

# Documentation for meeting tourism model

A technical document including data, model structure and  
modelling results

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Applied research and consulting on the development of peripheral areas and tourism targeting strategy and policy development at local, regional and international levels.

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## Introduction

Based on the experience from the previous project for VisitDenmark (VisitDenmark, 2012; Zhang, 2014) during the period in 2011-2012 and the UNWTO manual for the meeting activities (UNWTO, 2006), VisitDenmark and CRT have agreed to start another similar project for evaluating the economic and employment impacts of meeting sectors and meeting activities in Denmark.

Purpose of this project is:

- To conduct the new surveys both at the place of meeting and at place of meeting tourists overnight
- To follow the same definition for meeting activities as we defined in 2012
- To use also the same methods we developed previously, however there must accept that there are some changes because the newest interview data
- To develop a new version of SAM-K and the LINE model that can provide the credible data for meetings tourism
- To analysis the economic and employment effects of meetings tourism
- To propose the political initiatives in order to support the wide interests among the meeting arrangers and MICE enterprises

MICE tourism is a special type of business tourism focusing on Meeting, Incentive, Convention and Exhibition market. Evaluation for the Meetings Economic and Employment Impact (MØBBE<sup>1</sup> in Danish) is different in compare with the Tourism Economic and Employment Impact (TØBBE<sup>2</sup>). TØBBE has covered all kinds of tourism activities, from the same-day visitors to the overnight tourists, from the leisure tourists to the business tourists, from the domestic to the foreign tourists. MØBBE is just a segment from TØBBE, this focusing only on the meetings, congress, exhibition markets. MØBBE does not cover conventional business traveller, for example, the travellers for selling and marketing; however, MØBBE covers also some local meeting participates, for which they are not defined as tourists. Therefore, there is an overlap between the MØBBE and TØBBE, but there are some areas they can't be compared totally.

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<sup>1</sup>MØBBE is denoted in Danish as 'Mødeturismens Økonomiske og Bekæftigelsesmæssige Betydning i Danmark'.

<sup>2</sup>TØBBE is denoted in Danish as 'Turismens Økonomiske og Bekæftigelsesmæssige Betydning i Danmark'.

## Data inputs from VisitDenmark

The main data inputs are from VisitDenmark's interview data. VisitDenmark collected data for number of meeting participants and number of personal nights at meetings municipalities and place of overnight. The data for the daily consumption by participants both at the meetings place and the place of overnight municipalities. These data are inserted into the model as a series of variables. These variables include number of meetings, number of bed nights or number of day-participants with different purposes for the meetings.

There are following variables for the number of meeting and number of bed nights:

- umtipod = number of Danish meeting participants with axis of MEETPURP (p, purpose of meetings), OFD (o, overnight forms), DKK (d, 98 municipalities);
- umtupod = number of foreign meeting participants with axis of MEETPURP (p, purpose of meetings), OFD (o, overnight forms), DKK (d, 98 municipalities);
- umplpd = number of local meeting participants with axis of MEETPURP (p, purpose of meetings), and DKK (d, 98 municipalities);
- uctipod = number of Danish meeting tourist overnight with axis of MEETPURP (p, purpose of meetings), OFD (o, overnight forms), DKK (d, 98 municipalities);
- uctupod = number of foreign meeting tourist overnight with axis of MEETPURP (p, purpose of meetings), OFD (o, overnight forms), DKK (d, 98 municipalities);
- ucplpd = number of local meeting participants with axis of MEETPURP (p, purpose of meetings), and DKK (d, 98 municipalities);

There are following variables for the daily consumption:

- MTIPODVQ = daily spending in krone of Danish meeting participants with axis of MEETPURP (p, purpose of meetings), OFD (o, overnight forms), DKK (d, 98 municipalities), and V (products);
- MTUPODVQ = daily spending in krone of foreign meeting participants with axis of MEETPURP (p, purpose of meetings), OFD (o, overnight forms), DKK (d, 98 municipalities), and V (products);
- MPLPDVQ = daily spending in krone of local meeting participants with axis of MEETPURP (p, purpose of meetings), DKK (d, 98 municipalities), and V (products);
- CTIPODWTQ = daily spending in krone of Danish meeting tourist overnight with axis of MEETPURP (p, purpose of meetings), OFD (o, overnight forms), DKK (d, 98 municipalities) and WT (tourism consumption components);
- CTIPODWTQ = daily spending in krone of foreign meeting tourist overnight with axis of MEETPURP (p, purpose of meetings), OFD (o, overnight forms), DKK (d, 98 municipalities) and WT (tourism consumption components);

- CPLPDWTQ = daily spending in krone of local meeting participants with axis of MEETPURP (p, purpose of meetings), and DKK (d, 98 municipalities) and WT (tourism consumption components);

## Meetings Expenditure

Meetings expenditure is also the meeting revenue received from the different meetings activities. From the meetings interview the daily consumption at meetings places is broken down by different products, such as payment to the locations (meetings venues, rooms, decoration, cost for lunch, transport, so on. The daily consumption is different by different purpose of meeting, in different forms and at different municipalities. Likewise, the daily consumption at place of overnight municipality is also broken down by different tourism consumption components, for example, food, drinks and tobacco, restaurant, accommodation, cultural expenses and souvenir, etc. Tourist spending is also different by different purpose of meeting, in different forms and at different municipalities.

