ECONOMIC IMPACT OF TOURISM

THE PROCESS OF RESEARCH DESIGN FOR THE JÄMTLAND REGION

EKONOMISKA SPRIDNINGSEFFEKTER INOM TURISM (SPRIT)

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Agenda

Introduction – Tourism Economic Impact Analyses (EIA)

- Purpose and domains of EIA

Tourism EIA – The current situation in Sweden

- Statistical approaches for EIA
- Model approaches for EIA
- Summary of needs for regional EIA in tourism

Defining requirements for Tourism EIA in the region of Jämtland

- Background & Stakeholders
- Conceptual framework

Outlook and summary

- Regional Social Account Matrix (RSAM)
- Regional Tourism Satellite Account (RTSA)
- Regional Computable General Equilibrium Model (RCGE Model)

Purpose of Tourism Economic Impact Analyses (EIA)

- Economic **significance** of T&T
- Economic **benefits** from T&T ⇔ income, employment, foreign exchange earnings & balance of payment, improvemed economic structures, entrepreneurship
- Qualified **prospects** ⇔ (Non)tourism businesses, public officials, planners, community
  → Assessment of value-added, beneficiaries ⇔ economic interdependencies

Scope Domain of EIA

- **Direct** effects → business receipts of tourism & -related sectors
- **Indirect** effects → further re-spending and linkages among industries
- **Induced** effects → increased household income

Aggregation-level domain of EIA

- Sector(s) of *System of National Account* (SNA) ⇔ sub-sectors of SNA (Tourism Satellite Account)

Time domain of EIA

- Ex-Post ⇔ Ex-Ante (forecasts)

Geographic domain of EIA

- National ⇔ **(Sub)regional ⇔ Destination**

Frechtling & Smeral 2010, Stynes, 1997

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The Current Situation: Statistical Approaches

- **Overnight Statistics** – **Inkvarteringsstatistik** (SCB & Tillväxtverket)
  - Room occupancy, guest nights, guest type (business, groups, leisure), country of origin, total revenue of accommodation provider
  - Commissioned by government ⇔ considers suppliers if ≥ 5 rooms / 9 beds
  - Reported daily/monthly - mainly electronically

Statistiska centralbyrån
Statistics Sweden

- **Eating & Drinking Places** (SCB & Visita; *partily n progress*)
  - Classification of restaurant types
  - Sample: 1,000 restaurants ⇔ 7 categories

TILLVÄXT VERKET

- **System of National Account** (49 SNI–based economic activities)
  - Tourism-related sector's output (e.g. Transportation)

VISITA
SVENSK BESÖKSNÄRING

SCB 2014, Tillväxtverket 2014, Visita 2014

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The Current Situation: Statistical Approaches

- **National Tourist Data Base** (TDB; Resurs AB)
  - Ca. 24.000 tel. interviews/year with domestic houesholds
  - Info on reservation habits, transport mode, accommodation type, trip purpose, destination, expenses…

