<table>
<thead>
<tr>
<th>Term</th>
<th>Page(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>A-error</td>
<td>283, 286, 287, 290–93</td>
</tr>
<tr>
<td>Aadland, D.</td>
<td>122</td>
</tr>
<tr>
<td>absolute percentage transfer errors</td>
<td>375–7</td>
</tr>
<tr>
<td>accessible river habitat</td>
<td>171–3, 176–9</td>
</tr>
<tr>
<td>Acharya, G.</td>
<td>202–3</td>
</tr>
<tr>
<td>acidity (pH)</td>
<td>81, 82, 95</td>
</tr>
<tr>
<td>Adamowicz, W.</td>
<td>75, 90, 99, 201</td>
</tr>
<tr>
<td>adaptation</td>
<td>144–5</td>
</tr>
<tr>
<td>advertising</td>
<td>331–2, 333</td>
</tr>
<tr>
<td>advisory referenda</td>
<td>132–4</td>
</tr>
<tr>
<td>affective forecasting</td>
<td>144</td>
</tr>
<tr>
<td>age</td>
<td>92–4, 194, 196, 197–8</td>
</tr>
<tr>
<td>aggregate reef</td>
<td>44, 45, 46</td>
</tr>
<tr>
<td>agri-environmental policy</td>
<td>142–3, 147</td>
</tr>
<tr>
<td>benefit transfer and Canadian water quality improvements</td>
<td>13, 358–81</td>
</tr>
<tr>
<td>air quality</td>
<td>224, 243–5</td>
</tr>
<tr>
<td>alcohol consumption</td>
<td>193, 194, 195, 197</td>
</tr>
<tr>
<td>alkalinity</td>
<td>81, 82, 87, 95</td>
</tr>
<tr>
<td>alternative specific constants (ASCs)</td>
<td>237–8</td>
</tr>
<tr>
<td>alternatives</td>
<td>273–4, 274–6</td>
</tr>
<tr>
<td>irrelevant</td>
<td>328–31</td>
</tr>
<tr>
<td>anchoring test</td>
<td>339–41</td>
</tr>
<tr>
<td>Andersson, H.</td>
<td>17, 19</td>
</tr>
<tr>
<td>anomaly testing</td>
<td>326–47, 348</td>
</tr>
<tr>
<td>apartments</td>
<td>17</td>
</tr>
<tr>
<td>aquatic systems</td>
<td>159; see also bioindicator-based stated preference valuation (BSPV)</td>
</tr>
<tr>
<td>Ariely, D.</td>
<td>334, 339</td>
</tr>
<tr>
<td>Arrow, K.</td>
<td>255, 262</td>
</tr>
<tr>
<td>ascending bundles</td>
<td>234–6</td>
</tr>
<tr>
<td>asymmetric dominance</td>
<td>327–30</td>
</tr>
<tr>
<td>asymptotic variance-covariance (AVC) matrix</td>
<td>278, 279, 281–2, 283</td>
</tr>
<tr>
<td>attribute level balance</td>
<td>276–7, 287–8, 288–9</td>
</tr>
<tr>
<td>attribute levels</td>
<td>273–4, 274–6</td>
</tr>
<tr>
<td>bioindicator-based stated preference valuation</td>
<td>171, 173</td>
</tr>
<tr>
<td>number of</td>
<td>277</td>
</tr>
<tr>
<td>range</td>
<td>277</td>
</tr>
<tr>
<td>attribute scale</td>
<td>260–61</td>
</tr>
<tr>
<td>attribute scope</td>
<td>260–61, 266–8</td>
</tr>
<tr>
<td>definition and presentation of attributes</td>
<td>267–8</td>
</tr>
<tr>
<td>inclusion and exclusion of attributes</td>
<td>266–7</td>
</tr>
<tr>
<td>attributes</td>
<td></td>
</tr>
<tr>
<td>bioindicator-based stated preference valuation</td>
<td>171, 172</td>
</tr>
<tr>
<td>causally prior</td>
<td>268</td>
</tr>
<tr>
<td>choice experiment on upland management</td>
<td>147–9</td>
</tr>
<tr>
<td>iconic</td>
<td>268</td>
</tr>
<tr>
<td>linkages between ecological attributes</td>
<td>167</td>
</tr>
<tr>
<td>Australia</td>
<td>255</td>
</tr>
<tr>
<td>aversion, costs of</td>
<td>3–4</td>
</tr>
<tr>
<td>Bajari, P.</td>
<td>226, 228, 230, 231, 247</td>
</tr>
<tr>
<td>Banzhaf, H.S.</td>
<td>223–4, 246–7</td>
</tr>
<tr>
<td>Barbier, E.</td>
<td>202–3</td>
</tr>
<tr>
<td>Bartik, T.J.</td>
<td>230</td>
</tr>
<tr>
<td>baselines</td>
<td>167, 371</td>
</tr>
<tr>
<td>Battese, G.E.</td>
<td>211</td>
</tr>
<tr>
<td>Bayer, P.</td>
<td>248</td>
</tr>
<tr>
<td>Bayesian parameter priors</td>
<td>283, 284</td>
</tr>
<tr>
<td>beaches</td>
<td>6, 60–73</td>
</tr>
<tr>
<td>Becker, G.S.</td>
<td>301</td>
</tr>
<tr>
<td>behavioural efficiency</td>
<td>294</td>
</tr>
<tr>
<td>behaviouralist critique</td>
<td>315–16</td>
</tr>
<tr>
<td>benefit–cost analysis</td>
<td>13, 14, 322, 379</td>
</tr>
<tr>
<td>benefit function transfers</td>
<td>353–6; see also benefit transfer</td>
</tr>
<tr>
<td>benefit transfer</td>
<td>13, 353–84</td>
</tr>
<tr>
<td>Canadian water quality improvements</td>
<td>13, 358–81</td>
</tr>
<tr>
<td>international meta-analysis</td>
<td>354–5, 356–8</td>
</tr>
<tr>
<td>reliability</td>
<td>371–9</td>
</tr>
<tr>
<td>scope, scale and framing</td>
<td>11, 258, 265</td>
</tr>
</tbody>
</table>
Index

