

Alternative futures for the UK's local ethnic populations: sensitivity and scenario analyses

4th ESRC Research Methods Festival, 5-8 July 2010, St Catherine's College Oxford

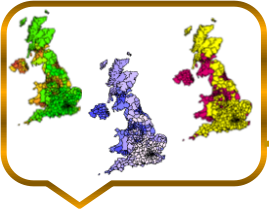
*Pia Wohland, Paul Norman, Peter Boden
and Phil Rees, University of Leeds*

Online Information on the project:

<http://www.geog.leeds.ac.uk/projects/migrants/>

Acknowledgements

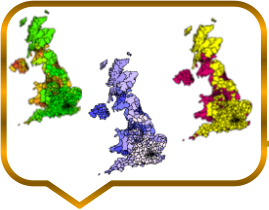
- ESRC ONS GROS NISRA OS UKBORDERS CDU ESDS



5 reference scenarios based on TREND projection

Contrast the existing results by using:

- All group mortality
- All group fertility
- No mixing matrix
- Zero migration
- Zero international migration



Impact on total population number and age structure of total population, regional effects

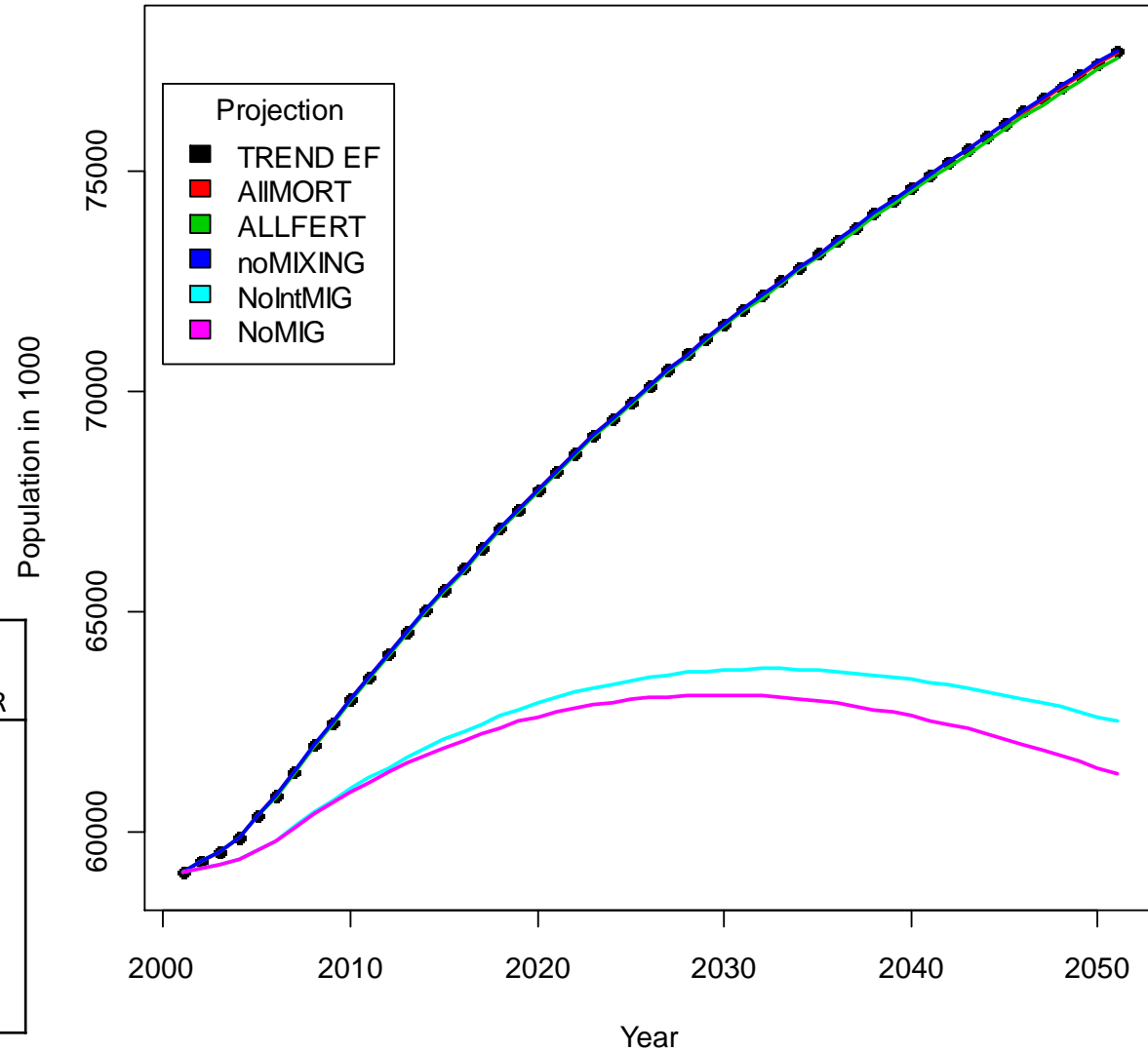
Impact on ethnic groups, ethnic composition, ethnic groups age structure

Example local area impact on population size and age structure, ethnic composition

The UK's total population and age structure under different scenarios

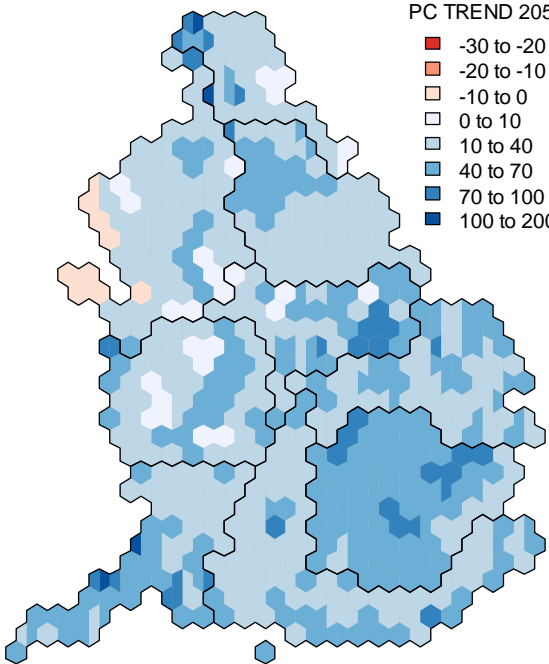
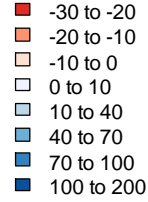
Projections	Final population 2051 (in 1000)	Percent difference
TRENDEF	77720	
ALLMORT	77700	-0.03
ALLFERT	77563	-0.2
noMIXING	77744	0.03
NoIntMig	62510	-19.57
NoMIG	61320	-21.1

Projections	Population in Millions			
	0 to 15	16 to 64	65+	ODR
2001	11.86	37.88	9.37	25
2051 TRENDEF	13.39	44.61	19.72	44
2051 ALLMORT	13.39	44.61	19.71	44
2051 ALLFERT	13.26	44.53	19.77	44
2051 NoMIXING	13.5	44.59	19.65	44
2051 noIntMIG	10.37	34.00	18.14	53
2051 noMIG	10.02	32.78	18.52	56

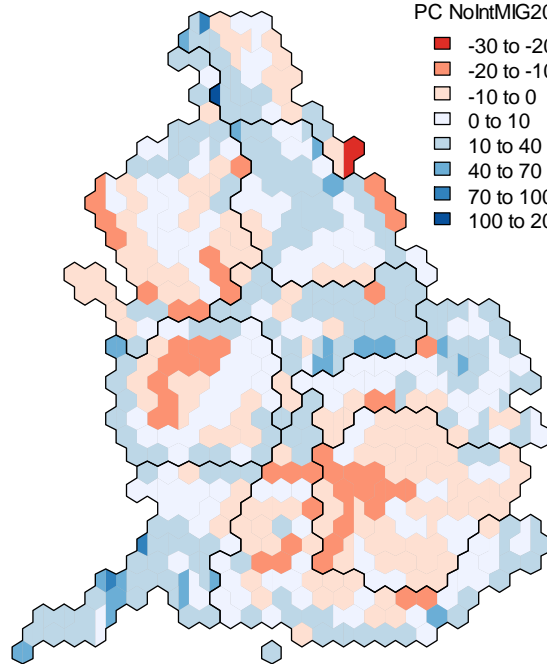


Total population change in percent 2051 compared to 2001

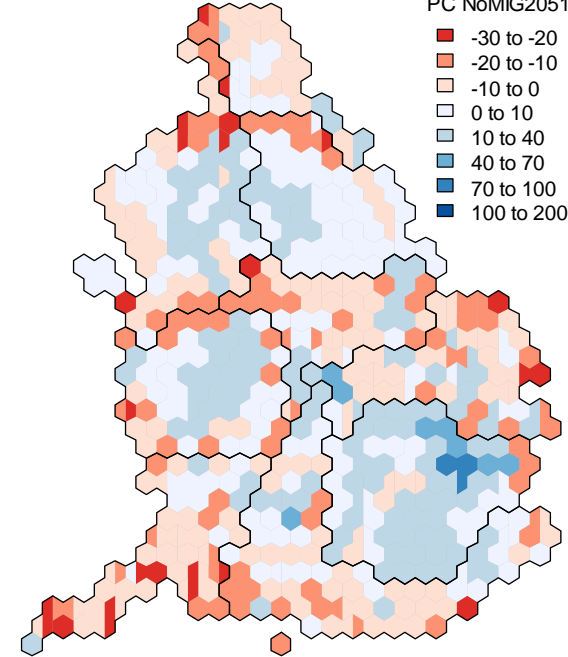
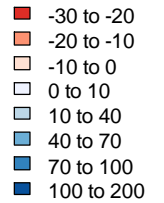
PC TREND 2051



