

THE RELATIONSHIP BETWEEN SOCIAL CAPITAL AND QUALITY OF LIFE AMONG RURAL HOUSEHOLDS IN TERENGGANU, MALAYSIA

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© Ontario International Development Agency. ISSN 1923-6654 (print),
ISSN 1923-6662 (online). Available at <http://www.ssrn.com/link/OIDA-Intl-Journal-Sustainable-Dev.html>

Abstract: Social capital has been widely recognised in the recent development literature to have positive consequences on societal well being. However, most studies examine the impact of social capital on some narrow indicators of well being such as income, poverty, education and health. While these indicators do measure and represent the standard of living of the society, and are important development objectives, they focus only on the material aspect of well being. Therefore, it does not really shed light on whether social capital is associated with quality of life which is the subjective aspect of well being. This gives rise to the question on whether social capital also leads to better quality of life. This paper attempts to fill this gap by extending the analysis not only on the impact of social capital on income, but also on quality of life. Empirical evidence on the links between social capital and quality of life is provided by performing regression analysis. The analysis is carried out using primary data obtained from a survey of 2500 rural households in Terengganu, Malaysia. The results show that social capital has a significant impact not only on household income but also on quality of life. These results imply that investment in social capital is crucial to achieve development objectives.

Keywords: Malaysia, quality of life, social capital

I. INTRODUCTION

Social capital, which generally refers to trust, social norms, and networks, has been widely recognised in the recent literature to have positive consequences on economic and social development. Indeed, social capital has been suggested as one of the possible factors that could explain why development performance differs across nations or communities. Putnam [12] for instance, argued that the differences in development outcome of various regions in Italy are mainly attributed to the differences in the level of social capital owned by the

community in the regions. He found that regions where there are high levels of voluntary participation and activities, i.e. what he calls 'civic engagement', are also regions that have high level of trust among the community.

Besides, there is also high perception among the community that people in the regions are law abiding people, and those in powers are normally corruption free. Interestingly, Putnam [12] found that there is a positive association between regional differences in 'civic engagement' and development performance of the regions in Italy.

Social capital also has been suggested to have a positive effect on economic growth rates [13]. Furthermore, it also seems to be perceived as one of the key ingredients to remedy socio-economic problems. Putnam [11] provided evidence that shows the levels of 'civic engagement' and voluntary participation in the United States were strongly correlated with a number of social consequences such as lower levels of violent crime, lower mortality levels, and better educational outcomes. Nakagawa and Shaw [9] showed that social capital plays an important role in disaster recovery. In their study on disaster recovery in Kobe, Japan and Gujarat, India, Nakagawa and Shaw found that a community with higher social capital proactively participates in the reconstruction program and hence, successfully and quickly recover from the disaster.

There are also studies carried out at the micro level to examine the relationship between social capital and household income. For instance, Narayan and Pritchett [10], in their study among households in rural Tanzania, found that social capital is one of the important determinants of household's income. Indeed, they concluded that ignoring social capital in the analysis and understanding of poverty issue "could be missing a large part of the poverty puzzle". Moreover, they found that households in villages with

more social capital are more likely to enjoy better public services, use advanced agricultural practices, participate in communal activities and use credit for agricultural improvements. Another study by Yusuf [17] in Nigeria also found that social capital does enhance household income. These studies show that social capital does contribute towards higher standard of living, which is an undoubtedly important development objective.

However, it should be realised that development is not only concerned with the material or physical aspects of life, but it is also concerned with quality of life.¹ Therefore, measures of living standard such as income appear to be poor proxies for overall changes in development objectives. The ultimate goal of development is attaining a good life. But the question is what constitutes a good life? In this regards, Goulet [3] perspective on the meaning of development might be helpful. He suggested that the inner meaning of development comprises of three core values, which is sustenance, self-esteem and freedom. While the first core value is concerned with meeting the basic human needs such as food, shelter, education and health, the other two are concerned with a sense of worth and self-respect, and having full control over oneself, which are subjective in nature. In view of that, measures on the standard of living such as income, health and education, might not completely capture the notion of a good life. For instance, Schimmel [14] argued that there is a mismatch between the indicators of well being measured by Human Development Index (HDI), with the individual quality of life. Thus, having greater wealth is not tantamount to having higher level quality of life.²

While previous studies have shown that social capital positively affects income, and thus contributes towards our understanding on the issue, the question that remains to be answered is this: does social capital contributes towards a better quality of life? It is in this sense that this study attempts to make a contribution. In particular, the analysis of previous studies is extended further on two important counts. First, the impact of social capital on the quality of life is examined, where the individual quality of life is measured through their assessment on their state of

well being. Second, while most previous studies on social capital employs data at the aggregate level, here empirical evidence is provided at the micro level.³ The data were obtained from rural households in Terengganu, Malaysia.

