

# The Askøy bridge

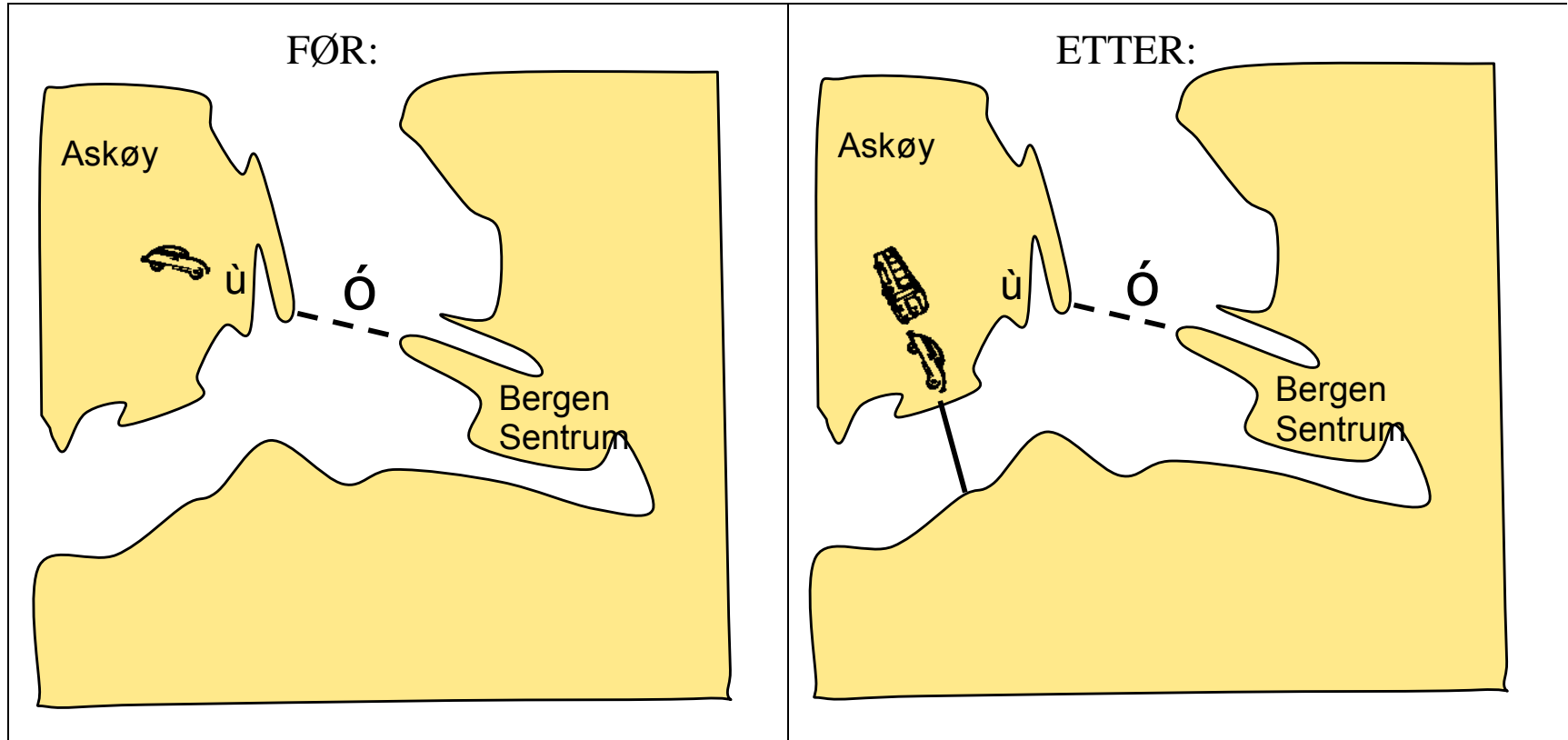
- A before and after study



# Motive:

- Test a transport model
  - Frequently used model, test assumptions in the transport model
  - Describe challenges of ferry modeling
  - What kind of effects (general, because of the bridge) are captured by the model

# New transport system



# Three travel surveys

- 1992 Bergen
  - 1993 only on Askøy
  - 2000 Bergen
- Correspond well to the project, the Askøy bridge opened dec. 1992.

# Model

- TASS 5 design –the newest at the time of this study
- Model area as in an earlier model
- Bigger zones
- Three scenarios TM92, TM93 and TM2k
- Zonal data for TM92 and TM93 from 1990 and for TM2k 2000 (from TASS 5)
- Road network from older models
- Not parking, few crossings coded

