


HOW TO CALCULATE THE IMPACT OF A UNIVERSITY ON THE REGIONAL ECONOMY

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P.H.Pellenbarg
Faculty of Spatial Sciences
Urban&Regional Studies Institute URSI
University of Groningen, the Netherlands
p.h.pellenbarg@rug.nl

How important is a university in the region, for ..

- Employment
- Incomes
- Social structures
- Cultural life
- Prestige
- Image
- Happiness



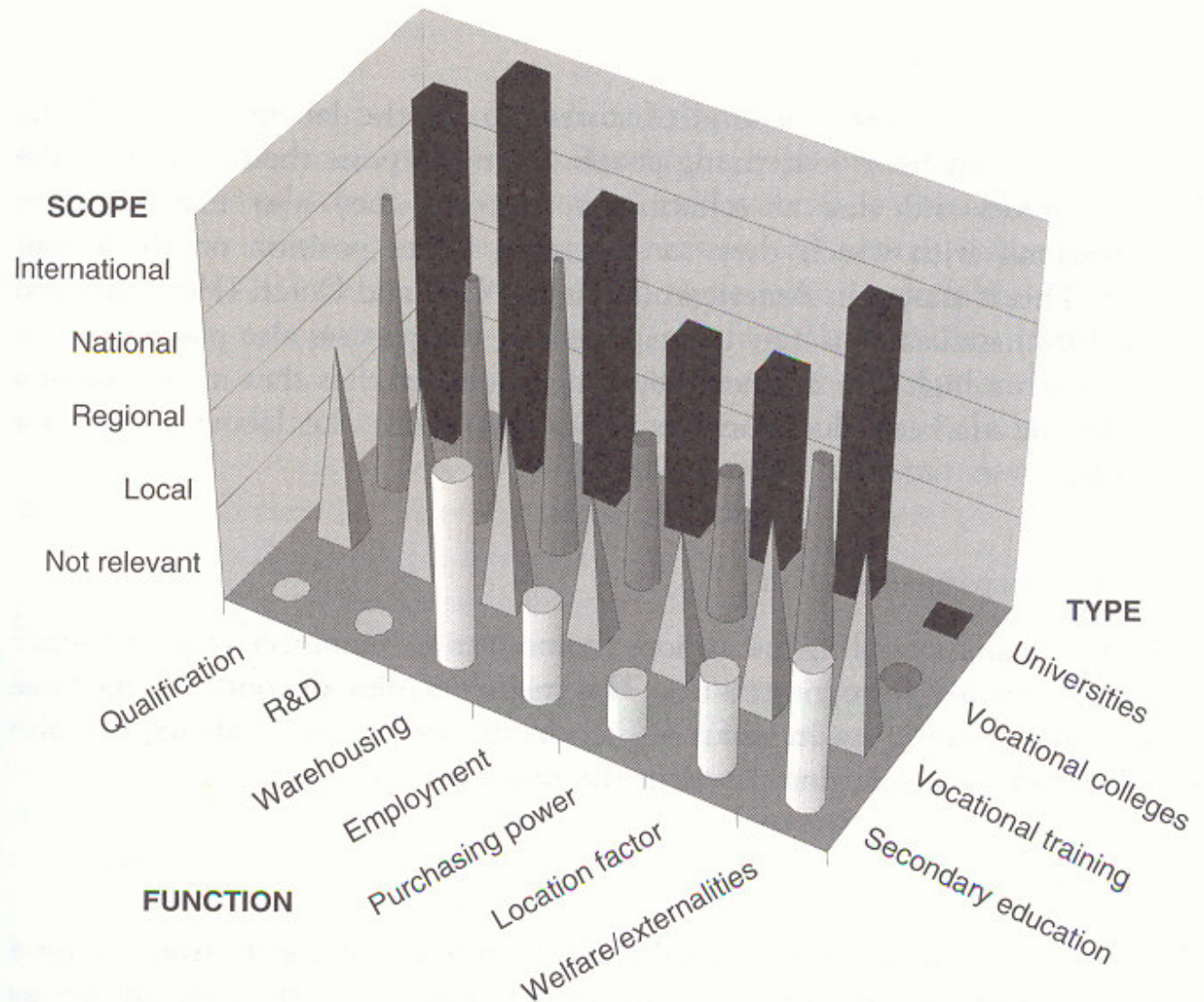
Complexity
of measuring

Functions and effects of universities

- SCHOOL
(teaching)
- LABORATORY
(research)
- ENTERPRISE
(business)
- INPUT-effects
(backward linkages)
- OUTPUT-effects
(forward linkages)
- ATTRACTION-effects
(location&image linkages)

A Model of Economic Functions of Institutes of Higher Education and their Spatial Scope

Source:
M. Vermeulen
*Human Capital in
the Hinterland*
Tilburg 1996



Categories of Impact according to Vermeulen

- Qualification effects
 - R&D effects
 - Warehousing effects
 - Employment effects
 - Purchasing power effects
 - Location effects
 - Welfare effects and externalities
- } Output effects
- } Input effects
- } Attraction effects

Qualification effects

- 20,000 students
- Annual output of graduates: 2500
- 35% (875*) enter the regional labour market
- where they are supposed to earn not modal but double modal incomes (60,000 Euro)
- Resulting in a yearly extra input of $875 \times 30,000$
= 22 million Euro = 200 extra jobs

** this is only 2.5% of the cohort of 35,000 schoolleavers that enters the northern labour market each year!*

R&D effects

- 2002: contract activities account for 15% of the university budget
- This corresponds to many (1000?) full time research jobs, but that is counted elsewhere in our model (being an employment effect)
- Only 10% of the contract money is from private firms – mostly outside the region
- The (output) R&D effect to regional firms is weak.

Employment effects

- 5,400 direct univ. employment (4400 fte)
 - 7,000 in the university medical centre
 - 1,000 indirect, spending to regional firms
 - Total employment effect: 13,400
-
- 15,000 small student jobs (4,000 fte) are *not* counted as employment effects, but as adding to the purchasing power effects

Purchasing power effects

- Not only expenditure in shops, cafe's etc, but also spending on housing, sports, culture
- Crucial for calculation: the multiplier %
- For employees univ and umc: multiplier 50%
- For students: multiplier 15%
- Result: 50% of 13,400 + 15% of 20,000
= 9,700 jobs from purchasing power effect

