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ENVIRONMENTAL BEHAVIOURS IN THE MODEL GREEN CITY OF MELAKA

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Abstract

Environmental Behaviour [EB] manifests in a person's ability to contribute in his context. It houses behaviours such as engaging with the surrounding, executing roles or tasks, proving skills and aptitude and behaving responsibly. Issue: The past 10 years since the Green City Action Plan [MGCAP] was announced warrant for an appraisal of Melaka residents EB to determine the magnitude to which the citizen have participated towards modelling Melaka as Green City. Purpose: This paper aims to compare the EB of Melaka residents to residents of other states in Malaysia. Approach: One-Way MANOVA was generated to determine the mean distribution of 10 EB items, across Malaysia States. Findings: There were significant differences within subjects of the 10 EB items between-subjects of Malaysia States. The Post-Hoc Test indicated relatively half of the means of EB items for Melaka were higher than other states while the remaining half revealed lower means. In comparison to other states, Melaka has low practices of eco-behaviours specifically relating to energy saving, recycling and waste handling as well as environmental purchasing.

***Keywords**:* Melaka Green City, environmental behaviours, consumption

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INTRODUCTION

Melaka has embarked on a path towards sustainable urban growth. This journey was driven by the Malaysian Prime Minister's pledge during the Conference of the Parties (COP15) meeting in Copenhagen in 2009 to reduce Malaysia's carbon intensity relative to its GDP by 40% by 2020. Efforts comprise of government led policies and projects on top of private sector and citizen initiatives, sought to improve the liveability of Melaka. The first step towards preparing a holistic approach towards urban sustainability was adopting the Green Technology Blueprint in 2011 and formalized a vision to transform Melaka into a Green Technology City State by 2020. The Green Technology Council was established for the purposes of overseeing efforts to achieve the vision and adopted United Nations Urban Environmental Accords ratings method to assess their green city performance. A wide-ranging approach to Melaka Green City Action Plans (MGCAP) endorsed by the state government, private sector engagement, and citizens on systematic planning have aided Melaka Green City transformation. Public participation in the implementation and monitoring the GCAP is a key enabler. Involvement of citizens in the monitoring the GCAP implementation raise ownership of the GCAP and empower various local communities.

In this paper, the sustainable behaviours of the Melaka citizen in response to the Green City vision is examined in opposition to other states in Malaysia. The third dimension of the 'Human Interdependence with the Environment' model by Abu Bakar, et al., (2017) is adopted to assess environmental behaviours of Melaka respondents in comparison to respondents from other Malaysia states.

LITERATURE REVIEW

Individuals functionality and contributions to their social and environmental contexts which in return enhance the individual's wellbeing is examined under Human Interdependence [HI] (Abu Bakar et al., 2019a; 2019b; 2019c; Abu Bakar et al., 2020a; 2020b; 2020c). In-depth studies on HI discovered 70% of individual well-being is sourced from HI, proposing that passing on well-being to others is an important cause of individual well-being (Abu Bakar et al., 2015; 2016a; 2016b; 2017a; 2017b; 2017c; 2017d; 2017e; 2017f; 2017g; 2018). This paper focuses on Human Interdependence with the Environment [HIE].

The World Book of Happiness (Bormans, 2010) which reviews novel findings of well-being research universally implies four dimensions of HIE. In the interest of Malaysia, recent case studies selected Asian articles are reviewed and tabulated to show potential determinants of HI along with their conditional factors. HIE manifests in four interconnected dimensions. This paper focuses on the third dimension of HIE, which is Environmental Behaviour [EB].

Environmental Behaviour manifests in a person's ability to contribute in his context. The dimension houses behaviours such as engaging with the surrounding, executing roles or tasks, proving skills and aptitude, behaving responsibly and other related behaviours. In the environmental context, examples of HI manifestations are a range of environmentally responsible behaviours such as conscious decision-making, smart consumerism, recycling behaviours, energy-saving initiatives, and waste-handling efforts. The manifestations are observed in the Environmental behaviours [EB]. Studies on environmental behaviours are concerned on individuals' responsible behaviours towards the environment. Case studies selected from Asian Journals dated from the year 2011 onwards highlighted potential determinants and qualities of EB (refer to Table 1).