# Result themes

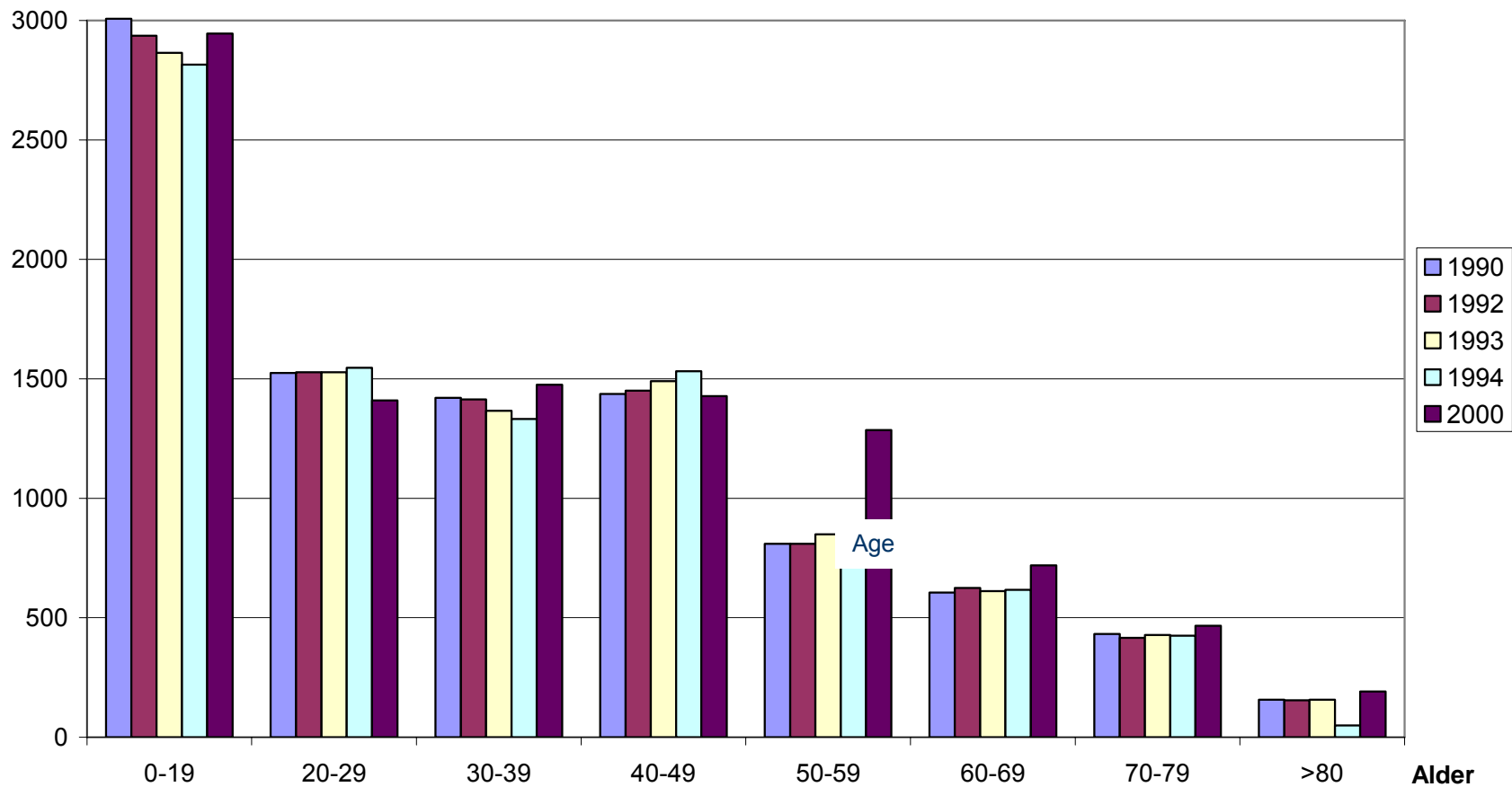
- Trip production
- Travel (OD-) pattern
- Mode choice
- Traffic flows

# Trip production groups are:

1. Residence – work
2. Residence – elementary school
3. Residence – college and universities
4. Residence – shopping/service
5. Residence – Other
6. Other (= the non-home based parts of trip chains)
7. External traffic
8. Commercial traffic

# Number of men on Askøy

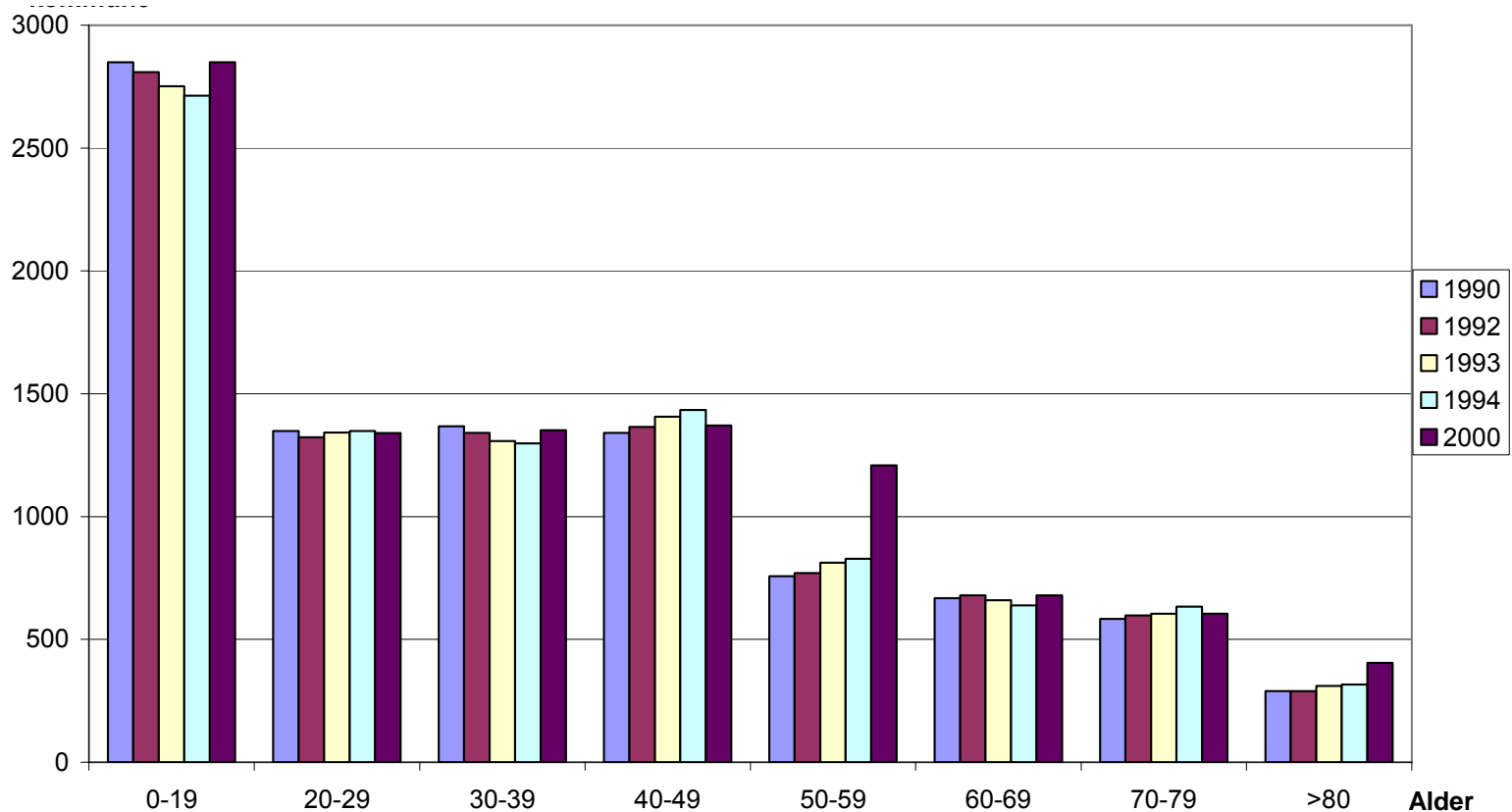
Source: NSD (Norwegian social science dataservice)



