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# The Sustainable World



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# Malaysian newspapers coverage of waste issues: problems in need of solutions?

H. A. Hamid, A. Hussein & S. L. Chu

*School of Communication, Universiti Sains Malaysia, Penang, Malaysia*

## Abstract

The media have a role as information transmitter and educator to the public; exposing and creating awareness among the public regarding environmental issues inclusive of waste control and management issues. This paper reports a study which examined how waste issues were framed in selected Malaysian English-language newspapers. Articles regarding waste issues and management published in *The Sun* and *New Straits Times* from 2003 to 2007 were analysed. A total of 616 articles on waste issues were identified and subjected to quantitative and qualitative content analyses to determine the extent and nature of newspaper coverage. Informed by framing theory, the study found that the newspapers' articles mostly gave suggestion of solutions, defined problem and stated consequences. Moral evaluations had the least presence. The study also concluded that the waste issues in Malaysia are problematic and in dire need of efficient solutions.

*Keywords:* Malaysian newspapers, content analysis, media framing, environmental issues, waste issues problems and solutions.

## 1 Introduction

Human beings generate wastes everyday in their lives. Due to population growth and the increasing economic activities, more wastes will be generated and in the long period, if poorly managed, waste will affect our environment, health, and economy. Grodzińska-Jurczak and Read [1] stated that it will not be possible to fully implement the principles of sustainable waste management (particularly segregation of secondary materials, hazardous wastes, electronics and batteries, recycling, composting, decrease of municipal solid waste generated) without the active participation of wider society. According to Meyers et al. [2],



inappropriate solid waste (SW) management causes air, soil and water pollution leading not only to environmental degradation but also to a growing catalogue of human health problems. Irresponsible SW management may contaminate surface and ground water supplies. In industrial and urban areas, washing “away” SW can clog drains, creating stagnant water for insect breeding and potential for floods in rainy seasons. Irresponsible burning and incineration have a significant influence on air pollution. Organic wastes dumped in landfills generate greenhouse gases, and untreated leachate pollutes surrounding soil and water bodies such as ground water.

Waste issues in Malaysia often cover matters associated with insufficient waste management and both the federal and local government are in a dire search of sustainable solutions to handle wastes in the term-and-condition basis that neither do not exceed their budgets nor leave an impact to the public’s health. These matters will not be resolved even though remedial measures are implemented, unless the public realises their responsibility and put initiative to reduce wastes. Solid waste, in addition to being an environmental nuisance, could require an exceedingly large investment for its handling. The Malaysian Government needed to spend Malaysian Ringgit (RM) 0.06 (or US\$0.016) per kilogram waste per day to deal with the country’s average daily waste generation of 0.8 kg/capita [3]. With a population of 23 million (year 2000 census), this corresponds to a staggering RM400 million (or US\$105 million) per year. This has finally led to the Government’s strong desire to raise environmental awareness in its population. It is envisaged that an environmentally conscious population with a sense of responsibility towards its surroundings will have a more positive attitude towards the ever-growing waste-handling and disposal problems as well as environmental protection and preservation [4].

It is clear that the public needs to be continuously informed, educated, acknowledged, and reminded of their role to reduce wastes and overcome wastes problems. Here, the media have a role as information transmitter to the public; exposing problems and creating awareness among the public regarding general environmental issues and those related to wastes control and management. Several scholars and researchers perceived the role of media similarly as one of the major influences on public perceptions and one of the main transmitters and sources of the public’s risk information [5–8]. Altheide [9] pointed out that whether the media are viewed as independent of or actively engaged with the society, the influence of the media and mass communication is regarded as a powerful force in the society.

In Malaysia, solid waste remained as one of the most debatable environmental issues (Zolkifly [10] and Ghani Rais et al. [11]). It was reported in the *Ninth Malaysia Plan* that the amount of solid waste generated in Peninsular Malaysia increased from 16,200 tonnes per day in 2001 to 19,100 tonnes in 2005 or an average of 0.8 kg per capita per day. Solid waste in Malaysia comprises on average 45.0 per cent food waste, 24.0 per cent plastic, 7.0 per cent paper, 6.0 per cent iron, and 3.0 per cent glass and others [12]. The major consequence of Malaysia’s rapid urbanization is viewed as “social transformation” with a greatly



increased generation of municipal solid waste (MSW). In some urban areas, Malaysia's current estimated rate of MSW generation (0.93 kg per capita per day) has increased to be nearly as great as the average in the European Community (Arango and Bertuzzi [13]). In fact, the World Bank has identified MSW management as one of Malaysia's three most important urban environmental problems [14].

