

# Sustainable Travel Behaviour of Chinese Tourists

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The 17th UNWTO/PATA Forum on Tourism Trends and Outlook  
Guilin, China  
26-28 October 2023



# Agenda

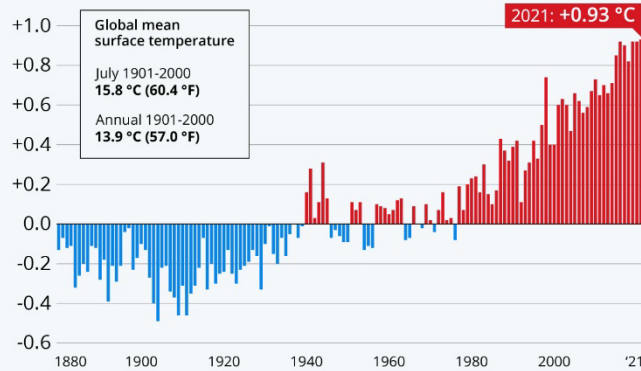
- Introduction
- Research Questions
- Research Objectives
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# Introduction | The Global Call for Sustainability



## July 2021 Was the Hottest Month on Record

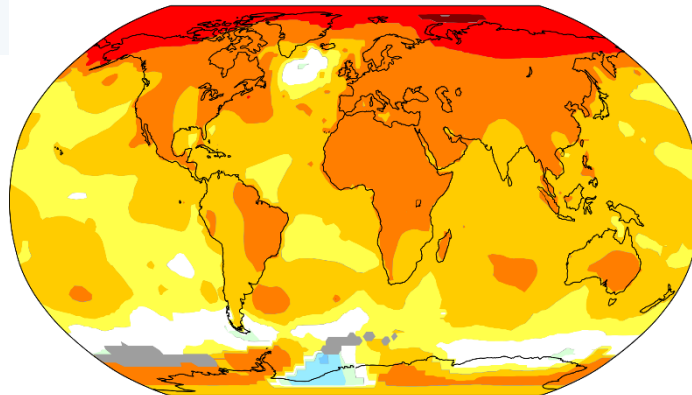
Global land and ocean surface temperature anomalies in July (°C compared to the 20th century average)



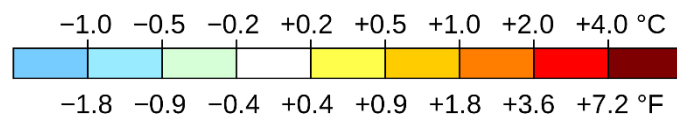
Source: NOAA



Temperature change in the last 50 years



2011–2021 average vs 1956–1976 baseline



- The Intergovernmental Panel on Climate Change (IPCC, 2019) indicated that continued carbon emissions substantially drive global warming, which has resulted in and will continue to cause severe, pervasive and irreversible impacts on global ecosystems.
- A joint worldwide commitment was thus proposed by the United Nations Framework Convention on Climate Change (UNFCCC) to limit global warming to no more than 1.5°C higher than the pre-industrial level (UNFCCC, 2022).

