

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

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Outline

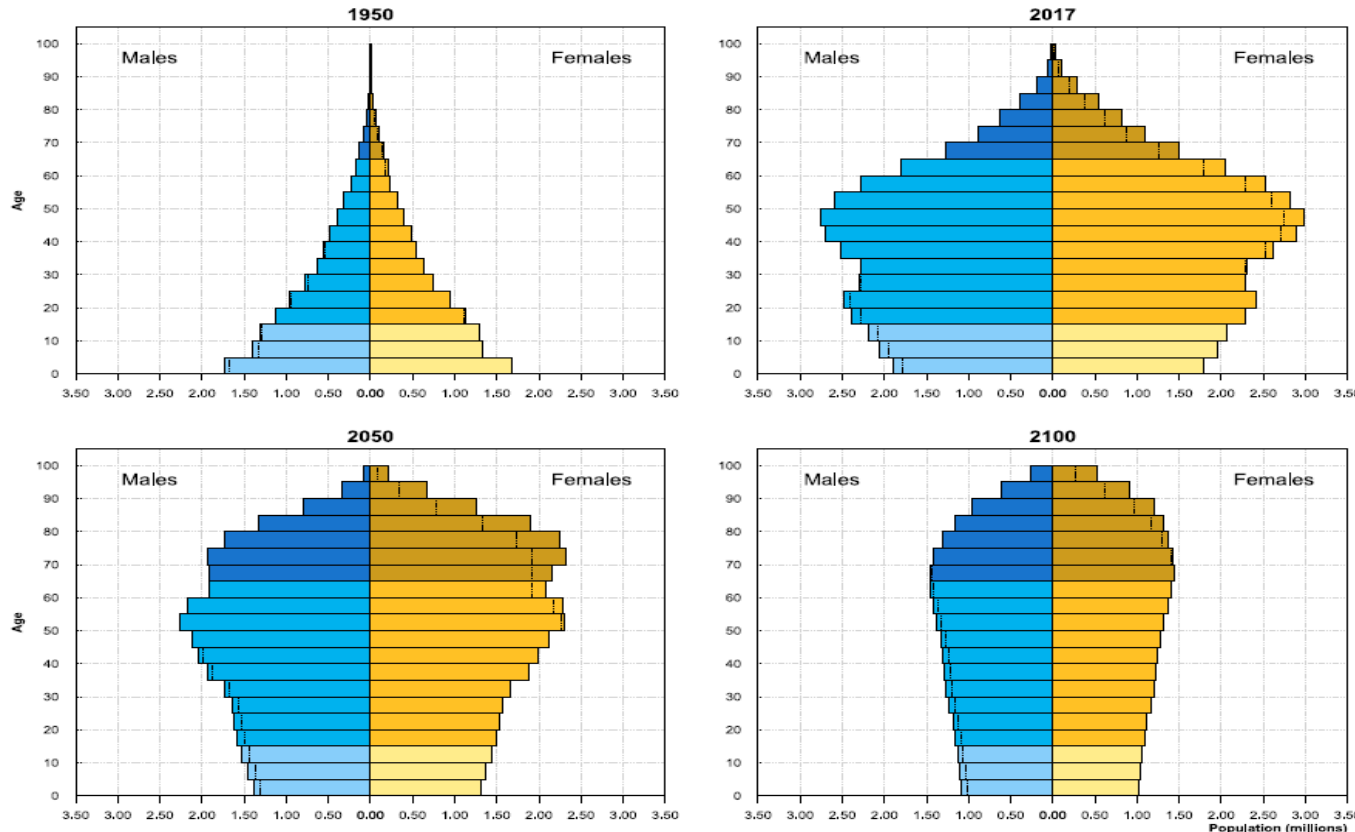
- Introduction
- Purposes of HART project
- Study Frame of Reference
- Survey methods: units, interviews, instrument
- Values of HART
- Challenges

Introduction

Thailand - Transformation into aging society

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

Population by age groups and sex (absolute numbers)



The dotted line indicates the excess male or female population in certain age groups. The data are in thousands or millions.

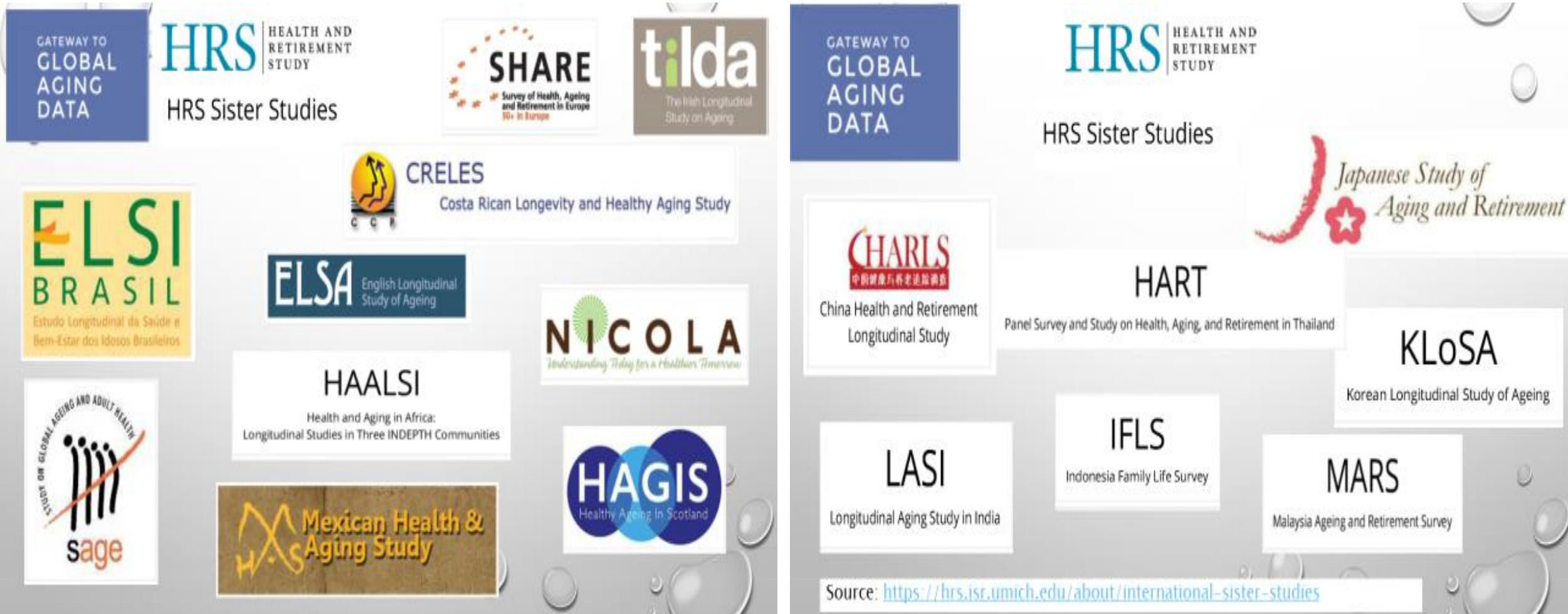
Preparation in terms of policies and measures in other countries with evidence-base and longitudinal panel data