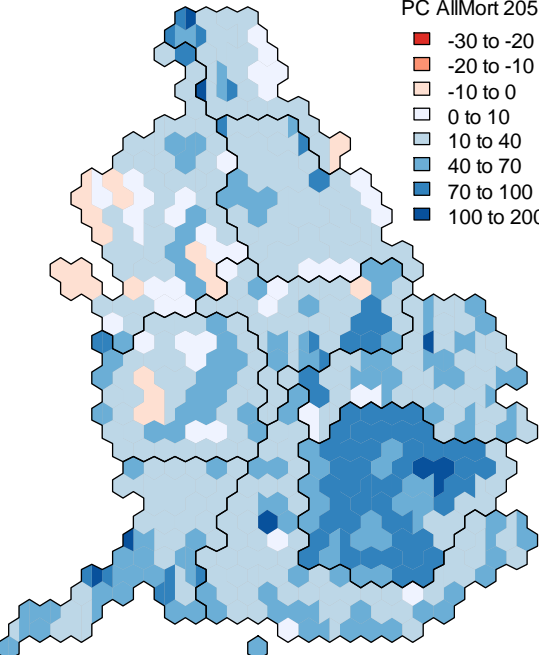
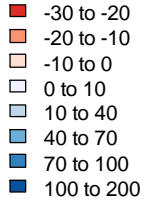
PC NoIntMIG2051



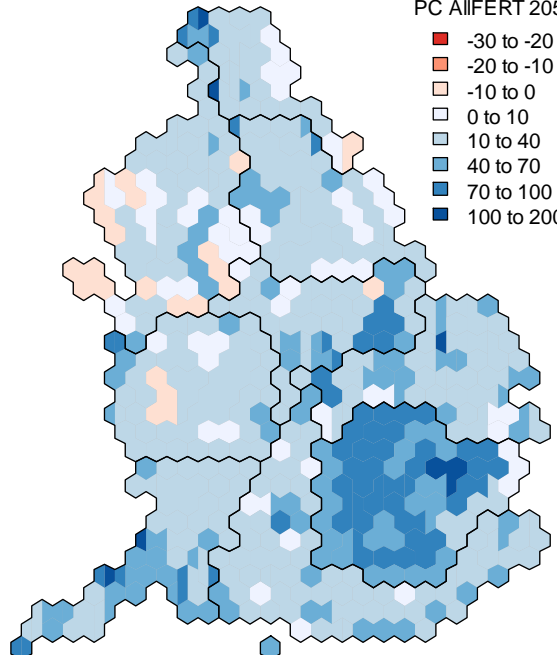
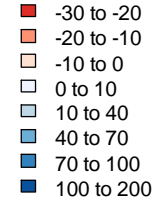
PC NoMIG2051



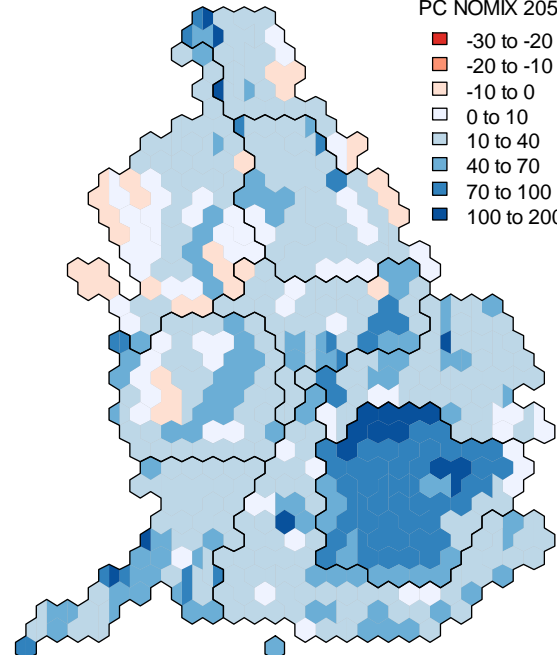
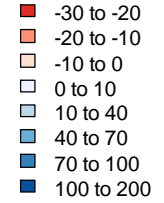
PC AllMort 2051



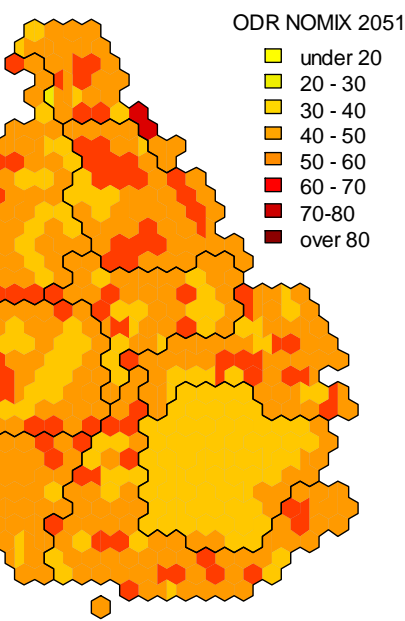
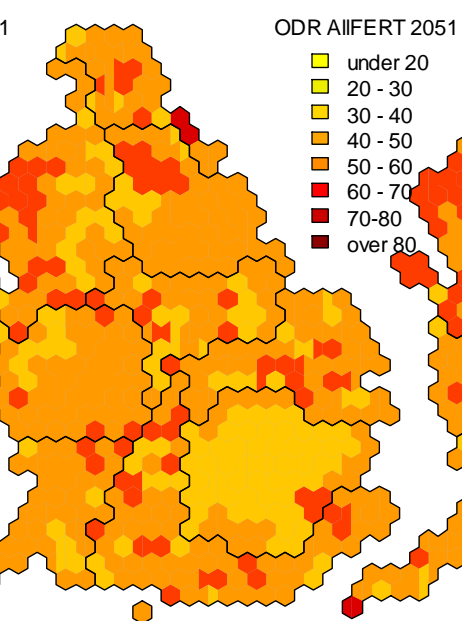
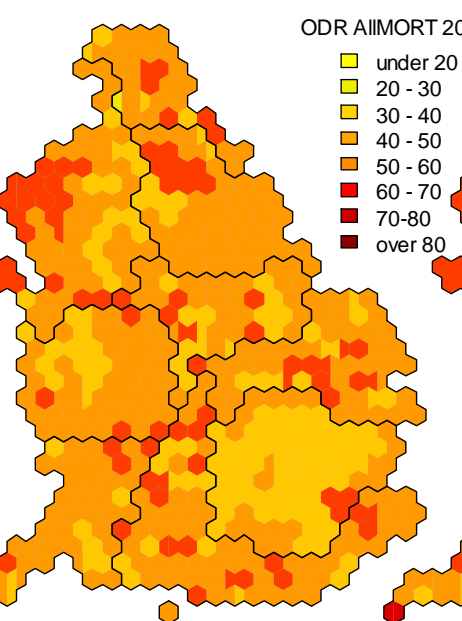
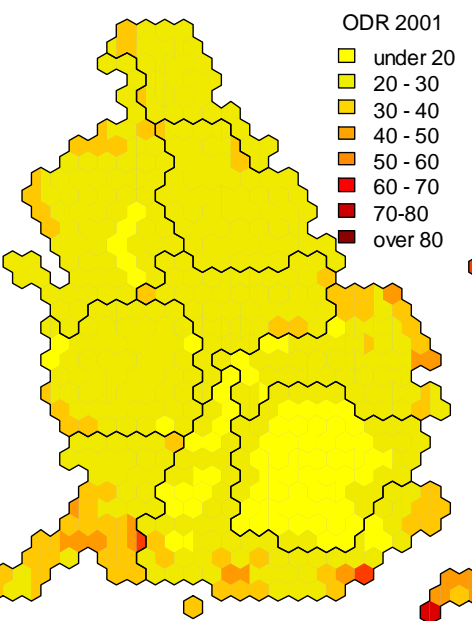
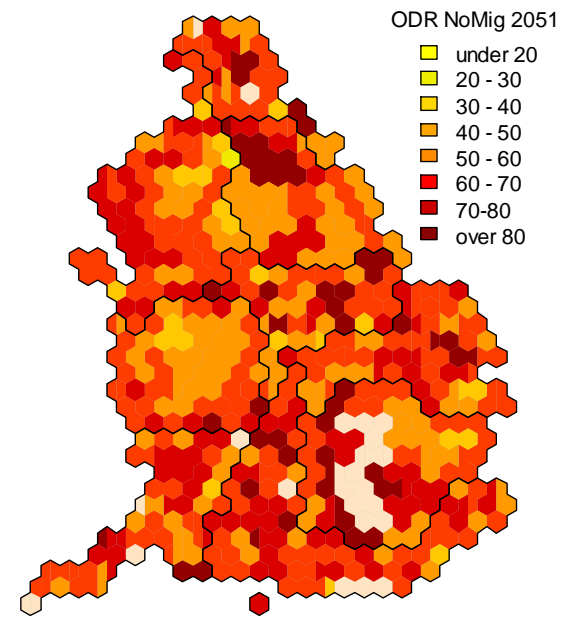
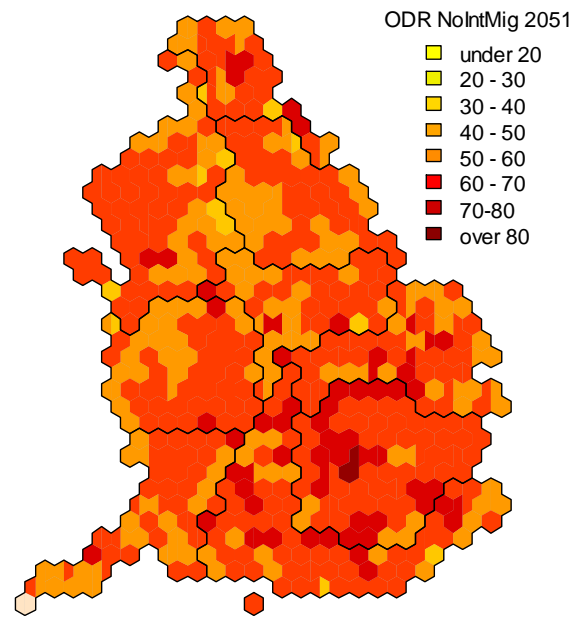
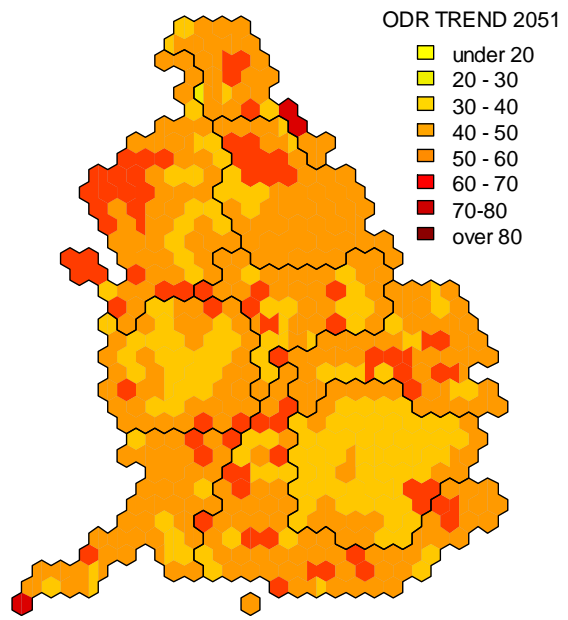
PC AllFERT 2051



