

Experience on Socio-Economic Impact Analysis at CERN

Cultural Value of Tourism at CERN

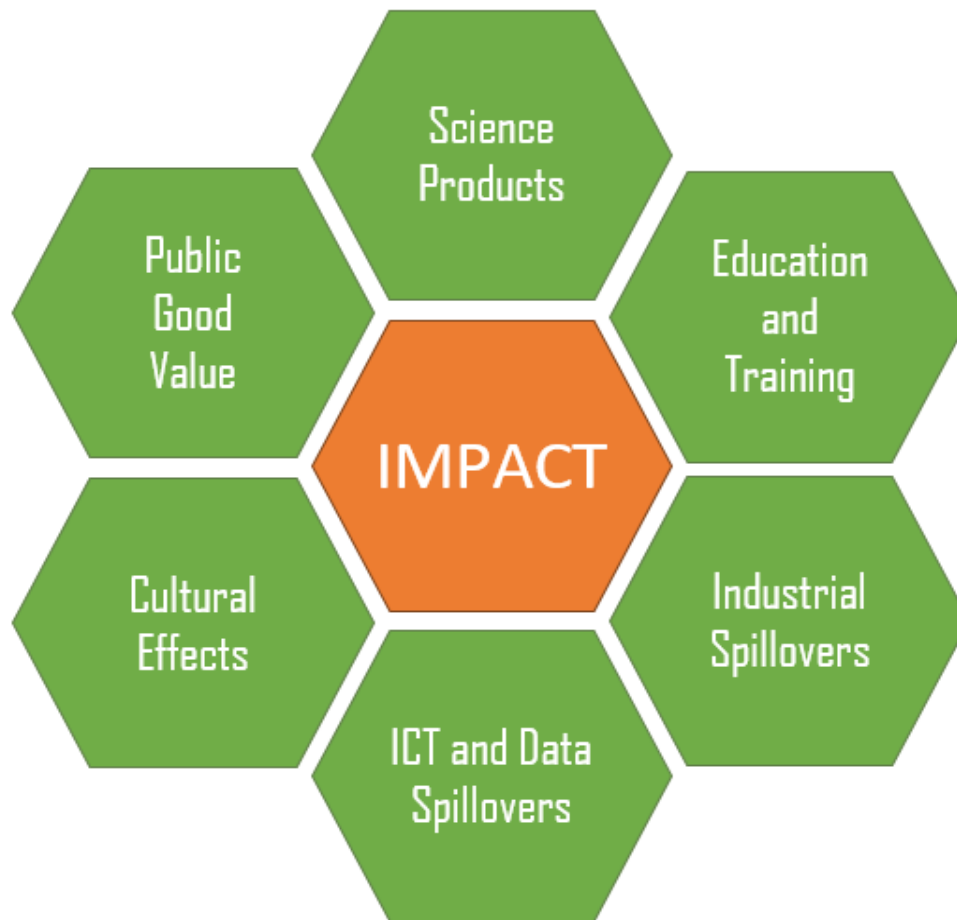
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CERN

Dec 16, 2020



IMPACT PATHWAYS



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:				
<input type="checkbox"/> < 18	<input type="checkbox"/> 18 - 25	<input type="checkbox"/> 26 - 35	<input type="checkbox"/> 36 - 65	<input type="checkbox"/> > 65

Country of travel origin:

How many days does your visit in the region last?			
<input type="checkbox"/> 1 day	<input type="checkbox"/> 1 – 3 days	<input type="checkbox"/> 4 – 7 days	<input type="checkbox"/> > 7 days

How did you travel to CERN?			
<input type="checkbox"/> Bus	<input type="checkbox"/> Train / tram	<input type="checkbox"/> Plane	<input type="checkbox"/> Car / taxi

How far did you travel to get to CERN?			
<input type="checkbox"/> less than 50 km	<input type="checkbox"/> 50 – 500 km	<input type="checkbox"/> 501 – 1500 km	<input type="checkbox"/> > 1500 km