Table 1: Conditional Factors to Environmental Behaviours

Conditional Factors	Potential Determinants	References
Urban-rural strata (rural residents tend to practice conservation and waste recycling than urban residents) and education background (science students tend to practice conservation behaviour)	Conservation behaviour (turn off fans, lights, taps; separate waste; use own grocery bags, buy refillable detergents, and purchase energy-saving appliances)	(Asmuni et al., 2012)
Age negatively influence knowledge, household income negatively influences attitude, and community leaders tend to recycle more than community members.	Recycling behaviours (separate food and waste, reduce and reuse of recyclable materials)	(Singhirunnusorn et al., 2012)
Cultural orientations – consumers with high collectivistic values and low materialistic values had higher recycling tendency	Recycling attitude and behaviours (the approach to reclaiming the purpose of used materials)	(Latif & Omar, 2012)
Policies implementation supporting environmental purchasing behaviours such as promotion of energy rating, labelling green appliances, banning hazardous items, rebate, and green procurement practices	Purchase energy-efficient, recycled packaging, and biodegradable products, hazardous free electric and electronic equipment, and green detergents	(Harizan et al., 2013)
Concerns about environment, social influence, accessibility to environmental facilities, monetary motivation, and altruism.	Waste separation, practising buy-back centres and recycling and reusing household items	(Zena et al., 2014)
High income and high education level individuals were more concerned about environment thus tend to favour the green movement and have concerns for food safety	Purchasing and consuming organic food (food and meat grown and raised without chemicals or pesticides)	(Teng et al., 2011)
Concern on solid waste management and readiness to adjust to new practices	Bring reusable bag for shopping	(Zen et al., 2013)
Awareness (familiarity to energy-efficient labels), attitude (standpoint on energy-savings) and social norms (environmental lifestyles)	Purchasing energy-efficient products and appliances based on energy efficiency labels (reduce energy use)	(Zainudin et al., 2014)
Perceived consumer effectiveness (environment related past experience behaviour, environment-related intention-behaviour, willingness to pay, and regulatory support - separating household waste, being a member of environmental groups	environmentally conscious consumer behaviour (purchasing biodegradable products, energy-saving products, and products that are less harmful to the environment)	(Ramly et al., 2012)
Environmental emotions (feelings and sentiment towards green practices), environmental cognition (well-informed, understanding and knowledge on green practices), environmental attitude (a person's general sense of favourableness or unfavourableness for green behaviour)	Keeping materials out of the waste stream: reduce (minimize consumption), reuse (repurpose used materials) and recycle (reclaim used materials into a functioning material)	(Nameghi & Shadi, 2013)

EB manifests in the committed positive and responsible behaviours throughout everyday decisions and actions attempted to favour and safeguard the environment. Qualities adhere to EB include (i) energy conservation, (ii) recycling, reusing and waste handling and (iii) purchasing behaviour (Abu Bakar et al., 2020a; 2020b; 2020c).

Table 2: Manifestation and Determinants of Environmental Behaviours

Determinants	Qualities inferred through Indicators
energy conservation	turn off fans, lights and taps, and purchase energy-saving appliances use hazardous free electric and electronic equipment
recycling, reusing and waste handling	separate food and waste, minimising consumption, reduce the use of plastic packages, reuse separated materials, use disposables, recycling attitude and behaviours, practising buy-back centres, recycling and reusing household items, use recycled packaging
purchasing behaviour	purchasing energy-efficient products and appliances based on energy efficiency labels/ biodegradable products/ products made from recycled materials/ energy-saving products/ refillable detergents, bring water tumbler instead of purchasing water, purchase and consume organic food, bring reusable or own bag for grocery shopping

Table 3 Indicators of Environmental Behaviours

Definition of EB	Components	Indicators	Code
The committed positive and responsible behaviours throughout everyday decisions and actions attempted to favour and safeguard the environment	Energy Savings	turning off fans and lights when they are switched on	EB1
		turning off taps when brushing teeth	EB2
	Recycling and Waste Handling	throwing rubbish according to designated recycle bins	EB3
		separating rubbish at home (metals, paper, glass, etc.)	EB4
		reusing grocery bags/ jars/ bottles/ boxes/ cans, etc.	EB5
		using towels instead of tissues	EB6
	Environmental Purchasing	using water tumbler instead of purchasing water	EB7
		purchasing refillable detergents	EB8
		purchasing energy-savings appliance	EB9
		purchasing products that are organically produced	EB10

The indicators were developed into statements in questionnaires to be answered by respondents across states in Malaysia.