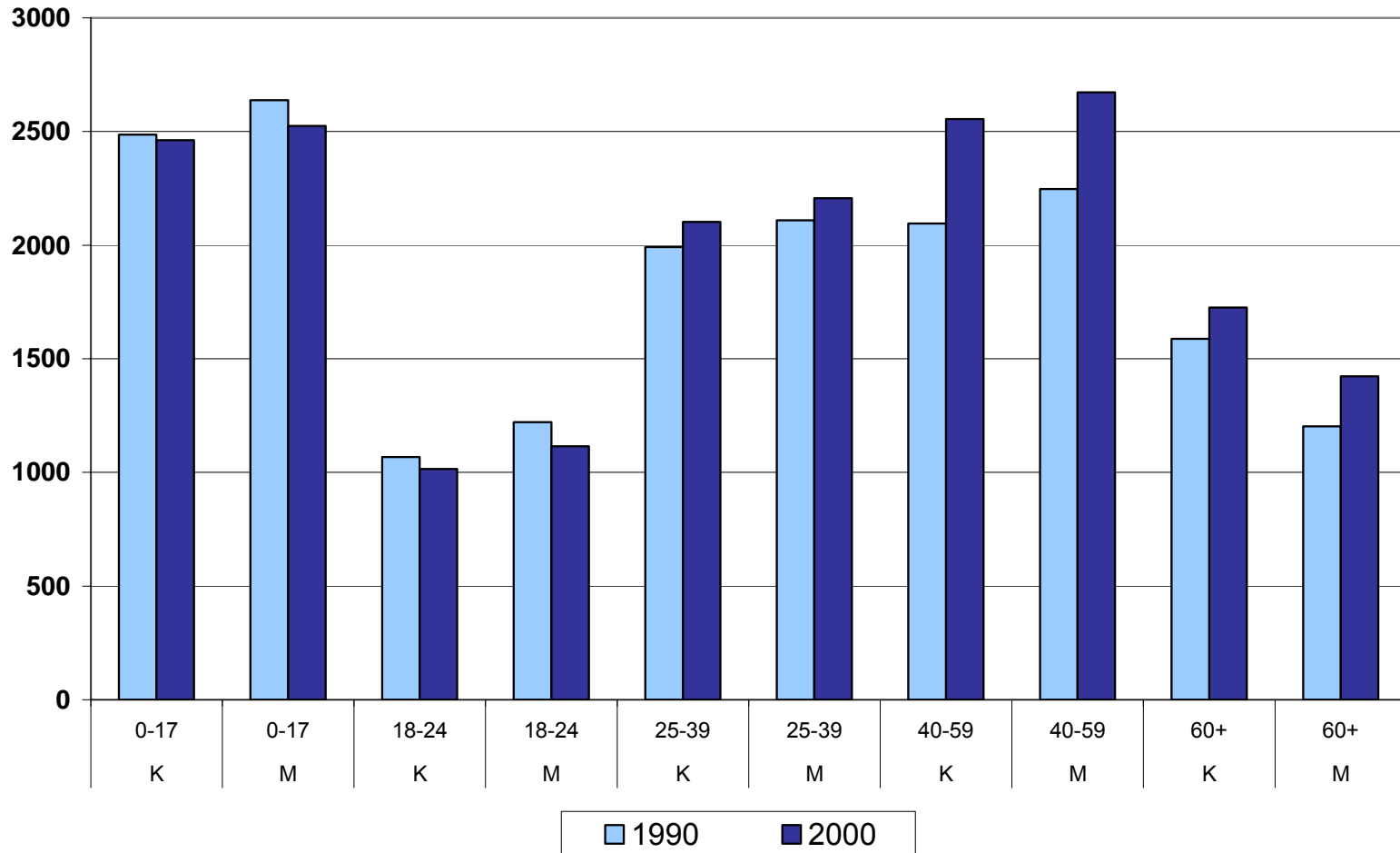


# Number of women in Askøy

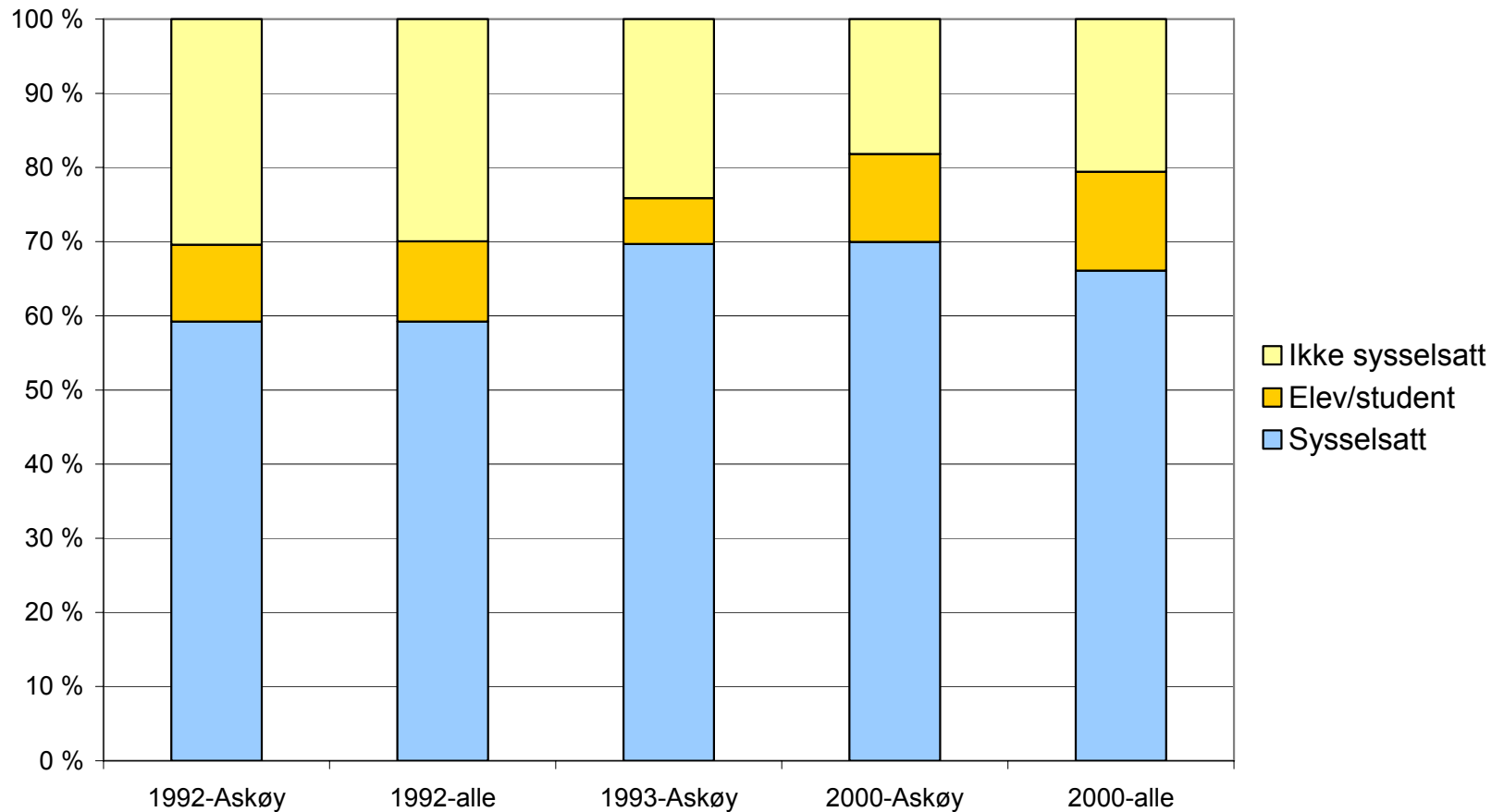
