



APPENDICES

ลิขสิทธิ์มหาวิทยาลัยเชียงใหม่

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Appendix A

Thailand's Provincial Poverty Lines in 2009 and 2010

(unit: baht/person/month)

Region/ Province	2009		2010		Region/ Province	2009		2010	
	Urban	Rural	Urban	Rural		Urban	Rural	Urban	Rural
Bangkok	2,135		2,198						
Central	1,828	1,563	1,897	1,645	North	1,602	1,452	1,679	1,542
Nakhonpathom	1,821	1,557	1,907	1,654	Chiangmai	1,667	1,511	1,765	1,621
Nonthaburi	1,898	1,623	1,931	1,674	Lamphun	1,631	1,478	1,703	1,564
Pathumthani	1,749	1,496	1,857	1,610	Lampang	1,645	1,491	1,705	1,565
SamutPrakan	1,964	1,679	2,014	1,746	Uttaradit	1,578	1,430	1,665	1,529
Samutsakhon	1,869	1,598	1,932	1,675	Phrae	1,614	1,463	1,693	1,555
Chainat	1,788	1,529	1,900	1,648	Nan	1,618	1,467	1,649	1,515
Phranakhonsiayutthaya	1,865	1,594	1,875	1,626	Phayao	1,634	1,481	1,748	1,605
Lopburi	1,774	1,517	1,860	1,613	Chiangrai	1,621	1,470	1,701	1,563
Saraburi	1,825	1,560	1,887	1,636	Maehongson	1,607	1,457	1,614	1,482
Singburi	1,775	1,518	1,867	1,619	Nakhonsawan	1,556	1,410	1,653	1,519
Angthong	1,772	1,515	1,859	1,612	Uthaithani	1,585	1,436	1,651	1,517
Chanthaburi	1,829	1,564	1,896	1,644	Kamphangphet	1,549	1,404	1,644	1,510
Chachoengsao	1,761	1,505	1,804	1,564	Tak	1,562	1,416	1,632	1,499
Chonburi	1,920	1,642	1,990	1,726	Sukhothai	1,591	1,442	1,658	1,522
Trat	1,814	1,551	1,876	1,627	Phitsanulok	1,593	1,444	1,657	1,521
Nakhonnayok	1,764	1,508	1,846	1,600	Phichit	1,571	1,424	1,655	1,520
Prachinburi	1,774	1,517	1,889	1,638	Phetchabun	1,555	1,409	1,612	1,480
Rayong	1,882	1,609	1,947	1,689					
Sakaeo	1,766	1,510	1,831	1,588	Northeast	1,558	1,454	1,648	1,565
Ratchaburi	1,794	1,534	1,886	1,636	Nakhonratchasima	1,540	1,437	1,650	1,567
Kanchanaburi	1,767	1,511	1,847	1,601	Buriram	1,551	1,447	1,624	1,542
Suphanburi	1,773	1,516	1,823	1,581	Surin	1,550	1,446	1,633	1,551
Samutsongkhram	1,776	1,519	1,880	1,630	Sisaket	1,538	1,435	1,628	1,546
Phetchaburi	1,809	1,547	1,898	1,646	Ubonratchathani	1,555	1,451	1,650	1,567
Prachuapkhirikhan	1,815	1,552	1,861	1,614	Yasothon	1,575	1,470	1,656	1,573
					Chaiyaphum	1,572	1,467	1,642	1,559
South	1,634	1,514	1,706	1,594	Amnatcharoen	1,556	1,452	1,634	1,552
Nakhonsithammarat	1,618	1,499	1,713	1,601	Nongbualamphu	1,539	1,436	1,623	1,541
Krabi	1,610	1,491	1,687	1,576	Khonkaen	1,610	1,502	1,673	1,589
Phangnga	1,621	1,502	1,705	1,593	Udonthani	1,538	1,435	1,631	1,549
Phuket	1,773	1,643	1,827	1,707	Loei	1,555	1,451	1,655	1,572
Suratthani	1,669	1,546	1,740	1,625	Nongkhai	1,565	1,461	1,662	1,578
Ranong	1,626	1,506	1,703	1,591	Mahasarakham	1,542	1,439	1,654	1,571
Chumphon	1,689	1,565	1,720	1,607	Roiet	1,571	1,466	1,664	1,580
Songkhla	1,680	1,557	1,733	1,619	kalasin	1,569	1,464	1,659	1,576
Satun	1,600	1,483	1,659	1,550	Sakonnakhon	1,569	1,464	1,678	1,594
Trang	1,639	1,519	1,700	1,588	Nakhonphanom	1,557	1,453	1,632	1,550
Phatthalung	1,653	1,532	1,719	1,606	Mukdahan	1,572	1,467	1,656	1,573
Pattani	1,537	1,424	1,616	1,510					
Yala	1,660	1,538	1,733	1,619					
Naratiwat	1,528	1,416	1,631	1,523					

