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Public choice for payment vehicles of turtle conservation in Terengganu, Malaysia

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Abstract. *Kamaludin M, Alipiah RM, Nordin NSN, Afiqah N. 2023. Public choice for payment vehicles of turtle conservation in Terengganu, Malaysia. Biodiversitas 24: 636-644.* Sea turtle is known as the iconic natural heritage in Terengganu, Malaysia. Unfortunately, the turtle populations are declining these days due to many threats such as incidental catch, human activities, coastal development, irresponsible tourism, and poaching. Besides, erosion occurs on some beaches, reducing the area available for turtle nesting. This study determines marginal willingness to pay (WTP) for sea turtle conservation programs with two different payment vehicles i.e. tax collection and trust fund in Terengganu, Malaysia. The choice experiment (CE) method was utilized to calculate the marginal WTP of four attributes (population of sea turtles, communities involved, conservation activities and tax/trust fund). The study found that public placed a higher value of the marginal WTP on the 'conservation activities' attribute with RM3.32 (tax) and RM110.11 (trust fund), while the public exhibited higher values of WTP on the medium of payment vehicle (trust fund), where the coercive payment was not favorable among them. Therefore, a workable and suitable medium of payment is essential to support the efforts in protecting sea turtles and keeping coral reefs and sea grass beds healthy. After all, more sea turtles will survive and thrive to maintain the fragility of ecosystem's balance in the ocean.

Keywords: Conservation, choice experiment, sea turtle, stated preference, willingness to pay

INTRODUCTION

The chelonians (Testudines) are an order of reptiles characterized by a body covered with a special bony shell, commonly named turtles (marine chelonians), tortoises (terrestrial chelonians) and terrapin (freshwater chelonians) throughout the world (Flanagan 2015; Kemp 2019). In Malaysia, about 24 species or 6.7% of chelonians have been reported consists of Asian Hard-Shell Turtles (*Geoemydidae*), Softshell Turtles (*Trionychidae*), Sea Turtle (*Cheloniidae* and *Dermochelyidae*), Land Tortoises (*Testudinidae*) and New World Turtle (*Emydidae*) (Mohd Salleh et al. 2022). In terms of species diversity, Malaysia is a home to four sea turtle species while the other 20 species are freshwater turtles distributed all over Malaysia. With regard to sea turtles, four species reported in Malaysia are Green turtle (*Chelonia mydas*), Hawksbill turtle (*Eretmochelys imbricata*), Olive ridley turtle (*Lepidochelys olivacea*) and Leatherback turtle (*Dermochelys coriacea*) (Chan and Liew 1989; Mohd Salleh et al. 2022. The state of Terengganu is bestowed with high biodiversity of turtles with 17 species in total, including all four species of sea turtles, and 13 species of freshwater turtles (Ibrahim et al. 2018; Mohd Salleh et al. 2022).

Several endangered species including sea turtle population are declining every year. The most established bodies in conservation biodiversity are the IUCN (International Union for Conservation of Nature) and CITES (Convention on International Trade in Endangered Species of Wild Fauna and Flora) (IUCN 2001; Chan 2013; Mohd Salleh et al. 2022). The IUCN Red List (2019) classifies turtle species into nine groups from 'Extinct' (EX) to 'Not Evaluated' (NE) and has highlighted that sea turtle population was decreasing. At that point in time, there were 42.9% vulnerable, 28.6% were critically endangered, and 14.3% were categorized as both endangered as well as due to data deficiency. The situation demonstrated that the sea turtle population is at an alarming level. Several determinants such as natural or human factors have caused this situation. The natural factor, climate changes impact the sea turtle's population especially during the egg ripening process. The rising temperature has affected the sex determination of sea turtles as the number of female sea turtles increases during hatchling (Jensen et al. 2018). This would lead to unstable population where the female number is higher than the male population. Pollution from a high amount of plastic trash in the ocean threatens the turtles. The sea turtles tend to feed on plastics that look like jellyfish. WWF Malaysia (2020) discovered that if a turtle ate just one piece of plastic, it had a 22% chance of dying. The ingestion of plastics by sea turtles is found in all species (Duncan et al. 2021). The plastics' sharp edges can damage their internal organs and can cause intestinal blockages, making them unable to feed which leading to starvation. If the sea turtles survive, they will suffer from unnatural buoyancy and slow reproduction rate.

