



# SLS-DSU

SCOTTISH LONGITUDINAL STUDY  
DEVELOPMENT & SUPPORT UNIT

# Introduction and the 2011 Census linkage

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- What is the SLS?

- The 2011 linkage

- New questions in 2011

# What is the SLS?

- The SLS is a large-scale, anonymised linkage study designed to capture 5.5% of the Scottish population
- The sample is based on 20 semi-random birthdays
- It's a joint project between University of Edinburgh, University of St Andrews and National Records of Scotland (NRS)
- It is built using data available from...
  - Census
  - Vital Events
  - NHSCR (migration into or out of Scotland)
  - Education (School Census, Absences and SQA qualifications)

Ethnicity

Personal

Family and household

Emigration of SLS members

Immigrants into the sample

Socio-economic

# Census

Religion

# NHSCR

Re-entries of SLS members

Communal Establishments

Accommodation

Health

Widow(er)hoods

Qualifications

Occupation

Deaths

Births

SQA qualifications

Attendance

# Vital Events

School Census

# SLS

Infant mortality

# Education

SQA attainment

Exclusions

Stillbirths

Marriages

Absence

Temperature

PM<sub>10</sub> concentration

PM<sub>2.5</sub> concentration

Sunshine

SO<sub>2</sub> concentration

# Environmental

Precipitation

CO concentration

Cloud Cover

Wind Speed

O<sub>3</sub> concentration

NO<sub>2</sub> concentration

# Health data

Not held within the SLS database but can be linked on a project by project basis

- SMR00 – Outpatient Attendance dataset
- SMR01 – General / Acute Inpatient and Day Case dataset
- SMR02 – Maternity Inpatient and Day Case dataset
- SMR04 – Mental Health Inpatient and Day Case dataset
- SMR06 – Scottish Cancer Registry
- SMR11 – Neonatal Inpatient dataset
- Accident and Emergency dataset
- Child Health Surveillance (CHSP-PS/ CHSP-S/SIRS)
- Outpatient dataset
- Maternity and Neonatal Linked Database
- Prescribing Information System (PIS)
- Scottish Birth Record
- Scottish Drug Misuse Database
- Scottish Morbidity Database

# Study structure

Entries 1991-2011

Births 63,181

Immigrations 46,092

**1991**

Original sample:  
270,385  
selected from 1991  
Census

Plus members of  
household

*193,735  
members  
found at both  
1991 and 2001*

**2001**

265,104  
sample members found  
at 2001 Census

Plus members  
of household

*196,702  
members found  
at both 2001  
and 2011*

**2011**

270,947  
sample members found  
at 2011 Census

Plus members of  
household

*151,910 members found at 1991, 2001 and 2011*

Events 1991-2011

Births to sample mothers 52,260

Births to sample fathers 48,363

Widow(er)hoods of sample members 20,154

Marriages of sample members 42,436

Exits 1991-2011

Deaths 56,961

Embarkations\* 30,369

# The 2011 Census Linkage

- Collaborative work between Census, NHSCR, NRS Alternative Sources branch and the SLS team
- Used deterministic, probabilistic and clerical matching to trace SLS members

# Tracing and linking

## Tracing

Finding SLS members on the NHSCR database (if they are found, it means they are registered with a GP and thus with the NHS)

The first time a SLS member is found on the NHSCR system a flag is placed on the record

## Linking

Linking a census record or a vital event to an existing SLS member

*Note:* Only traced SLS members can have other data linked to them

# 2011 SLS Tracing Rates



	1991		2001		2011	
	Count	%	Count	%	Count	%
<b>New entries</b>	265,321	96.8%	30,934	11.5%	14,268	5.2%
<b>Existing SLS members found</b>	-		225,445	84.0%	255,168	93.0%
<b>Total traced cases</b>	265,321	96.8%	256,379	95.5%	269,436	98.2%
<b>Total no traces cases</b>	5,064	1.8%	8,725	3.3%	1,502	0.5%
<b>Total dummies and duplicates</b>	3,670	1.3%	3,324	1.2%	3,366	1.2%
<b>Total</b>	274,055	100.0%	268,428	100.0%	274,304	100.0%

# New 2011 Census questions

5 new questions were included in 2011 Census:

- national identity
- ability in spoken English
- languages other than English used at home
- long term health conditions
- Month/year of arrival into the UK (for people not born in the UK)

