



SCAN ME

Awareness of ISM members about endangered species in Malaysia



INTRODUCTION

Some species of animals, including Malayan tapir have been declared as an endangered species in Malaysia due to deforestation, accompanied by habitat loss. Authorities have set up some conservative measures and campaigns to raise public awareness and protect the endangered species. This study will focus on the level of awareness and general support of Institute of Mathematical Sciences (ISM) staff and students on endangered species in Malaysia. The data are taken from the survey conducted among the Institute of Mathematical Sciences (ISM) members (Scan the QR-Code provided for more information regarding the background and source of data). The findings are crucial for the initiatives that can promote the ISM community's awareness on the conservation of endangered species in Malaysia for the benefits of our posterity.

OBJECTIVES

1. To compare the general support of ISM staff and students towards endangered species conservation in Malaysia.
2. To identify the proportion of ISM members according to the level of awareness towards Malayan tapir endangerment issue.

METHODOLOGY

In this analysis, descriptive analysis is used for the first objective and decision tree for the second objective. Decision tree is a classification procedure that applies recursive partitioning to the dataset. The information gain measure is used to select the alternative splits. The measure to capture the information needed to group the observations, is

$$info(D) = -p \log_2(p) - n \log_2(n) \quad (1)$$

where p: Proportion of binary observations
n: The size of dataset

The binary partition of the training dataset that are resulted from each choice of split results were named as D_1 and D_2 , where $D = D_1 \cup D_2$. I_1 and I_2 are information measures of each of these subsets. A measure of the combined information, or entropy is obtained as

$$info(D, S) = \frac{|D_1|}{|D|} I_1 + \frac{|D_2|}{|D|} I_2 \quad (2)$$

The measure of the gain in "knowledge" is obtained by comparing the combined information with original information.

$$gain(D, S) = info(D) - info(D, S) \quad (3)$$

The split that provides greatest gain in information is chosen. In the decision tree, the leaf nodes where the tree does not split anymore contain the decision needed.

RESULT

OBJECTIVE 1

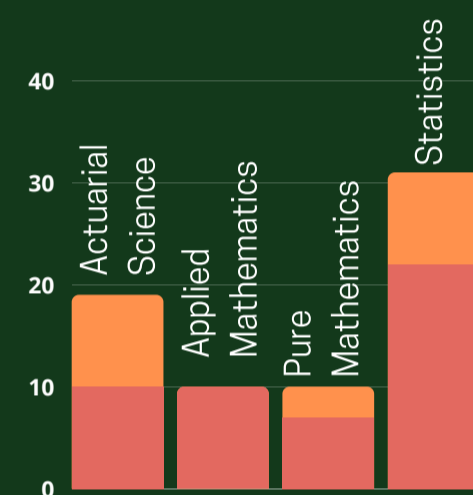


Figure 1: Bar graph of ISM members support towards endangered species based on physical appearance according to the courses.

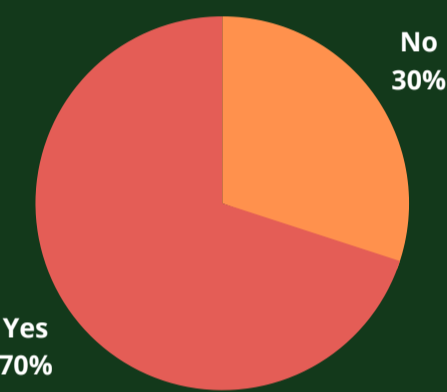


Figure 2: Pie chart of ISM members support towards endangered species based on physical appearance.

70% of the ISM members are **more inclined** to support an endangered animal if they liked its physical appearance.

67%

of the ISM members were **strongly agreed** to encourage the authorities to prevent industrial development in certain areas to protect this endangered species.

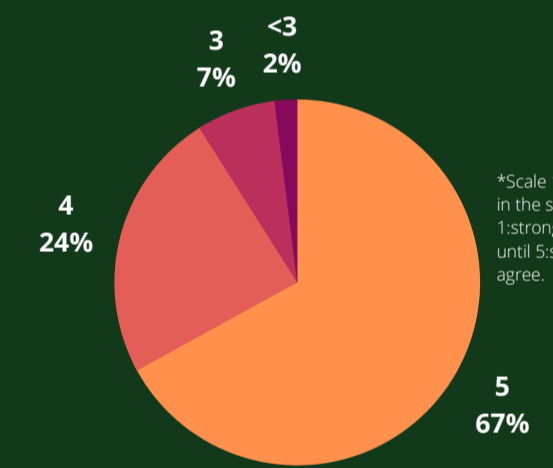


Figure 3: Pie chart of ISM members' opinions about encouraging the authorities to prevent industrial development to protect the endangered species.

