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EFFORTS TOWARDS ZERO SINGLE-USE PLASTIC IN A PRIVATE INSTITUTION

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Abstract: *One of the major environmental issues in Malaysia is related to plastic waste. More than 40% of plastic is used just once and a staggering 91% of plastic wastes are not recycled, which directly causes harm to the environment. This publication manifests the current utilization of environmentally-harming materials, specifically plastic bags and straws in a private university in Nilai. The objective of this research is to determine the awareness on Zero Waste among the community of the institution. The data was acquired through an online survey, where questionnaires were distributed to the students and the staff for a duration of 2 weeks. The findings of this research manifest a substantial amount of support of the private university community towards the zero waste concept.*

Keywords: Zero Waste, Zero Waste Awareness, Environment, Environmentally Harming Materials, Single Use Plastics, Plastic Wastes, Pollution.

1. Introduction

Disposables have become a lifestyle in this new age. According to the Minister of Housing and Local Government of Malaysia, Malaysia has a population of over 32 million, which contributes about 38,000 tonnes of waste on a daily basis – of which an extensive amount from it are plastics (The Star Online, 2019). This could also be due to several reasons. Based on a study by Harun, Yunus, Rasul, Zakaria, S. R. A., & Mohsin (2019), there are four factors that challenge the implementation of the zero-waste concept in the case study area, namely management, financial, enforcement and social behaviour factors.

As urban and rural development has been progressing rapidly with a lack of landfill space in the country, the authorities in Malaysia are addressing different waste management approaches. One of the authorities that is currently overseeing of the waste management system in Putrajaya, Kuala Lumpur, Perak, Perlis, Pahang, Melaka, Negeri Sembilan and Johor is the Solid Waste Management and Public Cleansing Corporation (The Star Online, 2018).

In advocating the efforts of Solid Waste Management and Public Cleansing Corporation in Malaysia, this research is focused on instilling Zero Single-use Plastic Wastes habit among the staff and students of a university in Nilai, Negeri Sembilan. As a private education institution, it plays an important role in educating the university members to conserve the environment.

1.1 Objectives

1. The objective of this research is to determine the support shown by members of the university on Zero Single-use Plastic Wastes efforts.
2. The objective of this research is to determine the frequency of Zero Single-use Plastic Waste practice in the everyday life of the members of the private university.

2. Literature Review

2.1 Zero Waste

The new definition of Zero Waste: *The conservation of all resources by means of responsible production, consumption, reuse, and recovery of products, packaging, and materials without burning and with no discharges to land, water, or air that threaten the environment or human health.*

The updated definition of zero waste was adopted by the Zero Waste International Alliance (ZWIA) in December 2018. It has since been used to represent a more ethical, economic, efficient and insightful goal to guide people to change their lifestyles and practices. The concept was further considered to emulate sustainable natural cycles, where all waste materials are designed to be a resource that can be used by others. This includes material and process preparation and management, consistently avoiding the amount of waste and material toxicity, maintaining and restoring all sources, and not burning or burying them. As an impact to this, it will eliminate all discharges into the ground, water and air which serve as a threat to planetary, human, animal or plant well-being.

The zero waste concept was introduced in 1973 for the purpose of resource recovery from chemicals (Palmer, 2004). The concept was then gaining the attention of the public in 1990, leading to global initiatives to put into practice.

As in Malaysia, the concept of zero waste began to be introduced in certain area. SWCorp, for example, has partnered with Kitakyushu City, Japan, and Alam Flora Sdn Bhd at Fraser's Hill to introduce a green project aimed at making Bukit Fraser a zero waste city. The programme was introduced to enhance solid waste management, in particular by reducing waste that should be disposed of at the site of the landfill (The Star Online, 2016).

A research conducted by Harun, Yunus, Rasul, Zakaria, S. R. A., & Mohsin (2019) on challenges implementation of zero waste concept in Johor Bahru City council identified the factor of management, financial, enforcement and social behaviours. The findings were based on interviews with five respondents from the city council who are managing the solid waste, as well as experts on the subject. In terms of enforcement, there is no enactment of law or act to empower the city council to carry out the implementation of zero waste management. As for management aspect, agencies are lacking manpower to oversee the implementation, as well as employees' welfare that is not well taken care of. In addition, financial allocation from the government to run this project on a large scale was insufficient. Lastly, the society has not cultivated a mindset on the importance of zero waste – which, in turn, rendered them to perceive that this effort does not benefit them.

