

Effectiveness of Masjid Lestari Program on Recycling Practices among Bandar Baru Bangi and Semenyih Residents

(Keberkesanan Program Masjid Lestari terhadap Amalan Kitar Semula dalam Kalangan Penduduk Bandar Baru Bangi dan Semenyih)

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ABSTRACT

The government of Malaysia has implemented various measures to reduce disposal of daily solid waste to landfills including recycling. Based on the issue, the Universiti Kebangsaan Malaysia took the initiative to organise “Program Masjid Lestari” targeting to enhance recycling practices among the community. The objectives of this study are to identify factors that influence the behaviour of recycling practices in the community and to assess the effectiveness of the awareness programme, “Program Masjid Lestari.” “Program Masjid Lestari” focused on recycling practices among Bandar Baru Bangi and Semenyih residents took place in 2015, 2016 and 2017. The study applies survey instrument and also weight of recyclable items collected during the program. The questionnaires were distributed to the residents who had attended the event at Section 3 and Section 4, Bandar Baru Bangi and also Bandar Rinching, Semenyih. The survey data was analysed using Statistical Packages for Social Sciences (SPSS) version 23. Based on the findings, the total recyclable items collected during the program were 800 kg in 2016 and 878 kg in 2017 for Bandar Rinching, Semenyih. Most of the respondents have good knowledge, awareness and attitude towards recycling. However, the involvement of community in recycling practices is still low due to lack of facilities, time and cost constraints. In general, awareness campaigns are able to increase community involvement to recycle. A good advertising and promotion, appropriate time, location and improvement of facilities are the important factors to ensure a successful awareness program that could make an impact on the recycling practice.

Keywords: Recycle; community; awareness program; behaviour

ABSTRAK

Pihak kerajaan telah melaksanakan pelbagai usaha untuk mengurangkan pelupusan sisa pepejal ke tapak-tapak pelupusan sampah termasuk kitar-semula. Berdasarkan isu ini, Universiti Kebangsaan Malaysia telah mengambil inisiatif untuk mengadakan “Program Masjid Lestari” bertujuan untuk memperkasakan amalan kitar semula di kalangan komuniti. Kajian ini bertujuan mengenal pasti faktor-faktor yang mempengaruhi tingkah laku pengamalan kitar semula di kalangan komuniti dan mengkaji keberkesanan Program Masjid Lestari terhadap amalan kitar semula. “Program Masjid Lestari memfokus amalan kitar semula di kalangan penduduk Bandar Baru Bangi dan Semenyih telah dijalankan pada 2015, 2016 dan 2017. Kaedah yang digunakan dalam kajian ini adalah edaran borang soal selidik dan penimbangan bahan kitar semula. Soal selidik diedarkan kepada penduduk Seksyen 3 dan Seksyen 4, Bandar Baru Bangi dan Bandar Rinching Semenyih yang hadir ke Program Masjid Lestari. Data kajian dianalisis secara kuantitatif dengan menggunakan perisian Statistical Packages for Social Sciences (SPSS) versi 2. Hasil kajian mendapati bahan kitar semula yang dikumpulkan ialah 800 kg untuk program pada 2016 dan 878 kg pada tahun 2017 di Bandar Rinching, Semenyih. Kebanyakan responden di Bandar Baru Bangi dan juga Semenyih mempunyai pengetahuan, kawalan kesedaran dan sikap yang baik dalam amalan kitar semula. Tetapi, penglibatan amalan kitar semula masih ditahap yang rendah kerana kekurangan fasiliti, kekangan masa dan kos. Secara amnya, program kesedaran kitar semula seperti Program Masjid Lestari mampu meningkatkan keterlibatan komuniti dalam aktiviti ini. Promosi dan pengiklanan yang baik, kesesuaian masa, tempat dan penambahbaikan fasiliti merupakan faktor penting dalam memastikan program kesedaran ini berjaya memberi impak kepada amalan kitar semula.

