

Rivers Development: The Views of Malaysian Youth

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Abstract: This study attempts to identify the relationship of the rural youth with Pahang and Muar Rivers. This is a quantitative study and used developed questionnaire for collecting its data. A total of 165 rural youth settled along Pahang and Muar Rivers have been selected as the respondents. Findings have confirmed that a majority of rural youth still needs the rivers for their recreational activities while a small portion of them still rely on the river for their additional income. The rural youth have demonstrated a high level of agreement on river development as it offers them benefits with regard to locals' development, environmental awareness, social bonding and transportation. Further, analysis performed have confirmed that factor of state have recorded significant difference with agreement towards river development while the factor of distance to the nearest city have recorded a positive and significant relationship with agreement towards river development. A number of discussions have been placed and it is a hope that such discussion will assist in any planning of developing Pahang and Muar Rivers.

Key words: Rural youth, community development, river development, Muar River, Malaysia

INTRODUCTION

Both Pahang and Muar Rivers are among main rivers in Malaysia. In the old days, both rivers have played a significant role in enhancing the socio-economic aspects of the community. Previously, the community have relied on these rivers particularly for their mobility, protein sources and income generating activities. In addition, the connection of Pahang and Muar Rivers at a place called Penarikan at Jempol, Negeri Sembilan has benefited people during that time particularly the traders and army troopers to either go up to the east coast region states or down to the west coast region states. In this modern day, due to the invention of tar road, rapid development of transportation, improvement of public transportation services and environmental pollution, the community seems to place less reliance on these 2 rivers. Nonetheless, albeit such low level of reliance, however yet, there are some of people out there who still have a good relationship with the river which assist in their socio-economic routine but the questions to be raised here is what type of relationship they have with the river now-a-days and how strong is the relationship? Are this people relies on the river for its social dynamics or more on the economic dynamics? In response to this, it is an awesome effort to investigate on what type of relationship

of this people has towards the river and the main objective of this study has hugely related to this whereby it attempts to investigate the relationship of the rural youth with Pahang and Muar Rivers.

Pahang and Muar Rivers: Pahang River, started in Pahang (a state in the East Coast Region of Peninsular Malaysia), represents the longest river in Peninsular Malaysia (459 km). Pahang River has 27,000 km² of catchment areas and flows through 2 states, namely; Negeri Sembilan and Pahang. Pahang River starts at a point where Tembeling and Jelai River met at a place known as Kuala Tembeling. The down-stream of Pahang River is at Kuala Pekan, Pekan, Pahang where it flows into South China Sea. A number of historical sites such as, Lubuk Pahang Tomb and Sultan Abu Bakar Museum have been preserved along the river and still can be visited. Muar River is another major river in Malaysia. It starts at a place called Tanjung Ipoh in Kuala Pilah, Negeri Sembilan and flows to Malacca straits at Muar, Johor. Muar river flows through 3 states, namely; Johor, Pahang and Negeri Sembilan. Muar River is famous with a number of historical sites such as Bukit Kepong Police Station, Bentayan Fortress, Kota Buruk Fortress and bombed bridged locally known as Jambatan Patah at Segamat.

Uniquely, Pahang and Muar Rivers are nearly connected at Jempol Negeri Sembilan. At a village of Jambu Lapan, a place called Penarikan is where the 2 rivers are nearly connected. In the old days, people from either river can enter another river by pulling their boat for about 300 m on the land and enter to the another river. Due to the word pulling where Penarikan is the local word, the place is named as Penarikan. In the old days, both rivers play a significant role in socio-economic routines of the locals, traders and army troopers. During that time, community rely on the water supply from the rivers for their daily usage and agriculture related activities. Furthermore, both rivers are used as the main highway as during that time as traditional boat or locally known as sampan are used as their main means of transportation. The connection of Pahang and Muar Rivers has witnessed a number of historical events. The connection is well benefited by traders as their main route to go up to the East coast region (Terengganu, Pahang or Kelantan) or either down to the west coast (Johor, Malacca or Negeri Sembilan). The same route was associated with the legendary Malay Warrior Hang Tuah, Princess Tun Teja and King of Malacca-Sultan Mahmud Shah. Moreover, the connection has been used by the Siamese in their military operation whereby via such route the Siamese have launched a number of attacks against Malacca.

