A Panel Survey on Health, Aging, and Retirement in Thailand (HART)

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National Institute of Development Administration

At

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Economic Research Institute for ASEAN and East Asia (ERIA)
Outline

• Introduction
• Purposes of HART project
• Study Frame of Reference
• Survey methods: units, interviews, instrument
• Values of HART
• Challenges
Introduction

Thailand - Transformation into aging society

Population pyramids of Thailand, 1950, 2017, 2050, 2100

Preparation in terms of policies and measures in other countries with evidence-base and longitudinal panel data

Importance of data for aging society:

- G8 Summit in Denver, Colorado in 1997 - Biomedical and behavioral research, pension system, health and long-term care
- UN SDGs – Goal 3 Ensure healthy lives and promote well-being of all at all ages with
  - systematic follow-up and review of the implementation of this Agenda over the next 15 years
  - data which is high-quality, accessible, timely, reliable and disaggregated by income, sex, age, race, ethnicity, migration status, disability and geographic location and other characteristics relevant in national contexts
Support from NIA since 1990s to establish a network of study on aging led by Health and Retirement Study (HRS), Institute for Social Research, University of Michigan

HRS Sister projects around the globe

Source: https://hrs isr umich edu/about/international-sister-studies
Health, Aging, and Retirement in Thailand (HART)

Project under the Center for Aging Society Research, NIDA: PIs from
- Research Center
- School of Applied Statistics
- School of Development Economics
- School of Social Development

Experiences of HART:
Pilot project:
- Pilot Wave 1 (NRCT FY2009)
- Pilot Wave 2 (CHE FY2011)

HART project:
- HART Wave 1 (NRCT FY2014)
- HART Wave 2 (NRCT FY2016)
- HART Wave 3 (TRF/TSRI FY2019)

- A panel and longitudinal survey project with representative households from 5 regions and Bangkok and vicinities: 5,600 household
- A bi-annual survey

- Interview: Face-to-face interview
- Survey instruments:
  - Wave 1 (Base line): paper and pencil interview (PAPI)
  - Wave 2 & Wave 2+: computer assisted personal interview (CAPI)
Purposes of the HART Project

• To conduct a longitudinal panel survey of the older persons’ households in Thailand
• To study aging behaviors in multi-disciplinary dimensions: e.g. demographic, health, economics, sociology.
• To harmonize the data with HRS and its sister projects.
• To create a national longitudinal and household panel data archive on aging in Thailand.
  • The data archive is maintained by the Intelligence and Information Center (IIC), NIDA. http://iic.nida.ac.th/main/?page_id=564
  • The data are available for academic users from the website of the Center for Aging Society Research (CASR), NIDA, at: http://rc-demo.nida.ac.th/casr/
  • Useful information on aging society and HART study is also available in the Facebook of the Center for Aging Society Research (CASR) at https://www.facebook.com/HART.Thailand/
Study Frame of Reference for HART

Figure 1: Well-being of the Elderly

- Population, socio-economic and culture factors
- Personal characteristics
  - Family transfer system
  - Social transfer system

Well-being of the elderly
Well-being of the other groups

Figure 2: Dynamics in Aging Behaviors

Economic Dimension
- Income security and wealth

Dynamic Longitudinal

Social Dimension
- Kinship and social network, living arrangement

Health Dimension
- Physical and mental health, disability, mortality


Note: Revised from Figure 4 in Borch-Supan, Axel, Hendrik Jürges and Oliver Lipps (2003-7). SHARE: Building a Panel Survey on Health, Aging, and Retirement in Europe,” Mannheim Research Institute for Economics of Aging (MIIA), University of Mannheim, Germany, July.
Study Frame in 7 Multi-disciplinary Dimensions

- Dimension A: Demographic Characteristics
- Dimension B: Family and Transfers
- Dimension C: Health
- Dimension D: Employment
- Dimension E: Income
- Dimension F: Assets and Debts
- Dimension G: Expectation and Life Satisfaction
- Exit Interview (Mortality)
Technical Frame

Figure 3: Survey Instruments and Computer Programs

Questions from KLoSA, CHARLS & HRS

HART Questions

Computer System: Survey Trak, Web Trak, Blaise

Knowledge on Aging from HART

HART Database

Survey
Identification of Household/Respondent/Proxy for interview

**Respondent – R**

**Spouse of R - S**

**Proxy - P**

**Wave 2 Respondent: (S/P 45+ - R*1)**

**CORE INTERVIEW**

**EXIT INTERVIEW**

- **Info of R, S, and P**
  - Name
  - Relation to R
  - Gender

- **R Information**
  - Birth date
  - Marital status
  - Living arrangement

- **Exit information about R**
  - Marital status
  - When R died
  - Where R died
  - Cause of death
Figure 5: Demographic Characteristics