The waste problem has become so grave that a cabinet committee on solid waste management had to be set up in early 2006. At the end of April 2006, the then Deputy Prime Minister Datuk Seri Najib Abdul Razak, who headed the panel, ordered sixteen of the dumpsites that posed a threat to public health to be closed immediately. Another 33 that were situated close to water sources would have to be shut down as soon as possible (Bhattacharjee [15]). In August 2007, an 88-page Solid Waste Management and Public Cleansing Corporation Act (PPSPA) which had been under review for ten years was finally approved by the Malaysian Parliament due to continuous waste problems. The PPSPA is expected to bring major changes and new challenges in waste management in Malaysia [16].

Common waste management constraints and problems in Malaysia include inadequate funds, as waste handling is lower down the priority list when compared with other issues such as infrastructure development and industrialization, lack of proper waste disposal sites, lack of expertise and manpower to run programmes, indifference of the population towards waste reduction and recycling, illegal waste dumping practice and inefficient use of resources (money, equipment, manpower, time) [17]. The amount of solid waste recycled in 2004 remained at less than 5.0 per cent of total waste disposed, despite concerted efforts to promote reuse, reduction, and recycling (3Rs Concept) of materials through the National Campaign on Recycling [18]. Obviously, as argued by Peretz [19] what remains unanswered is whether people are willing to make the commitment to study environmental issues at a level that correctly identifies problems and addresses the necessary solutions as well as the possible sacrifices. According to Watts and Probert [20] a *de facto* implementation of the "3R" (Re-use/Reduce/Recycle) waste alternative (involving segregation of waste at the household) would be possible only with the full acceptance of an environmentally aware public. In Malaysia, it is generally accepted that proper handling of waste is essential for public well-being and environmental protection, but the common attitude is that having paid the tax, all responsibilities related to waste handling rest with the local authorities [21]. Thus, there is a need for the mass media to make a transformation of the society. The mass media, despite being channels of information and agents of change, should also play important roles in providing the public with accurate, reliable, and unbiased sources of information.

This study was informed by media framing theory. As many media researchers have noted, media framing focuses on the specific ways issues are presented and how the public issues are expressed to the audience (Gamson and Modigliani [22], Tankard et al. [23], Entman [24]). Cappella and Jamieson stressed that "framing is the key to how journalists organise news" (as quoted in



Goodman and Goodman [25]. While researchers have presented many aspects of framing, this study focused on the framing functions as described by Entman [26]. According to Entman, the four general functions of framing are problem definition (determine what a causal agent is doing with what costs and benefits), problem diagnosis (identify the forces creating the problem), moral judgments (evaluate causal agents and effects) and remedies to the problem (offer and justify treatments for the problems and predict their likely effect). These four functions can coexist in the same media presentation, and all four may not be present in every frame (Sieff [27]).

Thus, this paper seeks to answer how environmental issues of consequence such as waste issues being covered by the selected Malaysian English daily newspapers. The mainstream pro-establishment newspaper, *The New Straits Times* (circulation: 120,770), and a relatively new and free newspaper, *The Sun* (circulation: 300,557), were selected. Given the seriousness of waste issues, this study seeks to ascertain the extent of how these newspapers portray waste issues as problems in need of solutions.

## 2 Method

Articles on waste issues published in the *Sun* and the *New Straits Times* from January 2003 to December 2007 were collected manually to identify the existing framing functions in the headlines and applicable paragraphs. Analyses were carried out based on Entman's framing functions. Selected articles were also analyzed based on the types of frames. The newspapers' portrayal of waste issues were examined on either they presented information that sounded positive, negative, or neutral (Goodman and Goodman [28]). Positive frames refer to the presentation of news story in a calming tone. Positive stories could change the public's perceptions towards waste issues when the public were provided with quality information that could enhance their knowledge on waste issues and help them in making informed decisions. Negative frames refer to the presentation of news story in an alarming tone. Normally, negative stories would make the public feel uneasy, scared, and worried. Neutral frames refer to the presentation of news story in a balanced tone.