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



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

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

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)

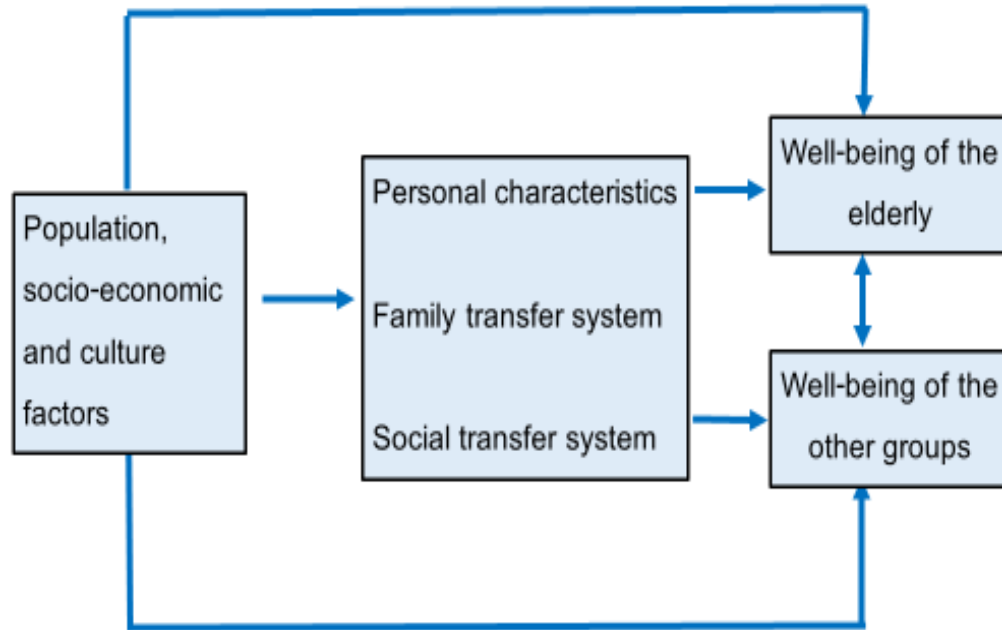
- Interview: Face-to-face interview
- Survey instruments:
 - Wave 1 (Base line): paper and pencil interview (PAPI)
 - Wave 2 & Wave 2+ : computer assisted personal interview (CAPI)

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/>

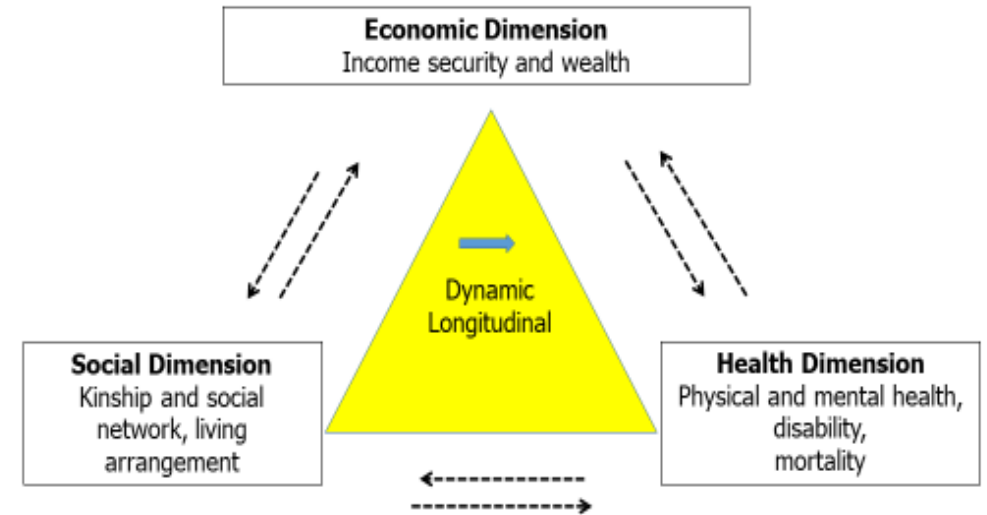
Study Frame of Reference for HART

Figure 1 Well-being of the Elderly



Source: Hemalin, Albert (2002). "Theoretical Perspectives, Measurement Issues, and Related Research," in *The Well-being of the Elderly in Asia: A Four Country Comparative Study*. Edited by Albert Hemalin. Ann Arbor: The University of Michigan Press. P.108

