

Exploring the relationship between happiness, objective and subjective well-being: Evidence from rural Thailand

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“Happiness is something personal. Only a person would know the meaning of his/her own happiness” Women aged over 60 from Southern Thailand

“Human well-being is composed of four factors: having offspring, and entourage, house, and land” A 60-year-old religious scholar from Northeastern Thailand²

ABSTRACT

This paper approaches well-being from the two distinct perspectives of the Subjective and Objective well-being traditions. Drawing from Thai data collected in rural communities through the Resources and Needs Questionnaire (RANQ), the paper analyses the relationship between objective indicators of basic need satisfaction (following Doyal and Gough, 1991) and global happiness and domains satisfaction. Objective indicators of basic need satisfaction such as food shortages, chronic ill health and wealth have a significant impact on household happiness and domain satisfaction in Thailand, although with some variation across regions. Perceptions of the economic position of the household in comparison with the rest of the community come up as a key determinant of happiness and domain satisfaction. The analysis

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² Cited in Jongudomkarn (2004) Phase 1 Quality of Life Pilot Study. WeD Working Paper

undertaken in the paper opens up the field for a further exploration of the relationship between basic needs indicators and self-reported happiness and satisfaction in poor rural communities.

1. INTRODUCTION

Well-being is a broad concept ranging from subjective accounts of individuals' happiness to fulfilment or satisfaction of a given list of capabilities, functionings or needs. Two traditions have collected those apparently opposing approaches under the labels of Subjective Well-Being (SWB) and Objective Well-Being (OWB) studies. Scholars in both areas have pointed out the problems faced when trying to find the link between objective and individual's perceptions of well-being (Gasper, 2004), difficulties that have been extensively reported in happiness studies since the work of Easterlin (1975) on happiness and income.

Although income has been the objective indicator of well-being most commonly investigated for its poor explanative power when it comes to happiness and life satisfaction, there are other objective indicators that are commonly used to assess society's well-being to which attention needs to be paid. 'Normative theories of the good'³, like the Theory of Human Need (THN, Doyal and Gough, 1991), offer richer accounts of human flourishing than the ones approximated through income. They maintain that there are universal characteristics from which individuals' well-being can be assessed, and that those can be summed up in concrete and specific lists of well-being components.

The Resources and Needs Questionnaire (RANQ), developed by the Well-being in Developing Countries (WeD) Research Group, was designed to begin the exploration of the social and cultural constructions of well-being drawing from the THN among other theoretical approaches. The RANQ has been applied in several rural and urban communities within Bangladesh, Ethiopia, Peru and Thailand offering data on basic needs and SWB. This paper draws from the data of the RANQ survey in Thailand which has collected information from 922 households in five rural communities, two in the South of the country and three in the Northeast during 2004.

³ See Clark (2002: 81-92) for a discussion on the several alternative conceptions of the good.

The analysis is done at two levels, first we carry out a descriptive analysis of basic needs satisfaction in the sites and we test for correlations between basic needs indicators and SWB variables. Then a causal model is developed following the SWB tradition in economics (Van Praag and Ferrer-i-Carbonell 2004, Frey and Stutzer 2002, Graham 2004, Rojas 2005 etc...). We use a Probit model to study the causal relationship between socio-demographic and economic indicators, including basic needs indicators, with self-reported happiness and life domains satisfaction.

The structure of the paper is as follows: in the first part, we present the background discussion between subjective and objective accounts of well-being as well as the debate over bridging the two approaches. Second, we introduce the survey and the socio-demographic characteristics of the respondents, the level of basic need satisfaction of the participating households and the household head's reported level of global happiness and satisfaction with family income, family food consumption, family housing, children's education and health. Then the model used to analyse happiness and domains satisfaction is described and the results discussed. Finally, we discuss the importance of basic needs indicators in explaining individual happiness and domain satisfaction in rural Thailand.

2. OBJECTIVE AND SUBJECTIVE WELL-BEING TRADITIONS

What constitutes well-being is a topic for debate. There are two main distinctive approaches that, despite some attempts at reconciliation still occupy different compartments within well-being studies. Objective Well-being theories are usually supported by a list of requirements that people should have satisfied in order to lead a good life, those requirements are universal and do not vary among societies. Subjective Well-being theories base their notion of well-being on the fact that "people are reckoned to be the best judges of the overall quality of their lives, and it is a straightforward strategy to ask them about their well-being" (Frey and Stutzer, 2002:405).

The superiority of any of the two approaches in capturing well-being is an ongoing debate well beyond the scope of this paper. However, it is worth highlighting some of

their features since this paper explores well-being in rural Thailand drawing from the two traditions.

The OWB tradition has managed to get support with regards to the need for objective measures when assessing well-being, welfare or developmental achievements. Despite criticism of paternalism, being against differences in culture and not allowing for individuals' diversity, several scholars have produced specific lists of values or capabilities attained or possessed by individuals (Nussbaum 2000, Doyal and Gough 1991, Max-Neef 1991 among others) as best indicators of the goodness achieved in societies⁴. Moreover, OWB theorists have strongly supported the use of the information from bottom-up approaches to enrich or even adapt their universal lists to different values or societies⁵.

The Theory of Human Need by Doyal and Gough (1991) is a normative theory of well-being, which has inspired, among other theories, the Resources and Needs Questionnaire (RANQ) from which the data of this study are taken. It defines a list of needs ranked from universal goals through basic needs to intermediate needs. As universal goals they identify avoidance of serious harm, social participation and critical participation. Physical health and autonomy are considered the basic needs. Intermediate needs represent the characteristics that human needs satisfiers have to comply with (THN ch.10) and are grouped into eleven categories: adequate nutritional food and water, adequate protective housing, non-hazardous work and physical environments, appropriate health care, security in childhood, significant primary relationships, physical and economic security, safe birth control and childbearing, and appropriate basic and cross-cultural education (Doyal and Gough, 1991: 202). Whereas needs are considered universal⁶, satisfiers depend on the culture and the society in which the individual is living. Although they recognize cultural variety in meeting needs, they do not see the identification of needs as being subordinated to cultural contexts⁷ (Gough, 2005). Following the THN, an assessment of the well-being achieved by a society or a individual could be done through indicators of objective need-

⁴ See Des Gasper (2005, 2004, 1996) for a discussion on OWB and needs theories.

⁵ See Nussbaum (2000:41-50), Doyal and Gough (35-45) and Gough (2002:3).

⁶ That basic needs are universal means that if they are not satisfied the individual will suffer from some kind of objective harm.

⁷ Gough (2005:293) states that "if need satisfaction is to be optimized, all groups with knowledge about this context should have the ability to participate in research into need satisfiers and to contribute to policy making".

satisfaction showing the level of satisfaction of the basic needs as well as the performance in terms of intermediate needs⁸.

SWB can be defined as “people’s multidimensional evaluation of their lives, including cognitive judgments of life satisfaction as well as affective evaluations of moods and emotions” (Eid and Diener 2003:65). As Diener (2002:2) points out, SWB is used as an ‘umbrella’ term referring to separable components: “life satisfaction and satisfaction with life domains such as marriage, work, income, housing and leisure: feeling positive affect (pleasant emotions and moods) most of the time: experiencing infrequent feelings of negative affect (such as depression, stress and anger); and judging one’s life to be fulfilling and meaningful”. In order to capture SWB, researchers usually rely on self-reported questions about happiness or life satisfaction. Thus, questions about happiness, global or domains satisfaction, self-reported adequacy of life domains, frequency of good and bad feelings, etc. are commonly included in surveys and used as indicators of SWB. Increasingly, there has been strong support in development studies for considering individuals’ account of SWB as a necessary complement to assessments done through objective indicators. It is accepted that people do not only base their behaviour on what is available to them but on what they feel about the different options or constraints that they are facing.

Reconciling subjective accounts of well-being and objective measures such as income, consumption or availability of housing, school or health facilities has proven to be a challenging task (Des Gasper, 2005). One of the relationships most studied by economists has been the one relating income and SWB. Regression exercises have traditionally found weak, even if statistically significant, relations between income and SWB⁹. Although people in richer nations are on average happier than people in poorer nations, differences in wealth within nations show only small positive correlation with happiness (they only explain 2-3% of the variance in SWB between individuals¹⁰). Furthermore, economic growth in developed countries has not been associated with increases in SWB beyond a middle-income level over the past decades (Easterlin,

⁸ The indicators of need-satisfaction should be related to the *minimum optimorum*, “the minimum quantity of intermediate need-satisfaction required to produce the optimum level of basic need satisfaction” (THN:162).

⁹ See Kahneman et al (1999) for a discussion of different approaches to SWB.

¹⁰ Ahuvia (2002:24) collecting results of the works of Ahuvia and Friedman, 1998; Andrews and Whitney, 1976; Campbell et al.1976; Clark and Oswald, 1994;Diener et al.,1985,1993; Larson,1978;Schyns, 2000)

1995). These paradoxical results have been the basis for several studies enquiring into the reason for the slow increase or stabilization of SWB measures when income rises. Frey and Stutzer (2002:414) argue that “additional material goods and services initially provide extra pleasure, but it is usually only transitory. Higher happiness with material things wears off. Satisfaction depends on change and disappears with continued consumption”.