River benefits for the community

Strengthening family and community social bonding:

Though people have always accentuating on the economic benefits of the river however, yet the river has something to offer from the social perspectives. By having a proper development, the river can be a place for recreational activities such as picnic, fishing, kayaking/canoeing and other activities can be conducted. Such social advantage will place a powerful force to attach family members and the community together while embedding a sense of pride in the area. In addition to this, river can be a natural teacher who educates the children on the roles and benefits of the rivers in their life. Albeit social relationship is subjective in nature and is difficult to be measured yet, it has a greater reward for the community to which it applies (McCartan and Brady, 2007).

Income generating activities: River can be a suitable place for money making activities. River faunas can offer extra income for the locals. Within the case of Pahang and Muar Rivers, fresh river shrimps and fishes are still available though the number is reducing. The price for fresh shrimp of Muar River for example can go up to RM45 (roughly equivalent to USD15) while rare fishes

species of Pahang River such as Jelawat (*Leptobarbus hoevenii*) and Patin Munchung (*Pangasius hypophthalmus*) can go up to RM400-500 (roughly equivalent to USD133-166). Furthermore, Pahang River is indeed a famous and suitable place for aquaculture activities whereby there is a huge number of fish cages for fish rearing are built along the river. Places such as Pekan and Temerloh are very well known with their aquaculture products and among the main species reared are patin (*Pangasius sutchi*) and tilapia. In a number of villages along Pahang and Muar Rivers (e.g., Sungai Senduk and Kundang Hulu Village) some of the villagers are running boat renting activities for the anglers as Pahang and Muar Rivers are the places of interest among the anglers across the countries. In addition to this, other economic activities with regard to recreational, tourism and agriculture industry are also conducted along the river.

As the source of protein: Pahang and Muar Rivers can be a good supplier of protein to the community. Well known with its fresh shrimps and fishes a portion of community reside to the Pahang and Muar Rivers, still rely on it for their protein in their diets. Though the number of such faunas are depleting caused by the swift development (e.g., commodity plantation, sand mining activities, logging). The number is still adequate for the needs of Pahang and Muar River community.

Mode of transportation: In this modern day, river can be a means of movement for the community to go to other places (Misra, 2007; Sudar, 2005). Both Pahang and Muar Rivers are still used as the means of transportation. Though only a minority of the community still rely on boat for their mobility, yet it impacts on their daily routine is huge. At Pahang River, some of the locals particularly the aborigines still used the river as their main route while at Muar, a small boat locally known as kotak is used by the community particularly the farmers and students to cross Muar River.

Uplifting the quality of life: As the social and economic dynamics can be intensified via river development, unarguably, it will gear towards a better quality of life (Yassin *et al.*, 2011). Doubtlessly, Pahang and Muar River have the ability to produce sustainable economic benefits to local businesses and communities at large. On top of it, rivers are seen to contribute towards sustainable transport in urban and rural areas. Furthermore, the greenery natural environment and beauty have something to do with the health and the subjective well-being of individuals and society. The environments that they

communicate daily, the greenery and open spaces added by the wider environment depicts the importance of the river as the contributor of their individual and collective quality of life. In short, both the subjective well-being and objective well-being of the communities reside near to the river could be uplifted.

MATERIALS AND METHODS

This study is a quantitative in nature where a developed questionnaire was used as the main data gathering tool. The questions were majorly constructed based on the literatures and past studies. The questionnaire consists of demographic data and their relationship to the river which apply a closed and open questions. The final part of the questionnaire-their agreement towards river development part, applied a 5 Likert scale option whereby 1 represents strongly disagree, 2 represents disagree, 3 represents moderately agree, 4 represents agree and 5 represents strongly agree. The completed questionnaire was then pre tested among 30 respondents in 2 selected villages in Muar. The resulted cronbach alpha value of 0.810 has exceeded the recommended value of 0.700 by Nunnally (1978) which then demonstrated the reliability of the instrument. For validation process, the questionnaire then was cross checked by a number of experts in community development. Originally, the respondents for this study composed of 900 respondents, however for the purpose of this study which focuses on the rural youth, only a total of 165 respondents, aged between 15-40 years old (the age for youth in Malaysia) have been selected. For the purpose of analysis, descriptive and inferential analyses using SPSS were performed.

