

Gratification towards Weather Information via Television: An Analysis of the Coastal Communities in Malaysia

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Abstract: The main purpose of this study is to determine Malaysian coastal communities gratification towards weather information via television. The study was a quantitative study where a developed instrument was used as the main data collection tool. Through, multi-stage simple random sampling, a total of 210 coastal villagers from 3 coastal areas in Malaysia were selected as the respondents. The findings demonstrate that there was a gap between the weather information received and the weather information needed by the respondents, as well as a gap between the weather information received and the weather information believed. A number of discussions are highlighted in this study in the hope that they can assist the appropriate parties in generating the best strategy for information sharing and dissemination processes among the coastal communities.

Key words: Coastal communities, weather information, information development, dissemination process, gratification

INTRODUCTION

In spite of the tremendous progress that researchers have accomplished, researchers have sacrificed some of the natural aspects around us. Under the intention of development, industrial activity has resulted in changes to the climate. These changes can disrupt life and could threaten present and future generations. According to the MNRE (2009), climate change can be defined as:

Any change in climate over time that directly and indirectly affects humans and their activities as well as natural systems and processes

Climate change has an adverse effect on the environment and among the worst affected areas are marine and coastal areas. Aside from its impacts on the socio-economic aspects of the communities who rely on the environment, climate change negatively affects the environment itself. In a number of local studies, climate change has been shown to induce extreme temperatures which in turn resulted in a reduction in the number of unusually cold days and nights and an increase in the number of unusually warm days and nights (Kwan *et al.*, 2011; Wai *et al.*, 2005). There has been growing concern among scientists about climate change, since the discovery of the El-Nino phenomenon which causes some areas to experience severe drought periods and other

areas to receive excessive rainfall. Based on previous studies, the incidence of global warming is an acute problem. In a study done by Kwan *et al.* (2011), it was found that >70% of the global soil samples showed a significant decrease in the annual number of cold nights and a significant increase in the annual number of warm nights.

States such as Kelantan, Terengganu and Pahang (which are located on the east coast of Peninsular Malaysia) are highly vulnerable to floods because they face the northeast monsoon which usually strikes from November until February. During the Northeast monsoon, heavy rains, strong winds and storms usually strike the coastal areas of these states. Moreover, Suhaila *et al.* (2010) recorded a significant increase in rainfall intensity and extreme occurrences in most states in Peninsular Malaysia during the Northeast monsoon period. The heavy rain (which is one of the possible causes of floods) also causes a rise in river water levels which endangers those who utilize the rivers to conduct their daily socio-economic activities.

Zubaidi (2010) and Din and Omar (2009) detected that a sea level rise in Malaysia results in extreme waves which then cause erosion to the coastal areas (Ekhwan, 1997). Out of the 4,809 km of coastal areas in Malaysia, it is expected that 29.1% of these areas are facing critical erosion and the extent of critical erosion in Malaysia has

increased from 156-233 km in a period of 15 years (from 1986-2000) (Ekhwan, 1997). Furthermore, strong winds have been detected several times in a number of coastal areas in Malaysia, such extreme events are not surprising, as climate change has been proven to negatively affect oceanographic variables such as wind velocity (Walsh *et al.*, 2012; Chini *et al.*, 2010).

The facts presented prove the negative impacts of the changing climate on Malaysia's marine and coastal areas, reflecting the need to further strengthen the weather information dissemination process to the coastal communities. Understanding this process is vital as it provides information that could enable the coastal communities to take proactive and reactive actions against the threats of the changing climate. However to date, there has been little research with regard to the dissemination of weather information to communities, particularly those in coastal areas. This study tried to fill this gap by identifying the gratification of coastal communities towards the weather information disseminated via television. Understanding this concept is vital, as it will assist extension educators, policy makers and agricultural specialists in Malaysia in strategizing the best ways to disseminate weather information in line with the needs, interests and capabilities of the coastal communities.

Although, there were a number of potential suitable theories that could have been selected as the grounded theory, the theory of interest for this study was the uses and gratification theory. This study focused on the televised weather information received, the televised weather information believed and the televised weather information needs among Malaysia's coastal communities.