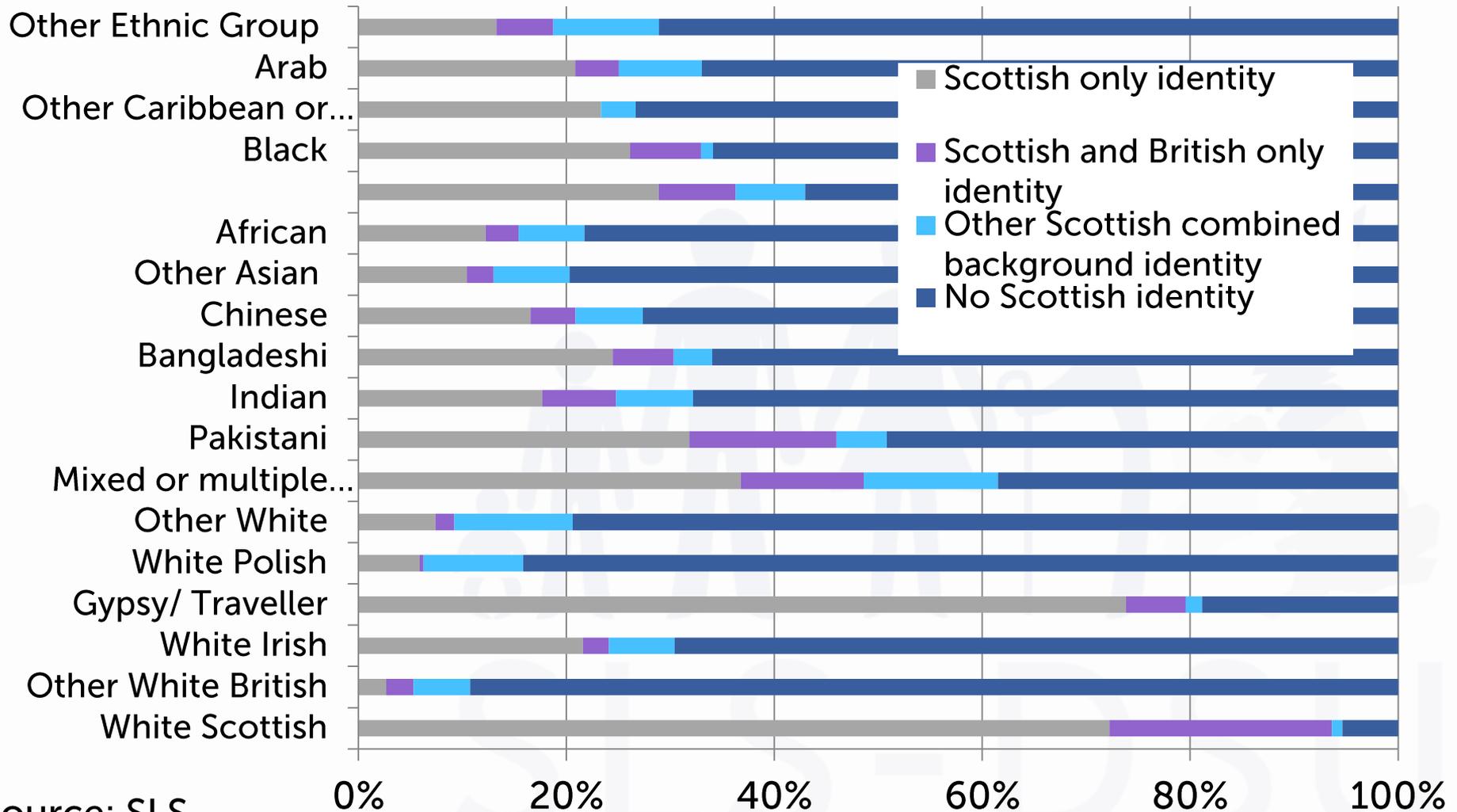


# National Identity

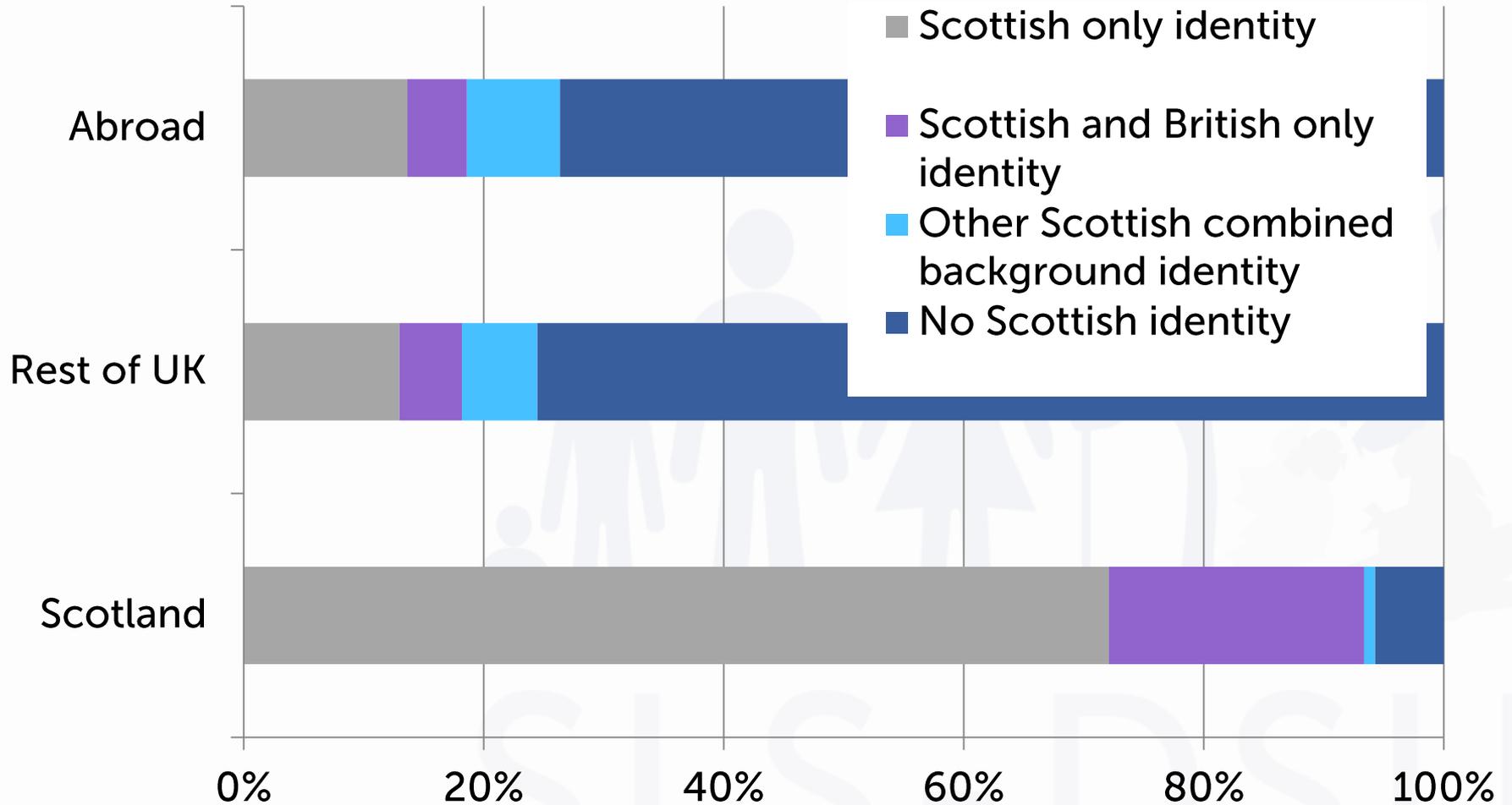
	SLS		2011 Census		Representativeness Ratio
	Count	Percent	Count	Percent	
Scottish only	168,286	62.6%	3,306,138	62.4%	1.00
Scottish and British only	50,160	18.7%	968,759	18.3%	1.02
Other Scottish combined background	5,060	1.9%	102,028	1.9%	0.98
No Scottish identity	45,208	16.8%	918,478	17.3%	0.97
<b>Total</b>	<b>268,714</b>	<b>100.0%</b>	<b>5,295,403</b>	<b>100.0%</b>	<b>1.00</b>