Figure 2: Dynamics in Aging Behaviors



Note: Revised from Figure 4 in Borsch-Supan, Jürges and Lipps (2003:7)

Source: Borsch-Supan, Axel, Hendrik Jürges and Oliver Lipps. 2003. "SHARE: Building a Panel Survey on Health, Aging, and Retirement in Europe," Mannheim Research Institute for Economics of Aging (MEA). 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

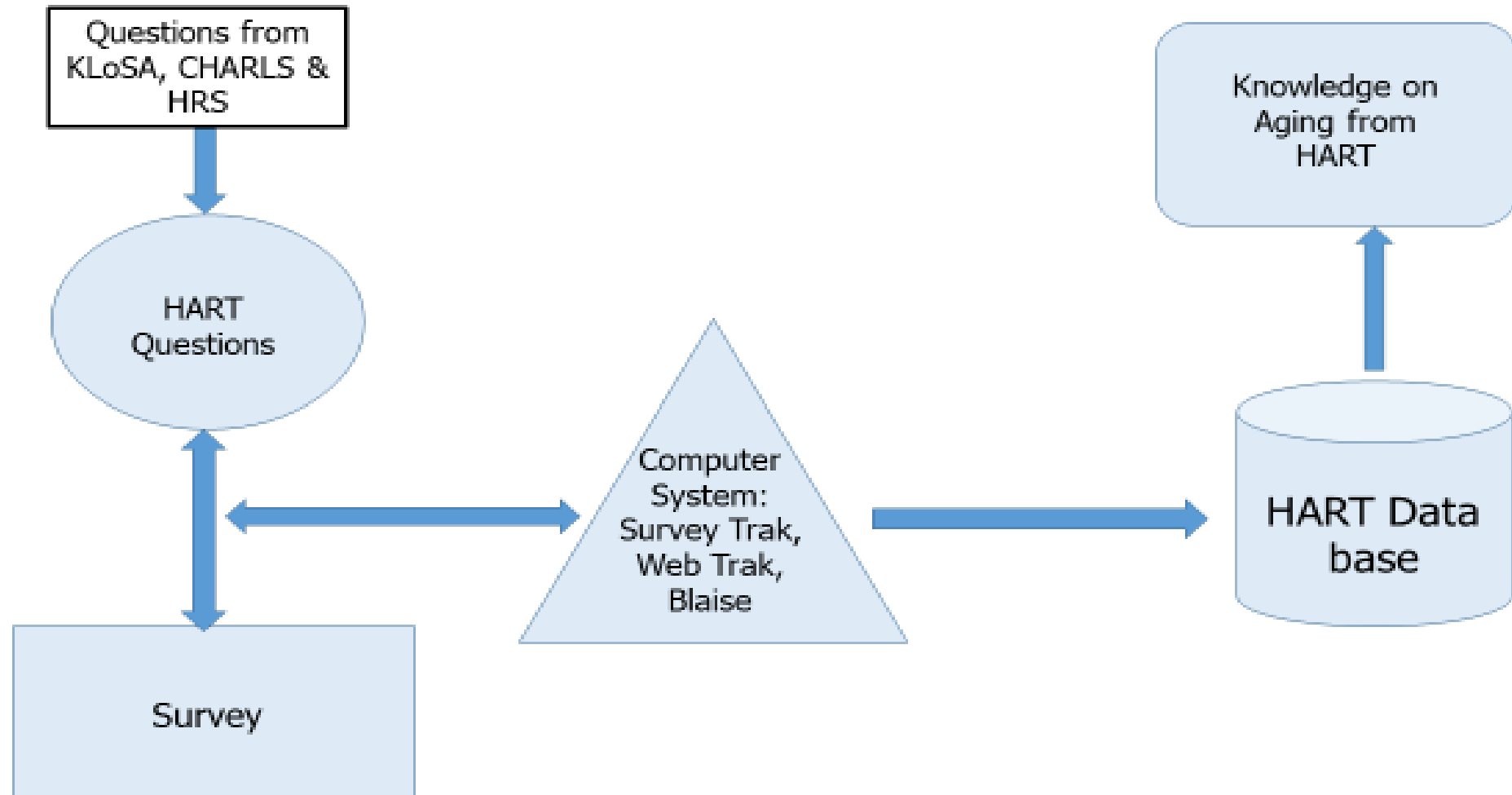