Respondent - R

- Place of Birth
- Education
- Religion

From Cover Screen
- Birth date
- Marital status
- Gender

Family History

- Number of children
- Number of children alive

From Cover Screen
- Living arrangement
Figure 6: Family and Family Transfers

**Children & Grandchildren**
- Number of children
- Communication and Visits
- Transfers: money and in-kind (to and from children)
- Number of grandchildren
- Transfers: money and in-kind (to and from grandchildren)

**Parents & the in-laws**
- Status of parents
- Communication and visits
- Transfers: money and in-kind (to and from parents)

**Siblings**
- Number of siblings
- Status of siblings
- Communication and visits
- Transfers: money and in-kind (to and from siblings)

- The in-laws
- Transfers: money and in-kind (to and from the in-laws)
Fig. 7: Health Dimension

**Health Status**
- Self rated assessment
  - Physical health
  - Mental health
- Evaluation by medical physicians
  - Physical sickness: visual, hearing, speech, mental
  - Non communicative diseases (NCD)
- Pains in body parts
- Accidents / Fall down
- Health problems:
  - Urinate control, visual, hearing, mouth and teeth
  - BMI
- Feelings

**Health Behaviors**
- Exercises
- Smoking
- Alcohol consumption

**Activities of Daily Living (ADL)**
- Getting dress
- Washing face/brushing teeth/combing hairs
- Taking bath
- Eating meal
- Getting out of bed/getting out of room
- Using toilet

**No biomarkers**
Figure 7.1: Health Dimension

**Health Insurance**
- Public health insurance
- Private health insurance

**Utilization of Health Services**
- Annual physical check up
- Frequency in utilizing health services and costs (out-patient, in-patient)
- Type of place to utilize health care

**Care givers**
- Relations to R
- Care time and cost

**Cognition**
- Self evaluation
- Verbal test
- Numerical test
- Date and time test
Figure 8: Employment Dimension

### Employment Status

- **Employed**
  - With/without payment

- **Unemployed and Looking for employment**
  - Month and year of being unemployed

- **Temporary unemployed/during sick leave/other leaves (e.g. maternity leave/monkhood leave)**
  - Going back to the same employment or not
  - When being employed before temporary unemployed

- **Disability**
  - Month and year being disable
  - Current, any employment with payment

- **Retired**
  - Month and year being retired
  - Currently, any employment with payment

- **Housework/working at home**
  - Currently, with/without payment

### Main Employment (Under employer)

### Main Employment (Own business/self-employed)

### Questions in common

### Retirement

### Last employment (Currently, no employment)

### Employment History
Figure 8.1: Employment Dimension (cont.)

Main Employment
(Under employer: government, private in agriculture, private in non-agriculture, family)

- Type of employer
- Type of job/type of work
- Month and year starting the employment
- Working hour/week
- Holiday leave/week/year with payment
- Sick leave/year with payment
- Number of days absent from work due to health problems in the past 12 months
- Payment/month/day/hour/piece/commission/in-kind
- Ability to increase/decrease working hours
- Working place characteristics: Single place/multi places/number of employees/labor turnover
- Membership of trade union
- Pension system: membership/benefits

Main Employment
(Own business/self-employed: in agriculture, non-agriculture)

- Type of business
- Type of job/type of work
- Month and year starting the business
- Working hour/week
- Holiday leave/week/year
- Number of days absent from work due to health problems in the past 12 months
- Revenue from wage/salary/seasonal: how much, (before tax or other expenses)
- Net income/profit: how much
- Number of employees in the business
- Spouse/partner’s participation in the business
- Pension system: membership/benefits
### Common Questions

<table>
<thead>
<tr>
<th>Main Employment</th>
<th>Main Employment</th>
</tr>
</thead>
<tbody>
<tr>
<td>(Under employer: government, private in agriculture, private in non-agriculture, family)</td>
<td>(Own business/self-employed: in agriculture, non-agriculture)</td>
</tr>
</tbody>
</table>

- Evaluation of the quality of current employment
- Expectation about the future revenue: increase/decrease/same
- Opinions about looking for another employment: which geographical area, same or different from current employment, way to look for another employment, reasons for not looking for another employment
- Interest in changing to other employment, reasons for not changing the employment
- Opinions about the current employment characteristics
- Opinions about the administration of current working place
- Doing any second employment
- Retirement from the main employment: at what age
- Any retirement plan: at what age
- Opinions about retirement: benefits, concerns
Figure 8.3: Employment Dimension (Cont.)