However, comparisons across countries seem to encounter strong correlations between national wealth and national average levels of SWB but those are not comparable to the results from within country comparisons, mainly due to different measurement levels and aggregation.

Research on SWB in developed countries might lead to building a hypothesis about what can be found when investigating socio-economic determinants of happiness in developing countries. It would be expected that since those countries have greater poverty rates than developed ones, correlations between income or objective variables with SWB would be higher and significant. This seems to be the case in the early quality of life South African studies of Valerie Møller (2005). She collected a set of objective quality-of-life indicators as well as satisfaction questions matching the objective domains and found that correspondence between subjective assessment and objective living conditions was very strong, thus supporting her choice of just monitoring subjective well-being.

Nevertheless, those are not universal findings. Low income individuals in developing countries have not always been reported to experience higher levels of satisfaction as income increases and objective conditions improve (Janakarajan and Seabright, 1999, Graham, 2004). Other factors seem again to override income and other objective indicators in their importance to raise satisfaction. Theories of adaptation have long studied this phenomenon.

Martha Nussbaum, in her 2001 book *Women and Human Development*, tackled adaptive preferences following Elster (1983)¹¹. Nussbaum argued that adaptation is a generalized phenomenon in developing countries as women get used to deprivation or constrained liberties. She exemplifies adaptation drawing on evidence from Indian women

¹¹ J. Elster (1983:25) defines adaptive preference formation as “the adjustment of wants to possibilities-not the deliberate adaptation favoured by character planners, but a causal process occurring non-consciously. Behind this adaptation there is the drive to reduce the tension or frustration that one feels in having wants that one cannot possibly satisfy”.

experiencing abusive marriage, discriminatory wage structure, discriminatory system of family income sharing and unhealthy or unsanitary conditions. She found that women under those circumstances internalise their situations and live their lives and make their choices in an adverse surrounding without feeling it as oppressive, as it would look to an external observer and even to their eyes if they had the chance to try life with extended liberties or options. Thus, oppressed women would declare themselves to be more satisfied with their lives than an initial account of their situation through objective socio-economic measures would indicate.

Rivalry, social relationships and personal traits might play more important roles than type of house, education and health care when people in poor countries are confronted with questions on happiness or satisfaction. On one hand, Fafchamps and Shilpi (2003) show how in Nepal rivalry might reverse positive feelings associated with increases of income, thus group cooperation does not lead to well-being (framing effects). On the other hand, Biswas-Diener and Diener (2001), in their study carried out in Calcutta, find evidence that a slum's dwellers do not show a much lower sense of life satisfaction than more affluent counterparts due to the importance they attach to social relationships and the satisfaction derived from them. Nevertheless, it could also happen that OWB measures do not include the variables that individuals take into account when they assess their well-being, thus reinforcing the irreconcilability of the two approaches. Carol Graham (2004) in her research on reported well-being in Latin America and Russia points out the key role of behaviour when explaining happiness. Personality traits such as optimism and self-esteem might well be behind the low explanatory power of socio-economic and demographic variables¹².

The next part of the paper will contribute to the debate by drawing from data of five rural sites in Thailand. The level of basic needs satisfaction will be depicted and compared across the sample. The role of those objective indicators in determining self-reported accounts of happiness and domain satisfaction will be addressed through regression analysis in the last part of the paper.

¹⁰ That personality matters is a well known finding in psychology research. Richard Ryan's empirical studies on Self Determination Theory (SDT) demonstrate that even if objective material indicators show a scenario of scarcity, individuals might report a relatively high level of subjective well-being if they manage to have their psychological needs fulfilled in a given setting (society, community, group) (Ryan, 2005).

3. NEEDS SATISFACTION AND SWB IN RURAL THAILAND

Understanding well-being is an ambitious goal that requires bridging different approaches and disciplines. Capturing people's perceptions is necessary to assess the impact of social, economic and political changes on the population whereas gathering information about the resources they have access to in order to make their living is essential to understand the way structures affect individuals' behaviour. The Resources and Needs Questionnaire (RANQ) is a survey instrument designed to advance towards the understanding of how well-being is constructed in developing countries. It gathers information on household resources (human, material, natural, social and cultural), the level of needs satisfaction by household (income, health, education, food and housing), long-term shocks and fortunes, social resources, etc. Many questions are identical across the four countries of WeD (Thailand, Peru, Ethiopia and Bangladesh); others have been adjusted to each country's characteristics.

In Thailand, RANQ has been applied to five rural sites so far, and it is currently being undertaken in two urban sites. The data analysed in this paper concerns the rural sites surveyed during 2004 collecting data from 4315 individuals belonging to 922 households distributed in five sites, two in the South and three in the Northeast of the country.

The characteristics of the sites are summarised in table A.1 in the appendix. Despite the communities being basically rural there are many differences with regards to their geographical and economic situation; the ones in the south being relatively prosperous compared to their Northeastern counterparts. However, within regions, access to the nearest urban conglomerates determines the different speed at which the rapid transformation of the country impacts rural societies.

Most of the questions of the RANQ are at the household level but the ones related to personal perceptions, like domain satisfaction and global happiness, were only addressed to the head of the household. Table A.2 in the appendix goes over the main characteristics of the household heads participating in the survey by community of residence. 77% of the household heads were males and most of them were middle aged, between 40 and 59. By far the main activity of the households is related to agriculture (48%), rubber plantation being predominant in the South and rice farming in the Northeast. However, the proximity of the Northeastern community of Ban Lao to the

thriving city of Khon Kaen results in a lower incidence of farming activities (19%) and a more disperse distribution of economic activities like working in factories and construction sites. Most households are Buddhist (67%) although in the Southern sites there is a strong presence of Muslims that account for 44% of the households in Ban Chai Khao and for 75% in Ban Tha.

Basic needs satisfaction

Societies can be assessed from their success in meeting basic needs. Doyal and Gough (1991) undertake this task and compare “the three worlds” demonstrating that “objective welfare can be compared and evaluated over space and over time” (THN:268). Following their study in chapter 12 of the THN, table A.3 in the appendix shows summary indicators of individual need satisfaction for Thailand, Peru (the other middle-income country studied by the WeD research) and the average of lower-medium income countries as defined by the World Bank (2001). In terms of the two basic needs, health and autonomy, Thailand scores much higher than the average of middle-income countries. However, health services are scarce. This represents a threat to the current and potential capacity of the country to satisfy the basic need for health (Gough, 2000:105-130) since in 1995 there were only 0.2 physicians and 1.5 beds per 1,000 people.

With regards to needs satisfiers, the differences between urban and rural population arise: 95% of the urban population having access to safe water compared to 81% of the rural population. The poverty rate (13.1%) is again lower compared to other middle-income countries but the unequal distribution of income shows that 32.5% of the population are below the \$2 a day poverty threshold.

Table 1 offers a description of the level of basic needs satisfaction in the five Thai rural sites where RANQ was applied. It shows indicators under headings of health and education categorizing the two basic needs of physical health and autonomy. It also shows data on housing, food, connections, wealth and long term shocks identifying intermediate needs that are required to reach an optimum level of basic needs satisfaction. The intermediate needs collected in this table are associated with adequate nutritional food and water, adequate protective housing, physical environment, significant primary relationships, basic education, and economic security.

Table 1. Basic Needs satisfaction: Rural households in Thailand, 2004

Basic Needs satisfaction in Rural Thailand	South		North East			TOTAL
	Ban Chai Khao	Ban Thung Nam	Ban Lao	Ban Dong	Ban Tha	
Health						
Chronic illness ¹	16%	18%	20%	19%	19%	18%
(% households affected) ²	10%	22%	14%	18%	16%	16%
Major disability ¹	1%	3%	1%	2%	3%	2%
(% households affected) ²	6%	12%	6%	8%	12%	8%
Education						
Illiteracy ¹	6%	8%	2%	17%	2%	8%
Non formal ¹	2%	3%	1%	2%	1%	2%
Primary ¹	43%	54%	69%	53%	76%	55%
Secondary ¹	31%	22%	22%	23%	19%	24%
Higher education ¹	10%	5%	6%	1%	2%	6%
Housing						
Electricity ²	99%	99%	100%	95%	99%	98%
Clean water ²	84%	82%	97%	97%	91%	89%
Sanitation ³	96%	89%	100%	83%	99%	92%
Piped water ²	53%	21%	96%	84%	97%	61%
Food						
Food shortages ⁴	8%	11%	43%	64%	39%	29%
Connections						
Kin and fictive kin ⁵	98%	92%	100%	99%	99%	97%
Local community ⁶	43%	33%	85%	81%	82%	59%
Wider world ⁷	53%	61%	56%	55%	72%	57%
Wealth						
Asset Index (average score) ⁸	3.5	2.77	2.61	2.02	2.48	2.76
Long term shocks						
Too much rain or flood ²	50.8%	37.6%	-	5.6%	62.7%	29.7%
Serious illness of family members ²	10.0%	8.4%	8.3%	11.1%	7.5%	9.3%
Accident/severe injury ²	6.8%	4.4%	14.0%	6.1%	11.9%	7.6%
Total households ²	250	250	157	198	67	922

Source: RANQ-Thailand (2004), WeD Research Group, University of Bath, UK.