Sea turtle conservation is important because every source of marine life carries its role in ensuring stability in the marine ecosystem. The turtle species identified such as hawksbill, loggerhead, green, leatherback, and olive ridley are distinguished as endangered species, hence, they are the focus of conservation (WWF Malaysia 2020). This animal plays important roles to stabilize aquatic ecosystem, preserving healthy seagrass bed, coral reefs and helping marine food web at a balanced level (Oceana n.d.). Sea turtles hatch their eggs during nesting season and produce a hundred of eggs. These eggs will turn into food for some predators around the seashore and if those eggs failed to hatch, all the empty eggshells will provide nutrients for the microorganism and invertebrates to be recycled (WWF Malaysia 2020). Promoting conservation of sea turtles is significant to protect them from extinction and to ensure marine ecosystem maintains its balance.

Objectives of the study are (i) to assess the marginal willingness to pay (WTP) for sea turtle conservation, and (ii) to compare calculation of the WTP from two proposed different payment vehicles such as tax collection (tax) and trust fund (tfund). Thus, this study can close the gap by assessing publics' WTP for the proposed conservation trust fund and tax collection from the perspective of developing countries with the intention to address the ongoing biodiversity catastrophe.

MATERIALS AND METHODS

Sea turtle conservation programs in Malaysia have been implemented many years ago in many ways particularly, policy and legislation development (Abd Mutalib et al. 2013; Abd Mutalib and Fadzly 2015; WWF-Malaysia 2010, 2012; Mohd Jani et al. 2020; Poti et al. 2021); turtle egg protection and hatchery programs (Chan 2013; Abd Mutalib and Fadzly 2015; Mohd Jani et al. 2020); educational and awareness programs (WWF-Malaysia 2010, 2012; Chan 2013; Abdullah and Halim 2018) as well as institutional management programs (Chan 2013; Mohd Jani et al. 2020). Despite the widespread decline of turtle population in Terengganu and their ecological importance, one way to support turtle conservation programs is to demonstrate the economic importance of marine turtles by demonstrating an economic valuation.

This study applies a hypothetical method which is under Stated Preference (SP) method, namely Choice Experiment (CE) to observe public preferences on turtle conservation in Terengganu, Malaysia. The idea of the method was initially by Lancaster (1966), a 'commodity' is treated as the embodiment of a bundle of attributes or characteristics, which are the things of real interest to consumers. The CE method depends on random utility theory (RUT) (McFadden 1973). This study introduces the analysis of attributes-based utility for turtle conservation in Terengganu with tax and trust fund samples.

$$U_{nj} = \beta_1 pop_{nj} + \beta_2 comm_{nj} + \beta_3 cons_{nj} + \beta_4 tax_{nj} + \varepsilon_i \quad (1)$$

$$U_{nj} = \beta_1 pop_{nj} + \beta_2 comm_{nj} + \beta_3 cons_{nj} + \beta 4 tfund_{nj} + \varepsilon_i \quad (2)$$

The utility is expected to comprise an observable component and a random component depicted by a distribution. The utility obtained from option *j* by individual *n* is a function of the four attributes, such as population of sea turtles (pop), communities involved in conservation (comm), conservation activities (cons) and tax/ tourism fund (tax/tfund)) which describes turtle conservation in addition to an error term. The choice between options is probabilistic and the option leading to the maximum utility preferred by the individual. The condition is exemplified in (3). These utility functions, are linear and with assumption that the error terms follow a type I extreme value distribution which denotes conditional logit model (4). As the (4) depicts the attributes that do not vary by option and do not affect probabilities.

