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Exploring the Levels of Knowledge, Attitudes and Environment-Friendly Practices Among Young Civil Servants in Malaysia

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ABSTRACT

Today's younger generations will determine the future and progress of the country. It is therefore important to create and nurture mature behaviour in younger generations towards the environment. Such behaviour is vital to ensure that the environment is continually protected and conserved. Exploring the levels of knowledge, attitudes and environment-friendly practice in young civil servants is an initial step in designing an environmental programme that will empower youth in leading and promoting recycling as one environment-friendly response to a threatened environment. To achieve this purpose, this study utilised the Knowledge, Attitudes and Practice (KAP) Model to examine the levels of knowledge, attitudes and workplace recycling practice among young civil servants. The study involved 244 young civil servants randomly selected from administration or management divisions in 25 government agencies aged between 20 and 40 years. The findings reveal that the level of knowledge and attitudes among the young civil servants on recycling was remarkable. However, the level of recycling practice at the workplace is moderate. Both recycling knowledge and attitudes are predictors of workplace recycling practice among young civil servants. Thus, any intervention programme involving youth to improve recycling should consider these results as a basis in designing a programme that can equip youth with some abilities and skills in proper recycling methods. With this knowledge, they can inspire their colleagues to actively participate in office recycling practices. In addition, these well-trained young civil servants can also be appointed to become change agents in promoting, educating and enhancing recycling practices in their neighbourhood. Civil servants not only serve the people, but can also lead

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in voluntary community environment-friendly activities. Indeed, they should be encouraged to do so.

Keywords: KAP Model, environment-friendly practice, recycling knowledge, recycling attitudes, recycling practice, empowerment programme, change agent

INTRODUCTION

The progress of a country always depends on its present-day younger generations. Without mature younger generations (youth), the future of a country becomes uncertain. Realising the importance of youth's role and contribution, each year, the Ministry of Youth and Sports, Malaysia organises the National Youth Celebration. For instance, in May 2011, the Ministry of Youth and Sports organised a programme to converge a million youth in Putrajaya to indicate that the present younger generations are relevant in determining the progress of the country at present and in the future. The government believes that only with a clear direction can well-nurtured younger generations guarantee the survival and success of the country. Former Prime Minister, Tun Dr. Mahathir, set Vision 2020 as a road map and goal for shaping Malaysia into a developed nation. Thus, today's younger generations have to strive to achieve that aspiration while embracing environment-friendly practices that will ensure the preservation of Mother Nature for the benefit of all Malaysians.

The deterioration of the natural environment is a worldwide concern as it has direct implications on human well-being now and in the future. Malaysia launched her first nationwide recycling campaign thirteen years ago in November 2000 The recycling campaign was a programme that embedded a three-component practice, namely 'Reduce, Reuse and Recycle' (3R's). Although the Ministry of Housing and Local Government (MHLG) was the main anchor of this campaign, other stakeholders such as concessionaires, manufacturers, NGOs and resident associations were also actively involved. The purpose of the campaign was to foster recycling habits with messages typically stressing on the principle of sorting and separating household waste and to enhance public participation in reducing waste generation at the source. This campaign also involved various age groups including youth.

For the purpose of youth development programmes and activities in Malaysia, the youth age is set as 18 to 25 years (Ministry of Youth and Sports, 1997), but the National Youth Development Policy of Malaysia suggests youth as people aged 15 to 40 years. The United Nations defines youth as people aged between 15 and 24 years. In order to accommodate both national and international definitions of youth and the purpose of this study, the proposed age for youth is set between 20 and 40 years. The suggested age group falls within the recommended age range. Basically, this study considers this age group of youth as mature members of society who are working, vibrant and active. This age group is more suitably engaged as a social

change agent. Most importantly, an intensive youth empowerment programme can help increase knowledge and enhance the right attitudes and behaviour on recycling. As such, this initiative can become a turning point to further improve present and future quality of life. With greater youth participation in recycling programmes, the prospect of achieving the goal of creating an environment-friendly community by 2020 is brighter.