RESULTS AND DISCUSSION

Table 1 demonstrates the demographic data of the respondents. It can be identified that there was nearly equal distribution of male and female respondents. Only minority of them were aged after 25 years old while majority of them were in the age group of 36-40 years old. Rural youth in this study is achieving a better education as it was found that almost 2 third of them achieved SPM and earlier level of education. Compared to their urban counterparts, who mostly research in professional sectors, most of the rural youth were found to be self-employed and working in agriculture related profession such as farmers and rubber tappers. Is good to discover that the mean score recorded managed to exceed the poverty level set by the Economic Planning Unit (EPU) (>RM720 or roughly equivalent to USD240), however 15.2% of them were found to earn only <RM500

Table 1: Respondent demographic data

Variables	Frequency	Percentage	Mean	SD
Gender				
Male	84	50.9		
Female	81	49.1		
Age (years)				
15-25	32	19.4	31.80	6.31
26-30	32	18.8		
31-35	44	26.7		
36-40	58	35.2		
Education achievement				
PMR and after	57	34.5		
SPM and earlier	108	65.5		
Job categories				
Self-employed	39	23.6		
Government sector	26	15.8		
Agriculture related	32	19.4		
Housewives	35	21.2		
Private sector	22	13.3		
Others	11	6.7		
Income per month (RM)				
<500	25	15.2	1587.53	1434.67
501-1000	50	30.3		
1001-1,500	27	16.4		
>1,500	63	38.1		
States				
Pahang	78	47.3		
Negeri Sembilan	46	27.9		
Johor	41	24.8		
Period of staying at the village (years)				
<10	27	16.4	25.50	11.70
11-20	22	13.3		
21-30	44	26.7		
>31	72	43.6		
Distance to the nearest town/city (km)				
<5	49	29.7	12.80	11.60
6-10	54	32.7		
>11	62	37.6		
Distance to Muar or Pahang River (km)				
<250	41	24.8	0.87	0.67
251-500	44	26.7		
501-1000	44	26.7		
1000-2000	36	21.8		
Marriage status				
Single	57	34.5		
Married	102	61.8		
Divorced	6	3.7		
No. of households				
1-2	16	9.7		
3-5	85	51.5		
6-7	39	23.6		
>8	25	15.2		

a month. Most of the respondents were interviewed in Pahang and majority of them can be considered as a senior villager based on the mean score recorded for period of staying in the village (M = 25.5 years). In addition to this, more than two-fifth of the respondents have been in the village for >31 years. Most of the respondents were found to stay quite far away from the town/city which depicts their difficulties in getting daily needs. Despite the risks of flood, particularly during monsoon, still there is a total of 24.8% of the respondents who stay <250 meter from Muar/Pahang River. The data also have found that a majority of the respondents are married and have 3-5 members within their house.

In term of their relationship to the river, it seems that the rural youth is still connected to the river particularly with regard to recreation activities such as fishing, netting and to spend leisure time with their family. To have such results is not surprising as Pahang and Muar Rivers are the place of interest for anglers across the countries. These rivers offer famous species such as fresh prawn, baung and patin which are sought by the anglers. Usually recreational activities are conducted during weekend at these rivers. In addition to this, a number of small pondok have been constructed in a number of places along Pahang and Muar Rivers (e.g., Kundang Hulu, Jorak and Kuala Pahang Village) making it possible for the locals to spend their time to socialize either with their family or colleagues.

Rural youth seems to rely less on the river for their daily usage and this can be proven as only 17.6% of them still use the water from the river for taking bath and only 8.5% of them use it for their agricultural related activities (Table 2). Such level of relationship can be driven by a number of causes. First, both Muar and Pahang Rivers are facing pollution problem which reduce the water quality and making it less suitable for the community daily usage. Such pollution can be caused from activities related to sand mining, palm oil and industrial discharge (Ambak and Zakaria, 2010; Khan, 1991; Rahman *et al.*, 2011). Second, as the swift development has taken its place, most of the community are equipped with adequate number of basic facilities resulting in fewer needs for them to rely on the natural resources.

