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Original article

# The Altamira controversy: Assessing the economic impact of a world heritage site for planning and tourism management

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## ABSTRACT

This paper is the first report of a large research project for the preventive conservation and tourism management of the Altamira World Heritage site that was conducted from 2012 to 2014 and focused on a key feature of the project estimating the potential economic impacts of reopening the Altamira cave to the public. The study analyzed the direct and indirect economic impacts of visitors to Altamira on the regional economy of Cantabria, a Spanish Autonomous Community. Using an input-output method (IO), we estimated the values accrued to the region. This study provides the scientific foundation for the development of an effective tourism management program for the Altamira Complex, analyzing the impact of its access regime and offering policy recommendations on the broader regional economic impact of Altamira.

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## 1. Introduction

This paper is the first delivery of a large research project entitled *Programa de Investigación para la Conservación Preventiva y Régimen de Acceso a la Cueva de Altamira, 2012–2014* (Research Program for the Preventive Conservation of and Access Regime for the Altamira Cave, 2012–2014, or PROALT)<sup>1</sup> conducted by the Government of Spain's State Secretariat for Culture and Ministry of Education, Culture and Sports (MECD). The project's overall objective is to estimate the impact of human presence upon the conservation of Altamira Cave, a paleolithic-era cave that was declared a UNESCO World Heritage Site in 1985. The cave has been closed and reopened in various occasions during the last four decades, and it was again closed temporary to the public in 2012 out of concern for the impact visitors were having on the prehistoric paintings in the cave. This project therefore seeks to determine whether the effective conservation of Altamira is compatible with the implementation of a

tourism management plan and visitor regime if these are articulated through a preventive conservation plan.

This paper focuses on an essential part of that project, namely, estimating the potential economic benefits of reopening the cave by studying the direct and indirect economic impact of visitors on the regional economy of the Autonomous Community of Cantabria, where the Altamira Cave is located (see Fig. 1).

The so-called "Altamira Complex" (AC) is a set of heritage assets and institutions that comprise the National Museum and Altamira Research Center, the original Cave and the *Neocueva* (Neo-cave), a precise, scientifically accurate three-dimensional reproduction of the original cave [1] (see Fig. 2). As a result of our investigation (2012 to 2014), a phase of experimental visits to the Cave was initiated under a controlled access regime in which a group of five random visitors were allowed entry per week under strict clothing and lighting protocols to facilitate the study (see Fig. 3). The information gathered in this investigation is intended to facilitate the development of policy guidelines and generate recommendations for mitigating and/or resolving the controversy that has surrounded Altamira and confronted its stakeholders for years. Here, as in most heritage projects, the range of stakeholders spans the local community of Santillana del Mar, scientists, curators, politicians and tourism operators as well as all classes of visitors [2].

The Altamira Cave has become famous worldwide when it was fortuitously discovered in 1868 and the controversy about its authenticity ensued. That history was brought to the big screen in

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<sup>1</sup> PROALT: Programa de Investigación para la Conservación Preventiva y Régimen de Acceso a la Cueva de Altamira, 2012–2014. Project website: <http://ipce.mcu.es/portada/destacado68.html>.



Fig. 1. Location of the Altamira Cave in the autonomous community of Cantabria, Spain.

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Hugh Hudson's latest film (2016), starring Spanish actor Antonio Banderas, which told how the Cave's discovery and its authenticity were called a sham by researchers and scholars for decades. It was not until 1902, that a French study confirmed that the paintings were indeed of prehistoric origin. That conclusion positioned Altamira as a unique archaeological, historical and cultural material testimony of the Upper Paleolithic Era. Since then, Altamira has become an icon for those seeking to understand the origins of humanity and art through paintings and engravings dating back 15,000 years. Not surprisingly, Altamira also became a major tourist destination. In the 1970s, Altamira attracted more than 150,000 visitors per year,<sup>2</sup> especially because of the excellent quality and condition of its paintings. Indeed, Altamira is now considered a masterpiece of human artistic expression that is nicknamed the "Sistine Chapel of European Rock Art" owing to the paintings' large format, use of shapes and three-dimensional effects [3].

After Altamira was officially recognized by the scientific community, the number of visitors grew steadily, until it became necessary to restrict access to the cave and implement a conservation program. The cave was temporarily closed for the first time in 1977, after scientists warned about the deterioration of the paintings due to the body heat and expelled breath of visitors, which had raised CO<sub>2</sub> levels inside the cave (see Table 1). The cave reopened in 1982 with a quota that limited access to 11,300 visitors each year, resulting in a waiting list up to three years long. The cave was again temporarily closed to the public in 2002 because of the appearance of green mold on the paintings, similar to that found in the prehistoric Lascaux Cave, in France. This damage was attributed to body heat, artificial lighting and humidity fluctuations in the cave due to the presence of visitors. In 2001, the Museum and "Neo-cave" opened, allowing visitors an alternative form of access. Nowadays, even with the original cave closed to the public, the

<sup>2</sup> <http://museodealtamira.mcu.es/Informacion.Institucional/cifras.html>, Statistics from the Museum of Altamira.

Table 1

Chronology of main events in the history of Altamira.

Year	Event
1868	Discovery of Altamira
1902	Acknowledgement of the authenticity of the cave after the publication of Émile Cartailhac's <i>La grotte d'Altamira. Mea culpa d'un sceptique</i> in the journal <i>L'Antropologie</i> [54]
1917	Cave opened to the public
1924	Cave declared a Spanish National Monument
1973	Altamira reaches 174,000 visitors per year
1977	First temporary closure of the cave for conservation purposes
1979	Creation of the National Museum and Research Center of Altamira, as a scientific and administrative institution responsible for managing and conserving the site
1982	Controlled reopening of the cave, with 11,300 visitors/year
1985	Altamira Cave declared a World Heritage Site
2001	New headquarters of the National Museum and Research Center of Altamira and the Neo-cave opens
2002	Second temporary closure of the cave
2007	Agreement with CSIC (Spanish National Research Council) to investigate the state of conservation of the cave and define an accessibility protocol
2010	CSIC studies advise maintaining the closure of the cave
2012	PROALT launched
2014	Cave reopens under a strict regime of controlled experimental visits

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Altamira Complex manages to attract an average of 250,000 visitors a year, making it one of the most-visited Spanish museums and a key driver of regional development through tourism (see Fig. 4).

Despite these measures, the debate about the impact of human presence on the paintings' conservation was never resolved, with different scientific and non-scientific stakeholders taking different positions on whether or not to reopen the original cave. This controversy led the Spanish Government to launch PROALT in 2012 to lay the scientific foundations for a program that would ensure the adequate conservation of the cave and define a visitor access regime that guaranteed the preservation

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