2.2 Law Enforcement

According to a journal published by the Ministry of Energy, Science, Technology, Environment and Climate (MESTECC) in 2018, most plastics are produced for single-use purposes, which contributes to the waste accumulation. Out of the staggering 9 billion tonnes of plastics that the world has ever produced, only 9% has been recycled. In this regard, Malaysia is ranked eighth among the top ten countries that mismanaged plastic wastes in the world. The research estimated 0.94 million tonnes of plastic wastes that has been mismanaged, of which 0.14 to 0.37 million tonnes are washed into the oceans. In order to prevent more damages to the environment and to the people, the Ministry has designed a roadmap towards Zero Single-Use Plastics for a cleaner and healthier environment in Malaysia by 2030. “This Roadmap is to take a phased, evidence-based and holistic approach by involving all stakeholders in jointly addressing single-use plastics pollution in Malaysia”.

Through the Ministry of Domestic Trade, Cooperative and Consumerism (MDTCC) in 2011, The Federal Government propelled "The No Plastic Bag Day" (NPBD) Campaign throughout Malaysia on every Saturday. The aim is to reduce the utilization of plastic bags so that it would lessen its damaging effect on the environment. Some parties, like retail outlets, supermarkets, and hypermarkets, launched to boycott single-use plastic containers and bags. However, they permitted the utilization of new plastic bags for wet markets, cafés and night markets for the purpose of cleanliness (Zen, Ahamad, and Omar, 2013). Zen, I. S., Ahamad, R., and Omar, W. (2013). Customers are urged to bring their own grocery bags by certain stores or they could purchase the eco-friendly bags sold in the stores. Some stores provide paper bags or manufactured fibre grocery bags that can be reused. With a mere cost of RM0.20 for each bag, this effort has elevated the scale of reducing plastic bag usage.

2.3 The Recycling Process in Malaysia

Recycling is a way of reusing materials that might be dismissed as waste. Upcycling, which includes adding value to an element for reuse; and downcycling, which involves breaking down an element or material into its portion to reuse something that can be recycled, are several forms of recycling.

The third aspect of the "Reduce, Reuse and Recycle" concept's waste hierarchy is recycling, a central component of modern waste reduction (Shekdar, 2009).

Recycling has been adopted globally as a waste disposal process, and the domestic recycling rate in Malaysia is still low, which is at about 5% (Chandravathani, 2008).

Khazanah Research Institute, in one of its research on plastic wastes in 2019, explained that plastics are divided into seven categories and not all types can be recycled.

Table 1: Categories of Plastics

No.	Category	Product of Uses	Recyclable in Malaysia
1.	Polyethylene Terephthalate (PET/PETE)	Mineral Water Bottles, Cookie Jars	Yes
2.	High-Density Polyethylene (HDPE)	Milk Containers, Buckets, Shampoo Bottles	Yes
3.	Polyvinyl Chloride (PVC)	Pipes, Synthetic Leather	No
4.	Low-Density Polyethylene (LDPE)	Bubble Wrap, Plastic Bags	No
5.	Polypropylene (PP)	Disposable Food Containers, Bottle Caps	Yes
6.	Polystyrene (PS)	Disposable Cups, Plates, Cutlery	No
7.	Others	Miscellaneous Plastic, Nylon	No

Source: JPSPN (2011) and Wong (2017)

According to Table 1, Malaysia is able to recycle Category 1: *Ployethylene Terephthalate* (PET), Category 2: *High-Density Polyethylene*, and Category 5: *Polystyrene*. However, the local recycling industry centralizes resources on plastic that are easy to recover and hold high value, such as PET mineral water bottles. Products using low quality plastics (like food packaging) are seldom recycled. Therefore, with the limited capabilities to recycle plastics, it has made it more challenging for Malaysians to reduce the consumption of the environmentally harming material that is plastic.

2.4 Awareness of Malaysians on Single-Use Plastics

Malaysia is positioned as the eighth worst country worldwide for plastic waste (The Star Online, 2018). This was then further supported by YouGov Omnibus (2019) which showed that Malaysians remain as big-time consumers of single-use plastics, with one in five (22%) using plastic straws daily. The study found that 35% of the people do not know where to get reusable straws. Another reason for using plastic straws is due to the mindset of the people who think that it is not necessary to use reusable straws (32%) and that it is a hassle to carry one around (27%).