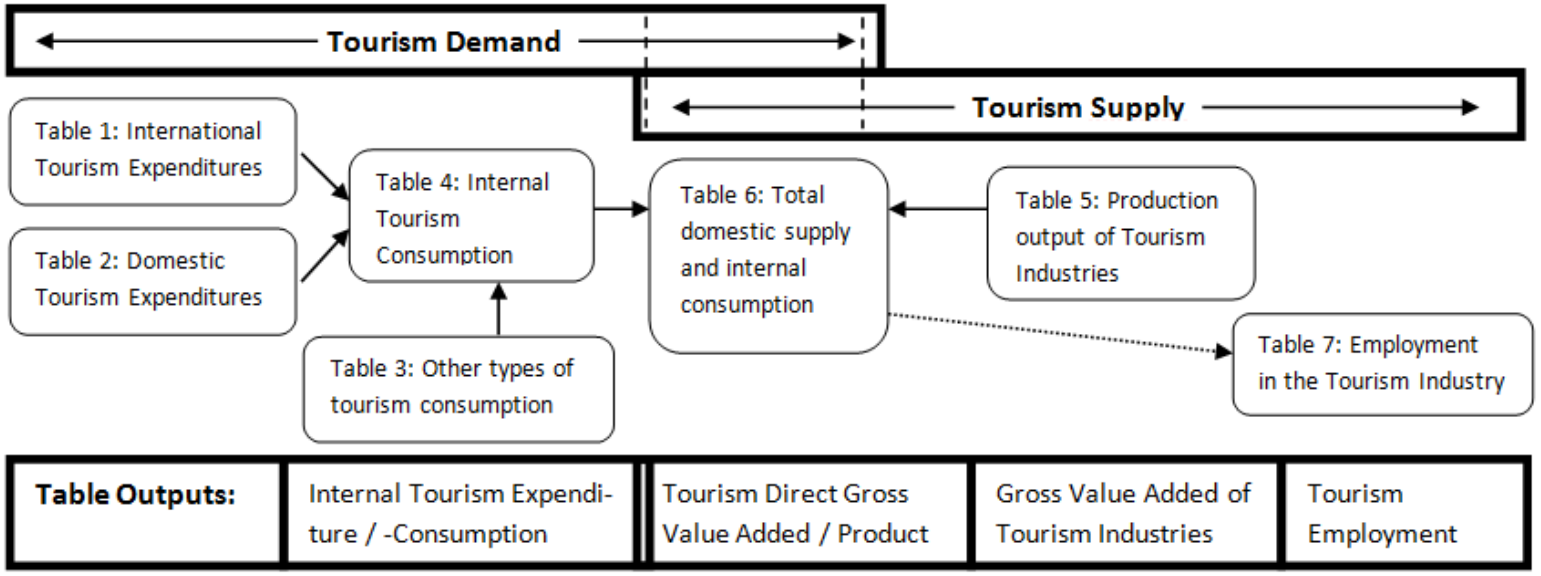
- **International border surveys** (IBIS; Inkommande besökare i Sverige, (Tillväxtverket)
  - Since 2011 yearly data on tot. amount of incoming visitors, origin country, purpose of visit, length of stay, expenditure patterns…

Tillväxtverket 2014, Resurs AB 2014

The Current Situation: Statistical Approaches

Tourism Satellite Account (TSA) (SCB, Tillväxtverket)

- Set of tables measuring **size** and **shape** of *demand-defined* tourism industry
- Measures **impact of visitor consumption on GDP and employment**
- Integrates supply and demand-side concepts
- Based on SNA framework & UNWTO Guideline



Frechtling 2010, Frechtling & Smeral 2010

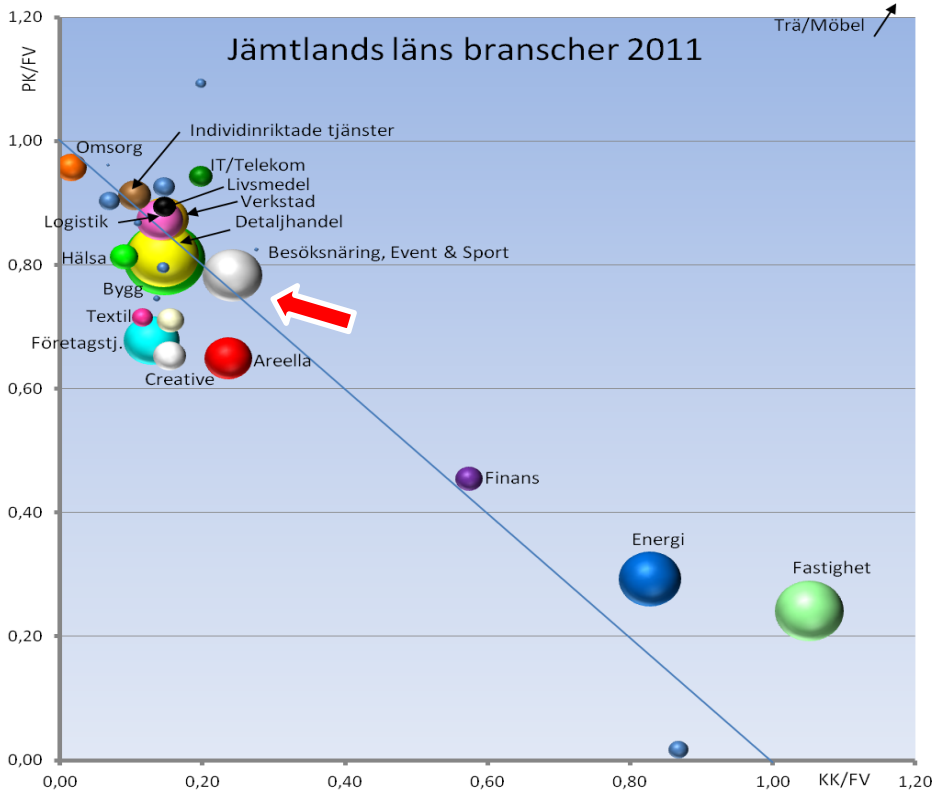
The Current Situation: Model approaches for EIA