## 3 Results and discussion

Of the 616 waste articles published during the five-year study period, the majority (71%) appeared in the *New Straits Times*. As shown by Table 1, a majority (79.06%) had at least one framing functions and about one-fifth (20.94%) had none.

Table 2 reveals an interesting finding that is a substantial presence (22.12%) of another framing function, i.e. consequences or impacts statement alongside Entman's framing function of solution suggestion (29.84%) and problem definition (24.07%). While both newspapers indicated presenting comparable framing functions, *The Sun* had almost twice as many news articles that make moral judgment or evaluation than *New Straits Times*.



Table 1: Percentage of all waste articles with the number of framing functions present in all waste articles, 2003–2007.

Number of framing functions present	<i>New Straits Times (NST)</i> N= 439	<i>The Sun (TS)</i> N= 177	Percentage of all waste articles , N=616
0	22.5	16.55	20.94
1	26.65	33.33	28.57
2	30.52	24.86	28.90
3	12.98	16.38	13.96
4	6.38	4.52	5.84
5	0.92	3.96	1.79

Table 2: Percentage of framing functions present in waste articles in *New Straits Times (NST)* and *The Sun (TS)* and 2003–2007.

Types of framing functions present	<i>NST (N=677)</i>	<i>TS (N=295)</i>	Total (N=972)
1) To define problem(s)	23.93	24.41	24.07
2) To state cause(s)	17.13	14.24	16.26
3) To make moral evaluation/judgment(s)	6.06	11.53	7.72
4) To suggest solution(s)	31.17	26.78	29.84
5) To state consequence/impact(s)	21.71	23.05	22.12

However, for the remaining of the paper, due to technical constraints, only 47 waste articles that contained four and five framing functions present were selected for illustrations.

Table 3: Percentage of type of frames in headlines of waste articles in *New Straits Times (NST)* and *The Sun (TS)* and 2003–2007.

Type of frames in headlines of waste articles	<i>NST (N=32)</i>	<i>TS(N=15)</i>	Total (N=47)
Positive frame	21.9	60.0	34.0
Negative frame	50.0	40.0	46.8
Neutral frame	28.1	0	19.2

Tables 3 shows the type of frame, whether negative, positive or neutral, of the coverage. A total of 22 headlines of waste articles were portrayed in negative tone, 16 in positive tone, and 9 in neutral tone. The two newspapers were different in their framing of the headlines. While *The New Straits Times* had more negatively framed headlines (50%) than *The Sun* (40%), the latter presented more positive (60%) picture of the waste situation through its headlines. Even though a substantial number of *The New Straits Times* headlines were presented in alarming manner which stressed upon the state of urgency of the waste issues and demand for an immediate action, they were actually effective in the terms of gaining attention from the readers who come from all walks of life so that they may be alerted and aware of the crucial waste problems. Meanwhile, positive headlines were mostly presented in the form of solution and giving suggestion in a bright tone. Neutral headlines were mostly mere

statements and brief information about the waste issue, and they sometimes contained both positive and negative tone. Tables 4a, 4b and 4c show examples of the different types of frames used by headlines of the two newspapers.

Table 4: Examples of negatively framed headlines in *The Sun (TS)* and *New Straits Times (NST)*.

Come down hard on illegal dumping (NST/ 16 December 2003)
Residents upset over bin move (NST/ 23 December 2003)
Illegal dumpers giving them bad name (NST/ 26 July 2004)
Typhoid: MB blames it on littering 'culture' (NST/ 21 April 2005)
Tanjung Tuan threatened by pollution (NST/ 9 May 2005)
More like trashing, not hashing (NST/ 18 May 2005)
New dumping ground an environmental threat (NST/ 26 July 2005)
Soiled diapers in garbage raising a stink (NST/ 9 November 2005)
60 tonnes of rubbish dumped into Sungai Klang daily (NST/ 8 June 2006)
Gurney Drive 'now ugly and smelly' (NST/ 26 February 2007)
Stench drives patrons away (NST/ 14 June 2007)
Get solid waste management right (TS/ 28 June 2007)
Poor work ethic fatal to incinerator safety (TS/ 23 January 2003)
Waste collection deal in the dumps TS/ 11 February 2004)
Dumping organic waste a costly habit (TS/ 15 June 2004)
Stop soft-peddalling on waste (TS/ 13 March 2006)

(a)

Table 4: Examples of positively framed headlines in *The Sun (TS)* and *New Straits Times (NST)*.

