Index

action-oriented research (France) 259, 260, 261, 268, 270, 271, 272
aggregates see United Kingdom: sustainability of aggregates transportation
Analytic Hierarchy Process (AHP) (Chile) 351–2
applied research 5
approaches of applied geography see relevance and approaches
ArcGIS
  Australia 129
  Estonia 104
  Hong Kong 334
  United Kingdom 66
  United States 116, 118, 186
associative analysis (Hong Kong) 334–5
attitudinal surveys (Israel) 298
Australia 198, 205
Australia: emergency services provision and urban growth in Brisbane 123–40
ArcGIS 129
Australian Research Council (ARC) Linkage programme 124, 127
building type 130
calendar events 126, 128, 129, 130
co-plot 129
comaps 129, 131, 135, 136, 139
cultural diversity 131
derived factor score data 129
descriptive analysis 129
diurnal variations 126
eexisting collaboration 127
factor analysis (FA) 128–9
fire incidents 129
fires, significance of 125
geo-visualization 129
GIS 123, 125–6, 129, 132, 138
innovation 128
isochrones 133, 134
Large Scale Urban Model (LSUM) 124, 127, 128, 132–3, 137, 139–40
location 130
meteorological conditions 126, 128, 129, 130
MS Access 129
new dwellings construction 133
no-growth boundary 137–8, 139
open-source Java 132
optimal location modelling 137
planning and management strategies 125–7
predicting urban population (PUP) growth model 133, 138, 139
principal component analysis 131
Queensland Fire and Rescue Service (QFRS) 124, 127, 132, 137, 139–40
R statistical programming environment 132
raw census variables 128
regression modelling 131–2, 135
relative increases in load 133
residential fires 128
RouteFinder 133
socio-economic factors 126, 128, 130, 131
spatial decision support system (SDSS) development 124, 128, 132, 137–8
spatial and spatio-temporal modelling 124, 126, 128, 129–32, 135–6, 138–40
transit-oriented developments (TODs) 133, 137, 138, 139
urban growth and expansion 133, 137, 138‘what if’ scenarios 132
Studies in applied geography and spatial analysis

Australia: ‘store wars’ sovereignty debate (retail aggregate space–time trip (RASTT) model) 160–81
ACIL report 169
ACT Inquiry on Trading Hours (1991) 172
advantage of model 162–3
Aldi 167
Bendigo Referendum 170, 176–7, 179
boundary conditions 162
Coles 161, 166–7, 168–70, 174, 175, 177–8
consumer preferences 173
customer sovereignty 171, 172–3, 174, 179, 180
dependence effect 172
distance discounting 162
distance minimization 160, 164
empirical regression analysis 162
equilibrium
  cooperative/non-cooperative 169
Factories, Shops and Industries Act (1962) 169
Franklins 166–7, 169, 177
Freedom to Shop campaign 174
‘gravity’ model 161
Hydnes report 169
IGA 168
investment in disinformation 168
media and public domain 175–80
neutralization of adverse findings 168
oligopolistic structures in retail 166–70
online shopping 165
policy implications 163–4
producer sovereignty 173–5, 180
reaction function 168
region by radius method 163
relating model to individual
  shopping centres and
  consumers 164–6
Retail Trading Hours Act (1987) 179
Retail Trading Hours Amendment Act (2010) 179–80
Shopping Centre Council of
  Australia (SCCA) 178
spatial obsolescence 172–3
Supermarket Inquiry 177–8
Sydney Project (199–8) 164–5, 176
time minimization 160, 165
Trade Practices Act 177
Trading Hours Act 174
weak and strong competition 167–8
‘what if’ scenarios 172, 176
Woolworths 161, 166–7, 168–9, 174, 177–8
automobile dealership customer and site analysis see United States:
  automobile dealership