The study is organised as follows. Section II discusses the sources of data as well as the method employed in the study. Section III presents the results of this study, while Section IV concludes.

II. THE CONCEPTUAL FRAMEWORK

Woolcock and Narayan [15] mentioned that "... a person's family, friends and associates constitute an important asset, one that can be called on a crisis, enjoyed for its own sake and leveraged for material gains". Thus, the underlying assumption of social capital is that it is a form of asset and that socialising is generally good. Consequently, the involvement and participation of individual in groups, i.e. having social ties and relation with others in society, can have positive socioeconomic consequences not only to the individual, but also to the community at large. Communities endowed with higher stock of social capital are perceived to be in a stronger position to deal with poverty and vulnerability, resolve disputes, and take advantage of new opportunities [15]. Communities with a lower stock of social capital on the other hand, can have the opposite outcome.

There are various ways through which social capital may influence development outcomes. Narayan and Pritchett [10] for instance suggested five ways in which social capital could leads to higher income. First, higher social capital leads to efficiency of the economy. In particular, communities with higher social capital such as high levels of voluntary participation and activities are more likely to facilitate close monitoring of the provision of public services and the performance of the government. Increased efficiency of the government, in turn, would leads to higher economic growth and income. Second, higher social capital may facilitates greater cooperative behavior among the community members and thus would be helpful in solving problems with regards to "common property" and thus could avoid the "tragedy of the commons". Consequently this may result in better use of resources and benefit most of the members of the community. Third, "social participation", "interconnectedness with the social system", "exposure to interpersonal communication channels" and "belonging to highly interconnected systems" are each positively associated with the early

¹ Here the term quality of life is used interchangeably with subjective well being.

² A study by Jongudomkarn and Camfield [6] among people in the North Eastern and Southern Thailand found that the non material aspect of well being is important. The respondents of their study assert that material gains should not deteriorate the family and community relationships, or reduce their devotion to religious and moral beliefs. This might be one of the explanations of the Easterlin paradox, i.e. why there is inconsistency between income measures and the reported measures of well being, as discussed in the literature on the economics of happiness. For a discussion on the economics of happiness, see for instance, Graham, C. [4].

³ Bjornskov [2] is among those who investigated the relationship between social capital and life satisfaction. However, his analysis is based on macro level data.

adoption of innovations. Thus, communities with higher social capital may adopt new technology at a faster rate, and hence achieve higher economic growth and development. Fourth, communities with higher social capital may have more and better information. Thus, higher social capital may result in less imperfect information. This may in turn may lower transaction costs, reduce uncertainty, lessen adverse selection and moral hazard, and hence leads to higher economic activities and growth. Finally, social capital may act as an informal insurance or informal social safety net. Social capital therefore could mitigate the consequences of adverse outcomes. Thus, communities with higher social capital may pursue higher return but more risky activities since there is greater sharing of household risk. This in turn would leads to higher income.

With regards to the relationship between social capital and quality of life (life satisfaction), Bjornskov [2] suggested a few possible explanations. First, social capital could lead to higher economic growth rates, which in turn, may create optimism for the future. The optimism about the future then may lead to higher life satisfaction. Second, social capital could help countries to cope with external shocks successfully. The ability to cope successfully with external shocks will help promote stability to the economy. This in turn may reduce economic uncertainty, and hence raise the level of life satisfaction. Finally, social capital inherently is good in itself. Having social interaction and knowing many friends could lead directly to the feeling of good about oneself and may raise the individual or societal level of life satisfaction.