Source: NSD (Norwegian social science dataservice)



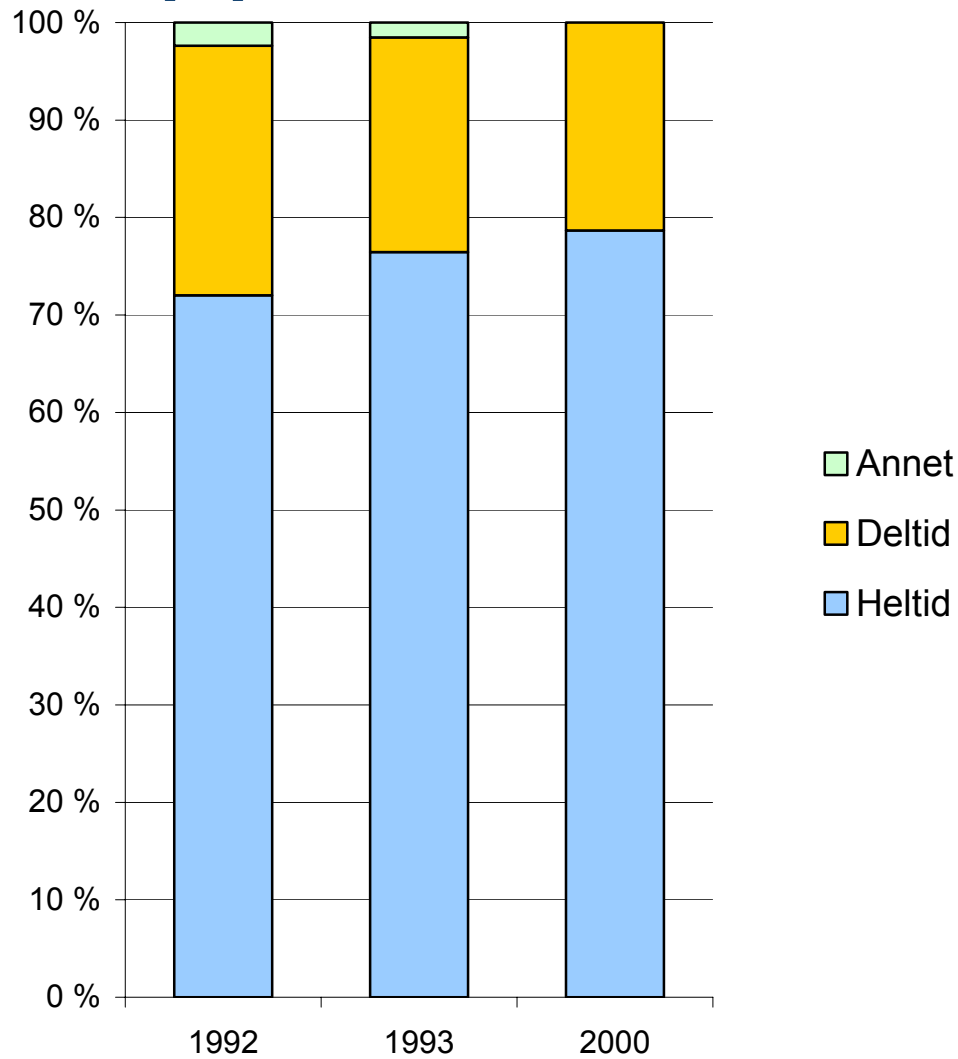
# Number of men and women from the zonal data