Meeting expenditure is the product of number of meetings (or number of bed nights) and daily spending, it can be expressed by the formula as:

$$mtipodv = umtipod * MTIPODVQ \quad (1)$$

$$mtupodv = umtupod * MTUPODVQ \quad (2)$$

$$mplpdv = umplpd * MPLPDVQ \quad (3)$$

$$ctipodw = uctipod * CTIPODWQ \quad (4)$$

$$ctupodw = uctupod * CTUPODWQ \quad (5)$$

$$cplpdw = ucplpd * MPLPDWQ \quad (6)$$

Formula (1), (2) and (3) show the meeting revenue at place of meeting, that is the gross meeting revenues for meeting arrangers.

$$mtitupldv = \sum mtipodv + \sum mtupodv + \sum mplpdv \quad (7)$$

Formula (4), (5) and (6) show the tourist revenue at place of overnight municipalities, which is the gross tourism revenue from the tourists spending in different consumption groups.

$$ctitupldw = \sum ctipodw + \sum ctupodw + \sum cplpdw \quad (8)$$

When meetings or tourism revenues are separate domestic, foreign and local meeting participants' expenditure, it will allow us to give a separate analysis for each type of meeting participants.

## Meetings Satellite Accounts

Satellite accounts provide a framework linked to the national accounts, allowing attention to be focused on a certain field or aspect of economic or social life in the context of national account, such as tourism satellite accounts, environmental satellite accounts, and education satellite accounts. Satellite accounts can meet specific needs by providing more detail, by rearrange concepts from the central framework by providing supplementary information.

Meeting satellite accounts should follow the same way as the other satellite accounts. Meeting expenditure is a part of national private consumption, as seen from the demand side of national accounts, we have intermediate consumption (xraev), private consumption (cpdwv), public consumption (codwv), investment (irdwv) and export (eudv). As noted that every part of demand, there is 'v', that is to way that all the demand is listed with a series of product.

Meeting expenditures from above formula (7) mtitupldv can be transformed into mtitupldwv that include both 'v' and 'w'; likewise tourism expenditures from formula (8) ctitupldw can be transformed into ctitupldwv, that also include both 'v' and 'w'.

National private consumption is broken down into several parts that allow tourism and meeting expenditure to be part of private consumption:

$$cpdwv = ctiodwv + ctuodwv + mtitupldwv + ctitupldwv + cpldwv \quad (9)$$

Where cpdwv is total private consumption; ctiodwv is domestic tourism consumption; ctuodwv is foreign tourism consumption; mtitupldv is meeting expenditure; ctitupldw is meeting participants' expenditure; and cpldwv is local private consumption. In the formula (9), o denotes for overnight forms; d for municipality; p for purpose of meetings, w for consumption components, and v denotes for products and service.

When these tourism and meeting expenditures become parts in the private consumption, in the modelling, any part of these is reduced, it will reduce the level of private consumption, thereafter reduces the production supply and reduce gross value added and employment.



## Model Structure

An input-output model is a quantitative economic technique that represents the interdependence between different industries in the national economy or different regional economies. Input-output models are widely used in many countries in the world.

Wassily Leontief was the first to use a matrix representation of a national (or regional) economy. His model shows inter-industry relationships within an economy that shows how production from one industry sector can be an input to another industrial sector. In the inter-industry matrix, columns typically represent input to an industrial sector, while rows represent output from a given sector. The format therefore shows how dependent each sector is of other sectors, both as customer outputs from other sectors and as supplier of inputs. Each column of the input-output matrix shows the monetary value of input for each sector, and each row represents the value of each sector's outputs. In addition, the input-output model also includes final use, which consists of private consumption, public consumption, investment and export. From the supply side, it also includes imports.

The LINE model is a local and inter-regional macroeconomic model with the municipality as an economic entity. In the LINE-model employment is determined by the size of production, which in turn is determined by the demand, such as exports to abroad, exports to other municipalities and demand from the municipality itself. The production determines what is earned (gross value added, primary incomes, income taxes and disposable income) by the household. Unemployment is determined by employment, but also of the labour force, which indicates numbers in each municipality's population available for work. The labour force is determined by the size of population. The linkages between the regions are commuting, shopping, tourism flows and trade flows between the municipalities.

