Human Development Index of Rural Communities in Malaysia: Tembeling, Pahang and Muar Rivers

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Abstract: This quantitative study attempts to determine, the Human Development Index (HDI) level of river communities in Malaysia. A total of 240 respondents were selected from 4 villages located near to Tembeling, Pahang and Muar Rivers. The analysis confirms that the HDI level of the respondents studied is low; however respondents in Gintong recorded a moderate-level HDI compared to other 3 areas which recorded low HDI values. Furthermore, there is a significant difference in terms of HDI between the 4 areas studied. Several strategies are suggested by which to further enhance the HDI of local communities, particularly those who reside near to rivers.

Key words: Community development, river development, rural development, HDI, strategies

INTRODUCTION

The Human Development Index (HDI) is an important concept. Human development can be understood in relation to the absolute freedom that people possess and the way in which this assists them to decide who to be what to do and how to live. HDI was developed by Mahbub ul Haq who accentuated the inadequacy of existing measures of human progress for the true purpose of development which is to improve people's lives. A number of themes are considered fundamental to human development, such as social progress, economics, efficiency, equity, participation and freedom, sustainability and human security (UNDP, 2010). To date, a number of definitions have been put forward for human development; among the most famous is that suggested by Mahbul ul Haq:

> The basic purpose of development is to enlarge people's choices. In principle, these choices can be infinite and can change over time. People often value achievements that do not show up at all or not immediately in income or growth figures: Greater access to knowledge, better nutrition and health services, more secure livelihoods, security against crime and physical violence, satisfying leisure hours, political and cultural freedoms and sense of participation in community activities. The objective of development is to create an enabling environment for people to enjoy long, healthy and creative lives

Indeed, understanding achievements in human development among communities is important, as failing to do so will result in a number of communities being left behind in terms of the vital areas outlined. In response to this, a number of international studies have been conducted with the main aim of determining the level of human development of communities in certain countries. However, despite the wide range of extant literature on human development at the international and at the local (community) level, for example in the Malaysian context-little information relating to HDI is available. For this reason, the main attempt of this study is to identify the human development level of communities that reside near to Tembeling, Pahang and Muar Rivers.

The human development index: In order to measure human development, a number of HDI tools have been invented. Governments across the globe have relied on the established HDI to produce official government statistics. Data produced in annual publications has resulted in serious political discussions and renewed efforts, nationally and regionally. Among established HDI measurement tools is the Well-O-Meter; this was invented by the American Human Development Project of the Social Science Research Council (http://www.measure of america.org/well-o-meter/). It is a modified version of the American Human Development Index and it focuses on 3 common components of HDI; namely, health, income and education (AHDP, 2011). Though, the measurement

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was invented specifically for the American context, it is also useful within the Malaysian context, particularly in relation to those living in rural areas. By relying on this foreign measurement tool, researchers can identify the HDI level of rural communities in Malaysia in order to compare them to other communities living in developed countries.

Tembeling, Pahang and Muar Rivers: Tembeling, Pahang and Muar are connected to each other. Tembeling River originates from Mount Tahan, Pahang. The combination of Tembeling and Jelai Rivers forms Pahang River which flows through 2 states Pahang and Negeri Sembilan for 459 km, making it the longest river in Peninsular Malaysia. Pahang River is nearly connected to Muar River at Jambu Lapan in Jempol, Negeri Sembilan. Historically, these 3 rivers have been involved in a number of important events. For example, Tembeling River has been used, as a route for traders from the Eastern states while traders from the West preferred Muar River, as their main route to the East. At Jambu Lapan, these traders had to pull their boats on land and continue for almost 300 m before proceeding via Pahang River to the West. Pahang and Muar River are also connected to the legendary Hang Tuah-a famous Malay warrior-who used the Muar-Pahang River route to bring Tun Teja back to Malacca. Recently, although Tembeling, Pahang and Muar Rivers are no longer used as main trade routes, several communities still rely on these rivers for their socio-economic activities. Tembeling River is still used by a community in the remote areas of Kuala Tembeling, as their main route of transportation while at some points along the river aquaculture activities are conducted whereby species, such as patin (*Pangasius sutchi*) and tilapia are reared. Abu Samah *et al.* (2011) confirmed that some of the communities in Muar still rely on the Muar River for their additional income, especially through prawn-fishing activities. Abu Samah *et al.* (2011) added that the majority of the Muar River community, also conduct recreational

activities at the river while Yassin *et al.* (2010) confirmed that a community in Kundang Hulu Village in Jorak use small boats called kotak to cross Muar River. Pahang River is a popular place in which to rear patin and in fact accounts for a large portion of the country's patin production (Department of Fisheries Malaysia, 2010). Furthermore, some parts of Pahang River have been developed into recreational areas (for fish and shrimp netting) and a number of communities, especially aborigines in remote areas, still rely on Pahang River as a transportation route.