METHOD

A sample of 4315 was pooled after the data screening process. The Malaysian respondents were given an 11-point Likert scale to respond to questionnaire items which consist of statements relating to the ten (10) EB items. One-Way Multivariate Analysis of Variance [MANOVA] was generated to determine the multivariate effect of Malaysia States on EB items. That is the difference in mean values of the 10 EB items combined between states. It is hypothesized that different states respond differently towards each of the 10 EB items. The following sections provide empirical evidence on the statistical interaction between Malaysia States and the EB items. The report of the statistical outputs in the following section pay attention to Melaka in opposition to other states.

RESULTS

One-Way MANOVA using Statistical Package for the Social Sciences [SPSS] was generated to determine the mean distribution of the dependent variables which were the 10 EB items, across the subjects of the independent variable, which was Malaysia States.

Prior to the One-Way MANOVA test, the data was screened for (i) missing cases, (ii) unengaged responses (SD ≠ 0), (iii) univariate and extreme outliers (boxplot and SD < 3.0), (iv) normality (skewness < 1.5, kurtosis < 3.0) and (v) linearity (r > 0.30). The data was also screened for (vi) multicollinearity (VIF < 3.0) and (vii) multivariate normality and influential outliers (Cook's Distance < 1.0). Since each state consists of more than 30 cases (>200 respondents), the MANOVA test was robust against violations of homogeneity of variance-covariance matrices assumption. It is also to note that the multivariate homogeneity of variance between group assumption using Levene's Test was violated ($p < .001$). Therefore, a stricter alpha level was used ($\alpha = 99.9\%$, $p = .001$) to interpret the univariate ANOVAs (Allen & Bennett, 2008).

One-Way MANOVA was conducted to determine significant differences within-subjects of EB items combined, between-subjects of Malaysia States. The deduced statistical hypothesis was:

> H_0: *There were no significant differences within subjects of the 10 EB items between-subjects of Malaysia States. That is, Malaysia States have no multivariate effects on the 10 EB items.*

The statistical output revealed that **at 99% confidence level there was a statistically significant mean differences within-subjects of EB items between-subjects of states, F (140, 43000) = 7.560, p < .00001; Pillai's Trace V = .240, partial η2 = 024. The null hypothesis was rejected.** There were significant differences within-subjects of the 10 EB items between-subjects of Malaysia States. That is, Malaysia States had statistically significant multivariate effects on the 10 EB items, and the effect size was medium.

The One-Way MANOVA outputs, in essence, suggested that residents across the states reacted differently to each of the EB items. That is, the outcome, i.e. the mean values of each of the EB items were distinct from each other due to the different state they were coming from.

Table 4 shows the mean values of EB items across states. A radar chart was generated to demonstrate the difference in means of EB items across states. The chart shows that Melaka had high mean values for EB1, EB3, EB5, EB6, EB7 and EB8 in relation to other states. On the contrary, Melaka had moderate to low mean values for EB2, EB4, EB9 and EB10 in relation to other states. Table 4 tabulates the Tests Between-Subject Effects and Post-Hoc Comparison of Melaka Mean Values for EB items against other states.