The practice of using reusable bags was not culturally embedded into the system and mindset of the people. YouGov (2019) found that about a quarter (24%) of Malaysians also use single-use plastics bags at least once a day. While making a purchase, two-thirds (67%) would sometimes refuse one and one in eight (12%) always opt for plastic bags during their purchase.

Consequently, Jake Gammon, Head of YouGov Omnibus APAC, commented that: “While most Malaysians believe that conserving the environment is important, our data shows that many are still heavily relying on single-use plastics on a daily basis. Many Malaysians will be looking to the government to reduce plastic waste, and conserve the environment as a whole.”

The latest IPSOS Malaysia study reveals that only 44% Malaysians are aware of Government’s attempt towards halting single-use plastics. Although the rest of the Malaysians are unaware of the efforts, 56% Malaysians are however showing concerns about the effects of single-use plastic. In contrast, 70% Malaysians believe it is the responsibility of the Government to control not only the usage but also the production of single-use plastics. Malaysians have also been open to the idea of recycling (80%) to reduce the usage of plastics, provided if recycle bins are placed all over the ‘places in the country. The effort is also gaining support from citizens who are willing to participate in the “No Plastic Waste Movement” (73%).

Greenpeace Malaysia believes that understanding the problem is the key to break free from plastics. According to them, more than 3 million people across the globe have joined the association to urge companies to stop polluting the planet with throwaway plastics. It is important to note that, due to the pressure, the effort has rendered positive results.

Previous studies have reported that 50% of the residential community in Johor Bahru have been recycling and are mindful of the environmental and economic benefit of recycling as well (Halim, Darwis, & Martin, 2018). This study was a survey conducted among 500 residents in Johor Bahru City Council and Johor Bahru Tengah Municipal Council of Iskandar Malaysia. In addition, 85% of the respondents in Majlis Bandaraya Johor Baru responded positively to the question on waste separation at source, while 78.8% for Majlis Perbandaran Johor Baru Tengah will separate waste at source. Only a small percentage of them will not separate waste at source. Besides, the percentage dropped to 74.3% for Majlis Bandaraya Johor Baru and 74.8% for Majlis Perbandaran Johor Bahru Tengah to separate waste at source with facilities provided. Therefore, it was discovered from this research that most of the respondents have the knowledge of recycling, are aware of the advantages of recycling, and understand the purpose of recycling. Nonetheless, only few of them would frequently put it into effect. This was due to insufficient waste separation facilities, while some of them said they were busy and had little time to practise recycling.

3. Methodology

This study employed a quantitative approach. A total of 1,600 respondents from a private university in Nilai – consisting of students and staff – were the respondents of this study.

A Zero Single-Use Plastic Survey was conducted by PDC1108 (Skills for Creative Thinking) students. Merely sharing the survey links to the respondents without stimulus, write-ups or any other persuasions was not going to effectively instill or educate respondents on the importance of Zero Single-Use Plastic concept. Hence, PDC1108 students came up with effective and impactful ways to encourage the staff and students of the private university to be part of the Zero Single-Use Plastic effort.

In achieving this, the PDC1108 students designed creative social media contents, such as short videos, blogs and posters, to create awareness on Zero Single-Use Plastic. Survey questions were also distributed online through various social media platforms.

4. Key Findings and Discussions

In order to fulfill the objective of this study, which is to determine the awareness on Zero Waste among the community of the institution, a survey – comprising four questions on awareness in terms of support and six questions on practice of zero waste – was administered. The data was analysed using Statistical Package for the Social Sciences (SPSS). Simple descriptive statistics were used to determine the frequency and percentage for each item.

Table 1: Awareness in terms of support

Question	No	Yes
Have you taken part in any zero waste projects/campaigns?	686 (42.9%)	914 (57.1%)
Do you encourage your family members or friends to stop using single-use plastics?	215 (13.4%)	1385 (86.6%)
Do you support zero plastic campaign?	82 (5.1%)	1518 (94.9%)

The survey result shows that 57.1% of 1,600 respondents show their support for Zero Waste projects and campaigns. Similarly, a study by IPSOS Malaysia suggests that in recent times, Malaysians have been showing their support towards the idea of zero waste

The same study by IPSOS also suggests that Malaysians are not willing to take personal actions to mitigate the risks despite understanding the drawbacks of non-recycle plastic products on the environment. However, the response received through this survey has sparked some hope where 86.6% respondents do take personal actions, like encouraging their family and friends to stop using single-use plastics.

