

The footprint of outdoor recreation on the Danish national economy

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Introduction

Politically, more focus has been given to the importance of nature areas for the Danish public's outdoor life in recent years – a focus culminating in the spring of 2015, when the Ministry of Environment published the first Danish national outdoor recreation policy (Miljøministeriet, 2015). In preparation of this policy, the national economic significance of outdoor recreation was called for. To meet this demand, the consumption related to the Danes' outdoor recreation activities were estimated based on data collected through a questionnaire survey. Knowing this consumption allows for 'input-output' analyses to calculate the proportion of Denmark's gross domestic product (GDP) that is attributable to the outdoor recreation activities of Danish households, and the related employment (Jacobsen et al., 2014).

Data collection

To ensure that respondents are on common ground, 17 specific outdoor recreation activities and physical areas (forest, beach, lake, city, etc.) were specified in the questionnaire. Instructions were given to ensure the accuracy of the expenses reported as incurred in connection with the activities – e.g. ensuring that the same expenses are never stated more than once and that the expenses were carried in Denmark during the last 12 months prior to the survey. The respondents were asked to indicate what expenses the *household* have had over the entire range of possible expenses – from transport, specialized clothing and overnight stays, to more durable consumer goods such as tents, bicycles, weapons, etc. adapted to the 17 specific outdoor recreation activities. The 17 activities were selected on the basis of e.g. previous national outdoor recreation surveys and what is generally considered as 'outdoor recreation' in a Danish context – in contrast to e.g. pure sport activities at designated grounds and mere transport. The questionnaire was sent out to a representative sample of the adult Danish population through a polling company (Userneeds). In total, responses from 4,058 persons were received in the period from Mid-October to Mid-November 2013.

Input-output model

The data basis for the input-output model is derived from the overall input-output table for the Danish economy, divided into 117 professions. Across these industries, the contribution of the activity-creating consumption can be divided into *direct* and *indirect* effects. Initially, activity-creating consumption contributes to direct effects in the industries that deliver the requested goods and services. In order, for the industries which benefit from the direct effects, to deliver the desired production they need additional input from a number of other

industries, and thereby creating the indirect effects – whereby the value of the total production always will exceed the activity-creating consumption.

Results

Consumption

In 2013 (September 2012 - September 2013) Danish households spent 11,157 DKK on average on outdoor activities in Denmark, with an estimated total consumption of around 29 billion DKK at the national level (Table 1). Equipment expenditure is the largest item (just over 11 billion DKK), followed by clothes and shoes (almost 3.5 billion DKK). Analysing consumption by activities (Table 1), it is apparent that the largest consumption falls within the category 'Nature trip' with a consumption of just 6.8 billion DKK, followed by sailing at just 5.7 billion DKK. However, it should be noted that more than half of the expenses related to sailing are accounted for by the trade of used boats between private individuals. This does not create economic activity – in a national economic sense.

Table 1. Footprint of domestic outdoor recreation consumption on the Danish national economy in 2012-2013, ranked by consumption. (Million DKK and number of employees. 1 € ≈7.5 DKK; 1 US\$≈6 DKK).

	Consumption	Activity creating consumption	----- Induced effect on -----			
			Production	GDP-contribution	Employment	Fulltime
Nature trip	6.809	5.023	8.476	5.200	11.727	8.771
Sailing	5.729	1.989	3.205	2.264	3.432	2.716
Cycling	4.960	2.242	3.669	2.620	4.874	3.739
Horseback riding	2.087	1.511	2.452	1.591	3.059	2.515
Study/exp. nature	1.818	1.169	1.954	1.277	2.602	1.977
Hunting	1.782	1.222	2.142	1.351	3.019	2.491
Bathing	1.420	1.043	1.759	1.099	2.393	1.798
Jogging	1.397	870	1.428	989	2.216	1.649
Fishing	1.315	622	1.022	736	1.525	1.147
Mountain biking	616	263	429	315	566	435
Canoeing/kayaking	496	288	482	319	633	489
Flying	145	104	172	117	228	178
Paintball	126	78	129	93	194	144
Roller-skating/skiing	122	74	120	82	191	141
Nordic walking	108	70	115	79	175	130
Skiing/ice skating	90	57	92	62	139	104
Wind- & kitesurfing	77	37	62	48	74	58
Total	29.096	16.662	27.708	18.239	37.047	28.483

Footprint on the national economy

But what is the impact of the 29 billion DKK spent on outdoor recreation on GDP and employment? The input-output model utilizes the national account's information on which industries that deliver, produce and/or trade the individual goods and what economic and employment activity it causes. However, the production and employment effects of the total consumption of 29 billion DKK will depend on the composition of the consumption. Therefore one has to identify the *activity-creating consumption*. To do so, it is necessary to withdraw a number of contributions which are not included in the input-output model, namely: 1) direct imports related to outdoor recreation spending of approx. 4.2 billion DKK, 2) VAT of approx. 4.5 billion DKK, 3) taxes of approx. 270 million DKK, and finally 4) private (used) trade of almost 3.5 billion DKK. Leaving an activity-creating consumption of just over 16.6 billion DKK (Table 1). The industries supplying goods and services for the good 16 billion DKK creates indirect effects in terms of demand in their respective productions. Thereby, so-called multiplier effects occur throughout the Danish economy, which means that the total impact of outdoor recreation consumption can be estimated at just

over 27 billion DKK (Table 1). The GDP contribution is calculated to 18.2 billion DKK or approx. 1 % of the Danish GDP in 2012. The total production due to outdoor recreation consumption gives rise to an employment rate of just over 37,000 people, or 1.2 % of the total number of employed (equivalent to 28,500 full-time employees). Breaking down the figures to specific outdoor recreation activities, it is evident that the more general 'Nature trip'-activity is the most significant by its contribution of close to 1/3 to the overall national economic impact of outdoor recreation.

Multiplier effect

A comparison of the importance of the various recreational activities for the Danish economy – independent of the level of activity – can be achieved by considering the so-called multipliers. Considering e.g. 'Nature trip' it turns out that for every 1 million DKK consumed within this activity, a production of 1.12 million DKK is generated in the Danish economy – a contribution of 0.69 million to the GDP and the employment of 1.55 persons. Generally, the secondary effects of 'Nature trip' are among the highest, while the lowest derived effects are seen for 'Cycling' and 'Mountainbiking', due to high import rates.

Closing remarks

A comparable Swedish study of spending on outdoor recreation in 2009 reaches a consumption of just over 72 billion SKK by the Swedish households (Fredman et al., 2010). When converting to DKK and taking the difference in population-size into account, the Swedish consumption correspond to 29.5 billion DKK. In this way, the total consumption in the two analyses turns out to be astonishingly similar; however, significant differences occur when comparing the individual consumption categories and types of activities.

References

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