**Retirement**
- Month and year of retirement
- Retirement: voluntary or compulsory
- Opinions about satisfaction in retirement
- Comparison between before and after retirement: Better/worse/same
- Opinions about retirement: benefits, concerns

**Last Employment**
(CURRENTLY UNEMPLOYED)
- The last employment status:
  - Month and year of the last payment
  - Employer
  - Working characteristics
- Normal working hour
- Number of holiday leave/week
- Payment/day/week/month
- How many working places, number of workers
- Starting payment
- Reasons to resign
- Pension system
- During the past 10 years, ever being laid-off/unemployed, how many times

**Employment History**
- Number of ex-employer
- Type of employer (government, private, family)
- Type of business/type of work
- When begin, when resign
- The last working year: normal working hour, holiday leave days, income before tax when resign, reasons for resign
- Pension received/benefited
- “Early Retirement” scheme by employer
**Income of Household**

- Type of income during the past year:
  - Wage/salary, bonus overtime, commission, etc.
  - Revenues from professional work/sales, second job
  - How much before tax from each type

**Income and Revenue of R and S**

- Wage/salary, bonus overtime, commission, etc.
- Revenues from professional work/sales, second job
- How much before tax from each type
- Unemployment compensation: yes/no, when receiving the latest and how much
- Sickness/accident compensation: yes/no, when receiving the latest and how much
- Veteran benefits: type, when, since when
- Living allowance for old age: when how much
- Pension: how much, when receiving the first time
- Other welfares: how much, since when

- Other revenues: from own business, professional practices, rent, dividends, including reinvestment, financial assistance from friends or relatives not living in the same household, how much from each source

- Type of lump sum revenues: from insurance company, inheritance, gifts from friends/relatives, loans, and how much from each source

Note: R = Respondent, S = Spouse
Opinions of R about Financial Situations

- Comparing the current financial situation with that of 2 years ago: better, worse, same
- The future financial situations in the next 2 years: better, worse, same
- Donation to charity organizations/religious organizations: how much
- If encounter serious financial problems in the future: whom for help

Note: R = Respondent
Figure 10: Assets and Debts

**House**
- Ownership
- Value of the house (current price)
- Rent
- Public utilities (electricity and water supply expenditures)
- How to obtain the house (Buying/inheritance)

**Saving and Investment**
- Real estates (land, rental estates, business partnership, loans) and their values
- Vehicles (automobile, ship) and their values
- Investment in stock exchange market and values
- Investment in money market and values
- Savings/other assets

**Lump sum money**
- Type of lump sum money received: inheritance, pension, insurance
- When received
- How much

**Debts**
- Loans: from whom/which institution and how much
- Guarantee: for whom and how much
- Other debts
<table>
<thead>
<tr>
<th>Expectation</th>
<th>Satisfaction</th>
</tr>
</thead>
<tbody>
<tr>
<td>• Opportunity to leave inheritance to children</td>
<td>• Physical health</td>
</tr>
<tr>
<td>• Opportunity to receive inheritance</td>
<td>• Mental health</td>
</tr>
<tr>
<td>• For being employed: opportunity to continue working full time</td>
<td>• Economic situation</td>
</tr>
<tr>
<td>• For being unemployed: opportunity to find work to earn income</td>
<td>• Relations with spouse</td>
</tr>
<tr>
<td>• Opportunity to have long life</td>
<td>• Relations with children</td>
</tr>
<tr>
<td>• Opportunity for economic situations to get worsen</td>
<td>• Quality of life in general</td>
</tr>
<tr>
<td>• Opportunity for children to live in a better socio-economic environment</td>
<td></td>
</tr>
<tr>
<td>than the current one.</td>
<td></td>
</tr>
</tbody>
</table>
Figure 12: Exit Interview: When R dies

**Family Transfers**
- Help taking care of grandchildren
- Time spent for caring
- Transfers in terms of money and how much
- Other helps: types and how much

**Employment**
- When stop working at the time of R’s death
- How much revenues (before tax) R received at the time of his/her death.