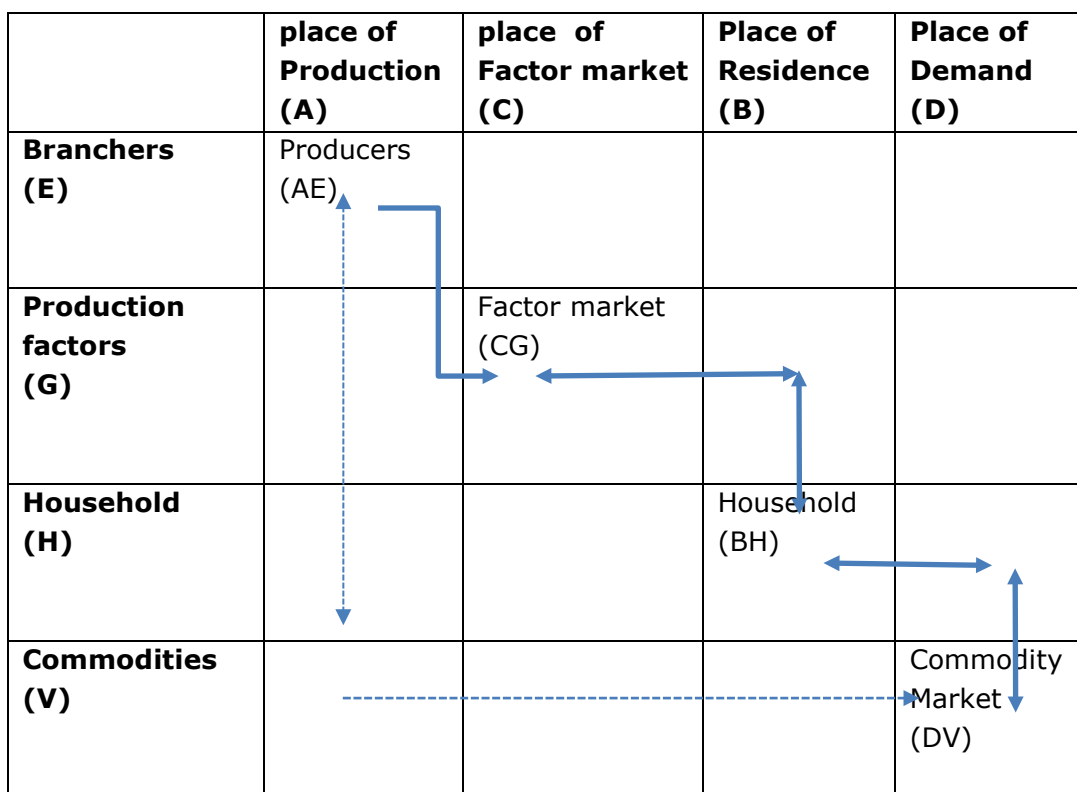
The LINE model operates with two agents - producers and households. The producers are located after production (production municipality called A in the diagram) and sectors (called E), as shown by figure 1. Production will therefore take place in the cell 'AE'. Households were allocated to the residence (B in the diagram), by household type (H in the diagram) and placed in the cell 'BH'.

The two agents - the companies (producers) and households (consumers) - are connected by two markets: factor market (CG) and commodity market (DV), respectively, according to the place of factor market (C) and factor (G), and the place of demand (D) and commodity market (V). On the commodity market (the cell 'DV') is focused on products offered by companies and demand from other industries and households. In the factor market can be seen among other things, the types of labour 'BG' who work in the companies.

The arrows in the diagram indicate how the model running around. Results achieved by starting from box to box in the diagram - a number of times around in the diagram is called iterations.

Thus the model continues operated in a circle where the direct effects propagate from production and sectors (AE), corporate income, and socio-economic group (BG), on to disposable income (BH), then to private consumption and product demand in the retail and wholesaling trade ( DV) and through interregional trade, production of goods (AV) and back to increased production in industries (AE). The described circle illustrates the direct impact on employment, income, private consumption and production.

**Figure 1: The structure of the LINE model**



The direct impact of companies' raw material consumption shown by the dashed line from the 'AE' to 'DV'. Commodity demand converted here from branches (E) to product (V) and the place of production (A) to the place of commodity market (D). The effects depend on the product mix of the raw material consumption in the industrial and shopping patterns of commodity purchase. That is where the industrial company buys raw materials (location of wholesale trade in commodity market place). Commodities from place of commodity market (DV) purchased - via the trading system - from the production place (AV), which means that companies' raw material consumption can be produced in the same municipality, in other municipalities (inter-regional imports) or abroad (international import).