GRUFMAN REJE management

The Simpler Model (Grufman Reje; *regional impact study*)

- **Economic performance** over time (Value Added, profitability, capital/labor intensity)
- Single businesses → **entire industries**
- SNI code/expert opinion-based

labor intensive



capital intensive

Performance of Jämtland' s Industries

X = Capital intensive turnover (capital costs/value added)

Y = Labour intensive turnover (wage costs/value added)

Line: Costs = Value Added (VA)
Right of line: Costs > VA
Left of line: Costs < VA

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The Current Situation: Model approaches for EIA

Input Output Model

Statistiska centralbyrån
Statistics Sweden

- Regional table quantifies mutual **interrelationships** among sectors of economy
- Sector's level of intermediate **input** and corresponding **output** level
- IO-Model calculates **direct** and **indirect** effects from visitor spending

	Agriculture (AGR)	Manufacturing (MFG)	Services (SER)	Final Demand	Total Output
Agriculture	1	2	1	6	10
Manufacturing	1	3	2	4	10
Services	2	2	4	12	20
Value Added	6	3	13		
Total Input	10	10	20		

$(I-A)^{-1}$ **Δy** Direct **Δx**

	AGR	MFG	SER
AGR	1.18	0.37	0.12
MFG	0.22	1.55	0.21
SER	0.35	0.48	1.33
Total	**1.75**	**2.40**	**1.66**

Multiplier

*

Δ Final Demand
1
2
0

=

Indirect

Δ Total Output
1.92
3.32
1.31
∑ = 6.55

Dwyer et al 2004, Eurostat 2008, Frechtling 2011, Hara 2008

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The Current Situation: Model approaches for EIA

Regionalt Analys- och Prognossystem (rAps, Tillväxtanalys)

- Regional analyses of population, housing, employment, economy
- Based on Input-Output Model
- Integrates 2 systems
  - Regional information system for regional statistics
  - Local forecasting and scenario analyses

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Summary: Needs for Regional Tourism EIA in Jämtland

- **Small suppliers omitted** in overnight statistics (SCB)
- Limited **regional specific expenditure data** (TDB; IBIS)
- Limited indication of **share and significance of tourism** (SNA; TSA)
- Limited measurement of **secondary and induced effects** (TSA)
- No **inter-industry effects** (i.e. tourism as isolated sector) (Simpler Model)
- No resource limitation and fixed input-output structure (IO Model)
- Not **full tourism industry** (rAps)

TILLVÄXTVERKET tillväxtanalys GRUFMAN REJE management UNWTO World Tourism Organization

SCB Statistiska centralbyrån Statistics Sweden VISITA SVENSK BESÖKSNÄRING TDB® RESE- OCH TURISTDATABASEN rAps

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Defining requirements for EIA in Tourism for Jämtland

Background

- Insufficient evidence on economic significance of tourism in region of Jämtland
- Needs to support decisions related to tourism sectors ⇔ What-if-scenarios for investments in Åre/Östersund?

