SEMARAK ILMU PUBLISHING

Journal of Advanced Research in Applied Sciences and Engineering Technology

Journal homepage:
https://semarakilmu.com.my/journals/index.php/applied_sciences_eng_tech/index
ISSN: 2462-1943

The Effect of Green Technology Policy on Climate Change Awareness of Youth in Sabah, Malaysia

Sarimah Surianshah[1,♣], Suriani Hassan[1,*], Audrey Liwan[2]

[1] Faculty of Science and Natural Resources, Universiti Malaysia Sabah, Jalan UMS, 88400, Kota Kinabalu, Sabah, Malaysia
[2] Faculty of Economics and Business, Universiti Malaysia Sarawak, Jln Datuk Mohammad Musa, 94300, Kota Samarahan, Sarawak, Malaysia

ARTICLE INFO

Article history:
Received 25 September 2023
Received in revised form 28 December 2023
Accepted 28 February 2024
Available online 17 April 2024

Keywords:
Green technology policy; climate change; youth's awareness, two-stage least squares method

ABSTRACT

The role to mitigate climate change issue should be embark among youth. This study examines the effects of green technology policy on climate change awareness of youth in Sabah, Malaysia. Using a random sampling method, this study involved 254 respondents from four areas of Sabah namely Tawau, Lahad Datu, Sandakan, and Kota Kinabalu. This study used two approaches which are i) probit model and ii) two-stage least squares method. We find a positive effect between youth' positive perceptions on green technology policy on their climate change awareness. In addition, the effect becomes five times higher when we address the endogeneity problem in model estimation using the two-stage least squares method and identification strategy based on the prospect theory. This study has highlighted the great impact of youth in implementing green technology to reduce climate change issues in Malaysia in general.

1. Introduction

Climate change is a global's decades environmental issues, and hence a critical topic that requires up-to-date analysis and the best possible inferences. Climate change has a pronounced effect, such as droughts, floods, and so on. Awareness of the importance of green technology in climate change is increasingly being explored. The use of green materials to preserve the environment is good by using sustainable green building development by Yee *et al.,* [1]. Zulkifli *et al.,* [2] designed and developed a GSM cloud-based multi-sensor system to monitor river health; to provide clean water and protect underwater life. The use of green LEDs in field studies in northern Malaysia were proven to accelerate fish growth by 30-40%, reducing the dependency on commercial food by 30 % and reducing the harvesting cycle by 20% [3]. Ha *et al.,* [4] identified the factors affecting the willingness of public on buying green residential property. The results of this study could contribute young generation focus on own health and comfortable life. Nanotechnology research by Hamrayev *et al.,* [5] used synthesis of nanoparticle from green chemistry pathways which reduces the utilization and

* *Corresponding author.*
E-mail address: suriani@ums.edu.my
♣sarimah.surianshah@ums.edu.my

https://doi.org/10.37934/araset.43.2.4251

exposure of toxic chemical to the environment. This is not only the role of the national government, but individual especially youths should be involved to combat it as youths are the future catalyst for Malaysian sustainability development. As defined by the World Business Council for Sustainable Development (WBCSD), sustainable development is a form of progress that meets the needs of the present without compromising the ability of future generations to meet their needs.

Among independent organisations that examines the ranking of countries' performance on sustainability issues-including climate change is the Yale Center for Environmental Law & Policy. Figure 1 shows the data of the relationship between climate change and overall EPI scores for Southeast Asia countries by Wendling *et al.,* [6]. It shows that Malaysia underperform developed economies countries such as Singapore and Brunei Darussalam as well as less developed countries-Timor-Leste. These low scores stress that Malaysia must continuously make efforts in mitigating the greenhouse gas emissions that have been identified contribute largely to the climate change scores. In addition, the World Economic Forum and past studies highlight that increasing phenomenon such as natural disasters and severe weather was a sign of failure of climate change mitigation and adoption [7-9]. Hence, it poses urgent challenges to many parties to encounter these issues persistently.

