

## Extended Abstract

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| <b>Paper Title</b> | <b>Application of the Theory of Planned Behaviour in Assessing Willingness to Pay: A Case Study for Malayan Tiger Conservation</b> |
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**Abstract prepared for presentation at the 98th Annual Conference of The Agricultural Economics Society will be held at The University of Edinburgh, UK, 18th - 20th March 2024.**

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| <b>Abstract</b>   | <b>200 words max</b>  |
| <p>The Malayan tiger, also known as "<i>Panthera tigris jacksoni</i>", is listed as one of the new subspecies of tigers with a unique DNA. The International Union for Conservation of Nature (IUCN) has placed it on the red list and presently, the tiger population has fallen to under 200 tigers in the wild, pointing to the need of conservation. Understanding human conservation behaviour and factors that motivate it could determine the success of conservation policy. The objective of this study is to evaluate the relationship between attitude, subjective norms and perceived behavioural control, and the visitors' willingness to pay (intention) for Malayan tiger conservation in Taman Negara Pahang, Malaysia. Three hypotheses were tested using a structural equation model. We administered face-to-face interviews, leading to 315 valid responses. The results showed that attitude, subjective norms, and perceived behavioural control significantly impact visitors' willingness to pay for Malayan tiger conservation. The attitude was the main driver, followed by perceived behavioural control and subjective norms, the latter pointing to the role of relevant others. Therefore, this input should be incorporated into future Malayan tiger conservation policies.</p> |   |
| <b>Keywords</b>   | Theory of Planned Behaviour, Structural Equation Modelling, Malayan tiger, Willingness to Pay, Conservation |
| <b>JEL Code</b>   | D10, D90, D91, Q57  |
| <b>Introduction</b>   | <b>100 – 250 words</b>  |
| <p>The Malayan tiger population has decreased from around 3,000 tigers in the 1950s to approximately 250 to 340 in 2013, signifying a continuous decline in tiger numbers. This alarming decrease is caused by persistent poaching, illegal trade, deforestation, and declining prey numbers. Currently, the Malayan tiger is listed as a critically endangered species under the IUCN Red List, with only 200 tigers left in the wild. Despite all the protection attempts by various domestic and international organizations, the Malayan tiger population continues to shrink while the numbers of tigers are increasing globally. Social and environmental considerations have become essential components of human' decision-making processes in this regard. Human behaviours are a significant driver of most environmental issues, and understanding human conservation behaviour in particular is critical to the success of conservation policy. Moreover, social psychologists have considered different elements that might drive human decision-making, attitude, and behaviour. They have found that behavioural dispositions such as beliefs, social attitudes, and personality traits play an essential</p>  |   |

role in influencing, predicting, and explaining individual behaviour. Therefore, to increase the numbers of Malayan tigers in the wild, it is crucial to understand factors influencing the promotion of tiger conservation strategies. We frame the behaviour as willingness to pay for conservation of the Malayan tiger and detect intentions in this regard (stated preferences).

## **Methodology**

**100 – 250 words**

Our data were collected in Taman Negara, one of the largest and best-known parks in Malaysia, covering an area of 4,343 km<sup>2</sup>. This is also an important area for tiger conservation due to its strategic location in Malaysia's Central Forest Spine, where tiger density ranges from 1.10 to 1.98 tigers/100 km<sup>2</sup>.

The most commonly used theoretical framework to understand human behaviour is the Theory of Planned Behaviour (TPB) and many studies have used the TPB to explain people's behaviour towards environmental conservation and management.

Based on the extant literature, we propose the following hypotheses:

H1: A significant positive relationship exists between visitors' attitude and their intention to pay for Malayan tiger conservation.

H2: A significant positive relationship exists between visitors' subjective norms (stated preferences of significant others) and their intention to pay for Malayan tiger conservation.

H3: A significant positive relationship exists between visitors' perceived behavioural control (i.e., the ability to conduct the action) and their intention to pay for Malayan tiger conservation.

The data to test our hypotheses are obtained by means of Likert scales in questionnaires. A pilot study was conducted prior to the actual survey to validate the questionnaire. Face-to-face interviews were administered, which led to 315 valid responses from individuals aged 18 to 66.

The data were analysed using Structural Equation Modelling (SEM). The measurement model was estimated using confirmatory factor analysis (CFA) to define the indicators for each construct of independent or dependent variables and examine the relationship along with assessing the construct validity.

## **Results**

**100 – 250 words**

The measurement model met acceptable model fit criteria. Construct and convergent validity were evaluated by assessing the factor loadings, Average Variance Extracted (AVE), and Composite Reliability (CR). All standardized factor loadings were positive for all items and exceeded the critical threshold of 0.5, while Cronbach's Alpha values exceeded the critical value of 0.7 for all variables. All latent variables had acceptable AVE values and were higher than the squared correlation estimates. For CR, all values ranged between 0.775 and 0.871, higher than the threshold of 0.7.

The estimated standardized structural model result shows that each dependent variable has a significant and direct positive relationship with the independent variable, i.e., the intention to pay for Malayan tiger conservation. Thus, all the three hypotheses were supported. Attitude had the most significant positive impact on behavioural intention ( $\beta = 0.35$ ,  $P < 0.01$ ), confirming the first hypothesis (H1). The second hypothesis (H2) is also supported, whereby subjective norms have a positive significant impact on

behavioural intention ( $\beta = 0.29$ ,  $P < 0.01$ ). The third and final hypothesis (H3) is that perceived behavioural control has a positive effect on behavioural intention, and it is indeed supported ( $\beta = 0.31$ ,  $P < 0.01$ ).

These findings on the positive relationship between the original constructs of the TPB and the intention to pay for Malayan tiger conservation is consistent with other previous studies on nature conservation.

### **Discussion and Conclusion**

*100 – 250 words*

The main objective of this study was to evaluate the relationship of attitude, subjective norms, and perceived behavioural control with the intention of paying for Malayan tiger conservation among visitors of Taman Negara Pahang. Three hypotheses were tested using SEM analysis. The hypothesis testing confirmed a significant positive impact of attitude, subjective norms, and perceived behavioural control on the intention to pay for Malayan tiger conservation.

Attitude has the greatest influence, followed by perceived behavioural control and subjective norms. The main factors that contribute to the positive attitude are the belief that Malayan tiger conservation is useful, and that paying for its conservation is a responsible act that benefits the future. Therefore, policymakers could incentivise visitors' willingness to pay for Malayan tiger conservation by addressing their expectations for conservation programs as a useful, responsible action for the sake of future generations. Park management, for their part, should ensure that the ambience for families and friends visiting the national park is suitable for leisure activities, as the intentions of relevant other matter.

Ultimately, the respondents exhibited a positive intention to pay for Malayan tiger conservation when they realise that paying for tiger conservation is within their control. This suggests that policymakers should clarify how the visitors can help conserve the Malayan tiger by organising attractive quality programs that educate people about tiger conservation, and encourage them to join the programs. Future studies could implement field experiments to test if stated willingness to pay is reflected in actual behaviour, e.g., donations.