Kata Kunci: Kitar semula; komuniti; program kesedaran; sikap

INTRODUCTION

Rapid development of Malaysia contributes to a significant impact on the solid waste generation that is increasing annually. A total of 37,000 tons of garbage is generated every day and 13.5 million tons of waste produced each year (Anon 2017). Irwan et al. (2013) indicated that affluence has a positive effect on municipal solid waste discharge rate as households that earn a higher income tend to produce more waste.

According to Guerrero et al. (2013), solid waste management is a challenge for the cities' authorities in developing countries mainly due to the increasing generation of waste, the burden posed on the municipal budget as a result of the high costs associated to its management, the lack of understanding over a diversity of factors that affect the different stages of waste management and linkages necessary to enable the entire handling system functioning.

Recycling is an option apart from reduce and reuse for inorganic waste management such as plastics, papers and aluminium to reduce the amount of solid waste sent to landfills. The government has introduced various measures to reduce generation of solid waste. For instance, recycling campaigns were launched in 1993 and 2000 (Seow 2004). The campaign aims to increase the percentage of recycling by 1% per year. However, the targets in these campaigns were not achieved because majority of people were not aware and unconcerned about the waste management.

There is also some effort to promote recycling at the state level. For example, in Selangor, No Plastic Day was introduced on 1st January 2011 and it was extended to seven days a week starting 1st January 2017 (The Star 2016). The campaign aimed to reduce the use of plastics by community while encouraging people to use durable bags (i.e. multiple applications bags).

There are several factors that influence the practice of recycling each individual. Among the factors are as follows:

- i. Religion
Zeeda et al. (2012) stated the potential role of religious communities in environmental practices, such as recycling, has to go beyond general idealism on the positive influence of religious values/ethics on environmental protection. Due emphasis also needs to be given to the characteristics of each religious community, and how these can be useful in supporting different aspects of a recycling programme.
- ii. Facilities
According to Hawkins (1991) the supply of bins to residents will increase the collection of recyclable materials. Distribution of recycling bins that are free for some households in the United States has increased the rate of collection of recyclable materials (Hageman 1989).
- iii. Attitude and subjective norm
Theory of Planned Behaviour express that interaction between attitude and subjective norms can influence

individual's recycling practices. Subjective norms play an important in motivating recycling behaviour. It can increase the tendency to do recycling for those who show a positive attitude and give encouragement to people who have knowledge about the benefits of recycling (Wan et al. 2016).

- iv. Awareness Level
Malaysian Science and Technology Information Centre (MASTIC) showed that Malaysians are more aware about issues related to the environment such as recycling, global warming and air pollution compared with other issues such as science and technology (MASTIC 2004). This indicates a positive change shown by Malaysians and they are aware of the environment condition around them.
- v. Education
Kaplowitz and Levine (2005) agreed that the local community who involved in the recycling are based on the level of education and their knowledge about the benefits of recycling. There is a significant relationship between knowledge and awareness of the practice of recycling (Kollmus & Aygeman 2002). Therefore, people who have high education are more likely to engage in recycling programs because they have the knowledge, awareness and understanding of the negative impacts if they do not recycle.

This study aims to identify factors that influence the behaviour of recycling practices in a community, and to assess the effectiveness of the "Program Masjid Lestari" in enhancing recycling practices by the community at Section 3 and 4 Bandar Baru Bangi and Bandar Rinching, Semenyih.

METHODOLOGY

There were three phases of awareness programmes being held for "Program Masjid Lestari," i.e. "Program Kelestarian Masjid dan Surau Bandar Baru Bangi 2015," "Program Masjid Lestari 2016" and "Program Masjid Lestari 2017." Section 3, Section 4 at Bandar Baru Bangi and Bandar Rinching, Semenyih were selected as the study areas.