III. DATA AND METHOD

A. The Data

The data used in this study are primary data gathered through a survey carried out between April 15 and May 18 2009 in Terengganu, Malaysia. The area of study covers about three quarter of the total area of the state of Terengganu (Fig. 1). The area under study consists of three districts, namely Dungun, Kemaman and Hulu Terengganu. The total population in these three districts is about 416,600, while the estimated number of households is around 90,565 (Table I). The sample of the study consists of 2500 households who were selected through a stratified random sampling method. This constitutes about 3% of the estimated total households in these three districts. However, due to missing values, only 2439 households can be used in the analysis.

FIGURE I:
MAP OF TERENGGANU

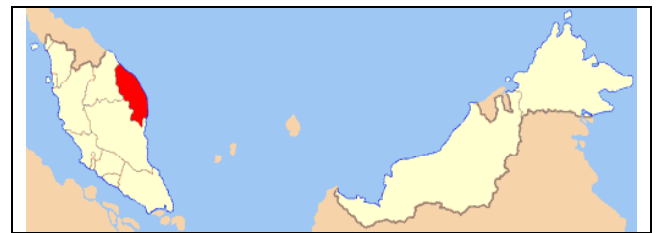


TABLE I:
SAMPLE OF THE STUDY BY DISTRICTS
(NUMBER OF HOUSEHOLDS)

District	Total Population *	Estimated Number of Households**	Sample	Percentage
Dungun	164,000	35652	985	39.4
Kemaman	176,400	38348	1058	42.3
Hulu Terengganu	76,200	16565	457	18.3
TOTAL	416600	90565	2500	100.0
Terengganu	1,094,300	237891		

*Source: [7]

**Authors' own estimation, assuming average household in Terengganu consists of 4.6 family members.

A. Measures of Social Capital

In the literature, there is a disagreement on what constitutes social capital. In fact, there is also a disagreement on how social capital should be measured. Here, social capital is viewed to constitute six dimensions or components. These six components are: i) groups and networks, ii) trust and solidarity, iii) collective action and cooperation, iv) information and communication, v) social cohesion and inclusion, and vi) empowerment and political action.⁴ Table II shows the social capital dimensions and the related items that capture each dimension. There are six dimensions and 12 items in the social capital index.

All of the items representing each domain are in the form of "yes" or "no" answer. A value of 1 is designated to "yes" answer, while the value of 0 is given to "no" answer. In order to derive the social capital index for each individual household, the percentage of "yes" answer is calculated. Then this percentage is transformed into a scale of 1 to 10 by applying a linear transformation, as below:

$$Y = h(x) = 1 + (9/100)*x$$

where x is the raw score (percentage of "yes" answer) and Y is the (social capital) index score.

⁴ For a more elaborate discussion on social capital, see Grootaert, C. et.al. [5].

TABLE II:
SOCIAL CAPITAL DIMENSIONS AND RELATED INDICATORS

DIMENSION OF SOCIAL CAPITAL	ITEMS
Groups and networks	(i) Membership in formal or informal organisation or association. (ii) Ability to get support from those other than family members and relatives in case of hardship.
Trust and solidarity	(i) Most people in the community can be trusted (ii) Most people in the community often help each other.
Collective action and cooperation	(i) More than half of the community contribute time or money towards common development goals. (ii) High likelihood that people in the community to cooperate to solve common problem.
Information and communication	(i) Frequently listen to radio. (ii) Frequently read newspapers. (iii) Frequently watch television.
Social cohesion and inclusion	(i) Strong feeling of togetherness within the community. (ii) Feeling safe from crime and violence when alone at home.
Empowerment and political action	(i) Have control in making decisions that affect everyday activities. (ii) Vote in the last general election (2008).

B. Measures of Quality of Life (QOL)

As in the case of social capital, the quality of life (QOL) suffers from lack of standard agreed definition and form of measurement. However as suggested in the literature, such limitation could be overcome if it is possible to distinguish QOL from standard of living. In many cases the terms QOL and standard of living are used interchangeably leading to misconception of what QOL actually refers to. One needs to understand that QOL relates to a comprehensive meaning of life satisfaction where good QOL refers to feeling good about one's life. It covers many aspects of human life such as environment, health, education, public and private amenities, religious belief and so on. On the other hand the term standard of living only captures a narrow dimension of life satisfaction which normally refers to the level of consumption and thus income. It is basically the satisfaction in meeting basic needs.