# Employment from travel surveys



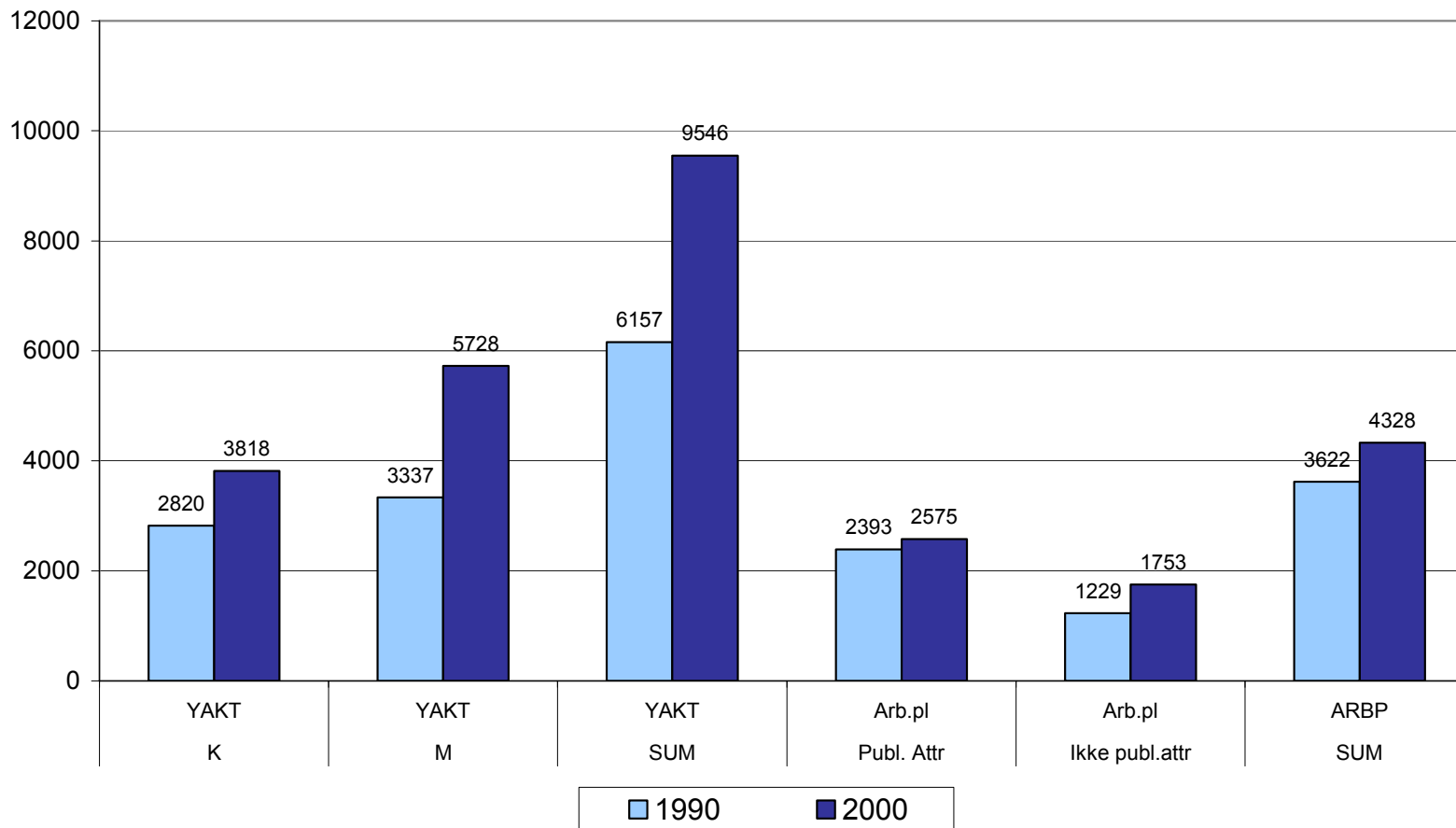
# Employment (2)