How much did you spend on accommodation?				
<input type="checkbox"/> 0 €	<input type="checkbox"/> up to 100 €	<input type="checkbox"/> up to 200 €	<input type="checkbox"/> up to 500 €	<input type="checkbox"/> > 500 €

How much did you spend on the travel (tickets, fuel, toll, etc.)?			
<input type="checkbox"/> up to 50 €	<input type="checkbox"/> up to 100 €	<input type="checkbox"/> up to 500 €	<input type="checkbox"/> > 500 €

How much do you spend daily on transport in the region?			
<input type="checkbox"/> 0 €	<input type="checkbox"/> up to 10 €	<input type="checkbox"/> up to 20 €	<input type="checkbox"/> > 20 €

How much do you spend daily on drinks and food in the region?			
<input type="checkbox"/> 0 €	<input type="checkbox"/> up to 70 €	<input type="checkbox"/> up to 150 €	<input type="checkbox"/> > 150 €

How much do you spend on visiting other sites (museum, exhibition...)?				
<input type="checkbox"/> 0 €	<input type="checkbox"/> up to 50 €	<input type="checkbox"/> up to 100 €	<input type="checkbox"/> up to 200 €	<input type="checkbox"/> > 200 €

How much do you spend on souvenirs?				
<input type="checkbox"/> 0 €	<input type="checkbox"/> up to 50 €	<input type="checkbox"/> up to 100 €	<input type="checkbox"/> up to 200 €	<input type="checkbox"/> > 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

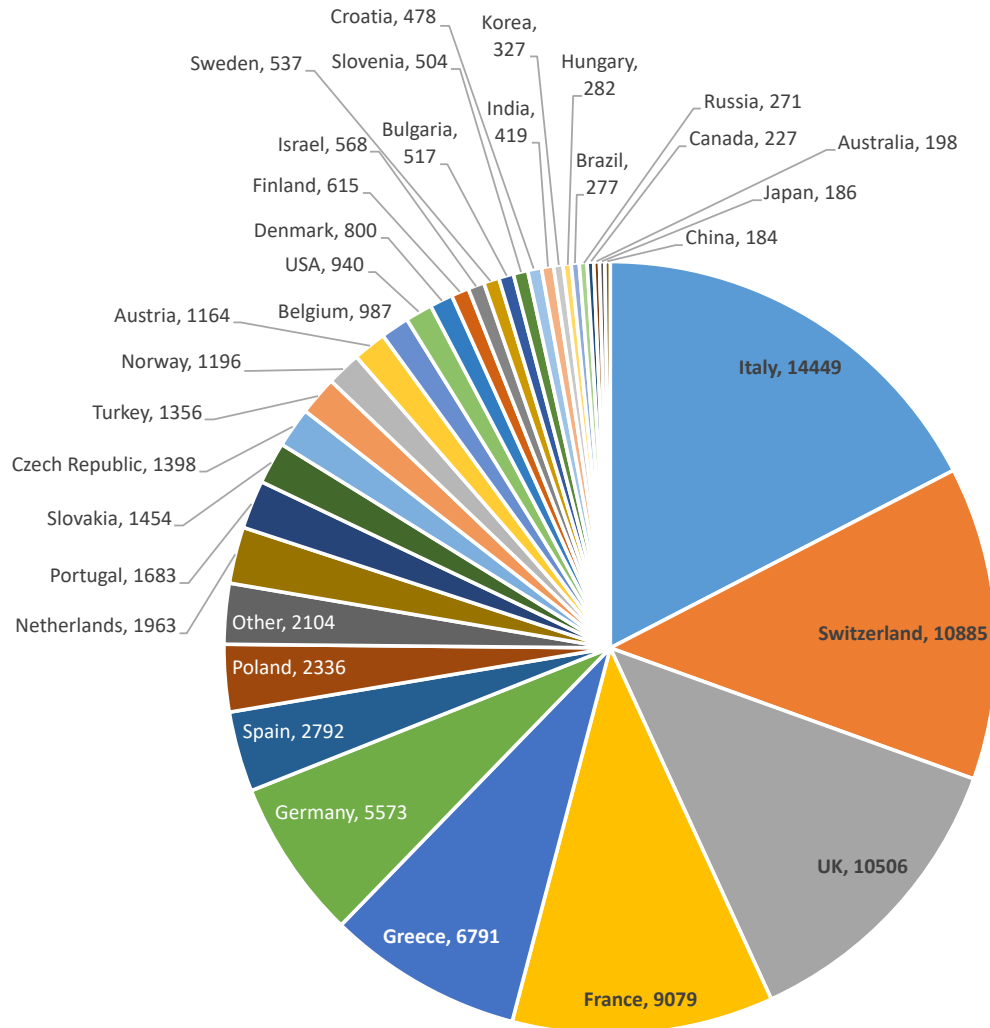
$$\begin{aligned}
 \text{Value}_G &= (N_{\text{days}} * \text{Cost}_{\text{food/day}}) \\
 &+ (N_{\text{days}} * \text{Cost}_{\text{transport/day}}) \\
 &+ \text{SUM}(\text{Cost}_{\text{accomodation}}) \\
 &+ \text{SUM}(\text{Cost}_{\text{travel}}) \\
 &+ \text{SUM}(\text{Cost}_{\text{visits}}) \\
 &+ \text{SUM}(\text{Cost}_{\text{souvenirs}}) \\
 &+ \text{Value}_{\text{travel time}} \\
 &+ \text{Value}_{\text{visit time}}
 \end{aligned}$$

