

Methodological brief on the data input to the Economic Impact Assessment conducted by COWI for Aarhus 2017

Purpose

The Economic Impact Assessment conducted by COWI consists of two components:

1. The economic impacts generated by increased Aarhus 2017 motivated tourism,
2. The economic impacts generated by the labour-market due to Aarhus 2017.

The tourism economic data consists of data from 2017. The labour-market economic data includes data from 2013 to 2017. This brief provides an overview of the collection and quality control of the data, the Aarhus 2017 Foundation provided to the analysis. A concise overview of the Economic Impact Assessment event model (EIA event model) implemented by COWI are specified in the Economic Impact Assessment report.

All collected data sets are validated by the respective collectors with Aarhus 2017 translating data to the necessary data input to COWI. Further, COWI has validated all data inputs used in the EIA event model.

1: The economic impacts generated by increased Aarhus 2017 motivated tourism

Table 1: Tourism data input from the Aarhus 2017 Foundation to COWI

Data input	Description of data input	Source
One-day visits	<p>The number of one-day visits is based on an extrapolation of the 2016 results from <i>Danskernes Transportvaneundersøgelse</i>, Technical University of Denmark</p> <p>Aarhus 2017-motivated one-day tourism distributed on national and international visits from the Aarhus Tourism-survey (ATS)</p>	Technical University of Denmark Epinion
Overnight stays	<p>Aarhus 2017 motivated overnight stays in the Central Denmark Region (CDR) distributed on national and international visits and on the following accommodation types because of daily expenditure differences:</p> <ul style="list-style-type: none"> - Hotel – Vacation - Hotel – Business - Camping - Hostels - Rented holiday homes - Holiday Resorts - Marinas - Airbnb - Family/Friends 	<p>Overnight stays: Statistics Denmark (DST)</p> <p>Motivational factor: VisitDenmark</p> <p>Airbnb, Family/Friends: re-thinkIMPACTS</p>



Ticket sales revenue	Ticket sales revenue generated within the Aarhus 2017 projects and distributed on ticket sales revenue from national and international audiences. Only the tickets sold to audiences living outside CDR	Aarhus 2017 projects
Cruise ships	Number of cruise ship guests in Aarhus that can be ascribed to Aarhus 2017	VisitAarhus

Level of motivation – overnight stays and one-day visits

To ensure a conservative approach regarding the motivational factor on both overnight stays and one-day visits, the following applies:

- 'Not at all': 0%
- 'To a small degree': 0%
- 'To some degree': 50%
- 'To a high degree': 100%
- 'The only reason': 100%

One-day visits

Unlike overnight stays there is no overall count of one-day tourism data. It is assumed that Aarhus 2017 will generate a substantial one-day tourism impact. The survey 'Danskernes Transportvaneundersøgelse' conducted in 2016 provides the basis for one-day visits in 2017.

Table 2: Definition of one-day visit

Type	Delimitation	Purpose
Holiday trip	<ul style="list-style-type: none"> - Trip duration more than 3 hours - Travel time more than 2 hours - Total length of stay at main destination at more than one hour - Only trips out of home municipality are included 	<ul style="list-style-type: none"> - Amusement (theatre, café, restaurants, sport events, church etc.) - Holiday, day trip - Visiting family/friends - School trip, camp, study trip - Holiday House/allotment
Business trip	<ul style="list-style-type: none"> - Trip duration more than 3 hours - Travel time more than 2 hours - Total length of stay at main destination at more than one hour - Only trips out of home municipality are included 	<ul style="list-style-type: none"> - Meeting, business conference - Business trip, other business-related trips



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Model of calculation:

One-day visits calculated on basis of "Danskernes Transportvaneundersøgelse 2016" extrapolated by the increase in overnight stays from 2016-2017

$$\begin{array}{c} \times \\ \text{Motivational factor (one-day visits)} \\ = \\ \text{Aarhus 2017-motivated one-day visits} \end{array}$$

Overnight stays

Overnight stays on all accommodation types except Family/friends and Airbnb are provided by VisitDenmark based on data from Statistics Denmark. Information regarding cruise ships are provided by VisitAarhus.

Model of calculation:

$$\begin{array}{c} \text{Index based overnight stays distributed on accommodation types} \\ \times \\ \text{Motivational factor} \\ = \\ \text{Aarhus 2017-motivated overnight stays distributed on accommodation types} \end{array}$$

Notes on accommodation types, that differs from standard calculation above:

Holiday houses

Since the final 2017 figures for overnight stays holiday houses were not yet available at the time for the COWI calculation, the volume of overnight stays in holiday houses are an extrapolation of the 2016 figures.

Cruise ship visits

Based on numbers from VisitAarhus, the motivated number of cruise ship visits are included in the data input to COWI using a motivational factor of 50% of the increase in cruise ship visits from 2016 to 2017.