Ensuring a healthy, sustainable environment (NST/ 19 February 2003)
Fix recycling on one day a month (TS/ 16 January 2004)
Unit Combi to keep Penang clean and sparkling (NST/ 2 June 2004)
Educating the young will help (NST/ 21 April 2006)
Natural gas, fish ponds the answer? (NST/ 18 June 2007)
Raise awareness to save environment (NST/ 13 August 2007)
Centralised PFAs the answer (TS/ 17 September 2007)

(b)

Table 4: Examples of neutrally framed headlines in *New Straits Times (NST)*.

More needs to be done to protect our environment (NST/3 May 2004)
Factory suspected of importing toxic chemicals sealed (NST/9 June 2004)
On the right track but still long way to go (NST/22 April 2005)
Waste from NS camp flowing into sea (NST/3 May 2005)
DOE detains tanker over Kota Tinggi oil spill (NST/29 June 2005)
New site still unacceptable (NST/3 January 2006)
Legendary mountain turning into dumpsite (NST/6 January 2006)
Landfill method not the best way (NST/26 January 2006)
MB: Landfill a costly option (NST/16 March 2006)

Note: There were no neutrally framed waste articles in *The Sun (TS)*.

(c)



### 3.1 Illustrations of framing functions

While headlines provided readers with brief summary of news articles, opening paragraphs or leads enticed readers to read further. What kind of information did readers get in the body of news articles? Next, we illustrate how selected articles from *The Star* and *New Straits Times* presented the various framing functions in the applicable paragraphs. Below are some examples of framing functions and types (tones) of frames used in the applicable paragraphs:

#### 3.1.1 To define problem

In this study, equal number of frames (positive, negative, and neutral) were used in the paragraphs of problem definition. Paragraphs of problem definition were regarded as positive when they were in suggestive and advisory form: “Ensuring a healthy, sustainable environment”. *Industrial development and environment management must go together to ensure a healthy and sustainable environment, Universiti Sains Malaysia (USM) vice-chancellor Professor Datuk Dzulkifli Abdul Razak said (New Straits Times, 19 February 2003).*

Negative problem definition was presented in a way that raised urgency and negative image when the situation was pictured negatively: “Paying for waste”. *The sheer quantity of garbage Malaysians put out is frightening enough to force the current re-look at how to deal with our waste. The way things now stand – or rather how our trash stacks up – means it would take just nine days for our rubbish to fill up both 88-storey columns of the Petronas Twin Towers (New Straits Times, 18 June 2007).*

“Stop soft-peddalling on waste”. *The setting up of a cabinet committee to address environmental problems has come not a day too soon. In the wake to the stomach-churning encounter that people in the Klang Valley had with contaminated water supply last month, the question hanging in the air is whether the current state of environmental management inspires confidence (The Sun, 13 March 2006).*

Neutral problem definition was mainly presented in the form of statement that explained the situation or condition of the issue and may sometimes contain mixed tone: “Get a zero waste strategy going now”. *It is heartening that open dumpsites method of solid waste disposal will be fetched to the past in a matter of time. What is mortifying is why it took so long before the National Resources and Environment Ministry announced that such an environmental disastrous system has to be stopped urgently (The Sun, 2 May 2006).*

#### 3.1.2 To show causes

Equal number of frames (positive, negative, and neutral) were used in the attribution of causes paragraphs. Positive attribution of causes consisted of positive consequences that could lead to a better outcome and action. Positive attribution of causes also appeared in the form of advice and suggestion to outcome the problem as apparent in the following example:

“Centralised PFAs the answer”. *Pig farmers should abandon the traditional way of managing the waste produced by the farms and start practicing modern waste management, which has been implemented in many developed countries*





where effluents from the farms are not allowed to flow into the rivers and pollute the waterways (*The Sun*, 17 September 2007).

Negative attribution of causes, on the other hand, emphasizes on the tone of ignorance, refusal, denial, and blaming: “Dumping organic waste a costly habit”. *Indeed, it could be legitimately asked: if composting of organic waste has so many benefits, why is it not being implemented all over the country? Part of the reason is the lack of urgency. Most Malaysians are oblivious to or could not be bothered about the environmental costs of discarding organic waste in landfills. It is fair to believe that they do not know that landfills exist unless one is located near them* (*The Sun*, 15 June 2004).