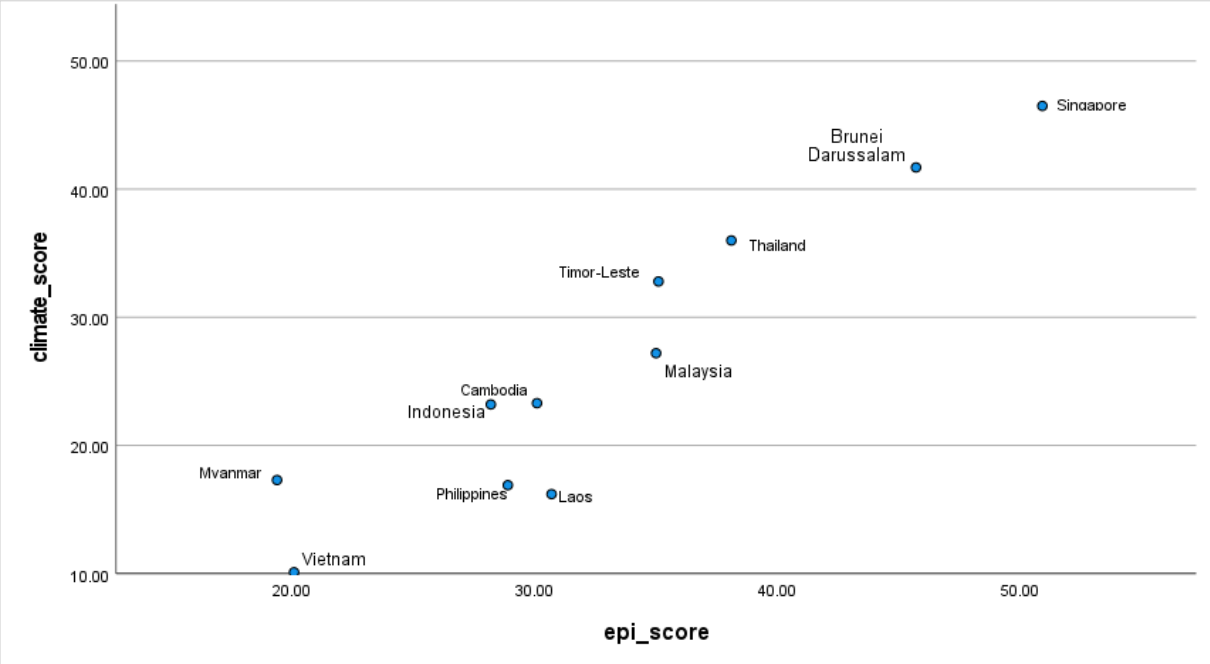

Fig. 1. The relationship between climate change and overall EPI scores in 2022, by Southeast Asia countries

In Malaysia, the introduction of the National Green Technology Policy (NGTP) is the first approach by the government to embed green technology implementation. It aims to embark green technology applications in four main sectors which are energy, environment, economy, and social. The NGTP creates a framework to which accelerate the national economy and promote sustainable development. Several initiatives have been implemented including the introduction of new green technology policy namely the Green Technology Master Plan (GTMP) Malaysia 2017-2030 which enhancing the NGTP achievement. Conducting green campaign to promote green consumerism is among other initiatives from the policy. However, its effects on youths' awareness as the future catalyst for national development is still ambiguous-particularly in Sabah.

Youth are powerful change makers with unique insight that are often overlooked [10,11]. Their involvement in promoting environmental sustainability is critical for policy implementation and dealing with long-term change. In Malaysia context, youth make up a large section of the population and have a big impact on the country's social and environmental problems [11]. Therefore, understand what motivates pro-environmental behaviour among the youth is crucial. In relation to that, the Sabah government has introduced a few strategies to embark it youths' potential to mitigate environmental issues to the optimal level. For example, through the Sabah State Youth Strategic Development Plan and the Sabah Youth Policy. However, study on youths perspective in Sabah is very limited. For instance, Jainudin *et al.,* [12] and Mahat *et al.,* [13] both have examined the level of green technology awareness in construction community.

