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Abstract

  This study aims to assess the green preferences in Brunei Darussalam among young adults evaluate the level of environmental and financial literacy among Brunei's young adults and investigate the influence of financial literacy, environmental literacy and environmental concern on the green preferences of young adults in Brunei. A survey questionnaire was distributed to youths between the ages of 15−40 years old, out of which 192 responses were gathered. Various statistical analyses were carried out to achieve the aims. It is found that green preferences were moderate among Bruneian young adults. Environmental literacy is found to be relatively low while the level of financial literacy is moderate. Only financial literacy has a significant influence on green preferences while environmental literacy and environmental concern are found to be insignificant.

Keywords: Financial literacy, Environmental literacy, Environmental concern, Green preferences

1. Introduction

Climate change poses significant health risks to humans, including temperature-related illnesses, extreme weather-related illnesses, air pollution-related illnesses, water and foodborne diseases, and the impact of food and water scarcity (Adedeji et al, 2014). The Open Working Group proposed a set of global Sustainable Development Goals (SDGs) with 17 goals and 169 targets at the United Nations in New York to alleviate climate change issues. This study specifically focuses on the attainment of Goals 12 and 13, which advocate for sustainable production and consumption patterns and prompt measures to alleviate the impacts of climate change. These goals hold great significance, as their national progress indicators lack sufficient data according to the SDG Secretariat of Brunei Darussalam. The enduring climate transition risk is a perpetual concern in Brunei. Numerous Bruneians are presently confronting first-hand challenges posed by climate change, with several areas in Brunei consistently encountering flash flooding due to extreme weather conditions such as heavy rainfall and exceptionally high temperatures.

  For individuals to take action to mitigate climate change issues, prior studies have identified the need to have concerns for the environment and to be

environmentally literate. An environmentally literate citizen recognizes environmental problems when they arise and take action to solve them, evaluates environmental issues before acting, prefers long-term benefits, recognizes lifelong learning about environmental problems, recognizes the human-nature relationship, treats public and private property with equal respect, recognizes the needs of future generations and its impact of population growth to make reasonable and productive decisions in a variety of environmental contexts (Hollweg et al., 2011; Roth, 1992). Despite environmental literacy raising awareness about pollution, many people still face 'action paralysis', believing they are powerless to make a difference (Ballantyne et al, 1998).

It has been noted in prior studies that adapting pro-environmental behavior is typically expensive in the short term but beneficial in the long run, for example, studies have found that fertilizers are predicted to become more expensive when global resources are exhausted as a result of natural disasters caused by climate change (Lades et al, 2021). The quest for alternative sources of energy, such as biofuel production, is likely to divert food supplies and drive-up prices (Lawrence et al, 2013). This demonstrates the importance of financial literacy as it can enable individuals to forecast future costs in relation to current costs of green products. Planning for the future in terms of finances is a fundamental aspect to consider (Percy & Elizabeth, 2011) as this aligns with the study done by (Kadoya & Khan, 2020) in which individuals who believe that thinking about the future is a waste of time are less financially literate. Hence, it is beneficial to engage financial literacy towards climate action in order to prepare for the anticipated negative effects of climate change on businesses in general by providing relevant products and services. While majority of studies have already been conducted in order to determine whether environmental literacy and environmental concern have an effect on green preferences, but only few papers have been published so far on the effects of financial literacy on green preferences, though it was focused on only certain aspect of financial literacy such as investment rather than savings.

This study is aimed at analyzing the influence of environmental concern, environmental literacy and financial literacy on green preferences of youths in Brunei. While the issue of environmental concern and environmental literacy has been studied in other countries, to the authors' knowledge no study has been conducted in the Brunei context. Brunei faces the same climate change issues that other countries face hence a study is needed to understand the green preferences of people in the country. Brunei has environmental education resources, but they are mainly underutilized (Odihi, 2000). A study conducted by Wasiuzzaman et al (2021) found that while there is a significant level of understanding of what crowdfunding and green initiatives, the knowledge of climate change issues in Brunei is still extremely low. With proper improvements, these channels can become useful and effective environmental literacy and concerns, instilling people's inclinations towards environmental preferences and impacts in Brunei. In addition, according to a national survey conducted in 2019 by the Brunei National Strategy for Financial Literacy, 52% of young per-sons (under 30 years old) exhibit inadequate financial literacy and claim to have poor savings habits (Rizzo, 2019). This is concerning due to the fact that financial literacy is an important variable and is beneficial in determining the future effects of climate change as it may affect young adults' green preferences.