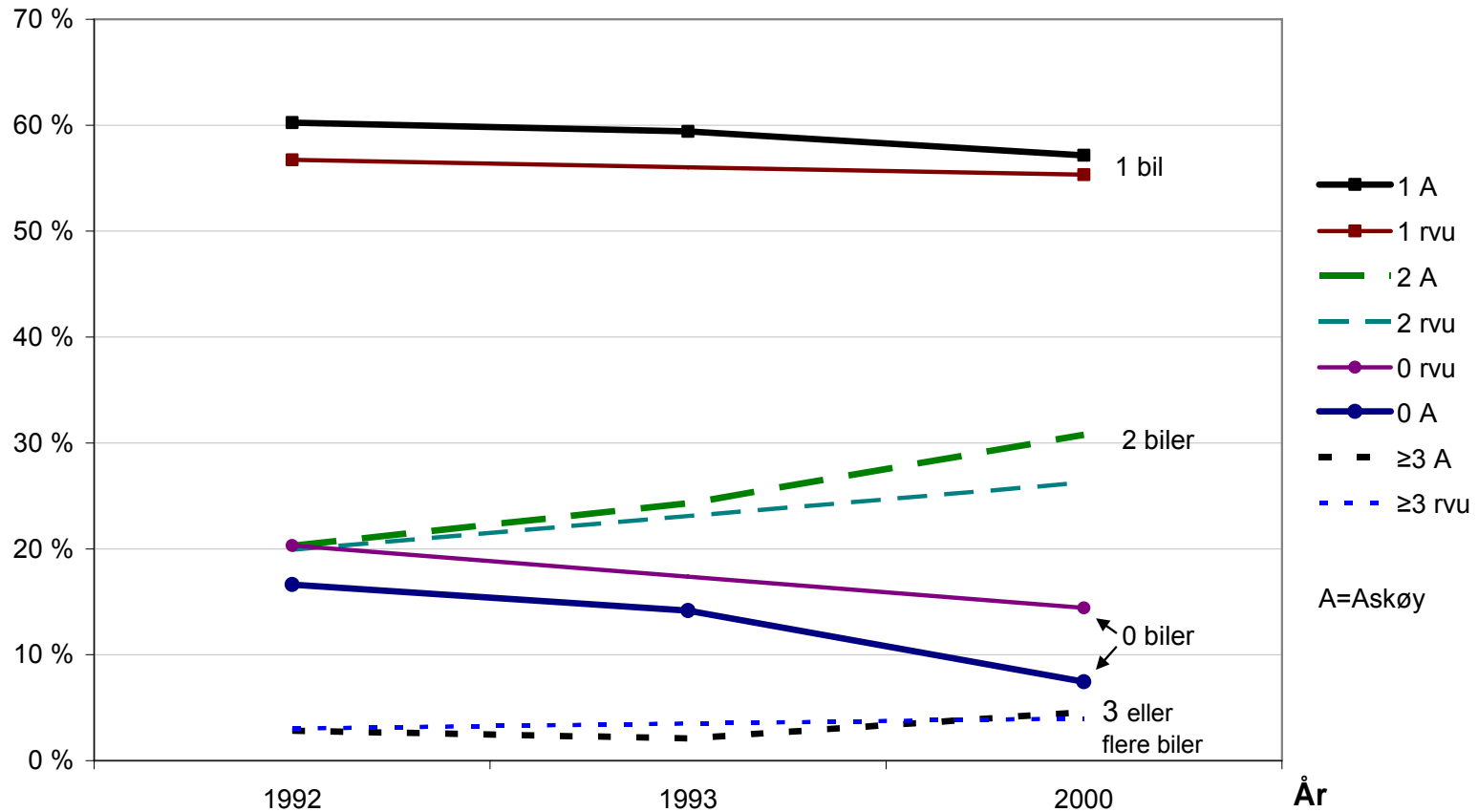
# Employment from zonal data

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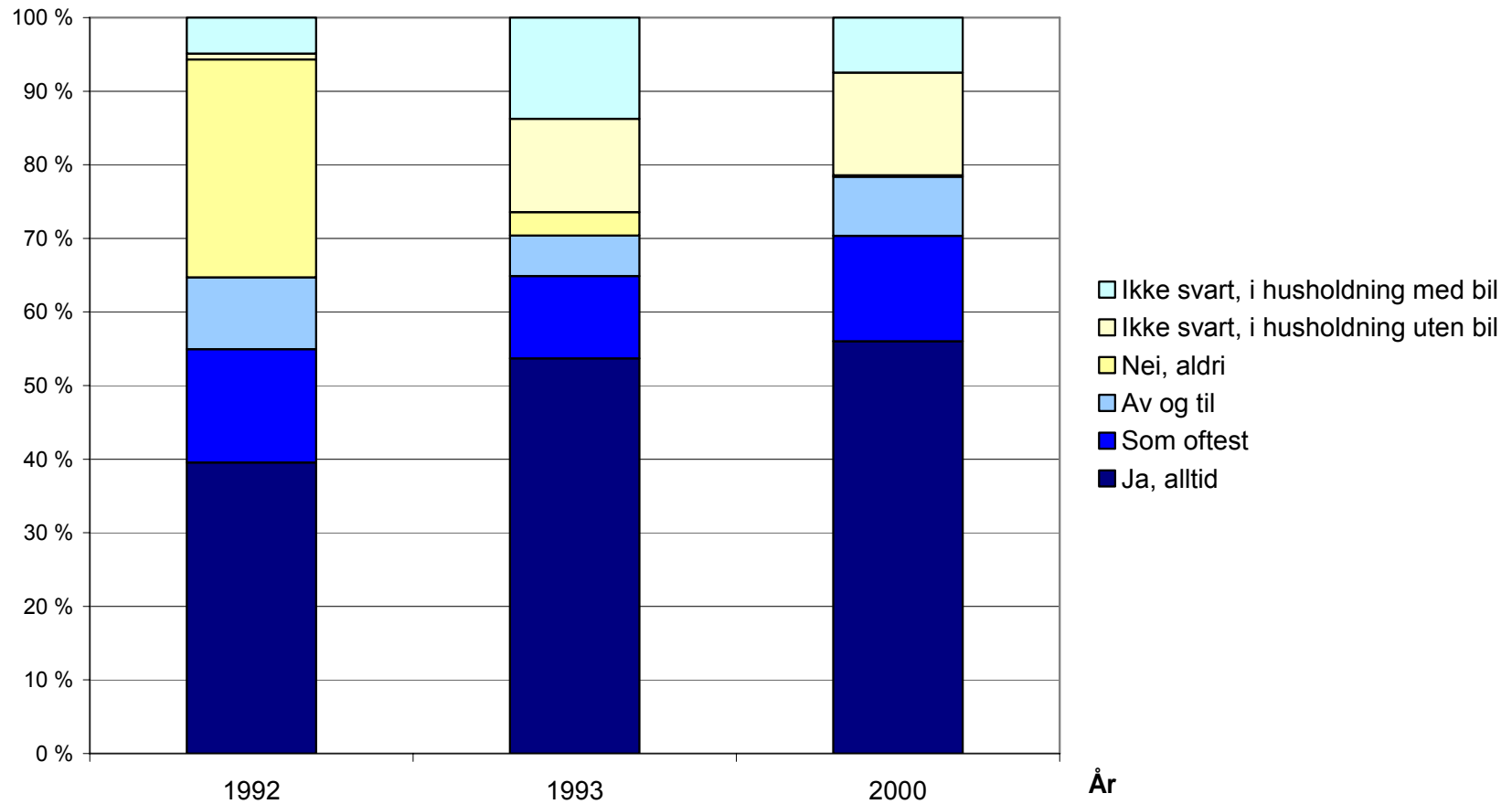




