and Exchanges in Global Perspectives," *Journal of Comparative Family Studies* 40, No.5 (October 2009): 827-848.

³⁸ Maurer-Fazio, Margaret, Rachel Connelly, Lan Chen and Lixin Tang, "Childcare, Eldercare, and Labor Force Participation of Married Women in Urban China, 1982-2000," *Journal of Human Resources* 46, No.2 (March 2011): 261-294.

³⁹ Chen, Feinian, Guangya Liu and Christine A. Mair, "Intergenerational Ties in Context: Grandparents Caring for Grandchildren in China," *Social Forces* 90, No.2 (December 2011): 571-594.

⁴⁰ Marco Albertini, Michael Gähler and Juho Härkönen, "Moving Back to 'Mamma'? Divorce, Intergenerational Coresidence, and Latent Family Solidarity in Sweden," *Population, Space and Place* 24, No.6 (February 21, 2018): e2142.

⁴¹ Mendez-Luck et al., "The Concept of Familism in the Lived Experiences of Mexican Origin Caregivers," *Journal of Marriage and Family* 78, No.3 (June 2016): 813-829.

8. Conclusion and Recommendation

A study of post-retirement work among elderly persons in Thai extended families cannot be completed without considering the role and status of the elderly in the family. These elderly family members often display altruistic preferences and behaviors. Family is a production unit that uses commodity goods and time as factors of production. In this context, time is a limited resource whose value increases in societies where technology has largely replaced labor in traditional production processes. In family economics, blood ties define the status, roles, and responsibilities of each family member. These relationships influence how families allocate their limited time among various activities. The study of work in Becker's family economics focuses on unpaid labor, particularly household chores. Family members must consider this unpaid work alongside paid work and leisure when making time allocation decisions.

This research studies the decision-making process of elderly persons in Thai extended families regarding labor market participation. This study employs the concepts of time allocation and intergenerational resource transfer from Becker's family economics to explain the decision-making process and determinant factors that influence grandparents in Thai extended families to participate in the labor market after retirement.

The study results indicate that Becker's family economics factors, demographic factors, socioeconomic factors, income and institution factors, family structure, and family obligation influence the decision-making process of grandparents regarding labor force participation. These factors include age, health condition, education, wage, non-labor income, occupation characteristic, pension, family structure, cultural norms (co-residential), and family obligation are the determinant factors in family economics that influence elderly in extended family to work after retirement.

This study is limited by its focus on grandparents in extended families who decide to work after retirement. For future research, it is strongly recommended that investigators compare different family types, which would allow for a more comprehensive view of family dynamics and their impacts. By examining various family structures, researchers could gain broader insights and draw more generalizable conclusions on grandparents' decisions to work after retirement.

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