Experience on Socio-Economic Impact Analysis at CERN

Cultural Value of Tourism at CERN

Irene Crespo Garrido and Johannes Gutleber
CERN
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IMPACT PATHWAYS

- Public Good Value
- Cultural Effects
- ICT and Data Spillovers
- Science Products
- Education and Training
- Industrial Spillovers

IMPACT

RI Impact Pathways. This H2020 INFRASUPP Coordination and Support action has received funding from the European Union’s H2020 Framework Programme under Grant Agreement no. 777563
HOW WE ESTIMATE CULTURAL VALUE

- **Consume time** value of presence in traditional media.
  - Non specialized press articles
  - Books
  - TV, movies, radio

- **Consume time** value in social media.
  - Read - time value of posts (Tier 0)
  - Write - time value of referring posts (Tier 1)
  - Read - time value of referring posts and reactions (Tier 2)

- **Consume time** value of Webpages.

- **Consume time** value of YouTube.

- **Spending and time value of on-site visitors.**
  - Groups
  - Individuals
MOTIVATION TO REVISE VALUE OF ONSITE VISITORS

• Study 2012 – 2016 estimated the value based on Travel Cost Method.

• This method underestimated the actual economic value, since it focuses on the distance-based travel cost and the travel time value.

• The method is not exact, since the origin of the visitors was not known.

• For future estimates: a first-hand observation based value estimation, will be required.
**APPROACH**

- **Survey** based on anonymous *questionnaire* of on-site visitors at CERN, *over one year*.
  - June ‘18 – May ’19.

- Elucidate actual *spendings* per person, *related to the visit*.

- **Identify causal relationship** with visit.
  - CERN as primary goal, which leads to further regional impacts.
  - Visit to the region, combined with a visit to CERN.
# QUESTIONNAIRE IN MULTIPLE LANGUAGES

**Your age:**
- □ < 18
- □ 18 - 25
- □ 26 - 35
- □ 36 - 65
- □ > 65

**Country of travel origin:**

**How many days does your visit in the region last?**
- □ 1 day
- □ 1 – 3 days
- □ 4 – 7 days
- □ > 7 days

**How did you travel to CERN?**
- □ Bus
- □ Train / tram
- □ Plane
- □ Car / taxi

**How far did you travel to get to CERN?**
- □ less than 50 km
- □ 50 – 500 km
- □ 501 – 1500 km
- □ > 1500 km

**How much did you spend on accommodation?**
- □ 0 €
- □ up to 100 €
- □ up to 200 €
- □ up to 500 €
- □ > 500 €

**How much did you spend on the travel (tickets, fuel, toll, etc.)?**
- □ up to 50 €
- □ up to 100 €
- □ up to 500 €
- □ > 500 €

**How much do you spend daily on transport in the region?**
- □ 0 €
- □ up to 10 €
- □ up to 20 €
- □ > 20 €

**How much do you spend daily on drinks and food in the region?**
- □ 0 €
- □ up to 70 €
- □ up to 150 €
- □ > 150 €

**How much do you spend on visiting other sites (museum, exhibition...)?**
- □ 0 €
- □ up to 50 €
- □ up to 100 €
- □ up to 200 €
- □ > 200 €

**How much do you spend on souvenirs?**
- □ 0 €
- □ up to 50 €
- □ up to 100 €
- □ up to 200 €
- □ > 200 €
VARIABLES USED FOR ANALYSIS

Duration of travel: time value.

Cost of travel: direct cost.

Accommodation: direct cost.

Transport in the region: direct cost.

Food: direct cost.

Further visits: entrance fees.

Regional purchases: direct cost.
TYPES OF VISITS

• Visit motivated by CERN’s research.
  • The original motivation is the fundamental scientific research carried out at CERN.
  • 100% of the indicated spendings are considered for the economic value generation, since the travel would not be performed without the existence of CERN and its research activities.
  • People of this visit category, often travel as part of a group.