LITERATURE ON YOUTH RECYCLING BEHAVIOUR

Although a lot of research focusses on pro-environmental behaviour studies that focus on youth remain rare. Of late, studies on youth environment-friendly programmes have begun to flourish. The focus of these studies include youth participation and leadership (Carleton-Hug, 2003), youth environmental motivational factors (Lee, 2008), green living (Rahim *et al*., 2012), environmental attitudes and knowledge (Chib, 2009; Oweini & Houri, 2006) and environmental action (Schusler *et al*., 2009). Generally, youth pro-environmental behaviour studies have been conducted in different perspectives.

A study conducted by Carleton-Hug *et al*. (2003) assessed youth participation and leadership in various environmental and social activities involving 450 Polish teenagers. They found that Polish youth have participated in few activities, predominantly litter clean-up efforts, and only a small minority of youth has acted as organisers of actions. Lee (2008) examines Hong Kong female adolescents' perception on motivational factors to engage in more private-sphere environmental behaviour. Among the motivational factors highlighted are environmental concerns, perceived responsibility and perceived effectiveness of environment-related behaviour. The study also reveals that knowledge on environmental problems is insufficient to motivate youngsters to act, and attitudes towards the environment also cannot motivate them to protect the environment (Lee, 2008). Rahim *et al*. (2012) conducted a survey on 320 respondents to assess the perception of Malaysian youth on the concept of green living in advertising. The results show that Malaysian youth have some awareness of the concept of green living. Despite the exposure to green advertising, green-living practice among youth is low. Due to a lack of a comprehensive understanding of the concept, the implication on their specific knowledge on green living is low. However, Ling-yee (1997) argues that even if people have little knowledge about the environment, they would still exhibit a strong emotional attachment to environmental well-being. People may still exhibit a strong positive attitude towards the environment, and specific knowledge can further strengthen their attitudes and their environment-friendly practice. Chib *et al*. (2009) conducted a study on Singaporean youth pro-environmental attitudes and found that exposure to environmental messages proved useful in encouraging learning among youth. Indeed, message exposure provides them with some information and

knowledge of the environment.

Studies have shown that past recycling behaviour is a better predictive factor of future recycling behaviour and past recycling behaviour shows double the effect of attitudes on the intent to recycle (Biswas *et al*., 2000). Furthermore, a study by Haldeman and Turner (2009) reveals that 28% of the recycling rate of the residents in piloted areas was already in the action stage, which would require less effort to get them to increase the rate to 50%, as compared to residents in low participating areas. Fazio and Zanna (1981) support this argument and articulate that attitudes based on direct experiences with the attitudes object are stronger and more accessible (easier to retrieve) compared to indirect experience attitudes. It also means that people's previous experiences, either attained directly or indirectly, do guide their practice. A study by Perets, Tonn and Folz (2005) shows that recycling participation rates increased when people value recycling programmes as convenient to practice. Furthermore, the tendency for people to believe or value something as good or beneficial is greater. Oweini and Houri (2006) argue that although attitudes are requisites for positive action, attitudes alone may not push an individual into action. Although numerous studies examined people's environment-friendly behaviour, few focussed on youth, and little is also known about the levels of recycling knowledge, attitudes and practice among youth, especially among young civil servants. Hopefully, this study can provide some insights into what is needed to engage young civil servants in promoting and improving recycling practice at the workplace.

According to Pruneau *et al*. (2007), to facilitate full youth participation in the sustainable development of their community, the young need to progressively develop some knowledge and skills: evaluating the local environment, predicting and managing risks, solving environmental problems, sustainable decision-making and planning for the future. Hungerfold and Volk (1990) stipulate that knowledge of action strategies and skill in action implementation are two important modifiers of environmental behaviour. According to Borden and Serido (2009), youth became active participants in their community when they felt connected with the programme especially in making decisions and supporting relationships among adults in the programme. It also made them feel recognised. Thus, youth will require more diverse opportunities to authentically engage in environmental and social actions since few are willing to take leadership roles (Carleton-Hug *et al*., 2003). In addition, Schusler *et al*. (2009) posits that young people's tangible contribution to positive environmental and community changes is also indicative of measures of success.

According to LeRoy *et al*., (2004), training of youth is a critical component in promoting youth leadership, and social supports are necessary for the programme's success. To facilitate the development of

youth empowerment programmes, one area that needs exploration is the current levels of recycling knowledge, attitudes and practice among youth.