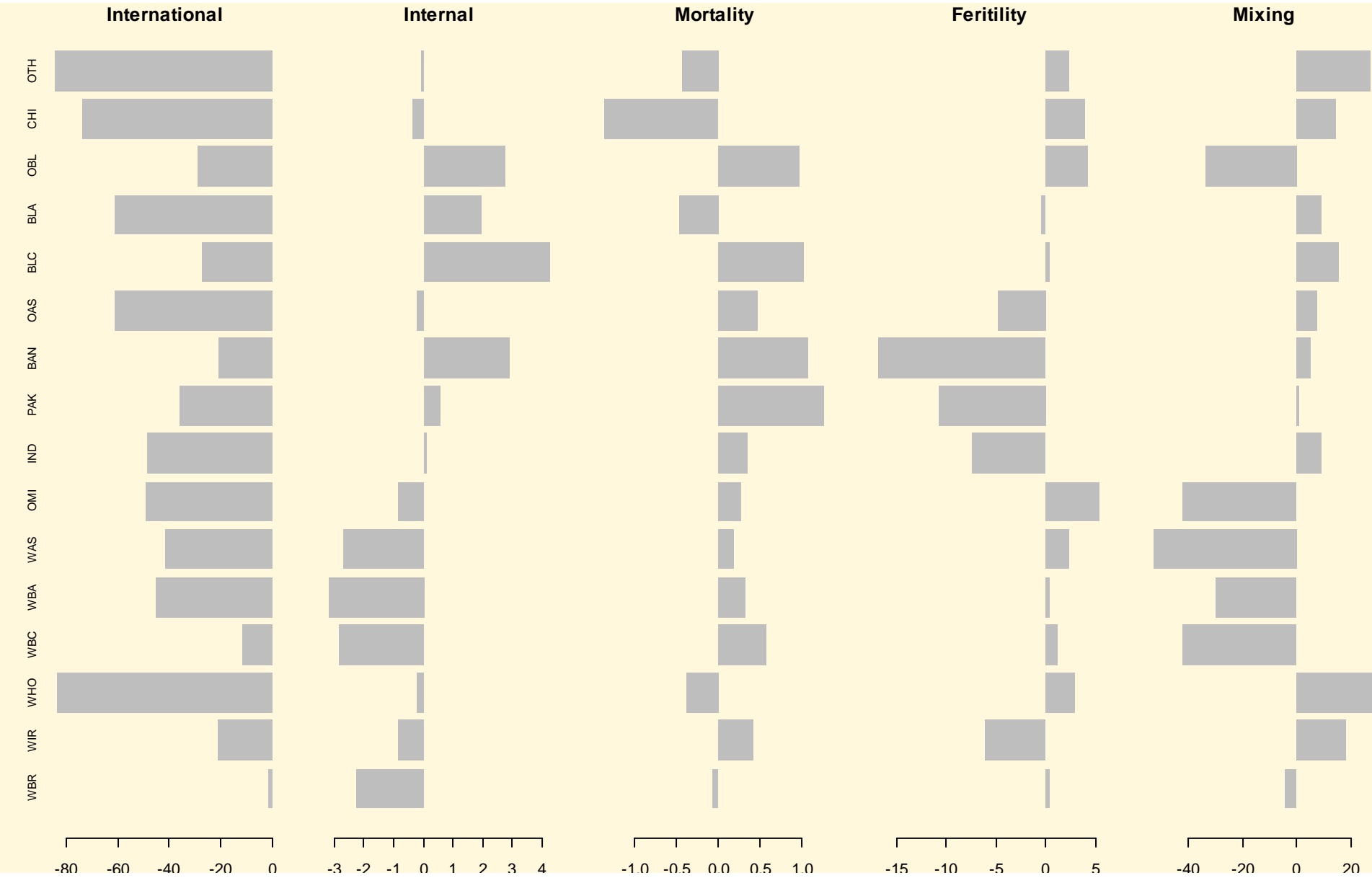
PC NOMIX 2051



Old age dependency ratio (ODR) England

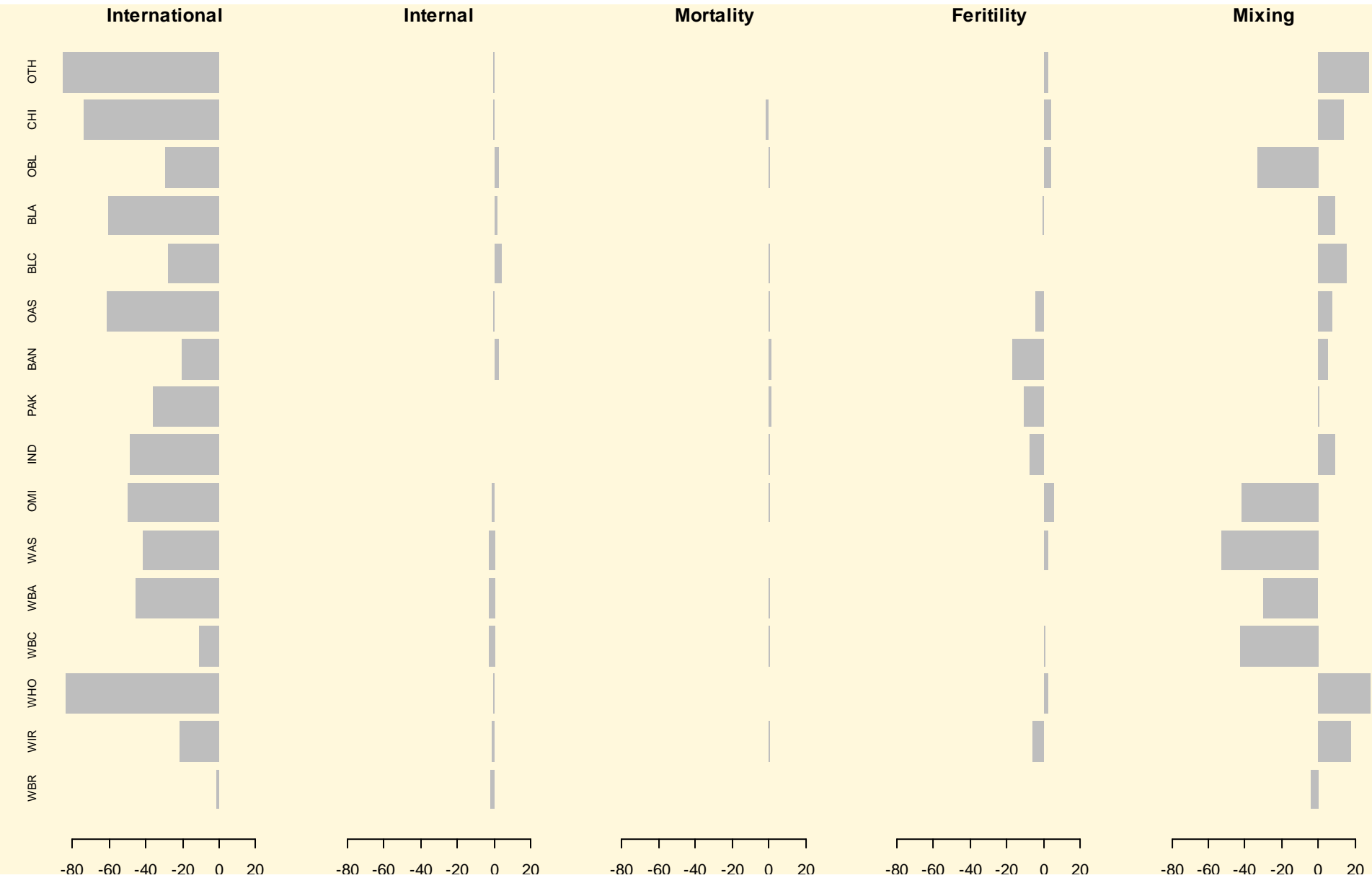


Components effects on the UK's ethnic groups – individual scale



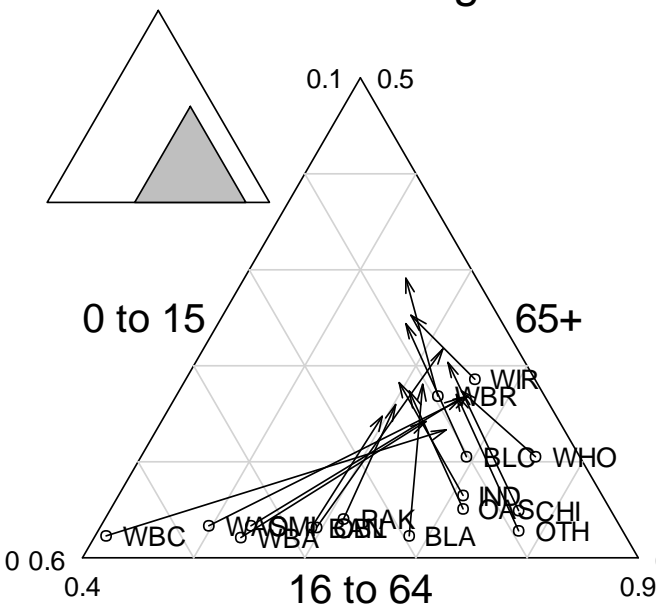
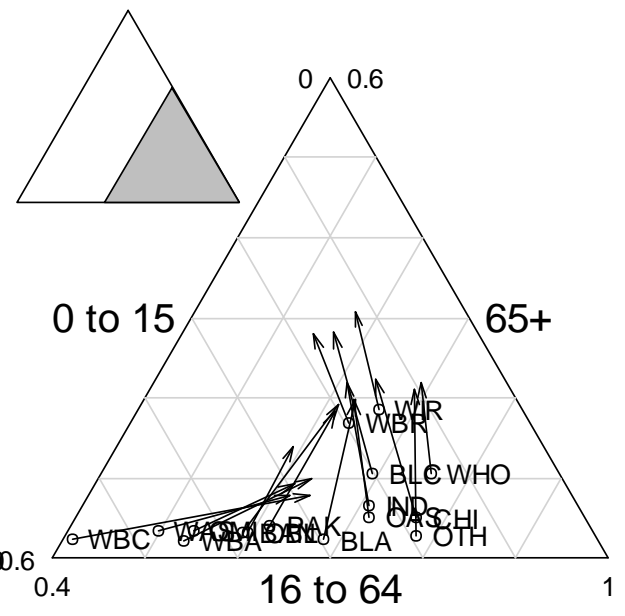
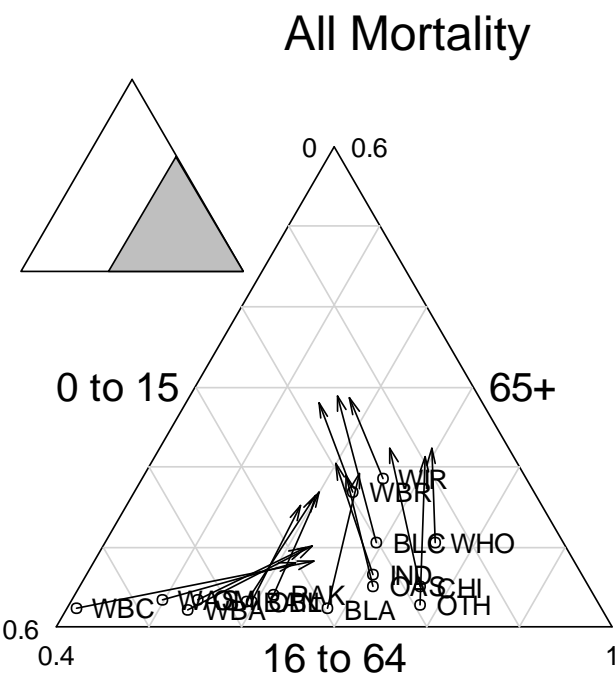
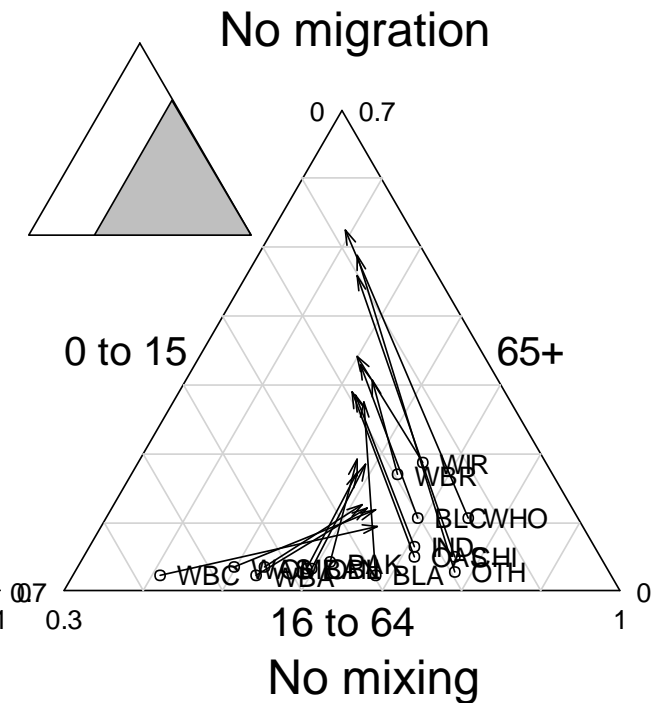
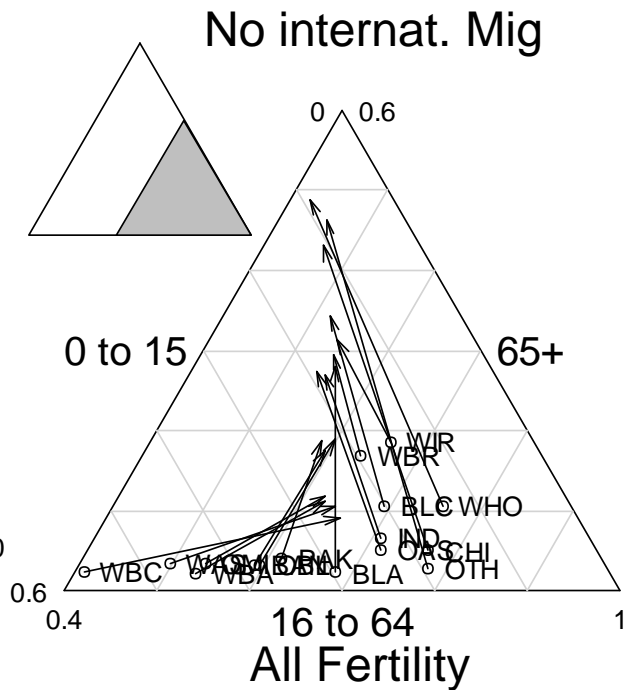