$$Prob_{ni} = Prob\ (\varepsilon_{nj} - \varepsilon_{ni} < X_{ni}\beta - X_{nj}\beta)\ j \neq i \in J \quad (3)$$

$$Prob_{ni} = \frac{\exp(\mu X ni \beta)}{\sum_{i=1}^{J} \exp(\mu x nj \beta)} \quad (4)$$

The CE aims at public's willingness to pay (WTP) either tax collection or trust fund to support turtle conservation in Terengganu. The study was conducted in Terengganu, located on the East Coast of Malaysia, where turtle is significant as a tourism symbol in the state. The animal is Terengganu's iconic pride, natural and cultural heritage for the state (WWF Malaysia 2016). Previously, Rantau Abang, Terengganu, was popular for its Leatherback Sea Turtle sightings, and the turtles would come ashore to lay eggs every year from May to October, back in the 1950s. Sightings decreased dramatically in the 1990s, from a high of 10,000 in the 1950s to 50 per year in the 1990s. By 2003, only two turtles had been spotted laying eggs here, effectively making this species extinct in Terengganu (Malaysia Today 2019). The reasons were poor treatment of these turtles on land by unethical visitors, sea pollution, fishing practices and egg poachers. In addition, erosion occurs on some beaches in Terengganu every year, reducing the area available for turtle nesting. Hence, one way to help minimize the decreasing rate of turtle is through conservation programs in the state.

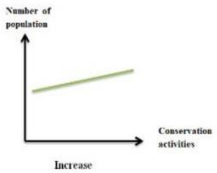
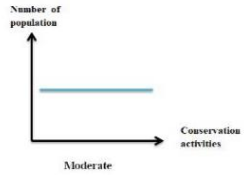
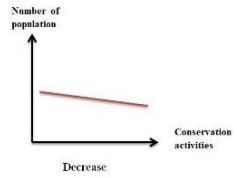
Questionnaire design

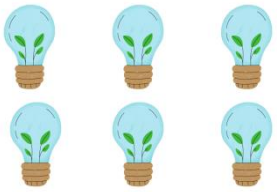
A questionnaire was constructed to assess public's preferences on attributes towards turtle conservation programs. The selection of attributes was based on literature reviews, input from conservationists and experts' opinions on turtle conservation. A pilot test was conducted to fine-tune the final version of questionnaire, whereby the questionnaire was further expanded and validated through a test with 25 respondents. The non-response and protest response rates were modest, and there were no serious issues during the pilot. Each respondent assessed 12 choice sets, where every set comprised two experimental turtle conservation programs and a 'no-option' option. The status quo was not available as a choice scenario, the respondent was in a 'forced choice' situation. Because of an absence of precise risk information regarding the public's sea turtle conservation activities, then a "forced-choice" scenario was selected. The final version of attributes and levels are

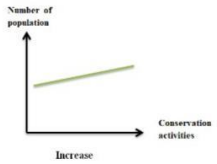
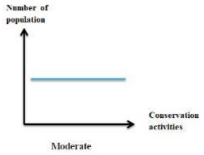
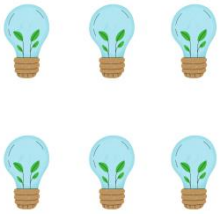
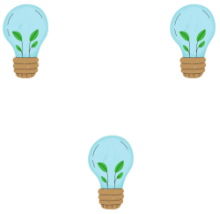
illustrated in Table 1 with two different methods of vehicle payments.

An experimental design was used to combine and select attributes and levels into a series of options. The experimental designs can be defined as a systematic arrangement in matrices of the values that researchers have used to describe the attributes representing options of hypothetical choice sets. The larger the number of attribute levels, the larger the experimental design will be (Bateman et al. 2004). This study has used fractional factorial designs which take only a subset of all possible combinations hence reducing the number of combinations presented to respondents. This study has performed an Efficient choice experimental design using STATA econometric software. The researcher then reduced the number of attributes and its levels offered to respondents is in Figure 1 in a choice card. Example of choice cards offered to respondents regarding improvement of sea turtle conservation in Terengganu as in Figure 1. Three options for turtle conservation were given in a choice card, where the respondents were requested to choose the most preferred option, which they derived the highest utility (Figure 1). The respondent chooses "Option C" if they do not prefer any proposed conservation activities in "Option A" and "Option B".