Table 4: Descriptive Statistics: Mean Values of EB items

EB	**MEL**	PUT	KL	SEL	N9	JOH	PAH	TER	KEL	PER	PEN	KED	PERL	SAB	SAR
EB1	**9.23**	8.15	8.42	8.47	9.13	8.78	8.64	9.02	9.38	8.49	8.00	9.06	9.30	7.31	7.84
EB2	**8.35**	8.12	7.94	8.17	8.85	8.51	8.35	8.85	8.74	8.35	7.98	8.81	8.97	7.04	7.66
EB3	**8.30**	7.73	7.36	7.26	8.42	8.17	8.12	8.05	8.15	7.83	7.79	7.88	8.50	7.01	7.28
EB4	**7.45**	7.83	6.90	6.80	8.29	7.65	7.46	7.80	7.23	7.20	7.53	7.63	7.90	6.89	6.96
EB5	**8.27**	7.80	7.50	7.24	8.44	8.17	7.64	8.14	8.02	7.45	7.64	7.90	8.55	6.86	7.22
EB6	**8.34**	8.12	7.37	7.18	8.28	8.06	7.81	8.16	7.94	7.49	7.62	7.89	8.61	7.09	7.26
EB7	**8.84**	8.10	7.85	7.70	8.58	8.47	7.81	8.09	8.24	7.75	7.80	8.28	8.35	6.97	7.61
EB8	**8.63**	8.12	7.94	7.82	8.54	8.55	7.66	8.43	8.35	7.72	7.87	8.12	8.40	7.07	7.58
EB9	**8.20**	8.34	7.57	7.52	8.49	8.13	7.85	8.21	7.99	7.65	7.83	7.83	8.15	6.90	7.45
EB10	**8.04**	8.12	7.30	7.20	8.17	7.87	7.67	8.15	7.90	7.35	7.60	7.63	8.00	6.76	7.40