Thus high standard of living does not mean high QOL and vice versa.

In this study QOL is measured through questions about people's perception on some aspects of quality of life. Here, the domain employed in Malaysian Quality of Life Index (MQLI) is adopted. The MQLI consists of 10 domains as follows: (i) working environment; (ii) communication and transportation; (iii) health; (iv) education; (v) housing; (vi) environment; (vii) family life; (viii) social participation; (ix) public safety; and (x) culture and leisure. Another domain, which is religious life and activities, is added to the existing MQLI domains.

Of the 11 domains, four are dropped because they are either irrelevant⁵ or have been accounted for in measuring social capital. The four domains are working environment, social participation, public safety, and culture and leisure. Thus the survey covers seven domains which are health, education, housing, transportation and communication, environment, family life, and religious life and activities. The seven domains contain 24 items (Table III). Each respondent uses Likert scale to assess their satisfaction or dissatisfaction ranging from 1 (strongly disagree) to 5 (strongly agree). The scores for each domain are averaged to produce a measure of QOL.

In order to derive the QOL index for each individual, the raw score is obtained by adding up the scores of each item in the domain and then are averaged out by the number of items in that particular domain. Then this raw score is transformed into a scale of 1 to 10 by applying a linear function as below:

$$Y = h(x) = (9x-5)/4$$

where x = raw score and Y = index score.

⁵ Items in the domain of working environment appear irrelevant to our respondents since most of the items are designed for those working in the formal sector whereas our respondents are from rural areas and involve in informal sector. Items in the domain of social participation, public safety, and culture and leisure, seem to be overlapping with items in social capital index.

TABLE III:
DIMENSION OF QUALITY OF LIFE AND THE RELATED INDICATORS

DIMENSION OF QUALITY OF LIFE	ITEM
Health	(i) public health service
	(ii) state of health
	(iii) level of happiness
	(iv) level of stress
Education	(i) quality of education
	(ii) cost of children's education
	(iii) accessibility to education
Housing	(i) general condition of the house
	(ii) water supply
	(iii) electricity
	(iv) neighbourhood area
Transportation and Communication	(i) public transport
	(ii) private transport
	(iii) road safety
	(iv) public telecommunication such as public phone
Environment	(i) air quality
	(ii) water quality
	(iii) forest
	(iv) sewerage system
Family Life	(i) assessment of family life
	(ii) relationship with family members
	(iii) financial
	(iv) jobs
Religious Life and Activities	(i) state of religious belief

Aside from deriving quality of life through the calculation of QOL as above, information with regards to the overall state of quality of life of the individual is obtained through a single item measure. Each of the respondents is asked to assess his or her overall state of quality of life using Likert scale, ranging from 1 (strongly disagree/dissatisfied) to 5 (strongly agree/satisfied). The score is then transformed to scale 1 to 10 as shown above. Both measures, the calculated QOL and the overall quality of life, are used in the estimation. Table IV shows the mean score for each dimension of quality of life.

TABLE IV:
MEAN SCORE OF QUALITY OF LIFE

DIMENSION OF QUALITY OF LIFE	MEAN SCORE
Transportation and Communication	5.82
Health	7.32
Education	7.07
Housing	7.19
Environment	7.11
Family Life	7.49
Religious Activities	7.89
Calculated Aggregate Quality of Life (QOL)	7.09
Individual assessment of their overall quality of life	7.69

C. Regression Analysis

In this paper, two measures of development objectives are employed. These are the standard of living and quality of life. The standard of living is measured by income and quality of life is measured by the index of quality of life. These two measures constitute two alternative dependent variables. To gain better insights on the role of social capital, each of them is regressed on the index of social capital as well as other variables, as follows:

$$HHINC_i = \beta_0 + \beta_1 SOCC_i + \beta_2 HUMC_i + \beta_3 PHYC_i + \beta_4 X_i + u_i \quad (1)$$

$$QOL_i = \alpha_0 + \alpha_1 SOCC_i + \alpha_2 HUMC_i + \alpha_3 PHYC_i + \alpha_4 X_i + v_i \quad (2)$$

Where:

- HHINC_i = household income for household i
- QOL_i = index of quality of life for household i
- SOCC_i = index of social capital for household i
- HUMC_i = years of education for the head of household i
- PHYC_i = other types of capital (or assets) owned by household i
- X_i = a vector of household characteristics
- α and β = the coefficients
- u_i and v_i = error terms

As being mentioned earlier, the index of quality of life, which is the dependent variable in equation (2), is calculated from individual assessment on various aspects of quality of life. Household characteristics comprise of demographic variables of the head of household such as age (AGE), marital status (MARST), gender (GEN). Besides, the household size (HHSIZE) is also included. Table V shows the summary statistics of the variables.