Table 1. Attributes and its levels

Attribute	Infographic of selected attributes	Descriptions
Population of sea turtles (Pop)	 Increase  Moderate  Decrease	The trend of the sea turtle population if the conservation activities ongoing
Communities involved in conservation (Comm)	 90 people  40 people  10 people	Total of the community involved in sea turtle conservation activities  : 10 people

Attribute	Infographic of selected attributes	Descriptions
Conservation activities (Cons)	 Large range  Medium range  Small range	Total range of the conservation activities for the sea turtle
Adding taxation per tourism (RM) (Tax)	 RM10  RM5  RM2	The amount of tax that should be paid by visitors
Trust Fund (RM) (TFund)	 RM50   RM30  RM10	Introduction of trust fund to support conservation activities that society is willing to pay

	Option A	Option B	Option C
Population of sea turtle			
Communities involved in conservation			
Conservation activities			No option
Trust fund per person (RM)			
Your choice?	**(A)**	**(B)**	**(C)**

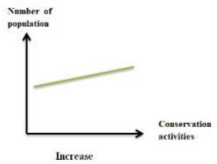
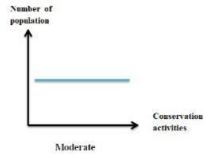
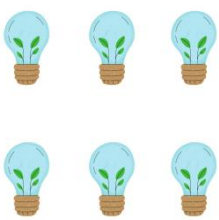
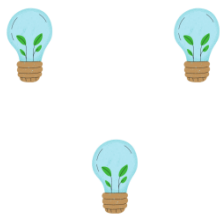
	Option A	Option B	Option C
Population of sea turtle			
Communities involved in conservation			
Conservation activities			No option
Taxation per tourism			
Your choice?	**(A)**	**(B)**	**(C)**

Figure 1. Choice card offered to *tax* and *tfund* samples in questionnaire

Data sampling

The researcher has conducted field survey data collection with 240 respondents in three months from June 2021 to August 2021. The survey was carried out with the assistance of trained enumerators. Purposive sampling was applied to choose the sample of respondents, where respondents that share a similar characteristic, such as direct experiences with the sea turtles will be involved in the study. The purpose of the sampling is to concentrate on certain characteristics of a population that is of interest. For instance, the estimated benefits in this study demonstrated only on the "use values" which are defined as values that involve physical contact with the sea turtles and services (i.e. sea turtle watching activities) derived from it. The respondents were divided into two samples according to their vehicle payments, tax collection (tax) and trust fund (tfund). Hence, each vehicle payment consisted of 120 respondents. According to Johnson and Orme (2010), the rule of thumb to calculate an appropriate sample size for the CE method by focusing on the attribute levels, as below;

$$N = 500 \times L/(A \times C) \quad (5)$$

Where, N shows the sample size, A shows the number of alternatives per choice set in the absence of status quo, C shows the number of choice questions and L demonstrates the largest number of attribute levels. The calculation generated a total of 63 respondents required, thus 120 respondents involved in each sample is appropriate.

For tax collection, the respondents were informed that the tax would only be used for turtle conservation programs, that they should be careful with their budget constraints, and that additional uses could be initiated for higher tax revenues. For trust fund, the respondents were notified that the fund would only be used for conservation, thus they should keep in mind that their budget constraints would shift as other spending was involved. Estimation of marginal willingness to pay (WTP) measures is associated with unit changes in the improvement of sea turtle conservation in the state.

RESULTS AND DISCUSSION

Table 2 provides socio-economic descriptions for two samples of tax collection and trust fund, which totaled 240 respondents from Terengganu, Malaysia, who have direct experience (i.e. entailing physical contact with the sea turtles and its services) with turtles. Most of the respondents involved in both samples were male and they were from the Malay majority, this conformed to the fact that Malay contributed more than 90% ethnic identity position in the state.