2. Literature review

Green preferences are important in shaping macroeconomic fluctuations and lowering emissions due to the fact that a green preference wave will stabilise the business cycle by causing a second source of volatility in several sectoral variables (e.g., green consumption and investment) (Busato et al. 2022). Green preference is commonly defined as "the differen-tial benefit that arises from both contributing to and consuming an environmental public good" (Kotchen, 2005, 2006; Wichman, 2016, p. 209). According to Bhatia & Jain (2014), overall green values, awareness of green products and practices, and perceptions of marketing companies' seriousness about green marketing have positive significant impacts on consumer persuasion towards green preferences over conventional products. This study focuses on the influence of environmental literacy, environmental concern and financial literacy on the green preferences of youths in Brunei. This corresponds to SDG Goal 12, particularly Target 12.8, which aims to ensure, by 2030, that individuals worldwide possess pertinent information and awareness promoting sustainable development and lifestyles in harmony with nature, as outlined by the United Nations.

2.1. Environmental literacy and green preferences

Environmental literacy is "the ability to recognise and evaluate the relative health of environmental

systems, as well as the ability to take appropriate action to maintain, restore, or improve that health" (Roth, 1992, p. 27). It is important to foster productive and respon-sible citizens of this planet due to the fact that environmental issues such as managing finite fuel resources, providing adequate food and water, improving quality of atmosphere and prevent further extinctions of animals requires collective action. Prior studies have documented how environment literacy effects green preferences. (Brinia et al, 2020) study of 253 adults in Greece found low median levels of environmental knowledge and pro-environmental behaviour as well as a positive but moderate connection between the two variables. It was observed that despite the fact that environmental education has been part of the Greek school system for over 25 years, the median of the two variables is not high and this could have been because people are not completely engaged in sustainability issues nor do they prefer to have greener products despite having the information. Liang et al.'s (2018) nationwide study of undergraduates in Taiwan showed low level of environ-mental literacy and no significant relationships between knowledge and attitudes or knowledge and conduct. However, a higher level of environmental knowledge was linked to more pro-environmental behavior and more positive attitudes towards the environment. This is consistent with Target 13.3 of Sustainable Development Goal 13, which aims to enhance knowledge and capabilities to address climate change. This involves enhancing education, raising awareness, and improving human and institutional capacities in climate change mitigation, adaptation, reducing impacts, and early warning systems.

H1. Environmental Literacy among young adults significantly influences their green preferences.

2.2. Environmental concern and green preferences

Environmental concern plays an important role as consumers nowadays are paying more attention to the safety of personal care items and products that have been exposed to the environment. Consumer awareness of sustainable, or "green," products has grown dramatically in recent years, as have consumer sentiments toward them. Consumers are willing to spend a higher price for ecologically friendly products because they care about the environment (Grankvist et al, 2004). Mostafa (2006) studied 1093 consumers in Egypt to understand their green purchase behavior. The study found increasing concerns about the state of the

environment and customer's willingness to participate in some way to protect the environmental. However, this concern may not be expressed consistently in actuality due to the fact that although many consumers in this survey profess to be environmentally concern, it is unclear to what extent they are willing to buy things solely for environmental reasons. They may expect green items to be competitively priced and perform similarly to other products, allowing them to differentiate between two relatively identical commodities based on their greenness. As a result, the study recommends that it is critical for marketers to explain why buying green products is convenient and to shift consumer opinions in a positive direction. Devi et al (2019) believes that the more knowledge a consumer has about green products, the more favorable insights they will have about greener items, increasing their buy intention. This is because human behavior is a major contributor to environmental issues, and these issues should be addressed by humans themselves by altering their vision and perspective of their actions towards the environment. However, it is not always true that an individual's green preference is matched by their positive behavior and concern towards the environment (Agyeman, 2014).

H2. Environmental Concerns among young adults significantly influences their green preferences.

2.3. Financial literacy and green preferences

It is evident from past studies that pro-environmental behaviours require sufficient financial commitments hence in this study, financial literacy is considered as a factor influencing green preferences. Financial literacy is crucial among young adults, who are increasingly taking responsibility for their financial future and setting financial goals for the next five years. However, research on the impact of financial literacy on green preferences is limited. Anderson & Robinson (2019) found a connection between pro-environmental attitudes and investment decisions among Swedish families. Green households do not make green financial decisions due to two main factors: financial disengagement, where environmentally active households are less concerned about money and less likely to own individual equities outside their retirement plan, and complications in understanding how to make green investment decisions. This complexity in making green investment decisions hinders those with less financial education from incorporating their green preferences into their investment portfolios.