“Poor work ethic fatal to incinerator safety”. *Looking at our track record in managing and operating the various public utility services, the poor work attitudes and weak enforcement is often the cause of breakdowns in service* (*The Sun*, 23 January 2003).

Meanwhile, neutral attribution of causes appeared in the form of mere explanation, statement and prediction:

“Illegal dumpers giving them bad name”. *It is something set to happen more often – solid waste contractors say more illegal dumps are likely to pop up in the Klang Valley in the future as lax enforcement and the relocation of landfills to more remote areas are setting a vicious cycle in motion* (*New Straits Times*, 26 July 2004).

### 3.1.3 To make moral evaluations or judgments

Basically, positive moral judgments were presented in the form of opinion and in a hopeful tone: “Ensuring a healthy, sustainable environment”. *“The environmental management problem should be looked upon as a part of the process and in terms of total investment rather than liability. It should be part of the total process instead of an extra investment.”* (*New Straits Times*, 19 February 2003).

Negative moral judgments sounded threatening, blaming, disappointing, and hopeless where statements of the possibility of side-effects, consequences, and slow action existed: “Don’t use incinerators till you are ready”. *The public can diligently separate the waste, but if the collection system lumps them all together in the garbage truck again, their efforts would come to naught* (*The Sun*, 9 March 2007).

“Get solid waste management right”. *Whether it is privatization, corporatisation or federalization – call it by any fancy name – the crux of the matter is, any plan for all its good intentions will be a failure if the people tasked with the responsibilities are not up to the mark. So, can we ensure that we have the right people for the job on their own merit?* (*The Sun*, 28 June 2007).

Neutral moral judgments appeared in mere statements that sounded like making prediction or assumption: “Tanjung Tuan threatened by pollution”. *He (Mohd Basir Abdullah) said there was bound to be a long-term chain effect on the area’s habitat, wildlife and bio-diversity if no one checked the problem immediately* (*New Straits Times*, 9 May 2005).



### 3.1.4 To suggest solutions

When the news articles presented the framing function of suggesting solutions, they were often positively framed. Positive frame contained particulars such as suggestion, opinion, and explanation to the issue. Positive frame here might also contain the tone of reminding, hope, and success when action was taken to overcome the problem or when the implementation of a measure was found to be effective. Examples are as follows:

“Give the facts on managing waste”. *Statistics and information, including nasty truths about solid waste management problems and reports of commissioned studies, should also be posted on the ministry’s website to promote informed discussions (The Sun, 27 September 2004).*

“Cleaning the tarnished pearl”. *Abdullah’s wish for a cleaner Penang can be realized by letting them know that their jobs are on the line if it remains as dirty the next time he visit so that the accountability chain take its effect (The Sun, 22 February 2005).*

“Raise awareness to save environment”. *The media and politicians must help to educate the people in order to save the environment. There must be effective enforcement. Impose fines on residents who do not have dustbins to hold their rubbish. Contractors must clear the rubbish after finishing their projects and they should be punished for leaving heaps of stones and bricks around (New Straits Times, 13 August 2007).*

“Everyone has a role to play”. *Manufacturers and retailers can also play a big part in saving the environment. Reducing the packaging of their products or making use of environment-friendly packaging would be one of the ways (New Straits Times, 19 September 2007).*

### 3.1.5 To show consequences

A majority of stating consequences paragraphs contained negative frame. Negative frame contained particulars on the effects of wastes in terms of the environment, health, and economy. Negative frame might also sound blaming and terrifying:

“Poor work ethic fatal to incinerator safety”. *Despite all the safety standards that come with the technology, workers who lack a sense of responsibility and have poor attitudes to work can turn the incinerators into unnoticed killers (The Sun, 23 January 2003).*

“Hello, Malaysia is not one giant rubbish bin”. *The piles of rubbish along the roads and highways and under bridges are not only an eyesore but also a health hazard (New Straits Times, 8 June 2005).*

“Natural gas, fish ponds the answer?” *Any untreated or inadequately treated waste water passing through the pond would adversely affect the health of the fish, causing mortality (New Straits Times, 18 June 2007).*

Meanwhile, neutral frame article was merely giving explanation or statement on the process of waste management: “Reversing our Earth debt”. *With more mouths to feed, we have to produce more, which means using more resources. We also have to deal with the residue of these resources a.k.a. waste, by using, guess what? Even more resources! (The Sun, 27 June 2006).*



