



**Laidlaw Scholars Undergraduate Leadership and Research Programme
Research Proposal**

Title of Your Research Project
**Can Limiting Tourist Access Preserve Value? Evidence from the 2017
Visitor Management Reforms at Machu Picchu**

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Abstract

Machu Picchu is one of the most visited natural UNESCO World Heritage Sites in the World, receiving millions of visitors annually. The continuous flow of tourism has led to overcrowding, environmental degradation, and structural damage. In the face of overtourism, the government of Peru established a set of visitor-management measures in July 2017, including timed entry systems and stricter access regulations. The purpose of these limitations is to preserve the natural and architectural value of the site, while still allowing for regional economic sustainability. This study evaluates how effective limits on tourist access are as policy tools, investigating whether the visitor-management reforms introduced in 2017 successfully reduced the flows of overtourism without proportionally comprising the revenue from tourism activities.

The research uses Machu Picchu as a single case study and employs a quasi-experimental causal design that analyzes the changes in both visitor and revenue flows before and after the implementation of the tourism management regulations. The study will consist of two main components, including quantitative analysis of tourism and economic revenue data and policy review of tourism practices in UNESCO World Heritage Sites and in Machu Picchu.

The study lies at the intersection of environmental protection and economic sustainability, offering data-backed evidence for understanding if limitations on tourist access can achieve the balance in question.

Introduction

Tourism is a driver for economic growth, cultural exchange, and employment, yet it can also lead to environmental degradation and infrastructural damage when visitor volumes exceed actual site capacity. UNESCO World Heritage Sites are increasingly experiencing overtourism, posing challenges to the long-term sustainability of the sites.

Machu Picchu was named a World Heritage Site by UNESCO in 1983 and is one of the Seven Wonders of the World. Tourism demand has grown over the decades and led to unfavorable outcomes, such as erosion of trails, pressures among the local community of Aguas Calientes in Cusco, and inadequate waste management. In consultation with UNESCO, the Peruvian government introduced new visitor-management regulations in July.

Growing up between Barcelona, Spain, and Lima, Peru, I witnessed the challenges of tourism saturation in world renowned destinations. Living in Peru provided me with direct exposure to news and debates about the preservation of Machu Picchu, and I visited the site in December of 2019, about 2.5 years after the implementation of the tourism regulations.

My professional experience further strengthens my understanding of how effective policymaking can impact the tourism industry. I prototyped an app called Energized, presented at COP29, which uses a rewards-based system to incentivize sustainable tourist behaviours.

Research Objectives & Questions

Research Objectives

Primary Objective:

To evaluate the effectiveness of the 2017 visitor-management reforms at Machu Picchu in reducing pressures from overtourism while maintaining tourism revenue.

Secondary Objectives:

1. Evaluate the causal impact of the policy reforms on tourism flows at Machu Picchu.
2. Analyze changes in tourism revenue after the implementation of the reforms.
3. Assess economic and environmental trade-offs of the policy.
4. Draw policy insights applicable to other UNESCO World Heritage Sites impacted by overtourism.

Research Questions

- Did the 2017 visitor-management reforms at Machu Picchu causally decrease tourism flows and congestion?
- What impact did these reforms create on tourism revenue at Machu Picchu?
- How can the case of Machu Picchu inform the implementation of similar strategies for managing overtourism at other UNESCO World Heritage Sites?

Background

There is limited causal evidence that assesses the economic and tourism impacts of visitor access regulations, especially in UNESCO World Heritage Sites situated in the Global South. This study will fill in the literature gap of before and aftereffects of the policy reforms and will use a within-site causal design to avoid problematic comparisons and confounding variables.

Methodology

The research will employ a mixed-methods approach:

1. Quantitative analysis:
 - Regression Discontinuity in Time (RDiT) design, leveraging the clearly defined implementation time of the visitor-management reforms.
 - Collection of tourism statistics, ticket revenue, and revenue per visitor from the Peruvian Ministry of Culture and MINCETUR.
 - Time frame: Data from 2015 (2 years before policy) to 2019 (2 years after the policy and before COVID-19).
2. Policy review:
 - Evaluation of UNESCO recommendations on controlling tourism, Peruvian overarching strategy for tourism and heritage management, and reports from the 2017 policy introduction.

This research will be conducted under the supervision of Dr. Nicholas Zammit, whose experience in teaching econometrics courses will be valuable in helping use regression analysis models and interpreting results.

Training/ Certifications Needed

- Online modules on sustainable tourism (UNWTO Tourism Online Academy): 1 week
- STATA: 2 weeks (prior experience using the software)

Research Location

Toronto (access to online databases from the Peruvian Ministry of Culture and MINCETUR, policy reports, and academic resources).

Research Ethics Board

This research does not require REB approval given it uses publicly available, non-identifiable datasets and policy documents. This research does not involve human participants.

Timeline

Pre-work (May 15-June 14, 2026)

- Compile tourism and revenue data sources for remote access
- Literature review on overtourism at UNESCO World Heritage Sites
- Readings about Machu Picchu's tourism history and conservation strategies

Week 1 (June 15-21):

- Clean time-series data
- Review methods of RDiT

Week 2 (June 22-28):

- Perform regression discontinuity analysis
- Test robustness of analysis

Week 3 (June 29-July 5):

- Evaluate revenue outcomes before and after the policy
- Being review of policy reports

Week 4 (July 6-12):

- Integrate quantitative results with policy context
- Draft results interpretation

Week 5 (July 13-19):

- Develop policy implications and recommendations to other UNESCO sites
- Prepare tables and visuals

Week 6 (July 20-24):

- Finalize research report
- Prepare deliverables for Laidlaw Scholars Research Symposium
- Identify potential publication outlets

Resources & Support Needed

- Access to data on tourism and economic flows at Machu Picchu
- Guidance from faculty supervisor on causal inference

Potential Impact

This research will provide data-backed evidence on whether limitations to visitor access can constitute effective policy tools for managing overtourism without delivering disproportionate economic losses. The findings offer relevant policy insights for conservation authorities and tourism boards at UNESCO World Heritage Sites on the circumstances where such policies may be effective, supporting evidence-based policymaking in sustainable tourism.

Budget

3600 CAD to cover rent, food, and transportation expenses in Toronto throughout the 6 weeks.

References

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