MATERIALS AND METHODS

This is a quantitative study in which a total of 240 villagers from 4 villages, namely Gintong (Jerantut, Pahang), Bantal (Kuala Tembeling, Pahang), Langkap (Kuala Pilah, Negeri Sembilan) and Jorak (Muar, Johor) (Table 1) were randomly selected as respondents. All respondents lived near to Tembeling, Pahang or Muar River. In order to calculate the HDI of the respondents, a total of 23 questions were formulated with reference to the Well-O-Meter website (http://www.measureofamerica.org/well-o-meter/). The instrument focused on 3 areas, namely:

- Health (23 questions derived from the Well-O-Meter)
- Income (1 question)
- Education (1 question)

A total of 5 additional demographic questions were also included, taking the total number of questions 30. The data was collected by trained and experienced enumerators using the survey method. After the HDI was calculated using the Well-O-Meter website, SPSS was used to calculate the cumulative HDI value. The actual data collection took almost 6 months to complete from May, 2013 till October, 2013. The data then was analyzed using descriptive and inferential analyses.

Table 1: Characteristics of the areas studied

Areas	Main access	Main economic income	Distance to nearest city	Additional info
Gintong	Road	Agriculture activities, government sector	Roughly 14 km; 15 min to the nearest city	Located near Jerantut city Vulnerable to floods Adequate infrastructure facilities
Bantal	Boat	Agriculture activities	Roughly 70 km; 3 h by boat	Located at the Kuala Tahan National Park reserved forest areas Vulnerable to floods Adequate infrastructure facilities
Jorak	Road	Industrial and agricultural activities	Roughly 20 km;15-25 min to the nearest city	Located near to the Bukit Pasir industry area Vulnerable to floods Adequate infrastructure facilities
Langkap	Road	Agricultural activities	Roughly 27 km; 30-40 min to the nearest city	Located at the Pelangai reserved forest areas Inadequate infrastructure facilities

RESULTS AND DISCUSSION

Table 2 displays the respondents demographic data. A total of 22.1% of the respondents work in agriculture-related fields primarily, as rubber tappers followed by 20.8% who are self-employed. A huge majority of the respondents are Malay (74.6%) followed by aborigine (24.6%); only 2 of them are Chinese. Most of the respondents can be considered senior villagers based on the mean score for period living in the village (M = 31.5 years). The respondents stated that they live far away from the nearest city; this is confirmed by the mean score recorded for distance to the nearest city (M = 29.2 km). Most of the respondents (31.7%) live between 0.251-0.5 km from Tembeling, Pahang and Muar River while a total of 23.3% live <0.25 km from Tembeling, Pahang and Muar River.

Table 3 demonstrates the 1st part of the HDI which focuses on the respondents gender, age and health. More than half of the respondents are male (54.2%) compared to

Table 2: Respondents background data

Background data	Frequency	Percentage	Mean	SD
Job category				
Government sector	26	10.8	31.500	20.500
Self-employed	50	20.8		
Housewife	47	19.6		
Retiree	10	4.2		
Agriculture-related	53	22.1		
Student	14	5.8		
Private sector	21	8.8		
Businessman	9	3.8		
Other	10	4.2		
Race				
Malay	179	74.6		
Aborigine	59	24.6		
Chinese	2	0.8		
Period living in village (years)				
<10	46	19.2	29.200	24.200
11-20	41	17.1		
21-30	43	17.9		
31-40	28	11.7		
41-50	29	12.1		
>51	53	22.1		
Distance to nearest city (km)				
<10	49	20.4	0.841	0.905
11-20	105	43.8		
>21	86	35.8		
Distance to Pahang or Muar River (km)				
<0.0250	56	23.3		
0.0251-0.500	76	31.7		
0.501-1	66	27.5		
>1	42	17.5		

Table 3: HDI part 1 (Health)

Level	Frequency	Percentage	Mean	SD
Gender				
Male	130	54.2	39.7	16.6
Female	110	45.8		
Age (years)				
Under 30	95	39.6		
Between 30-40	38	15.8		
Between 40-50	38	15.8		
Between 50-70	61	25.4		
Over 70	8	3.4		