Figure 4: Cover Screen

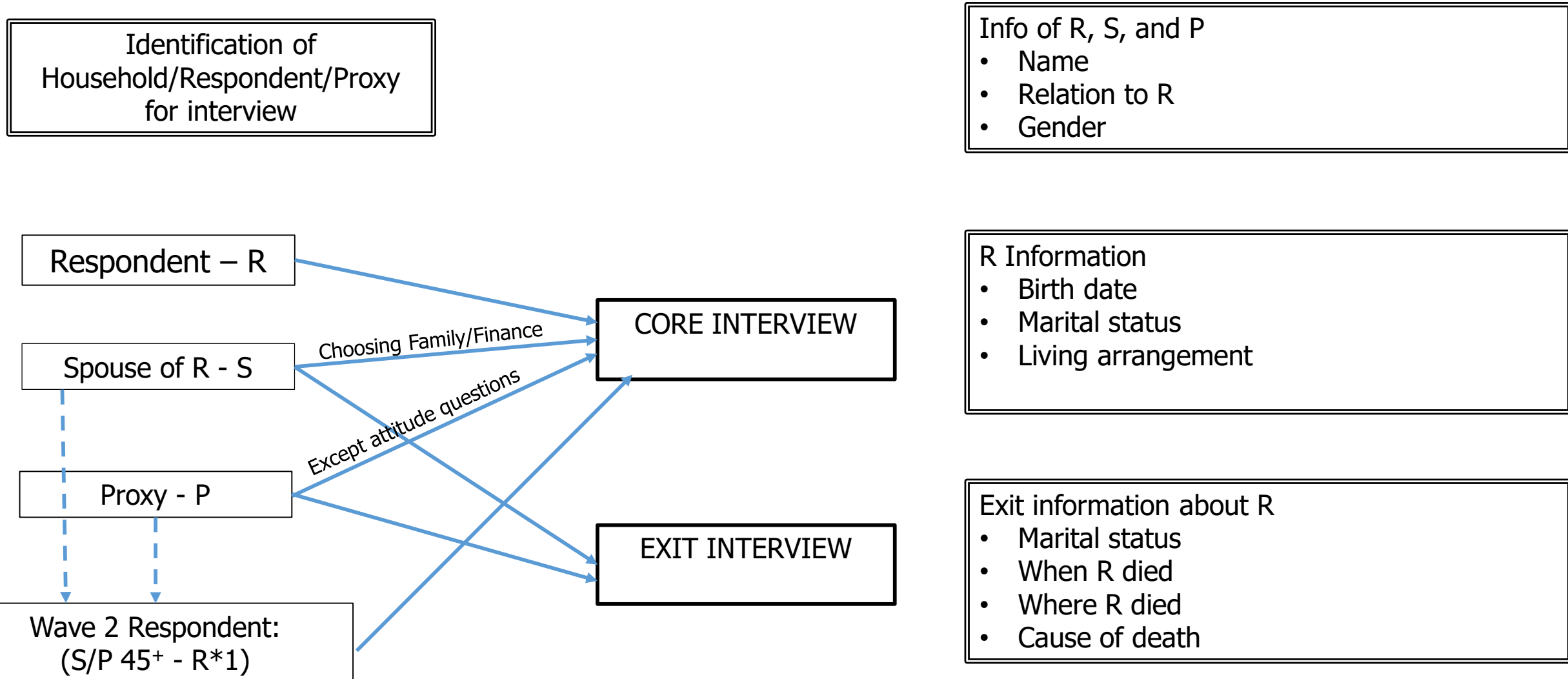


Figure 5: Demographic Characteristics

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

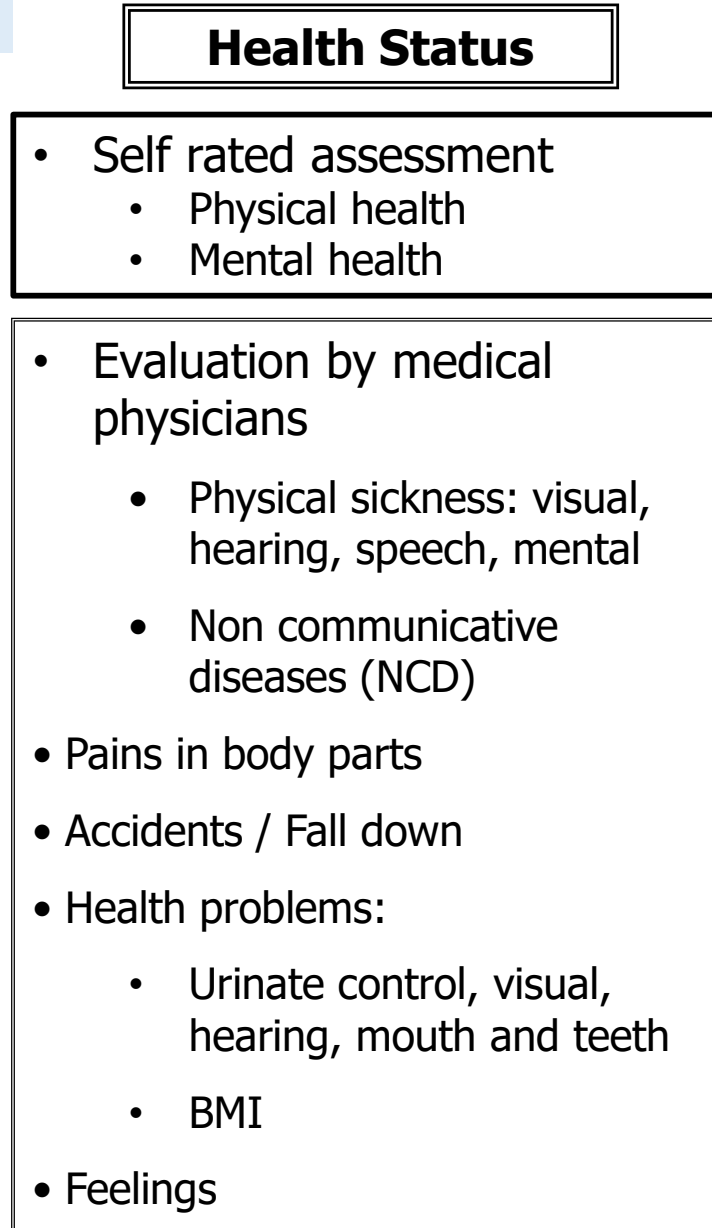
- Status of parents
- Communication and visits
- Transfers: money and in-kind (to and from parents)

- The in-laws
- Transfers: money and in-kind (to and from the in-laws)

