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REGIONAL TOURISM, THE LABOUR MARKET AND EDUCATION

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Abstract: The tourist industry differs from other service industries, because it cannot be delimited in terms of supply, but must instead be defined in terms of demand. This is because tourists demand many different goods and services, such as accommodation, transport, food, cultural services etc. Tourism also influences the labour market. But economic impact analysis does not reveal who works in the tourist industry. Is it young or old people, men or women, highly educated or less well-educated people? At the regional level tourism labour market may also varies because of a different tourism structure. This paper presents the methods for analysing the regional tourism labour market, the data and some preliminary results using the variable education at the regional level for Denmark in 1996.

I. INTRODUCTION

This paper presents the preliminary results of an investigation of the relationship between tourism, the regional labour market and education in Denmark. The paper applies a labour market model in relation to tourism. The tourist industry differs from other service industries, because it cannot be delimited in terms of supply, but must instead be defined in terms of demand. This is because tourists demand many different goods and services, such as accommodation, transport, food, cultural services etc. Since tourism is not an industry in the traditional sense, the effects of tourism must be estimated using a national or regional economic model.

Tourism also influences the labour market. But economic impact analysis does not reveal who works in the tourist industry (young or old people, men or women, highly educated or less well-educated people?) At the regional level tourism labour market may also varies because of a different tourism structure.

The Danish Tourist Board and The Institute of Local Government Studies (AKF) have in 1996/97 made a major investigation of the regional impact of tourism in Denmark - in short called TØBBE (Turismens Økonomiske og Beskæftigelsesmæssige Betydning - The economic and employment impact of tourism) (Danmarks Turistråd, Analyseafdelingen, 1998; Ahmt og Eriksen, 1997). In TØBBE the employment effect of tourism is estimated using an interregional model with an input-output framework. The employment data from TØBBE can be combined with a model for the labour market. This paper presents the methods for analysing the regional tourism labour market, the data and some preliminary results using the variable education.

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II. METHODS

As already mentioned, it may be difficult to distinguish the demand generated by tourists from other types of demand. Tourist demands cannot be met by one area alone. On the contrary, tourist demands are part of demand in many different areas (the retail trade, hotels and restaurants, agriculture, transport etc). Thus it is impossible to find data for employment in the tourist industry in the labour market files produced by Statistics Denmark. To obtain information about the market for employment in the tourist industry, it is necessary to combine an economic model for tourism with a model for the labour market as seen in figure 1.

The first step in the analysis of the economic impact of tourism is to use a demand model with data showing the number of nights and average spending per night, resulting in an estimate for total consumption by tourists. Employment and other economic figures are estimated using a regional economic model with an input-output table. More detailed descriptions of the input-output method are found in Jensen (1993), Hansen and Jensen (1996), Ahmt and Eriksen (1997), Eriksen and Ahmt (1997).

The estimates includes direct, indirect and induced employment effects. The direct effects stem from firms selling directly to tourist. The indirect effects arise because firms selling directly to tourists receive supplies from other firms. The induced effects arise because tourism generates income for hotel owners and other capital owners using the profit to increase their private consumption, thus creating additional employment.

In this paper the focus will be on demand by Danish and foreign tourists in Denmark. The estimates cover all the economic effects of a tourist's stay in Denmark. Earnings related to the transport of tourists to and from Denmark are not taken into account. Thus, I use what might be called a "destination approach".