Green technology development is affected by market effectiveness [14]. A less effective policy will slow down its further implementation such as in the form of investment in development and diffusion of new environmentally beneficial technologies. Market effectiveness or desirable outcomes may affect youth attitudes toward green technology. Eckstein *et al.,* [15] show the evidence of how youth's risk in schooling can be mitigated by better school experiences. Their perspective followed along with their experience. This is likely related to the prospect theory by Kahneman and Mercure [16] which explains how an individual makes decisions based on risk conditions. Thus, in this study, we assume that as a youngster, our respondents are a risk-averse person which reacts according to their expected plausible utility only. Knobloch and Mercure [17] show the significant effects of behavioural factors- the outcomes, towards expected green technology adoption rates. To take into account this expected utility or outcomes of green technology, we conduct a two-stage least squares method in the estimation. Using the method, we can examine simultaneously the output and inputs of green technology implementations. We mainly only focus on i) green technology efficacy (proxy by youths perspective on the introduction of green technology implementation) or initial settings as the input and ii) green technology policy effectiveness and efficiency (proxy by youths perspective on how effective the enforcements and how friendly the regulation enforcement) as the outputs. In general, findings from this study highlights that green technology policies or programmes should be enhanced as it is significantly contributed to better environmental protection or climate change awareness among youth.

The rest of the paper is organised as follows. The next section describes briefly the theory related to the identification strategy of this study. It is followed by a data and methodology section, empirical results and discussions, and ends with a conclusion section.

1.1 The Prospect Theory

The prospect theory discusses how an individual may make a decision not according to his or her expectation of utility maximisation [16]. This is because the individual has placed other considerations above utility. Cohen *et al.,* [18] discussed two types of individual behavior under risk and uncertainty: risk averse and risk taker. The risk-averse person will take action up to their plausible value only. Returning to this paper's context, here we assume that as a youngster many of them are categorised as risk aversion individuals. Their attitudes on green technology policy are based on the plausible outcomes which is how effective and efficient the policy implementation has been.

2. Data and Methodology

Referring to the definition of Sabah youth by the Malaysian Youth Development Research Institute, youth refers to individuals between the ages of 15 and 40. For this study, a total of 254

youths have involved in the survey of this study which we categorised into youth below 20 years old, youth between 20-30 years, and youth above 30 years. The sample size fulfilled Krejcie and Morgan's [19] sample size suggestions. The respondents were randomly selected from urban and rural areas of Sabah including Kota Kinabalu, Sandakan, Lahad Datu, and Tawau. The selection of these areas was made based on population density and accessibility. The areas also were among the most popular tourist destinations in Sabah. Saifullah *et al.,* [20] show the importance to investigate environmental issues in urban or popular areas as they tend to have vast development and green practices are needed.

2.1 Empirical Strategy

The climate change awareness model was examined using two methods: i) probit method, and ii) two-step least squares (2SLS) method. The probit model at an individual level can be written as follows:

$$S_i = \alpha + \beta X_i + \gamma_j D_{ij} + \mu_i \quad (1)$$

where S_i is the dummy measure of youth i's climate change awareness (proxy by how an individual is aware about environmental protection) with one equal to high and zero equal to low, X_i is the vector of youth's perceptions on green technology policy efficacy - performance under ideal and controlled circumstances, D_{ij} is the vector of j control variables of youth characteristics, α is the intercept, β and γ_j are the parameters, and μ_i is the error term.

The two-stage least squares model (2SLS) has two stages. The first-stage is:

$$X_i = \delta + \rho Y_{ik} + \varepsilon_i \quad (2)$$

where Y_{ik} for k=1,…,q are the q instruments for X_i of Eq. (1), that is youths' perceptions on green technology effectiveness and efficiency - results in a real-world setting, δ is the intercept, ρ is the parameter, and ε_i is the error term. Our identification strategy followed the prospect theory, where we expect that green technology policy outcomes in the real world may affect an individual's perceptions of its introduction. The outcomes will become the limit for the individual decision-making process. In addition, a risk-averse person may act according to the plausible outcomes only.

While the second-stage is:

$$S_i = \alpha + \beta \hat{X}_i + \gamma_j D_{ij} + \mu_i \quad (3)$$

where $\hat{X}_i$ is the predicted value of X from Eq. (2).

To test the validity of the 2SLS model, three post-estimations were conducted: i) the significance of the Wu-Hausman F-statistics [21,22]; ii) the F-statistics of first-stage regression [23,24]; iii) the X^2 statistics of Sargan [25].

3. Results and Discussions

This section begins with a report on the percentage of youths' consciousness or knowledge of green technology policy in Malaysia. It then presents the findings of the main objective of this paper.

3.1 Youth Consciousness or Knowledge on Green Technology Policy in Malaysia

Figure 2 shows the percentage of youths' consciousness or knowledge on ten main green technology policies or programmes in Malaysia. Overall, a majority (72 percent) of youths are conscious or ever heard about and have some knowledge on the current National Green Technology Policy, followed by the Green Technology Financing Scheme (54 percent) and the National Policy on Climate Change (57 percent). However, only 17 percent of youths are aware of the implementation of Feed-in-Tariff for Renewable Energy in Malaysia.