Siblings

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

Figure 7: Health Dimension



No biomarkers

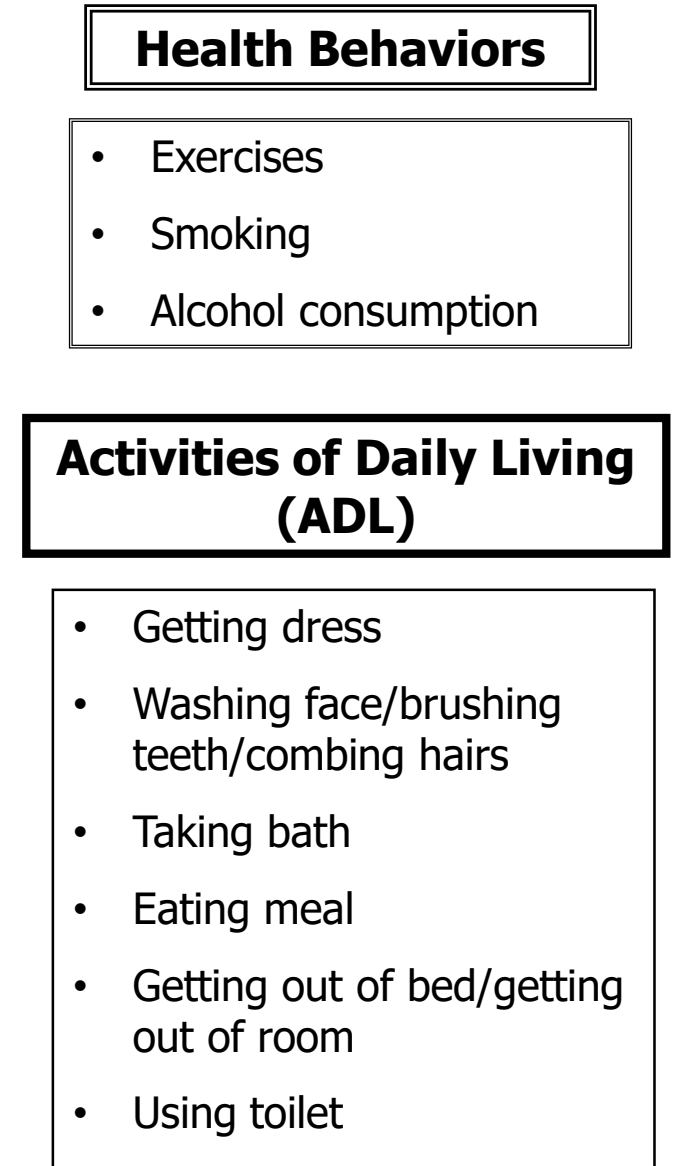


Figure 7.1: Health Dimension

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

Figure 8.2: Employment Dimension (Cont.)

Common Questions

Main Employment

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

Main Employment

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

- 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

Figure 9: Income Dimension

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

Figure 9: Income Dimension

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/heritance)

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

Figure 11: Life Expectation and Satisfaction Dimension

Expectation

- Opportunity to leave inheritance to children
- Opportunity to receive inheritance
- For being employed: opportunity to continue working full time
- For being unemployed: opportunity to find work to earn income
- Opportunity to have long life
- Opportunity for economic situations to get worsen
- Opportunity for children to live in a better socio-economic environment than the current one.

Satisfaction

- Physical health
- Mental health
- Economic situation
- Relations with spouse
- Relations with children
- Quality of life in general

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

Select
Sample
households


Sample size:

$$n = \frac{p^*(1-p^*)N^2 Z_{\alpha/2}^2}{N^2 + p^*(1-p^*)Z_{\alpha/2}^2} = \frac{0.5(1-0.5)(21143975)(2326)^2}{(21143975)(0.0156)^2 + 0.5(1-0.5)(2326)^2} = 5556.4$$

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 $1 - \alpha = 0.99$:

$$n = \frac{p^*(1-p^*)NZ_{\alpha/2}^2}{Ne^2 + p^*(1-p^*)Z_{\alpha/2}^2} = \frac{0.5(1-0.5)(21143975)(2.326)^2}{(21143975)(0.0156)^2 + 0.5(1-0.5)(2.326)^2}$$



= 5556.4 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

Table 1: Provinces sampled from each region in Stage 1

Region	Large-size		Small-size	
	Province	Number of Households	Province	Number of Households
Bangkok and vicinity	Bangkok	2,334,126	-	-
	Nonthaburi	506,548	-	-
	Samut Prakan	497,386	-	-
	Pathum Thani	446,121	-	-
East	-	-	Chanthaburi	193,307
Central	Petchabun	302,742	Sing Buri	67,911
Northeast	Khon Kaen	510,219	Surin	334,461
North	Chiangmai	650,667	Uttaradit	231,227
South	Songkhla	421,177	Krabi	141,027

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 much 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

Table 2 Total Households and Sampled Households by Sampled Provinces and by Region (Number of Households)

Region	Province	Number of Households	
		In Population	In Sample
Bangkok and Vicinity	Bangkok	2,334,126	600
	Nonthaburi	506,548	200
	Samuthprakan	497,386	200
	Pathumthani	446,121	200

Table 2 (Cont.)

Northeast	Khon Kaen	510,219	600
	Surin	334,461	400
	Total	844,680	1,000
North	Chiangmai	650,667	600
	Uttaradit	231,227	400
	Total	881,894	1,000
South	Songkla	421,177	600
	Krabi	141,027	400
	Total	562,204	1,000

Source: All regions
<http://203.113.86.149/xstat/pop92-3.html>
<http://www.dons.go.th> Retrieved on July 29, 2006