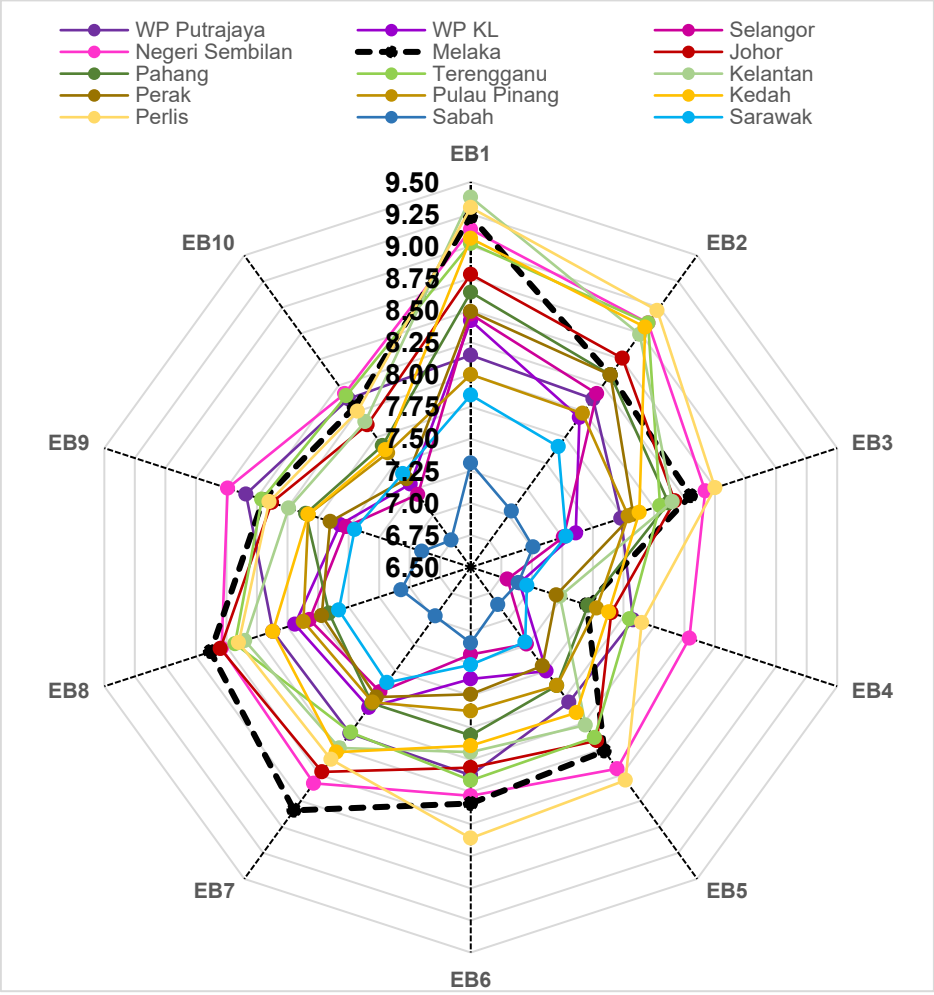

Figure 1: Radar Chart of EB Items Mean Values Across States

Table 5: Univariate ANOVAs and Post-Hoc Comparison of Melaka Mean Values

UNIVARIATE ANOVAs

DV	Type III Sum of Squares	df	Mean Square	F	Sig.	η2
EB1	1514.849	14,4300	108.203	3.823	.000	.091
EB2	1239.419	14,4300	88.530	23.945	.000	.072
EB3	936.143	14,4300	66.867	17.550	.000	.054
EB4	763.026	14,4300	54.502	12.565	.000	.039
EB5	1032.438	14,4300	73.746	16.349	.000	.051
EB6	884.382	14,4300	63.170	17.050	.000	.053
EB7	962.549	14,4300	68.754	2.673	.000	.063
EB8	882.469	14,4300	63.033	15.363	.000	.048
EB9	713.634	14,4300	5.974	16.934	.000	.052
EB10	719.470	14,4300	51.391	19.616	.000	.060

POST-HOC TESTS: MEAN DIFFERENCE OF MELAKA AGAINST OTHER STATES

EB		PUT	KL	SEL	N9	JOH	PAH	TER	KEL	PER	PEN	KED	PERL	SAB	SAR
EB1	MD	*1.080*	**.800**	**.760**	*.100*	*.450*	*.590*	*.210*	*-.150*	**.740**	**1.230**	*.160*	*-.070*	**1.920**	**1.390**
	p	*.053*	**.001**	**.001**	*.999*	*.241*	*.045*	*.998*	*.999*	**.001**	**.001**	*.999*	*.999*	**.001**	**.001**
EB2	MD	*.230*	*.400*	*.180*	*-.500*	*-.160*	*.001*	*-.500*	*-.390*	*.001*	*.370*	*-.460*	*-.620*	**1.310**	**.690**
	p	*.999*	*.642*	*.998*	*.331*	*.999*	*.999*	*.318*	*.728*	*.999*	*.784*	*.312*	*.080*	**.001**	**.006**
EB3	MD	*.570*	**.940**	**1.040**	*-.120*	*.130*	*.180*	*.250*	*.150*	*.470*	*.510*	*.420*	*-.200*	**1.290**	**1.020**
	p	*.933*	**.001**	**.001**	*.999*	*.999*	*.999*	*.994*	*.999*	*.256*	*.282*	*.507*	*.999*	**.001**	**.001**
EB4	MD	*-.380*	*.550*	**.660**	**-.840**	*-.190*	*-.010*	*-.340*	*.230*	*.260*	*-.080*	*-.180*	*-.450*	*.570*	*.500*
	p	*.999*	*.242*	**.007**	**.004**	*.999*	*.999*	*.934*	*.998*	*.986*	*.999*	*.999*	*.677*	*.081*	*.319*
EB5	MD	*.470*	*.770*	**1.030**	*-.170*	*.100*	*.630*	*.130*	*.250*	**.820**	*.630*	*.370*	*-.270*	**1.410**	**1.050**
	p	*.995*	*.011*	**.001**	*.999*	*.999*	*.079*	*.999*	*.997*	**.001**	*.108*	*.821*	*.994*	**.001**	**.001**
EB6	MD	*.220*	**.980**	**1.160**	*.060*	*.280*	*.530*	*.180*	*.410*	**.850**	**.720**	*.460*	*-.270*	**1.250**	**1.080**
	p	*.999*	**.001**	**.001**	*.999*	*.930*	*.152*	*.999*	*.653*	**.001**	**.006**	*.344*	*.988*	**.001**	**.001**
EB7	MD	*.740*	**.980**	**1.140**	*.250*	*.360*	**1.020**	**.750**	*.600*	**1.080**	**1.040**	*.550*	*.490*	**1.860**	**1.220**
	p	*.539*	**.001**	**.001**	*.987*	*.585*	**.001**	**.002**	*.041*	**.001**	**.001**	*.052*	*.296*	**.001**	**.001**
EB8	MD	*.510*	*.690*	**.810**	*.090*	*.090*	*.970*	*.200*	*.280*	**.910**	**.760**	*.520*	*.230*	**1.560**	**1.060**
	p	*.980*	*.023*	**.001**	*.999*	*.999*	*.001*	*.999*	*.984*	**.001**	**.006**	*.227*	*.998*	**.001**	**.001**
EB9	MD	*-.140*	**.640**	**.680**	*-.290*	*.070*	*.350*	*-.010*	*.210*	*.550*	*.380*	*.370*	*.050*	**1.300**	**.750**
	p	*.999*	**.009**	**.001**	*.934*	*.999*	*.678*	*.999*	*.995*	*.020*	*.597*	*.528*	*.999*	**.001**	**.001**
EB10	MD	*-.080*	**.750**	**.840**	*-.130*	*.170*	*.370*	*-.110*	*.140*	**.700**	*.440*	*.420*	*.050*	**1.280**	**.640**
	p	*.999*	**.001**	**.001**	*.999*	*.996*	*.448*	*.999*	*.999*	**.001**	*.197*	*.216*	*.999*	**.001**	**.001**