→ **Östersunds Municipality** (Camilla Olsson)

→ **Regionförbundet** (Sven Winemark)

→ **Jämtland Härjedalen Turism** (Mats Forslund)

→ **Tillväxtanalys** (Anne Kolmodin)

→ **Razormind** (Lars-Börje Eriksson)

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Defining requirements for EIA in Tourism for Jämtland

Stakeholder meetings in Nov /Dec 2013 and January 2014 → *SPRIT Ekonomiska Spridningseffekter inom turism (ETOUR report* 2014:4)

1. **Regional tourism expenditures** in **main destinations** (Åre, Östersund)

2. **Tourism EIA** on *all* sectors of regional economy → Regional multiplier, induced effectes, leakages outside region
   - **Direct** and **indirect economic effects**: turnover (*business*), income (*household*), tax (*government*)
   - **Societal (induced) effects**: houesehold income, job types

3. **What-if-scenarios** for regional development ⇔ Estimating economic impact of investments in tourism(-related) sectors (+/-)

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Outlook

1) Regional Social Account Matrix (SAM)

Builds on **IO Table** to quantify **interrelationships** among sectors of economy

SAM additionally considers **factors of production** and **households/government**

Matrix operations lead to **direct, indirect and induced effects**

Multiplier $(I-A)^{-1}$

Intermediate Input
Value Added
Total Input

Intermediate Output

	AGR	MFG	SER	FACT	HH-R	HH-U
AGR	1.49	0.68	0.43	0.46	0.61	0.50
MFG	0.61	1.94	0.62	0.58	0.79	0.61
SER	0.97	1.11	1.98	0.92	1.20	1.01
FACT	1.02	1.01	0.91	1.59	0.78	0.64
HH-R	0.37	0.36	0.33	0.57	1.31	0.26
HH-U	0.57	0,57	0.51	0.89	0.54	1.40
Total	5.03	5.67	4.79	5.01	5.23	4.41

*

Direct

Δy

Δ Final Demand
0
0
1
0
0
0

=

Δx

	Δ Total Output
Indirect	0.429
	0.616
	1.982
Induced	0.914
	0.331
	0.515
	∑ = 4.787

Dwyer et al 2004, Eurostat 2008, Frechtling 2011, Hara 2008

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Outlook

1) Regional Social Account Matrix

- *Direct, indirect and **induced*** **economic effects** from tourist spendings and investments
- **Societal effects**: per household type/income groups (wage, job), location
- **Limitations**: fixed input structure, homogenous output, unlimited resources

Tasks

- Data input ⇔ regional IO Table (49 SNI activities; *Tillväxtanalys*) → disaggregation into **tourism sub-sectors**
- Estimation of tourism **share** in **tourism-related industries**
- **Tourists' spending data** in Åre/ÖSD
- **Composition of** (intermediate) **inputs**
- **Household data**

Akkemik 2012, Burfisher 2011, Frechtling 2011, Hara 2008

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Outlook
2) Regional Tourism Satellite Account

- Set of tables quantifying **size** and **shape** of **tourism industry ⇔ direct impact** of tourist expenditures on **GDP** and **employment**
- *Demand* (**tourist expenditures**) ⇔ *Supply* (**GVA of tourism industries, tourism employment**) → *Tourism direct Gross Value Added* (**Tourism share on GVA, employment**)

Tasks

- Supply **data from Regional SAM** *disaggregated* for tourism-related sectors

  → secondary and primary (survey-based) data

Frechtling 2010, Hara 2008, UNWTO 2013, van Ho 2008

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Outlook

3) Regional Computable General Equilibrium Model (CGE)

- Effects of **changes in demand** and **changing market/policy conditions**
- **Overcomes SAM limitations** ⇔ unlimited resources, fixed market structures
- Equations describe producers'/consumers' bahavior according **theory**
- **More realistic** ⇔ competitive markets, factor substitution, price changes, resource flows from other industries into tourism (→ lower multiplier)

Tasks

- Adjusting **existing CGE models** for region of Jämtland, e.g. producers'/ consumers' economic behavior ⇔ elasticities, factor substitution, resource limits, export share on output, independent variables
- **SAM data** as **input** for initial equilibrium ⇔ EIA by *'experiments'*

Blake 2006, Burfisher 2011, Dwyer et al. 2004, Norén 2013

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Summary & conclusion

- **Research & development project SPRIT → Prototypes for set of models and methods, exemplary results of regional EIA in tourism, recommendations**
  - *Feasibility study* and *project completion* with industry experts
  - Stakeholder access to results (e.g. DW of DMIS Åre)
- **Challenges**
  - Delays in obtaining data measuring **supply/demand activities** in tourism
  - **Structural changes** in regional economy
  - Intervals between activities and measurable effects ⇔ **short/long-term effects**

Frechtling & Smeral 2010

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Thank you ☺

Comments…

Questions…

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