*Scale 1-5 is used in the survey with 1-strongly disagree until 5-strongly agree.

OBJECTIVE 2

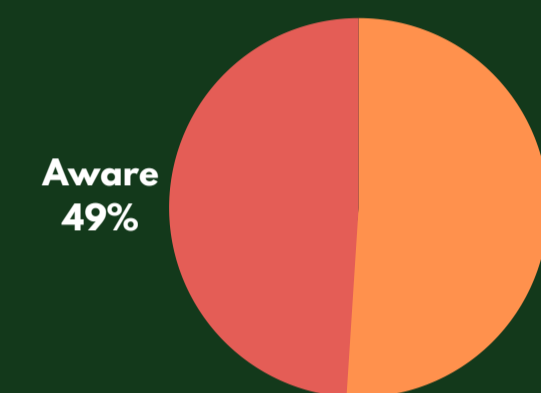


Figure 3: Pie chart of ISM members awareness of the state of extinction of Malayan tapir.

51%

of the ISM members are **not aware** of the state of extinction of Malayan tapir.

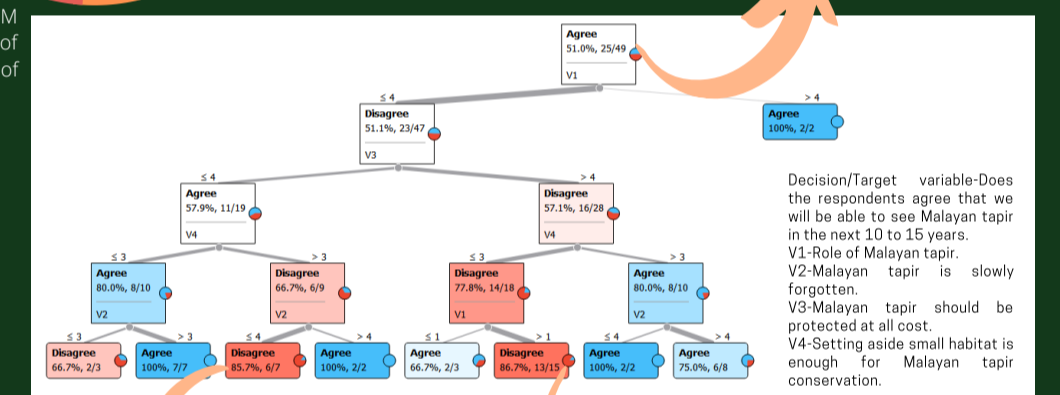
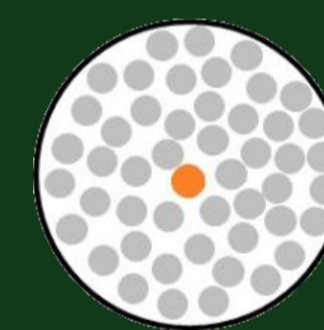


Figure 4: Decision tree of awareness of ISM members about the endangerment issue of Malayan tapir.

*Scale 1-5 is used in the survey with 1-strongly disagree until 5-strongly agree.



1/49 Only 1 member out of 49 has poor knowledge on this issue.



1 OUT OF 3 Only 1 out of 3 ISM members has a **high awareness level** on the endangerment issue of Malayan tapir.

CONCLUSION

As a conclusion, we figured out that most ISM members are aware and have the basic knowledge on the endangerment issue of Malayan tapir and that they will support any initiatives of endangered species conservation, but favorable appearance is observed to be a biasing factor. The findings are crucial for the government and local organization of endangered species conservation as guidelines in planning future campaigns. The target audience for future campaigns should focus on one specific community at a time to ensure each of us knows exactly our duty in protecting endangered species. One thing to bear in mind is this analysis is very sensitive towards any changes as the inputs were based on rational expectations. Increasing the number of observations and including respondents with different backgrounds in future study can raise the accuracy and reliability of this analysis.

References:

- Hear how the physical appearance of certain animals influence in saving endangered species at the expense of rational conservation approach. (n.d.). Encyclopedia Britannica. Retrieved December 25, 2020, from <https://www.britannica.com/video/185606/role-appearance-prioritization-species-conservation-decision-making>
- Anon. Can Malaysia protect any of its endangered species from extinction? Retrieved from <https://www.geography.org.uk/teaching-resources/singapore-malaysia/Can-Malaysia-protect-any-of-its-endangered-species-from-extinction>