# Introduction | What is Sustainable Travel Behavior?

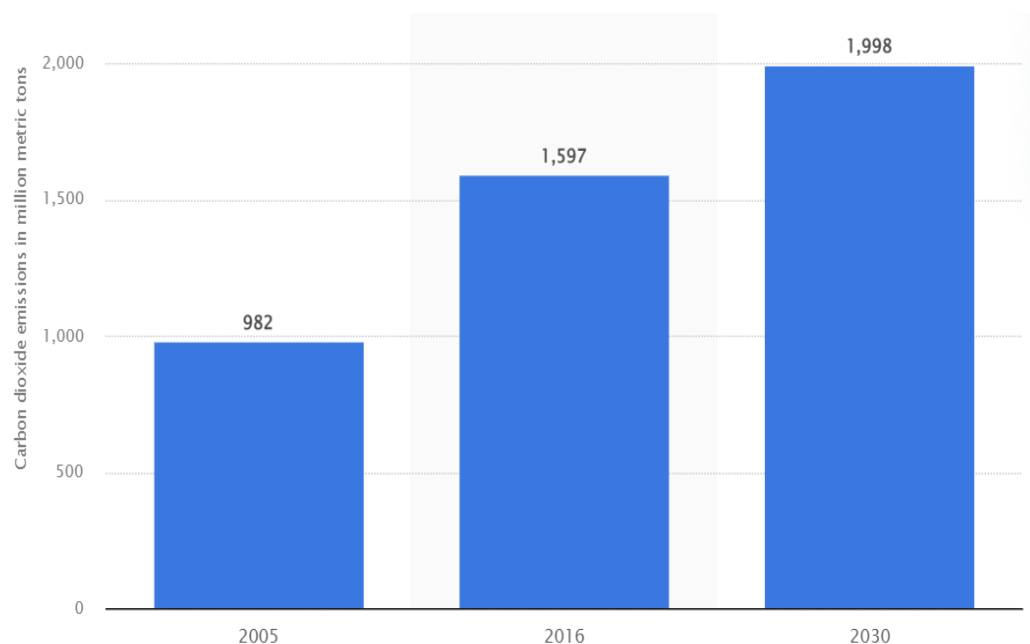
- “Sustainable travel behavior” refers to the actions, choices, and attitudes exhibited by individuals while engaging in travel activities that demonstrate a commitment to environmental sustainability.
- Sustainable travel behavior includes
  - selecting eco-friendly accommodations
  - choosing low-carbon transportation options
  - practicing waste reduction and recycling
  - supporting local and sustainable businesses
  - respecting natural and cultural heritage, and
  - participating in conservation and environmental education initiatives
- Sustainable travel behavior reflects a conscious effort to minimize the negative impact of travel on environment and to promote sustainable practices in tourism.



# Introduction | Why Does Sustainable Travel Matter?



- Carbon emissions from tourism grew by at least 60% from 2005 to 2016 and were predicted to rise by 25% or more by 2030 if decarbonization actions are not taken (UNWTO and ITF, 2019).
- Tourism remains one of the main sources of carbon dioxide emissions due to fossil fuel consumption for transportation and electricity generation in tourist accommodation/attractions.
- Tourism is an important contributor to climate change, accounting for approximately 8% of global carbon emissions (Lenzen et al., 2018).
- Given the reciprocal impacts of climate change on tourism and vice versa, the tourism industry is not exempted from the global pressure to achieve carbon neutrality by 2050.
- The growing awareness of climate change necessitates the adoption of environment-friendly modes of travel.
- Therefore, the development of sustainable tourism has become increasingly important for destinations as well as tourists.



Source: UNWTO (2023)

# Introduction | Why Does Sustainable Travel Matter?

- Officially introduced in July 2021, China's carbon emission trading system is the largest in the world, with a coverage of about 4,800 million tones of CO2 emissions.
- 287 carbon offset projects have been registered in the China Certified Emission Reduction (CCER) system since 2013 .
- By September 2019, a total of 202 million tones of CO2-equivalent emissions had been traded (Slater et al., 2019).
- Carbon offsetting is important for the tourism industry's engagement in achieving carbon neutrality .
- However, due to the limited availability of accessible offset products, tourists have often been excluded from participating in decarbonization activities or carbon emission trading markets.
- The development of carbon offset products in tourism requires effort and co-operation across all stakeholders in tourism.



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# Introduction | Tourists' Role in Sustainable Travel

- Tourists can minimize their carbon footprint by opting for eco-friendly transportation and responsible lodging choices.
- The development of travel carbon offset (TCO) products requires an in-depth understanding of tourists' decarbonization preferences.



# Introduction | Tourists' Role in Sustainable Travel



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## Buy Carbon Offsets

The carbon footprint of the average American is 17 tonnes. Join us and reduce what you can, then buy carbon offsets for the rest.