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

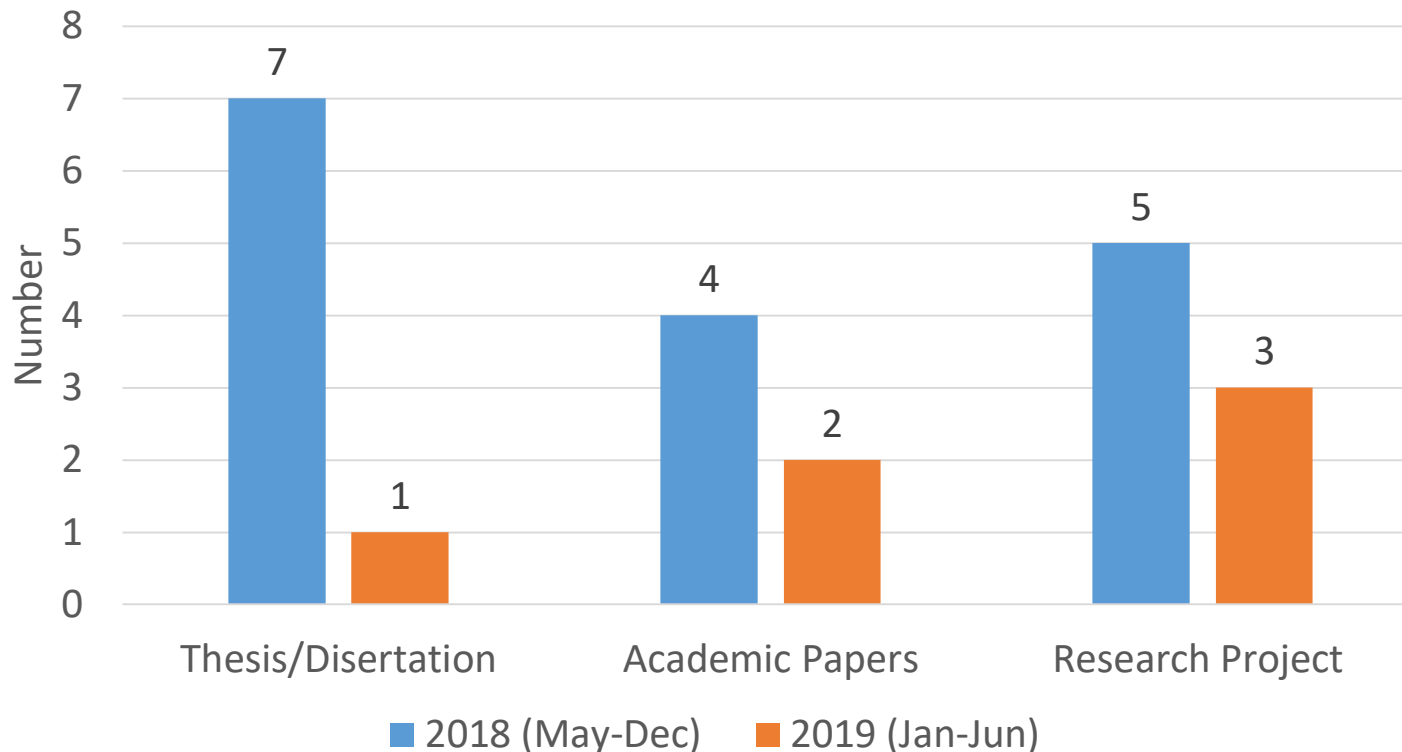
Source: TRANSFORMING OUR WORLD: THE 2030 AGENDA FOR SUSTAINABLE DEVELOPMENT

<https://sustainabledevelopment.un.org/content/documents/21252030%20Agenda%20for%20Sustainable%20Development%20web.pdf>

Output and Outcome of HART

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

Data Utilization from HART, 2018 - 2019



Facebook of Center for Aging Society Research
<https://www.facebook.com/HART.Thailand/>

Output & Outcome of HART



Encyclopedia of Gerontology and Population Aging

Living Edition

| Editors: Danan Gu, Matthew E. Dupre

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

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)

Theerawanviwat, Duanpen. 2014 "Intergenerational Transfers and Family Structure: Evidence from Thailand," Ageing Int. DOI 10.1007/s12126-014-9199-6. Springer Science+Business Media New York

"Income Distribution and Socio-economic Disparity in Aging Society in Thailand," a manuscript in *Journal of Social System Study*, Vol. 39, September, 2019.

Unpublished paper on cognition of the respondents from HART Wave 2 (2018)

“Cognitive decline among elderly in Thailand: Multi-theories perspectives”
by
Arnond Sakworawich and Kritsana Chansathit.

Using paradata from Wave 2 on cognition data (Part C)

Word recall test score (Round 1)

Figure 1 *Word recall test (Round 1) score plot with standard errors by each age group*