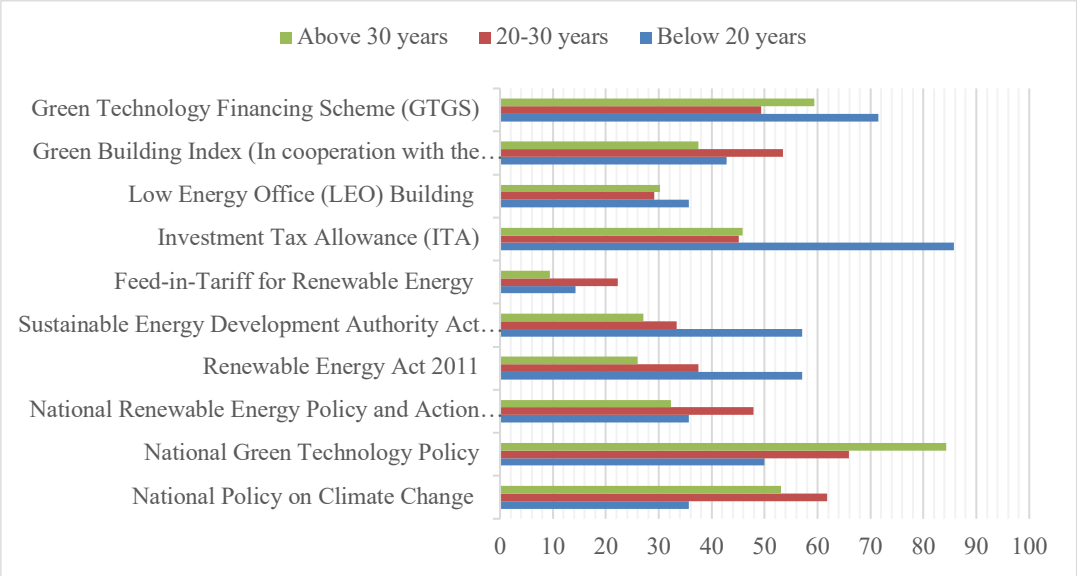

Fig. 2. Percentage of youth consciousness on green technology policies or programmes

Based on the age range of youth, we found that youth under 20 years old were prone to know or ever heard about the Investment Tax Allowance, and youth between 20 to 30 years old and above 30 years old respectively majorly know about the National Green Technology Policy. To note that, all categories of youth age have low knowledge of the Feed-in-Tariff policy. The low percentage of youths who know about the Feed-in-Tariff might be due to its characteristics which are costly and suitable for industrial sectors or high-income families. On the other hand, a high percentage for the National Green Technology Policy is potentially due to its characteristics that target many parties including those from different areas and age groups. A high percentage of youths who are aware of current green technology policy shows a positive indicator for Malaysia's movement towards a sustainable development country.

3.2 Effects of Youth Perception on Green Technology Policy on Climate Change Awareness

Table 1 shows the effects of youths' perceptions on green technology policy on climate change awareness using the probit method and two-stage least squares method (2SLS). The findings of the probit model in marginal effects were presented in column (1), while columns (2) and (3) were the findings of the two-stage least squares model. The post-estimation results of the 2SLS model were reported at the bottom section of Table 1. Only youth aged 20-30 years show significant effects and thus the other age group categories of youth are omitted for simplicity.

For youth aged 20 to 30 year-old category, both the probit and 2SLS models show positive effects of green technology policy efficacy on youth awareness on climate change. The impact is pronounced

when the endogeneity bias in the probit model is addressed using the 2SLS model. The 2SLS model estimates are valid to be interpreted as all post-estimations results of the model are satisfied. It shows that the findings followed the prospect theory where perceptions of youth in Sabah on green technology introduction increase only if they increase their perception of green technology implementation outcomes. The findings also are in line with the theory of planned behaviour, where behaviours are perceived from attitudes [26], here it reflects youths' perspectives on climate change awareness.