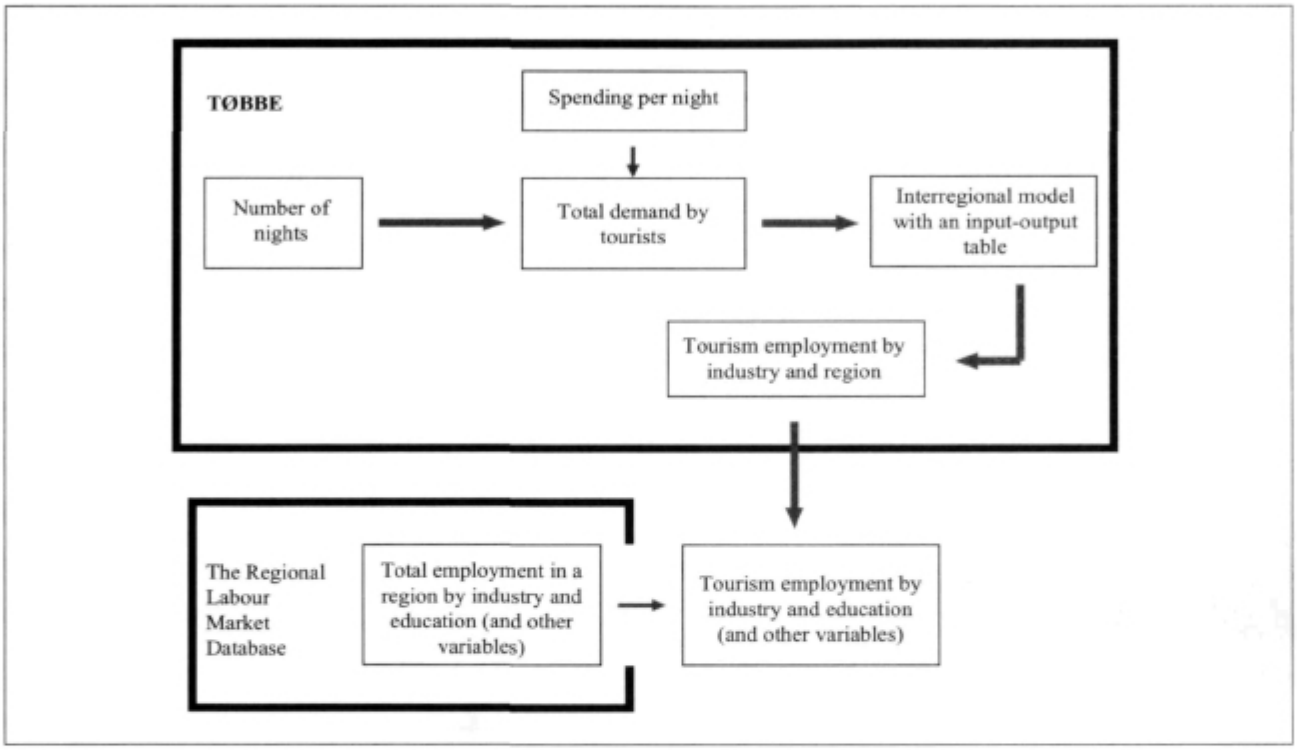
The analysis includes all types of tourist as defined in TØBBE. It is hotels, both holiday and business, holiday centres, camping, youth hostels, yachting, rented holiday homes, owners and loaners use of holiday homes, festivals, cruising, rural holiday, visits to relatives and friends, and foreign one-day visits. However, the definition of tourism chosen is not particularly important for the analysis. For instance, figures for excluded visitors can easily be added without changing the methods used.

In the project I get figures for total tourism employment and tourism employment by industry from TØBBE. The main purpose of this paper is to investigate the educational level of people employed in the tourist industry. This is done by relating the results obtained from the estimates of tourism employment by industry to information concerning formal education and other relevant variables like gender and age contained in labour market files for the Danish population issued by Statistics Denmark (Danmarks Statistik). At the Danish Institute of Border Region Studies, the files are organised in The Regional Labour Market Database.

At the regional level the crucial equation for the estimates is:

$$L_{i,e,r,t} = (L_{i,e,r,d}/L_{i,r,d}) * L_{i,r,t} \qquad (1)$$

Figure 1
Method of estimation



where $L_{i,e,r,d}$ is employment in a county by industry and education, while $L_{i,r,d}$ is total employment by industry in a county. For a county $L_{i,r,t}$ is employment from tourism by industry as estimated in the interregional model TØBBE. The resulting $L_{i,e,r,t}$ is employment from tourism by industry and education. This is precisely the interesting dimension, showing the distribution of people working in the tourist industry in terms of education and other variables like gender and age. The results are for all industries that come into contact with tourists, not only for selected industries with turnover derived primarily from tourism like studies of hotels and restaurants carried out in the past by other researchers (Baum 1995, Hjalager 1996).

Equation 1 imply that the implicit assumption is fulfilled:

$$L_{i,e,r,d}/L_{i,r,d} = L_{i,e,r,t}/L_{i,r,t} \qquad (2)$$

The assumption states that people in a specific industry and county have the same characteristics whether their employment is caused by tourism or not. In other words, it is assumed that retail shops on the west coast in Ringkøbing county have the same distribution of employees in terms of education and gender as retail shops in Herning (in mid-Jutland but still in Ringkøbing county). Or that hotels in Aarhus have the same distribution of employees as small family hotels in other parts of Aarhus

county which derive most of their turnover from parties etc. For instance, small tourist sites in outlying districts may experience a huge increase in population during the summer, making it necessary to hire extra assistants in shops, restaurants etc. In large cities an influx of tourists may not have the same implications. In other words, the need for flexible workers is less evident in such cities.