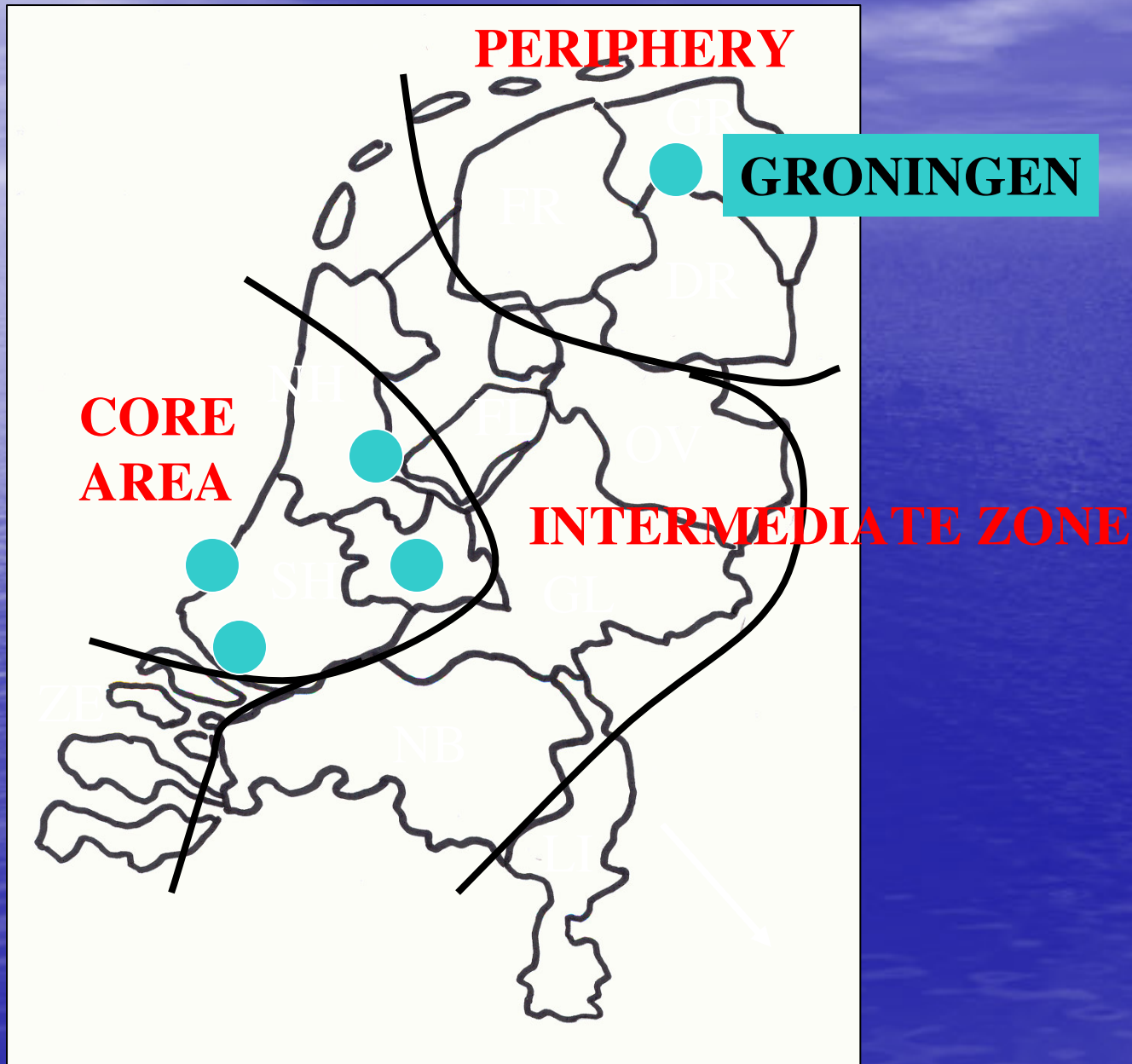
Location effects: 2 categories

- **Spin-offs:** firms started in or from the university
- *not completely known*
- 20 firms Univ. Holding Comp. (170 jobs)
- 5 other firms (730 jobs)
- AOG (50 jobs)
- TCN (450 jobs)
- 50% of the Science Park firms (500 jobs)
- Total 1,900 jobs
- **Spin-on's:** firms attracted by the university as the main location factor
- *almost completely unknown*
- Cordis (1500 jobs)
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- 50% of the call centres in Groningen (2000 jobs)
- 50% of the firms in the Science Park (500 jobs)
- Total 4,000 jobs