**Assets and Debts**
- Any inheritance/will
- To whom
- Any debts, with whom and how much
- Any life insurance
Survey Methods: Sample Design and Sampling Method

Multi-stage stratified random sampling

Stage 1
Divide the country into 6 regions

Stage 2
Divide province into districts: urban and rural areas

Stage 3
In the urban area: Blocks
In rural area: Villages

Stage 4
Selected blocks/villages:
Select households with at least 1 member aged 45+

Select Sample provinces:
Select Sample districts
Select Sample blocks/villages

Sample size:

\[ n = \frac{\rho^* (1 - \rho^*) N \frac{\sigma^2}{\omega^2}}{N \sigma^2 + \rho^* (1 - \rho^*) Z_{\omega/2}^2} = \frac{0.5(1-0.5)(21143975)(2328)^2}{(21143975)(0.0156)^2+0.5(1-0.5)(2328)^2} = 5556.4 \]
Survey Methods: Sampling design and sampling method

- **Sample design:** The multi-stage stratified random sampling.

- **Sample size:** 5,600 households ($n$)
  - $n$ at $e = 0.0156$ and the confident level of $1 - \alpha = 0.99$:
    
    \[
    n = \frac{Ne^2 + p^*(1-p^*)Z_{\alpha/2}^2}{(21143975)(0.0156)^2 + 0.5(1-0.5)(2.326)^2}
    \]
    
    $n = 5556.4 \approx 5,600$

- **Sampling method:**
  - From the total population and household data of Department of Provincial Administration (DOPA), Ministry of Interior, the two-stage stratified random sampling is employed:
    - **Stage 1:** 6 regions of Thailand are classified: Bangkok & Vicinity, East, North, Northeast, and South. In each region, small provinces (with population aged from 45 less than 250,000 persons) and large provinces (with population aged from 45 more than 250,000 persons) are separated. One small province and one large province will be selected from each region. However, in the East, there are only 7 provinces and the number of population are not as many as in other regions. Thus, the number of households in the East is reduced.
    - **Table 1:** Provinces sampled from each region in Stage 1

<table>
<thead>
<tr>
<th>Region</th>
<th>Large-size Province</th>
<th>Number of Households</th>
<th>Small-size Province</th>
<th>Number of Households</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bangkok and vicinity</td>
<td>Bangkok</td>
<td>2,334,126</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>Souhth</td>
<td>Nonthaburi</td>
<td>506,548</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>North</td>
<td>Samut Prakan</td>
<td>497,386</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>South</td>
<td>Pathum Thani</td>
<td>446,121</td>
<td>-</td>
<td>-</td>
</tr>
<tr>
<td>East</td>
<td>-</td>
<td>Chanthaburi</td>
<td>193,307</td>
<td></td>
</tr>
<tr>
<td>Central</td>
<td>Petchabun</td>
<td>302,742</td>
<td>Sing Buri</td>
<td>67,911</td>
</tr>
<tr>
<td>Northeast</td>
<td>Khon Kaen</td>
<td>510,219</td>
<td>Surin</td>
<td>334,461</td>
</tr>
<tr>
<td>North</td>
<td>Chiangmai</td>
<td>650,667</td>
<td>Uttaradit</td>
<td>231,227</td>
</tr>
<tr>
<td>South</td>
<td>Songkhla</td>
<td>421,177</td>
<td>Krabi</td>
<td>141,027</td>
</tr>
</tbody>
</table>
Survey Methods (cont.)

- **Stage 2:** Each province sampled from Stage 1 is classified into 2 areas: urban and rural (defined by DOPA) and sampling
  - In urban area: a number of blocks
  - In rural area: a number of villages