Within the study scope, the rural youth who rely on the river for income are the part timer who spends their time at the river after working hours and during weekends. Though, it was claimed that the river natural sources were lacking however yet, there are a portion of the community who still rely on the river for their money making activities. The limited number of prawn and some species of fishes has significantly increased their prices and provides income generating opportunity of the river part timer. Fresh river prawn particularly in Muar River can reach up to RM45 k^{-1} (roughly equivalent to USD15) and prices for fishes in Pahang River particularly the rare one such as Jelawat (*Leptobarbus hoevenii*) and Kelah (*Tor tambroides*) are ranging from RM250-500 k^{-1} (roughly equivalent to USD83-166).

A total of 12 statements were prepared to measure rural youth agreement towards river development where by a total of 8 positive statements (question number 1 till number 8) and four negative statements (question number 9 till number 12) were included. Within the scope of this study, the mean score were categorized into three levels, namely:

Table 2: Relationship to the river

Relationship to the river	Yes
Daily usage	
Taking bath	17.6
Washing	3.0
Farming and animal rearing activities	8.5
Recreation activities	
Fishing (anglers)	50.9
Netting	33.9
Leisure time with their family	26.7
Kayaking/canoeing	5.5
Picnic	12.7
Sources of income	
Fishing	18.8
River prawn	14.5
Boat renting	2.4
Fish cage rearing	3.6
Prawn cage rearing	1.8

- Low, represented by mean score between 1.00-2.33
- Moderate, represented by mean score between 2.34-3.67
- High, represented by mean score between 3.68-5.00

Based on the data demonstrated on Table 3, it can be seen that all of the positive statements recorded a high mean score except for question number 8 which recorded a moderate level of mean score. As the mean score for the statements number 1 till 7 recorded a high level of mean score, it can be seen that a majority of them agreed on the benefits of river development on the social and economic aspects of the community particularly on local development, environmental awareness, social bonding and transportation. To have such data is not surprising as earlier study done by Samah *et al.* (2011) have confirmed that rural community will accept development with 2 major conditions; the development will benefits them and second, the development will not hinder them from doing their daily routines. Question number 8 recorded a moderate level of mean score which depicted a mix answer among the respondents. Such data might be driven by the facts that despite efforts done, a number of villages located near to either Pahang or Muar River (e.g., Kundang Hulu, Belimbing, Pulau Keladi Baru Villages) are still vulnerable towards natural disaster such as flood. Each year, particularly towards the end of the year or early in the year (e.g., November to February) both agencies and the communities are preparing against the threats of the changing monsoon which commonly will cause heavy rain and flood.

A total of 4 negative questions were prepared for the respondents. All of the questions recorded a moderate level of mean score which depict a mix answer between the respondents; some of them agreed that development will not affect the environment and the income of those who depend on it while the other are not. Albeit, development in the current days has been claimed to be more environmental friendly, yet the rural youth found

Table 3: Statements measuring agreement towards river development

Statements	1	2	3	4	5	Mean
Development of the river will benefit the local community		3.6	6.7	44.8	44.8	4.31
Development of the river will promote local development growth		4.2	5.5	46.7	43.6	4.30
The development of the river will enhance local community awareness towards the river		2.4	7.9	47.3	42.4	4.30
Development of new towns along the river is a viable business		6.1	8.5	44.2	41.2	4.21
By creating a recreation area will be able to promote closer ties between families and local communities	1.2	3.0	7.3	55.8	32.7	4.16
Development of the river transport system is a good system to the existing transportation system	1.8	10.9	8.5	38.2	40.6	4.05
Efforts to develop the river will be able to beautify the river environment	1.2	7.3	9.7	55.8	26.1	3.89
River development will reduce the flood risks	2.4	13.3	35.8	37.0	11.5	3.42
Efforts to develop the river will cause environmental pollution (-ive statement)	10.3	32.1	21.8	31.5	4.2	2.87
Development of the river will affect the sources of income of the local communities based on the recreational activities (-ve statement)	12.1	37.0	21.2	19.4	10.3	2.79
Development of the river will negatively affect the activities of fish and lobster catching (-ve statement)	11.5	39.4	23.0	20.6	5.5	2.69
Development of the river will negatively affect the flora and fauna of the river (-ive statement)	12.1	38.8	22.4	21.8	4.8	2.68

that both of the rivers are facing threats from the development. Muar River for example is threatened by the flourishing agriculture activities particularly from the palm oil and rubber activities. Though, the emergence of the palm oil and rubber factories provide employment opportunities for the locals, the waste from the factories indeed will pollute the river and negatively affect the quantity and the quality of the river flora and fauna. This in turn will affect the income of those who depend on the river. The similar scenario goes to Pahang River where the main pollution sources are coming the sand mining activities and logging.