CALCULATED TOTAL

**\$280.33**

1 tonne = \$16.49 USD

OFFSET NOW

[Already know your output?](#)  
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## Research Questions

- **Tourists' preferences for low-carbon footprint travel**
  - Will Tourists choose low-carbon footprint travel?
  - Can nudging boost tourists' low-carbon footprint travel choices?
- **Offset as a solution for tourism decarbonization**
  - Are tourists willing to pay for travel carbon offset products (TCO)?
  - What are the factors that influence tourists' choices of TCO?

# Research Objectives

To investigate Chinese tourists' preferences for low-carbon footprint travel choices with consideration of a nudging effect.

To explore Chinese tourists' preferences for and their WTP for travel carbon offset (TCO) products.



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# Research Content



## Can nudging affect Chinese (HK) tourists' low-carbon footprint travel choices?

H1. Carbon emission-related attributes significantly influence tourists' destination choices.

H2. Tourists have a significant positive WTP for low-carbon footprint travel.

H3. Nudging has a significant positive effect on tourists' selection of low-carbon footprint travel.

H4. Tourists with higher (vs lower) climate change perception are more likely to choose low-carbon footprint travel.

H5. Tourists' sociodemographic factors have significant effects on their low-carbon footprint travel choices.

## Are Chinese tourists willing to pay for travel carbon offset products?

H1. Tourists have a significant positive WTP to offset carbon emissions.

H2. Green trust towards carbon offsets positively influences the choice probability of selecting a TCO product.

H3. Tourists with carbon offset experience are more likely to offset their carbon emissions than people without such experience.

H4. Tourists' socio-demographic characteristics significantly influence their choice of TCO products.



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# Research Content

## *Can nudging affect tourists' low-carbon footprint travel choices?*

- Tourists are required to select the travel destinations considering attributes including destination type (i.e., short- and medium-haul destinations and long-haul destinations), destination temperature, carbon dioxide emissions of the trip per person, tourism-related carbon offset projects, and carbon offset payment.
- A piece of nudging information regarding the impacts of climate change was provided for the tourists in treatment group before they made the destination choice.

Imagine you are planning a *[response to question 1.3]* days leisure trip with *[response to question 1.5]* persons. You will select a destination that you prefer and go there by plane during October and November. The average temperature in Hong Kong at that time is 23~26°C. When you are making the travel plan, you see a piece of news about carbon emissions on social media: Carbon dioxide emissions have had severe impacts on the entire world. According to the Intergovernmental Panel on Climate Change (IPCC), continued carbon emissions largely determine global warming and increase the likelihood of severe, pervasive and irreversible impacts on ecosystems, including more frequent wildfires and extreme weather, accelerated sea-level rise and mass extinction of species etc. Travel activities are also affected by global climate change which is caused by excessive carbon dioxide emissions. Everyone has the responsibility to take action to reduce carbon emissions for environmental protection and sustainable tourism development.



Source: The first two images courtesy of iStock; the third image courtesy of Arne Naevra