Table 3 presents public's perceptions of sea turtle conservation trust fund. The most relevant opinion is about 25% of respondents believed the trust funds could protect sea turtles from extinction. Cárdenas and Lew (2016) indicated that donations would lower the risk of extinction of endangered species and people were more likely to donate to Galapagos Marine Reserve in the future. About 22.55% of respondents believed the sea turtle trust funds conservation should be a shared responsibility. They also thought that species protection should not just be left to the community only (Cárdenas and Lew 2016). Moreover, 19.17% of respondents felt that the fund's contribution is important for the benefit of the present and future generations. Other than that, the trust funds could preserve the sustainability of marine ecosystem as agreed by 17.5% of respondents. Finally, 15.83% of respondents assumed the funds could raise awareness of the extinction of sea turtles.

The Conditional Logit (CL) analysis for the CE method regressed with NLogit Version 4.0 econometric software (Table 4). The researchers combined all data from the two samples and observed that the two models in Table 4 offered the best match as well as intriguing findings for interpretation after testing numerous models. The first sample demonstrated "population of sea turtles" attributed with a positive relationship at 5% significant level. Public was to select options on how to increase population of the turtle as they agreed that the animal is an iconic heritage to the state. Next, "communities involved in conservation activities" attributed a negative relationship where the results indicated the communities involved in payments against tax collection was 73 percent with 120 respondents did not agree to pay, for the reason that the conservation activities should be paid by the government. The lack of knowledge of the rules and regulations, lack of information and the existence of some species are the main reason why communities did not involve and were not interested in conservation activities (Bennet and Dearden 2014).

Table 2. Summary of socio-demographic respondents by payment vehicle sub-samples

	Tax collection		**Trust funds**	
	Freq	**%**	**Freq**	**%**
No. of respondents	120	100	120	100
Gender				
Male	42	35	29	24.2
Female	78	65	91	75.8
Education level				
No education	0	0	0	0
Primary school	0	0	0	0
High School	16	13.3	7	5.8
Diploma	23	19.2	23	19.2
Degree	78	65.0	88	73.3
Master/PhD	3	2.5	2	1.7
Ethnic Identity				
Malay	110	91.7	112	93.3
Chinese	5	4.2	0	0
Indian	4	3.3	2	1.7
Others	1	0.8	6	5.0
Individual income				
< RM 3,000	72	60	85	70.8
RM 3,000-5,000	26	21.7	24	20.0
RM 6,001-9,000	5	4.2	7	5.8
>RM 9,001	17	14.2	4	3.3

Table 3. Public's perceptions of sea turtle trust funds

Perceptions	Freq.	Percent. (%)
I think the fund's contribution to sea turtle conservation is a shared responsibility	27	22.5
Trust funds can help protect sea turtles from extinction	30	25
I believe that the fund's contribution is vital for the benefit of present and future generations	23	19.17
Trust funds at least can preserve sustainability of marine ecosystem	21	17.5
Trust funds can raise awareness of the extinction of sea turtles	19	15.83

Table 4. Conditional Logit (CL) analysis

Attributes	Tax collection	Trust fund
Population of sea turtles	0.2293**	0.3156**
	(0.0751)	(0.1192)
Communities involved in conservation activities	-0.0190**	-0.2104***
	(0.0070)	(0.0594)
Conservation activities	0.7861***	3.4474***
	(0.1168)	(0.9251)
Tax collection	-0.2368***	-
	(0.0417)	
Trust fund	-	-0.0313***
		(0.0076)
Pseudo R^2	0.2472	0.1259
No. of observation	1440	1440

Note: *Significant at p<0.10; **significant at p<0.05; ***significant at p <0.01. Standard errors in parentheses

Table 5. The marginal willingness to pay estimates for attributes

Attributes	Tax collection	Trust fund
Population of sea turtle	0.97	10.08
Communities involved in conservation activities	-0.08	-6.72
Conservation activities	3.32	110.11

