



How can young doctors be attracted to become GPs?

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Background

- Countries worldwide face challenges in recruiting GPs
- Ambitious health policy reform in Norway: More GPs wanted



The policy issue

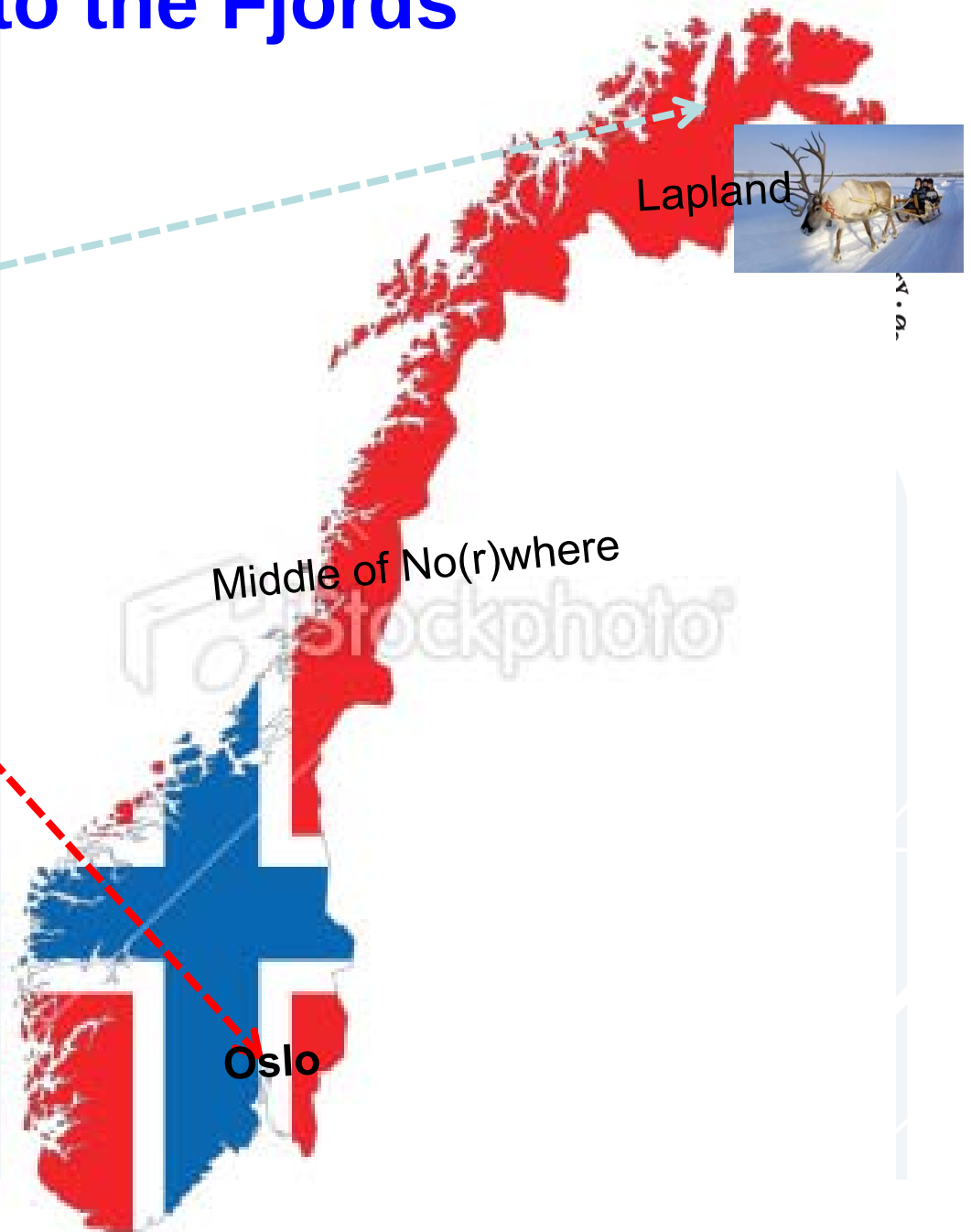
- How can general practice be made more attractive?
 - What are the relative importance of various job attributes?
 - Which types of compensations would make young doctors choose rural locations?



'Getting Doctors into the Fjords'



?



The young doctor study

- All last year medical students and interns (N= 1,562)
 - Compulsory internship
 - 12 months in hospitals + 6 months in general practice
 - Invitation letter including link to online questionnaire
 - 2 reminders
 - 53% response



The young doctors study

- Motivation and background
 - Inclination to work as a GP
 - Attitudes towards various job characteristics
 - Attitudes to the current remuneration system (Abelsen & Olsen; *Does an activity based remuneration system attract young doctors to general practice?* BMC Health Services Research, 2012)
 - Socio demographic
- Discrete choice experiment
 - Relative importance of five important job characteristics
 - Attributes and levels selected based on
 - Preceding qualitative study; 5 med. students + 3 interns
 - MABEL and a Danish study