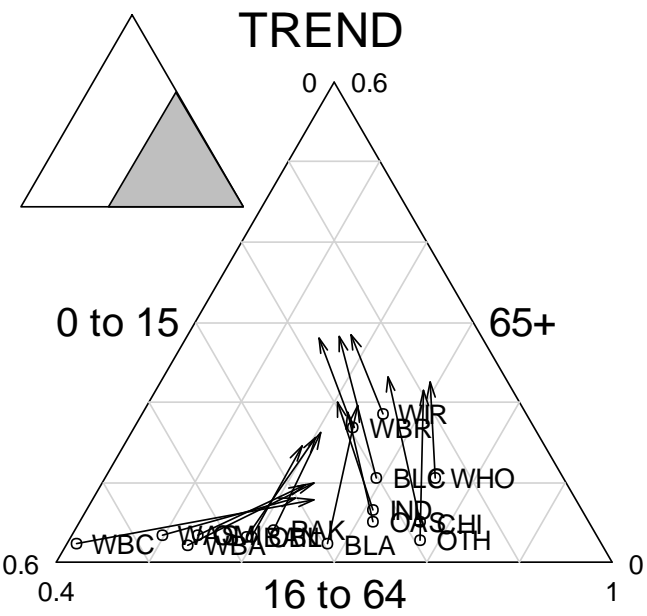
% Difference in population numbers compared to TREND projection (2051)

Components effects on the UK's ethnic groups – standard scale



% Difference in population numbers compared to TREND projection

Age structure UK ethnic groups



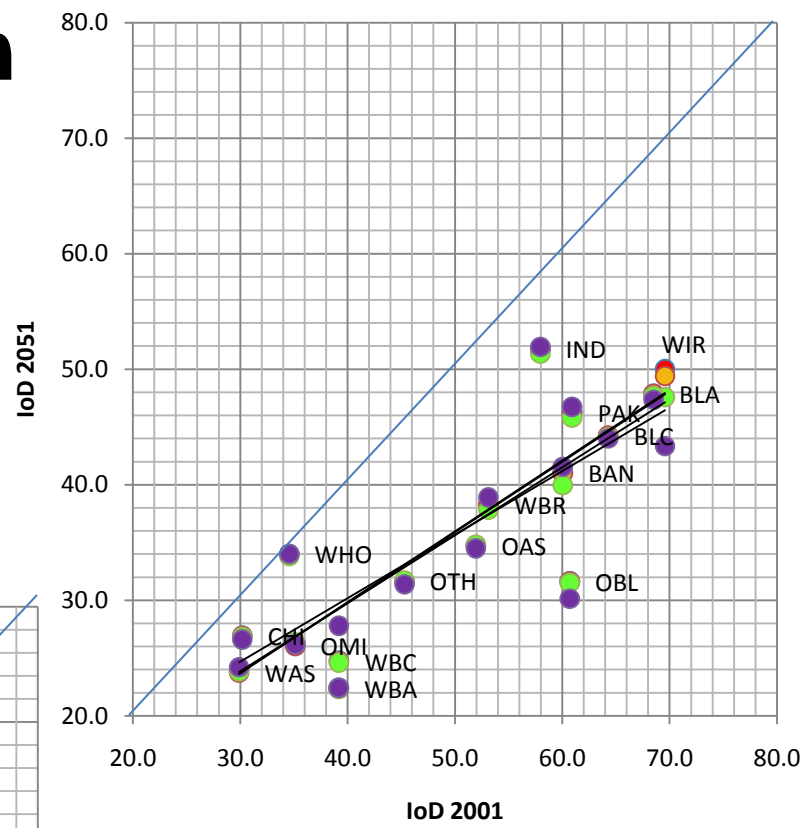
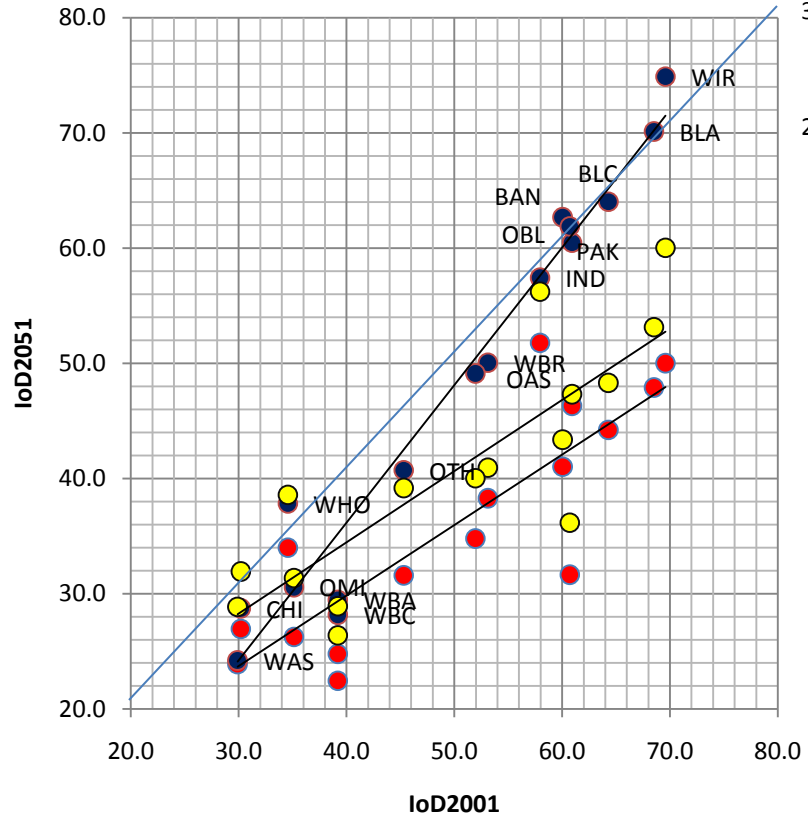
Spatial distribution of the UK's ethnic groups