For the first phase, "Program Kelestarian Masjid dan Surau Bandar Baru Bangi 2015" was held on 31st October 2015 at Masjid Hasanah, Bandar Baru Bangi. This is regarded as a pre-test study. The second phase, "Program Masjid Lestari 2016" was held in Bandar Baru Bangi and Semenyih. There were three locations involved, i.e. Surau al-Kauthar, Section 4, on 8th October 2016, Surau As-Sobah, Section 3 on 19th November 2018 and Bandar Rinching, Semenyih on 22nd October 2016. The third phase, "Program Masjid Lestari 2017" were held at Seksyen 4, Bandar Baru Bangi and Bandar Rinching, Semenyih. "Program Masjid Lestari 2016" was a one-day program, which incorporated other community activities such as multi-media environmental awareness lecture and collection of recyclable materials. The third phase, "Program Masjid Lestari 2017" focused only on

collection of recyclable items for a period of one month for each location.

Two approaches were applied for this study. The first approach is through questionnaire survey. This study used two different sets of questionnaires. A set of questionnaire was used to investigate the factors that influence the behaviour of recycling activities in the communities. The questionnaires were distributed to all participants during “Program Kelestarian Masjid dan Surau Bandar Baru Bangi 2015” and “Program Masjid Lestari 2016” respectively to evaluate the factors that influenced community recycling behaviour. The questions asked to the respondents for the survey are described in Table 1. Likert scale of 1 to 4 was used evaluate the factors that influenced community recycling behaviour. The questionnaires also provide space for the respondents to give suggestions for improvement. The questionnaires were analysed using *Statistical Package for Social Sciences (SPSS) version 23*. The descriptive analysis was performed to extract the results.-

The other set of questionnaire was distributed to investigate the level of effectiveness of the awareness program conducted at “Program Masjid Lestari 2017”. The questions asked to the respondents for the survey are described in Table 2. All questionnaires were printed and distributed to those who attended the events.

The other method done for this study was weighing the recyclable items that were collected by residents during “Program Masjid Lestari 2016 and 2017”. “Program Masjid Lestari 2017 was done four times in a period of one month, starting from 15th, 22nd, 30th April 2018, and 7th May 2018. Data on the collected recyclable items was done manually by using standard weighing equipment, and analysed using Microsoft Excel.

RESULTS AND DISCUSSION

The results from the questionnaires that were distributed during the first phase, “Program Kelestarian Masjid dan Surau Bandar Baru Bangi 2015” shown in Table 3. There were about 30 persons who had attended the program, six persons had agreed to be the respondents for the survey. Most of the respondents have positive attitude and extensive knowledge on recycling practices. However, there are some barriers such as lack of recycling facilities and less involvement by the local authorities, Majlis Perbandaran Kajang (MPKJ) that had caused less involvement of the residents to practice recycling. Although the residents showed high level of awareness and in-depth knowledge about recycling, most of the respondents still did not show good ethical values on environmental issues as they did not feel guilty when they did not practice recycling. A study done by Nur Khalishah et al. (2015) revealed that the community participation level in recycling programme in the whole area of Putrajaya was significant with the community attitude and their knowledge on solid waste segregations, and the distance from home to recycling collection centre, time constraint and limited space

and bins were the major factors that prevent community from participating recycling programme.

Table 4 shows the second phase of the study, which was carried out to 32 respondents at Bandar Baru Bangi and Semenyih who had attended the “Program Masjid Lestari 2016.” The findings showed that residents in Bandar Baru Bangi and Semenyih have extensive knowledge, good attitude and possessed high awareness level of understanding towards recycling. Nevertheless, their involvements in recycling practices were still very low. McDonald and Oates (2003) commented that a lot of people express their interest in recycling, but not all of them expressed it through acts. Most of them still do not implement the recycling due to lack of facilities including recycled bins for waste segregation and no recycling centre nearby their housing areas.

From the survey results, it is suggested that the number of recycling facilities should be increased and located nearby public areas and business centres. In addition, the provision of recycling bins for all residents will ease a community to perform the separation of recyclable materials, and thus foster the practice of recycling among the residents. Bandar Baru Bangi and Semenyih residents also agreed on collection of recyclable items in front of the resident’s houses is the most effective method to enhance recycling practices for the residents.