• Visit to CERN in addition to travel to the region.
  • 50% of the people travelling to the region know that CERN exists and plan also a visit to CERN.
  • Only 50% of the individuals’ spendings are considered to be in causal relation with CERN.
  • The time value of regional travel and the visit to CERN is considered for all individual visitors.
### VALUE OF A VISIT TO CERN

**Value generated by group visitor**

\[
Value_G = (N_{\text{days}} \times \text{Cost}_{\text{food/day}}) + (N_{\text{days}} \times \text{Cost}_{\text{transport/day}}) + \text{SUM}(\text{Cost}_{\text{accomodation}}) + \text{SUM}(\text{Cost}_{\text{travel}}) + \text{SUM}(\text{Cost}_{\text{visits}}) + \text{SUM}(\text{Cost}_{\text{souvenirs}}) + Value_{\text{travel time}} + Value_{\text{visit time}}
\]

**Value generated by individual visitor**

\[
Value_I = \text{Cost}_{\text{food/day}} + \text{Cost}_{\text{transport/day}} + Value_{2h \text{ transport time}} + Value_{3h \text{ visit time}}
\]

Not further considered in this specific study, but will be included in future estimates.
RESULT OBTAINED through 900 validated form-based inquiries that were extrapolated to a total of 120,000 visitors (83,000 as part of groups and 37,000 individual visitors).

<table>
<thead>
<tr>
<th></th>
<th>Group visitors</th>
</tr>
</thead>
<tbody>
<tr>
<td>Summer</td>
<td>21’400</td>
</tr>
<tr>
<td>Winter</td>
<td>61’600</td>
</tr>
<tr>
<td>Per year</td>
<td>83’000</td>
</tr>
</tbody>
</table>

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<thead>
<tr>
<th></th>
<th>Spending</th>
<th>Time value</th>
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<tr>
<td>Groups</td>
<td>53.2 MChf</td>
<td>11.8 MChf (24h)</td>
</tr>
<tr>
<td>Individuals</td>
<td>17.6 MChf</td>
<td>1.5 MChf (5h)</td>
</tr>
<tr>
<td>Per year</td>
<td>70.8 MChf</td>
<td>13.3 MChf</td>
</tr>
<tr>
<td>Total</td>
<td>ca. 84 MChf / year</td>
<td></td>
</tr>
</tbody>
</table>

YEARLY ECONOMIC VALUE GENERATION

Visitors (June 1 to September 31, 2018) | Visitors (October 1, 2018 to May 31, 2019)

- **Groups**
  - Summer: 21,400
  - Winter: 61,600
  - Per year: 83,000

- **Individuals**
  - Summer: 21,400
  - Winter: 61,600
  - Per year: 83,000

- **Total**
  - Per year: 124,600

**Spending**
- Groups: 53.2 MChf
- Individuals: 17.6 MChf
- Per year: 70.8 MChf

**Time value**
- Groups: 11.8 MChf (24h)
- Individuals: 1.5 MChf (5h)
- Per year: 13.3 MChf

**Total spending**
- Ca. 84 MChf / year
RESULT AS INPUT FOR MC SIMULATION

The plot permitted to develop a spending distribution that will be used for a Monte-Carlo simulation based socio-economic impact analysis, of the Future Circular Collider project.
CONCLUSIONS

• Survey confirms that curiosity about the fundamental scientific research performed at CERN, motivates people to make a trip.
  • Even if the distance is long and the stay needs to be extended.
  • People voluntarily invest time and money for being close to the scientists exploring the origins of the universe.

• The main visit period is from autumn to spring.
  • CERN offers an activity that is highly complementary to traditional leisure activities in spring and summer.

• The one-year survey-based analysis, created a reliable spending distribution.
  • Will be used for analysing the expected economic benefits for a Future Circular Collider at CERN.

• The work revealed that long-term systematic sampling of visitors at CERN would be required.
  • To confirm the results and to ensure that the content creation matches well the visitors expectations, and thus, ensures a continued attractivity of the research infrastructure.
I appreciate your questions concerning what I have presented to you.

THANK YOU