1 % of the population affected

2 % of the households affected

3 % of households with flush toilet or improved pit latrine

4 % of households suffering from food shortages during last year

5 % of households spending time with relatives in the previous week

6 % of households participating in any collective activity in the community in the last year

7 % of households staying more than 1 night in other communities during the last year

8 see appendix for a description of the index

Illiteracy is still a problem in rural Thailand, the rate being twice that of the population as a whole (8% compared to 4%). However, it is unevenly spread, with the two towns in the South showing figures around 7%, the two Northeastern well-connected sites an average of 2% and the remote community of Ban Dong 17%. The bulk of the sample has primary schooling and the Southern communities present higher percentages of population with some sort of higher education. However, proximity to bigger cities arises as an important factor explaining Ban Chai Khao and Ban Lao's superior regional higher education rates.

The high rate of chronic illnesses in rural Thailand shows the deficiencies identified at the national level. 18% of the population in the villages report suffering from a chronic illness, the most common being joint and muscle pain, diabetes, high blood pressure, allergies and heart disease. Clean and available water stands out as a difficulty for southern rural households. On average they have less access to clean water (15% of households do not have access) and to piped water (only 51% have access in Ban Chai Khao and 21% in Ban Thung Nam¹³).

Households suffering from food shortages are common in the Northeast. In the relatively isolated town of Ban Dong, 64% of households reported food shortages during the last year. Most shortages are of staple food, lack of vegetable proteins, animal proteins and vegetables/fruit is less common¹⁴. Divergences between the two regions could be related to the differentiated capacity of households to balance a bad harvest. Southern rural households are richer in terms of asset ownership¹⁵ than their Northeastern counterparts, thus making it easier for them to draw from their own resources to compensate for a bad farming season.

Despite the relatively high level of labour migration (11% travel beyond nearby areas to work), family networks are very strong in rural communities with 97% of the households spending time with relatives during the week prior to the survey. The

¹³ Jongudomkarn (2004:6) reports that in Ban Tung Nam "villagers that do not have tap water rely on ground water. Unfortunately, when the dry season comes, these villagers encounter a shortage of water because the ground water takes on an offensive smell and they are obliged to buy bottled water for drinking"

¹⁴ 24% households suffer from lack of staple food, 10% vegetable proteins, 9.6% animal proteins and 9.2% vegetables and fruits.

¹⁵ In the appendix there is a general description of how the asset index is built. The index is set as an indicator of wealth or a proxy for consumption. It highlights differences within regions and between communities and illustrates the type of assets commonly owned. Following the index descriptives, southern sites have wealthier households and this distinction is significant at a level lower than .001. For instance when it comes to the highest score in the index (households having a car or a pick up truck) Southern communities have on average more households represented: 14% in Ban Chai Khao, 4% in Ban Tha and Ban Laow , 1 household in Ban Dong and none in Ban Tha Nam.

importance of family relations was clearly underlined in the results of the pilot study in Phase 1 of the WeD quality of life study since it was the most cited area by participants as being important for a good life.

Local community involvement shows very high figures in the Northeast. However, this is not representative of active participation in the community but of compulsory enrolment in groups such as the village burial/cremation group. The Southern sites show a more heterogeneous wealth of community groups, from savings groups, rubber buying groups and agricultural demonstration groups to housewife groups. Ban Thung Nam has the lowest percentage of households involved in community activities due to the weak links between the Muslim and the Buddhist communities in the village (Jonguomkarn, 2004).

Happiness and domains satisfaction

Subjective well-being has been collected in RANQ through two different types of questions addressed to the household head: global happiness and satisfaction with life domains. Happiness was investigated through a three point scale question asking "Taking all things together, how would you say things are these days? Would you say you are: very happy, fairly happy, not too happy". Satisfaction was worded in terms of adequacy of children's education, family health care, family housing, family food consumption and family's total income also using a three-point scale.

Table 2 shows the results in percentages by site. Most household heads declare themselves to be fairly happy (76%) whilst only a minority state that they feel very happy (5%) and nearly 20% of the household heads affirm to feeling not too happy. Again, differences between regions stand out, Northeastern households being on average unhappier and more dissatisfied. The unhappiest households are in Ban Dong with 33% of the household heads declaring themselves not too happy.

Children's education is the most unsatisfactory domain for all sites (78.6%), followed by total income (54.1%), family housing (42.6%), health care (33.4%) and food consumption (18.8%). Ban Dong is again the most dissatisfied community by far, with 84.7% of households dissatisfied with children's education, 79.1% with total income, 66.3% with family housing, 51.8% with family's health care and 42.6% with food consumption. This remote community in the Northeast showed the lowest level of basic needs satisfaction since it had the highest proportion of illiterates, highest incidence of

food shortages and lowest level of wealth. Moreover, this was a politically active community engaged with the Thai Communist party until its fall in 1980, which has left a feeling of inequality in access to government services contributing to an overall feeling of dissatisfaction (Jongudomkarn, 2004).

A simple correlation analysis showed a high Pearson Chi-square for happiness and the asset index at a significance level lower than .001 for both regions. In the exploratory Quality of Life research with a sub-sample of RANQ, income and having money appeared as the third important area of people's lives, money being related to survival, to basic needs satisfaction and to feelings of personal worth¹⁶ (Jongudomkarn, 2004). Those underlying motives for wanting money have been empirically proven to be positively related to SWB since they reflect meeting life necessities and using money as a measure of market worth and achievement in life (Srivasta et al. 2001). Thus, following results of previous cross-section analysis income approximates happiness at low levels of wealth or income.

With regards to domain satisfaction, Chi square statistics showed a significant strong association (at a level of significance lower than .001) between satisfaction with income and asset index and satisfaction with food consumption and food shortages for all the sites in both regions. These results confirmed the relationship between key objective indicators of basic and intermediate needs (food shortages and level of wealth) and subjective indicators of well-being (reported satisfaction with food and income) in poor rural settings. Associations between health care and chronic illness were only significant for the Southern sites (level of significance below .05) where people in general are more satisfied with their health services.

¹⁶ "Not having enough money worried every group of participants. Young adults said that not having enough money stopped them from buying things to make their lives easier or boost their self-esteem. They added that lack of money caused them to drop out of school, both at primary and secondary school levels. (...) Lack of money kept older participants working harder than they should have been at their age" (Jongudomkarn, 2004:16).

Table 2. The overall percentage of Respondents by category of subjective well-being: Rural households in Thailand, 2004

	South		North East			Total
	Ban Chai Khao	Ban Thung Nam	Ban Lao	Ban Dong	Ban Tha	
Happiness (average)						
Very happy	5.2%	5.2%	6.4%	4.1%	3.0%	5.0%
Fairly happy	88.3%	78.8%	71.3%	62.9%	69.7%	76.0%
Not too happy	6.5%	16.0%	22.3%	33.0%	27.3%	19.0%
Total (number)	248	250	157	197	66	918
Satisfaction with children's education						
Not adequate	76.1%	83.4%	71.3%	84.7%	68.3%	78.6%
Just adequate	23.5%	16.2%	28.7%	15.3%	30.2%	21.1%
More than adequate	0.5%	0.4%	-	-	1.6%	0.4%
Total (number)	213	229	150	190	63	845
Satisfaction with family's health care						
Not adequate	25.8%	29.6%	29.3%	51.8%	30.3%	33.4%
Just adequate	73.0%	69.2%	70.7%	47.7%	65.2%	65.5%
More than adequate	1.3%	1.2%	-	0.5%	4.5%	1.1%
Total (number)	233	250	157	193	66	899
Satisfaction with family's housing						
Not adequate	26.0%	36.1%	52.3%	66.3%	37.3%	42.6%
Just adequate	64.0%	57.4%	47.7%	32.7%	62.7%	52.7%
More than adequate	10.0%	6.4%	-	1.0%	-	4.7%
Total (number)	250	249	155	196	67	917
Satisfaction with family's food consumption						
Not adequate	3.6%	12.0%	23.6%	42.6%	19.4%	18.8%
Just adequate	93.6%	83.2%	75.8%	55.3%	74.6%	78.2%
More than adequate	2.8%	4.8%	0.6%	2.0%	6.0%	3.0%
Total (number)	250	250	157	197	67	921
Satisfaction with family's total income						
Not adequate	30.1%	47.0%	69.2%	79.1%	61.2%	54.1%
Just adequate	65.5%	51.0%	29.5%	19.9%	29.9%	43.1%
More than adequate	4.4%	2.0%	1.3%	1.0%	9.0%	2.8%
Total (number)	249	249	156	196	67	917

Source: RANQ-Thailand (2004), WeD Research Group, University of Bath, UK.

Moreover, association between house satisfaction and piped water was only significant for the Northeastern villages where 90% of the households have access to this facility. Those traits might indicate either the importance of social comparison when answering the satisfaction questions or adaptation to a reduced set of opportunities in the most domain-deprived regions. Finally, community involvement and happiness is only significant in the Southern sites where participation is lower, aiming at particular economic problems (credit, rubber sales, agriculture pressure groups...).