The assumption concerning $L_{i,e,r,d}/L_{i,r,d}$ is critical to the results of the estimation. At the moment we only have information relating to the left-hand side of equation 2, and this is the information used in this paper. In spite of the reservations, the method seems adequate in order to gain an overview of the educational level of employees in the tourist industry.

III. LABOUR MARKET STRUCTURE IN THE TOURIST INDUSTRY

This section starts with a description of the labour market data. Then some results of the relative distribution of educations in the counties are presented. It correspond to the term $L_{i,e,r,d}/L_{i,r,d}$ in equation 1. Unfortunately, I did not have the time to combine the tourist employment obtained from the economic model with information from the regional labour market at this moment in my current work.

III.1. Labour market data

The analysis of people engaged in the tourist industry is based on annual time series data from a regional model for labour market at the Danish Institute of Border Region Studies. The basis for the regional model is provided by data files on the Danish labour force from Statistics Denmark. These data files describe the labour market attachment in the last week of November for people living in Denmark on 1st January the following year. The database contains information on all Danes aged between 15 and 74. First of all the population is divided into people still undergoing education and people outside the education system respectively. Then people are placed in one of the following groups: employed, unemployed, and people not in the workforce. The employed group includes both self-employed persons and wage-earners.

The regional database also contains information on county, education, occupation, age, gender and part time/full time job. The regional dimension is counties. In Denmark there is 14 counties and 2 municipalities which also hold county obligations. These two municipalities Copenhagen, and Frederiksberg are pooled together with the county Copenhagen to one area: Copenhagen (København).

In the paper education means formal education. The basic files contain more than 400 different forms of education, and about 200 occupations. Data for occupations is summarized in 10 groups, while data for education is summarized in 15 groups.

The 15 education groups consist of 8 vocational training, 5 further and higher education categories, 1 group for people still undergoing education, and 1 group for people who only have a general education (i.e. no qualifying education).

In the Danish school system you only need a primary and lower secondary education to

begin vocational training. Vocational training takes 3-4 years, and includes both theoretical and practical training. To start further and higher education you need an examination from an upper secondary school or a vocational training. Further and higher education takes 1 to 5 years or more.

III.2. The structure of education

Table 1 gives a general view of the educational level in the 14 counties, while tables 2 and 3 show particulars for vocational training and further education. About one third of the Danish employees have no qualifying education while more than one third have vocationeltraining. 19 per cent of the employees have a further education, while 11 per cent is still in the educational system but besides have a job.

Table 1 also shows that there are geographical differences in the educational level in Denmark. In peripheral areas like Bornholm, Storstrøm, Sønderjylland, Ribe, Ringkøbing and Viborg there seems to be more people with no qualifying education than in other parts of Denmark. Contrary the employees in the cores or the counties with the biggest cities have a more well-educated population.

Looking at further education there is a higher representation in København and Frederiksborg (north of Copenhagen - an area where a lot of people working in Copenhagen take up residence). The higher representation is not surprising because the Government Departments and other central authorities are settled in the Copenhagen area. Headquarters of bigger firms and some centralized functions in the health sector is also

Table 1
Employment in Denmark by county and education 1996. Per cent

County	General education	Vocational educational	Further education	Students
København	32.1	33.3	24.3	10.4
Frederiksborg	27.7	37.7	25.2	9.5
Roskilde	27.7	42.4	19.8	10.1
Vestsjælland	33.5	39.6	16.7	10.1
Storstrøm	34.4	40.2	15.6	9.8
Bornholm	37.3	38.7	14.6	9.3
Fyn	30.9	37.5	18.7	12.9
Sønderjylland	34.2	39.0	16.3	10.6
Ribe	34.1	37.9	16.3	11.7
Vejle	33.4	38.4	17.2	11.0
Ringkøbing	36.1	37.4	14.7	11.8
Aarhus	28.3	35.9	21.6	14.1
Viborg	35.2	38.3	15.5	11.0
Nordjylland	32.8	37.7	17.2	12.3
Total Denmark	31.9	37.4	19.3	11.4

Sources: Danish Institute of Border Region Studies.

concentrated there. These last arguments also apply for Aarhus. Table 3 shows the particulars for different types of further education.