TABLE V:
SUMMARY STATISTICS OF THE VARIABLES

	Average	Minimum	Maximum	Std. Dev
HHINC	1864.59	50.00	15750.00	1575.95
QOL (Composite Index)	7.09	3.09	9.84	0.66
QOL (Single item measure)	7.69	1.00	10.00	1.22
SOCC	7.26	1.00	10.00	1.45
PHYC	56362.91	0.00	596000.00	62202.39
HUMC	7.14	0.00	18.00	3.76
MARST	1.25	1.00	3.00	0.60
GENDER	1.08	1.00	2.00	0.28
AGE	50.31	18.00	95.00	11.67
HHSIZE	6.83	1.00	18.00	2.74

In order to verify the results in equation (2), the equation is re-estimated using a single item measure

of quality of life as the dependent variable. The estimation employed in this study is the Ordinary Least Squares Method (OLS). The results of the estimation are discussed in the following section.

IV. THE RESULTS

Table VI shows the estimation results of equation (1). It is found that the variation in social capital, human capital, physical assets, gender of the head of households, marital status, as well as household size are significant in explaining the variation in household income. These variables also have the correct expected signs. The results therefore confirm the findings of previous studies, i.e. social capital leads to higher household income. In the literature, there are various explanations suggested for this positive impact of social capital on income. Narayan and Pritchett [10] argued that social capital leads to higher income via increased efficiency, reduced conflicts, greater stability, higher rate of adoption to new technology, lower transaction costs, and reduced risks.

As mentioned earlier, income makes up only the material aspect of well being. While social capital is found to have a positive relationship with household income, it remains to be seen whether social capital also contributes towards better quality of life, i.e. the subjective measure of well being. To test this conjecture, the impact of social capital on quality of life is estimated, i.e. equation (2). Table VII shows the estimation results for equation (2). It is found that only two variables – social capital and physical assets – have a positive signs and are significant in explaining changes in quality of life. Other variables are found to be insignificant.⁶ Thus, the results indicate that social capital is important in explaining quality of life.

To investigate further, the index of quality of life in equation (2) is replaced with a single measure of quality of life. The results of the re-estimation are shown in Table VIII. Interestingly, the result shows that social capital is again significant in explaining quality of life. Besides, it also has the correct expected sign. Thus, Table VIII confirms the results

⁶ It is interesting to find that gender is not significant in explaining quality of life. Our finding is therefore in common with the findings of Argyle [1] who concluded that gender differences have little impact on satisfaction with life. Besides, Myers and Diener [16] also found that subjective well being is evenly distributed with not only gender, but also race, age, socioeconomic status and wealth. Nonetheless, with regards to marital status, our finding seems contrary to Yakimec [16] who found that marital status is significant and positively correlated with life outlook, life satisfaction, and overall happiness.

in Table VII that social capital does matter towards improvement in quality of life. The findings in Table VII and Table VIII seem to be in agreement with Bjornskov [2] who found that social capital matters in determining life satisfaction. The results therefore show that not only social capital is positively correlated with household income as found in past studies, but it is also positively correlated with quality of life.

Here a few possible mechanisms through which social capital might have an impact on quality of life can be conjectured. First, social capital leads to higher income, and hence creates optimism about the future [2]. Optimism about the future, in turn, may lead to better life satisfaction. Better life satisfaction goes together with higher quality of life. Second, social capital may help individual to overcome problems, and thus reduce vulnerability and uncertainty. Feeling secure and the ability to solve problems might improve perception about oneself and hence leads to better quality of life. Third, social capital, i.e. social interaction, may not only have economic (material) value to an individual, but it also may have emotional (psychological) value. For instance, the material value of having a trusted friend or companion might be that the individual may have someone to turn to for help during difficulties or for showing opportunities that leads to material gain or satisfaction. However, even without any favour given, having such a friend or companion could be emotionally fulfilling. This emotional attachment to such a friend or companion may lead to a good feeling about oneself and hence contributes towards a better quality of life.