Change of the Index of dissimilarity compared (IoD) to 2001

Group			Change 2051-2001					
			NO INT			MIXIN		
			TREND	MIG	NoMIG	FERT	G	MORT
White	British	WBR	-15	-12	-3	-15	-14	-15
	Irish	WIR	-20	-10	5	-22	-26	-20
	Other White	OWH	-1	4	3	-1	-1	-1
Mixed	W & BI Caribbean	WBC	-14	-10	-11	-15	-11	-15
	W & BI African	WBA	-17	-13	-10	-17	-17	-17
	White & Asian	WAS	-6	-1	-6	-6	-6	-6
	Other Mixed	OMI	-9	-4	-5	-9	-9	-9
Asian or Asian British	Indian	IND	-6	-2	-1	-7	-6	-6
	Pakistani	PAK	-15	-14	0	-15	-14	-15
	Bangladeshi	BAN	-19	-17	3	-20	-18	-19
	Other Asian	OAS	-17	-12	-3	-17	-17	-17
Black or Black British	Black Caribbean	BCA	-20	-16	0	-20	-20	-20
	Black African	BAF	-21	-15	2	-21	-21	-21
	Other Black	OBL	-29	-25	1	-29	-31	-29
Chinese or Other	Chinese	CHI	-3	2	-1	-3	-4	-3
	Other Ethnic Group	OET	-14	-6	-5	-14	-14	-14

Spatial distribution

Index of dissimilarity
(IoD)



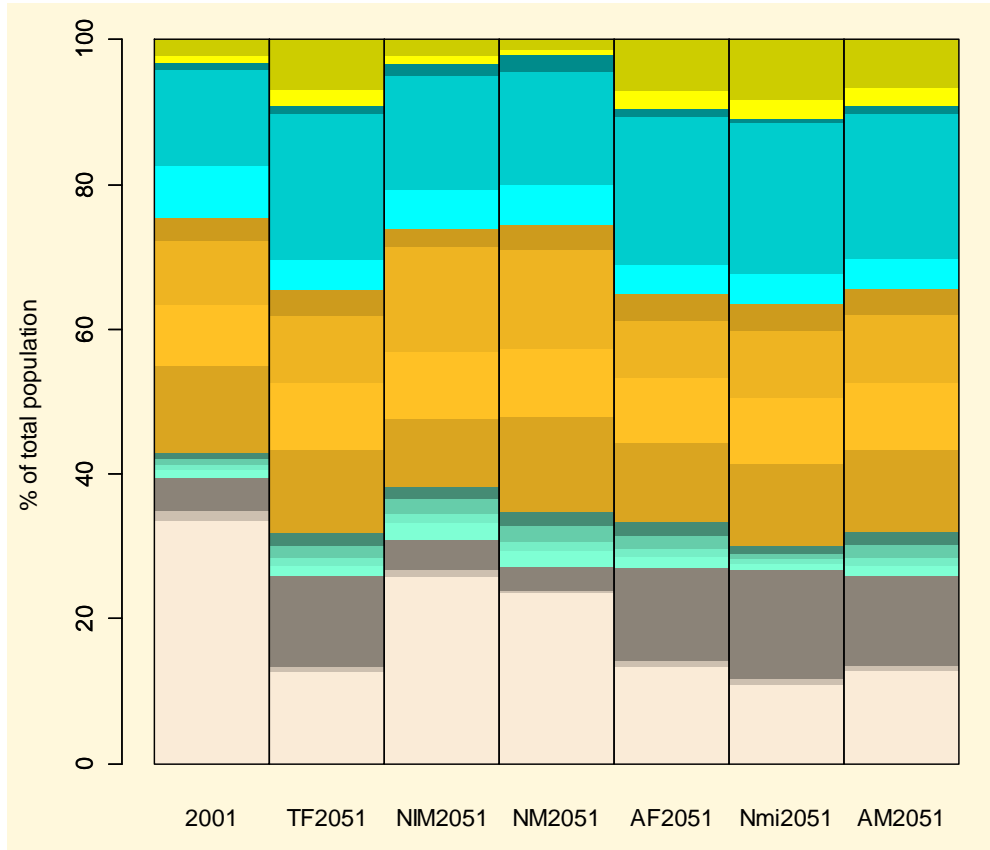
- 2051 TREND
- 2051MORT
- 2051FERT
- 2051MIXING
- Linear (2051 TREND)
- Linear (2051MORT)
- Linear (2051FERT)
- Linear (2051MIXING)

- 2051 TREND
- 2051NOMIG
- 2051INTMIG
- Linear (2051 TREND)
- Linear (2051NOMIG)
- Linear (2051INTMIG)

Newham – Example LA

Population in 2001 ca. 250 thousand

Projections	Final population 2051 (in 1000)	Percent difference
TRENDEF	504	
AllMORT	503	-0.31
ALLFERT	503	-0.26
noMIXING	529	4.94
NoIntMig	233	-53.88
NoMIG	427	-15.28

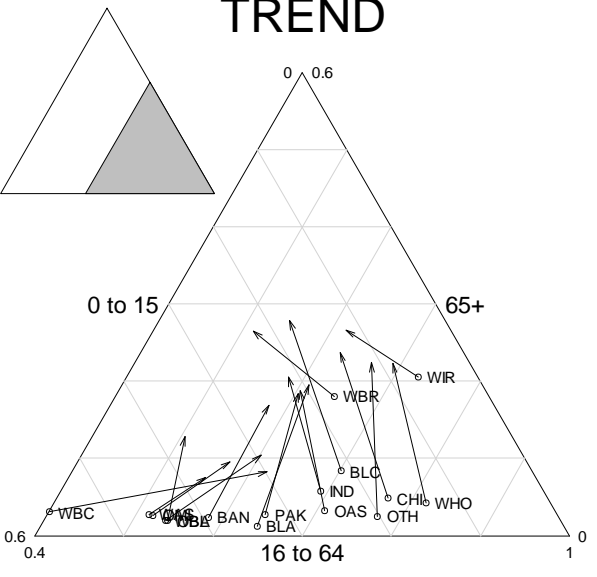


- OTH
- CHI
- OBL
- BLA
- BLC
- OAS
- BAN
- PAK
- IND
- OMI
- WAS
- WBA
- WBC
- WHO
- WIR
- WBR

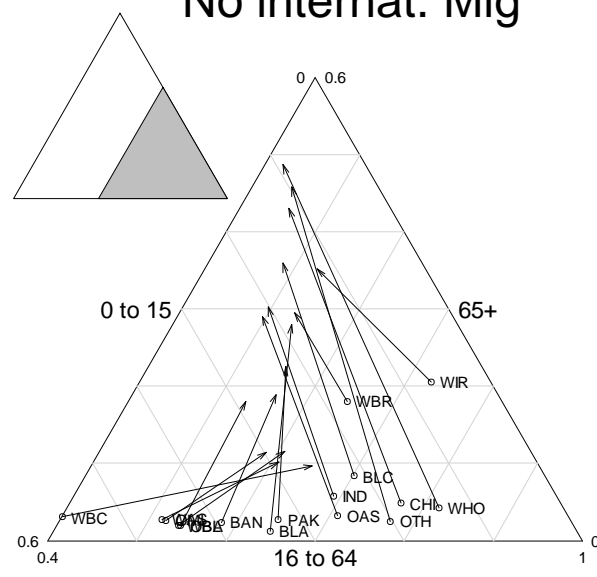
Newham				
Projections	Population in 1000			ODR
	0 to 15	16 to 64	65+	
2001	63.68	163.91	21.82	13
2051 TRENDEF	98.79	302.19	103.22	34
2051 AllMORT	98.82	302.02	101.78	34
2051 AllFERT	100.58	298.67	103.63	35
2051 noMIXING	110.68	315.59	102.85	33
2051 noIntMIG	45.82	123.17	63.55	52
2051 noMIG	98.62	227.7	100.84	44