Causal relationships exploring the impact of basic need indicators on subjective reports of well-being will be exposed hereafter.

4. HAPPINESS AND SATISFACTION DETERMINANTS IN RURAL THAILAND

Modelling Individual Perception: A Binary Choice Model

Some caution is required when carrying out an empirical analysis of subjective well-being using regression analysis due to the small percentage of variation of SWB measures variation explained by socio-economic-demographic variables (Graham, 2004). Another issue of theoretical and empirical concern is that causation could go both ways: “the causal arrow between income and SWB appears to go in both directions, but the interactions between personality dispositions and income are poorly understood” (Diener, 2002:153). “The causality does not necessarily go from the factors just mentioned to happiness, but may run in the opposite direction. Thus good health does not only cause happiness, but happy people also tend to be in better health. As with the selection effect, it is necessary to collect additional evidence in order to ascertain the direction of causation” (Frey and Stutzer 2002:66).

In this paper the causal relationships between the socio-economic and demographic variables of RANQ and the SWB indicators are analyzed through a Probit model which is designed to model the choice between two discrete alternatives: satisfied or unsatisfied with life domains, or happy or unhappy. The original variables were recoded from the first three score responses to the binary ones so an ordered probit could be used. The reason was that for the happiness question, the vast majority of the responses, an average of 97%, was concentrated on “fairly happy” and “not too happy”. Regarding

the domain satisfaction questions, the answers were mainly concentrated around “not adequate” and “just adequate” groups (see Table 2 for a more detailed description). Given this fact, the happiness question was grouped into two categories: a) “happy”, including both “very happy” and “fairly happy” options, and b) “unhappy”, comprising the “not too happy” response. Similarly, for the life domain satisfaction questions, the following groups were created: a) “satisfied” consisting of “just adequate” and “more than adequate” options, and b) “unsatisfied”, formed by “not adequate” option¹⁷.

In general, it is assumed that there are N individuals ($i = 1 \dots N$), with a vector x_{ki} containing observations on K independent variables that explain individuals’ perception of happiness and life domain satisfaction. The binary variable y_i is defined as:

$$y_i = 1 \text{ if individual } i \text{ is happy or satisfied with life domain}$$

$$y_i = 0 \text{ if individual } i \text{ is not happy or unsatisfied with life domain}$$

The empirical specification is formulated in terms of a latent response variable, y_i^* , which depends on individual perception and is defined by the following structural equation:

$$y_i^* = \beta_0 + \sum_{k=1}^K \beta_k x_{ki} + \varepsilon_i \quad \varepsilon_i \sim NID(0,1) \quad (1)$$

where:

- i : The surveyed individual
- x_{ki} : Independent variables that explain the individual’s perception
- β_k : Parameter that indicates the effect of x_k on y_i^*
- β_0 : Intercept that indicates the value of y_i^* when all x equal to zero
- ε_i : A normally distributed independent error term for household i

Variable y^* generates the observed binary variable y_i where:

$$y_i = \begin{cases} 1 & \text{if } y_i^* > 0 \\ 0 & \text{if } y_i^* \leq 0 \end{cases}$$

Following the definition from equation (1), the empirical models use the following endogenous and exogenous variables.

¹⁷ In addition to the probit model, an ordered probit model of the selected regression was also estimated. The results were quite similar using both models.

Exogenous variables

It is important to note that we do not have measures of the personality traits (e.g. extroversion and neuroticism) that have been studied in psychological research (Schimack et al., 2002 in Camfield, 2004) and found to be more important determinants of life satisfaction scores than objective life circumstances. Thus well-being might be determined by personality traits and reduce the utility of happiness or satisfaction measures and obviously explain why a model based on objective socio-economic measures has a limited explanatory power.

Bearing in mind those limitations, the proposed set of exogenous variables available from the RANQ are organised as follows:

a) Personal characteristics of the household respondent such as age, gender, sex, level of education, marital status, religious membership, number of kids and location according to region were considered. Empirical evidence offers some insights about the impact on these variables on the endogenous variables:

- In the case of marital status, Diener et al. (1999) found that married people on average are happier than unmarried people;
- Age exhibits contradictory findings. Many studies find that older people's reported happiness is higher than for younger people although the effect tends to be small, however this not always hold since other studies find a negative relationship. What seems clear is that controlling for health and other factors the young and the old seem to be happier than the middle-aged (Frey and Stutzer 2002:54);
- Regarding gender, women seem to be happier than men, but again the difference is not substantial (Frey and Stutzer 2002:54);
- Education and well-being appear to be unrelated (Frey and Stutzer 2002:54);
- The impact of religion has also been studied. It has been found that religion raises happiness but the effect is not large (Frey and Stutzer 2002:59). "There may also be reverse causality: Happier people are more religious. This is particularly so in societies in which religion plays a

prominent social role and where participation in church is positively regarded. There are also many open questions awaiting research. One is whether the same positive relationship applies to all religions equally or whether there are differences among the faiths”.

- b) Objective well-being variables are related to the satisfaction of basic needs. For housing characteristics, the variables considered are access to good drinking water, electricity and sanitation. For health care service, the relevant variables are: presence of any household member suffering from chronic ill health; presence of persons suffering from major disability; presence of persons injured and unable to perform usual daily activities in the last 12 months; presence of persons who suffered from illness or injury in the two weeks before the interview and who sought treatment in a government institution. Additionally, presence of any household member receiving vaccination was included. In relation to education, variables such as level of education of children currently attending to school, type of school, location of school, mode of transport used and time to reach school were taken into account. In addition to that, family food condition is taken into account when the household has suffered any shortage of staple food, vegetable, fruit, vegetable protein and/or animal protein during the last 12 months.

Long term shocks were also included to capture the unexpected events that led to significant changes in asset holdings, household income or consumption in the last 5 years.

- c) Using the information about perceptions of relative position in relation to other households in the community allowed the ranking of the households in rich, average and poor households. Information on self-evaluation of current family’s total income when comparing with its total income five years ago, enabled classification into two main groups: income better and income worse than five years ago, having as a reference group those who said that their income was the same.
- d) Social capital variables consisted of connections to the community expressed as household member participation in local institutions or in any form of collective

community activity. Connections to the wider world was captured through the presence of a household member visiting outside the community and the identification of household access to mass media for knowing about events in the capital city or elsewhere in the country.

Table 3 contains the variable descriptions and descriptive statistics of selected variables for the full household sample of 922 rural households.

Table 3. Descriptive Statistical of Data

Variable	Description	Obs	Mean	Std. Dev.	Min	Max
Household Head Characteristics						
age	Age of head of household in years	921	50.147	14.534	21	89
ageage	Age in years squared	921	2725.691	1549.474	441	7921
dumyageg	Age dummy. 1 if head aged 40-59. (Reference group aged 20-39)	922	0.462	0.499	0	1
dumyag_a	Age dummy. 1 if head over 60	922	0.275	0.447	0	1
sex	Gender dummy. 1 if head of household is male	921	0.767	0.423	0	1
married	Marital status dummy. 1 if head of household is married	922	0.831	0.375	0	1
dumyreli	Religion dummy. 1 if head of household is Buddhist	922	0.663	0.473	0	1
yeareduc	Years of education of head of household	922	4.466	3.243	0	14
dumyact	Dummy variable. 1 if head of household takes part in farm activities	922	0.621	0.485	0	1
labourhe	Employment status dummy. 1 if head of household is self-employed	917	0.549	0.498	0	1
Household Characteristics						
familysi	Number of household members	922	4.680	1.910	1	16
numkids	Number of children	909	3.557	2.531	0	17
region	Location dummy. 1 if household is located in the South region	922	0.542	0.498	0	1
Basic Needs Objective Indicators						
foodshor	Dummy variable. 1 if household faced food shortage the last 12 months	922	0.289	0.453	0	1
goodhous	Household access to water, electricity and sanitation. Values from 0 to 3	922	2.793	0.446	0	3
dwwater	Dummy variable. 1 if household has a private piped water	922	0.615	0.487	0	1
houcroil	Dummy variable. 1 if household members suffer from chronic ill health	920	0.565	0.496	0	1
vaccine	Dummy variable. 1 if household members have taken vaccination	922	0.352	0.478	0	1
majdisyn	Dummy variable. 1 if household members have major disability	922	0.085	0.278	0	1
injuryea	Dummy variable. 1 if household member has been injured/ill that he/she was unable to perform usual daily activities in the last 12 months	922	0.364	0.482	0	1
treatgov	Dummy variable. 1 if household member suffered from illness/injury in the last 2 weeks and sought treatment in a government institution	922	0.269	0.444	0	1
aaindex	Asset index. Values from 1 (lowest) to 6 (highest)	915	2.758	1.422	1	6
dumyshoc	Dummy variable. 1 if household faced a shock in the last 5 years	922	0.637	0.481	0	1
childpri	Dummy variable. 1 if children are currently attending to primary school	922	0.113	0.317	0	1
govschoo	Dummy variable. 1 if children are attending to government school	922	0.167	0.373	0	1
whereduc	Dummy variable. 1 if school is located in the village	922	0.102	0.303	0	1
traneduc	Mode of transport dummy. 1 if children walk to school	922	0.064	0.245	0	1
timeeduc	Time dummy. 1 if children take less than 30 minutes to reach the school	922	0.202	0.402	0	1
Perception Variables (dummy variables)						
dumyhapp	Perceived happiness dummy. 1 is happy	922	0.807	0.395	0	1
dumychil	Perceived satisfaction with children's education. 1 is satisfied	845	0.214	0.411	0	1
dumyheal	Perceived satisfaction with family's health care. 1 is satisfied	899	0.666	0.472	0	1
dumyhous	Perceived satisfaction with family's housing. 1 is satisfied	921	0.812	0.391	0	1
dumufood	Perceived satisfaction with family's food consumption (1 is satisfied)	921	0.812	0.391	0	1
dumyinc	Perceived satisfaction with family's total income	922	0.457	0.498	0	1
dumyrich	Household compared with village. 1 if is rich, control group is poor	922	0.132	0.339	0	1
dumyaver	Household compared with village. 1 if is above average	922	0.411	0.492	0	1
better5years	1 if household income is better than five years ago. Control group: the same income	922	0.386	0.487	0	1
worse5years	1 if household income is worse than five years ago.	922	0.311	0.463	0	1
Social Capital (dummy variables)						
communit	1 if household members take part in community organisation	922	0.586	0.493	0	1
outact	1 if household members made visits outside the community the last year	922	0.574	0.495	0	1
media	1 if household uses mass media to know events in the capital or elsewhere	922	0.957	0.204	0	1