The findings coincide with previous studies on climate change awareness in different settings of industries and countries. For instance, work by Nguyen [27] using data for mining enterprises in Vietnam finds evidence of the important role of government bodies in boosting environmental consciousness; work by Hossain *et al.,* [28] finds a positive relationship between green technology and environmental awareness in manufacturing SMEs in Bangladesh; and study by Yu *et al.,* [29] finds both consumer environmental awareness and subsidy policy are crucial to produce optimal production in automobile industry. However, the finding contradicts with study in the urban setting of Kuala Lumpur, Malaysia by Saifullah *et al.,* [20] who found a negative effect of green technology on environmental awareness. They found that only green products and government policies have a direct influence on environmental awareness and suggest for the government to encourage incentives on both aspects among the youngster.

Table 1
Estimates of youths' perceptions of green technology policy on climate change awareness

Dependent variable: High climate change awareness (=1)	(1) Probit model	(2) 2SLS model	(3) 2SLS model
High perceptions on green technology policy efficacy (=1)	0.258***	1.004***	1.253***
	(0.073)	(0.301)	(0.319)
Male (=1)	0.072	0.169	0.204*
	(0.078)	(0.114)	(0.122)
Level of education (base: No formal or primary)			
Secondary	0.945***	-0.203	-0.314
	(0.193)	(0.206)	(0.214)
Tertiary	0.959***	-0.086	-0.160
	(0.182)	(0.145)	(0.155)
Location (base: Kota Kinabalu)			
Tawau	0.045	-0.032	-0.054
	(0.081)	(0.119)	(0.133)
Lahad Datu	0.019	0.067	0.086
	(0.100)	(0.114)	(0.128)
Sandakan	0.053	0.067	0.073
	(0.081)	(0.079)	(0.091)
Constant		0.032	0.054
		(0.119)	(0.133)
First-stage estimates:			
Dependent variable: High perceptions on green technology policy efficacy (=1)			
High perceptions on green technology policy effectiveness (=1)		0.332***	0.313***
		(0.087)	(0.081)
High perceptions on green technology policy efficiency (=1)			0.146**
			(0.075)
Observations	144	144	144
Wu-Hausmann F-statistics (p-value)		0.006	0.000
F-statistics of first-stage estimates		14.519	9.403
Sargan chi-squared statistics (p-value)			0.064

Notes: Standard errors in parentheses. Significance levels: * $p < .1$, ** $p < .05$, *** $p < .01$.

Figure 3 shows the conceptual framework that might help the government in particular in developing future actions in framing the next phase of national green technology policy involving youths. In general, the framework follows the prospect theory and risk-averse individual behaviour that shows how youths' climate change awareness is perceived from their perceptions of green technology policy given better technology policy implementation outcomes.

Fig. 3. Conceptual link between climate change awareness and green technology policy

Table 2 and Table 3 show the effects of green technology policy efficacy on youth awareness on climate change based on gender and location respectively. Similar to the findings in Table 1, we found positive effects of green technology on youths' climate change awareness. Expectedly females compared to males' high perception on green technology policy contribute significantly to their high climate change awareness. Also, youths who live in highly concentrated locations such as Kota Kinabalu and Sandakan have better climate change awareness when there are positive exposures of green technology policy outcomes.

Table 2
Estimates of the climate change awareness model by gender

Dependent variable:	(1)	(2)	(3)	(4)	(5)	(6)
High climate change awareness (=1)	Probit model		2SLS model		2SLS model	
	Male	Female	Male	Female	Male	Female
High perceptions on green technology policy	1.444***	0.206***	6.308	2.212	0.480**	0.743***
efficacy (=1)	(0.377)	(0.076)	(5.628)	(1.380)	(0.209)	(0.221)
Level of education (base: No formal or primary)						
Secondary	-0.174	0.962***	-0.871	-0.325	0.088	-0.006
	(0.119)	(0.218)	(0.688)	(0.222)	(0.155)	(0.160)
Tertiary		0.923***			0.082	0.016
		(0.202)			(0.110)	(0.118)
Location (base: Kota Kinabalu)						
Tawau	-1.087***	0.075	-2.291	-0.769	0.055	0.046
	(0.298)	(0.086)	(2.721)	(0.676)	(0.101)	(0.114)
Lahad Datu	0.123	-0.058	0.843	0.297	-0.024	-0.016
	(0.140)	(0.128)	(0.698)	(0.258)	(0.087)	(0.098)
Sandakan	-0.028	0.119	0.693	0.147	0.124	0.111
	(0.147)	(0.091)	(0.652)	(0.243)	(0.096)	(0.094)
Constant			-0.158	0.116	-0.055	-0.046
			(0.331)	(0.144)	(0.101)	(0.114)
First-stage estimates:						
Dependent variable: High green technology policy (=1)						
High perceptions on green technology policy			0.154	-0.041	0.388**	0.382
effectiveness (=1)			(0.150)	(0.045)	(0.100)	(0.092)