Note. MD= Mean Difference; p = p/significant value at 99% confidence level

COMPARISON MATRIX: MEAN VALUES OF MELAKA AGAINST OTHER STATES

EB	Putra-jaya	K.Lum-pur	Sela-ngor	N.Sem-bilan	Johor	Pa-hang	Tereng-ganu	Kelan-tan	Perak	P.Pi-nang	Kedah	Perlis	Sabah	Sara-wak
EB1	+	+*	+	+	+	+	+	—	+*	+*	+	—	+*	+*
EB2	+	+	—	—	—	+	—	—	+	+	—	—	+*	+*
EB3	+	+*	—	—	+	+	+	+	+	+	+	—	+*	+*
EB4	—	+	+*	—*	—	—	—	+	+	—	—	—	+	+
EB5	+	+	—	—	+	+	+	+	+*	+	+	—	+*	+*
EB6	+	+*	+	+	+	+	+	+	+*	+*	+	—	+*	+*
EB7	+	+*	+	+	+	+*	+*	+	+*	+*	+	+	+*	+*
EB8	+	+	+	+	+	+	+	+	+*	+*	+	+	+*	+*
EB9	—	+*	—	—	+	+	—	+	+	+	+	+	+*	+*
EB10	—	+*	—	—	+	+	—	+	+*	+	+	+	+*	+*

Note. +* = Melaka has significantly higher mean; + = Melaka has higher mean; — Melaka has lower mean.

Table 5 shows that at 99% confidence interval there were statistically significant difference in all of the EB items between states and the effect sizes were all medium ($\eta 2 = .010 < .031$ to $.052 < .138$). The Post-Hoc Test exhibits the mean difference in EB items of Melaka in opposition to other states. The Post-Hoc Test on Melaka shows that majority of the mean difference of Melaka compared to other states were positive.

The Comparison Matrix indicates that majority of EB items' means for Melaka were higher than EB items' means for other states, except for EB4 for Negeri Sembilan. Out of the 140 cells, 108 cells revealed that Melaka had statistically higher means of EB items than other states and 37 out of the 108 cells were statistically significant. Table 6 shows the interpretation of the result.

Table 6: Result Interpretation

Items	Statements	Interpretation
EB1	*turning off fans and lights when they are switched on*	Melaka had significantly higher means of EB1 than (i) Kuala Lumpur, (ii) Selangor, (iii) Perak, (iv) Pulau Pinang, (v) Sabah and (vi) Sarawak.
EB2	*turning off taps when brushing teeth*	Melaka had significantly higher means of EB2 than (i) Sabah and (ii) Sarawak.
EB3	*throwing rubbish according to designated recycle bins*	Melaka had significantly higher means of EB3 than (i) Kuala Lupur, (ii) Selangor, (iii) Sabah and (iv) Sarawak.
EB4	*separating rubbish at home*	Melaka had significantly higher means of EB4 than Selangor.
EB5	*reusing grocery bags/ jars/ bottles/ boxes/ cans, etc.*	Melaka had significantly higher means of EB5 than (i) Selangor, (ii) Perak, (iii) Sabah and (iv) Sarawak.
EB6	*using towels instead of tissues*	Melaka had significantly higher means of EB6 than (i) Kuala Lumpur, (ii) Selangor, (iii) Perak, (iv) Pulau Pinang, (v) Sabah and (vi) Sarawak.
EB7	*using water tumbler instead of purchasing water*	Melaka had significantly higher means of EB7 than (i) Kuala Lumpur, (ii) Selangor, (iii) Pahang, (iv) Terengganu, (v) Perak, (vi) Pulau Pinang, (vii) Sabah and (viii) Sarawak.
EB8	*purchasing refillable detergents*	Melaka had significantly higher means of EB8 than (i) Selangor, (ii) Perak, (iii) Pulau Pinang, (iv) Sabah and (v) Sarawak.
EB9	*purchasing energy-savings appliance*	Melaka had significantly higher means of EB9 than (i) Kuala Lumpur, (ii) Selangor, (iii) Sabah and (iv) Sarawak.
EB10	*purchasing products that are organically produced*	Melaka had significantly higher means of EB10 than (i) Kuala Lumpur, (ii) Selangor, (iii) Perak, (iv) Sabah and (v) Sarawak.