Benkard, C.L. 226, 228, 230, 231, 247
Bennett, J. 259, 260, 263, 264, 265, 266, 268
Bentham, J. 143
Bergstrom, J.C. 188, 258–9
Bernheim, B.D. 316
Berry, S. 237, 238, 239
bias vs efficiency 187–200
hypothetical, see hypothetical bias
part-whole 254–5, 259
potential for in valuing ecological restoration 164–5
road noise and house pricing model 24
binary referendum questions
demand revelation and uncertainty in values 127–9
incentive compatibility and demand revelation 124–7
binding referenda 124–34
bioindicator-based stated preference valuation (BSPV) 9–10, 159–86
challenges to valuation of ecological restoration 160–65
characterizing restoration outcomes 171–4
to survey implementation 174–5
empirical application and data 169–75
empirical model 175–81
structured use of ecological indicators within stated preference valuation 165–9
bioindicator-based stated preference valuation (BSPV) 9–10, 159–86
challenges to valuation of ecological restoration 160–65
characterizing restoration outcomes 171–4
to survey implementation 174–5
empirical application and data 169–75
empirical model 175–81
structured use of ecological indicators within stated preference valuation 165–9
bioindicator-based stated preference valuation (BSPV) 9–10, 159–86
challenges to valuation of ecological restoration 160–65
characterizing restoration outcomes 171–4
to survey implementation 174–5
empirical application and data 169–75
empirical model 175–81
structured use of ecological indicators within stated preference valuation 165–9
biological cover 44–5, 59
birds, migratory 254
Bishop, K. 248
Bliemer, M.C. 283–4
boat ramps 85–6, 87, 95
Bockstael, N.E. 61
Bohm, P. 122
boundary indifference 234–6
boundary value designs 288
Bowen, H.R. 301
Bowker, J.M. 188
Braga, J. 337
Breusch and Pagan Lagrange multiplier test 40, 47, 212
Brookshire, D.S. 16
Brown, J.N. 230
Brown, W.G. 60
Brox, J.A. 359
budget constraint 224–5
Bue-Bjørner, T. 17, 19–20
Buon Ma Thuot (BMT) 206–20
burning of forest, prescribed 105, 110–19
Burton, A.C. 125–7
California forest fire prevention 110–19
Cameron, T. 187, 188, 191, 201
Canada
benefit transfer for water quality improvements 13, 358–81
unit value comparison based on Canadian studies 369, 371–9
water quality studies and international meta-data 359, 366, 369, 370–71
Carlson’s Trophic State Indices (CTSI) 82–5
catchable-size fish, number of 171–3, 176–9
causally prior attributes 268
Caussade, S. 267
cement water storage tanks 209, 211, 212–14
Chattopadhyay, S. 231–2
cheap-talk scripts 8, 137, 304–7
chlorophyll 81, 87, 95
choice experiments/choice modelling 8–9, 160–61, 180
bioindicator-based stated preference valuation 9–10, 170–75
decision vs experienced utility 9, 142–58
choice attributes 147–9
development of experimental designs 11–12
discrete, see discrete choice experiments
hedonic and sorting models 224–9
labelled 266, 276