H3. Financial Literacy among young adults significantly influences their green preferences.

3. Methodology

The study aimed to collect data on Bruneian young adults aged 15–40, focusing on their demographic information, educational status, marital status, and district regions. The da-ta was collected through an online survey that was distributed. A set of questionnaires was distributed in both English and Malay languages, divided into five parts: demographic information, questions related to environmental literacy, green preferences, environmental concern, and financial literacy. The questionnaires were distributed through a Google Form survey and were initially distributed through a pilot test. Research ethics were followed to ensure participant privacy and confidentiality. The target population was 100–200 respondents, using non-probability sampling. Out of the 223 that has been gathered, 192 respondents answered the English version of the questionnaires and 31 respondents answered the Malay version. The survey reached its target with 223 respondents, and the answers were exported to Microsoft Excel for data cleaning before being integrated into SPSS software for analysis. However, only 192 responses were useable for analysis. The remaining 31 responses were dis-carded because of respondents are false data and some did not fulfill the sample requirement due to those not in the age range of young adults.

3.1. Measurement of variables

The dependent variable of this study is green preferences in which the questions are adopted from (Anderson & Robinson, 2019). Respondents were asked to rate their green preferences on a scale of 1–5. The lowest score indicates poor pro-environmental behavior, while the highest score indicates high pro-environmental behavior. The results indicate that respondents with the lowest score or "Don't know" indicate poor pro-environmental behavior.

Three independent variables are considered in this study: Environmental Literacy, Environmental Concern, and Financial Literacy. The questions for environmental literacy are adopted from Anderson & Robinson's (2020) work. Environmental literacy is measured through basic and advance questions to understand individuals' understanding, skills, and motivation towards the environment. There is only one correct answer for each question hence the total

value for environmental literacy of an individual is calculated by the number of correct answers obtained.

Environmental concern of each individual refers to an individual's perception of environmental risks and progress over the environment. Questions on environmental concert are also adopted from Anderson & Robinson's (2020) and the response choice given are of the five-point Likert scale form. Respondents were questioned and get to choose the most appropriate on a scale of 1–5 being (0-Not dangerous at all, 1- Not very dangerous, 2-Somewhat dangerous, 3-Very dangerous, and 4-Extremely dangerous) for question 1 to 6. Whereas for questions 7–9 being (0-Strongly disagree, 1-Disagree, 2-Neither Agree or Disagree, 3-Agree, and 4-Strongly Agree). If the lowest score is obtained, it indicates that the respondent has not been imbued with concerns towards the environment.

For financial literacy respondents were asked to choose the most appropriate on a scale of 1–5 being (0-Not at all, 1-Very little, 2-Somewhat, 3-Very well, and 4-Completely) for question 1 to 7. Whereas (0-Never, 1-Rarely, 2-Sometimes, 3-Often, and 4-Always) are for questions 8 to 10. Questions will be retrieved according to (Consumer Financial Protection Bureau, 2017). If the results reveal the lowest score, it means respondents have poor financial literacy, while the highest score means respondents have high financial literacy.

Cronbach alpha values are calculated for the Likert scale questions − financial literacy and environmental concern − to check for reliability. The Cronbach's Alpha coefficient for both environmental concern and financial literacy is found to be 0.759, indicating acceptable reliability.

Age, marital status, and income are considered as control variables as previous studies have shown diverse findings with respect to these variables.

4. Analysis of data and findings

Demographic profile is investigated using frequency analysis. The analysis shows that 43.2% of the respondents are males and 56.8% are females. 20 years old or younger make up 9.9% of the respondents, 21–30 years old (77.1%), and 31–40 years old (13%). 87.5% of the respondents are single while 12.5% are married. Half of the respondents (60.2%) have a bachelor's degree, 18.3% have Diploma or Higher National Diploma and Technical certificates, 15.7% are Postgraduate Masters and PHD holders while 5.8% have College and Upper Secondary qualifications. Students comprise to 56.8% of the participants while 18.8% are employees in the public and private sectors. The vast majority of

respondents are from the lower income group, with 57.3% earning less than BND$500.

The average score for the variables green preferences (GP), environmental literacy (EL), environmental concern (EC), and financial literacy (FL) are presented in Table 1. The average value for green preferences is 3.75 (SD = 0.740) and that of environmental concern is 2.95. Average environmental literacy is quite low with an average of 1.72 (SD = 1.199) but average level of financial literacy is fairly high with an average of 3.02 (SD = 0.574).