Appendix B

Estimation Results from Selection Equation in Heckman Selection Model

Dependent variable: whether household borrowed in 2008			
Independent variables	Model 1	Model 2	Model 3
<i>Household head characteristics:</i>			
Age	-0.0035** (-4.91)	-0.0035** (-4.89)	-0.0035** (-4.87)
Women	0.0361* (2.00)	0.0364* (2.01)	0.0366* (2.02)
Education (years)	-0.0345** (-12.47)	-0.0345** (-12.48)	-0.0346** (-12.50)
Single	-0.5376** (-13.59)	-0.5373** (-13.59)	-0.5357** (-13.54)
Widowed/ divorced/ separated	-0.1542** (-6.98)	-0.1544** (-6.99)	-0.1537** (-6.95)
<i>Demographics:</i>			
Household size (persons)	0.0954** (17.05)	0.0953** (17.02)	0.0943** (16.88)
Dependency ratio	-0.2967** (-10.80)	-0.2968** (-10.81)	-0.2948** (-10.73)
<i>Socio-economics occupations:</i>			
Landless farmers	0.2528** (6.79)	0.2529** (6.80)	0.2524** (6.79)
Fishing, forestry, agriculture services	-0.3411** (-6.45)	-0.3404** (-6.44)	-0.3370** (-6.37)
Entrepreneurs	-0.2781** (-10.93)	-0.2773** (-10.90)	-0.2761** (-10.85)
Professional and technical	-0.4159** (-11.24)	-0.4154** (-11.23)	-0.4153** (-11.23)
Farm and general workers	-0.3716** (-9.08)	-0.3710** (-9.07)	-0.3695** (-9.03)
Other employees	-0.3666** (-15.66)	-0.3661** (-15.64)	-0.3645** (-15.57)
Unemployed	-0.2556** (-9.52)	-0.2548** (-9.49)	-0.2536** (-9.45)
<i>Income and assets:</i>			
Monthly income (THB 1,000)	-0.0040** (-3.78)	-0.0040** (-3.78)	-0.0040** (-3.78)
Land tenure	0.6802** (27.02)	0.6800** (27.02)	0.6805** (27.02)
Home business	0.1466** (7.58)	0.1463** (7.57)	0.1465** (7.57)
Number of motorcycles	0.0256** (4.03)	0.0262** (4.14)	0.0260** (4.12)

Dependent variable: whether household borrowed in 2008			
Independent variables	Model 1	Model 2	Model 3
Number of cars	-0.0926** (-8.95)	-0.0933** (-9.01)	-0.0941** (-9.08)
<i>Other variables:</i>			
Rural household	0.4137** (26.33)	0.4138** (26.34)	0.4135** (26.32)
Accessibility to other sources of credit	0.1811** (13.32)	0.1816** (13.35)	0.1934** (13.93)
Difficulty to get emergency loan	0.0887** (7.64)	0.0889** (7.65)	0.0867** (7.47)
<i>Constant</i>	-0.9981** (-19.39)	-0.9999** (-19.43)	-1.0047** (-19.50)

Notes: Numbers in parenthesis indicate z-statistics.

***, ** and * represent level of significance at 99%, 95% and 90%.

Appendix C

The National Rural Development Database (NRD54)

6 Dimensions	31 Indicators	Criterion
1. Infrastructure (maximum score of 21)	(1) Road	Well in the dry season
	(2) Drinking water	63%-95% of total households have drinking water 5 liters per person per day
	(3) Water	63%-95% of total households have water 45 liters per person per day
	(4) Water for agriculture	There is enough in the rainy season
	(5) Electricity	90% of total households
	(6) Cultivation land	10%-25% of total households own or rent land for cultivation
	(7) Communication	10% of total households access to phones and internet
2. Economic (maximum score of 21)	(8) Employment	80%-97% of people (age of 15-60 years)
	(9) Work in business sector within sub-district	5%-10% of total households
	(10) Productivity of the paddy	Majority of households have output Central: 301-400 kg. per rai North: 331-430 kg. per rai Northeast: 271-370 kg. per rai South: 271-370 kg. per rai (an acre = 2.471 rai)
	(11) Productivity of the farm (e.g., soybean, green beans, peanuts, cane, cassava etc.)	Majority of households have annual income THB20,000-40,000
	(12) Other products from the farm	i) rubber planting have annual income THB20,000-40,000 ii) 40%-80% of households use cattle breeding promote by the government iii) small sea fishing have annual income THB30,000-50,000 iv) medium and large fishing have annual income THB 3-4 million v) fresh water fishing have annual income