The LINE model has in this first calculation round meant the direct effects of corporate activities divided on commodity consumption effects, and private consumption effects. This is followed by the calculation of the derived effects of the company, which includes second and many rounding effects of the establishment of an industrial company and is the sum of the indirect effects (commodity effects) and the induced effects (consumption effects). For example, producers in the fishing industry delivers fish to private consumption, and the fishing industry has to purchase raw materials from the other industries - such as ships and boats from ship-building companies. These spread-over effects are secondary from many rounds of model calculations. Each round includes more and more indirect effects (commodity effects) and induced effects (consumption effects of increased income of employees).

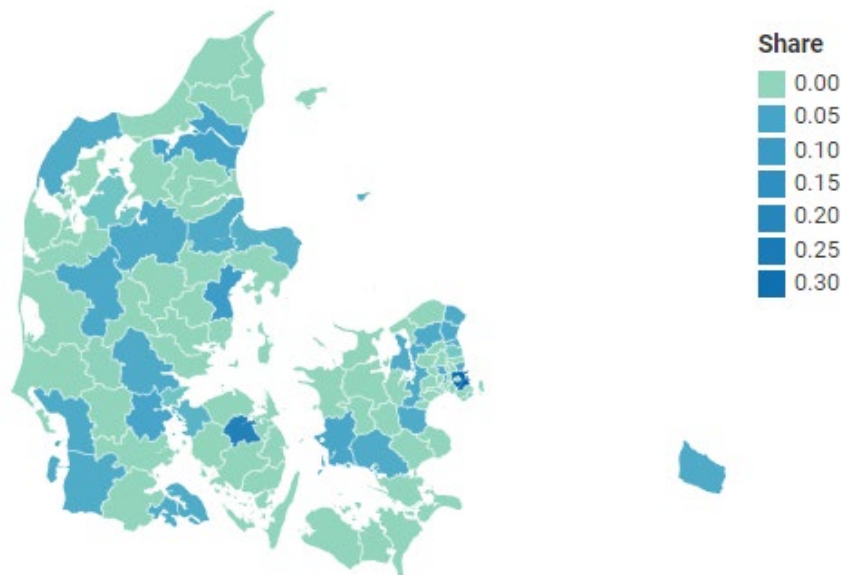
## **Model calculation for economic consequences of meeting activities**

The model for evaluating the meeting activities is based on SAM-K / LINE®, here we called meeting version of VisitDenmark's tourism model. The model is built-up by "bottom-up" from registered individuals and companies data aggregated to municipal level. The unique feature of the MØBBE – the importance of the meeting economic and employment is the centre for this version of the model. The LINE model in the meeting version focuses on all the meetings activities that cover 26 sectors. The model is based on the regional and local economic accounts for the Danish municipalities and describes not only the economic activities of business and labour, but also the economic activities of institutions in regional and local economies as well as those institutions' use of goods. "Institutions" may be households, municipalities, regions and state as well as companies and organizations, etc. Furthermore, the regional and local level of the model contains information on economic interaction with other regions and local areas as well as abroad, as well as SAM-K also contains prices and costs for the production and use of goods in the regional and local economy.

In this section, some of the results from model calculation will be presented and explained. The illustration of the result is based on economic factors that indicates what impacts of meeting activities have in the municipalities in Denmark. These economic factors are meetings consumption, employment, gross value added, and numbers of tourist involved in the meeting activities. This is illustrated and explained in the following figures and tables, that each shows the different importance on the economic factors that are affected by the meeting tourism activities in each municipalities in Denmark. The overall view is, that many municipalities are not affected by meeting activities where the activities have no significant influence in these locations. On the other hand, the following figures and table will illustrate that the meeting tourism is centralized into few municipalities that have a large share of the meeting tourism activities. The municipalities that have most of the meeting

tourism activities are mostly the biggest municipalities in Denmark as Copenhagen, Aarhus and Odense.

**Figure 2: Share of Total Consumption of Meeting Activities**



*Share of total consumption in each municipality from meeting activities at meeting places*

Map: Tobias F. Rasmussen • Source: CRT • [Get the data](#) • Created with [Datawrapper](#)

Figure 2 show the share of total consumption of meeting activities in each municipality. First, the map indicates, that most of the meeting tourism happens in few municipalities. In addition to that observation we can see that especially Copenhagen and Odense have most of the consumption from meeting tourism activities.

In Table 1 the consumption from meeting tourism is separated into five categories by type of tourism. This is demonstrated by the top 10 municipalities by total meeting consumption, where we can see that there are differences in the types of meeting tourists in the municipalities.