Television as a weather information dissemination tool in Malaysia: People in rural areas commonly exhibit positive behaviours towards television usage. A number of studies have proven that behavioural factors such as attitude (D'Silva *et al.*, 2010), social influence (Mazuki *et al.*, 2013), self-efficacy (Shaffril *et al.*, 2010) and perceived benefits (Omar *et al.*, 2012) can gear a community towards adopting certain information and communication technologies. Although, television is considered to be a conventional tool of disseminating information, it has been used effectively by rural communities, particularly in their efforts to seek agriculture-related information (including weather information) (Azarian *et al.*, 2012; Shaffril *et al.*, 2012). Moreover, weather forecasting via television helps coastal communities to be proactive in planning their upcoming socio-economic activities. Such, early information is particularly vital among fishermen: One of

the main groups of coastal communities (Omar *et al.*, 2013). Weather information disseminated through television can strengthen their safety while conducting their fishing operations, reduce their vulnerability towards extreme weather and minimize certain costs (e.g., fuel, ice and crew members' payment). Hassan *et al.* (2010) found that the rural communities in their study considered television to be a reliable and trusted tool, as the communities had grown up with television. Shaffril *et al.* (2012) confirmed that agricultural communities prefer to obtain weather information via television, as the communities consider this information to be more germane to their routines. Shaffril *et al.* (2012) viewed traditional media as cheaper and more frequently updated than other sources of information, especially when it comes to weather forecasting. Azarian *et al.* (2012) agreed with this by accentuating that television can fulfil agricultural communities cognitive needs regarding information seeking.

MATERIALS AND METHODS

Based on multi-stage simple random sampling, a total of 210 coastal villagers were selected from 3 coastal areas in Malaysia: Sayak Island village (located in the Northern zone of Malaysia), Sedili Kechil village (located in the southern zone of Malaysia) and Pengkalan Atap village (located on the east coast of Peninsular Malaysia). The study used a developed instrument to collect its data: The instrument was developed based on a review of the literature and the questionnaires used in past studies. The original instrument consisted of 6 parts, however to fulfil the objectives of this study, only 2 parts were focused on, namely the demographics and gratification sections.

The demographic section consisted of open-ended and closed-ended questions. By contrast, in the gratification section, the respondents were given 5-point Likert scales (answers ranging from 1-5). In the gratification part, it relies much on the uses and gratification theory where the theory highlights the need to measure the satisfaction provided by the new media in comparison with that provided by the old media (Lin, 2001). The uses and gratification theory assumes an active audience for media and the audience seeks satisfaction from the media (Katz *et al.*, 1974). Within the scope of this study gratification towards weather information are measured by 3 components namely information received, information believed and information needed.

The 6 types of weather information (big waves, strong winds, heavy rain, water levels (rivers), high temperatures and floods) were explored. This selection

was made based on the literature review which supports the fact that climate change is producing these 6 weather types. The instrument was then pre-tested at Kuala Pakavillage (in Terengganu) and the resulting Cronbach's alpha value exceeded the minimum value of 0.7 suggested by Nunnally (1978). The actual data collection started in February, 2013 and ended in April, 2013. The data gained were analysed through statistics such as frequency, percentage and mean score.

RESULTS AND DISCUSSION

Based on the findings presented in Table 1, most of the respondents were from Kedah (35.8%), followed by Johor (35.2%) and Terengganu (29.0%). The majority of the respondents were male and aged between 41 and 50 years old (mean = 37.5). The majority of the respondents possessed a low level of education, as April 4, 2014 only 6.2% of them possessed a tertiary level of education while the majority held a SPM/SPMV/MCE level of education (33.8%). The results also reveal that most of the respondents were working as fishermen or self-employed. The majority of the respondents could be considered senior villagers, based on the fact that they had stayed in their villages for between 16 and 25 years (mean = 27.7). It can be noted that the mean score for monthly earnings was RM1,039.50 which exceeds the poverty level set by the Economic Planning Unit (EPU) at RM720.