Discussion of Results: Determinants of happiness

The results of the probit analysis, including parameter estimates, corresponding z-statistics are given in Table 4.

Regarding household head characteristics, self-reported happiness is affected negatively with age. So, individuals aged 40-59 and above 60 years are unhappy when compared

with individuals aged 20-39. At the regional level, a similar result is found only in the Northeast region.

Education of the head of household is a significant variable at all sample levels and in the South region. This indicates that education increases the probability of being happy. However, gender, marital status and religion do not seem to be relevant factors.

The results suggest that self-employed individuals show a lower self-reported happiness than employed workers. Household characteristic variables such as household size and region are not statistically significant.

In analysing basic needs variables, shortage of staple food suffered by the household during the last 12 months at the time of survey, presence of household members with chronic health illness and experience of shocks in the last 5 years have a negative impact on self-reported happiness although their significance is low. In relation to this last variable, it is important to note that unexpected past events that led to significant reductions in asset holdings, caused household income to drastically fall or resulted in considerable reduction in consumption, remain important in the household's account of SWB.

The assets index shows a strong direct relationship with happiness, access to durable consumer goods seem to be important factors in explaining an individual's perception of happiness. However, access to private piped water, a proxy variable for housing conditions is not relevant at all sample and regional levels.

Perception variables show, in general, a better performance. Self-reported household wealth in relation to the village's households, indicates that both better off and average households are happier than self-reported poor households. Finally, social capital variables such as connections and participation in local village have a positive impact on happiness although their significance is low.

Table 4. Determinants of Happiness in Rural Thailand

	All Sample		North		South	
	Coef.	z	Coef.	z	Coef.	z
Household Head Characteristics						
dumyageg	-0.348	-2.39	-0.442	-2.32	-0.231	-1.04
dumyag_a	-0.394	-2.32	-0.609	-2.58	-0.150	-0.57
sex	0.203	1.32	0.319	1.66	0.053	0.20
married	0.012	0.07	-0.042	-0.18	0.048	0.17
dumyreli	-0.234	-1.39	-0.312	-0.68	-0.203	-1.11
yeareduc	0.038	1.89	0.027	0.94	0.065	2.04
labourhe	-0.201	-1.81	-0.305	-1.90	-0.074	-0.44
Household characteristics						
familysi	0.005	0.16	-0.022	-0.54	0.048	0.98
region	0.272	1.45				
Basic Needs						
foodshor	-0.207	-1.61	-0.068	-0.44	-0.553	-2.37
houcroil	-0.160	-1.42	-0.208	-1.37	-0.100	-0.60
aaindex	0.164	3.29	0.189	2.45	0.144	2.28
dwwater	0.099	0.70	0.167	0.70	0.047	0.27
dumyshoc	-0.201	-1.73	-0.216	-1.33	-0.223	-1.30
Perception variables						
dumyrich	0.943	4.18	1.110	3.78	0.688	1.91
dumyaver	0.521	4.13	0.756	3.92	0.261	1.45
better5y	0.171	1.22	0.305	1.56	0.016	0.07
worse5y	-0.253	-1.98	-0.242	-1.46	-0.309	-1.43
Social Capital						
communit	0.083	0.65	-0.065	-0.35	0.228	1.20
_cons	0.523	1.61	0.769	1.31	0.622	1.53
Number of obs	908		413		495	
Wald chi2(19)	136.68		72.57		52.96	
Prob > chi2	0		0		0	
Pseudo R2	0.1999		0.1759		0.1735	
Log likelihood	-356.0953		-203.6178		-146.1123	

Discussion of results: determinants of life domains satisfaction

This section discusses the main findings of the life domain satisfaction regressions. As stated above, five domains are analysed.

Satisfaction with Children's education

Table 5 presents the regression results for the satisfaction with children's education. It is observed that head of the household characteristics variables show mixed effects. Education satisfaction decreases with age, but this finding is only significant in the Northeast region. Gender, marital status, labour category, number of kids and region variables do not play any role in explaining self-reported education satisfaction. In

contrast, years of education of the head of the household has a positive statistically significant effect on children's education satisfaction in all samples and regions.

In assessing the relevance of objective indicators, it is found that children currently attending primary school display a significant negative statistical impact on education perception. This suggests that household heads would be more satisfied when their children are attending secondary school.

Concerning the type of education facility, it is found that children attending government schools have a positive impact on education satisfaction. Location of the educational facility is the only relevant factor for the Northeast region, displaying a negative coefficient. This implies that location of the school outside the village has a negative effect on satisfaction with education. In addition to that, the mode of transport used to attend school, mainly walking, has a positive effect in the Northeast. The time required to reach the educational facility, being less than 30 minutes, negatively affects education's satisfaction in the South region.

In analysing the relevance of perception variables, it is identified that households self-reported as better off are more satisfied with children's education than poor households.

Table 5. Satisfaction with children's education in rural Thailand

	All sample		North		South	
	Coef.	z	Coef.	z	Coef.	z
Household head characteristics						
age	-0.030	-1.19	-0.071	-2	0.004	0.12
ageage	0.000	1.27	0.001	2.22	0.000	-0.31
sex	-0.034	-0.21	-0.160	-0.76	0.106	0.46
married	-0.030	-0.16	-0.060	-0.25	0.004	0.01
dumyreli	0.318	2.2	-0.458	-0.92	0.382	2.55
yeareduc	0.050	2.8	0.091	3.27	0.008	0.3
labourhe	-0.066	-0.62	-0.090	-0.55	0.037	0.24
Houshold characteristics						
numkids	0.004	0.17	-0.033	-0.91	0.015	0.42
region	0.038	0.28				
Children's education						
childpri	-0.643	-2.75	-0.867	-2.45	-0.597	-1.85
govschoo	0.523	2.48	0.274	0.93	0.689	2.07
whereduc	-0.189	-0.79	-0.785	-2.36	-0.019	-0.05
traneduc	0.054	0.23	0.582	1.65	-0.304	-0.86
timeeduc	-0.147	-0.78	0.395	1.18	-0.446	-1.76
Perception variables						
dumyrich	0.617	4.07	0.485	2.32	0.687	2.92
dumyaver	0.152	1.27	0.079	0.42	0.142	0.85
_cons	-0.631	-0.99	1.077	1.07	-1.258	-1.35
Number of obs	832		390		442	
Wald chi2(16)	53.99		44.32		40.28	
Prob > chi2	0		0.0001		0.0004	
Pseudo R2	0.0613		0.0985		0.0738	
Log likelihood	-402.9967		-186.6191		-205.6123	

Satisfaction with family's housing

Table 6 displays the results for the housing satisfaction regression. Regarding head of the household variables, age, gender, marital status and number of children are not relevant factors in explaining housing satisfaction in rural Thailand. Being a Buddhist has a positive effect on housing satisfaction. Years of education also displays a positive impact but it is not statistically significant. However, households located in the South region are more satisfied with their housing than households in the Northeast region. The asset index shows a positive statistically significant effect on housing satisfaction. This result suggests the role of household access to durable consumer goods in explaining housing satisfaction.

As expected, having electricity, water and toilet facilities show a positive impact on housing satisfaction. This finding confirms again a strong and positive relationship between basic needs and subjective indicators of well-being.

Finally, household's wealth perception is positively associated to housing satisfaction. This means, the better off and about average households in the community are more satisfied than poor households.