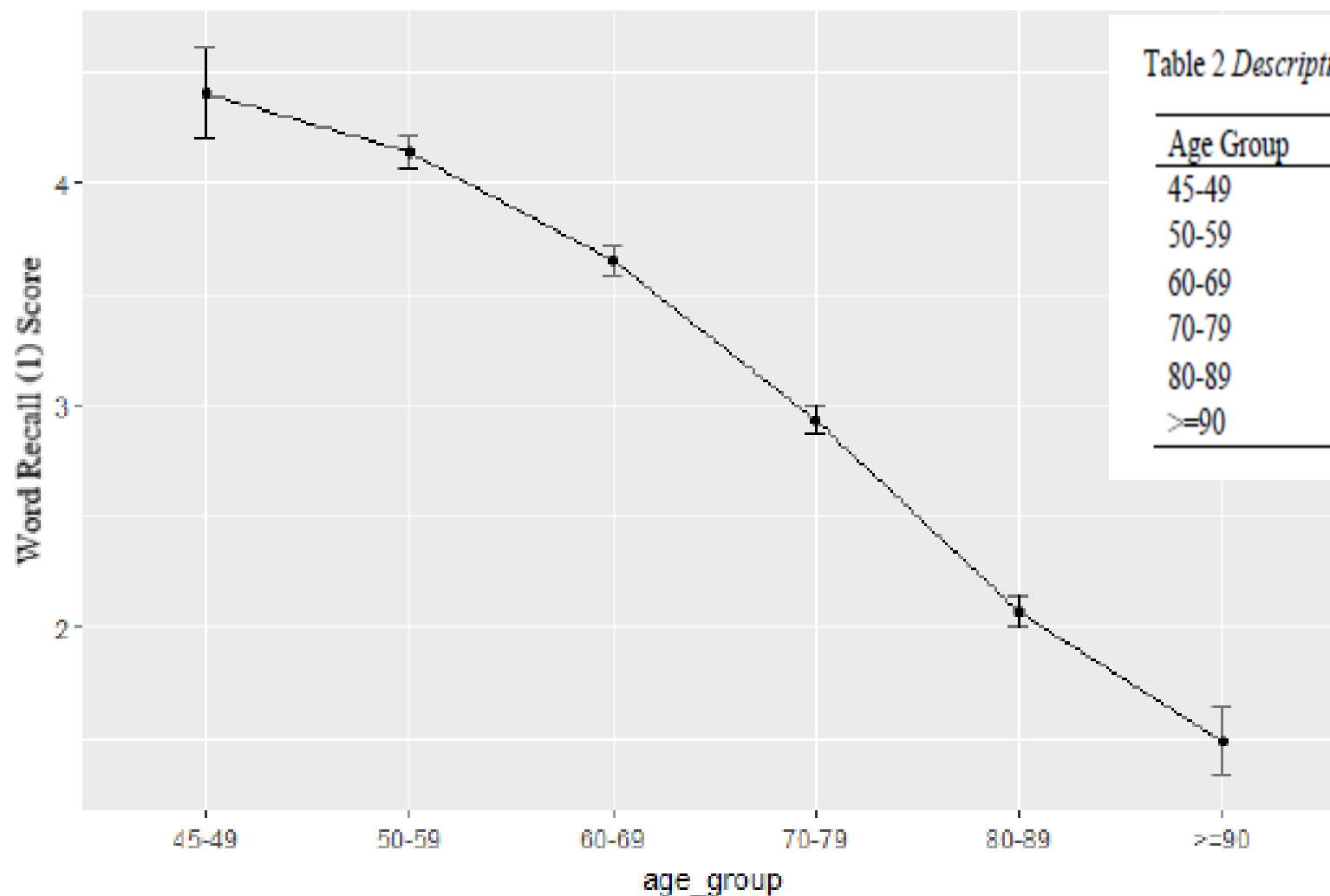


Table 2 *Descriptive statistics of word recall (round 1) test score by age group*

Age Group	<i>N</i>	<i>M</i>	<i>SD</i>	<i>SE</i>
45-49	112	4.40	2.16	0.20
50-59	733	4.14	1.93	0.07
60-69	1046	3.65	2.06	0.06
70-79	921	2.94	1.94	0.06
80-89	641	2.08	1.90	0.07
≥90	140	1.49	1.81	0.15