TABLE 1. Questions on factors that influenced recycling behaviour for the community for “Program Kelestarian Masjid dan Surau Bandar Baru Bangi 2015” and “Program Masjid Lestari 2016”

Item	Questions
Attitude	Recycling is the responsibility of an individual Recycling is clean, good and useful Recycling can increase income
Subjective Norm	Others think I should recycle Others would agree if recycle
Awareness Level	Recycling is easy Know recycling items
Ethics Facilities	Feel guilty if I do not recycle Appropriate recycling facilities Involvement of local authority

TABLE 2. Questions on effectiveness for “Program Masjid Lestari 2017”

Item	Questions
Information Dissemination	Ease to obtain information on event
Program Effectiveness	Very Effective, Effective, Less Effective, Not Effective
Impact to behaviour	Improve attitude Practice recycling
Program Continuation	Program to be extended to other community

TABLE 3. Factors that influence recycling behaviour in the community of Bandar Baru Bangi

Item	*Likert Scale (Mean)
Attitude	3.78
Norm subjective	3.35
Awareness Level	3.40
Ethics	3.06
Facilities	2.94

*Likert scale 4, 1 = extremely disagree, 2 = disagree, 3 = agree, 4 = extremely agree

TABLE 4. Factors that affect the behaviour to recycle in Bandar Baru Bangi and Semenyih community in 2016

Item	*Likert Scale (Mean)
Attitude	4.20
Subjective Norm	3.80
Awareness Level	4.20
Ethics	4.20
Facilities	3.60

*Likert scale 4, 1= extremely disagree, 2 = disagree, 3 = agree, 4 = extremely agree

Figure 1 shows that the total weight of recyclable materials collected during “Program Masjid Lestari 2016” from Bandar Rinching, Semenyih alone was approximately 800kg. Higher amount of recyclable items were collected during the “Program Masjid Lestari 2016” in comparison to “Program Masjid Lestari 2017” for a day collection may be due to the program was conducted together with other community activities and environmental awareness talk. These activities had attracted the residents to attend the program and bring along the recyclable items.

Figure 1 also shows the collection of recyclable items for the “Program Masjid Lestari 2017” at Bandar Rinching. The collection for the first day of the “Program Masjid Lestari 2017” was on 15th April 2017 recorded as the lowest collection of 49.9kg. This effect may be due to delays in flyers distribution for programme promotion. Therefore, the residents did not have enough time to gather the recyclable items. Similarly, unsuitable timing for the collection date also contributed to less recyclable items collected on the third week, which was 30th April 2017. The collection was the highest on 22nd April 2017 at approximately 549 kg, which was the second week of the programme.

Figure 2 demonstrated that recycled items collected at Section 4, Bandar Baru Bangi increases by week except on 30th April 2017. The highest collection of recycled materials recorded was on 7th May 2017 with 400 kg, while the lowest collection of recycled materials was on the third week of collection with 212.8 kg. Less collection may be due to the long weekend as there was public holiday on Monday (1st May 2017). Possibly, most of the residents took the opportunity

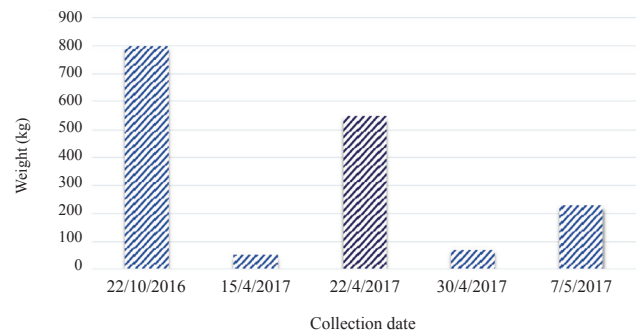


FIGURE 1. Weight of recycled items collected during “Program Masjid Lestari Program 2016” and “Program Masjid Lestari 2017,” Bandar Rinching, Semenyih