RESEARCH PROBLEM

A recycling programme was adopted as a main communication campaign and strategy to change people's mindset regarding the environment and to enhance recycling practice among citizens. The modes of communication strategies such as advertisements, publicity and interpersonal communication varied. In other words, everyone was encouraged to actively participate in the programme. Mass media was the primary vehicle used to communicate this pro-environmental behaviour by educating and fostering public participation. With sufficient recycling knowledge and the right attitudes, people were expected to engage in recycling practices voluntarily.

Recycling is no longer a new concept to Malaysians because the government has widely promoted this concept since its launch as a national campaign in November 2000. The Ministry of Housing and Local Government (MHLG) initiated this campaign with strong support from stakeholders such as local governments, concessionaires, manufacturers, non-governmental organisations (NGOs), and resident associations. According to Wee, Indera Syahrul and Jamaluddin (2006), MHLG has declared the recycling programme a failure, mainly in terms of changing people's mindset and behaviour, due to its limited success. In other words, Malaysians refuse to put recycling into practice although they are aware that recycling can lessen the effect of waste on the environment. There is also indication that there still are citizens who are unaware of recycling, its necessity and its benefits. Nevertheless, other local studies have shown that even though the percentage of recycling is low, some segments of society do accept and practise recycling (Mohd Badruddin, 2004; Murad & Siwar, 2007; Irina, 2006). Returning to the failure of the environmental awareness programme to take root in society, it is the scope of this research to ask: Is this failure relevant to Malaysian youth participation too? What are their levels of recycling knowledge, attitudes and practice, especially among young civil servants? Can young civil servants be change agents who voluntarily help the government to improve environment-friendly practice?

THEORETICAL BACKGROUND

Generally, the media highlights and communicates environment-friendly messages from time to time and, at the same time, enhances awareness and educates the public. Arguably, this communication effort is able to improve people's knowledge and modify their attitudes before they can adopt new recommended practices. In other words, the extent that communication influences an audience's knowledge, attitudes and practice determines the effectiveness of the communication.

According to the Knowledge, Attitude and Practice (KAP) Model, persuasive

communication influences a person's knowledge, attitudes and practice, and the pattern of the interaction between the variables is different (Valence, Parades, & Pope, 1998). This model focusses on the cognitive, affective and behavioural aspects which contribute to the ultimate outcome of the communication effect. Persuasive communication is considered effective when the level of people's knowledge increases, attitudes change and practice improve.

Knowledge is associated with cognition; it refers to mental performance actions such as perceiving, remembering, learning, recalling and predicting during information processing (Blumenthal (1977). People tend to process a message by organising it in whole or in part based on knowledge they already possess. Knowledge can be in the form of general knowledge or specific knowledge. According to DiEnno and Hilton (2005), knowledge about the environment relates to the formation of positive attitudes towards the environment. The study by Folz and Hazlett (1991) supported the view that recycling knowledge is important; they argue that although people show a strong willingness to continue the practice over time, specific knowledge on what to recycle and how to sort, store and collect recyclables remains critical for recycling programmes to succeed. In other words, specific knowledge is more prominent than general knowledge for a recycling programme to succeed.

Attitudes are simply affective responses to an object that depend on a person's beliefs and values (Bohner&Wanke, 2002). Affection relates to the sense of liking or feelings that people experience which may or may not concern a particular object or event. Beliefs refer to the subjective probability estimation of an object or idea necessary to attain a relevant goal (Wyer & Albarracin, 2005) or a person's subjective perception of how something performs based on different attributes depending on personal experience, advertisement and discussion with people (Kerin, Hartley and Rudelius, 2009).

Although up-bringing relates to the socialisation process and previous experiences, attitude formation depends on the way an individual has been brought up and his/her prior experiences. According to Donahue and Miller (2006), people's attitudes are derived from three main sources: socialisation (the learning of object attitudes, values and behaviours early in life), direct contact (experiences) and indirect contact (mediated). This study defines attitude as a person's disposition of favourable or unfavourable (beliefs) with a relational judgement (values) towards the idea which is also guided by his/her prior experiences including upbringing. Furthermore, Kerin, Hartley and Rudelius (2009) postulate that attitude is influenced by upbringing and shaped by beliefs and values that are taught. This is why people sometimes find it hard to change existing attitudes and practices.