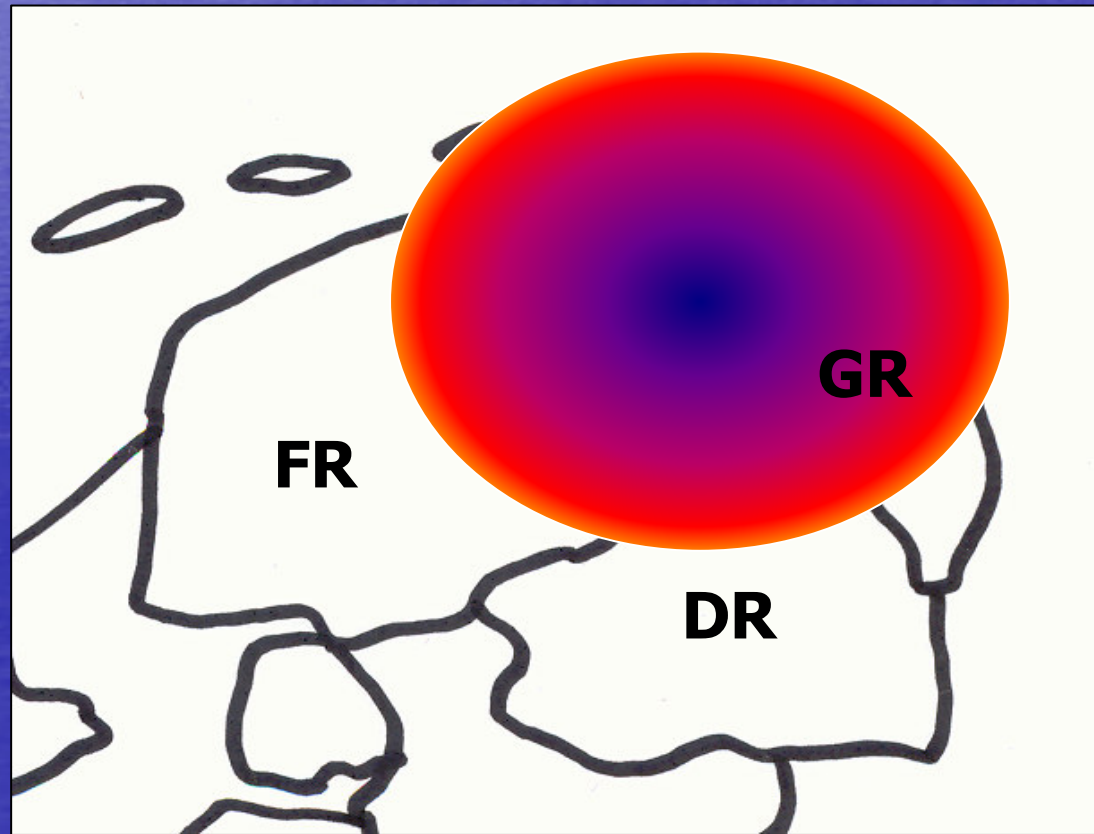
External effects

- Presence of the university supports the image of the region
- No quantification available, but
- 90% of the Dutch report a positive association between 'Groningen' and 'possibilities for education'
- Is Groningen the relevant region, or the whole of the North?
- 90% of all effects concern the province of Groningen + Northern Drenthe

The Netherlands: Core and Periphery



The University Region: the province of Groningen + Northern Drenthe *(radius 30-50 kms)*



SURVEY OF ALL EFFECTS

<i>effect</i>	<i>jobs</i>	<i>explanation</i>
UNIVERSITY	5,400	direct exmployment
UNIV.MED.CENTRE	7,000	direct employment
SUPPLIERS	1,000	indirect empl. of Univ. & UMC
QUALIFICATION EFFECTS	200	empl.eff. of 22 mill. euros
R&D EFFECTS	PM	
SPIN OFFS	1,900	incl. 50% of ScP and 50 AOG
SPIN ON'S	4,000	incl. 50% of ScP; 2000 call centr.
PURCHASING POWER		
- for Univ,UMC,suppl,stud.	9,800	incl. 50% mult. of qual.effects
- for spin offs & spin on's	2,250	50% mult.; callcentr:half of 30%
EXTERNAL EFFECTS	PM	
TOTAL	31,550	

CONCLUSIONS

- 90% of all effects land in the province of Groningen + North Drenthe
- 90% is 28.400 jobs, compared with a total of 268.500 in the region = 10.6 %
- Much more than the result of earlier studies from 1967 (2.5%) and 1983 (5%)
- Further growth is possible, especially growth based on location- and image-effects