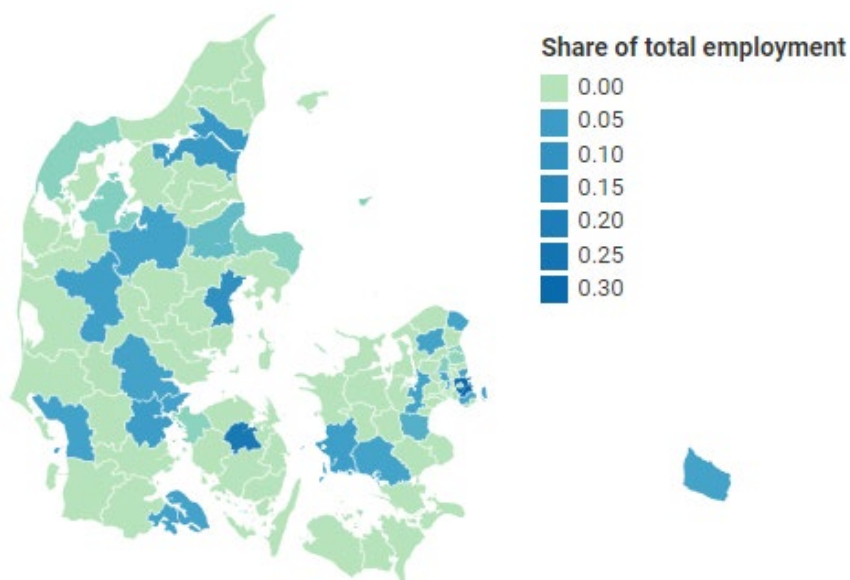
It is clear that Copenhagen have the biggest share of total meeting consumptions by over a third of all total meeting consumption in Denmark. Odense have more than a fifth of all total meeting consumption in Denmark followed by Aarhus with just under 10%. An interesting observation is that Odense have the most foreign day participants of all municipalities, which is almost half of all meeting consumption in Odense. On the other hand, Odense do not have much consumption from foreign overnight participants, compared to Copenhagen, Aarhus and Aalborg, relative to the total meeting consumption.

**Table 1: Top 10 municipalities of share of total consumption of meeting activities**

Municipality	Danish Participants		Foreign Participants		Local Participants	Total	
	Danish participants with overnight (mil. DKK)	Danish day participants (mil. DKK)	Foreign participants with overnight (mil. DKK)	Foreign day participants (mil. DKK)	Local day participants (mil. DKK)	Total meetings consumption (mil. DKK)	Share of total
<b>Copenhagen</b>	1,375.1	399.5	731.0	438.0	1,213.9	4,157.3	33.6%
<b>Odense</b>	412.8	373.1	110.2	1,106.6	698.8	2,701.6	21.9%
<b>Aarhus</b>	163.1	174.0	186.3	103.3	504.9	1,131.7	9.2%
<b>Aalborg</b>	224.3	39.2	138.8	31.7	244.5	678.4	5.5%
<b>Kolding</b>	127.6	125.3	13.6	82.2	237.8	586.5	4.8%
<b>Slagelse</b>	160.8	67.4	10.9	12.4	207.3	458.7	3.7%
<b>Herning</b>	54.1	57.5	29.0	25.5	166.8	332.9	2.7%
<b>Viborg</b>	42.5	45.1	0.8	1.6	130.8	220.7	1.8%
<b>Gentofte</b>	48.2	30.2	32.0	13.6	91.7	215.7	1.8%
<b>Fredericia</b>	46.3	35.0	3.7	46.4	63.5	194.8	1.6%

Figure 3 illustrates the share of the labour force employed in the meeting tourism in each municipality. The picture is here the same where it is the bigger urban cities that have employment in the meeting tourism. This again indicates a centralization of meeting tourism to the big cities in Denmark.

**Figure 3: Share of total employment in meeting tourism**



Share of total employment in each municipality in meeting tourism

Map: Tobias F. Rasmussen • Source: CRT • [Get the data](#) • Created with Datawrapper

In Table 2 the top 10 municipalities by employment in meeting tourism is illustrated. As in Table 1 it is the same municipalities that are among the highest in employment as in consumption in meeting activities.

As Table 2 shows, the three biggest cities have more than 60% of all employment in meeting tourism in Denmark. This means that the rest of employment is more spread out on the remaining municipalities which the table below indicates by some of the top 10 municipalities only contain under 2% of the total employment in meeting tourism.