# Car ownership



# Access to car



# Trip production

- Travel survey:
  - Trip Frequency **not changed** for Residence – shopping/service and Residence – Other (depended on number of people resided in Askøy)
  - Trip Frequency **changed** for Residence – work and Other (depended on number of jobs and number of people resided in Askøy)
  - Induced traffic ?

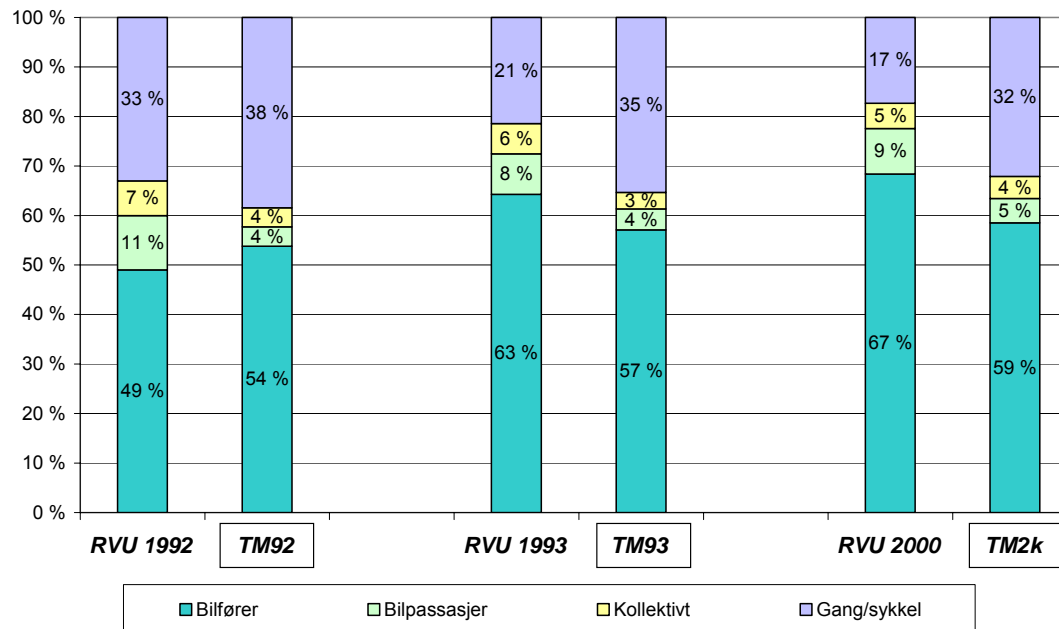


# Trip distribution

- The travel survey reported a change in Trip distribution, The Transport model reported other changes, but small changes
- Generalised Cost (time) are too high for the trips between Askøy-Bergen with the ferry