Behaviour changes the final communication-intended outcome. Behaviour denotes specific action, but not all behaviours are visible in a physical activity. This is because behaviours can be learned,

practised and perfected through cognitive and affective processes (Heimlich & Ardoin, 2008). According to Albaracin, Johnson and Zanna (2005), behaviour refers to the overt actions of an individual which can be observed. Heimlich and Ardoin (2008) postulate that people always act consistently with their values, beliefs, understandings, culture, socialisation, upbringing and training. However, behaviours are not static in nature, and people will continually adjust their existing practices by adopting appropriate behaviours for various reasons (Heimilich & Ardoin, 2008). In addition, people need to have some knowledge (information or fact) and/or belief (values, feelings, opinion or attitudes) before they are convinced that the action is worth the effort and the effort (cost) is worth the gain (benefits) (Kotler, Roberto, & Lee, 2005). In short, people will act if they personally feel enriched when performing the desired behaviour or when they are at risk. Thus, the level of environment-friendly practice is worth studying because the result will be useful as a guide to design better empowerment programmes for youth.The main objective of this paper is to examine and discuss the levels of knowledge, attitudes and recycling practice among young civil servants at their workplace. In addition, this paper also tries to empirically confirm that the knowledge and attitude variables are important influences on recycling practice.

METHOD

Respondents

This study involves young civil servants who are working in the administration or management departments of 24 ministries and one agency under the Prime Minister's Department. These government agencies are located in Putrajaya and Kuala Lumpur.

Procedure

This study employed the quantitative survey method. For the purpose of the researcher's doctorate thesis, a total of 360 survey questionnaires were distributed to civil servants working in 24 ministries and one agency under the Prime Minister's Department from April 28 to June 30, 2011. Out of 360 questionnaires, 320 completed questionnaires were returned. However, only 244 respondents fell into the age group of 20-40 years. The respondents represented two main categories, management and professional (Grade 41-54), while the supporting staff represented the supervisory (Grade 22-36) and clerical levels (Grade 17).

The main objective of this study was to determine the levels of knowledge, attitudes and practice on recycling among young civil servants at the workplace in Malaysia. The questionnaire was completed in English and translated into Bahasa Malaysia. However, only the Bahasa Malaysia version was utilised in this study. Prior to the survey, a list of names was gathered from the respective agencies involving civil servants in the three grades of service to determine the total number of respondents. Then, the number of respondents was proportionately identified for each agency according to their grades of service. Based on the number

and name list obtained for each grade, the respondents were randomly selected. A representative from each agency assisted in distributing the questionnaires to the respondents chosen. Despite spending a day at the respective agency office, the researcher could not retrieve all the questionnaires. As some officers and staff were not available or were busy during the researcher's visit to the respective offices, the researcher applied the 'drop-and-collect' method. The data were carefully keyed in and scrutinised to identify any missing values and outliers.

Instruments

The instrument was a 41-item survey, measuring respondents' perceptions of civil servants' knowledge, attitudes as well as their workplace recycling practice. This instrument focussed on three constructs with individual dimension. Recycling knowledge construct is represented by general knowledge and specific knowledge while, recycling beliefs, value and up-bringing measure the recycling attitude construct. However, only a single dimension represents workplace recycling practice.

Recycling knowledge: Civil servants' recycling knowledge was measured in two dimensions, namely general knowledge on the environment (six items) and specific knowledge on recycling (nine items). A 5-point Likert scale ('don't know', 'not sure', 'slightly sure', 'sure' and 'absolutely sure') measured the responses. Samples for general-knowledge items include "Recycling practice can reduce the global warming effect" and "Recycling can save energy". Samples for specific knowledge items include "Know which type of item should go in which coloured bin" and "Know how to separate items according to the types of waste." Cronbach's alpha for this set of items were .879 and .892 respectively. Table 2 presents the mean and standard deviation of each dimension.

Recycling attitude: This was a 17-item scale that measured civil servants' perceptions about their attitude on recycling beliefs (six items) and up-bringing related to recycling, (five items) using a 7-point Likert scale ranging from absolutely disagree (1) to absolutely agree (7). However, recycling value items (six items) were measured using a semantic differential scale with a 7-point scale. The sample items include "Recycling practice is something that is bad (1) to good (7)" and "Recycling practice is something that is not practical (1) to practical (7)". The sample item for beliefs wass "Nothing can be done with recycled items" while the sample item for up-bringing was "Family always remind me not to pollute the environment". Cronbach's alpha for the scale were .873, .937 and .902 respectively (see Table 2).