Jeff Bennett - 9780857931191
Downloaded from PubFactory at 09/18/2023 08:19:42AM via free access
survey design and dealing with scale and scope 254, 255, 256, 257–8, 259, 262–9
unlabelled choice tasks 276
virtual reality choice experiments 341–7
classroom recycling containers 132–4
Clawson, M. 60
Collins, A. 109, 118
Collins, J.P. 125–7, 315
comforts 145
compensation for road externalities 15, 32–3
comprehension of attributes 167, 341–7, 348
conditional logit model 61–2, 66–8, 169
conditional water demand function 205–6
confidence intervals 114–15
congestion 154
consequentiality 8, 122–41, 301–2
advisory referenda 132–4
conceptual framework 123–4
contingent valuation criterion validity test 134–5, 136
demand revelation in binary referendum with uncertainty in values 127–9
homegrown values and 129–31
incentive compatibility and demand revelation of binary referendum questions 124–7
construct validity 135–6
constructed preferences 325
contingent behaviour method (CBM) household water demand 10, 201–21
role of distributional parameters in count models 10, 187–200
contingent valuation method (CVM) 7–8, 9, 180, 202, 322–3
consequentiality and survey design 8, 122–41
framing effects and familiar goods in 332–6
learning design contingent valuation 336–41, 348
and overestimation 313–14
and scope 254–5, 256, 256–7, 259
survey mode and treatment of protest responses 8, 102–21
survey questions 301, 302, 303
theoretical framework 301–2
see also choice experiments
contingent valuation criterion validity test 134–5, 136
continuous choice set 225–6
contraction 297–8
contraction mapping algorithm 238, 239
convergent validity 136
convergent validity tests 368, 371–9, 380
Cooper, J.W. 333
coral reefs 5, 37–59
coral reef structures 43–6, 50–51
data for Hawaii 41–6
econometric model 38–41
GLS estimation hedonic price model 5, 39–40, 46–51, 55
ML estimation hedonic price model 5, 40–41, 51–4, 55
Corbell, H.K. 188
Coronation Hill 255
cost–benefit analysis 13, 14, 322, 379
costless signalling 304
costs of aversion 3–4
count models 10, 187–200
recreational site demand 189–93
US Forest Service OHV areas 193–9
cover letters 123–4, 137
Crawford, V.P. 304
criterion validity
consequentiality and contingent valuation 8, 122–41
contingent valuation criterion validity test 134–5, 136
Cropper, M.L. 231
cross-price elasticities 214, 217
culturally diverse neighbourhoods 43, 50, 54
Cummings, R.G. 129, 301, 313
cyanobacteria 81, 82
cyanobacteria 81, 82
D-efficiency 278, 283, 284
D-efficient orthogonal designs 278–9, 281–3, 284–7
optimal choice probability designs based on 290–93
D-error 283, 284, 286, 287, 290–93
Index

D-optimal orthogonal designs 278–9, 281, 284–7
optimal choice probability designs based on 290–93
Dak Lak Plateau 206–20
Damgaard, C. 19–20
data interpretation 307
Day, B. 14–15, 17
day trips for lake recreation 77–9, 80–81, 83, 85, 95
decision utility 9, 142–58

vs experienced utility 143–6
Peak District National Park 146–56
deliberative evaluation 119
Dellaert, B.G. 264
demand

demand shift parameters and distributional shape parameters 187–200
household water demand 10, 201–21
lake recreation demand 6–7, 74–101
revelation 124–9
in binary referendum with uncertainty in values 127–9
incentive compatibility and 124–7
derived indicators 165
Desvousges, W.H. 254
detached houses 28, 33
developing countries 10, 202, 217–18
diatoms 82, 95
dichotomous choice format 8, 106–7, 109
diminishing marginal utility 257, 262, 263–4
direct effects 168
discovered preference hypothesis (DPH) 325, 337
discrete choice experiments (DCE) 226–7, 279, 310–13, 322–3, 341
double-bounded discrete choice questions 315
travel cost method applied to Minorca beaches 6, 60–73
VRCE 341–7
discursive ethics 119
dissolved oxygen 87
distance
coral reef quality and house prices 43, 50–51, 51–4, 54, 55
road externalities and house prices 20, 21, 23, 25, 30–31
distributions
benefit transfer errors 375–7
of change in transfer accuracy 376, 377–8
distributional shape parameters 187–200
inappropriate assumptions 308
Ditton, R. 74, 83
Do, A.M. 145
double bound contingent valuation (DBCV) 337–41
double-bounded discrete choice questions 315
Duke, J.M. 177, 178, 266
Dunn, E. 144, 155
Dupont, D.P. 359
ecological field data 166–7
ecological indicators 160, 161–2, 163

structured use within stated preference valuation 165–9
using to characterize restoration outcomes 171–4
see also bioindicator-based stated preference valuation
ecological processes 180
ecological production function 163, 164
ecological restoration 9–10, 159–86
conceptual and theoretical challenges to valuation 160–65
economic consistency 232
economic experiments, usefulness of 313–15
economics 2
Edgeworth, F.Y. 143
education 92–4
efficiency
vs bias 187–200
statistical and experimental design strategies 278–9, 283–4, 286, 287–8, 290–93, 294
efficient orthogonal designs 278–9, 281–3, 284–7
Index 389