The DCE - attributes and levels

Attributes	Coding	Levels	Expected sign
Practice size	Dummy	1-2 doctors 3-5 doctors (<i>reference level</i>) 6 doctors or more	- ?
Location	Dummy	< 5 000 inhabitants 5 000 - 14 999 inhabitants 15 000 -49 999 inhabitants (<i>reference level</i>) > 50 000 inhabitants	- - + +
Opportunity to control working hours	Dummy	- Limited (<i>reference level</i>) - Very good	- +
Opportunity for professional development	Dummy	- Limited (<i>reference level</i>) - Very good	- +
Income	Continuous	10 % less than the average salary for hospital doctors - Equal to the average salary for hospital doctors (<i>reference level</i>) 10 % above the average salary for hospital doctors 20 % above the average salary for hospital doctors	- + +

Informed that average annual salary for young hospital doctors NOK 750,000 (1 AUD = 6 NOK)

The DCE – experimental design

- Choice pairs, created by software Ngene (Choice Metric)
- 4 blocks * 6 choice pairs = 24 choice pairs
- Binary forced choice: practice A vs. practice B



The DCE - data analyses



- Mixed logit model
- Income is assumed to be fixed, while all remaining covariates are assumed to be normally distributed
- Separate regressions for respondents who are i) considering general practice only; ii) considering GP as an alternative alongside with others, and; iii) not considering GP to be an alternative

Inclination to work as a GP

“Which job would you like to have in 10-15 years?”

Tick 1 or more from 6 listed alternatives



Respondent groups	Average ticks	N	%
Consider GP only	1	106	13
Consider GP + other alternatives	2.6	331	40
<i>Not</i> considering GP	1.8	394	47
Total	2	831	100

Why different degrees of inclination would matter in a DCE



- Different preferences
 - The relative values of the GP-job attributes might differ across the 3 groups
- Different degrees of noise/error
 - The degree of noise/error might differ across the 3 groups
 - The DCE questions may appear to be more hypothetical for those who do not rate GP among their top choices
 - Those who consider to become a GP should be expected to have more 'considerate preferences' on the GP-job attributes and/or take the DCE more seriously

→ Hypothesis:

The more inclined the respondent group is for becoming GPs, the less random are their responses in the DCE exercise, i.e. less noise/error

Hypothesis on 'GP only' group less random

- Heteroscedastic logistic regression model
- Hypothesis
 - The scale parameter (τ), which is inversely related to the variance (i.e. unobserved variability – error), is higher for those who consider GP, as compared to those not inclined to become a GP.



Mixed logit models

	Considering GP only			Considering GP + other alternatives			Not considering GP		
	Coeff.	SD	WTP	Coeff.	SD	WTP	Coeff.	SD	WTP
Size of practice (relative to 3-5)									
1-2 GPs	-2,734***	-1.283*	- 200 250	-1,966***	1,439***	-141 000	-2,170***	1.792***	-157 500
>6 GPs	-0,513	2.674***	-37 500	0,018	1,663***	1 500	0,121	1.776***	9 000
Location (relative to 15000-49999)									
<5000 inhabitants	-1,737***	2.652***	-127 500	-2,056***	2,241***	-147 750	-2,153***	2.515***	-156 750
5000-14999 inhabitants	-0,965*	-1,974*	-70 500	-0,289	-0,915*	-21 000	-0,628***	1,203***	-45 750
> 50000 inhabitants	-0,807	0,985	-59 250	-0,463*	-1,711***	-33 000	-0,238	2.502***	-17 250
Opportunity to control working hours (relative to limited)									
Very good	3,538***	-1.151**	259 500	2,207***	1,263***	158 250	2,013***	-0.587	146 250
Opportunity for professional development (relative to limited)									
Very good	2,249***	3,300***	165 000	2,339***	2,423***	168 000	2,222***	2.304***	161 250
Income	10,239***			10,455***			10,317***		
Cons	-0,132	-0,027		0,009	0,476**		0,146	0.175	
Pseudo R	0.335			0.252			0.251		
Number of observations	1 266			3 952			4 686		

Preference heterogeneity?

- Preference heterogeneity between groups tested, using the log likelihood test of parameter equality (Swait-Louviere)
- The hypothesis of equal utility parameters across groups was rejected (but with little margin)



The MWTP results

- The two least inclined groups have roughly the same WTP for
 - Avoiding small practice size
 - Avoiding rural location
 - Control over working hours
 - Professional development
- The 'GP only' group appear to have higher WTP for
 - Avoiding small practice size
 - Control over working hours



Hypothesis on 'GP only' group less random



- Result
 - The scale parameter (τ) is higher for the group that consider GP alongside with other alternatives and GP only, as compared to those who do *not* consider GP.
 - It appears that the size of the coefficient increases with the degree of inclination:
 - $\tau = 0.10$ and not statistically for the group considering GP alongside with other alternatives and
 - $\tau = 0.24$ and statistically significant for the group considering GP only

So, what's your views on...?

- Do the MWTP results make sense?
- Does the split into 3 respondent groups make sense theoretically?, i.e. are there reasons to believe
 - Preferences differ?
 - Degree of non-considerate answering differ?