basic research 5
Belgium 22
binary integer decision variables 116
binomial logistic regressions 150, 154, 155
binomial variables 155–6
biospheric conservation and development see Israel
‘blue skies’ research 198
Borj Cédria see Tunisia
BritPits database 63, 65
business activities survey (Portugal) 286
calibration
  Ireland 83
  United Kingdom 67–70
Central Place Theory 295
Centre for Geographical Studies see
demographic evolution in Europe
Chile: hydropower and socio-economic conditions for resettlement/comparison in Patagonia
  346–57
Analytic Hierarchy Process (AHP)
  351–2
anthropic variables 350
Aysén Hydroelectric Project (PHA)
  347, 356
Aysén Hydroelectric Project (PHA) infrastructure 350, 351, 353
classification of variables 351
distance from nearest road to
  Cochran 350, 351, 352
distance to nearest road (accessibility) 350, 351, 352
distance to watercourses 349, 351, 352
### Economic Sustainability Analysis
353–4, 355
### Economic Sustainability Index
353–4, 355
### Environmental Impact Assessment System (EIAS) 348, 355–7
### expected magnitude of territorial impact 348–9
### GIS 355
### habitability conditions 353, 354–5
### IDRISI software system 352
### income determination 354–5
### land cover type 349, 351, 352, 353
### land and hydropower potential 348
### measurement 350–53
### minimal threshold of production 354
### multi-criteria evaluation method 349
### physical variables 349–50
### raster layers 352–3
### slope 349, 351, 352, 353
### variable comparison matrix 352
### zoning proposal 355

#### cluster analysis
- Hong Kong 333–4, 338
- Portugal 276, 281
- United Kingdom 199–203, 211
- United States 235, 236
- co-plots (Australia) 129
- collaborative approach (France) 262–3
- comaps (Australia) 129, 131, 135, 136, 139
- conservation and development see Israel: biospheric conservation and development
- convenience sampling (United States) 316
- core dataset modelling (Australia) 129, 130
- Cplex 8.0 116, 118
- Crimestat’s Nnh (Hong Kong) 334
- critical reflexivity (France) 270
- Cyprus 22

#### DEEP procedure 10
definitions of applied geography and spatial analysis 2–3
demographic evolution in Europe
Centre for Geographical Studies participation in ESPON 1.1.4
project 17–33

<table>
<thead>
<tr>
<th>term</th>
<th>page(s)</th>
</tr>
</thead>
<tbody>
<tr>
<td>ageing</td>
<td>21, 22, 29</td>
</tr>
<tr>
<td>demographic transition</td>
<td>21–2</td>
</tr>
<tr>
<td>depopulation</td>
<td>29</td>
</tr>
<tr>
<td>EU15</td>
<td>22, 30–31</td>
</tr>
<tr>
<td>EU29</td>
<td>22, 25, 26, 30–31</td>
</tr>
<tr>
<td>fertility rate</td>
<td>21–2</td>
</tr>
<tr>
<td>France</td>
<td>29–30</td>
</tr>
<tr>
<td>Greece</td>
<td>28–9</td>
</tr>
<tr>
<td>labour shortage</td>
<td>22</td>
</tr>
<tr>
<td>migration</td>
<td>24</td>
</tr>
<tr>
<td>migration, replacement</td>
<td>22</td>
</tr>
<tr>
<td>migratory flows</td>
<td>22, 31, 32</td>
</tr>
<tr>
<td>Model A (zero-migration)</td>
<td>24–5, 27, 28, 29</td>
</tr>
<tr>
<td>Model B</td>
<td>24</td>
</tr>
<tr>
<td>Model B0 (current migration rate)</td>
<td>24–50</td>
</tr>
<tr>
<td>Model B1 (constant total population)</td>
<td>24–5</td>
</tr>
<tr>
<td>Model B2 (constant active population)</td>
<td>24–5, 27, 28, 30</td>
</tr>
<tr>
<td>Model B3 (Potential Support Ratio)</td>
<td>21, 24–5, 27</td>
</tr>
<tr>
<td>Model C</td>
<td>24</td>
</tr>
<tr>
<td>Model C1</td>
<td>24–5, 28, 30</td>
</tr>
<tr>
<td>Model C2</td>
<td>30</td>
</tr>
<tr>
<td>mortality rate</td>
<td>21</td>
</tr>
<tr>
<td>NUTS 2</td>
<td>27, 28, 30</td>
</tr>
<tr>
<td>population growth and decline</td>
<td>19–21, 26</td>
</tr>
<tr>
<td>Portugal</td>
<td>28–9, 30</td>
</tr>
<tr>
<td>productivity increase</td>
<td>24</td>
</tr>
</tbody>
</table>