Table 3: Continue

Level	Frequency	Percentage	Mean	SD
Living in urban area with a population of >2,000,000				
Yes	0	0.0		
No	240	100.0		
One grandparent has live to age 85 or more				
Yes	76	31.70		
No	164	68.20		
All grandparents have lived to age 80 or more				
Yes	51	21.30		
No	189	78.70		
Parent died of a stroke or heart attack before reaching 50				
Yes	33	13.70		
No	207	86.30		
Any parent, brother or sister under the age of 50 has (or had) cancer, a heart condition or diabetes				
Yes	51	21.30		
No	189	78.70		
Over 65 and still working				
Yes	13	5.40		
No	227	94.60		
Living with spouse or friend				
Yes	231	96.20		
No	9	3.80		
Years living alone since age 25 (years)				
0	206	85.80		
1-5	23	9.60		
>6	11	4.60		
Work behind a desk				
Yes	49	20.40		
No	191	79.60		
Work requires heavy physical labor				
Yes	103	42.90		
No	137	57.10		
Frequency of strenuous exercise (tennis, running, etc.) for at least half an hour (times per week)				
5	45	18.80		
2-3	50	20.80		
<2	145	60.40		
Sleep for >10 h each night				
Yes	43	17.90		
No	197	82.10		
Tend to be intense, aggressive or easily angered				
Yes	30	12.50		
No	210	87.50		
Tend to be easy-going and relaxed				
Yes	225	93.80		
No	15	6.20		
Happy				
Yes	232	96.70		
No	8	3.30		
Unhappy				
Yes	234	97.50		
No	6	2.50		
Received a speeding ticket in the last year				
Yes	19	7.90		
No	221	92.10		
No. of packets of cigarettes smoked per day				
0	162	67.50		
0.5-1	29	12.00		
1-2	48	20.00		
>2	1	0.50		
Drink the equivalent of 2 alcoholic drinks per day				
Yes	6	2.50		
No	234	97.50		
Overweight				
No	177	73.80		
By 10-30 lbs	17	7.10		
By 30-50 lbs	45	18.70		
By 50 lbs or more	1	0.40		
Annual medical check up				
Yes	154	64.20		
No	86	35.80		

female (45.8%). The mean score recorded for age was 39.7 with the majority falling into the under 30 age group. All of the respondents live in an area with a population of <2,000,000. A total of 31.7% claimed that one of their grandparents lived to 85 years or more while 21.3% claimed that all of their grandparents lived to age 80 or more. Thus, most of the family members of the respondents appear to possess good health; this is supported by the fact that only 13.7% of the respondents reported that one of their parents died of a stroke or heart attack before reaching 50 years old while 21.3% stated that a parent, brother or sister under the age of 50 has (or had) cancer, a heart condition or diabetes. Only 13 of the respondents have reached or exceeded 65 years old and still working and a large majority of the respondents (96.2%) live with their spouse or friends. A total of 9.6% claimed that they have lived alone for between 1 and 5 years, since they were 25 years old while a small percentage (4.6%) claimed that they have lived alone for 6 years and more since they were 25 years old.

Only a minority of the respondents work behind a desk, however this is to be expected, as the majority of the respondents are self-employed and work in agriculture. A total of 42.9% of the respondents claimed that their work requires heavy physical labor and worryingly, a total of 60.4% revealed that they strenuously exercise less than twice a week.

A total of 17.9% of the respondents sleep for >10 h each night while 12.5% claimed that they are intense, aggressive or easily angered. More than four-fifth of the respondents (93.2%) consider themselves easy-going and relaxed and a total of 96.2% claimed that they are happy.

The next 5 questions reveal the good health status possessed by the respondents. Only 19 respondents stated that they have received a speeding ticket in the previous year. It is encouraging to note that slightly more than two-thirds of the respondents (67.5%) are non-smokers while 97.5% do not consume alcohol and nearly 3-quarters do not have weight problems. It can be concluded that the respondents possess a good level of awareness on the importance of monitoring their health status, as the majority (64.2%) attend annual medical checkups.