Recycling at workplace: Respondents were asked to indicate the frequency of their participation in office recycling practices based on 10 items measured on a 7-point Likert scale ranging from never (1) to very frequent (7). The questionnaire was adapted from a list of environment-friendly office practices guide published in the Environment Department of Malaysia's

booklet. Sample items include "Separate and keep recycling material before selling them off". Cronbach's alpha for the scale was .859 (see Table 2).

RESULTS

Descriptive statistics were used to describe the results of the study. Table 1 presents the profile of the respondents. Table 2 presents the means and standard deviation for each construct dimensions except for workplace recycling practice while Table 3 summarises the levels of civil servants' recycling knowledge, attitudes and practice.

Respondents' Profile

About 66% of the respondents of the survey were females and the average age of the respondents across the sample was 30 years old. More than half (58.2%) of the respondents were married. Most of them had served the government for less than four years (66.8%). Nearly half (49.7%) of the support staff groups were STPM and diploma holders. However, there were six (6) respondents from the clerical

TABLE 1
Univariate Analyses for Socio-demographic Characteristics of Respondents

Variable	Management & Professional (Grade 41-54) n = 65	Supervisory Group (Grade 22-36) n = 34	Clerical Group (Grade 17) n = 145	Total (N=244)
Gender				
Male	38	10	35	83 (34%)
Female	27	24	110	161 (66%)
Age				
20 to 24	1	1	9	21 (8.6%)
25 to 29	24	11	59	94 (38.5%)
30 to 34	24	9	51	84 (34.4%)
35 to 40	16	13	16	45 (19.4%)
Educational level				
SRP/PMR	-	-	1	(0.4%)
SPM	-	3	57	60 (24.6%)
STPM	-	4	21	25 (10.2%)
Diploma	-	24	63	87 (35.7%)
Bachelor's degree	56	-	6*	62 (25.4%)
Master's degree	9	-	-	9 (3.7%)
Marital status				
Single	24	10	66	100 (41.0%)
Married	40	24	78	142 (58.2%)
Divorced	1	-	1	2 (0.8%)
Working experience				
2 years or less	31	11	59	101 (41.4%)
3 to 4 years	20	6	36	62 (25.4%)
4 to 5 years	8	3	29	40 (16.4%)
6 to 7 years	4	7	15	26 (10.7%)
9 years or above	2	7	8	15 (6.1%)

Note: * contract staff employed to carry out clerical works under the unemployed graduate scheme

group who held a degree qualification. They joined the government civil service under the unemployed graduate scheme. Most respondents had at least two years's working experience. The information in Table 1 presents the respondents' socio-demographic characteristics.

Recycling knowledge: Based on a 5-point Likert scale, the results suggest that civil servants' general knowledge on environment is high: more than 80% of civil servants indicated having a high level of general knowledge (M=4.26). The results also show the level of specific knowledge among the civil servants as high (60%), but the mean score for specific knowledge is slightly low (M=3.71). The results demonstrate that a majority of civil servants possess more general knowledge on the environment and its relation to recycling than specific knowledge on recycling. It is not surprising that the level of general knowledge of none of the respondents was reported as low while their specific knowledge was low to almost none (0.4%). It is most likely that these respondents had adequate exposure to recycling and found it easy to understand the general information about the environment, and lacked specific information on recycling that tended to be technical.

Recycling attitude: Recycling attitude dimensions are measured using a 7-point Likert scale. The results show that more than 80% of the civil servants obtained a high level of recycling values (M=5.86). Although, the level of recycling beliefs among the civil servants was high, only 60% of the civil servants indicated a high level of recycling beliefs compared to recycling values. In addition, the mean for recycling beliefs is lower (M=5.00) than for recycling values, but is higher than recycling upbringing (M=4.67). The results also show that nearly half (49.6%) of the respondents had a moderate level of recycling upbringing as compared to about 45% reported to obtain a high level of recycling upbringing. This result indicates that civil servants' upbringing process contributed a smaller impact to their attitudes than did their recycling beliefs and values.