#### Denmark 166
- derived factor score data (Australia) 129
description (DEEP procedure) 10
descriptive analysis
- Australia 129
- Hong Kong 335–6
- Portugal 278, 279–80
devolutional impacts see United States: economic, fiscal and
devolutional impacts
direct field observation (Portugal) 282
discussion tables (Israel) 306
economic impacts see United States
economic, fiscal and
devolutional impacts
Economic Sustainability Analysis/ Index (Chile) 353–4, 355

economics of space see United States: economic significance of NASA testing facility

emergency services see Australia: emergency services provision; United States: emergency services expansion; Australia: emergency services provision; United States: emergency services expansion

empirical–analytical framework 7–8

empowerment
France 270
Portugal 290–91

environmental hazards see Hong Kong: environmental hazards of outdoor falls

ESPON see demographic evolution in Europe

ESRI ArcGIS v9.1 software (United States) 186

Estonia: school network planning 95–106

ArcGIS Server 104

birth rate 98–9

changes in school network (1951–2009) 99
counter-urbanization 98
databases of future use 103
demographic background of school regulation 98–100
demographic pyramids and projection 99
design of school network 101–2
design of school network as geographic problem 96–7

Estonian Ministry of Education and Research (EMER) 95, 97, 101, 102–3, 104, 105

expert system for evaluation of schools 102

GIS 95, 96–7, 102, 105

grant funding system 100–101

mapping application 102

mathematical programming techniques 96

migration 98, 100, 101

municipalities 100–101

planning support systems 97

political background of school regulation 98–100

PostgreSQL database 104

PPGIS (Public Participation GIS) 97, 102–4, 106

pupil numbers 100–101

spatial decision support systems 95, 96–7

spatial modelling 105

spatial optimization modelling 96

transportation costs 101

urbanization rate 98

WebGIS 103

‘what if’ scenarios 95, 96, 106

ethics questions (France) 260, 270

European Spatial Development Perspective (ESDP) 17

European Union 284

cooperation with Tunisia 218, 221–2, 228–9
directives 283

policy and Portugal 290, 291

Social Inclusion Process framework 275

and United Kingdom 200, 202–3, 211

see also demographic evolution in Europe
evaluation (DEEP procedure) 10

explanation (DEEP procedure) 10

factor analysis: Australia 128–9

Portugal 276, 278, 281

federal investment see United States: federal investment in small business development

civil fiscal impacts see United States: economic, fiscal and developmental impacts

focus group sessions (Portugal) 282

framework for applied research 9–10

France 29–30, 277

France: urban planning issues in Perpignan 259–72

action-oriented research 259, 260, 261, 268, 270, 271, 272

capacity building 269

collaborative approach 262–3

counter-plan 266

critical reflexivity 270

empowerment 270
ethics questions 260, 270
GIS 259, 266, 271–2
methodological questions 260
neighbourhood plan 269
participatory research (engaged geography) 260–61, 262–9, 270–71
private space issues 267
Programme National de la Rénovation Urbaine (PNRU) 265
public space issues 267–8
qualitative analysis 268, 271
quantitative analysis 271
scale models 267–8, 270
'sensitive space' modelling 265–8
social diagnosis 269
social geography 261–2
spatial diagnosis 269
urban exclusion and marginality 263–5
functioning economic geography see United Kingdom: regional planning and functioning economic geography
general equilibrium model (Ireland) 93
geo-coding (Hong Kong) 331
geo-demographic methods 11
geo-visualization (Australia) 129
geographic analysis (Pakistan) 35–6
geographic concepts (Pakistan) 51–2
geographic context (Pakistan) 36–8
Geographic Information Systems see GIS
geographical analysis (Hong Kong) 339
GIS 1, 7, 14
Australia 123, 125–6, 129, 132, 138
Chile 355
Estonia 95, 96–7, 102, 103, 105
France 259, 266, 271–2
Hong Kong 329–30, 333, 334, 339, 341
Israel 298, 303, 305, 307, 309
United Kingdom 56, 59
United States 194, 237–8, 241, 249
emergency services expansion 109, 111, 115, 116, 117–18, 120, 121
see also ArcGIS; GIScience
GIScience 1, 7, 14
governance see Tunisia: technopoles (governance and networking)
'gravity' model (Australia) 161
Greece 22, 28–9
Historical–hermeneutic framework 8
Hong Kong: environmental hazards of outdoor falls in the elderly 325–42
age as factor 327
agglomerative approach 334
ArcGIS 334
area-pattern data 333
associative analysis 334–5
cluster analysis 333–4
cluster size 338
data acquisition 330–31
descriptive statistics 335–6
exposure 331, 332
extrinsic factors 327, 328, 331, 332, 336
fall assessment 327
footwear worn 336
gender as factor 327
geo-coding 331
geographical analysis 339
geographical variations 329–30
GIS 329–30, 333, 334, 339, 341
histories of falls as factor 327
individual health status 328
intrinsic factors 327, 331, 332, 335–6
joint-pattern data 333
kernel density estimation (KDE) technique 333–4, 335, 337–8, 340
mapping fall data 332–3
medication prescribed as factor 327
Monte Carlo simulations 338
nearest neighbour hierarchical (Nnh) spatial clustering routine 334, 337–8, 340
non-activity risk factors 336
physical activity 329
physical performance 329
place and time of falls 329
risk exposure 328–9
risk factors 326–7, 339
situational setting 328–9
spatial analysis: hot spots 337–8
threshold distance 338
weather conditions 336
human geography 11, 13
hydropower see Chile