High perceptions on green technology policy efficiency (=1)				0.384 (0.222)		0.150 (0.076)
Observations	41	103	41	103	41	103
Wu-Hausmann F-statistics (p-value)			0.004	0.145	0.164	0.007
F-statistics of first-stage estimates			1.091	1.818	15.124	10.116
Sargan chi-squared statistics (p-value)				0.040		0.004

Notes: Standard errors in parentheses. Significance levels: * $p < .1$, ** $p < .05$, *** $p < .01$.

Table 3
Estimates of the climate change awareness model by location

Dependent variable:	(1)	(2)	(3)	(4)
High climate change awareness (=1)	Kota Kinabalu	Sandakan	Lahad Datu	Tawau
High perceptions on green technology policy efficacy (=1)	1.526***	1.184***	2.679	-0.516
	(0.584)	(0.260)	(3.902)	(0.515)
Male (=1)	0.398*	0.224	0.857	0.133
	(0.223)	(0.207)	(1.139)	(0.321)
Level of education (base: No formal or primary)				
Secondary	-0.412	-0.264	-0.429	0.448**
	(0.278)	(0.167)	(1.158)	(0.197)
Tertiary				0.331*
				(0.172)
First-stage estimates:				
Dependent variable: High perceptions on green technology policy efficacy (=1)				
High perceptions on green technology policy effectiveness (=1)	0.259**	0.775***	0.135	0.319
	(0.125)	(0.164)	(0.208)	(0.204)
High perceptions on green technology policy efficiency (=1)				-0.016
				(0.152)
Observations	59	27	18	40
Wu-Hausmann F-statistics (p-value)	0.011	0.058	0.182	0.163
F-statistics of first-stage estimates	4.356	23.477	0.456	1.397
Sargan chi-squared statistics (p-value)				0.036

Notes: Standard errors in parentheses. Significance levels: * $p < .1$, ** $p < .05$, *** $p < .01$.

These findings show that green technology policy implementation relies on the 'bottom-up' of green technology effectiveness and efficiency. Youth especially those in concentrated locations and females prefer an evidence-oriented approach rather than the formalised approach. Stokes [30] has highlighted the importance of bottom-up self-selection and recommendations of customers and other influence groups, rather than relying on the traditional ways in entrepreneurial marketing contexts. It implies that exposure to green technology practices should be upgraded into an evidence approach to increase youth awareness on climate change.

4. Conclusions

Climate change is a more than decades national and global issue. It needs everyone's role to combat it. This study focuses on examining youths' role in combating the issues by examining their perceptions of green technology policy on awareness of climate change.

This study found significant positive effects of green technology policy on youth awareness of climate change. In addition, the effects become five times higher when we assume that youth react based on their expected utility only. This study also found that female youth in highly concentrated locations have a significant role in reducing environmental issues in Sabah. Further studies are suggested to explore the climate change awareness model by considering these sociodemographic

contexts in other settings such as by types of green technology initiatives or industries (see Mahat *et al.,* [8]), as the target of each initiative differs, to produce appropriate policy responses. Finally, this study highlights that green technology policies or programmes should be enhanced as it is significantly contributed to better environmental protection or climate change awareness in particular. It also coincides with the current National Green Technology Master Plan's initiatives to promote sustainable development in Malaysia [31].

Acknowledgement
The authors would like to thank the Research Management Centre, Universiti Malaysia Sabah (UMS), for providing the fund under the Skim Penyelidikan Bidang Keutamaan with grant number SBK0520-2022. The authors also would like to thank the respondents involved in the survey. The authors are responsible for the remaining errors.