Differences between agreement towards river development and selected independent variables: To examine the differences in agreement towards river development and factors of gender and education achievement, independent t-test was performed. Based on the analysis done, it can be identified that there was no significant difference in agreement towards river development between male ($M = 3.64$, $SD = 0.540$) and female ($M = 3.66$, $SD = 0.536$; $t(165) = 0.244$, $p = 0.807$). Furthermore, analysis done have confirmed that there was no significant difference in agreement towards river development education achievement as the group of PMR and after recorded ($M = 3.59$, $SD = 0.534$) and for SPM and earlier ($M = 3.68$, $SD = 0.537$, $t(165) = 0.988$, $p = 0.324$) (Table 4). Results depicted have concluded that both factors are not influencing rural youth agreement towards river development.

Another comparison on difference in agreement towards river development and factors of states and job categories was performed by using ANOVA. For the factor of states, there was significant differences in agreement towards river development among the

Table 4: Difference in agreement towards river development for selected independent variables using independent t-test

Variables	n	Mean	SD	t	p-value
Gender				0.244	0.807
Male	84	3.64	0.540		
Female	81	3.66	0.536		
Education achievement			0.988	0.324	
PMR and below	57	3.59	0.534		
SPM and above	108	3.68	0.537		

Table 5: Difference in agreement towards river development for selected independent variables using ANOVA

Variables	n	Mean	SD	F-value	p-value
State				8.287	0.001
Pahang	78	3.81	0.483		
Negeri sembilan	46	3.56	0.612		
Johor	41	3.43	0.446		
Job categories				0.778	0.567
Self-employed	39	3.64	0.588		
Government sector	26	3.61	0.529		
Agriculture related	32	3.76	0.490		
Housewives	35	3.67	0.608		
Private sector	22	3.48	0.489		
Others	11	3.66	0.290		

3 categories: $F(3, 165) = 8.287$, $p < 0.05$. The highest mean score recorded by rural youth in Pahang ($M = 3.81$) while the lowest was recorded by rural youth in Muar ($M = 3.48$).

For the factor of job categories, based on F -value ($6, 165$) = 0.778, $p > 0.005$, it can be concluded that there was no significance different that occurred between the 3 groups studied (Table 5). The highest mean score was recorded by those who involved in agriculture related sector which is not a surprise.

Relationship between agreement towards river development and selected independent variables: Pearson product-moment correlation was employed to examine any relationship that might occur between agreement towards river development and selected independent variables.

Table 6: Relationship between agreement towards river development and selected independent variables

Variables	r	p-value
Income per month	0.086	-0.134
No. of household members	0.118	0.132
Age	0.641	0.037
Distance to the Muar or Pahang River	0.094	0.230
Period of staying in the areas	0.229	0.094
Distance to the nearest city	0.029	0.707

Based on the analysis performed, it can be seen that only 1 out of 5 independent variables a significant relationship with agreement towards river development. The magnitude of 0.707 recorded by the factor of distance to the nearest city has demonstrated a positive and strong relationship with agreement towards river development (Table 6). Such data depicts that the nearer the rural youth to the city, the higher their agreement towards river development will be. To have such scenario is possible as people who stay near to the city are exposed more to the development, they will witness and be informed on the benefits of development to the locals. Rural people particularly in suburb area are always expressing their hunger for development as they have seen what development has benefited their counter part in the city (World Bank, 2009). Within the case of this study, as the average of the distance to the nearest city was 12.8 km and even some of them stay <5 km to the nearest city, there is no wonder this factor have influenced their agreement on river development.

CONCLUSION

Based on the findings, it can be seen that Pahang and Muar Rivers in the current days have less to offer in term of social and economic benefits for the community. Nevertheless, though only recreational activities at the river (e.g., fishing and netting) are relevant to majority of the rural youth in the current days, they have demonstrated a high level of mean score on most of the statements used to measure their agreement towards river development which depict their hunger for the river development. It is a hope that any development to be brought at Pahang and Muar Rivers is considering the potential environmental threats that can be created. It means that adequate researches that cover all environmental aspects should be conducted before any river development project takes place as it will reduce the negative impacts. To have this is importance as it is one of the community concerns.

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