optimal choice probability designs based on 290–93
Egan, K.J. 75, 90, 91
Ekeland, I. 231–2, 233
elicitation effects 136
embedding hypothesis 254–5, 256
Englin, J. 187, 188, 198
environmental awareness 2
environmental characteristic–market price relation 4–5
Environmental Protection Agency (EPA)
National Water Quality Inventory 74
water quality index 82, 83–5
water quality ladder 76, 77
environmental pressure groups 2
Environmental Valuation Reference Inventory (EVRI) 13, 355, 362
Eppele, D. 233–4, 247
error component logit model 149–54
eutrophication reduction technology 333–6
Evans, M.F. 132–4
‘exclusive’ residences 27–8, 30, 31, 33
experience 324–5
importance of prior preference 327–31
see also familiar goods
experience sampling method 144, 156
experienced utility 9, 142–58
vs decision utility 143–6
Peak District National Park 146–56
experimental design strategies 11–12, 273–99
basic principles 274–6
design considerations 276–9
limitations of mainstream designs 287–8
mainstream design construction methods 279–84
mainstream design type examples 284–7
Nelder–Mead algorithm 290, 293, 297–9
optimal choice probability design examples 290–93
optimal choice probability designs 288–90
prior parameter estimate assumptions 284
extension 297
extent of the market 247–8, 266
external scale tests 258
external scope tests 258; see also framing
Exxon Valdez oil spill 7, 255
familiar goods 12, 332–6; see also experience
farming 217
farm animal welfare schemes 337–41
field experiments, framed 129–31, 134
first stage of hedonic pricing 4–5, 16
fish-dependent wildlife 171–3, 176–9
fish passage restoration 160, 169–81
fishing, recreational 180–81
focus groups 118, 174
footpath network quality 148, 149, 151–4
forest fire prevention 105, 110–19
Fowkes, A.S. 288
fractional factorial design 278
framed field experiments 129–31, 134
framing 257, 258, 268–9
categorizing 259–62
effects in contingent valuations of familiar goods 332–6
and heuristic cues 325, 326, 331, 336, 339–41, 343–7, 348
Freeman, A.M. 16
full factorial design 278
gains–loss anomaly 344–7
Gaudin, S. 219
Gaussian Random Effects Poisson generalization 191–2, 192–3
model for OHV riding 194, 195–6, 197–8, 199
gender 194, 196, 198
general equilibrium 241–6
generalization errors 378–9
generalized least squares (GLS) hedonic price model 5, 39–40, 46–51, 55
generalized method of moments (GMM) estimation 40
gentrification 223–4, 246–7
geographic scope 260–61, 265
geographical information systems (GIS) 5, 43
Gibbard–Satterthwaite theorem 124
Goldberg, I. 259
good cause dump 256
Goodale, T.L. 74, 83
Great Lakes 75
Greater Oslo area 26–7, 33
Greene, W.H. 175, 176
group valuation 119
Groves, T. 122, 123, 137, 300, 301–3, 305, 307, 308, 309–10, 310–12, 314, 315–16
Haab, T.C. 62
handicap facility 86, 95
Hanemann, W.M. 103, 109, 168, 337
Hanley, N. 162
hard cheap talk 305
Harrison, G.W. 122, 129, 301
Hausman specification test 40, 47, 212
Hawaii 5, 37–59
Heckman, J.R. 205
hedonic pricing method 4–5
coral reef quality 5, 37–59
first stage 4–5, 16
hedonic models and preference heterogeneity 11, 222, 224–6, 229–33
structural models 222, 223, 225–6, 229–33
road externalities 5, 14–36
second stage 4–5, 11, 16, 38
hedonic treadmill 145
Hensher, D.A. 175, 176
Herriges, J. 132, 134, 137
heterogeneity 357
preference, see preference heterogeneity
respondent 10, 263
spatial 39, 40–41, 51–4, 55
heteroscedasticity 187–8, 190
modelling in negative binomial and Gaussian Random Effects models 192–3
heuristic cues 325, 326, 331, 336, 343–7, 348
anchoring test 339–41
Hibbard, J.H. 343
Hollands, J.G. 343
Holme land use options 344–7
Holmes, T.P. 162
home businesses 217
homegrown values 129–31
advisory referenda 132–4
horizontal sorting model 11, 228, 237–40, 246
Hotelling, H. 6, 60
house characteristics
coral reef quality in Hawaii 43, 47–50, 54, 58
and road externalities 17, 21, 22, 24–31, 33
house prices 4
coral reef quality and proximity in Hawaii 5, 37–59
road externalities and 15, 16, 16–20, 32
Norway 20–32, 33
household water demand 10, 201–21
accuracy of households’ estimates of water consumption 210
econometric estimation 204–6
estimates of 210–17
household profiles 208–10
household survey procedure 206–8
specification of the demand function 203–4
houses, as assets 247–8
Hu, W. 178
hypothetical bias 12, 302–3, 304–7, 313–14
consequentiality and survey design 8, 122–41
hypothetical survey questions 302–3
iconic attributes 268
implicit prices 14, 15, 38; see also hedonic pricing
in-person interviews/surveys 103
inappropriate distributional assumptions 308
incentive compatibility 12, 300–321
and demand revelation of binary referendum questions 124–7
income 194, 196, 198
incomplete methods 297–9
inconsequential survey questions 123, 301–2
Index 391

