

USING A DISCRETE CHOICE EXPERIMENT INCORPORATING DURATION TO VALUE HEALTH STATES (PRET-AS STUDY)

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PRET/PRET-AS project team

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Introduction

- Interest in using Discrete Choice methods for health state valuation
 - Respondents provide ordinal preferences over pairwise choices
 - Different cognitive demands to TTO and SG
 - DCE utility values need to be anchored on the full health-dead QALY scale
- Approach developed that includes duration as an attribute of DCE (DCE_{TTO}, Bansback et al, 2010)
 - EQ-5D health states with duration attribute administered online in Canada
 - Utility values produced by modelling binary choice responses to be equivalent to TTO indifference point
 - Method produced logical and consistent health state utility values
 - (range -1.13 (33333) to 1.00 (11111))

PRET-AS DCE_{TTO} study

- Investigation of the DCE_{TTO} method using EQ-5D-5L health states
 - Feasibility of DCE_{TTO} using EQ-5D-5L health states in UK
 - Inform the optimal selection of EQ-5D-5L state pairs for DCE
 - Investigate how many DCE_{TTO} questions respondents can feasibly complete
- On-line survey using existing commercial internet panel
- Part of wider PRET-AS project funded by MRC and EuroQol group

DCE_{TTO} question format

	HEALTH SCENARIO A	HEALTH SCENARIO B
	Slight problems in walking about	Moderate problems in walking about
	Slight problems washing or dressing yourself	No problems washing or dressing yourself
	Slight problems doing your usual activities	Slight problems doing your usual activities
	Severe pain or discomfort	Moderate pain or discomfort
	Moderately anxious or depressed	Moderately anxious or depressed
	Live for 5 years and then die	Live for 1 year and then die
Which scenario do you think is better?	<input type="checkbox"/>	<input type="checkbox"/>

EQ-5D-5L state 22243 for 5 years

EQ-5D-5L state 31233 for 1 year



Methods: State selection and allocation

- 120 EQ-5D-5L health scenario pairs selected using D-optimal algorithm
- 3 duration levels (1y, 5y, 10y)
 - 18 pairs where duration differed
- 36 blocks of 5 pairs
- 36 survey versions
- Respondents completed 15 pairs (3 blocks)
 - Each block appeared first, second and third
- Block design used to test how many pairs respondents can feasibly complete

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Methods: Survey completion process

- Respondents representative of UK general population in age and gender
- Survey format:
 - Information page
 - Consent page
 - Demographic questions
 - Self reported health and health/life satisfaction
 - EQ-5D-5L
 - 15 DCE_{TTO} questions
 - Free text question

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Methods: Analysis

- Model specification:
 - latent utility scale (μ) for each respondent i choosing between health profile j where each profile includes EQ-5D attributes x and life years t :

$$\mu_{ij} = a_i + \beta t_{ij} + \gamma' x_{ij} \cdot t_{ij}$$
 - t (1, 5, 10) estimated to be linear
 - Rescaled to health utility scale (V) using:

$$V_j = 1 + \hat{\gamma}' / \beta' t_j \cdot x_j$$
 - Models carried out for overall sample completing 15 pairs and also each batch of 5/10 pairs

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Results: DCE coefficients

	All	Rank	95% CI width
Mob2xT	0.006	1	0.020
Mob3xT	-0.021 ***	3	0.019
Mob4xT	-0.096 ***	13	0.021
Mob5xT	-0.116 ***	15	0.020
SC2xT	-0.004	2	0.019
SC3xT	-0.022 ***	4	0.018
SC4xT	-0.103 ***	14	0.019
SC5xT	-0.133 ***	16	0.021
UA2xT	-0.025 ***	5	0.021
UA3xT	-0.048 ***	8	0.020
UA4xT	-0.082 ***	11	0.020
UA5xT	-0.092 ***	12	0.019
PD2xT	-0.027 ***	6	0.019
PD3xT	-0.064 ***	9	0.020
PD4xT	-0.155 ***	17	0.020
PD5xT	-0.197 ***	20	0.021
AD2xT	-0.033 ***	7	0.019
AD3xT	-0.065 ***	10	0.019
AD4xT	-0.169 ***	18	0.020
AD5xT	-0.189 ***	19	0.022
T	0.393 ***		0.037
Obs	53970		

- 1799 respondents
 - (54% female; mean age 40)
- Mean task completion time
 - B1:24.03s/B2: 20.68s/B3: 18.63s
- One inconsistent coefficient (Mobility 2)
- Similar coefficients and relatively stable ranking across batches
- Smaller CI width:
 - Whole sample completing 15 DC tasks
 - Two thirds completing 10 DC tasks
 - Combination of sample size, number of tasks and level of comprehension
- Importance of number of observations?

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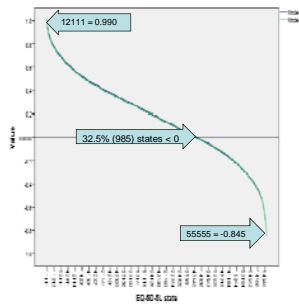
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Results: Modelling health state values

Anchored coefficients

	Model 1 (All)	Model 2 (Consistent)
Mob2	0.015	0
Mob3	-0.053	-0.058
Mob4	-0.244	-0.249
Mob5	-0.295	-0.303
SC2	-0.010	-0.010
SC3	-0.054	-0.056
SC4	-0.262	-0.261
SC5	-0.338	-0.338
UA2	-0.064	-0.063
UA3	-0.122	-0.122
UA4	-0.209	-0.208
UA5	-0.234	-0.234
PD2	-0.069	-0.066
PD3	-0.163	-0.160
PD4	-0.394	-0.391
PD5	-0.501	-0.497
AD2	-0.084	-0.081
AD3	-0.165	-0.162
AD4	-0.430	-0.426
AD5	-0.481	-0.477

Predicted utility values

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Discussion

- DCE_{TTO} may be a feasible method to generate health state utility values for EQ-5D-5L
 - produces generally consistent coefficients
- Analysis of data batches indicates:
 - 10 or 15 DC tasks may be better than five DC tasks per respondent
 - Number of observations may be a more important factor
- Limitations:
 - Small number of pairs where duration varies
 - Limited information about level of engagement with complex task in online environment
 - Representativeness of online sample (unobservable characteristics)

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