Note: Calculations of the WTP are in Ringgit Malaysia (RM), USD1: RM4.18

Besides, the fact that respondents supported conservation activities with tax collection indicates a positive relationship. Based on Abd Mutalib et al. (2013), people who play the role in community-based conservation activities are the valuable tools to encourage others in understanding responsibility towards the environment. It is vital to protect sea turtles through conservation activities because their existence maintains healthy and functional ecosystems for future generations (WWF Malaysia 2016). Moreover, the tax collection to support conservation programs has depicted a negative relationship with the respondents, where the higher the imposed tax, the lower willingness to pay will be. The finding was similar to Kamaludin et al. (2019) where the respondents' willingness to pay decreases when the offered price increases.

In trust fund sample, attribute of population of sea turtle demonstrated a positive relationship with 5% significant level, suggesting that public supported conservation of the species via contribution through trust fund. However, coefficient of "communities involved in conservation activities" portrayed a negative relationship with those respondents who lived in rural areas. Basically, they mostly worked as fishermen and farmers. Therefore, they did not have time or any opportunity to be involved in any program. A similar finding has occurred in rural areas in Portugal, where the community lacking involvement in conservation programs was obvious (Thaman et al. 2016). These were due to the wide range of livelihoods, lack of knowledge, decreased biodiversity, different cultures as well as unstable land price. These factors would lead to inefficiency in conservation efforts. Furthermore, the attribute of sea turtle conservation activity has a positive relationship with a highly 1% significant level.

Other than that, the attribute of trust funds demonstrated a negative relationship, where the higher the suggested amount, the lower willingness to pay of the respondents portrayed, as tallied with the law of demand, at a higher price, people demanded less quantity of goods/services. Moreover, Aseres and Sira (2020) in their research recommended conservation trust funds for generating additional funding sources than new pricing. This is because the introduction of a new pricing policy may have an impact on the visitors' trends resulting in a decrease in tourist spending. However, while maintaining the capital of a fund, detailed skills and specialized management abilities are required.

Implicit price refers to the mean willingness to pay for a "marginal" change in an attribute. CE offers a statistically efficient means of estimating WTP for marginal changes in a range of attributes for improvements in turtle conservation programs. The estimation of marginal willingness to pay (MWTP) can be determined below.

$$\text{MWTP} = -\frac{\beta_{attributes}}{\beta_{payment\ vehicle}} \quad (6)$$

Calculation of the MWTP for attributes that consist of population of sea turtles, communities involved in activities and conservation activities as shown in Table 5 in Ringgit Malaysia (RM). The choice of payment vehicle can significantly affect people to further improve conservation of sea turtles' activities with two payment vehicles, tax collection and trust fund. If using a trust fund as payment vehicle, the implicit price of "conservation activities" attribute is RM110.11, which shows higher values in attributes than the tax collection. Coercive payment such as through tax collection was not in favor among respondents in developing countries as evidently, there was only a small percentage of the population paid taxes effectively in Malaysia (Hassan et al. 2018). Gordon and Li (2009) indicated taxes often impose on only a small fraction of the population in emerging economies, whereas tax policy

monitoring and enforcement might be restricted. Respondents ignored the aspect of number of communities involved in conservation activities in the two samples because they believed that was not an important attribute to guarantee the sustainability of the animals.

In this case, higher value of implicit price of "conservation activities" attribute is supported by Hassan et al. (2017), who demonstrated that community voluntary participation in conservation programs builds a better understanding of human-sea turtle relationship. This will urge the locals' and the public's sea-custodian spirits which are crucial for the survival of sea turtles.