6 Dimensions	31 Indicators	Criterion
3. Health (maximum score of 12)	(13) Work in household business or community	THB20,000-40,000 vi) marine aquaculture have annual income THB100,000-150,000 vii) freshwater aquaculture have annual income THB20,000-40,000 viii) growing fruit, flower, vegetable have annual income THB20,000-40,000 Average annual income THB40,000-60,000
	(14) Benefit from tourism sector	1%-5% of total household get benefit from tourism sector
	(15) Safety in the workplace	There were injuries due to work or the illness is due to the use of chemical pesticides.
	(16) Protection of diseases	There were patients (no deceased) with diseases preventable by vaccines.
	(17) Sport	Competitive sports 3-6 times
	(18) Drug	The drug up to 5 people per 1,000 people
	(19) Current study of children	i) 5%-15% of children (15-17 years) studying high school level ii) 80%-99% of children (6-15 years) studying secondary education level iii) 60%-99% of children (3-5 years) studying primary education level iv) 30%-50% of people not attend secondary education level
	(20) Entry to high school education	30%-50% of people who have secondary education level
	(21) Education level	i) 5%-10% of people (>18 years) have high school degree or higher ii) 10%-20% of people (>15 years) have secondary education level iii) 5% of people (15-60 years) illiterate
	(22) Learning Community	5%-10% of total households learned from community learning centers or village philosophers
4. Education (maximum score of 9)	(23) Obtaining social	5%-10% of elder, people with disabilities,
5. Strong sense of community (maximum score of 15)		

6 Dimensions	31 Indicators	Criterion
	protection	orphan lack of care
	(24) Participation of the community	70%-95% of total households participated
	(25) The integration of the community	50%-90% of total households are take part in community group
	(26) Accessibility to capital	30%-50% of households that participate in community group can access to capital
6. Natural resources (maximum score of 15)	(27) The quality of the soil	Problem with shallow soil, leached soil
	(28) The quality of the water	60%-80% are surface water quality
	(29) Reforestation	50% of the forest plantation have forest and tree
	(30) Land use	75% of the agricultural area in the village used for cultivation
	(31) Environmental management	Unhygienic management of garbage and waste water. But there is not a problem

Appendix D

Description of Explanatory Variables Used in the Propensity Score Model

Variable name	Variable description	SES 2009	SES 2010
VF_dum	Household borrow from the Village Fund (1 = yes, 0 = otherwise)	23.80%	22.88%
HEADCOUNT	Being poor household (1 = yes, 0 = otherwise)	5.03%	4.74%
AGE	Age of household head (in year)	51.01	51.06
AGESQ	Square of age of household head (in year)	2,808.27	2,821.49
WOMEN	Women of household head (1 = yes, 0 = otherwise)	33.88%	34.81%
	Marital status of household head as follow:		
SINGLE	1 = single, 0 = otherwise	9.18%	10.03%
MARRIED	1 = married, 0 = otherwise	69.83%	69.03%
WIDOWED	1 = widowed/ divorced/ separated, 0 = otherwise	20.99%	20.93%
EDU	Education of household head (in year)	7.60	7.71
	Work status of household head as follow:		
EMPLOYER	Employer (1 = yes, 0 = otherwise)	6.53%	5.89%
OWN_COOP	Own- account worker or member of producers' cooperative (1 = yes, 0 = otherwise)	37.25%	38.85%
GOV_STATE	Government employee (1 = yes, 0 = otherwise)	12.36%	12.34%
FAMILY	Contributing family worker (1 = yes, 0 = otherwise)	2.35%	2.03%
PRIV	Private company employee (1 = yes, 0 = otherwise)	21.82%	21.33%
INACT	Economically inactive (1 = yes, 0 = otherwise)	19.70%	19.56%
HHSZ	Household size (persons)	3.18	3.12
HHSQ	Square of household size (persons)	12.72	12.29
HEALTH	Number of member having the universal health card	2.31	2.28
lnHHEXPEN	Natural logarithm of household monthly income (in 1000 baht)	2.59	2.63
TENURE	Household owns dwelling and/or land (1 = yes, 0 = otherwise)	75.25%	73.66%
	Dwelling used for business purpose (1 = yes, 0 = otherwise)	22.00%	21.17%
HOMEbiz			
MOTORCY	Number of motorcycles in the household	1.16	1.17
RURAL	Rural household (1 = yes, 0 = otherwise)	37.58%	37.61%
Total observations		41,296	41,850

Appendix E

Results from Logit Model for Estimate the Propensity Score

dependent variable: whether household from SES 2009

Independent variable	Coef.	Robust Std. Err.
VF_dum	0.0309*	0.018
HEADCOUNT	-0.1178***	0.036
AGE	0.0115***	0.003
AGESQ	-0.0001***	0.000
WOMEN	-0.0559***	0.017
SINGLE	-0.0439	0.028
WIDOWED	0.0312	0.022
EDU	-0.0003	0.002
EMPLOYER	0.2182***	0.031
GOV_STATE	0.1174***	0.028
FAMILY	0.2084***	0.049
PRIV	0.0983***	0.021
INACT	0.1329***	0.024
HHSZ	0.1207***	0.017
HHSQ	-0.0025***	0.002
HEALTH	-0.0544***	0.007
lnHHEXPEN	-0.1869***	0.014
TENURE	0.1040***	0.019
HOMEbiz	0.0968***	0.018
MOTORCY	-0.0518***	0.009
RURAL	-0.0494***	0.016
CONSTANT	-0.0020	0.092
Pseudo R2		0.0035
Log-likelihood		-57,427.741
No. of Observations		83,146

Note: ***, **, and * represent level of significance at 99%, 95%, and 90%, respectively.

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