References

[1] Ha, Chin Yee, Terh Jing Khoo, and Zheng Yik Koo. "Current status of green building development in Malaysia." *Progress in Energy and Environment* (2023): 1-9. https://doi.org/10.37934/progee.25.1.19
[2] Zulkifli, Che Zalina, Suliana Sulaiman, Abu Bakar Ibrahim, Chin Fhong Soon, Nor Hazlyna Harun, Nur Hanis Hayati Hairom, Muhammad Ikhsan Setiawan, and Ho Hong Chiang. "Smart Platform for Water Quality Monitoring System using Embedded Sensor with GSM Technology." *Journal of Advanced Research in Fluid Mechanics and Thermal Sciences* 95, no. 1 (2022): 54-63. https://doi.org/10.37934/arfmts.95.1.5463
[3] Aziz, Nik Mohd Azmi Nik Abdul, Noor Zalikha Mohamed Islam, Norhidayah Abu, Wedianti Shualdi, Khairuldin Mohd Isha, Tan Chin Kong, Tan Chin Hai, and Mohd Muzamir Mahat. "Underwater fish attraction LED lamp (UFAL) for improving aquaculture productivity." *Journal of Advanced Research in Applied Mechanics* 53, no. 1 (2019): 8-14.
[4] Ha, Chin Yee, Terh Jing Khoo, and Soo Chin Teh. "Malaysia green residential buildings and factors affecting the willingness of public on buying green residential buildings." *Progress in Energy and Environment* (2023): 33-43. https://doi.org/10.37934/progee.25.1.3343
[5] Hamrayev, Hemra, Kamyar Shameli, and Mostafa Yusefi. "Preparation of zinc oxide nanoparticles and its cancer treatment effects: A review paper." *Journal of Advanced Research in Micro and Nano Engineering* 2, no. 1 (2020): 1-11. https://doi.org/10.37934/jrnn.1.1.6274
[6] Wendling, Zachary A., John W. Emerson, Alex de Sherbinin, Daniel C. Esty, K. Hoving, C. D. Ospina, J. M. Murray, L. Gunn, M. Ferrato, and M. Schreck. "Environmental performance index." *New Haven, CT: Yale Center for Environmental Law And Policy. epi. yale. edu* (2020).
[7] World Economic Forum. *A Decade Left: Confronting Runaway Climate Threat.* Switzealand: Davos. (2021).
[8] Payus, Carolyn, Lim Ann Huey, Farrah Adnan, Andi Besse Rimba, Geetha Mohan, Saroj Kumar Chapagain, Giulia Roder, Alexandros Gasparatos, and Kensuke Fukushi. "Impact of extreme drought climate on water security in North Borneo: Case study of Sabah." *Water* 12, no. 4 (2020): 1135. https://doi.org/10.3390/w12041135
[9] Surianshah, Sarimah. "Environmental awareness and green products consumption behavior: A case study of Sabah State, Malaysia." *Biodiversitas Journal of Biological Diversity* 22, no. 7 (2021). https://doi.org/10.13057/biodiv/d220717
[10] Wee, M.I, Ariffin, F.N, Ng, T.F., and Shahbudin, A.F.A. (2017). *Handbook of Theory and Practice of Sustainable Development in Higher Education*. Switzealand: Springer Cham, Page 49-64.
[11] Rahman, Haliza Abdul. "Malaysian Youth and Environmental Sustainability: A Review: Belia Malaysia dan Kelestarian Alam Sekitar: Satu Ulasan." *Perspektif Jurnal Sains Sosial dan Kemanusiaan* 12, no. 2 (2020): 43-54. https://doi.org/10.37134/perspektif.vol12.2.6.2020
[12] Jainudin, Noor Azland, Ivy Jugah, Awang Nasrizal Awang Ali, and Rudy Tawie. "The acceptance of green technology: A case study in Sabah Development Corridor." In *AIP Conference Proceedings*, vol. 1875, no. 1. AIP Publishing, 2017. https://doi.org/10.1063/1.4998372
[13] Mahat, Noor Aisyah Asyikin, Sharifah Nur Aina Syed Alwee, Hamimah Adnan, and Ahmad Arzlee Hassan. "Propelling green building technologies adoption in Malaysia construction industry." In *IOP conference series: earth and environmental science*, vol. 233, no. 2, p. 022032. IOP Publishing, 2019. https://doi.org/10.1088/1755-1315/233/2/022032
[14] Jaffe, Adam B., Richard G. Newell, and Robert N. Stavins. "A tale of two market failures: Technology and environmental policy." *Ecological economics* 54, no. 2-3 (2005): 164-174. https://doi.org/10.1016/j.ecolecon.2004.12.027