## 4 Conclusion

Based on the analysis, Malaysian English newspapers primarily framed waste issues using at least one framing functions (79.06%). The frame of suggesting solutions was dominant in waste stories. It indicates that Malaysia is still looking for effective measures to treat wastes and that the waste management system in Malaysia is still considered limited and poor. This observation echoed the findings of a study by Ghani Rais et al. [29] that the solid waste management in Malaysia has a long way to go. There was also an increasing emphasis on another framing function such as stating consequences. This framing function of consequences was largely used in the coverage of waste stories that involved risk issues. For journalists, the degree of risk is just one element used in determining the importance or consequence of a story, and consequence is just one of many factors used in deciding whether a story is newsworthy or not (Sachsman et al. [30]).

The application of positive frame was obvious in the framing function of suggesting solutions. This indicates that there is still hope in overcoming problems concerning wastes. When waste stories were framed negatively, these were often associated with environmental and public health problems, inequitable siting of landfills, high costs for incineration and, finally, it was perceived as a landfill capacity crisis. These perceptions produced a collective frame of over-reliance on disposal (Wagner [31]). The neutral frame was less applied in the waste stories and when it was applied, it normally appeared in mere statements and brief information about the waste issue which neither sounded alarming or calming.

In conclusion, the study of selected Malaysian English newspapers indicated that the media played informative and educating roles by framing problem definitions, causes diagnoses, solutions suggestions and consequences statements with regards to waste issues. The media need to continuously play these roles because the problems associated with waste issues are not going to be resolved immediately as long as development continues, members of society still maintain unsustainable lifestyles and inefficient waste management systems are still in place. In short, waste issues are still problematic and in dire need of efficient solutions.

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## References

- [1] Grodzińska-Jurczak and Read., Increasing public participation in sustainable municipal solid waste management – a promotional and educational campaign in Jaslo City (Poland). In: Grodzińska-Jurczak, M., The relation between education, knowledge and action for better waste



- management in Poland. *Waste Management & Research*, 21, pp. 2-18, 2001.
- [2] Meyers, G.D., McLeod, G., & Anbarci, M.A., An international waste convention: measures for achieving sustainable development. *Waste Management Research*, Vol. 24, No. 505-513, 2006.
  - [3] Tean, S.N., The Study on Option and Household Participation for the Recycling Program. In: Isa, M.H., Asaan, F.A.H., Ramli, N.A., Ahmad, S., & Siew, T.S., Solid waste collection and recycling in Nibong Tebal, Penang, Malaysia: a case study. *Waste Management Research*, 23, pp. 565-570, 2001.
  - [4] Isa, M.H., Asaan, F.A.H., Ramli, N.A., Ahmad, S., & Siew, T.S., Solid waste collection and recycling in Nibong Tebal, Penang, Malaysia: a case study. *Waste Management Research*, 23, pp. 565-570, 2005.
  - [5] Bennett, P. Understanding Responses to Risk. In: P. Bennett and K. Calman (eds) *Risk Communication and Public Health*, Oxford University Press: Oxford, pp. 3-19, 1999.
  - [6] Lindsay, B.E., Zhou, H., & Halstead, J.M., Factors Influencing Resident Attitudes Regarding the Land Applications of Biosolids. *American Journal of Alternative Agriculture*, 15(2), pp. 88-95, 2000.
  - [7] Frewer, L.J., Miles, S., & Marsh, R., The Media and Genetically Modified Foods: Evidence in Support of Social Amplification of Risk, *Risk Analysis*, 22(4), pp. 701-710, 2002.
  - [8] Wakefield, S.E.L. & Elliott, S.J., Constructing the News: The Role of Local Newspapers in Environmental Risk Communication. *The Professional Geographer*, 55(2), pp. 216-226, 2003.
  - [9] Altheide, D. Creating Reality: How TV News Distorts Events. In: Einsiedel, E.F., Framing science and technology in the Canadian press. *Public Understanding of Science*, 1, pp. 89-101, 1976.
  - [10] Zolkifly Che Din, *Household & Industrial Waste Treatment: An Island Scenario*. In: Seminar – Workshop on Economic Progress and Environmental Development: Implications for Media, Asian Institute for Development Communication, Penang, 1998.
  - [11] Abdul Ghani Rais, Sakai, H., & Haniba, N.M., *Solid Waste Management: What's the Future*. The Waste Management Conference and Exhibition Kuala Lumpur, Malaysia, 2006.
  - [12] SMI Association of Malaysia (2007) SME Business Directory. *Waste Management for SMIs*. [www.smibusinessdirectory.com.my](http://www.smibusinessdirectory.com.my)
  - [13] Arango, O. & Bertuzzi, C. Municipal solid waste: a quantitative overview. In: Murad, W. & Siwar, C., Waste management and recycling practices of the urban poor: a case study in Kuala Lumpur city, Malaysia. *Waste Management Research*, 25, pp.3-13, 1994.
  - [14] Murad, W. & Siwar, C., Waste management and recycling practices of the urban poor: a case study in Kuala Lumpur city, Malaysia. *Waste Management Research*, 25, pp. 3-13, 1992.
  - [15] Bhattacharjee, R.B. (2006) *Safe options in managing waste*. Sun2Surf, [www.sun2surf.com/article.cfm?id=14288](http://www.sun2surf.com/article.cfm?id=14288)