increased information protests 108–9, 113, 116, 117, 117–18

independence of irrelevant alternative (IIA) violations 311–12

index of biotic integrity (IBI) 171–4, 176–9, 180

indirect effects 168

individual travel cost method 6, 60

induced value experiments 125–7, 315

induced uncertainty 127–9

information 161, 164

changes in and utility 155–6

extracting preference information 307

increased information protests 108–9, 113, 116, 117, 117–18

manipulating malleable preferences 332

properties of preference questions 12, 300–321

inorganic suspended solids (ISS) 81, 82, 95

institutional learning 337, 338–9, 348

interaction effects 277–8

internal scale tests 258, 263–4

internal scope tests 258

international meta-analysis 354–5, 356–8

Kahneman, D. 143–4, 145, 156, 254–5

Kanninen, B.J. 279, 288, 289, 290

Kauai 39, 41–6, 47, 51–4

Knetsch, J.L. 60, 254–5

Kolmogorov–Smirnov (K–S) tests 126–7

Kuhn, T.S. 122

Kuminoff , N.V. 227, 234, 240, 248

$L^{KJ}$ orthogonal fractional factorial design 280–81

labelled choice experiments 266, 276

Lagrange multiplier (LM) test 40

lake recreation
demand 6–7, 74–101

literature review 75–6

model estimation result 91–6

recreation demand model 88–90

welfare estimation 96–8

preference consistency test 328–31

lakes

amenities 85–6, 86–7, 91–6

oil-filled 254

size 85–6, 95

land

costal land use change scenarios 344–7

open space 223, 242, 246

sales, time and preference heterogeneity 247–8

sorting model of residential land markets 223

land management 60, 142

uplands 142–58

management intensity changes 146–54

Landry, C.E. 129–31

List, J.A. 129–31

live coral cover 43–6, 50–51, 54, 55, 59

local parameter priors 284

local search methods 297–9

locational sorting models, see sorting models

logit models

conditional 61–2, 66–8, 169

error component logit model 149–54

mixed, see mixed logit (ML) models

multinomial 149–54, 263
Index

nested 149
survey mode and treatment of protest responses 109, 114, 115, 116, 117
Loomes, G. 156
Loomis, J. 264, 353
Louviere, J.J. 267
MacGregor, D. 342–3
mail surveys 103, 105, 174
malleable preferences, manipulation of 331–2
margarine 332, 333
Maricopa County, Arizona 247–8
market price–environmental characteristic relation 4–5
markets 222
extent of the market 247–8, 266
Marshall, A. 143
Mazur, K. 260, 263, 265
Maui 39, 41–6, 47, 51–4
maximum likelihood (ML) random effects panel data model 5, 40–41, 51–4, 55
McConnell, K.E. 62
McFadden, D. 61, 89, 237
McKee, M. 125–7, 128, 315
mean methodological variables 368, 371–9
mean value unit transfers 369
measurement endpoints 162
mechanism design theory 124, 138
memory, see remembered utility
merged revealed preference and stated preference data 10, 201–21
meta-analysis 354
international, see international meta-analysis
meta-regression models (MRMs) 354
multinational 355–6, 357–81
migration 248
migratory birds 254
migratory fish passage restoration 160, 169–81
minimum daily water requirement 218
Minorca beaches 6, 60–73
data 63–6
model estimations 66–72
oil spill simulation 6, 68–72
TCM model 61–3
Mitchell, R.C. 78, 259, 309
mixed logit (ML) models
bioindicator-based stated preference valuation 169, 175–81
water quality perceptions and lake recreation demand 89–90, 92–6
mixed mode CVM surveys 103
model validation 224
momentary measures of well-being 145
monetary amounts, in international metadata 362–6
moorland fringe management 147–8, 149, 151–4, 155
moorland management 147, 149, 151–4
moose hunting 75–6
moral satisfaction 254–5
Morrison, M. 264
motorized vessels 85–6, 87, 95
‘Mr. Twister’ framed field experiments 129–31, 134
multimetric indicators 165–6
multinational meta-analysis 356–8; see also international meta-analysis
multinomial choice questions 8, 306, 310–11
multinomial logit model (MNL) 149–54, 263
municipal water supplies 202, 205
price awareness 211, 212, 220
pricing 202, 206, 218–19
sole source 208, 210–14, 218
with other water sources 206, 208, 210, 214–17, 218, 219
Munro, A. 328–31
Murphy, A. 248
National Oceanic and Atmospheric Administration (NOAA) 255, 326
native species, number of 162
natural resource damage assessment 60, 61
oil spill scenarios for Minorca beaches 6, 68–72
Nauges, C. 217
Navrud, D. 357
Nawas, F. 60
negative binomial generalization 190–91, 192–3
model for OHV riding 194–7, 198, 199
neighbourhood characteristics 43, 50, 54, 58
Nelder–Mead algorithm 290, 293, 297–9
multiple runs and tries 298–9
operation 297–8
neoclassical economics 303
behaviouralist critique 315–16
nested logit model 149
New Benthamites 143–4, 155
Nielsen, O.A. 19–20
nitrogen species 81, 82, 95
noise, road 5, 14–36
Noise Sensitivity Depreciation Index (NSDI) 17–20, 25, 27, 32
non-market environmental valuation growth in application 1–3
increased capacity 3
non-water-contact lake recreation 84, 85
non-zero valued parameter priors 278–9
North Carolina 10, 188, 193–9
North Scituate Village, Rhode Island 135
Norway
Directorate for Public Roads (DPR) 15, 20, 33
road externalities and house prices 5, 15, 20–32, 33
number of attribute levels 277
Oahu 39, 41–6, 47, 51–4
off-highway vehicle (OHV) recreation 10, 188, 193–9
oil-filled lakes 254
oil spill simulation 6, 68–72
one-and-one-half bid (OOHB) method 333–6
open space 223, 242, 246
optimal choice probability designs 288–90
examples 290–93
optimal orthogonal design 278–9, 281, 284–7
optimal choice probability design based on 290–93
optimization errors 314–15
ordinary least squares (OLS) models 188, 189
organic suspended solids (OSS) 81, 82, 95
orientation of beaches 67
orthogonal designs 278
traditional 280–81, 284–7, 290–93
Oslo 26–7, 33
out-of-sample convergent validity tests 371–9, 380
outdoor noise level 21, 23, 27–8
over-dispersion parameters 190–91, 192, 197, 198
own price elasticity for water consumption 212, 214, 217
oxygen, dissolved 87
ozone concentrations 224, 243–5
Pagan, A. 40
Breusch and Pagan Lagrange multiplier test 40, 47, 212
pair-wise correlations 210
Palomé, P. 314
parking spaces 193, 194, 195, 197
part-whole bias 254–5, 259
partial equilibrium 241–6
patch reef 44, 45–6
pavement with coral 44, 45
Pawtuxet Watershed 169–81
payment card format 309–10
Peak District National Park 9, 146–56
perceptions of water quality, see water quality
pH (acidity) 81, 82, 87, 95
Phaneuf, D.J. 75, 201, 238, 241–2, 246
phone–mail booklet–phone interview survey 103–4, 105–6
comparison with video survey mode 107–19
design 110–11
phone–mail survey mode 174
phone surveys 103, 105
phosphorus 81, 82, 87, 95
physical water quality 74, 75, 81–7, 90, 91–6
phytoplankton 81, 82
Platt, G.J. 233–4
pleasures 145
Plott, C.R. 325, 337
Poe, G. 137, 328–31
Poisson model 190
OHV riding 194, 195–6, 198–9
Index