On one hand, Sulle and Banka (2017) presented impacts of taxes proposed on tourism activities and found that the revenue of tourism activities would decline due to the high tax. The communities who lived nearby would get a lower return on the revenue. This scenario posed an impact on the communities where conservation activities were seen as impossible. The effect of tourism on tourists' budget allocations and the impacts of the taxation for the demands on tourism was at a micro-level (Song et al. 2019). The tax reduces the expenditure at destination for the goods (food and accommodation), while spending on transportation fuels for outbound tourism. On the other hand, Wang et al. (2019) analyzed the impacts of an environmental tax from both urban and rural areas, where the taxation would affect equality in both areas since the income of rural area is usually lower than in urban area. The taxation could increase the expenditure of an individual who is willing to pay the taxes. The real income declines and the purchasing power reduces due to the tax that they must pay.

This study adds to the current non-market valuation literature by assessing publics' WTP using a CE to protect sea turtles, particularly where conservation funding is insufficient. The CE allows people to make their choices, where they implicitly produce trade-off between the level of attributes for contribution of turtle conservation programs. The findings of these studies highlighted that there were differences in estimating welfare values using either tax collection or trust fund payment vehicles. The estimation from the findings indicated that the trust funds were an appropriate payment vehicle for conservation of the turtles in the state. Apparently, the respondents placed a higher value on trust fund payment vehicles than tax collection. Public was willing to pay with conduction of trust fund to support sea turtle programs, whereas they were not ready to allocate their spending for conservation of the animals with coercive payment, i.e. tax collection in Terengganu. Besides, most of the respondents involved were making less than RM3000 per month (Table 1), while the average household income in the state in 2019 was RM6815 (Department of Statistic Malaysia 2021). Nevertheless, the public's contribution is still necessary to secure existence of the turtles, considering that the animal is a prominent heritage to the Terengganu state. While, Teh et al. (2018) conducted an economic valuation for marine turtles in Sabah, Malaysia found that the estimated non-consumptive value (marine tourism) far exceeded the non-use values (ex-gratia payment, conservation investment and willingness to pay) and consumptive use value (consumption and sale of eggs) of marine turtles.

The results established that the four attributes were significantly affect public's preference to conserve sea turtle in the state. As the attribute of conservation activities (Cons) was the most preferred among the respondents, where they were willing to allocate money to enhance the implementation of conservation activities. At least, the mass sea turtle conservation programs will save the animals from extinction. Not only the animal is the icon of the state, but its existence is also important for maintaining the health and stability of the ocean ecosystems. One scenario of an imbalanced ecosystem is when there is more population of jellyfish in the ocean. Jellyfish is known as a part of the sea turtles' diet, but when the turtles decrease, these jellyfish populations will compete with fish for plankton. Thus, the lack of plankton will affect the country's fish stocks. Consequently, protecting these turtles is significant as an effort in ensuring the sustainability of the country's fisheries industry. Presently, by looking at the increase in turtle death cases, the threat is going on in the oceans and the cause of deaths of stranded turtles is still uncertain (Rusli 2022). Then, enforcement should be taken more seriously and broadly to prevent extinction of the turtles, particularly in the case of the turtles being trapped in fishermen's nets. In this regard, the state government should be strict in this matter, as anyone who commits an illegal act must face the consequences. For instance, The Malaysian Fisheries Department prohibits the use of nets larger than 25 centimeters, though many fishermen do not adhere to the rule. Besides, The Terengganu state assembly passed the Turtle Enactment 1951 (Amendment 2021), which, among other things, prohibits the trade of all types of turtle eggs which is starting 1st June 2022 and imposes much strict penalties for offenses against marine creatures. The intervention from the government at least can abolish the egg trade activities in the market and the ban on the sale of turtle eggs of all species would not have effects on the sellers as the selling turtle eggs activities are merely their extra income. Protecting and conserving the turtles includes working towards accomplishing a few Sustainable Development Goals (SDGs) i.e., Goal 13 Climate Action, Goal 14 Life Below Water, and Goal 15 Life on Land. The conservation programs safeguard the sustainability of humanity and the biosphere in accordance with the SDGs. By integrating with the SDGs, with an emphasis on ways to reduce the impact on the environment, the sea turtle must be protected to achieve a balance between the determinants which prosper economic development and sustainable environmental practices.

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