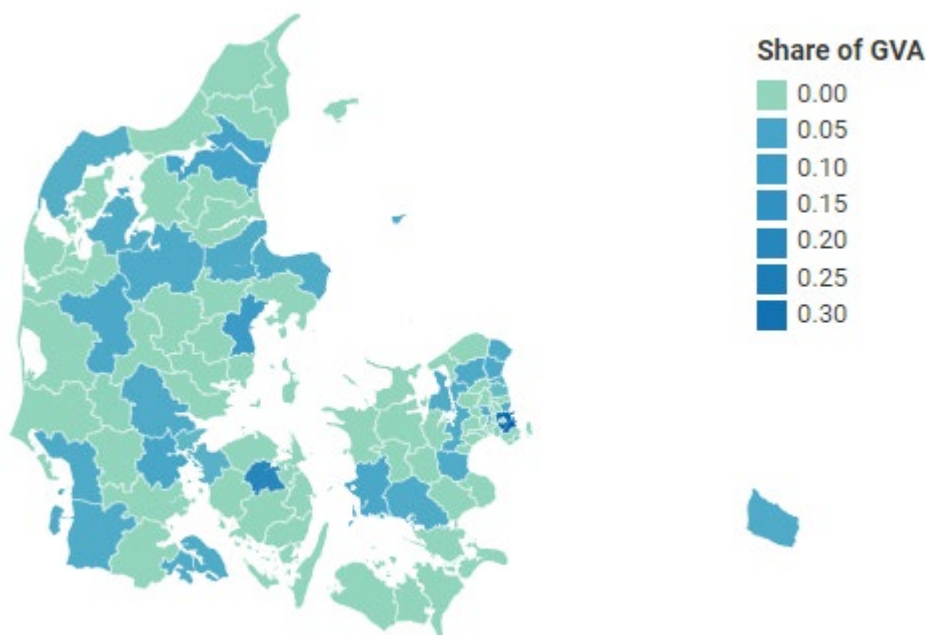
**Table 2: Top 10 municipalities of employment in meeting tourism**

<b>Total</b>		
<b>Municipality</b>	All Sectors in numbers of workers (1000 persons)	Share
<b>Copenhagen</b>	11.1	31.2%
<b>Odense</b>	8.0	22.3%
<b>Aarhus</b>	3.8	10.7%
<b>Aalborg</b>	2.2	6.2%
<b>Kolding</b>	1.5	4.2%
<b>Slagelse</b>	1.2	3.4%
<b>Herning</b>	1.0	2.8%
<b>Gentofte</b>	0.7	2.0%
<b>Fredericia</b>	0.6	1.7%
<b>Viborg</b>	0.6	1.6%

Figure 4 illustrates the share of gross value added from meeting tourism in each municipality. In the map, there are some changes in the municipalities that are affected from the previous maps. Here we see that some of the municipalities on Zealand like Frederikssund and Fredensborg. This is just some small differences from the previous results, so basically the overall view is still that the meeting tourism is centralized in the big cities.

Table 3 supports the argument about centralization of meeting tourism, where the gross value added is shown in the top 10 municipalities, where it is almost the same municipalities as in Table 1 and Table 2. The only change is that Hillerød is in the top 10 in this economic factor compared to the two previous.

**Figure 4: Share of gross value added in meeting tourism**



*Share of total gross value added in each municipalities in meeting tourism*

Map: Tobias F. Rasmusson • Source: CRT • [Get the data](#) • Created with [Datawrapper](#)

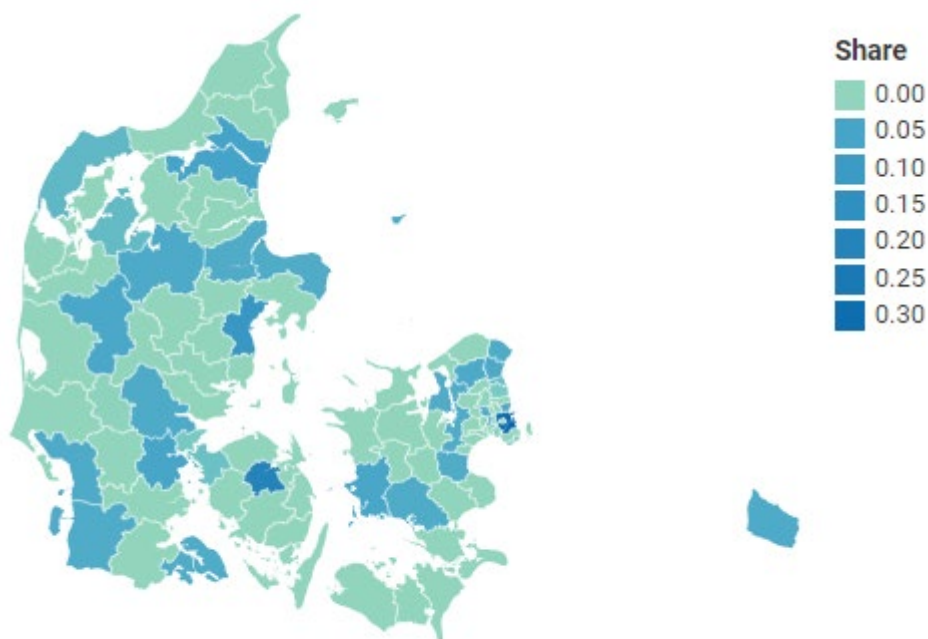
Again the picture show, that the three biggest cities also generate most value to the economic in meeting tourism. Actually, this picture is even clearer, because Copenhagen generate even more gross value added than both employment and the total consumption in meeting tourism. This bigger share indicates that the productivity is higher in Copenhagen than in the other big municipalities.