- [16] Waste Management Association of Malaysia, [www.wmam.org/](http://www.wmam.org/)
- [17] Isa, M.H., Asaan, F.A.H., Ramli, N.A., Ahmad, S., & Siew, T.S., Solid waste collection and recycling in Nibong Tebal, Penang, Malaysia: a case study. *Waste Management Research*, 23, pp. 565-570, 2005.
- [18] SMI Association of Malaysia (2007) *Waste Management for SMIs*, [www.smibusinessdirectory.com.my](http://www.smibusinessdirectory.com.my)
- [19] Peretz, J.H., Waste management agenda setting: a case of incorrect problem definition? *Waste Management Research*, 16, pp. 202-209, 1998.
- [20] Watts, B.M. & Probert, E.J., Variation in public participation in recycling – a case study in Swansea. In Grodzińska-Jurczak, M., The relation between education, knowledge and action for better waste management in Poland. *Waste Management & Research*, 21, pp. 2-18, 2001
- [21] Ridhuan, M., Recycling policies in Malaysia. In Isa, M.H., Asaan, F.A.H., Ramli, N.A., Ahmad, S., & Siew, T.S., Solid waste collection and recycling in Nibong Tebal, Penang, Malaysia: a case study. *Waste Management Research*, 23, pp. 565-570, 1994.
- [22] Gamson W.A. & Modigliani, A. Media Discourse and Public Opinion on Nuclear power: A Constructionist Approach. *The American Journal of Sociology*. 95 (1):1-37, 1989.
- [23] Tankard, J.W. Jr., Hendrickson, L., Sillberman, J., Bliss, K., & Ghanem, S., Media Frames: Approaches to Conceptualization and Measurement. *Paper presented at the Association for Education in Journalism and Mass Communication*, Boston, MA, August 7-10, 1991.
- [24] Entman, R. Framing: towards clarification of a fractured paradigm. *Journal of Communication*, 43: 51-58, 1993.
- [25] Goodman, J.R. & Goodman, B.P. Beneficial or biohazard? How the media frame biosolids. *Public Understanding of Science*, 15, pp. 359-375, 2006.
- [26] Entman, R. Framing: towards clarification of a fractured paradigm. *Journal of Communication*, 43: 51-58, 1993.
- [27] Sieff, E., Media Frames of Mental Illnesses: The Potential Impact of Negative frames. *Journal of Mental Health*, 12(3), pp 259-269, 2003.
- [28] Goodman, J.R. & Goodman, B.P. Beneficial or biohazard? How the media frame biosolids. *Public Understanding of Science*, 15, pp. 359-375, 2006.
- [29] Abdul Ghani Rais, Sakai, H., & Haniba, N.M., *Solid Waste Management: What's the Future*. The Waste Management Conference and Exhibition 2006, Environmental Management and Research Association of Malaysia and the Department of Environment Malaysia, 2006.
- [30] Sachsman, D.B., Simon, J., & Valenti, J.M., Risk and the environment reporters: a four-region analysis. *Public Understanding of Science*, 13, pp. 399-416, 2004.
- [31] Wagner, T., Reframing Garbage: Solid Waste Policy Formulation in Nova Scotia. *Canadian Public Policy – Analyse De Politiques*, 33(4), p.471, 2007.