Recycling practice: Recycling practice was also measured using a 7-point Likert scale. The results show that most of the civil servants had a moderate level of recycling practice. About 55% of the young civil servants indicated a moderate level of recycling practice (M=4.76). However, only 3% of the respondents indicated a low level of recycling practice. Nevertheless, the number of respondents who scored a high level of recycling practice is also encouraging (42%). The overall results suggest that there is a need to develop an intervention initiative to increase the participation level of young civil servants in workplace recycling programmes as more than half of them can be encouraged to practise recycling. Table 3 presents the details of the results on the level of the recycling practice of civil servants.

Multi-Linear Regression Model of Recycling Practice: To support the above results, an additional statistical test was conducted to examine the relationship

TABLE 2
Means and Reliability of Recycling Knowledge, Attitudes and Practice

Items	Likert Scale	M	SD	Alpha
Recycling Knowledge				
General Knowledge (6 items)	5	4.2652	.54714	.879
Specific Knowledge (9 items)	5	3.7148	.47578	.892
Attitude				
Beliefs (6 items)	7	5.0073	1.13368	.873
Values (6 items)	7	5.8634	.97171	.937
Up-bringing (5 items)	7	4.6697	1.04731	.902
Office Recycling (10 items)	7	4.7650	.92657	.859

TABLE 3
Levels of Recycling Knowledge, Attitude and Recycling Practice

Items	Level	Frequency	%
	Low	0	0.0
General Knowledge	Moderate	38	15.6
	High	206	84.4
	Low	1	0.4
Specific Knowledge	Moderate	93	38.1
	High	150	61.5
	Low	13	5.3
Beliefs	Moderate	82	33.6
	High	149	61.1
	Low	2	0.8
Values	Moderate	37	15.2
	High	205	84.0
	Low	13	5.3
Upbringing	Moderate	121	49.6
	High	110	45.1
	Low	7	2.9
Office Recycling	Moderate	134	54.9
	High	103	42.2

between dependent variable (recycling practice) and two independent variables (recycling knowledge and recycling attitude). For the purpose of this analysis, both general knowledge and specific knowledge dimensions combined to form a single knowledge construct. Similarly, three dimensions (recycling beliefs, values and upbringing) form the recycling attitude construct. This study assumes that both knowledge and attitudes constructs have influence on civil servants' workplace recycling practice. Multi-liner regression analysis was conducted to test the above

assumption.

The ANOVA results in Table 4 reveal that the F-statistic (F=37.049) is large and the corresponding p-value is significant ($p< 0.001$). This indicates that the slope of the estimated linear regression model line is not equal to zero, confirming that there is a linear relationship between recycling practice and the two predictor variables.

The results of the multi-linear regression analysis confirmed that the respondents' recycling knowledge and recycling attitudes had a direct influence on their recycling practice. Based on standardised coefficients, the beta coefficient for recycling knowledge was 0.277. Similarly, the beta coefficient for recycling attitude was 0.295. The R-squared is used to explain the variation in recycling practice. The R-squared of 0.235 implies that the two predictor variables explain about 23.5% of the variance in the recycling practice. Although the contribution of these two predictor variables to recycling practices is relatively small, the relationship between both dependent variables and independent variables is significant. Table 5 presents the results. This additional test reconfirmed that both recycling knowledge and recycling attitudes were predictor variables of recycling practice. In other words, to increase the levels of recycling practice among young civil servants, their levels of recycling knowledge and attitudes towards recycling must subsequently be increased too.

DISCUSSION

Recycling Knowledge

Recycling knowledge is vital for youth to adopt the practice of recycling. Without sufficient knowledge (ideas and skills), they cannot perform the recommended tasks to

TABLE 4
ANOVA Results

Model		Sum of Squares	Df	Mean Square	F	Sig.
1.	Regression	49.060	2	24.530	37.049	0.000
	Residual	159.565	241	.662		
	Total	208.626	243			

* Significant at 0.001

TABLE 5
Estimates of Coefficients for Model Recycling Practice

Model	Beta (Unstandardised Coefficients)	Std. Error	Beta (Standardised Coefficients)	t	p-value
Constant	0.180	0.551		0.326	0.745
Recycling Knowledge (X_1)	0.636	0.144	0.277	4.423	0.000*
Recycling Attitude (X_2)	0.394	0.083	0.295	4.720	0.000*

Notes: R = 0.485; R^2 = 0.235; Adj. R^2=0.229 * Significant at 0.001

practise recycling. The results show that the level of recycling knowledge among young civil servants is quite encouraging and most of the civil servants were found to have a high level of general knowledge and specific recycling knowledge. However, the percentage of young civil servants obtaining a high level of general knowledge is greater than the percentage for specific knowledge. In addition, the mean score for general knowledge is also higher than for specific knowledge.