Value generated by individual visitor

$$\begin{aligned}
 \text{Value}_I &= \text{Cost}_{\text{food/day}} \\
 &+ \text{Cost}_{\text{transport/day}} \\
 &+ \text{Value}_{2\text{h transport time}} \\
 &+ \text{Value}_{3\text{h visit time}}
 \end{aligned}$$

Not further considered in this specific study, but will be included in future estimates

COUNTRIES OF ORIGIN

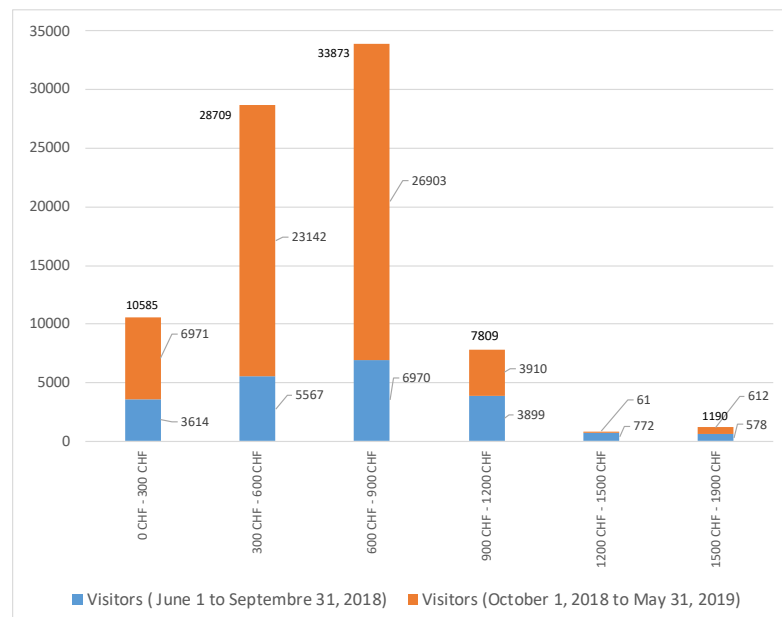


YEARLY ECONOMIC VALUE GENERATION