Newham ethnic groups age structure under different scenarios

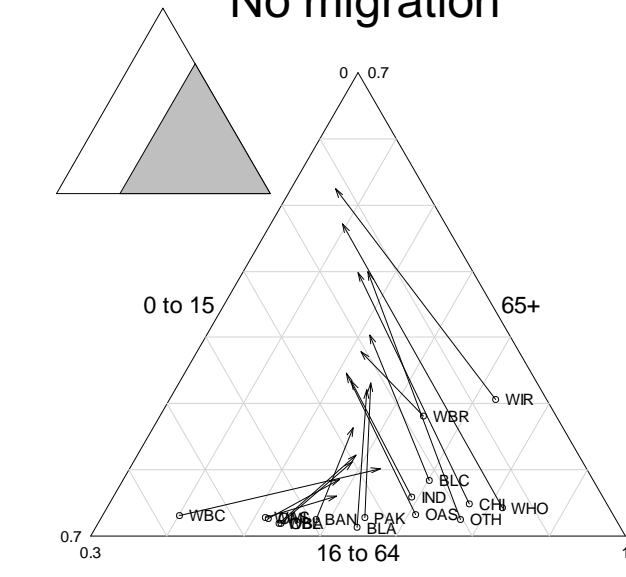
TREND



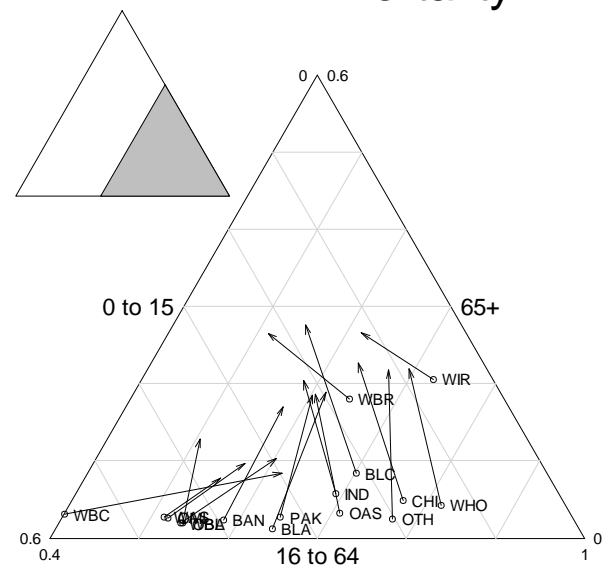
No internat. Mig



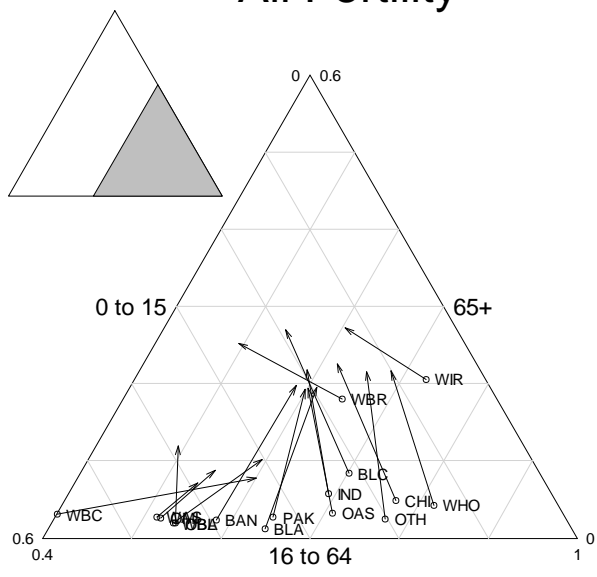
No migration



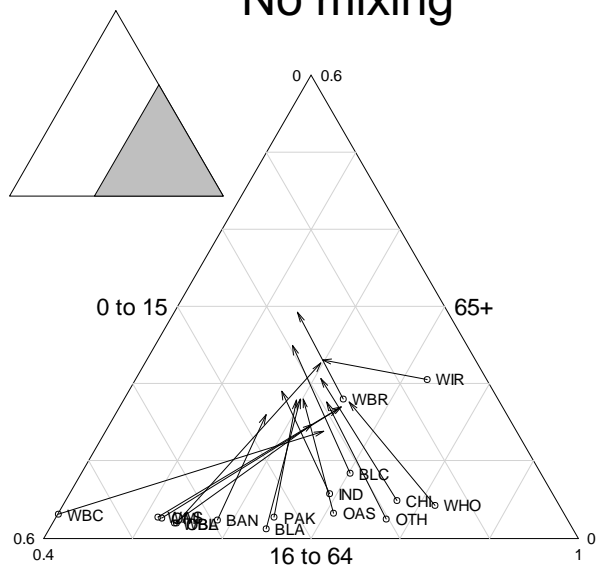
All Mortality



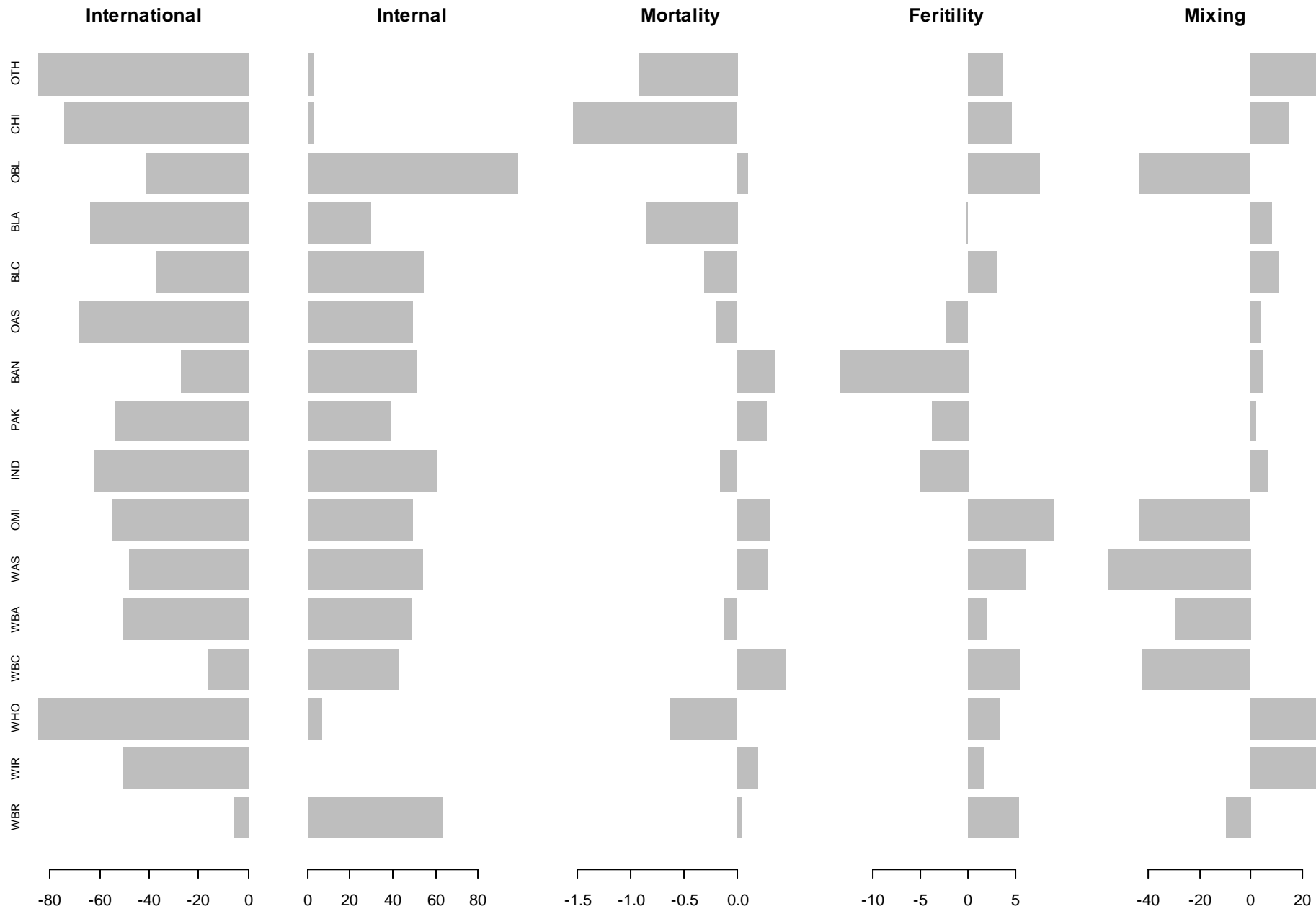
All Fertility



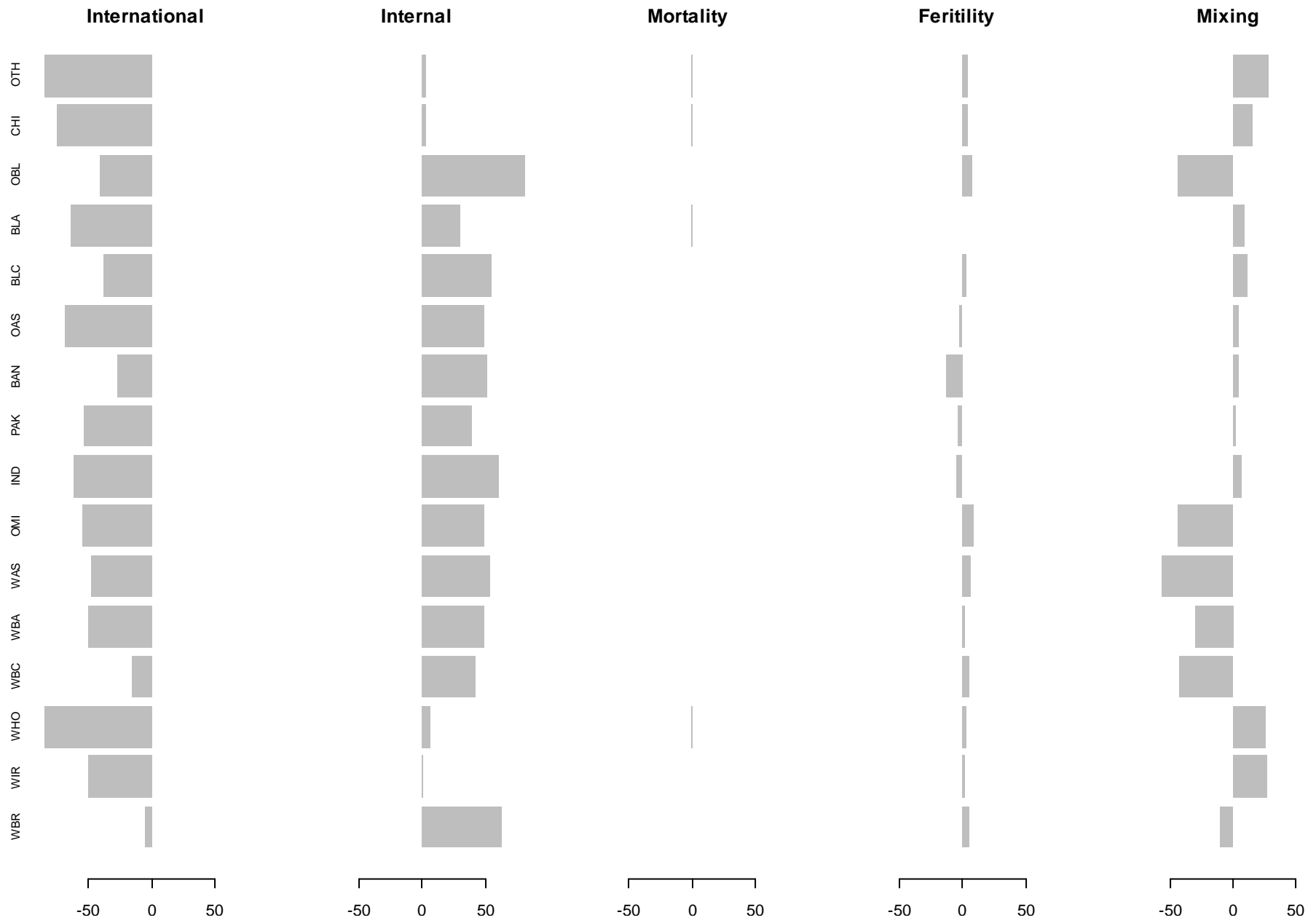
No mixing



Components effects on Newham's ethnic groups – individual scale



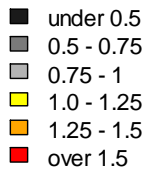
Components effects on Newham's ethnic groups – standard scale



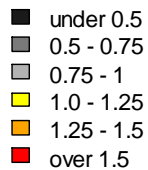
Conclusion

- Migration, in the first place international migration and to a lesser extend internal migration impact on the total population number as well as on the age structure of the population for the UK population