IDRISI software system (Chile) 352
IMPLAN Group (United States) 237–8, 239
IMPLAN input–output model (United States) 253, 254
implementation (DEEP procedure) 10
input–output model
  Ireland 93
  United States 237–9, 253, 254
interviews
  Portugal 276, 282
  United States 316–17
  Ireland 22, 277
Ireland: Simulation Model of the Irish Local Economy (SMILE) 79–93
agri-environmental model 92
average farm income and methane tax revenue 88–9
calibration technique 83
carbon equivalent tax 86–7
Common Agricultural Policy (CAP) reforms 84, 85
context 79–81
decoupling farm payments and impact on rural development 84–6
demographic and socio-economic variables 83
electricity supply and demand component 92
environmental subsidy 87
funding 81
gateway towns 80–81
general equilibrium model 93
general population model 92
geographical considerations 90
greenhouse gas emissions 86
health service analysis: access to GP services 89–91, 92
hub towns 80–81
income generation model 92
input–output model 93
key variables 82–3
Kyoto Protocol 86
labour force participation and market earnings at subnational level 87–9, 90
marine economy component 93
micro-simulation models for policy analysis 81–2
National Spatial Strategy (NSS) 80–81
nested variables within income generation model 90
rural development 79–80
Rural Environment Protection Scheme (REPS) 87
spatial interaction model (SIM) 90–91
spatial micro-simulation analysis of methane emissions 86–7
static farm component 83
statistical matching technique 83
SYNTHESIS spatial micro-simulation model 87
‘what if’ scenarios 92
White Paper Strategy 80–81
isochrones (Australia) 133, 134
Israel: biospheric conservation and development 295–309
action plans 302
agro-climatic units 298–9
application 306–8
attitudinal surveys 298
biosphere cells 303–4
biosphere reserves 296–301
  essence and structure 296–8
  planning procedure and products 298–301
buffer, controlled 300
buffer, integrated 300
buffer zone 297, 300, 301–2
conflict resolution and final plan 306
conflicts: defining and mapping 305–6
conflicts, interface 306
conflicts, statutory 305, 306
conflicts, subjective 306, 307
conservation and development 297, 298–300, 305, 306, 307
core area 297, 300, 301
core, controlled 300
core, preserved 300
cultural heritage complex 300
data bank 298
delineation of potential land uses 304–5
discussion tables 306
ecological units 299
ecological values 302
environmental treaty 302
GIS 298, 303, 305, 307, 309
hierarchy 300
historical corridors and identified roads 300
historical values 302
internal biosphere zoning 298
landscape complex 300
landscape values 302
logistic support 297
mapping possibilities of conservation and development 303–4
monitoring committee 302
National Committee for Planning and Construction 309
normalized value scale 298
objectives and client 301–2
planning concept 302–3
planning guidelines 300
planning methodology 303–6
public participation 298
transition area 298, 301–2
UNESCO Man and Biosphere (MAB) Programme 296–7, 302
visual basins 298–9
workshops 298
Italy 22, 277
Japan and cooperation with Tunisian technopoles 218, 221–2, 229
K’Cidade Urban Community Support Programme see Portugal
kernel density estimation (KDE) technique (Hong Kong) 333–4, 335, 337–8, 340
Lisbon Strategy 30
locational analysis 11
logistic regressions, binomial 150, 154, 155
London Olympic Park scenario 71–6
mapping application (Estonia) 102
Marxist critique 6, 7, 13, 261
mathematical critique 6, 7, 13, 261
mathematical programming techniques (Estonia) 96
metaphors for applied research 9–10
micro-simulation models (Ireland) 81–2, 86–7
monitoring (DEEP procedure) 10
Monte Carlo simulations (Hong Kong) 338
MS Access (Australia) 129
multi-criteria evaluation method (Chile) 349
multi-scale approach (Portugal) 276
NASA see United States: economic significance of NASA testing facility
National Spatial Strategy (Ireland) 80–81
nearest neighbour hierarchical (\(N_{nh}\)) spatial clustering routine (Hong Kong) 334, 337–8, 340
Netherlands 277
networking see Tunisia: technopoles (governance and networking)
New Zealand 125, 164
non-scientific approach 1
normalized value scale (Israel) 298
open-source Java (Australia) 132
Ordinance Survey (OS) Strategi database (United Kingdom) 65
Pakistan: transport policy 34–53
air transport and Civil Aviation Authority 41–2, 47–8
cross-modal coordination 38
cross-regional (provincial) coordination 38
financial resources, access to 38
graphic analysis 35–6
graphic concepts 51–2
graphic context 36–8
gepolitical factors 51–2
Indus River 51–2
infrastructure condition 38
infrastructure ownership 38
institutional related policies 49–50
intermodal transfer policies 50
International Civil Aviation Organization (ICAO) 42, 47
legal issues and supporting policies 50
logistical support 38–9
logistics and customs policies 50
Ministry of Communications 39, 46
objectives and goals 44–5
Pakistan International Airlines (PIA) 41–2, 48
Pakistan Railways 40–41, 46
pipelines 43, 48
political context 36–8
ports and shipping 43–4, 47
public–private partnerships (PPPs) 46, 47, 48, 50
railways 40–41, 46–7
remoteness 51
roads 39–40, 46
rural transport policies 49
surface transport system 37
transport infrastructure assessment 38–9
urban transport policies 48–9
Vision 2030 36
waterways transport 42–3, 48
panel survey (Portugal) 276, 285
participatory research
France 260–61, 262–9, 270–71
Israel 298
Portugal 282
Pearson’s correlation coefficient 69
perspectives of applied geography 3–4
physical geography 11, 13
Portugal 28–9, 30
Portugal: urban community development programme 274–92
Aga Khan Foundation (AKF) programme strategy development 275–6, 283
Aga Khan Foundation (AKF) Urban Community Support Programme 292
cluster analysis 281
community-based capacity building 276
comparative perspective (with European Union) 276, 277
continuous and structural unemployment 281