Numeracy test score

Figure 3 Numeracy test score plot with standard errors by each age group

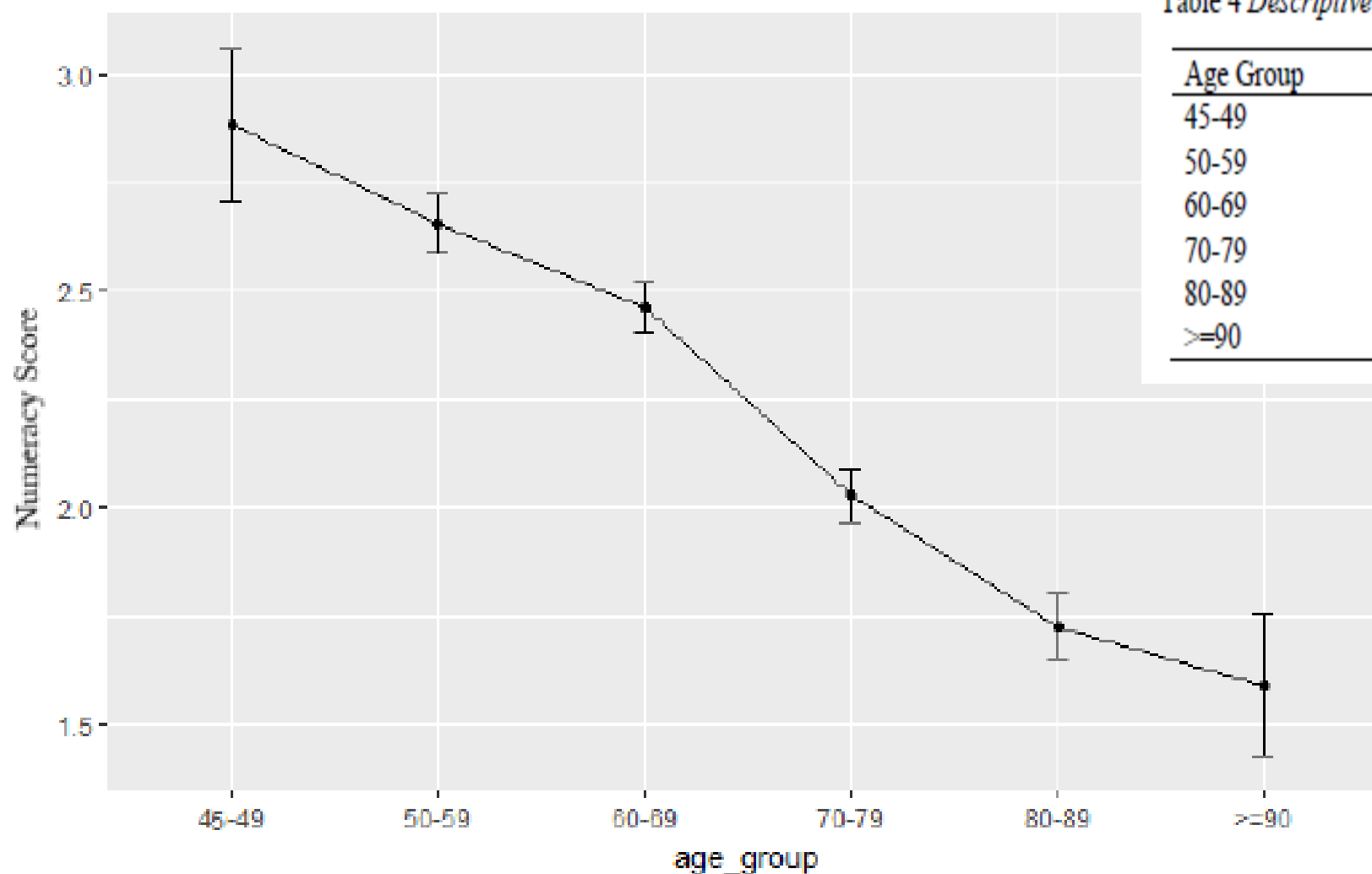


Table 4 Descriptive statistics of numeracy test score by age group

Age Group	N	M	SD	SE
45-49	97	2.89	1.73	0.18
50-59	639	2.66	1.72	0.07
60-69	851	2.46	1.74	0.06
70-79	698	2.03	1.60	0.06
80-89	376	1.73	1.48	0.08
≥90	61	1.59	1.28	0.16

Date memory test score

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

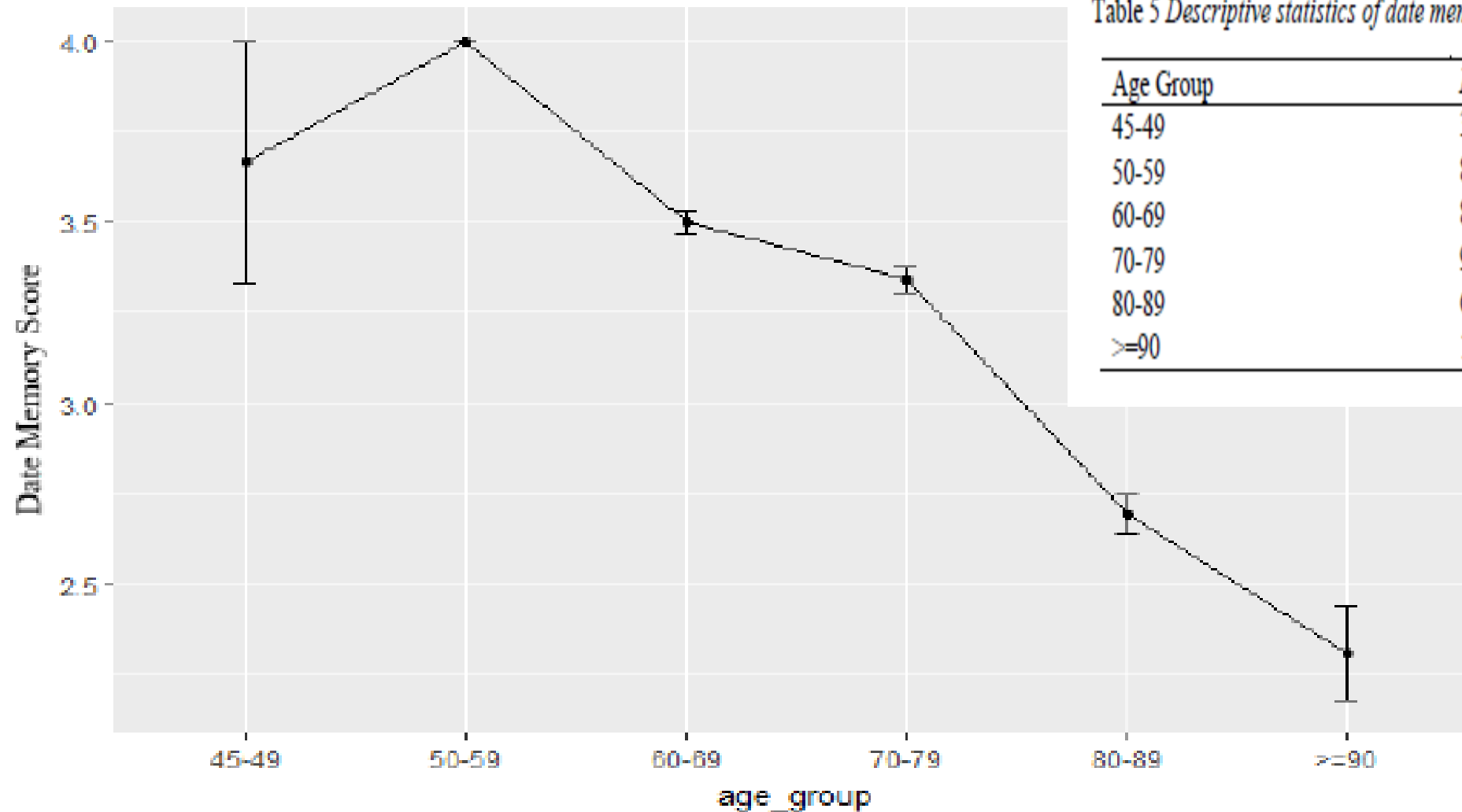


Table 5 *Descriptive statistics of date memory test score by age group*

Age Group	N	M	SD	SE
45-49	3	3.67	0.58	0.33
50-59	8	4.00	0.00	0.00
60-69	871	3.50	0.93	0.03
70-79	916	3.34	1.06	0.03
80-89	644	2.69	1.42	0.06
>=90	139	2.31	1.55	0.13

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 Thank you and dissemination the value of HART data to the government agencies.