For vocational training the picture is a bit more mixed with about 40 per cent of the employees having a vocational education in the counties Roskilde, Vestsjælland, Storstrøm, Sønderjylland and Bornholm. The lowest share is found in København where only 33 per cent have a vocational education. Table 2 shows that København especially lack people with educations like metallic and building.

For students there is a higher representation in Aarhus, Fyn and Nordjylland. The figures can be explained by all three counties having an university and other institutes of higher educations. Surprisingly, there is not such a higher representation in Roskilde and København which also have several higher educations.

Tables 1 to 3 show the educational level for employees in all occupations in Denmark, not only the tourism industry. To get an idea of how the educational level is in the tourism industry compared to other industries, I will report some results from 1994 of a study of the tourism labour market in Denmark as a whole (Jensen 1998). Table 4 shows the main results.

Compared with the occupational distribution for all people employed in

Table 2
Employment in Denmark by county and by vocational training. Per cent of total employment by county

County	Commer-ciel	Metallic	Building	Graphic	Service	Food	Health	Other vocationel	Total vocationel
København	17.3	4.6	3.0	1.0	2.6	0.9	2.9	0.9	33.2
Frederiksborg	18.4	6.4	5.1	0.7	2.2	1.1	2.4	1.3	37.6
Roskilde	20.5	7.3	5.5	0.9	2.5	1.4	2.8	1.6	42.5
Vestsjælland	15.9	8.1	5.9	0.6	2.1	1.8	3.1	2.2	39.7
Storstrøm	16.4	8.0	5.7	0.5	2.3	1.5	3.2	2.5	40.1
Bornholm	15.0	7.4	6.1	0.4	2.2	1.8	3.0	2.9	38.8
Fyn	15.1	7.4	5.0	0.7	2.3	1.5	2.8	2.8	37.6
Sønderjylland	15.6	8.4	5.2	0.4	2.1	1.9	2.5	3.0	39.1
Ribe	15.3	7.4	5.9	0.4	2.0	1.7	2.3	2.9	37.9
Vejle	16.5	7.5	5.2	0.8	2.2	1.6	2.6	2.0	38.4
Ringkøbing	15.5	6.8	5.7	0.5	2.4	1.8	1.8	2.8	37.3
Aarhus	16.2	6.6	4.7	0.9	2.0	1.3	2.5	1.7	35.9
Viborg	14.9	7.3	6.3	0.5	2.0	1.7	2.8	2.8	38.3
Nordjylland	15.7	7.8	5.5	0.5	1.9	1.6	2.6	2.2	37.8
Total Denmark	16.4	6.9	5.0	0.7	2.2	1.5	2.6	2.0	37.3

Sources: Danish Institute of Border Region Studies.
a) because figures are rounded they do not always add up to the figures in table 1.

Table 3
Employment in Denmark by county and by further education. Per cent of total employment by county

County	Humanities, arts	Technical science	Health	Social science	Other further educational	Total further[a]
København	9.1	4.1	5.3	4.7	1.2	24.4
Frederiksborg	8.5	3.6	7.0	4.4	1.7	25.2
Roskilde	6.9	2.6	5.2	3.4	1.7	19.8
Vestsjælland	7.1	1.2	3.8	3.4	1.3	16.8
Storstrøm	6.8	1.1	3.2	3.2	1.3	15.6
Bornholm	6.0	0.9	3.0	3.5	1.3	14.7
Fyn	7.2	1.8	4.9	3.8	1.0	18.7
Sønderjylland	6.6	1.4	4.3	2.8	1.2	16.3
Ribe	6.8	1.5	4.4	2.7	1.0	16.4
Vejle	6.7	1.7	4.8	3.1	1.1	17.4
Ringkøbing	6.1	1.3	3.4	2.9	1.0	14.7
Aarhus	8.4	2.7	5.4	4.2	0.9	21.6
Viborg	6.4	1.1	3.4	3.3	1.3	15.5
Nordjylland	6.9	1.7	4.1	3.3	1.1	17.1
Total Denmark	7.5	2.3	4.7	3.7	1.2	19.4

Sources: Danish Institute of Border Region Studies.
a) because figures are rounded they do not always add up to the figure in table 1.