policy
accounting for the environment in policy formulation 2
analysis 353
applications of sorting models 223, 240–47
making and decision utility vs experienced utility 156
policy scope 260–61, 266
population viability analysis (PVA) 171–3, 176–9, 180
preference heterogeneity 11, 222–53
benefit measurement and policy applications of sorting models 240–47
hedonic models 11, 222, 224–6, 229–33
horizontal sorting model 11, 228, 237–40, 246
modelling consumer choice 224–9
research opportunities 247–8
vertical sorting model 11, 227–8, 233–7, 243–7
preference questions, see survey questions
prescribed burning 105, 110–19
pre-testing of surveys 118, 167, 174
price indexes 236
price sensitivity 312
primary studies 354, 355
prior parameter assumptions 278–9, 283, 284, 289–90
prior preference 327–31
probabilistic referenda 129–31
procedural invariance 315–16
programme evaluation 222–3
projection bias 145
protest responses 8, 104–5, 106–7, 107–19
hypotheses regarding 107–9
increased information protests 108–9, 113, 116, 117, 117–18
robustness of median WTP to different treatment of protests 116–19
test of protest rates by survey mode 108, 113–14
WTP model 109–10
proxy indicators 163, 165
public access to restored areas 171, 172, 173, 176–9
public goods
indexes for local public goods 236–7
sorting models and improvements in 223–4, 246–7
pumps 209, 214, 216
quasi-random effects 222–3
questionnaire delivery technology, see survey mode
questionnaire design, see survey design
railway noise 17
random behaviour 311
random utility model (RUM) 6, 237–8
bioindicator-based stated preference valuation 168–9, 176–81
travel cost method 6, 60–61
Minorca beaches 61–2, 66–72
random utility theory 187
range of attribute levels 277
Rangel, A. 316
Ready, R. 357
reconciled variables 367
recreation
contingent behaviour method 10, 187–200
count models of recreational site demand 189–93
OHV riding 10, 188, 193–9
fishing 180–81
lake recreation demand 6–7, 74–101
Redelmeier, D.A. 145
reference conditions 167
reflection 297
regional differences 26–7
reliability of benefit transfer 371–9
remembered utility 145, 150–54, 155–6
repetition 337–9
as training 349
replacement cost 3–4
Resources for the Future (RFF) water quality ladder 367
respondent heterogeneity 10, 263
restoration, ecological, see ecological restoration
revealed preference method 3, 4–6, 143
extension of the revealed preference paradigm 301
merged revealed preference and stated preference data 10, 201–21
see also hedonic pricing method; travel cost method
Rhode Island 135
bioindicator-based stated preference valuation 9–10, 160, 169–81
Rhodes, P.W. 248
Rich, J.H. 19–20
right tail problem 308
river catchments 265
rivers, eutrophic reduction in 333–6
road externalities 5, 14–36
hedonic pricing technique and applications to road noise 15–20, 32
Norway 5, 15, 20–32, 33
Roberts, D.C. 266
Rolle, J. 263, 265, 266, 268
Roosen, J. 259
Rose, J.M. 283–4
Rosen, H.S. 230
Rosen, S. 14, 15–16, 222
Rosenberger, R. 109, 118
row houses 28, 33
rural areas
   coral reef quality 43, 50
   house prices and road noise 28–9, 33
Ruström, E. 122
S-error 283–4, 286, 287, 290–93
sample selection 357
sand 44, 45–6
scale 11, 254–72
   categorizing 259–62
   historical treatment 256–9
   internal scale tests 258, 263–4
   scale differences in choice modelling 262–4
Scarpa, R. 151
scatter reef 44, 45–6
Schiller, A. 161
scope 11, 254–72
   attribute scope 260–61, 266–8
   categorizing 259–62
   geographic scope 260–61, 265
   historical treatment 256–9
   policy scope 260–61, 266
scope differences in choice modelling 264–8
scope insensitivity 254–5, 256
scope sensitivity test 326, 348
Secchi transparency 81, 82, 87, 95
second stage of hedonic pricing 4–5, 11, 16, 38
seemingly unrelated estimation (SUE) 214–17
seemingly unrelated regression (SUR) 214
semi-urban houses 28–9, 33
sequencing effect 257
sequential discrete choice experiments 312–13
sequential generation orthogonal designs 280–81
shielding of road noise 21, 23, 25, 27, 29, 30
Shonkwiler, J. S. 198
shrinking 298
Sieg, H. 224, 233, 234, 235, 236, 241, 243
silicon 81, 82, 95
simultaneous generation orthogonal designs 280–81
single binary discrete choice (SBC) questions 7, 304–5, 310, 324
suitability of format 307–9
Slovic, P. 342–3
Smith, V.L. 125, 129
Sobel, J. 304
social interaction 246–7
socio-demographic characteristics
   lake recreation demand 78, 91–6
   OHV riding 194, 195, 197–8
soft cheap talk 306
sorting equilibrium 222
sorting models 11, 223–4, 226–9
   benefit measurement and policy applications 223, 240–47
   horizontal 11, 228, 237–40, 246
   vertical 11, 227–8, 233–7, 243–7
South Coast Air Basin 224, 243–6
spatial heterogeneity 39, 40–41, 51–4, 55
speculative inference 163, 167, 168, 181
Spence, M. 304
sports card shows 129–31
Stapler, R.W. 371–2
Index