V. CONCLUSION

In the past, economists and policy makers have been emphasising on the accumulation of physical and human capital as a tool for achieving development objectives such as to increase income and improve health and education level of the people. While these two types of capital are important, neglecting social capital may lead to failure of achieving the full potentials of development. This study confirms the findings in past studies that social capital does matter to enhance material well being (income), i.e. the standard of living of the people. Since the ultimate objective of development is not only constrained to raising the standard of living, development efforts should therefore bring about a better quality of life. The result of this study suggests that social capital is important and hence play a role in improving quality of life. Investment in social capital is expected not only to raise the standard of living, but also to improve quality of life.

TABLE VI:
ESTIMATION RESULTS: IMPACT OF SOCIAL CAPITAL ON HOUSEHOLD INCOME

Independent Variables	Coef.	Robust Std. Err	t	P> t	[95% Conf. Interval]	
Constant	320.9563	336.8989	0.9500	0.3410	-339.6824	981.5951
SOCC	102.5598	18.1016	5.6700	0.0000	67.0637	138.0559
HUMC	75.9190	9.8565	7.7000	0.0000	56.5909	95.2470
PHYC	0.0081	0.0007	11.2200	0.0000	0.0067	0.0096
AGE	-0.0149	2.7171	-0.0100	0.9960	-5.3430	5.3132
GEN	-494.5622	162.2056	-3.0500	0.0020	-812.6378	-176.4866
MARST	-305.6311	128.8364	-2.3700	0.0180	-558.2715	-52.9906
HHSIZE	85.9190	11.7583	7.3100	0.0000	62.8618	108.9762

Number of obs. =2439; F(7, 2431)=59.51; Prob > F=0.0000; R-squared=0.2064; Root MSE=1391.1

TABLE VII:
ESTIMATION RESULTS: IMPACT OF SOCIAL CAPITAL ON QUALITY OF LIFE (COMPOSITE INDEX)

Independent Variables	Coef.	Robust Std. Err	t	P> t	[95% Conf. Interval]	
Constant	6.2535	0.1682	37.1900	0.0000	5.9237	6.5832
SOCC	0.1049	0.0099	10.5500	0.0000	0.0854	0.1244
HUMC	0.0057	0.0045	1.2700	0.2060	-0.0031	0.0145
PHYC	0.0000	0.0000	2.8700	0.0040	0.0000	0.0000
AGE	-0.0020	0.0013	-1.5400	0.1250	-0.0046	0.0006
GEN	0.0508	0.0729	0.7000	0.4860	-0.0921	0.1936
MARST	0.0167	0.0546	0.3000	0.7610	-0.0905	0.1238
HHSIZE	0.0052	0.0048	1.0900	0.2770	-0.0042	0.0146

Number of obs.=2439; F(7, 2431) = 20.70; Prob > F= 0.0000; R-squared=0.0648; Root MSE=0.63723

TABLE VIII
ESTIMATION RESULTS: IMPACT OF SOCIAL CAPITAL ON QUALITY OF LIFE (SINGLE ITEM MEASURE)

Independent Variables	Coef.	Robust Std. Err	t	P> t	[95% Conf. Interval]	
Constant	6.4036	0.3076	20.8200	0.0000	5.8005	7.0067
SOCC	0.1239	0.0191	6.4900	0.0000	0.0865	0.1614
HUMC	-0.0021	0.0078	-0.2700	0.7880	-0.0173	0.0131
PHYC	0.0000	0.0000	1.2000	0.2290	0.0000	0.0000
AGE	0.0006	0.0025	0.2400	0.8140	-0.0043	0.0054
GEN	0.2635	0.1340	1.9700	0.0490	0.0007	0.5263
MARST	0.0782	0.1033	0.7600	0.4490	-0.1243	0.2807
HHSIZE	-0.0003	0.0093	-0.0300	0.9750	-0.0185	0.0179

Number of obs. =2435; F(7, 2427) =6.72; Prob > F=0.0000; R-squared=0.0235; Root MSE=1.2063

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