Table 6. Satisfaction with family's housing in rural Thailand

	All sample		Northeast		South	
	Coef.	z	Coef.	z	Coef.	z
Household head characteristics						
Age	0.026	0.98	0.024	0.73	0.041	0.88
Ageage	0.000	-1.16	0.000	-1.07	0.000	-0.77
Sex	0.020	0.12	0.115	0.59	-0.163	-0.51
Married	-0.005	-0.03	-0.217	-0.96	0.445	1.43
Dumyreli	0.417	2.19	0.141	0.31	0.470	1.91
Yeareduc	0.021	0.92	0.028	0.95	0.030	0.71
Labourhe	-0.022	-0.19	-0.304	-1.97	0.325	1.4
Household characteristics						
Numkids	-0.031	-1.28	-0.026	-0.72	-0.033	-0.77
Region	1.177	6.58				
Basic needs						
Aaindex	0.151	3.04	0.096	1.38	0.165	1.93
Goodhous	0.305	2.52	0.292	1.69	0.314	1.71
Perception variables						
Dumyrich	1.022	4.43	0.978	3.75		
Dumyaver	0.713	5.22	0.522	2.91	1.030	4.49
_cons	-1.915	-2.57	-0.974	-1	-1.881	-1.52
Number of obs	898		401		434	
Wald chi2(13)	184.44		45.08		56.84	
Prob > chi2	0		0		0	
Pseudo R2	0.2266		0.0985		0.2644	
Log likelihood =	-330.134		-225.015		-94.7702	

Satisfaction with family's food consumption

Table 7 presents the Probit's result for satisfaction with family's food consumption. As has already been identified in the above analysis, household head characteristics have ambiguous effects on food satisfaction. Age group variables, aged 40-59 and above 60, have positive impact in the South region. In contrast, age shows a negative effect in the Northeast and at all sample levels.

Participation in farm activities is only relevant for the Northeast region. This result seems to suggest that household heads involved in farm activities are unsatisfied with their family food consumption when compared to household heads whose main economic activity is in the non-farm economy. Taking into account that the Northeast

region is characterised as a poor one, this finding could indicate that farming activities do not provide an adequate source of food staple for those households.

Gender is not relevant in any sample, marital status has a positive and significant effect only in the South region and religion shows a positive impact, being significant only at all sample level.

The number of household members is negatively associated with family's food satisfaction. Access to consumer durable goods and good housing conditions (access to electricity, water and sanitation) show a positive effect.

Health related variables such as the presence of chronically ill members and the presence of persons who have been so badly ill/injured that they were unable to perform usual daily activities have a negative impact on food satisfaction. Predictably, household experience of food shortages also affects negatively family's food satisfaction.

Social capital variables, participation in local institutions, connections to wider world such as travels outside the village and access to information from the capital city and elsewhere, indicate positive relationship with food consumption satisfaction.

Finally, households better off and above average in the village are more satisfied with their food consumption than poor households.

Table 7. Satisfaction with family's food consumption in rural Thailand

	All sample		Noth		South	
	Coef.	z	Coef.	z	Coef.	z
Dumufood						
Household head characteristics						
Dumyageg	-0.071	-0.45	-0.208	-1.12	0.668	2.11
Dumyag_a	-0.198	-1.03	-0.528	-2.3	0.747	1.76
Dumyact	-0.162	-1.25	-0.333	-2.06	0.126	0.52
Sex	0.061	0.38	0.129	0.68	-0.348	-1.03
Married	0.097	0.53	-0.123	-0.57	1.043	2.7
Dumyreli	0.361	1.85	0.050	0.1	0.325	0.99
Yeareduc	0.003	0.13	0.017	0.59	0.061	1.72
Household characteristics						
Familyysi	-0.057	-1.89	0.027	0.7	-0.274	-4.4
Region	1.055	5.01				
Basic needs						
Aaindex	0.135	2.58	0.081	1.15	0.170	1.49
Goodhous	0.285	2.14	0.312	1.79	0.161	0.56
Hhchronic	-0.069	-0.56	-0.103	-0.7	-0.456	-1.57
Injuryea	-0.320	-2.69	-0.350	-2.39	-0.087	-0.36
Foodshor	-0.771	-5.69	-0.530	-3.56	-1.697	-6.14
Social capital						
Communit	0.291	2.13	0.091	0.51	1.241	2
Outact	0.281	2.45	0.227	1.65	0.374	1.37
Media	0.507	2.11	0.449	1.37	0.572	1.32
Perception variables						
Dumyrich	0.639	2.64	0.697	2.62		
Dumyaver	0.567	4.05	0.493	2.87	1.016	3.16
_cons	-1.140	-2.26	-0.699	-0.9	-0.112	-0.12
Number of obs	911		416		432	
Wald chi2(19)	235.99		69.3		93.23	
Prob > chi2	0		0		0	
Pseudo R2	0.3008		0.1472		0.529	
Log likelihood =	-305.50956		-221.003		-60.5909	

Satisfaction with family's health care

Table 8 presents the results of the probit model. It is observed that variables related to household's head characteristics such as age, sex, marital status religion, and labour category, do not play a role in explaining satisfaction with family's health care. In contrast, the number of years of education of the head of household has a positive effect. The number of children has a significant negative effect on health care satisfaction. However, households located in the South region are more satisfied with health care service than households from the Northeast region.

As expected, the presence of household members suffering chronic illness, major disabilities or seriously injured during the last 12 month have an important negative effect on self-reported satisfaction with health care.

Household's health care perception seems to be affected significantly and positively by household self-reported wealth position. So, households that consider themselves to be rich and above average in the village are significantly more satisfied with health care than poor households.

Individual injured or ill during the 2 weeks prior to the interview and who sought a treatment in a government institution would be less satisfied than individuals who used another source of health care.

Table 8. Satisfaction with family's health care in rural Thailand

	All sample		North		South	
	Coef.	z	Coef.	z	Coef.	z
dumyheal						
Household head characteristics						
age	0.000	0.02	0.040	1.19	-0.047	-1.44
ageage	0.000	-0.05	0.000	-1.04	0.000	1.32
sex	-0.123	-0.9	-0.040	-0.21	-0.141	-0.69
married	-0.198	-1.24	-0.297	-1.34	-0.126	-0.54
dumyreli	-0.038	-0.28	0.063	0.14	-0.005	-0.03
yeareduc	0.036	1.96	0.071	2.46	0.016	0.63
labourhe	0.110	1.15	0.091	0.62	0.156	1.15
Household characteristics						
numkids	-0.038	-1.81	-0.071	-2.03	-0.009	-0.33
region	0.285	2.07				
Basic Needs						
vaccine	0.002	0.02	0.098	0.68	-0.090	-0.62
houcroil	-0.487	-4.93	-0.578	-4.03	-0.449	-3.18
majdisyn	-0.332	-2.02	-0.389	-1.45	-0.338	-1.54
injuryea	-0.219	-2.23	-0.419	-2.89	-0.006	-0.04
treatgov	-0.162	-1.51	0.111	0.65	-0.362	-2.57
Perception variables						
dumyrich	0.542	3.41	0.674	2.97	0.425	1.75
dumyaver	0.367	3.44	0.245	1.42	0.427	2.88
Social capital						
communit	0.105	0.94	0.116	0.66	0.101	0.71
_cons	0.678	1.13	-0.475	-0.49	2.147	2.5
Number of obs	880		400		480	
Wald chi2(17)	102.9		55.88		54.72	
Prob > chi2	0		0		0	
Pseudo R2	0.1015		0.1195		0.0954	
Log likelihood =	-501.8144		-235.92725		-257.1226	

Satisfaction with total family income

The last domain satisfaction to be discussed is total family income and Table 9 presents the results. It is noted that age groups exhibit a direct relationship with income satisfaction in all samples and in the South region. Age variable could be capturing individual experience, which would offer better labour and income opportunities to the household head. In addition to that, self-employed work has a positive effect on income satisfaction in all sample and in the South region.

Other individual characteristics such as gender, marital status and religion are not statistically significant in explaining total family income satisfaction.

More educated household heads are more satisfied with their income. This finding implies a direct and strong relationship between human capital and income. More interestingly, this is applied to all samples with no distinction between poor and better off regions.

Number of household members negatively affects income satisfaction as well as the presence of members seriously injured and unable to perform usual daily activities.

Households located in the South region are more satisfied with their income than those in the Northeast region. This outcome is consistent when regional differences in economic development are taken into account, as the more prosperous and dynamic region would be providing more attractive income generating activities.

Variables denoting household's wealth perception suggest that better off and above average households are more satisfied with their income than poor households.