It is most likely that the general public receives more exposure to general issues related to recycling rather than to specific information on recycling. People may know, hear or read more general information related to recycling programmes. Unfortunately, they may have little exposure to information on specific recycling. Therefore, their level of knowledge on specific recycling is slightly low. In addition, specific knowledge focussing on ideas and skills related to recycling may sound technical. In this case, individuals will require more specific information about recycling rather than general or common issues related to recycling. For instance, they know that waste can contribute to air or water pollution and is very much related to global warming. Nevertheless, they lack knowledge of practical ways to manage this problem. In addition, there is a need to develop more specific knowledge on recycling and share this with the public. At the same time, more programmes related to specific recycling are required to enhance the participation of civil servants in recycling. In this context, recycling campaign messages should not only focus on efforts to encourage people to recycle, but must also identify ways to recycle in the right and proper manner. In addition, information on the mechanism of the recycling system must be clear and easy to adopt.

The results of this study contradict slightly with Ling-yee's (1997) argument that knowledge is not crucially important because people can still exhibit commitment to the environment even with a low level of knowledge. On the other hand, Folz and Hazlett (1991) posit that specific recycling knowledge is crucial for environment-friendly practices to succeed. The information used to specifically inform and teach youth how to reduce waste and help to clean the environment through recycling is crucial. At this juncture, a few non-governmental organisations (NGOs) carry out efforts to educate youth on recycling. The Malaysian government rarely airs such specific recycling information on a continuous basis through national television channels (RTM 1 and RTM 2) or private television channels (TV3, NTV7, TV8 and TV9). Such programmes should also demonstrate steps on recycling and reusing other materials such as plastics, paper or glass. There is a possibility that such efforts can increase youth recycling knowledge and, at the same time, instil the right recycling attitudes among them. According to Latifah, Mohd Armi and NurIIyana (2009), at least 20% of municipal waste can be diverted from landfills if every citizen supported this programme. Thus, to get youth's support

and active participation in recycling, there is a need for a concerted effort by the government and NGOs. Another solution is to design a programme that can provide youth with specific recycling skills and the ability to inspire their peers or colleagues to be more environmental-friendly.

Recycling Attitude

Attitude towards recycling also influences people to participate actively in recycling programmes. The study reveals that half of the young civil servants surveyed have a high level of beliefs and values towards recycling. The number of respondents with high beliefs towards recycling is very encouraging. Besides, more than 80% of the civil servants reported to have greater values towards recycling. Thus, we can expect young civil servants who demonstrate a positive recycling attitude to practise recycling regularly at the workplace. The percentage of respondents reported to have a low level of recycling beliefs and values is extremely low. Thus, it is important to uplift the level of their recycling attitudes. The efforts taken towards this end should be able to influence people in their emotions, especially on their beliefs and values towards recycling. In addition, the study also reveals that these young civil servants attached high value towards recycling such as that recycling is good, practical, interesting and necessary. Understandably, their beliefs on recycling and their upbringing may also influence their attitudes. Simultaneously, those already familiar with environmental concerns will find it easier to adopt the practice as stipulated by Haldeman and Turner (2009) that lesser efforts are required when people already have the experience of doing the recommended practice.

The results indicate that the upbringing level among young civil servants is moderate. Although the percentage between moderate and high is almost equal, the results suggest that the respondents were less exposed to recycling practices. Changing youth attitude is a challenging task because youth attitude is formed and accumulated throughout the upbringing process and depends on what they believe about and what value they attach to the recycling programme. Therefore, the message of the programme must include the element of emotions. It is important to let people feel involved and associated with their interest so that the chances of their altering their attitude are greater. Appointing and empowering several well-trained young civil servants to voluntarily lead recycling activities is a very interesting proposition and sounds practical and viable as a means to achieving this end.