Pearson correlation analysis is carried out next to assess the relationships between the dependent, independent and control variables. The results of the Pearson correlation analyses are presented in Table 2. Among the independent variables, FL has the strongest correlation with green preferences while EC has the weakest. Green preferences also have a positive but weak linear association with financial literacy (r = 0.234) and environmental literacy (r = 0.070), showing that individuals with a high level of financial literacy and environmental

literacy are more inclined to increase their green preferences. On the other hand, the correlation between GP and EC is negative indicating that as environmental concern increases, green preferences decrease. The correlation coefficients between the independent variables are all below 0.7, indicating no serious issues of multicollinearity.

Regression analysis is used to analyze the relationship between green preferences as the dependent variable and environmental literacy, environmental concern, and financial literacy as independent variables. Control variables are gender, age, marital status, education level, and income. Results of this analysis are presented in Table 3.

The results in Table 3 show that among the independent variables, only FL has a significant influence on GP (p-value = 0.002). Hence, as financial literacy improves, so do green preferences. Environmental concern, age, and marital status have negative relationships with green preferences. The R square in the data analysis is 0.067, which suggests that the independent and control variables can

Table 1. Average score of all variables.

Variable	Min.	Max.	Mean	SD	Skewness	Kurtosis
GP	1	6	3.75	0.740	−0.387	1.207
EL	0	5	1.72	1.199	−0.341	−0.303
EC	1	5	2.95	0.424	0.746	3.103
FL	1	5	3.02	0.574	−0.018	0.860

Table 2. Pearson correlation analysis.

	GP	EL	EC	FL	AGE	MS	INC
GP	1.000	0.070	−0.045	0.234	−0.052	0.001	0.058
EL	0.070	1.000	−0.159	0.142	0.097	0.103	0.250
EC	−0.045	−0.159	1.000	0.094	0.145	0.013	−0.036
FL	0.234	0.142	0.094	1.000	0.082	0.138	0.208
AGE	−0.052	0.097	0.145	0.082	1.000	0.404	0.549
MS	0.001	0.103	0.013	0.138	0.404	1.000	0.522
INC	0.058	0.250	−0.036	0.208	0.549	0.522	1.000

Table 3. Regression analysis.

Variable	Unstandardized Coefficient	Standardized Coefficient	t-value	p-value	VIF
(Constant)	3.219		8.044	0.000	
EL	0.015	0.024	0.321	0.749	1.108
EC	−0.036	−0.047	−0.629	0.530	1.083
FL	0.300[a]	0.233	3.153	0.002	1.076
AGE	−0.140	−0.091	−1.031	0.304	1.536
MS	−0.073	−0.033	−0.384	0.701	1.417
INC	0.033	0.069	0.712	0.477	1.846
N		192			
R-squared		0.067			
Sig. F.		0.045			

FL = Financial Literacy; EC = Environmental Concern; EL = Environmental Literacy, AGE = Age, MS = Marital Status, INC = Income.
[a] Relationship is significant at the level 0.05(P < 0.05).

only explain 6.7% of the variation in green preferences. The overall model fit is good with the F-test statistic being less than 0.05.

5. Conclusion

The objective of this study is to investigate whether financial literacy, environmental literacy and environmental concern have an effect on green preferences of Brunei's young adults. The study found that financial literacy has a significant positive relationship with green preferences in the regression study, hence higher financial literacy can improve green preferences. Both environmental literacy and environmental concern have positive but insignificant influences on green preference. Therefore, it is concluded that having higher levels of environmental literacy and concern do not automatically imply having higher green preferences. Unlike financial literacy, where better financial literacy coincides with higher green preferences, the key element here is to have financial literacy that can positively affect an individual's green preferences.

This study is limited by its data. As the data was collected during the Covid-19 outbreak, the survey was conducted solely through sharing and distributing questionnaire links to contact groups and emails. The challenge with this procedure is that participants may not be able to select various means of physical contact to elaborate further the data such as through interview, while some just simply remain unbothered. As a result, this strategy cannot guarantee that respondents will click on the survey link and take the time to complete the survey leading to some recipients may have ignore text messages and emails. It is also important to note that specific innovative methodologies could not be utilized in this study due to the limitations in the data. This underscores the ongoing need and opportunity for research in the field to discover new, innovative and impactful approaches, particularly to enhance understanding and address climate change challenges in Brunei Darussalam. Nevertheless, the research has used reliable and widely accepted methods to ensure the viability of the findings.

Conflict of interest

The authors are not aware of any conflict of interest.

Acknowledgements

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