Table 9. Satisfaction with family's total income in rural Thailand

	All		North		South	
	Coef.	z	Coef.	z	Coef.	z
dumyinco						
Household head characteristics						
dumyageg	0.203	1.66	0.155	0.84	0.258	1.57
dumyag_a	0.325	2.2	0.109	0.46	0.443	2.25
labourhe	0.145	1.51	-0.049	-0.31	0.259	2.05
sex	-0.049	-0.36	0.042	0.22	-0.122	-0.63
married	-0.131	-0.81	-0.308	-1.3	0.021	0.09
dumyreli	-0.087	-0.68			-0.120	-0.89
yeareduc	0.063	3.76	0.053	1.96	0.072	3.23
Household characteristics						
familysi	-0.074	-2.98	-0.059	-1.43	-0.091	-2.76
region	0.665	5.22				
Basic Needs						
aaindex	0.094	2.44	0.134	1.88	0.087	1.84
injuryea	-0.160	-1.63	0.067	0.44	-0.251	-1.96
Perception variables						
dumyrich	1.019	6.43	1.312	6.18	0.665	2.87
dumyaver	0.669	6.26	0.653	3.78	0.641	4.46
_cons	-1.103	-4.68	-1.148	-3.32	-0.457	-1.7
Number of obs	910		406		497	
Wald chi2(13)	212.02		73.96		76.67	
Prob > chi2	0		0		0	
Pseudo R2	0.2044		0.1691		0.1201	
Log likelihood =	-499.4478		-199.5017		-291.7246	

5. CONCLUDING REMARKS

Des Gasper (2004) offers a set of options for research when dealing with discrepancies between reported SWB and OWB indicators. One of them would be giving priority to OWB because people might not know what it is good for them. However as Clark (2002:103) points out in his South African study, after having evaluated the potential presence of “false consciousness” in his respondents’ account of what makes a good life: “Most of the people interviewed –despite often lacking formal education- had clear ideas about the things their lives lacked and the problems facing their community, not to mention the things they wanted the authorities to do about it”. This seems to be the case in rural Thailand, and what makes people happy and satisfied is not far from what an assessment of their situations following the normative theory of basic needs would imply. Satisfiers, are obviously diverse and different across cultures, but the underlying basic and intermediate needs appear to have an impact in people’s self-reported happiness and satisfaction.

The results of this exploratory paper show that the meeting or not of basic needs is taken into account when people report their satisfaction with health care and education. Chronic illnesses have a high incidence in rural Thailand and they are significantly negatively related to perceived health care satisfaction in all regions. Besides, in the rural areas there is a higher proportion of illiterates than the country average and government services do not keep up with people's expectations of education since secondary education is not generally available.

The level of fulfilment of some intermediate needs, like food, has a significant impact on satisfaction and happiness. Food shortages are a significant factor in explaining happiness, mainly in the south, and they are a big determinant of food satisfaction in all regions. Electricity, clean water and toilet facilities have a positive impact on house satisfaction for the whole sample and having piped water, a scarce facility in the South is positively associated with house satisfaction.

Community involvement, expected to be an important variable in explaining happiness and satisfaction does not seem to be so. It only shows a significant strong effect in explaining family's food consumption, mainly in the South, where community involvement is more business oriented.

Social comparison arises as an important factor when people assess their happiness or satisfaction with domains. Individuals who feel richer than the average report higher levels of happiness in all regions, higher satisfaction with food, health, education, house and obviously income. Perceiving the household as 'the richest in the community', 'amongst the richest in the community' and 'richer than most households in the community' indicates households with greater access to resources that can reverse institutionally deficient situations like lack of education, health and water infrastructures, and incidence of food shortages. Households who perceived themselves as rich also show a higher score in the asset index¹⁸ indicating that people in our sample interpret being rich in material terms.

Income as such has not been collected in the RANQ, although it will be collected in a second questionnaire administered a year into the project when greater rapport has developed between researchers and respondents. The question about access to assets is the closest indicator we can get from the questionnaire. There are many limitations to

¹⁸ The Pearson Chi-square value is above 40.000 for the two regions with a level of significance less than .001.

using this measure as a proxy for income since assets denote stock and income is a flow measure. However, the access to asset index gives some insight into the material wealth of the households in qualitative terms. From the QoL study in Thailand, it is known that rural households give importance to money with regards to the impact it has in meeting their basic needs. As their motives are not extrinsic (status, display) but intrinsic (need satisfaction) income is more likely to enhance their SWB (Ryan,2005). This is what we obtain in our results, since the asset index is shown to have a positive impact on households' happiness and income, housing and perceived food satisfaction.

To sum up, rural Thailand shows some deficiencies in basic needs satisfaction: higher incidence of chronic illnesses¹⁹, scarce and unevenly available water, higher degree of illiteracy and food shortages. All those variables have a negative impact on the satisfaction within the respective domains. With regards to global happiness, food shortages, chronic illnesses, economic deprivation and long term shocks also show a significant impact. Finally, perception of one's relative economic position within the community seems to point at the direction of the importance of social comparison. This was confirmed when the negative impact of not having some housing facilities or being chronically ill appeared be more significant in the sites with lower incidence of these difficulties.

More work needs to be done in the exploration of most of those relationships and causalities. Information about income and expenditures is key to producing a more accurate assessment of material well-being in those areas. Also investigating the extent to which social comparison overrides the objective poverty of the households needs to be clarified. However, this study may still shed light on the debate between OWB indicators and subjective assessments of well-being. Supplementing the universal THN with local accounts of well-being is a challenging task. This paper has aimed to do this by showing that basic need satisfaction matters to poor rural Thai households so when basic needs are not met happiness and satisfaction with life domains is generally reduced.

¹⁹ The threat to basic needs satisfaction would occur if chronically ill are untreated due to unadequate health services. RANQ data does not allow to confirm this point although we know that injured individuals treated by a government institution are more likely to be insatisfied with their health care.

6. REFERENCES

- Ahuvia, C. A. & Wong, N. Y. 2002, "Personality and values based materialism: their relationship and origins.", *Journal of Consumer Psychology*, vol. 12, no. 4, pp. 389-402.
- Camfield, L. 2004, "Subjective measures of well-being for developing countries," in *Challenges for the Quality of Life in Contemporary Societies*, G. e. al. Wolfgang, ed., Kluwer Academic Publishers.
- Clark, D. A. 2002, *Visions of Development* Edward Elgar, Cheltenham.
- Diener, E. & Biswas-Diener, R. 2002, "Will Money Increase Subjective Well-being?", *Social Indicators Research*, vol. 57, pp. 119-169.
- Diener, E. Findings on subjective well-being and their implications for empowerment. 2002.
Ref Type: Unpublished Work
- Easterlin, R. 1995, ""Will raising the incomes of all increase the happiness of all?"" , *Journal of Economic behavior & Organization*, vol. 27, pp. 35-47.
- Eid, M. & Diener, E. 2004, "Global judgments of subjective well-being: situational variability and long-term stability", *Social Indicators Research*, vol. 65, pp. 245-277.
- Elster, J. 1983, *Sour grapes: Studies in the subversion of rationality* Cambridge University Press, Cambridge.
- Fafchamps, M. & Shilpi, F. Subjective Well-Being, Isolation, and Rivalry. 2004.
Ref Type: Generic
- Frey, B. S. & Slutzer, A. 2002, "What can economist learn from happiness research?", *Journal of Economic Literature*, vol. XL, pp. 402-435.
- Frey, B. S. & Stutzer, A. 2002, *Happiness and Economics* Princeton University Press, Princeton.
- Gaspar, D. 2004, *Subjective and objective well-being in relation ot economic inputs:puzzles and responses* WeD Working paper 09, University of Bath.
- Gough, I. & Doyal, L. 1991, *A Theory of Human Need* The Macmillan Press, Basingstoke.
- Gough, I. 2000, *Global Capital, Human Needs and Social Policies* Palgrave, Basingstoke.
- Gough, I. 2005, "Human well-being and social structures", *Global Social Policy*, vol. 4, no. 3, pp. 289-311.
- Graham, C. Can happiness research contribute to development economics? paper presented at the Massachusetts Avenue Development Seminar, February 2004.
- Janakarajan, S. & Seabright, P. 1999, "Subjective and objective indicators of welfare change over time," in *Ill-fare in India*, Sage, Delhi.
- Jonguomkarn, D. 2004, Phase 1 QoL Pilot Study: An exploration of the quality of life of people in Thailand. WeD Working Paper, forthcoming.
- Kahneman,D. Diener,E. Schwarz,N. 1999, *Well-being:The Foundations of Hedonic Psychology*, Russel Sage Foundation, New York.
- Max-Neef M.Elizalde A. & Hopenhayn M. 1989, "Human Scale Development: An option for the Future", *Development Dialogue*, vol. 1, pp. 17-47.

Møller, V. 2005, "Researching quality of life in a developing country: lessons from the south african case," in *Well-being in Developing Countries. New Approaches and Research Strategies*, I. Gough & A. McGregor, eds., Cambridge University Press, Cambridge, forthcoming.

Nussbaum, M. C. 2000, "Adaptive preferences and women's options," in *Women and Human development: the capabilities approach*, Cambridge University Press, Cambridge, pp. 111-166.

Rojas, M. 2005, "The complexity of well-being. A life-satisfaction conception and a domains-of-life approach," in *Well-being in Developing Countries. New Approaches and Research Strategies*, I. Gough & A. McGregor, eds., Cambridge University Press, Cambridge, forthcoming.

Ryan, R. M. & Deci, E. L. 200, "Self-Determination Theory and the Facilitation of Intrinsic Motivation, Social Development, and Well-Being", *American psychologist*, vol. 55, no. 1, pp. 68-78.