Table 4 shows the annual income of the respondents. The mean score recorded was 13,421.50 Malaysian Ringgit (RM) per year which is equivalent to 1,118.46 RM per month. This number is above the poverty level set by the Economic Planning Unit (EPU) of Malaysia which is 720 RM per month. However, it should be noted that a total of 31.4% of the respondents earn 6,000 RM or less per year which is equivalent to 500 RM per month or less and this figure is below the poverty level. Less than half of the respondents (36.7%) were included in the income group category of 6,001-12,000 RM per month.

Table 4: HDI part 2 (Income per year)

Income per year (N = 188; RM)	Frequency	Percentage	Mean[*]	SD
No income	52	-	13,421.5	11819.9
≤6000	59	31.4		
6001-12,000	69	36.7		
12,001-18,000	22	11.7		
18,001-30,000	22	11.7		
>30,001	16	8.5		

[*]The mean score was obtained by dividing the annual income of those who have established income only with 12 (No. of months in a year); -: Those without any established income (e.g., housewives and students) are not included in the calculation

Table 5: HDI part 3 (Education)

Level of education	Frequency	Percentage
Did not complete high school/no diploma	147	61.3
High school graduate or equivalent	62	25.8
Some college credit or associate credit but did not receive a bachelor's degree	17	7.1
Bachelor's degree from 4 years college or university	14	5.8
Master's/doctorate or professional degree	0	0.0

Table 6: Overall community development index using the Well-O-Meter

HDI category	Frequency	Percentage	Mean	SD
Low (1.00-4.00)	177	73.8	3.36	1.52
Moderate (4.01-7.00)	55	22.9		
High (7.01-10.0)	8	3.3		

Table 7: Comparison between the 4 areas studied in terms of HDI

Variables	N	Mean	SD
Jorak	60	3.80	1.33
Bantal	60	3.01	1.02
Gintong	60	4.15	2.01
Langkap	60	2.49	0.92

$F = 17.786$; $p = 0.0001$

With regard to their education achievement, surprisingly the majority did not complete their high school or indicated that they do not have a diploma; this number is significantly bolstered by the respondents in Langkap and Bantal Villages. Slightly more than a quarter of the respondents (25.8%) are high school graduates or equivalent while another 5.8% possess a bachelor's degree from a 4 years college or university (Table 5).

The overall mean HDI score recorded for the respondents was 3.36 which is low. Only 8 respondents indicated a high level of HDI while another 22.9% recorded a moderate level of HDI. Although, the respondents possess good health status which is expected to increase their HDI, it is decreased by their low income and educational achievement (Table 6).

Only one village, namely Gintong, indicated a moderate HDI while the other 3 areas-Jorak, Bantal and Langkap recorded a low HDI. An Analysis of Variance (ANOVA) was performed to identify any difference in terms of HDI between the areas studied. The resulting F-value $(4, 240) = 17.786$, $p<0.05$ reveals a significant different between the 4 areas studied. Further post hoc analysis confirms that there is a significant difference in terms of HDI between villagers in Gintong and villagers in Langkap and Bantal (Table 7).

CONCLUSION

This study aimed to determine the human development status of 4 rural communities located near to rivers. The results that is the HDI level showed that only a few rural river-community members possess a high level of development. Using a 3-dimension scale (health, economics and education), the study revealed that the large majority of respondents are in the low or moderate categories. Though, rural areas are synonymous with less stress and a less hectic life style for many members of the general public which in turn influences their health status, the overall HDI score is low. This is due to an imbalance in the scores between the dimensions measured, since the low score for education and income impacts the total HDI score. This also indicates that rural communities need to strike a balance between the level of education (achievement) and income, together with health conditions in order to improve their development index and subsequently residents quality of life.

In general, though the HDI among the rural river communities was found to be low overall, one of the village revealed a notably higher index. This may due to some variations in characteristics among the locations studied. Based on the data, Gintong village which offers more possibilities for access to modern developments due to its location and facilities has a notably higher HDI score compared to the other 3 villages. This study, also reveals that living in rural area does not necessarily guarantee better living conditions, despite the fact that rural areas are associated with a non-chaotic life. Instead, the overarching principle in developing human is important strategy in ensuring a balanced development.

Methodologically speaking, the measurement method and the 3 domains used in this study which was adopted and adapted from abroad (USA) are generic in terms of application. The items in each domain are applicable and realistic in relation to the norms and socio-cultural aspects of the community studied and the country's national interests and aspirations. The adaptability of the measurement approach used, thus ensures the reliability of the findings in this study and the understanding of human development among the 4 rural communities residing near to Tembeling, Pahang and Muar Rivers in Malaysia.

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