In this study, the researchers tried to investigate the coastal communities gratification towards weather information disseminated through television via 3 different dimensions, based on users' perceptions of the levels of information received (gratification obtained), needed (gratification sought) and believed. The 6 different indicators of weather information were measured in this study: Big waves, strong winds, heavy rain, water levels (rivers), high temperatures and floods. The categories for the mean scores were calculated as follows: 5 (maximum mean score)/3 (number of levels). This resulted in 3 levels, namely low (mean score between 1.00 and 2.33), moderate (mean score between 2.34 and 3.67) and high (mean score between 3.68 and 5.00).

As can be seen in Table 2, the 4 types of weather information received had high mean scores, namely heavy rain, strong winds, big waves and floods while the other 2 (water levels (river) and high temperatures) had moderate mean scores. Within the weather information believed section, all of the types of information disseminated were believed to a high level, except for

Table 1: Demographic data

Variables	Frequency	Percentage	Mean
State			
Terengganu	61	29.0	
Johor	74	35.2	
Kedah	75	35.8	
Gender			
Male	126	60.0	
Female	84	40.0	
Age (years)			
15-20	37	17.6	37.50
21-30	44	21.0	
31-40	35	16.7	
41-50	48	22.9	
51-60	29	13.7	
61 and above	17	8.1	
Level of education			
Never been to school	27	12.9	
Primary school	53	25.2	
PMR/SRP/LCE	46	21.9	
SPM/SPMV/MCE	71	33.8	
Tertiary level	13	6.2	
Profession			
Fisherman	52	24.8	
Private/public sector staff	34	16.2	
Self-employed	52	24.8	
Housewife/retired	48	22.9	
Others	24	11.4	
Period of stay in the area (years)			
5 and below	23	11.0	27.70
6-15	21	10.0	
16-25	71	33.8	
26-35	37	17.6	
36 and above	58	27.6	
Income per month (RM) (n = 201)			
<500	49	24.4	1,039.50
501-1,000	90	44.8	
1,001-1,500	37	18.4	
>1,501	25	12.4	

Table 2: Weather Information received, believed and needed

Weather type	Received	Believed	Needed
Big waves	3.88	3.57	4.45
Strong winds	3.93	3.76	4.36
Heavy rain	4.01	3.85	4.36
Water levels (rivers)	2.77	3.23	3.91
High temperatures	3.21	3.59	4.05
Floods	3.77	3.67	4.24

water levels (rivers), big waves and high temperatures which had moderate mean scores. In the weather information needed part, all of the types of weather information listed had high mean scores. This is not surprising: According to Hassan *et al.* (2010) and Azarian *et al.* (2012), there are still gaps in providing the needed information to rural communities, particularly those working in agriculture.

Furthermore, the findings also show a gap between the information received and the information believed which denotes that although, the coastal communities do receive weather information, they do not completely believe it. These findings contradict those of

Hassan *et al.* (2010) who claimed that television is a reliable and trusted source of information among rural communities. However, this contradiction can be explained by Omar *et al.* (2013) who stressed that weather forecasting via television merely acts as an early warning system for coastal communities and it is up to their own self-monitoring to decide whether or not to proceed with their socio-economic routines.

CONCLUSION

Within the scope of the coastal communities in Malaysia, television has been acknowledged as one of the tools disseminating crucial weather information to the respondents in this study. It can be seen that all the types of weather information received had moderate to high mean scores, nonetheless, it should be noted that there is a big gap between the information needed and the information received which depicts the inadequacy of the information disseminated to the participants. It is recommended that television should play a bigger role in disseminating crucial weather information to the coastal communities, particularly during the northeast monsoon season when unstable weather becomes a threat to the coastal communities. A special segment focusing on weather during this season could be aired during prime-time television-particularly during the main news programmes, as such programmes are viewed by the majority of agricultural communities (Hassan *et al.*, 2010). Furthermore, more information related to water levels (river) and high temperatures needs to be aired more frequently via television, as the coastal community participants in this study noted that they only received such information at moderate levels.