Denmark, there was a higher representation of students in the tourist industry. Conversely, there was a lower representation of people with a further education. With regard to general education the figure was slightly higher in the tourist industry than elsewhere, and with regard to vocational training the opposite was found to be true.

This situation is not unique for Denmark. Further education (apart for technical education) seems to be directed primarily towards employment in private services, and especially public or non-market services. This may be because a formal education is required to perform these socially important tasks.

Table 4
Tourism employment and total employment by education in Denmark 1994. Per cent

	General	Vocational	Further	Students
Total employment tourism	37.6	32.5	8.3	21.6
Total employment Denmark	35.1	36.0	17.5	11.4

Sources: Jensen, 1998.

The reason why so many students are occupied in the tourist industry may be that the skills required for new employees are not particularly specific. The tasks to be performed are quickly learned. Students can also fill a gap when it is difficult to find other workers because of irregular working hours, seasonal or part-time employment etc. In other words, students may be more flexible than other groups. On the other hand, students may be prevented from applying or obtaining jobs in certain occupations because of trade union agreements or demands for specific training.

III.3. Other variables - gender, age and full time versus part time jobs

Other variables then education may be of interest describing the tourism labour market. This is variables like gender, age and the extent of full time versus part time jobs. This part of the analysis is not finished. But in the study of the tourism labour market in Denmark as a whole (Jensen, 1998), I found that women in 1994 accounted for half of all employment in the tourist industry, which was slightly more than in all industries in Denmark. Combining the information on education and gender it looked like that in general, female students seem more likely to have jobs in the tourist industry than male students. It was also more common for students to work in the tourist industry than in other sectors of the economy.

Women who have completed further education seem less likely than men to have jobs in the tourist industry. This may be because women primarily choose training related to the health and education sector. Such training are not directed towards employment in the tourist industry, but include tasks carried out in other parts of the economy not for the purpose of tourism. If we consider people with a vocational training, men seem more likely to work in the tourist industry than women. For people only having a general education, women are more likely than men to work in the tourist industry.

In relation to the age structure by education for people employed in the tourist industry in 1994 it was found that not surprisingly, the majority of students were under 30. Students probably work primarily to supplement their grants.

In terms of employees with a general education, there was a relatively high number of people in the young age-groups and people over 50. This can be explained by the fact that younger generations have a higher educational level than older ones. For young people general education may be a transitional stage before starting a qualifying education.

The 1994 investigation did not include the extent of full time versus part time jobs in the tourism industries, but my impression is that part time jobs are more common in the tourism industries than other parts of the economy.

In my further analysis I also expect to find regional differences in this three variables - the difference depending of the regional tourism structure.

IV. FURTHER WORK AND CONCLUSIONS

This paper gives a general view of the

labour market in Denmark with respect to education. It is the aim of my future work to analyse some of the problems outlined here in depth. Especially to describe the tourism labour market by combining the results from TØBBE of the tourism employment by industry with the information from the Regional Labour Market Database on education by industries. Another import work to be done is to look at other variables than education. I have already mentioned gender, age and the extent of full time versus part time jobs. The tourist industry is defined broadly to mean all industries involved with tourism, and not only front-line tourist sectors like hotels, restaurants, the retail trade and transport.

One important issue involves the analysis of regional data. In Denmark the tourist industry varies considerably from one region of the country to the next. On the west coast of Jutland rented holiday homes and camping sites dominate the tourist industry. In Copenhagen hotels dominate. This difference influences the regional tourist labour market within Denmark. Tourists in rented holiday homes primarily create jobs in the retail trade, manufacturing etc., while hotel tourists primarily create jobs in hotels and restaurants. Rented holiday homes also seem more likely to be influenced by seasonal fluctuations in demand, making it more difficult to obtain year-long employment. The ownership (private or public) and size of tourist firms may also influence the labour market.

Other interesting question may also be asked. For instance, has the labour market in the tourist industry changed over time, and if so in what direction? The tourist industry also has a high turnover of employees. Why is this so? Who stays in the tourist industry? Who leaves it? Is the fact that people in low-paid tourist jobs gradually move to better-paid jobs in other sectors of the economy a natural process? All these questions may not be answered by this set-up. Primary because data do not allow it. But it may be a point of departure for further investigations.

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