- **Stage 3:** Sampling households from the sampled blocks/villages in Stage 2 according to the estimated sample size of the households (5,600 households):
  - Since the number of households in the sampled provinces are very different, especially those in Bangkok. Thus, the allocation with proportional to size will not be appropriate, i.e., the household sample size in some provinces will be relatively small, while that in Bangkok will be very large.
    - Thus, the sample sizes are re-designed as followed (Table 2):
      - For each large province, the sample size is 600 households
      - For each small province, the sample size is 400 households
      - For Bangkok and vicinity, the total sample size of 1,200 households is determined:
        - The sample size for Bangkok is 600 and for each province in the vicinity is 200 households
<table>
<thead>
<tr>
<th>Region</th>
<th>Province</th>
<th>Number of Households</th>
<th>In Population</th>
<th>In Sample</th>
</tr>
</thead>
<tbody>
<tr>
<td>Bangkok and Vicinity</td>
<td>Bangkok</td>
<td>2,334,126</td>
<td>600</td>
<td>600</td>
</tr>
<tr>
<td></td>
<td>Nonthaburi</td>
<td>506,548</td>
<td>200</td>
<td>200</td>
</tr>
<tr>
<td></td>
<td>Samuthprakarn</td>
<td>497,386</td>
<td>200</td>
<td>200</td>
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<tr>
<td></td>
<td>Pathumthani</td>
<td>446,121</td>
<td>200</td>
<td>200</td>
</tr>
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<td>Northeast</td>
<td>Khon Kaen</td>
<td>510,219</td>
<td>600</td>
<td>600</td>
</tr>
<tr>
<td></td>
<td>Surin</td>
<td>334,461</td>
<td>400</td>
<td>400</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>844,680</td>
<td>1,000</td>
<td>1,000</td>
</tr>
<tr>
<td>North</td>
<td>Chiangmai</td>
<td>650,667</td>
<td>600</td>
<td>600</td>
</tr>
<tr>
<td></td>
<td>Uttradit</td>
<td>231,227</td>
<td>400</td>
<td>400</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>881,894</td>
<td>1,000</td>
<td>1,000</td>
</tr>
<tr>
<td>South</td>
<td>Songkla</td>
<td>421,177</td>
<td>600</td>
<td>600</td>
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<tr>
<td></td>
<td>Krabi</td>
<td>141,027</td>
<td>400</td>
<td>400</td>
</tr>
<tr>
<td></td>
<td>Total</td>
<td>562,204</td>
<td>1,000</td>
<td>1,000</td>
</tr>
<tr>
<td>All regions</td>
<td></td>
<td>6,369,919</td>
<td>5,600</td>
<td>5,600</td>
</tr>
</tbody>
</table>

Values of HART

The first longitudinal and household panel survey on aging in Thailand by utilizing computer program and CAPI instrument, and a sister study of HRS.

Data base on aging in multi-disciplinary dimensions: Wave 1 and Wave 2 in the data archive at NIDA.

Making possible to study of the dynamic changes in aging behaviors of the elderly in Thailand and in comparison with other countries.

Hoping to support to meet UN SDG – Goal 3 - Ensure healthy lives and promote well-being of all at all ages:
• With data which is high-quality, accessible, timely, reliable and disaggregated by income, sex, age, race, ethnicity, migration status, disability and geographic location and other characteristics relevant in national contexts.

Source: TRANSFORMING OUR WORLD: THE 2030 AGENDA FOR SUSTAINABLE DEVELOPMENT
Output and Outcome of HART

Websites: Center for Aging Society Research [http://rc-demo.nida.ac.th/casr/](http://rc-demo.nida.ac.th/casr/) & NIDA Intelligence and Information Center [http://iic.nida.ac.th/main/?page_id=564](http://iic.nida.ac.th/main/?page_id=564)

Data Utilization from HART, 2018 - 2019

<table>
<thead>
<tr>
<th>Category</th>
<th>2018 (May-Dec)</th>
<th>2019 (Jan-Jun)</th>
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<tr>
<td>Thesis/Disertation</td>
<td>1</td>
<td>4</td>
</tr>
<tr>
<td>Academic Papers</td>
<td>2</td>
<td>5</td>
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<tr>
<td>Research Project</td>
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</table>

Facebook of Center for Aging Society Research [https://www.facebook.com/HART.Thailand/](https://www.facebook.com/HART.Thailand/)
Output & Outcome of HART

WHO request to access data: Health, Aging, and Retirement in Thailand (HART)

“Mortality of the Thai Elderly: Preliminary Findings from HART Panel Survey,” presented at The Asian Conference on Aging and Gerontology (AGEN2018), organized by The International Academic Forum (IAFOR), Kobe, Japan (June 9, 2018)


Panel Survey and Study on Health, Aging, and Retirement in Thailand

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Living reference work entry
First Online: 21 May 2019
DOI: https://doi.org/10.1007/978-3-319-69892-2_982-1
Unpublished paper on cognition of the respondents from HART Wave 2 (2018)


Using paradata from Wave 2 on cognition data (Part C)
Figure 1: Word recall test (Round 1) score plot with standard errors by each age group.

Table 2: Descriptive statistics of word recall (round 1) test score by age group.