The positive and higher means of EB items suggests that Melaka residents are relatively agreeable on the EB items. However, Melaka had statistically significant lower mean of (i) EB4, *separating rubbish at home* than Negeri Sembilan and majority of the mean differences compared to other states were negative; similar to (ii) EB2, *turning off taps when brushing teeth*. Although the means were comparably positive, like other states, Melaka respondents were low on (iii) EB5, *reusing grocery bags/ jars/ bottles/ boxes/ cans, etc.*; (iv) EB6, *using towels instead of tissues*; (v) EB9, *purchasing energy-savings appliance*; and (vi) EB10, *purchasing products that are organically produced.*

DISCUSSION

The mainstream economists view consumption level as the measure of economy's fruitfulness. As living standards rise, income payees aspire to lead a more luxurious lifestyle, keeping them in debt and working harder to purchase and consume what everyone else seems to have. Resources depletion and ecosystem destruction are the outcomes of excessive resource consumption surpassing ecosystem's sustainable capacity. Howbeit the counterpart, sustainable consumption behaviour has a lot more than meets the eye.

Adopting and steering sustainable behaviours is unlike dealing with unproductive crops, uninterested buyers, personal debt or even uninsured risks; each of which has the urgency for immediate gains like agricultural productivity, business profitability, financial security and covered loses. Environmental behaviours are not impeded by competing alternatives other than negligence, offer no ephemeral profits and outcomes are difficult to measure. Environmental behaviours have no short-term monetary-gain for those expecting a quick return of investment. Practically any eco-action is overwhelmed by profiteers who benefit from others' eco-actions without partaking the alleviating movements (Montgomery, 1990). Some behaviours are sporadic such as the skip the straw movement in which involve different actors; consumers, retailers, manufacturers and policy makers. Incentives often needed for urgency. Also, green items are expensive because the current demand is low to encourage businesses to rethink their processes to minimize environmental impact.

All things considered, for economically vulnerable groups, environmental behaviours are fiscally inconvenient by the fact that the money they need to save is spent on eco-friendly equipment they cannot afford over investment which may or may not return in response to poorly educated usage patterns (Boudet et al., 2016; Van Leeuwen et al., 2009). The scenario begs the question, is the green living only affordable to middle- and high-income groups? The low-income groups make up 40% of Malaysian population. To date, it takes 3.7 hectares of land and sea to support each Malaysian. As population pressures mount, the larger the demand put on the limited natural resources. Environmental choices are in dire need from all corners regardless of economic status.

After 10 years the vision of Green City was introduced, evidently there is still much room for improvement on Melaka environmental behaviours. With the relatively low practice of eco-behaviours, specifically involving energy saving, recycling and environmental purchasing; Melaka residents have a long journey to embrace the green initiatives and become the endorsed locals of the model green city. The effective way to progress is by investigating the approach in which public policies actually affect public behaviour. The steps include (i) to determine the preconditions of a widespread behavioural change, (ii) to observe current attempts of adopting new consumption habits, and (iii) to deliver the cost and magnitude required towards crossing barriers of behavioural change.

CONCLUSION

This paper compares the Environmental Behaviours, the third dimension of Human Interdependence with the Environment, of Melaka residents in relation to other states. It was discovered that Melaka respondents were more agreeable to one-half of the 10 statements implying eco-behaviours, while they are less agreeable to the remaining half, in relation to other states. Melaka fell short in behaviours implying energy saving, recycling and purchasing culture. Future studies exploring the constructs elaborated in this paper via structural causal modelling and expand the findings through moderation effects of Malaysia States in relation to local environmental policies would be supportive of the current findings.

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