- population growth is boosted for all groups except the White British by international migration
- international migration plays an important role in slowing population aging down but only moderately
- population re-distribution and spatial mixing depends mainly on internal migration
- ethnic specific mortality and ethnic specific fertility does not affect the total population much though it does affect particular groups
- For single local areas and the different ethnic groups, the importance of the various components might differ from what is observed for the whole of the UK

WBR 2001

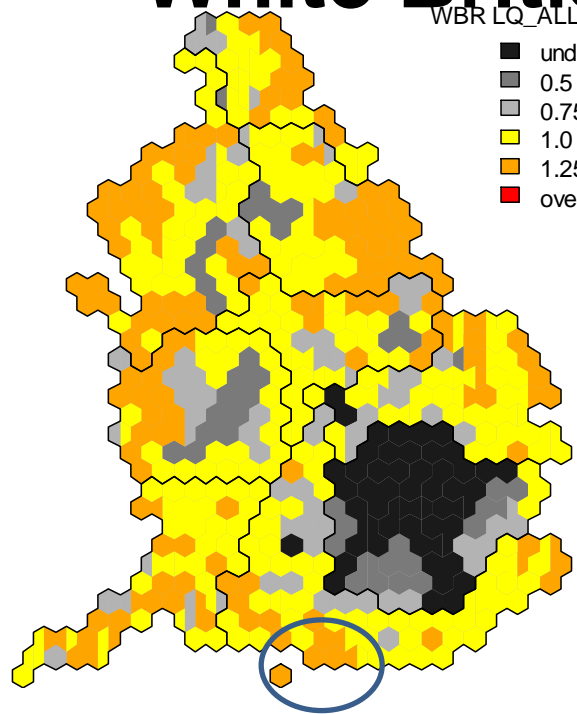
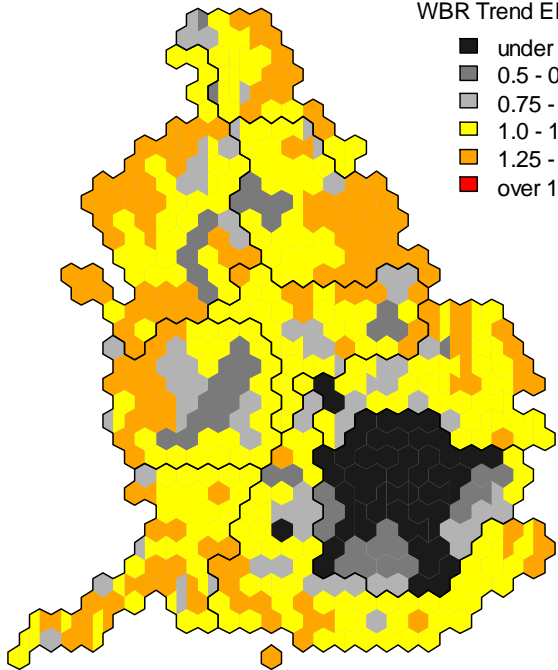
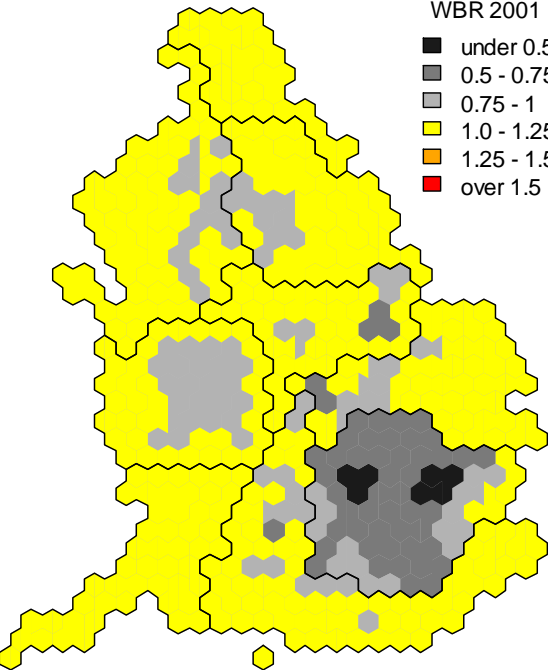
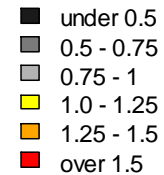