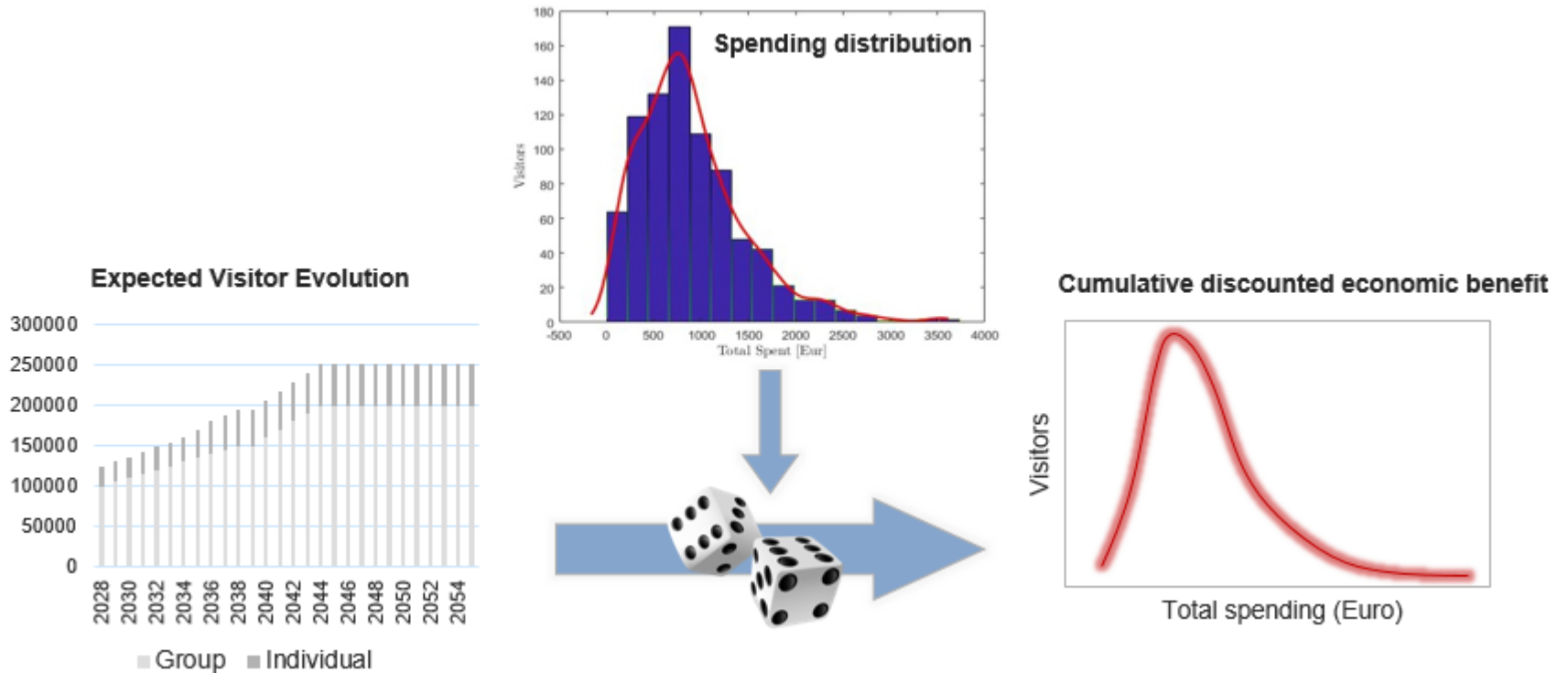
Result obtained through 900 validated form - based inquires that were extrapolated to a total of 120'000 visitors (83'000 as part of groups and 37'000 individual visitors).

	Group visitors
Summer	21'400
Winter	61'600
Per year	83'000

	Spending	Time value
Groups	53.2 MChf	11.8 MChf (24h)
Individuals	17.6 MChf	1.5 MChf (5h)
Per year	70.8 MChf	13.3 MChf
Total	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