descriptive analysis 278, 279–80
direct field observation 282
documentary information 278
education and training 279–80
and European Union directives 283
European Union Social Inclusion Process framework 275
factor analysis 278, 281
family disadvantage 279–80
female unemployment 278
finance 279–80
focus group sessions 282
health 279–80
immigrant concentration 278
in-depth interviews 276, 282
income poverty 279–80
K’Cidade Urban Community Support Programme 283–91, 292
Aga Khan Foundation (AKF) intervention 289–91
business activities survey 286
child care 289
citizenship and social cohesion 290–91
Community Innovation Centres 291
Community Intervention Programmes 291
comparative perspective with European Union 284, 290, 291
economic development 290
education 289, 290
empowerment 290–91
field observations 286
illiteracy rate 289
immigrants and ethnic minorities 289
labour market 289
overview and key indicators 286–9
panel survey 285
population survey implementation 285–6
poverty 286, 289
probability systematic sample 285
questionnaire 285
resident perceptions 289
sources of information 285
marginalization 275, 291
multi-scale approach 276
multivariate statistical techniques
(factor and cluster analyses) 276
neighbourhood assessment 278
non-governmental organizations 275
panel survey questionnaire 276
participative methodologies 282
partnership development 276
poverty 292
principal component analysis 278
social exclusion 274–5, 291–2
social problems 279–80
socio-economic difficulty 278
socio-economic index 281
spatial exclusion 292
statistical characterization 282
statistical data 278
target areas – Alta de Lisboa and
Mira-Sintra 282–3
territorial exclusion 275
under-employment 279–80
vulnerable population assessment
278
young people 278
youth on welfare 281
positivist paradigm 13
PostgreSQL database (Estonia) 104
postmodernist discourse 6–7, 13–14
PPGIS (Public Participation GIS)
(Estonia) 97, 102–4, 106
prescription (DEEP procedure) 10
principal component analysis
Australia 131
Portugal 278
United States 154
principles and practice of applied
geography 4–5
probability systematic sample
(Portugal) 285
problem-solving orientation 6
pure research 5
qualitative analysis 1, 11
France 268, 271
quantitative analysis 1, 7, 14
France 271
questionnaires (Portugal) 285
R statistical programming environment
(Australia) 132
raster layers (Chile) 352–3
reaction function (Australia) 168
realist–emancipatory framework 8
regional growth and development see
United States: emergency services
expansion and regional growth
and development
regional planning see United
Kingdom: regional planning
regression models/analysis
Australia 131–2, 135, 162
United States 150, 154–6
relevance and approaches of applied
geography 1–15
definitions 2–3
human geography 11, 13
Marxist critique 6, 7, 13
metaphors and framework 9–10
perspectives 3–4
physical geography 11, 13
postmodernist discourse 6–7, 13–14
societal issues 12–13
value 5–7
values 7–9
retail aggregate space-time trip
(RASTT) model see Australia:
‘store wars’ sovereignty debate
RouteFinder (Australia) 133
school network planning see Estonia
science parks see Tunisia: technopoles
scientific approach 1
Shift Share Analysis (United States)
234
simulation models
Europe 24
see also Ireland: Simulation Model
of the Irish Local Economy
Slovakia 22
small business development see United
States: federal investment in small
business development
social diagnosis (France) 269
social geography 259
social geography (France) 261–2
societal issues 12–13
socio-economic conditions for
resettlement/compensation see
Chile
space-time see Australia: ‘store wars’
sovereignty debate
Spain 22, 277
spatial analysis (Hong Kong) 337–8
spatial decision support system (SDSS)
Australia 124, 128, 132, 137–8
Estonia 95, 96–7
spatial diagnosis (France) 269
spatial interaction model (SIM):
Ireland 90–91
United Kingdom 67, 71–2
spatial micro-simulation analysis (Ireland) 86–7
spatial model specification (United Kingdom) 60–61
spatial modelling
Australia 124, 126, 128, 129–32, 135–6, 138–40
Estonia 96, 105
spatial optimization modelling
Estonia 96, 105
United States 115–16, 121
standardized root mean square error (SRMSE) 69
statistical characterization (Portugal) 278, 282
statistical matching technique (Ireland) 83
’s’ store wars’ see Australia: ‘store wars’
sovereignty debate
sustainability see United Kingdom: sustainability of aggregates
transportation
Sweden 22
Switzerland 166
SYNTHESIS spatial micro-simulation model 87
technology parks see Tunisia:
technopoles
technopoles see Tunisia: technopoles
toll roads see United States: economic, fiscal and developmental impacts of toll roads
tornadoes see United States: National Weather Service warnings of tornadoes
transport see Pakistan: transport policy; United Kingdom: sustainability of aggregates transportation
Tunisia: technopoles (governance and networking) 217–31
Borj Cèdria 223–30
cooperation with Europe 228–9
cooperation with Japan 229
company-sphere 225
cntrol structure 226
ecosystem of knowledge 226–8, 230
functionality 226
funding 226
governance processes 225, 230
higher education 228
ICTs 227–8, 230
innovation 227
integration into urban fabric 224–5
management through objectives 226
planning and project management 225
public–private partnerships (PPPs) 226
research 225
state, role of 225–6
sustainable approach 229–30
and cooperation with European Union 218, 221–2
and cooperation with Japan 218, 221–2
innovative projects with high added value 222–3
intellectual, social and microclimates 217–23
knowledge society 219–20, 230
small and medium-sized enterprises 219–20
spread of technopoles 218–19
sustainability 219–20
synergies 221–2
territories and strategies 221
United Kingdom 125, 126, 166, 170, 277
United Kingdom: regional planning and functioning economic geography in West Midlands 196–213
Advantage West Midlands (AWM) 200, 203, 204, 211
Index