Ryan, R. M. & Deci, E. L. 2001, "On happiness and human potentials: a review of research on hedonic and eudaimonic well-being", *Annu.Rev.Psychology* no. 52, pp. 141-166.

Ryan, R. M. & Sapp, A. R. 2005, "Basic psychological needs: a self-determination theory perspective on the promotion of wellness across development and cultures.," in *Well-being in Developing Countries. New Approaches and Research Strategies*, I. Gough & A. McGregor, eds., Cambridge University Press, Cambridge, forthcoming.

Van Praag, B. & Ferrer-I-Carbonell, 2004, *Happiness Quantified: A satisfaction Calculus Approach* Oxford University Press, Oxford.

7. APPENDIX

Table A.1. Rural sites in Northeast and South Thailand

Site code	Site name	Region	Number households	General information
41	Ban Chai Khao	South	250	Large rural community on the outskirts of Hat Yai city. 400 households. Much of its economic activity still dependent on rural natural resources. This juxtaposition of agricultural-rural and the modern-urban is increasingly unusual in Thailand. Its ethnic composition features an equal proportion of Thai Buddhists and Thai Muslims. Access to all government facilities is very good for the community due to its peri-urban location.
42	Ban Thung Nam	South	250	Established over 50 years ago. 300 households. The proportion of Thai Muslims and Thai Buddhists being about 70:30. People engaged in various occupations including rubber production, rice production, animal raising, fruit production, hired labour in rubber plantation and labouring in nearby factories. Moderately remote because poor quality roads particularly difficult in the rainy season.
43	Ban Lao	Northeast	157	15 kilometres away from Khon Khaen town. 190 households Agricultural town but off-farm activities, such as working in factories and on construction sites. Good infrastructure and well-connected to the thriving economy of Khon Kaen town.
44	Ban Dong	Northeast	198	Located in the middle of Phu Phan Mountain range (reserve forest area), distant from Mukdaharn Provincial town. 196 households of the village have no property rights in land. Livelihood strategies depend on a mixture of cash cropping (cassava), cattle raising, exploitation of forest products, and migration. This village is a relatively remote community in modern Thailand.
45	Ban Tha	Northeast	67	Surrounded by a rich variety of natural resources. Most households are rice farmers, but they also exploit other natural resources, as well as migrate to work in modern sectors of the economy. This village is moderately well connected to modern urban centres.

Source: WeD RANQ data and <http://www.welldev.org.uk/research/thailand.htm>

Table A.2. Socio-demographic characteristics: Rural households in Thailand, 2004

	South		North East			Total
	Ban Chai Khao	Ban Thung Nam	Ban Lao	Ban Dong	Ban Tha	
Family size (average)	4.48	4.81	4.61	4.51	5.63	4.68
Head of household						
Gender (in percentage)						
Male	77.6%	74.7%	68.8%	86.9%	68.7%	76.7%
Female	22.4%	25.3%	31.2%	13.1%	31.3%	23.3%
Total number	250	249	157	198	67	921
Age groups (in percentage)						
a) 20-39	27.6%	24.5%	20.4%	33.0%	19.4%	26.1%
b) 40-59	45.2%	44.6%	52.2%	44.2%	49.3%	46.3%
c) Above 60	27.2%	30.9%	27.4%	22.8%	31.3%	27.6%
Total number	250	249	157	197	67	920
Religion (in percentage)						
Buddhist	55.4%	25.4%	100.0%	99.0%	98.5%	67.6%
Islam	44.6%	74.6%				32.1%
Total number	242	244	156	195	64	901
Main economic activity (in percentage)						
Farmer	44.0%	47.2%	19.1%	74.7%	56.7%	48.2%
Agricultural labourer	2.4%	17.6%	5.1%	5.1%	1.5%	7.5%
Street vendor	6.0%	7.6%	4.5%	3.0%	3.0%	5.3%
Herding	2.4%	4.0%	8.9%	4.5%	4.5%	4.6%
Total number	250	250	157	198	67	922

Source: RANQ-Thailand (2004), WeD Research Group, University of Bath, UK.

Table A.3. Needs satisfaction in Thailand and Peru

	Thailand	Peru	Lower - Medium Income	Norway (1st HDI)
1 Pop. 2003 (m)	62	27.1	2,655	4.6
2 GNI/head 2003 (Atlas method, US\$)	2,190	2,140	1,480	43,350
Survival/Health				
3 Life Expectancy (2003)	69	70	69	79
4 Infant Mortality (2003)	24	30	32	4
5 Under 5 mortality rate (2002)	28	39	40	4
6 Low birth weight (%) (1995)	7.3	5.8		
Autonomy				
7 Literacy (%) (1999)	95.2	89.4	86.3	-
Intermediate Needs				
Water/Nutrition				
9 Safe water (% of population) (2003)	84	80	81	100
Safe water rural (% rural population with access) (2000)	81	62	-	-
Safe water urban (% urban population with access) (2000)	95	87	-	-
10 Calories				
Health services				
12 Physician per population (1,000)(1995)	0.2	1	-	-
13 Hospital beds (1,000) (1995)	1.5	2	-	-
14 Access				
Security				
15 Poverty (% population)	13.1	49	-	6.4
16 Population below x\$ a day (%)	32.5	37.7	-	4.3
Education				
17 Net primary enrollment (%) (1999)	84.2	99.9	-	99.9
Gross enrolment ratio (%) (1995 Peru, 2001 Thailand and Norway)				
Primary level	97.7	122.9	-	101.5
Secondary level	82.8	69.7	-	114.6
Tertiary level	36.8	27.1	-	70
Reproduction				
18 Contraception (%) (1995)	72	64	-	-
19 Maternal mortality rate (2001)	44	410	-	-

Source: World Bank (2004) unless otherwise stated.

1 Total population, 2003, millions

2 Gross National Income per capita 2003 calculated using the World Bank Atlas Method

3 Life expectancy at birth in years, 2003

4 Infant mortality per 1,000 live births

5 Under 5 mortality rate per 1,000 children

6 Low-birthweight babies (% of births)

7 Percentage of persons aged 25 and over "who can, with understanding, read and write a short, simple statement on their everyday life" (World B.

9 Percentage of population with access to an improved water source (% of population)

Percentage of population with access to safe water in rural areas

Percentage of population with access to safe water in urban areas

10 Daily calorie supply per head as percentage of requirements, Unicef

12 Physicians per 1,000 people

13 Hospital beds per 1,000 people

14 Percentage of population with access to health services as defined by the WHO

15 Percentage of population below the national poverty line 1990-2001 and % of population below 50% of the median income in Norway 1990-2001

16 Percentage of population below 2\$ a day in Peru and Thailand and 1.1\$ a day in Norway

17 Ratio of the number of children of official school age (as defined by the national education system) who are enrolled in school to the population

18 Percentage of woman using contraception aged 15-49

19 Maternal mortality ratio per 100,000 births

Assets Index

Section 4.3 of the RANQ enquires about the assets the household has access to. There are 51 assets in total classified under hand tools, mechanised productive assets, other productive assets, transport, electrical consumer goods and other household assets. There is neither information about the type of assets within a category nor about their price or quality. Furthermore, there is not information about the origin of the asset: inheritance, donation, gift, purchase, and exchange....

The three first categories of assets are related to the household as a production unit and the other four categories are related to the household as a consumption unit. The asset index is build using only the latter four categories grouping them into 7 new categories of goods coming out from the frequency of access and WeD Thai team knowledge of the status attached to them. Table A.4. shows the assets in RANQ and the frequencies for all rural sites. For further information about the generation of the index contact the authors.

Table A.4. Assets in RANQ and frequencies

Assets	Households having assets in the category(%)
Transport rich	15.73
CAR	7.16
PICKUPTRUCK	9.22
ITT rich	23.86
SATELLITETV	0.76
COMPUTER	4.77
DVD	5.86
VIDEOPLAYER	5.64
CAMERA	13.02
LANDLINEPHONE	4.01
Household goods rich	34.92
MICROWAVE	1.84
WASHINGMACHINE	23.75
SOFA	21.58
Jewellery*	61.93
GOLDEARRING	33.30
GOLDNECKLACE	35.03
GOLDRING	27.11
OTHEARRING	15.08
OTHNECKLACE	17.03
OTHRING	15.94
BRACELET	19.96
OTHJEW	6.83
ITTcommon	77.22
RADIO	46.85
CASSETTEPLAYER	37.96
CDPLAYER	47.94
MOBILEPHONE	48.16
Household goods basic	99.35
BED	43.93
BLANKET	58.13
MATTRESS	76.36
CHAIR	47.51
TABLE	41.87
WARDROBE	85.47
FAN	86.55
MOTORBIKE	79.83
WATCHORCLOCK	80.04
TV	88.83
Kitchen appliances basic	99.78
ELECPOT	55.21
ELECIRON	69.41
ELECRICECOOKEER	79.39
STOVE	63.12
FRIDGE	66.59
CUTLERY	50.11
CROCKERY	79.61
KETTLE	81.67
POTS	83.19

*46% of households own either a golden earring or a gold necklace