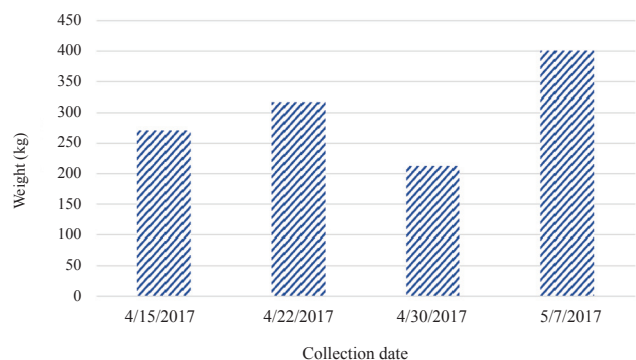


FIGURE 2. Weight of recycled items collected during “Program Masjid Lestari 2017” at Section 4, Bandar Baru Bangi

to have a short holiday away from home, thus unavailable during the collection day.

Finally, the survey results for phase three event, which was “Program Masjid Lestari 2017.” Approximately 150 persons involved in the program, 57 had agreed to be the respondents to this study. The result shows that 81% of the respondents knew about the recycling programme. It indicated that the residence of Bandar Rinching and Bandar Baru Bangi had obtained information about the recycling awareness programme. However, better promotion strategy should be conducted so that more residents would be aware to participate in the program. It was found that promotion and campaigns through social media able to spread about the recycling awareness program to a community.

From Figure 3, a total of 89% of the respondents had agreed that “Program Masjid Lestari 2017” is very effective, effective and reasonably effective to enhance recycling practice among the residents. While 11% of the respondents stated that awareness programmes such as “Program Masjid Lestari” are not effective to increase the recycling rate within a community.

Figure 4 shows the impact of recycling awareness program to a person. Majority of the respondents proclaim that the awareness program had increase knowledge and strengthen positive attitude towards recycling. They also claimed that “Program Masjid Lestari” had increased their participation in recycling practice and improve their attitude

towards recycling practice. According to a study by Nurliyana and Salina (2016), promotional programmes that highlight how recyclables should be managed and the availability of recycling facilities can enhance the perceived behavioural control of the individuals. Herewith, the promotional programmes can highlight how the recyclables should be sorted, stored and handled.

Furthermore, majority of the respondents also suggested that awareness program should be spread widely to other communities.

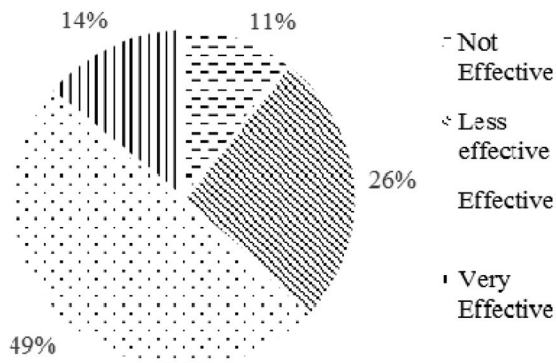


FIGURE 3. Effectiveness of Program Masjid Lestari towards recycling practices

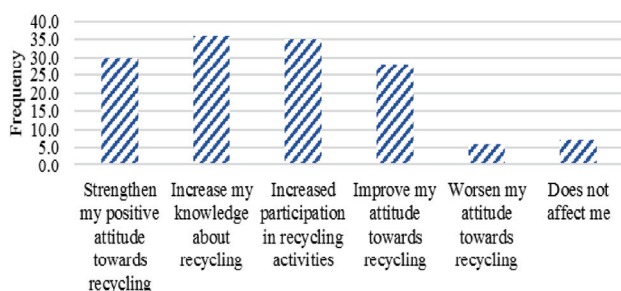


FIGURE 4. Impact to behaviour

CONCLUSION

Residents in Section Section 3 and 4, Bandar Baru Bangi and Bandar Rinching, Semenyih have good knowledge and attitude regarding recycling practice. However, their involvement to recycle is still low due to lack of facilities, time and cost constraints. The provision of good recycling facilities and services give positive impact towards the community recycling behaviour. Hence, environmental awareness programme such as “Program Masjid Lestari” can be done to increase the recycling rate. Appropriate time, location, promotion, advertising and facility improvements are the important factors in ensuring that the awareness programs would have greater impact towards a community recycling practices.

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