brand 206
business clusters 200–201
business and professional services 205, 207, 209
clusters 199–203, 211
E³I belt 206–7, 208, 210–212, 213
education levels, high 205, 207, 209
embryonic/aspirational clusters 201
Enterprise Zones 213
established clusters 201
and European Union 200, 202–3, 211
functioning economic geography 209, 210–212
growing clusters 201
high-technology corridors/metal manufacturing 199–203, 206, 210
innovative manufacturing 205, 207–9
knowledge economy 203
Local Enterprise Partnerships (LEPs) 211–12, 213
logistics sector 205–6, 208, 209
new firm formation 205, 210
New Labour 199–203
new orthodoxy 199–203
polycentricity 199–203
Regional Assemblies 196–7, 200
Regional Development Agencies (RDAs) 196–8, 200, 202, 204, 211, 213
Regional Economic Strategy (RES) 199, 200–201, 202–3, 204–210, 211
Regional Spatial Strategy (RSS) 196, 200–201, 202–3
regeneration zones 200–201, 203, 211
skill levels, high 205, 209
West Midlands Government Office (WMGO) 200
West Midlands Regional Assembly (WMRA) 200, 202
West Midlands Regional Observatory (WMRO) 204, 211
United Kingdom: sustainability of aggregates transportation 55–77
ArcGIS 9.2 Network Analyst Toolbox 66
balancing factors 61
baseline model 71–2, 74