<table>
<thead>
<tr>
<th>Age Group</th>
<th>N</th>
<th>M</th>
<th>SD</th>
<th>SE</th>
</tr>
</thead>
<tbody>
<tr>
<td>45-49</td>
<td>112</td>
<td>4.40</td>
<td>2.16</td>
<td>0.20</td>
</tr>
<tr>
<td>50-59</td>
<td>733</td>
<td>4.14</td>
<td>1.93</td>
<td>0.07</td>
</tr>
<tr>
<td>60-69</td>
<td>1046</td>
<td>3.65</td>
<td>2.06</td>
<td>0.06</td>
</tr>
<tr>
<td>70-79</td>
<td>921</td>
<td>2.94</td>
<td>1.94</td>
<td>0.06</td>
</tr>
<tr>
<td>80-89</td>
<td>641</td>
<td>2.08</td>
<td>1.90</td>
<td>0.07</td>
</tr>
<tr>
<td>&gt;=90</td>
<td>140</td>
<td>1.49</td>
<td>1.81</td>
<td>0.15</td>
</tr>
</tbody>
</table>
Figure 3: Numeracy test score plot with standard errors by each age group.

Table 4: Descriptive statistics of numeracy test score by age group.

<table>
<thead>
<tr>
<th>Age Group</th>
<th>N</th>
<th>M</th>
<th>SD</th>
<th>SE</th>
</tr>
</thead>
<tbody>
<tr>
<td>45-49</td>
<td>97</td>
<td>2.89</td>
<td>1.73</td>
<td>0.18</td>
</tr>
<tr>
<td>50-59</td>
<td>639</td>
<td>2.66</td>
<td>1.72</td>
<td>0.07</td>
</tr>
<tr>
<td>60-69</td>
<td>851</td>
<td>2.46</td>
<td>1.74</td>
<td>0.06</td>
</tr>
<tr>
<td>70-79</td>
<td>698</td>
<td>2.03</td>
<td>1.60</td>
<td>0.06</td>
</tr>
<tr>
<td>80-89</td>
<td>376</td>
<td>1.73</td>
<td>1.48</td>
<td>0.08</td>
</tr>
<tr>
<td>&gt;=90</td>
<td>61</td>
<td>1.59</td>
<td>1.28</td>
<td>0.16</td>
</tr>
</tbody>
</table>
Date memory test score

Figure 4 Date memory test score plot with standard errors by each age group

Table 5 Descriptive statistics of date memory test score by age group

<table>
<thead>
<tr>
<th>Age Group</th>
<th>N</th>
<th>M</th>
<th>SD</th>
<th>SE</th>
</tr>
</thead>
<tbody>
<tr>
<td>45-49</td>
<td>3</td>
<td>3.67</td>
<td>0.58</td>
<td>0.33</td>
</tr>
<tr>
<td>50-59</td>
<td>8</td>
<td>4.00</td>
<td>0.00</td>
<td>0.00</td>
</tr>
<tr>
<td>60-69</td>
<td>871</td>
<td>3.50</td>
<td>0.93</td>
<td>0.03</td>
</tr>
<tr>
<td>70-79</td>
<td>916</td>
<td>3.34</td>
<td>1.06</td>
<td>0.03</td>
</tr>
<tr>
<td>80-89</td>
<td>644</td>
<td>2.69</td>
<td>1.42</td>
<td>0.06</td>
</tr>
<tr>
<td>&gt;=90</td>
<td>139</td>
<td>2.31</td>
<td>1.55</td>
<td>0.13</td>
</tr>
</tbody>
</table>
Challenges:

• HART has been humbly conducted since 2009 as a pilot and a national panel survey and study with the funding from the Thai government research grants - (National Research Commission of Thailand - NRCT, the Commission on Higher Education - CHE):
  • A longitudinal and panel survey, but the government funding (in social sciences) is not a longitudinal grant.
  • The understanding from the main funding provider, the Budget Bureau, the final say. It is not friendly with the panel survey.

• The difficulties and costly in the nature of longitudinal panel survey and study: Two conditions are necessary to sustain HART project
  • A longitudinal research grant for every 6 years: to be able to conduct the study with the same cohort and replace the attrition and correct any the problems. (From HRS experiences)
  • An investment in computer system and human resources for the panel survey in order to manage and administrate the data and data archive
  • A training program for users to use and analyze household panel data

• More efforts by HART to provide information and dissemination the value of HART data to the government agencies.

Thank you