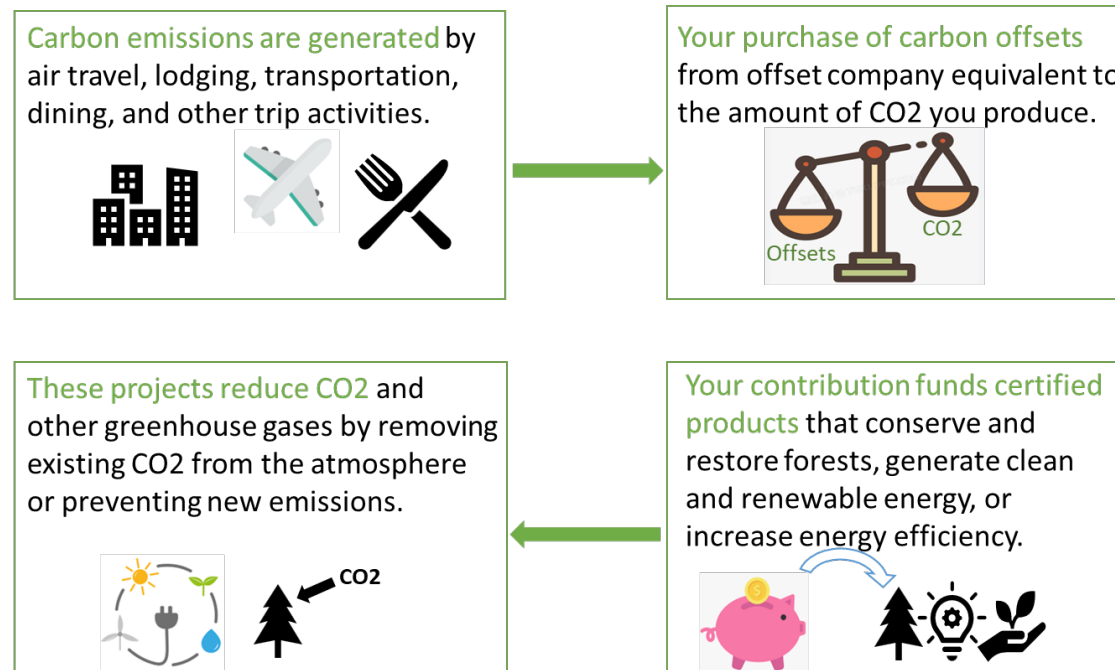
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# Research Content

## *Are Chinese tourists willing to pay for travel carbon offset products?*

- Tourists are required to select the travel destinations considering such attributes as CO2 offsetting contribution, project locations, project types, offset project providers, contribution from product providers, payment time, and carbon offset price.



# Results



## *Can nudging affect tourists' low-carbon footprint travel choices?*

- Tourists care about destination type, carbon emissions, and travel expenditure when they selected destinations.
- Tourists are willing to pay relatively more for destinations closer to home.
- Tourists prefer to avoid destinations that release high levels of carbon emissions and select destinations that supported and promoted carbon offset projects.
- Nudging increases the tourists' choice of the low-carbon emission trip and improves individuals' awareness of environmental protection.
- Tourists with higher climate change perception are more willing than others to travel to low-carbon-emission destinations that supported carbon offset projects.
- On average, a tourist was willing to pay an average of US\$50 per trip per ton of CO<sub>2</sub> emission, which was higher than the social cost of carbon emission, which is roughly US\$42/ton in 2022 (Nordhaus,2017).

# Results

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## *Are Chinese tourists willing to pay for TCO products?*

- Tourists were more likely to choose a TCO product that was implemented either in domestic or overseas destinations.
- They were in favor of reforestation, conservation and renewable energy projects.
- Tourists are more likely to pay for TCO products before departure.
- There was a negative relationship between tourists' green trust and the opt-out option: increasing green trust led to an increased probability of selecting TCO options.
- Women and tourists with carbon offset experience were more likely to pay for TCO products. Higher income levels are associated with more pro-environmental behavior.
- Tourists preferred TCO products through which they could offset more carbon emissions and were willing to pay more for optimal TCO products.

# Conclusion and Recommendations



- Destinations can consider investing in carbon neutral projects and implementing policies such as carbon subsidies or carbon reduction taxes for restaurants, hotels and scenic attractions.
- Influenced by the nudging effect, destinations can publicize climate change information through such channels as social media platforms to encourage tourists' sustainable travel choices.
- Tourists' preferences for TCO products signal the need for tourism providers to offer TCO options that provide access to travel carbon emissions data and the corresponding offsetting information and channels.
- More attractive TCO products should be developed focusing on domestic tourist destinations, renewable energy investments, non-airline providers and pre-departure payment options.
- TCO providers should improve their green trust in their carbon offset practices by developing reliable and transparent TCO products.





**Thank you!**