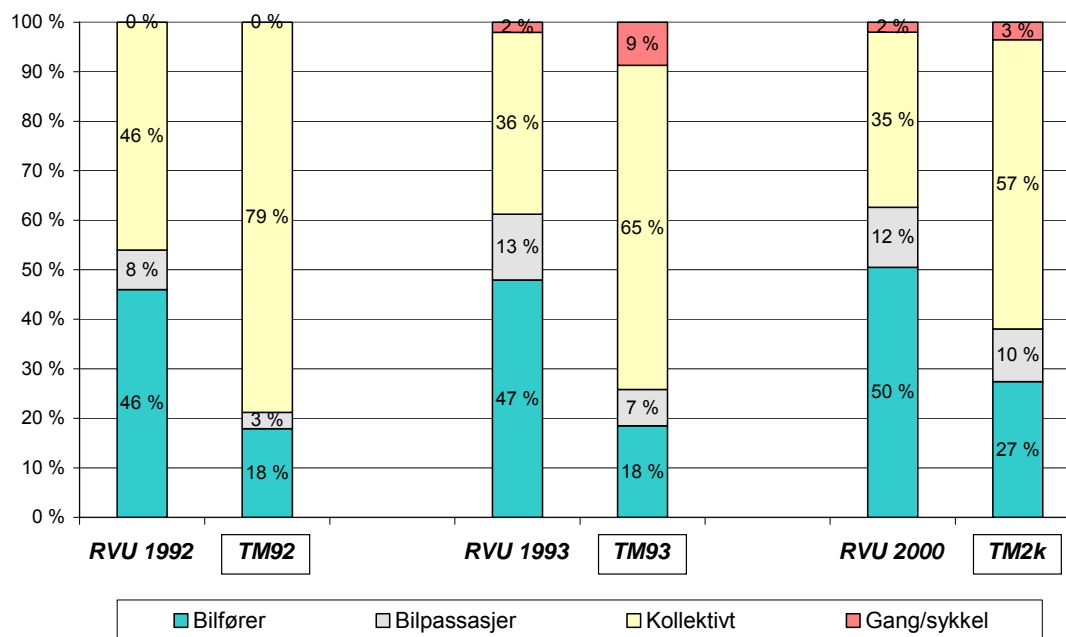
# Mode shares

Internal trips on Askøy – Transport model and travel survey



# Holder de mot RVU

- Trips to -and from Askøy – Transport model and travel survey



# Traffic flows ferry/bridge

Year	Transport model	Counts
1992	5 700	2 500
1993	4 500	4 000
2000	8 600	7 000

# Traffic flows ferry/bridge

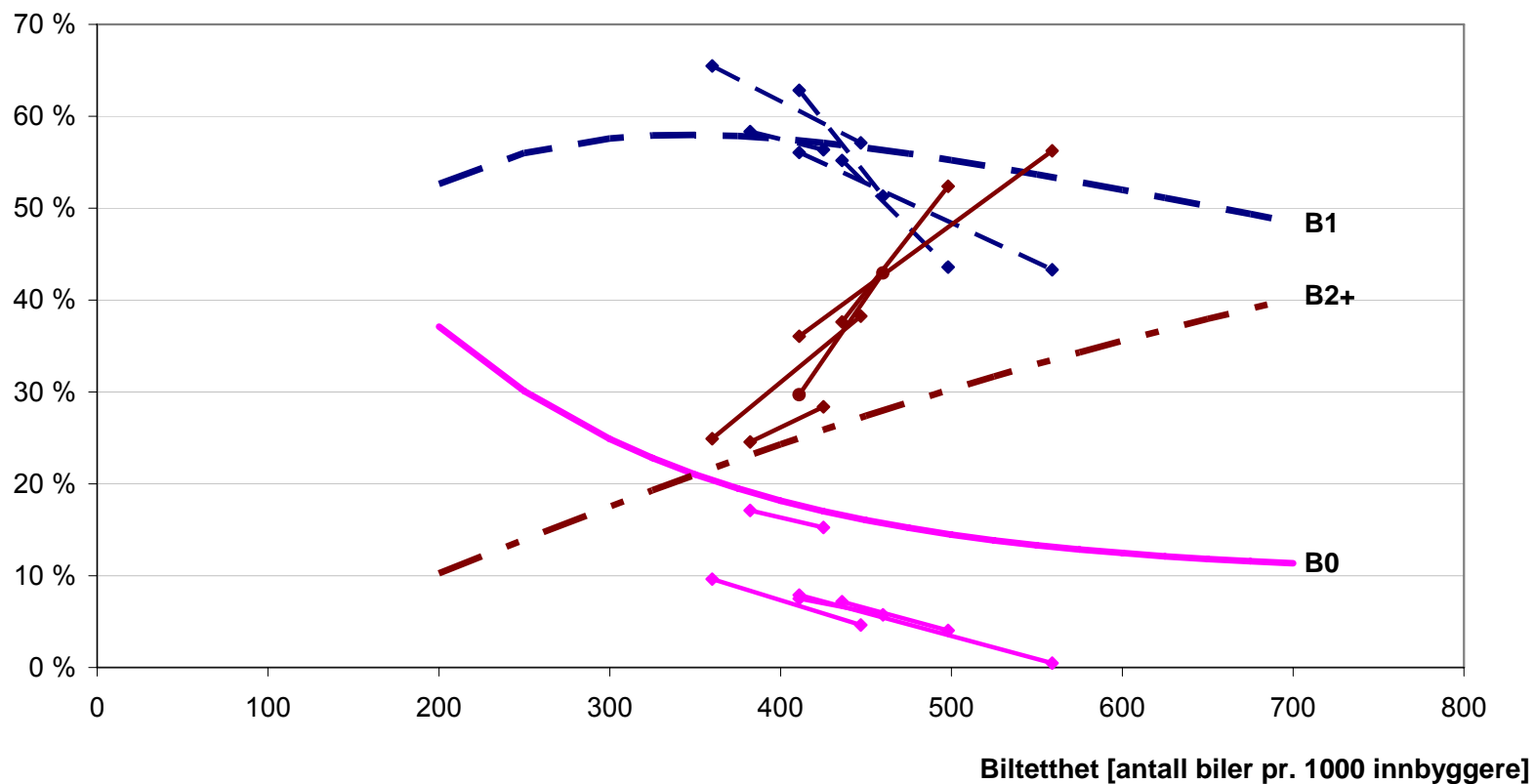
Year	Transport model	Counts
1992	2 000	2 500
1993	1 600	4 000
2000	5100	7 000

# Net assignment (3)

Ferry passengers	Aadt	Share
With car (light vehicles)	2 179	18 %
Without car	9 748	82 %

# Assumption on car ownership/car density?

## Car ownership and car density



# Assumptions in the TM

- Trip frequency
  - Shows that changes only follow increased activity in the work marked and only affects work-trips and trip-chains in connection with the work-trips
- Trips distribution
  - You can not use distance as the only variable into TD-calculation!  
Not even for external traffic or commercial traffic
- Mode shares
  - Costs connected to trips with the ferry seems too high
- Car ownership
  - Erroneous assumption about the relation between car ownership and car density



## Further .....

- Use other cost function for ferry in Trip Distribution and Mode choice calculations
- Combined trips (in TS and in TM)
- Change zonal data (job marked)
- Hierarchical logit models?
- Commercial traffic
- Test the new regional transport models