[15] Eckstein, Katharina, Marta Miklikowska, and Peter Noack. "School matters: The effects of school experiences on youth's attitudes toward immigrants." *Journal of Youth and Adolescence* 50 (2021): 2208-2223. https://doi.org/10.1007/s10964-021-01497-x
[16] Kahneman, Daniel, and Amos Tversky. "Prospect theory: An analysis of decision under risk." In *Handbook of the fundamentals of financial decision making: Part I*, pp. 99-127. 2013. https://doi.org/10.2307/1914185
[17] Knobloch, Florian, and Jean-Francois Mercure. "The behavioural aspect of green technology investments: A general positive model in the context of heterogeneous agents." *Environmental Innovation and Societal Transitions* 21 (2016): 39-55. https://dx.doi.org/10.1016/j.eist.2016.03.002
[18] Cohen, Michele, Jean-Yves Jaffray, and Tanios Said. "Individual behavior under risk and under uncertainty: An experimental study." *Theory and Decision* 18 (1985): 203-228. https://doi.org/10.1007/BF00134074
[19 Tabachnick, B.G. and Fidell, L.S. (2021). *Using Multivariate Statistics*. Pearson Education, Boston.
[20] Saifullah, Md Khaled, Fatimah Binti Kari, and Md Arphan Ali. "Linkage between public policy, green technology and green products on environmental awareness in the urban Kuala Lumpur, Malaysia." *The Journal of Asian Finance, Economics and Business* 4, no. 2 (2017): 45-53. https://doi.org/10.13106/jafeb.2017.vol4.no2.45
[21] Hausman, Jerry A. "Specification tests in econometrics." *Econometrica: Journal of the econometric society* (1978): 1251-1271. https://doi.org/10.2307/1913827
[22] Wu, De-Min. "Alternative tests of independence between stochastic regressors and disturbances." *Econometrica: journal of the Econometric Society* (1973): 733-750. https://doi.org/10.2307/1911789
[23] Stock, J.H., Wright, J.H., and Yogo, M. "A Survey of Weak Instruments and Weak Identification in Generalized Method of Moments." *Journal of Business & Economic Statistics* 20, no. 4 (2002): 518-529. https://doi.org/10.1198/073500102288618658
[24] Hahn, Jinyong, and Jerry Hausman. "A new specification test for the validity of instrumental variables." *Econometrica* 70, no. 1 (2002): 163-189. https://doi.org/10.1111/1468-0262.00272
[25] Sargan, John D. "The estimation of economic relationships using instrumental variables." *Econometrica: Journal of the econometric society* (1958): 393-415. https://doi.org/10.2307/1907619
[26] Ajzen, Icek. "The theory of planned behavior: Frequently asked questions." *Human Behavior and Emerging Technologies* 2, no. 4 (2020): 314-324. https://doi.org/10.1002/hbe2.195
[27] NGUYEN, Thi Kim Tuyen. "Studying factors affecting environmental accounting implementation in mining enterprises in Vietnam." *The Journal of Asian Finance, Economics and Business* 7, no. 5 (2020): 131-144. https://doi.org/10.13106/JAFEB.2020.VOL7.NO5.131
[28] Hossain, Mohammad Imtiaz, Tze San Ong, Boon Heng Teh, Ridzwana Mohd Said, and May Ling Siow. "Nexus of Stakeholder Integration, Green Investment, Green Technology Adoption and Environmental Sustainability Practices: Evidence from Bangladesh Textile SMEs." *Pertanika Journal of Social Sciences & Humanities* 30, no. 1 (2022). https://doi.org/10.47836/pjssh.30.1.14
[29] Yu, Yugang, Xiaoya Han, and Guiping Hu. "Optimal production for manufacturers considering consumer environmental awareness and green subsidies." *International Journal of Production Economics* 182 (2016): 397-408. https://doi.org/10.1016/j.ijpe.2016.09.014
[30] Stokes, David. "Putting entrepreneurship into marketing: the processes of entrepreneurial marketing." *Journal of research in marketing and entrepreneurship* 2, no. 1 (2000): 1-16. http://doi.org/10.1108/14715200080001536
[31] Tu, Fan, C. S. Ho, L. W. Chau, and X. Yu. "Promoting urban sustainability through green technology in Malaysia." *MIT-UTM Malaysia Sustainable Cities Program. Retrieved March* 11 (2016): 2017.