Beta values 67–9
British Geological Survey (BGS) 55–9, 63, 69, 72
BritPits database 63, 65
calibration 67–70
carbon emission estimation 70–71
Climate Change Act (2008) 75
closest facility analysis 66
costant factor 60–61
collection 62–3
delivery distance data, average 68
demand-constrained models 61
destination probability 69
distance decay parameter 67–8
doubly constrained models 61
environmental impact 57, 76
flows of aggregates 58
GIS 56, 59
index matrix 67
inland transportation paths 64
input-based approaches 70
interaction models 72
local authority districts (LADs) 62
London Olympic Park scenario 71–6
Managed Aggregate Supply System (MASS) 55–6
market shares by mode 68
mass terms 60–61
Mineral Planning Authority (MPA) 63–4
minimum transport cost 66
multimodal transport mode 66
Ordinance Survey (OS) Strategi database 65
origin–destination cost matrix generation 65, 66–7
output-based approaches 70
Pearson’s correlation coefficient 69
primary aggregates 57
production 63–4
pure road transport mode 65, 66
rail 64, 66, 70, 72–3
rail delivery cost 67
rail delivery distance, average 68
rail plus road transport mode 65–6
rail, relative cost 67–9, 71–2, 73–4
recycled aggregates 57
regional supply imbalances 58
road 64, 70, 72–3, 76
road delivery cost 67
Studies in applied geography and spatial analysis