Starmer, C. 337
state park 85–6, 95
stated preference method 3, 7–10, 143–4, 187
bioindicator-based, see bioindicator-based stated preference valuation
development before generation of experimental design 273–4
experimental design strategies, see experimental design strategies
incentive compatibility 12, 300–21
merged revealed preference and stated preference data 10, 201–21
and noise 14
scope, scale and questionnaire design 11, 254–72
validity of value estimates, see validity of value estimates
see also choice experiments/choice modelling; contingent
behaviour method (CBM); contingent valuation method (CVM)
statistical efficiency 278–9, 283–4, 286, 287–8, 290–93, 294
strategic behaviour 311–12, 323, 348–9
Strategic Plan for the Restoration of Anadromous Fishes to Rhode Island Coastal Streams 170
stratification 234–6
structural hedonic models 222, 223, 225–6, 229–33
Strumf, K.S. 248
substitution strategies for water sources 202, 206, 215–16, 217, 218, 219
Sugden, R. 143, 144, 145, 156
Sumatran tigers 332, 333
supply, sorting models and 247–8
survey design
consequentiality and 8, 122–41
scope and scale in stated preference experiments 11, 254–72
survey mode 8, 102–4, 105–6
comparison of phone–mail booklet–phone interview mode with video mode 107–19
hypotheses regarding 107–9
and survey response rates 107, 112–13
and WTP 107, 113–14
survey pre-tests 118, 167, 174
survey questions 12, 300–321, 347–8
behaviouralist critique 315–16
cheap talk 304–7
discrete choice experiments 310–13
extension of revealed preference paradigm 301
extracting preference information 307
hypothetical 302–3
hypothetical bias 12, 302–3, 304–7, 313–14
resurgence of payment card format 309–10
suitability of SBC format 307–9
theoretical framework 301–2
usefulness of economic experiments 313–15
survey response rates 107, 112–13
suspended solids 81, 82, 87, 95
tax 148, 149, 151–4
tax map key (TMK) code 41, 43
Taylor, L.O. 125–7, 258–9, 314–15
Terza, J. 191
Thomas, J.F. 203
Thomassin, P.J. 355, 358–9, 369
threshold noise levels 19, 31, 32, 33
Tiebout tendencies 224
tiger friendly’ palm oil products 332, 333
time
and land sales 247–8
travel time 66
Timmins, C. 248
Toner, J.P. 288
total suspended solids 87
toxin level 75
traditional orthogonal designs 280–81, 284–7
optimal choice probability designs based on 290–93
trail mileage 193, 194, 195, 197
Train, K. 89
transfer errors 369, 371–9
travel cost method 4, 5–7, 10, 188  
application to Minorcan beaches 6, 60–73  
lake recreation demand 6–7, 76–99  
travel time 66  
Trivedi, P. 191  
trophic state indices 82–5  
Tucson sports card show 129–31  
two-stage estimation procedure 205  
uncertainty 325  
effect on demand revelation 127–9  
understanding of attributes 167, 341–7, 348  
UNICEF 218  
unit value benefit transfers 353  
Canadian observations 369, 371–9, 380  
United States of America (USA)  
Environmental Protection Agency,  
see Environmental Protection Agency (EPA)  
Forest Service OHV areas 193–9  
metadata and water quality  
improvement in Canada 13, 358–81  
reliability of CVM 255  
unlabelled choice tasks 276  
unpacking of attributes 267  
uplands, management of 142–58  
urban areas  
coral reef quality 43, 50, 54  
road noise and house prices 28–9, 33  
US/Canada model 13, 366, 368, 369, 370–71, 380  
known methodological attributes of  
Canadian studies 368, 371–9  
with the mean methodological  
attribute assumption 368, 371–9  
US model 13, 366, 368, 369, 370, 371–9, 380  
use values 7  
usefulness of economic experiments  
313–15  
utility  
decision utility vs experienced utility 9, 142–58  
valuing ecological restoration 164–5  
validity of value estimates 12, 322–52  
eliciting valid value estimates 323–6  
validation 326–47  
empirical illustrations 327–47  
framing effects in contingent  
valuations of familiar goods 332–6  
importance of prior preference 327–31  
LDCV 336–41, 348  
manipulating malleable  
preferences 331–2  
VRCE 341–7  
valley bottom farmland management 148, 149, 151–4  
value learning 337, 339–41  
values juries 119  
Van Bueren, M. 259, 265  
verbal protocols 174  
vertical sorting model 11, 227–8, 233–7, 243–7  
video survey mode 8, 103–4, 105–6  
compared with phone–mail booklet–phone interview mode 107–19  
design 111–12  
Vietnam 10, 202, 206–20  
view, road noise and 21, 23, 25, 26–7, 29–31  
virtual reality choice experiments (VRCE) 341–7  
visual information 342–7  
volatile suspended solids 81, 82, 95  
Von Haefen, R.H. 201  
Vossler, C.A. 125–7, 128, 132–4, 315  
wake 85–6, 87, 95  
Walsh, R.P. 223–4, 242, 246, 246–7  
warm glow effect 256  
water  
household water demand 10, 201–21  
consumption and expenditure  
profile 207  
water contact lake recreation 83–5  
water quality  
international benefit transfer  
and Canadian water quality  
improvement 13, 358–81  
perceptions and lake recreation  
demand 6–7, 74–101  
improvement scenarios 96–8
Index