According to The Star, the existing government campaigns have no effect on the production levels or profits of plastics manufacturers. They love these types of “awareness” and “voluntary reduction” campaigns because there is no obligation for them to reduce production. If a campaign or initiative fails, they can blame consumers for failing to comply with advisories, littering, being ignorant or indifferent, and for not recycling enough. In reality, consumers are willingly rendering their support for zero waste campaign; and this is evident through this survey, where 94.9% of respondents support no plastic campaigns.

<https://www.thestar.com.my/opinion/letters/2019/07/13/its-time-to-get-serious-about-singleuse-plastics>

Table 2: Support in using reusable bags/bottles/utensils

Are you willing to pledge to use reusable bags/bottles/utensils more frequently in 2020?		
No	276	17.3%
Other reason(s)	34	2.1%
Yes	1290	80.6%
Total	1600	100%

Reasons for NO: “Forgetful”, “It is expensive to buy reusable items whereas plastic bags and boxes (utensils and straws) for takeaway food are free”, “Not convenient as always need to remember to have reusable bag in my handbag”, “Unhygienic as takeaway food will easily stain my reusable bag”, “No clean sink where I can wash my straw/utensils”.

In order to bridge the gap in cutting greenhouse gases, reduce pollution and reinvest resources locally Zero Waste Malaysia has come up with a nationwide endorsement programme called the Zero Waste Pledge. 80.6% of respondents of this survey have shown their interest in pledging to use environmentally-friendly materials. A remaining 17.3% expressed that reusable items are expensive and unhygienic and therefore would not use them.

This study accords with our earlier observations, which showed that the awareness of Malaysians are considerably favorable. Next, in order to strike a balance between support and translating it into action, we have also conducted a survey in understanding the practice of the respondents towards zero single-use of plastics.

Table 3: Practice towards Zero Single-use of Plastics

Question	Always	Sometimes	Seldom	Never
Do you bring your own reusable bag for shopping?	397 (24.8%)	779 (48.7%)	237 (14.8%)	187 (11.7%)
Do you bring your own cutlery/straw when you go to restaurants/ stalls in INTI?	280 (17.5%)	412 (25.8%)	277 (17.3%)	631 (39.4%)
Do you request a straw if you are not given one when you buy a drink?	325 (20.3%)	486 (30.4%)	359 (22.4%)	430 (26.9%)
For take-away orders, do you bring your own food container/tumbler?	316 (19.8%)	532 (33.3%)	369 (23.1%)	383 (23.9%)
Do you use a reusable water tumbler?	911 (56.9%)	392 (24.5%)	175 (10.9%)	122 (7.6%)

Based on the table above, 48.7% of the respondents sometimes bring their own reusable bag for shopping. There was 39.4% of the respondents who never bring their own cutlery/straws when they go to restaurants or stalls in INTI. Furthermore, only 30.4% of the respondents sometimes requested for a straw when they are not given one when buying drinks. As for bringing their own food containers or drinking tumblers, the findings showed 33.3% of the respondents sometimes practice that. Majority of the respondents, 56.9%, always bring reusable water tumblers with them.

It is apparent from this table that the awareness towards single-use plastics among Malaysians are still inadequate – in this case would be members of the university. These present findings seem to be consistent with YouGov that reflected many Malaysians' dependence on single-use plastics on a daily basis.

Table 4: Practice of waste separation

Do you separate your wastes?		
No	351	21.9%
Sometimes	590	36.9%
Yes	659	41.2%
Total	1600	100%

Based on Table 4, a substantial percentage of the respondents separate their wastes, 41.2%, while 36.9% of the respondents sometimes separate their wastes. However, 21.9% of the respondents do not separate the wastes. These findings of the current study are consistent with those of Halim *et al.*, (2018) who found that most of the respondents are aware about the importance of recycling, but do not put into practice.

5. Conclusion

The government has initiated a blueprint and enforced laws to minimize the detrimental effects caused by single-use plastics. Malaysians are aware that the harmful aspects of plastics have escalated to an alarming state, where it calls for immediate measures. In order to mitigate this problem, awareness surveys and campaigns are launched in different parts of the country. Based on the survey conducted on zero single-use plastic, some hopeful signs are evident in proving that there is support from the public in bringing about change; however, there is still a need to translate the support into action. Users should aim to reduce and to ultimately eradicate single-use plastics to conserve the environment for the sake of future generations.

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