road delivery distance, average 68
sea freight 70
secondary aggregates 57
spatial interaction models 67, 71–2
spatial model specification 60–61
standardized root mean square error (SRMSE) 69
supply and demand of aggregates at quarry and district level 62
supply-constrained models 61
sustainability target 74
transhipment cost 67–9, 71–3
transport costs 64
tavel cost function 60–61
unconstrained model 61
‘what if’ scenarios 61, 71, 75, 76
United States 96, 125, 126, 218
United States: automobile dealership customer and site analysis 184–94
customer context, changing 192–3
client deliverables 187
customer locations 187–8
customer sales 187
data 186–7
demographic changes 188–9
employment 191
ESRI ArcGIS v9.1 software 186
General Motors/General Motors Company 192–3, 194
GIS 194
housing 191
infrastructure changes 188–9
location analysis 188–92
National Automobile Dealer Association (NADA) 193
population and household data 186–7, 190, 191
product sales by city and defined market area 188
service activity addresses 188
United States: economic, fiscal and developmental impacts of toll roads in Dallas 247–58
commercial development impacts 255–6
construction activities, effects of 253–4
Dallas North Tollway (DNT) 251, 252–4, 255–7, 258
Dallas–Fort Worth (DFW) economic dynamo 247–52
direct effects 253
economic impacts 249–50, 253–5
employment growth 255–6
fiscal impacts 249, 254–5
GIS 249
IMPLAN input–output model 253, 254
indirect effects 253
North Texas Tollway Authority (NTTA) 247, 249–50, 251–2
254–5, 257, 258
North–South split 248–9
population growth 248–9, 255
President George Bush Turnpike (PGBT) 251, 252–4, 255–7, 258
regional mobility improvements 256–7
residential development impacts 255–6
United States: economic significance of NASA testing facility 232–45
annual economic impact and spin-offs 242–4
aspirational cluster 235, 236
Bureau of Economic Analysis (BEAT) REIS model 237–8
collaboration 244–5
community relations 245
control 245
cryogenic laboratory 236
direct impact 240–41
economic impacts 241
employment impacts 238–9, 241, 242
feasibility study 244
fiscal control 245
funding source 236
GIS 237–8, 241
hypersonic wind tunnel 236
IMPLAN Group 237–8, 239
indirect impact 240–41
induced impact 241
industry output 238
input–output (I–O) model 237–9
job bundles 239–40
joint port authority model 244–5
Local Government and Regional Collaboration Grant Program 236
multipliers 240–41
new economic vision 235–6
non-disclosure rules 239
one-time construction impact 241
politics 245
primary data 238
regional impacts 235
service area 239
Shift Share Analysis 234
Space Power Facility 235
Spacecraft Propulsion Facility 235
tax impacts 242
trust barriers 244–5
United States: emergency services
expansion and regional growth and development 109–122
analysis 116–18
ArcGIS 116, 118
binary integer decision variables 116
compensation 120
continuous space siting model 117–18
Cplex 8.0 116, 118
demand and placement spatial layers 114
Elk Grove Community Services District (CSD) Fire Department 110, 113, 115–18, 120–21
existing and already planned fire stations 111
findings and recommendations 118–20
fire, significance of 111–12
GIS 109, 111, 115, 116, 117–18, 120, 121
linear expressions 116
polygon intersection point set (PIPS) discrete locations 117–18
proximity analysis 117
response distance standard 113, 118
response times 113
response zone areas 113, 117, 118
spatial optimization 115–16, 121
study specifications 113–14
timeframe 120
United States: federal investment in small business development 144–58
agglomeration 155–6, 157
binomial logistic regressions 150, 154, 155
business and entrepreneurship 155
business incubators 145–8, 149, 150–51, 154, 155–6, 157
business support 157
control variables 149–50, 151, 153–4, 155
data 146
demographic variables 151, 152, 153, 156
economic variables 152, 153
environmental factors 148, 150–51
factor loadings 154
geographic patterns of business support systems by county 148
geographic patterns of business support systems by state 147–8
geographic patterns of business support systems by urban–rural division 146–7
high-technology scale 151, 155–6, 157
human capital 151, 155–6, 157
knowledge-based variables 149, 151, 152, 154–5
local government 155–6
metropolitan binomial variable 155–6
micropolitan binomial variable 155–6
principal components method 154
pull model/explanation 151, 155–6, 157
push model/explanation 151, 155, 157
regional factors 148, 150–51
regression models/analysis 150, 154–6
Small Business Administration (SBA) 144, 146
Small Business Development Center (SBDC) program 144–8, 150–51, 154, 155–6, 157
Small Business Innovation and Research (SBIR) 144–8, 149, 150–51, 154, 155–6, 157
social variables 152, 153
university, presence of 151, 155–6, 157
variables, measures and data 151–3
welfare 155, 157
United States: National Weather Service warnings of tornadoes 311–23
boundary-based warnings 319
communication strategies 322
convenience sampling 316
decisions and actions 320–21
Hazardous Weather Outlooks (HWOs) 313
interviews 316–17
knowledge of warnings and event 317–18
methods 316–17
multiple sources 317–18
newspaper and other media reports reviews 316
outcome and outputs 321–3
path of tornado 314
pathcasts 321–2
physical indicators of tornado 317
policy and practice 321
preconceived notions of tornado behavior 319
risk interpretation 321
risk perception and vulnerability 318–20, 321
risk personalization 318–19
second source (siren or phone call) 317–18
Service Assessments 311, 312–13
social science component 316
storm-based warnings 319, 321
team 315–16
verification of warnings 317–18
warning areas 315
warning dissemination 321
urban growth see Australia: emergency services provision and urban growth
urban planning see France: urban planning issues
value of applied geography 5–7
values in applied geography 7–9
variable comparison matrix (Chile) 352
weather warnings see United States: National Weather Service warnings of tornadoes
WebGIS (Estonia) 103
welfare geography 123
‘what if’ scenarios:
 Australia 132, 172, 176
Estonia 95, 96, 106
Ireland 92
United Kingdom 61, 71, 75, 76
workshops (Israel) 298
Index
Studies in applied geography and spatial analysis