**Table 3: Top 10 municipalities of gross value added in meeting tourism**

Municipality	Total	
	All Sectors (mil. DKK)	Share
<b>Copenhagen</b>	6,000.3	35.0%
<b>Odense</b>	3,495.0	20.4%
<b>Aarhus</b>	1,705.8	10.0%
<b>Aalborg</b>	966.9	5.6%
<b>Kolding</b>	693.5	4.0%
<b>Slagelse</b>	580.8	3.4%
<b>Herning</b>	448.9	2.6%
<b>Gentofte</b>	317.2	1.9%
<b>Hillerød</b>	278.2	1.6%
<b>Fredericia</b>	272.4	1.6%

Figure 5 show the share of total meeting participants by each municipality. This map is almost identical with the map of gross value added in meeting tourism, illustrated in figure 4. The only different seems to be the higher productivity in Copenhagen, which is indicated by the concentrated dark blue colour in Copenhagen compared by the other municipalities relative between Figure 4 and Figure 5.

**Figure 5: Share of total numbers of meeting participants**



*Share of total numbers of meeting participants in each municipality*

Map: Tobias F. Rasmusson • Source: CRT • [Get the data](#) • Created with [Datawrapper](#)

Table 4 looks very much like table 1 in the distribution of meeting participants compared with the total consumption in meeting tourism. In the top 3 municipalities a slight different is that Aarhus have a higher share of participants compared to the consumption in meeting tourism. Again, it is the three big cities that dominate the list, which illustrates the whole analysis about the centralization of meeting tourism. This is a general theme through all the factors that proves the economic impact of meeting tourism.

Another example of the differences in the large municipalities is that Aarhus have a higher share of local participants than Odense and Copenhagen. The share of local participant of total meeting participants is 44.6% in Aarhus, where the same share is 30.3% in Copenhagen and 27.1% in Aalborg.



**Table 4: Top 10 municipalities of total numbers of meeting participants**

Municipality	Danish Participants		Foreign Participants		Local Participants	Total	
	Number of Danish participants with overnight (1000 persons)	Number of Danish day participants (1000 persons)	Number of foreign participants with overnight (1000 persons)	Number of foreign day participants (1000 persons))	Number of local day participants (1000 persons)	Total number of meeting participants (1000 persons)	Share of Total numbers of meeting participants
<b>Copenhagen</b>	1,028.2	344.1	559.1	472.2	1,045.8	3,449.4	32.7%
<b>Odense</b>	364.1	318.2	83.9	778.3	577.0	2,121.5	20.1%
<b>Aarhus</b>	170.6	182.4	164.8	138.7	529.5	1,186.0	11.3%
<b>Aalborg</b>	175.4	37.5	108.6	36.5	234.1	592.0	5.6%
<b>Kolding</b>	105.4	100.0	11.6	58.0	181.3	456.2	4.3%
<b>Slagelse</b>	121.0	55.7	8.2	10.3	170.3	365.4	3.4%
<b>Herning</b>	49.8	53.0	28.9	34.5	153.9	320.1	3.0%
<b>Gentofte</b>	43.3	31.0	23.9	14.7	93.9	206.7	2.0%
<b>Viborg</b>	36.3	38.5	1.1	2.1	111.9	189.9	1.8%
<b>Fredericia</b>	45.6	34.6	2.6	32.6	62.6	178.0	1.7%

## Conclusion

The results indicates a centralization of meeting tourism to the big cities in Denmark, where the three biggest municipalities have over 60% of all meeting tourism activities in Denmark.

The results shows, that the municipalities differ from each other in types of meeting tourists, who participate in meeting activities. The biggest example on this is that Odense have a large share of foreign one-day participants and Aarhus have a large share of local participants.

The calculations also shows that it is almost the same municipalities who are represented in Top 10 in all of the economic factors. There are only small changes in the different results displayed above. Therefore, it is clear that it is the same municipalities that dominates the meeting tourism market in Denmark.