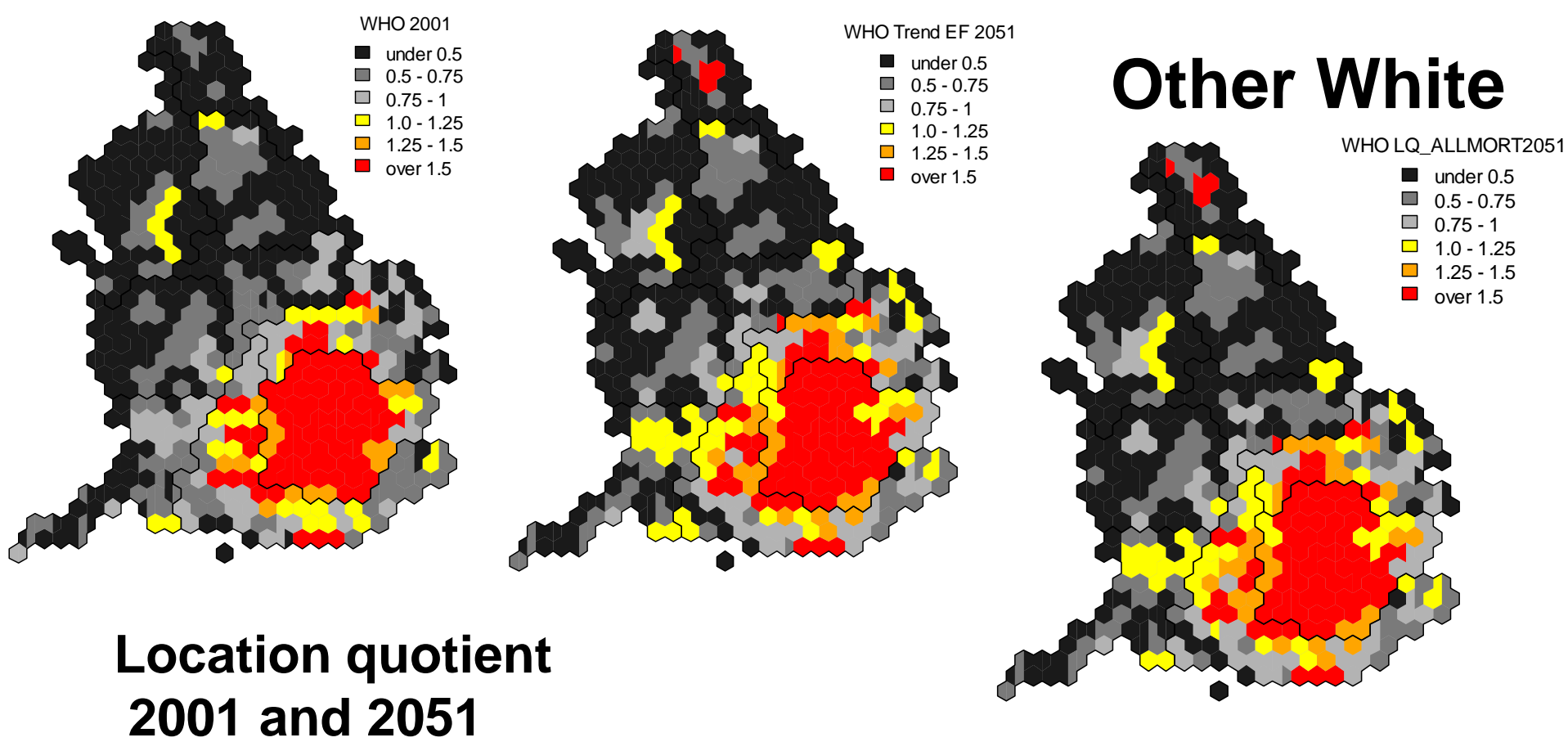
WBR Trend EF 2051

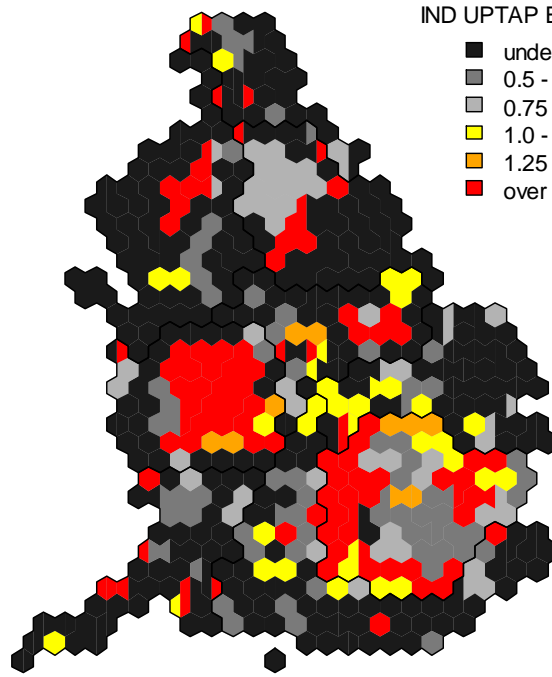
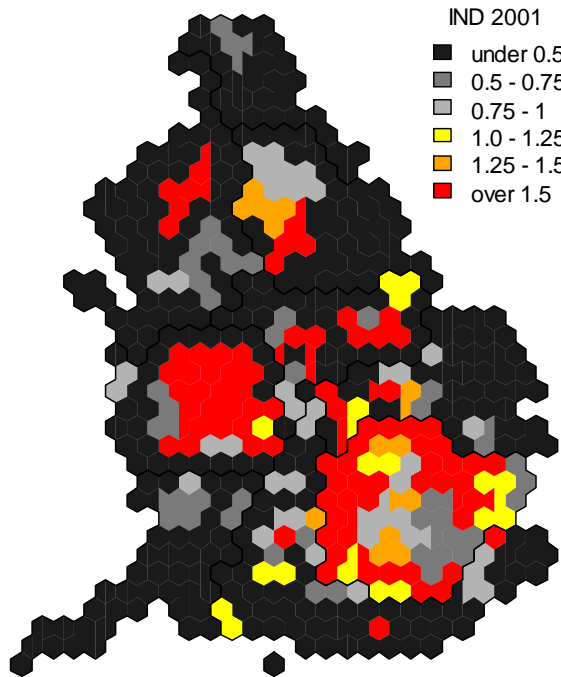


White British

WBR LQ_ALLMORT205



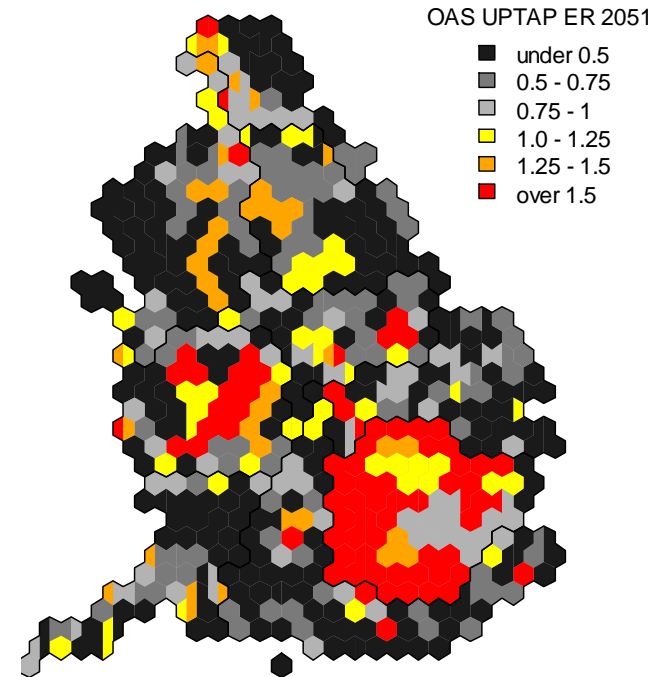
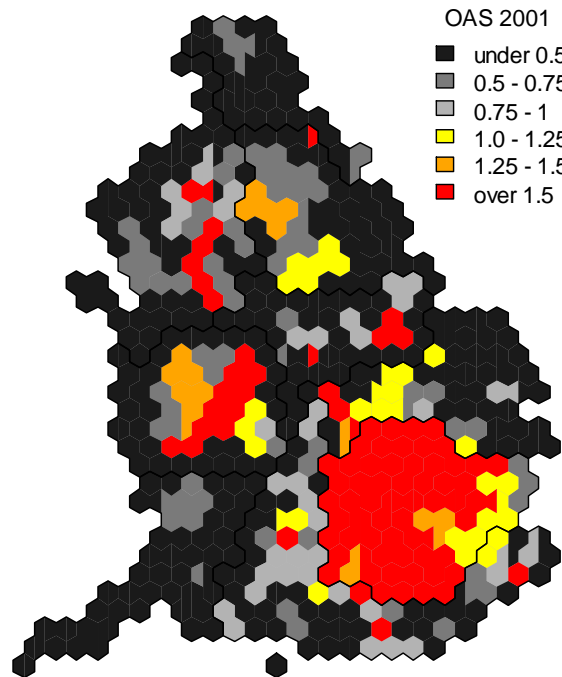




Indian

**Location quotient
2001 and 2051**

Other Asian



Newham Percent

Group	2001	TF2051	NIM2051	NM2051	AF2051	Nmi2051	AM2051
WBR	33.6	12.67	25.86	23.55	13.38	10.88	12.72
WIR	1.31	0.79	0.84	0.46	0.8	0.95	0.79
WHO	4.48	12.46	4.14	3.27	12.91	14.92	12.42
WBC	1.22	1.38	2.53	2.07	1.46	0.76	1.4
WBA	0.68	1.1	1.17	1.27	1.12	0.74	1.1
WAS	0.68	1.74	1.94	2.17	1.85	0.73	1.75
OMI	0.8	1.82	1.77	2.02	1.99	0.98	1.83
IND	12.1	11.31	9.24	13.12	10.77	11.53	11.33
PAK	8.5	9.35	9.36	9.44	9.01	9.12	9.4
BAN	8.82	9.21	14.49	13.47	7.99	9.2	9.27
OAS	3.14	3.66	2.49	3.48	3.59	3.63	3.67
BLC	7.29	4.02	5.48	5.57	4.14	4.26	4.02
BLA	13.1	20.13	15.66	15.67	20.15	20.83	20.02
OBL	1.12	1.19	1.52	2.2	1.28	0.64	1.19
CHI	0.98	2.38	1.32	0.8	2.49	2.59	2.35
OTH	2.16	6.8	2.2	1.43	7.07	8.25	6.76

Group	2001	TF2051	NIM2051	NM2051	AF2051	Nmi2051	AM2051
WBR	84	64	60	101	67	58	64
WIR	3	4	2	2	4	5	4
WHO	11	63	10	14	65	79	62
WBC	3	7	6	9	7	4	7
WBA	2	6	3	5	6	4	6
WAS	2	9	5	9	9	4	9
OMI	2	9	4	9	10	5	9
IND	30	57	21	56	54	61	57
PAK	21	47	22	40	45	48	47
BAN	22	46	34	58	40	49	47
OAS	8	18	6	15	18	19	18
BLC	18	20	13	24	21	23	20
BLA	33	101	36	67	101	110	101
OBL	3	6	4	9	6	3	6
CHI	2	12	3	3	13	14	12
OTH	5	34	5	6	36	44	34

Newham population count

UK ethnic composition in percent

Group	2001	TF2051	NIM2051	NM2051	AF2051	Nmi2051	AM2051
WBR	87.07	67.52	82.92	82.58	67.9	64.69	67.49
WIR	2.46	2.08	2.03	2.05	1.96	2.45	2.09
WHO	2.48	9.91	2.05	2.06	10.22	12.72	9.88
WBC	0.42	1.15	1.27	1.25	1.17	0.66	1.16
WBA	0.14	0.6	0.41	0.39	0.6	0.42	0.6
WAS	0.33	1.3	0.95	0.92	1.34	0.61	1.31
OMI	0.27	1.18	0.74	0.74	1.24	0.68	1.18
IND	1.81	3.68	2.36	2.41	3.42	4.01	3.7
PAK	1.29	2.99	2.38	2.45	2.67	3.01	3.03
BAN	0.49	0.98	0.97	1.02	0.82	1.03	0.99
OAS	0.43	1.18	0.57	0.58	1.12	1.26	1.18
BLC	0.97	1.05	0.95	1.03	1.06	1.22	1.07
BLA	0.85	2.57	1.25	1.34	2.57	2.8	2.56
OBL	0.17	0.36	0.32	0.34	0.38	0.24	0.36
CHI	0.43	1.39	0.45	0.46	1.45	1.59	1.38
OTH	0.4	2.05	0.38	0.39	2.1	2.6	2.04

Group	2001	TF2051	NIM2051	NM2051	AF2051	Nmi2051	AM2051
WBR	51469	52477	51832	50637	52664	50293	52438
WIR	1451	1615	1271	1258	1517	1905	1622
WHO	1465	7705	1280	1262	7925	9889	7675
WBC	246	895	793	768	905	516	900
WBA	83	463	254	239	465	324	465
WAS	197	1013	594	566	1036	477	1014
OMI	162	915	464	456	964	529	918
IND	1070	2864	1472	1475	2652	3116	2873
PAK	761	2322	1487	1500	2071	2342	2351
BAN	289	760	605	627	632	799	768
OAS	253	914	355	353	871	982	918
BLC	574	820	596	631	823	946	828
BLA	500	2001	783	822	1991	2180	1992
OBL	99	281	199	206	292	187	283
CHI	254	1084	283	279	1126	1236	1069
OTH	238	1592	240	239	1629	2024	1585

UK ethnic composition counts