REFERENCES

- Azarian, Z.S., M.S. Hassan and B. Abu Samah, 2012. Degree of gratification obtained from agricultural information disseminated through television among Malaysian farmers. *Sci. Ser. Data Rep.*, 4: 86-98.
- Chini, N., P. Stansby, J. Leake, J. Wolf, J. Roberts-Jones and J. Lowe, 2010. The impact of sea level rise and climate change on inshore wave climate: A case study for East Anglia (UK). *Coastal Eng.*, 57: 973-984.
- D'Silva, J.L., B.A. Samah, H.A.M. Shaffril and M.A. Hassan, 2010. Factors that influence attitude towards ICT usage among rural community leaders in Malaysia. *Aust. J. Basic Applied Sci. Res.*, 4: 5214-5220.
- Din, A.H.M. and K.M. Omar, 2009. Sea level changes in the Malaysian seas from multi-satellite altimeter data. http://www.fksg.utm.my/research_group/gng/publications/2009/5.pdf.
- Ekhwan, T.M., 1997. Critical coastal erosion: A dynamic analysis of the impact on the coastal communities in Kuala Kemaman, Terengganu. *Proceedings of the Conference on Social Science Research*, September 29-30, 1997, Kuala Lumpur, Malaysia -.
- Hassan, M.S., H.A.M. Shaffril, M.S.S. Ali and N.S. Ramli, 2010. Agriculture agency, mass media and farmers: A combination for creating knowledgeable agriculture community. *Afr. J. Agric. Res.*, 5: 3500-3513.
- Katz, E., J.G. Blumler and M. Gurevitch, 1974. *Utilization of Mass Communication by the Individual*. Sage Publication, Beverly Hills, USA.
- Kwan, M.S., F.T. Tanggang and L. Juneng, 2011. Projected changes of future climate extremes in Malaysia. *Proceedings of the National Symposium on Climate Change Adaptation*, November 16-17, 2011, Putrajaya, Malaysia -.
- Lin, C.A., 2001. Audience attributes, media supplementation and likely online service adoption. *Mass Commun. Soc.*, 4: 19-38.
- MNRE, 2009. National policy on climate change. Ministry of Natural Resources and Environment, Putrajaya, Malaysia.
- Mazuki, R., S.Z. Omar, J. Bolong, J.L.D. Silva, M.A. Hassan and H.A.M. Shaffril, 2013. Social influence in using ICT among fishermen in Malaysia. *Asian Soc. Sci.*, 9: 135-138.
- Nunnally, J.C., 1978. *Psychometric Theory*. 2nd Edn., McGraw-Hill, New York, USA., ISBN-13: 9780070474659, Pages: 701.
- Omar, S.Z., H.A.M. Shaffril, J. Bolong, J.L. D'Silva and M.A. Hassan, 2012. Usage of offshore ICT among fishermen in Malaysia. *J. Food Agric. Environ.*, 10: 1315-1319.
- Omar, S.Z., H.A.M. Shaffril, N. Kamaruddin, J. Bolong and J.L. D'Silva, 2013. Weather forecasting as an early warning system: Pattern of weather forecast usage among coastal communities in Malaysia. *Life Sci. J.*, 10: 2200-2210.
- Shaffril, H.A.M., B.A. Samah, M.A. Hassan and J.L. D'Silva, 2010. Socio-economic factors that impinge computer usage in administration works among village leaders in Malaysia. *Sci. Res. Essays*, 5: 3623-3633.
- Shaffril, H.A.M., M.S. Hassan, B. Abu Samah, M.S.S. Ali and N.S. Ramli, 2012. Satisfaction towards agriculture information received from the television among farmers in Malaysia. *Int. Res. J. Hum.*, 4: 27-42.

- Suhaila, J., S.M. Deni, W.Z.W. Zin and A.A. Jemain, 2010. Spatial patterns and trends of daily rainfall regime in Peninsular Malaysia during the southwest and northeast monsoons: 1975-2004. *Meteorol. Atmos. Phys.*, 110: 1-18.
- Wai, N.M., A. Camerlengo and A.K. Abdul Wahab, 2005. A study of global warming in Malaysia. *J. Technol.*, 42: 1-10.
- Walsh, K.J., K.L. McInnes and J.L. McBride, 2012. Climate change impacts on tropical cyclones and extreme sea levels in the South Pacific: A regional assessment. *Global Planet. Change*, 80: 149-164.
- Zubaidi, J., 2010. Climate change: Potential impacts on water resources and adaptation strategies in Malaysia. *Proceedings of the 1st International Workshop on Water Environment Partnership in Asia*, March 8-9, 2010, Hanoi, Vietnam -.