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## Appendix

### 1. Aggregation of branches in the meeting version of model

<b>Agg_branches in LINE 1 data</b>	<b>Agg_branches in LINE 2 data</b>	<b>English text for branches</b>	<b>Branches code (117)</b>
ERD101	ER2M01	Agriculture, fisheries, horticulture and forestry	01, 02, 03
ERD102	ER2M02	Mining and quarrying	06, 08, 09, 19
ERD103	ER2M03	Food, beverage and tobacco industry	10, 11, 12
ERD104	ER2M04	Manufacturing, excluding 19	13-18, 20-28, 31-33
ERD105	ER2M05	Energy, water supply and renovation	35, 36, 37, 38, 39
ERD106	ER2M06	Construction	41, 42, 43
ERD107	ER2M07	Retail sale including sale and repair of motor vehicle	45, 47,
ERD108	ER2M08	Wholesale	46
ERD109	ER2M09	Passenger rail transport	490010
ERD110	ER2M10	Local train, bus and taxi	490020
ERD111	ER2M11	Road and pipeline transport	490030
ERD112	ER2M12	Water transport	500000
ERD113	ER2M13	Air transport	510000
ERD114	ER2M14	Support activities for transport	520000
ERD115	ER2M15	Postal and courier activities	530000
ERD116	ER2M16	Hotels and other accommodations services	550000
ERD117	ER2M17	Restaurants, bar and café	560000
ERD118	ER2M18	Information and Communications	58, 59, 60, 61, 62, 63
ERD119	ER2M19	Finance and Insurance	64, 65, 66
ERD120	ER2M20	Housing and rental	680023, 24 - 680030
ERD121	ER2M21	Real estate agency and rental of cottages	680010

ERD122	ER2M22	Business Services (Consulting, Research and Development)	69, 70-78, 80-82
ERD123	ER2M23	Travel agent	790000
ERD124	ER2M24	Public administration, education and health	84-88
ERD125	ER2M25	Arts, entertainment and other services	90, 91, 92, 93
ERD126	ER2M26	Other services	94, 95, 96, 97
ERD1Spec	ER2MSpec	Unknown goods	99, 00

## 2. Aggregation of commodities in the meeting version of model

<b>Agg_products and service</b>	<b>English text for products and service</b>	<b>Products linked to branches (code)</b>
VAM01	Agriculture, fisheries, horticulture and forestry	01, 02, 03
VAM02	Mining and quarrying	06, 08, 09, 19
VAM03	Food, beverage and tobacco industry	10, 11, 12
VAM04	Manufacturing	13-18, 20-28, 31-33
VAM05	Energy, water supply and renovation	35, 36, 37, 38, 39
VAM06	Construction	41, 42, 43
VAM07	Passenger rail transport	490010
VAM08	Local train, bus and taxi	490020
VAM09	Ferry	500000
VAM10	Air transport	510000
VAM11	Road and pipeline transport	490030
VAM12	Payment of motorway and tunnel	520000
VAM13	Support activities for transport	520000
VAM14	Postal and courier activities	530000
VAM15	Hotels and other accommodations services	550000
VAM16	Restaurants, bar and café	560000
VAM17	Information and communication	58, 59, 60

VAM18	Telecommunications and IT	61, 62, 63
VAM19	Finance and Insurance	64, 65, 66
VAM20	Housing and rental	680023, 24 - 680030
VAM21	Real estate agency and rental of cottages	680010
VAM22	Business Services (Consulting, Research and Development)	69, 70-78, 80-81
VAM23	Car rental	770000
VAM24	Travel agent	790000
VAM25	MICE	820000
VAM26	Public administration, education and health	84-88
VAM27	Arts, entertainment and other services	90-93
VAM28	Tourist attraction (museums, zoo and amusement parks)	94-97
VAM29	Other services	99, 00
VAM470000	Retail including car dealerships and workshops	45, 47,
VAM460000	Wholesale	46

### 3. Aggregation of age

<b>Agg. Age groups in LINE 1 data</b>	<b>English text for educations</b>
AL0	0 years old
AL1	1-6 years old
AL2	7-9 years old
AL3	10-17 years old
AL4	18-19 years old
AL5	20-24 years old
AL6	25-29 years old
AL7	30-39 years old
AL8	40-49 years old

AL9	50-59 years old
AL10	60-64 years old
AL11	65-69 years old
AL12	70-79 years old
AL13	80-89 years old
AL14	90+ years old
AL15	18-64 years old

#### 4. Aggregation of education groups

<b>Agg. Educations in LINE 1 data</b>	<b>English text for educations</b>
HUD01	Primary school
HUD02	High School
HUD03	Professional school Education
HUD04	Qualifying Education
HUD05	Short-term higher education
HUD06	Medium-term higher education
HUD07	Bachelor's degree programs
HUD08	Master's degree higher education
HUD09	Ph.D. and research education
HUD10	Unknown etc.
HUDIalt	All education