Iowa Lakes Survey 74, 76–81
physical water quality measures 74, 75, 81–7, 90, 91–6
recreation demand model 88–96
welfare estimation 96–8
reduction of eutrophication problems 333–6
water quality index 96–8
water quality ladder 76, 77, 78, 82–5, 367
water source substitution strategies 202, 206, 215–16, 217, 218, 219
water storage 208–9, 211, 212–14
welfare estimation
bioindicator-based stated preference valuation 177–9
contingent behaviour model of OHV riding 198–9
lake recreation demand and water quality perception 96–8
Minorca beaches 68–72
see also willingness-to-pay (WTP)
well water 206, 207, 208, 209, 210, 214–17, 218, 219
West Okoboji Lake 96–8
White, H. 190
Whitehead, J.C. 201
Whitten, S. 263
Whittington, D. 202, 217
wildland forest fires 105, 110–19
willingness-to-pay (WTP) 14, 38
bioindicator-based stated preference valuation 177–9
contingent valuation method, see contingent valuation
differences in WTP by survey mode 107, 114–15
international meta-analysis and Canadian water quality improvements 354–6, 358–81
marginal using hedonic pricing 15–16
Minorca beaches 62–3
robustness, survey mode and treatment of protest responses 8, 102–21
survey questions and 303, 305, 306, 308, 309–10
validity of value estimates, see validity of value estimates
Windle, J. 263, 265
workshops 9, 146, 148–9
World Health Organization (WHO) 218
zero valued parameter priors 278–9
zonal travel cost method 6, 60