Airbnb and family/friends

The percentage of respondents using 'Airbnb' or 'Family/Friends' as accommodation type are provided through rethinkIMPACTS' audience surveys. To scale the percentage to an actual number representative of the total population, the combined overnight stays of the accommodation types: 'Hotel – business and pleasure', 'Caravanning', 'Hostels', 'Rented Holiday Homes', 'Holiday Resorts', and 'Marinas' are used as a reference.

To identify the percentage international 'Airbnb' overnight stays compared to the total number of respondents, the international 'Airbnb'-percentage is divided with the sum of international 'Airbnb' and 'Family/Friends' percentage:

Ticket Sales Revenue

As a supplement to the average daily spending made by the different visitor groups and accommodation types, Aarhus 2017 delivers data on the ticket sales revenue reported by the projects. It is distributed on ticket sales revenue from national and international audience, respectively. Only ticket sales revenue from audience living outside CDR are included in the calculation. This ratio has been calculated based audience interviews by rethinkIMPACTS 2017.

Ticket sales revenue are collected directly from the projects. As a conservative approach, all ticket sales revenues not distributed on national and international audience by projects are considered national.



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To quality check the numbers the top 20 projects, comprising 88% of the total economic share regarding ticket sales revenue from granted projects, are carried out to check if they have reported their ticket sales revenue correctly.

2: The economic impacts generated by the labour-market due to Aarhus 2017

Table 3: Labour-market data input from the Aarhus 2017 Foundation to COWI

Data input	Description of data input	Source
Full-time employments (FTE's) in the Aarhus 2017 Foundation 2013-2017	FTE's distributed on the following types of employment: <ul style="list-style-type: none"> - Seconded employment - Traditional employment - Wage subsidy employment - Flexible job employment - Company internship programme - Employment by fee (are not included in the assessment) 	Aarhus 2017 Foundation
Salaries generated by the granted projects because of Aarhus 2017	The economic impact of salaries that can be ascribed Aarhus 2017	Aarhus 2017 projects
The Aarhus 2017 Foundation budget	Overall contributions to Aarhus 2017 from: <ul style="list-style-type: none"> - Aarhus Municipality - The 18 other municipalities in the CDR - The Central Denmark Region - The Government - EU - Foundations and private sponsors 	Aarhus 2017 Foundation
Municipal contribution to Aarhus 2017	Total contribution to Aarhus 2017 from the Municipalities distributed on Municipality	Aarhus 2017 Foundation

All data received from the Aarhus 2017 projects are crosschecked and quality controlled.

Full-time employments (FTE's) in the Aarhus 2017 Foundation 2013-2017

FTE's generated in the Aarhus 2017 Foundation have operated under a fixed budget during the period of 2013-2017. The input for COWI is based on this period and the FTE's are distributed on the following types of employment:

- Secondments
- Traditional employment
- Wage subsidy employment
- Flexible job employment
- Company internship programme
- Employment by fee

Secondments

Seconded employees are accounted for equal to all other employees. This employment group encompasses secondments from Aarhus Municipality, the CDR, and the 18 other municipalities in the CDR.



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Salaries generated by the granted projects due to Aarhus 2017

For each project that have delivered a financial report before 31 January 2018 (70%), the salaries are registered and implemented in the final calculation for the data input to COWI. For the remaining projects (30%), budgets are used. Those valued unrealistic (i.e. a too high expectation of income and thus salaries) are downsized in comparison to similar projects that have delivered a financial report.

The financial reports reflect the project's full income and not just the Aarhus 2017 granted part. The following model are used to calculate the part of the salaries that are generated by Aarhus 2017. Further, it is used to exclude public grants given directly to the projects. If the project owner is a public institution, own financial contribution may encompass public means, thus only own financial contribution from projects that are not public institutions are included. This calculation key is used to account for the total expenses to salaries that can be ascribed Aarhus 2017:

Model of calculation:

$$\frac{\text{Aarhus 2017 grant} + \text{private grants from sponsors and foundations} + \text{ticket sales revenue} + \text{own financial contribution}}{\text{Total income}} = \text{Calculation key}$$

The 'calculation key' is 78,20%, which means, that only 78,20% of the total expenses to salaries that can be ascribed Aarhus 2017. The remaining (21,80%) is income from other public institutions.

The Aarhus 2017 budget

The Aarhus 2017 budget encompasses the following revenue sources:

- Aarhus Municipality
- The other 18 municipalities in the CDR
- The CDR
- The Government
- EU
- Foundations and private sponsors

3: Access to data

The following data is accessible on www.aarhus2017.dk:

- VisitDanmark – motivation data
- Epinion – motivation data
- Aarhus 2017 budget
- One-day visits

Data on overnights stays are accessible at <https://www.visitdenmark.dk/da/analyse/tal-og-analyser-om-turismen-i-danmark>



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