Recycling Practice

Success or failure of a recycling programme depends on the practice. The higher the level of practice, the greater the success achieved. In this study, the recycling practice among young civil servants is good, as out of 244 respondents, 64.3% demonstrated a moderate level of participation in recycling practice. About 3% of young civil servants are not that much involved in recycling; the

percentage is extremely small compared to those with high level of workplace recycling practice. With the current trend of recycling practice, youth's participation in recycling may also reflect the overall Malaysia recycling rate. It is highly probable that the failure of nationwide recycling campaigns is related to moderate youth participation. However, certain and specific measures can improve the recycling level among civil servants.

It is understood that the main role of civil servants is to provide services to the public; however, they could also be trained and assigned as voluntary change agents to enhance the recycling practice. Once they go through the empowerment programme and with the skills they have, they can voluntarily help the government to spearhead the recycling practice among their colleagues and neighbours.

Besides developing knowledge and skills, the recycling empowerment programme also promotes youth leadership and environment-friendly behaviours. Furthermore, the study shows that not many are willing to take leadership roles and organise environmental friendly activities (Carleton-Hug *et al*., 2003). Therefore, the programme not only focusses on specific knowledge of recycling and the correct recycling attitudes, but also on leadership skills. Through the proposed empowerment programme on environment-friendly behaviours, several objectives can be achieved such as: (1) promoting good recycling habits among youth, (2) encouraging today's youth to recycle in their neighbourhood and communities, (3) increasing the adoption of sustainable behaviour to reduce a wide range of environmental issues such as air pollution, climate change and water pollution, and (4) continually raising the level of recycling knowledge, attitudes and practice among youth. In addition, there is a need to expand environment-friendly practices such as saving energy and minimising water consumption. More recycling activities are also required such as making handicrafts from recycling materials, minimising waste by encouraging staff to use reusable food containers, setting concrete resolutions of supporting eco-friendly behaviour and actively generating income from office waste. Staff can use the monetary incentive obtained for their welfare club. Besides, this initiative is a sound practice and according to the suggestion by Kotler, Roberto and Lee (2005), that people who obtain some knowledge and beliefs are convinced when their action is worth the effort and their effort (cost) is worth the gain (benefits).

Finally, the relationship between the two predictor variables (recycling knowledge and recycling attitudes) and recycling practice is positively significant. The results further confirm that in order to improve recycling practice among young civil servants in the workplace, their specific recycling knowledge needs further improvement. At the same time, their attitudes towards recycling must be strengthened as well to ensure that recycling becomes a permanent practice at the workplace and at home. Since upbringing is crucial to attitude

formation, more recycling activities should be introduced to school children so that early exposure to recycling will establish an environment-friendly culture in Malaysia.

CONCLUSION

Generally, this study indicated that the levels of recycling knowledge and attitudes among young civil servants at the workplace are high. However, the recycling practice among them was moderate. Thus, necessary steps are required to produce a better outcome. The results indicate that present-day younger generations do know enough about the environment they live in but are willing to respond accordingly. However, this response depends on their knowledge and attitudes towards the recommended practice. It is strongly believed that with the imagination, ideas and energy youth have, the vision to create an environment-concerned society by 2020 is brighter. With these positive aspects, the chances of creating a healthier environment and a chance for all to adopt a green lifestyle are also greater. However, the effort to embrace youth as change agents must continually be pursued by the Ministry of Youth and Sports, since it has 'all rights' on youth development programmes in this country. It is time for the ministry to integrate a pro-environmental mindset in all youth empowerment programmes and to nurture the younger generation as future watchdogs for any environmental violations as well as to protect the environment.

The relevant government agencies should work hand in hand with the Ministry of Youth and Sports to specifically develop and create environment-friendly empowerment programmes. An aggressive effort from the relevant government agencies and NGOs is crucial in sustaining the practice of recycling among youth. At the same time, commitment from media organisations to support this campaign from time to time is vital, and this initiative can be done on the platform of corporate social responsibility. The effort to reach targetted youth groups in the country may be limited unless the government or NGOs help to finance recycling campaigns. One important measure to consider is to assign young civil servants (youth) to be voluntary change agents to enhance and improve the current level of recycling participation among their peers and in their neighbourhood.

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