Source: SLS & NRS, 2011 Census

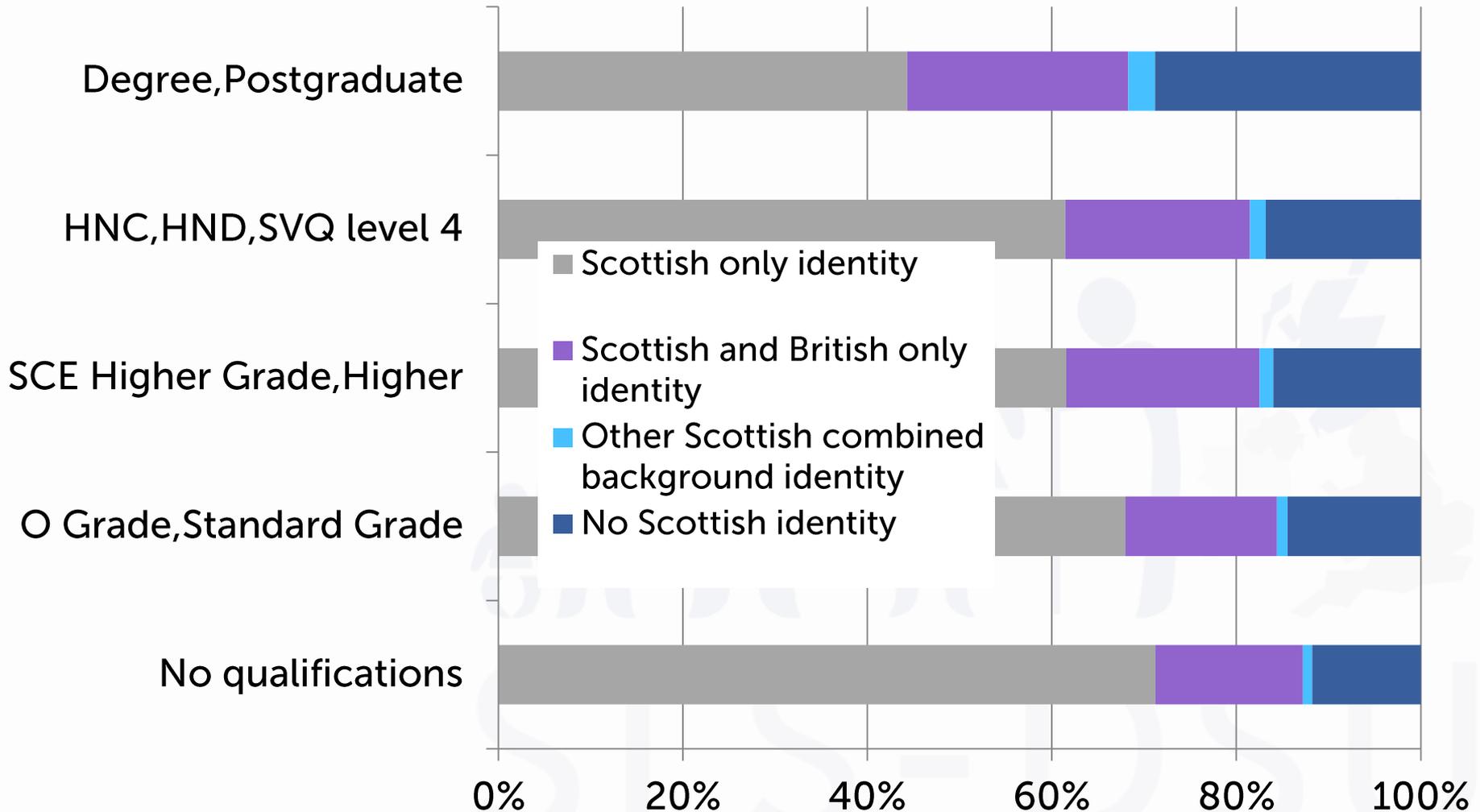
# National Identity by Ethnic group



# National Identity by Country of Birth



# National Identity by Qualification



# Two new language questions plus Gaelic expansion

- the 2001 Census in Scotland asked only whether people could understand, speak, read or write Scottish Gaelic
- Strong user need for Q on ability in spoken English
- New Q on other languages has many uses

**16** Which of these can you do?

◆ Tick all that apply.

	English	Scottish Gaelic	Scots
Understand	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Speak	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Read	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Write	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

or

None of these

**17** How well can you speak English?

Very well    Well    Not well    Not at all

**18** Do you use a language other than English at home?

◆ Tick all that apply.

No, English only

Yes, British Sign Language

Yes, other - please write in

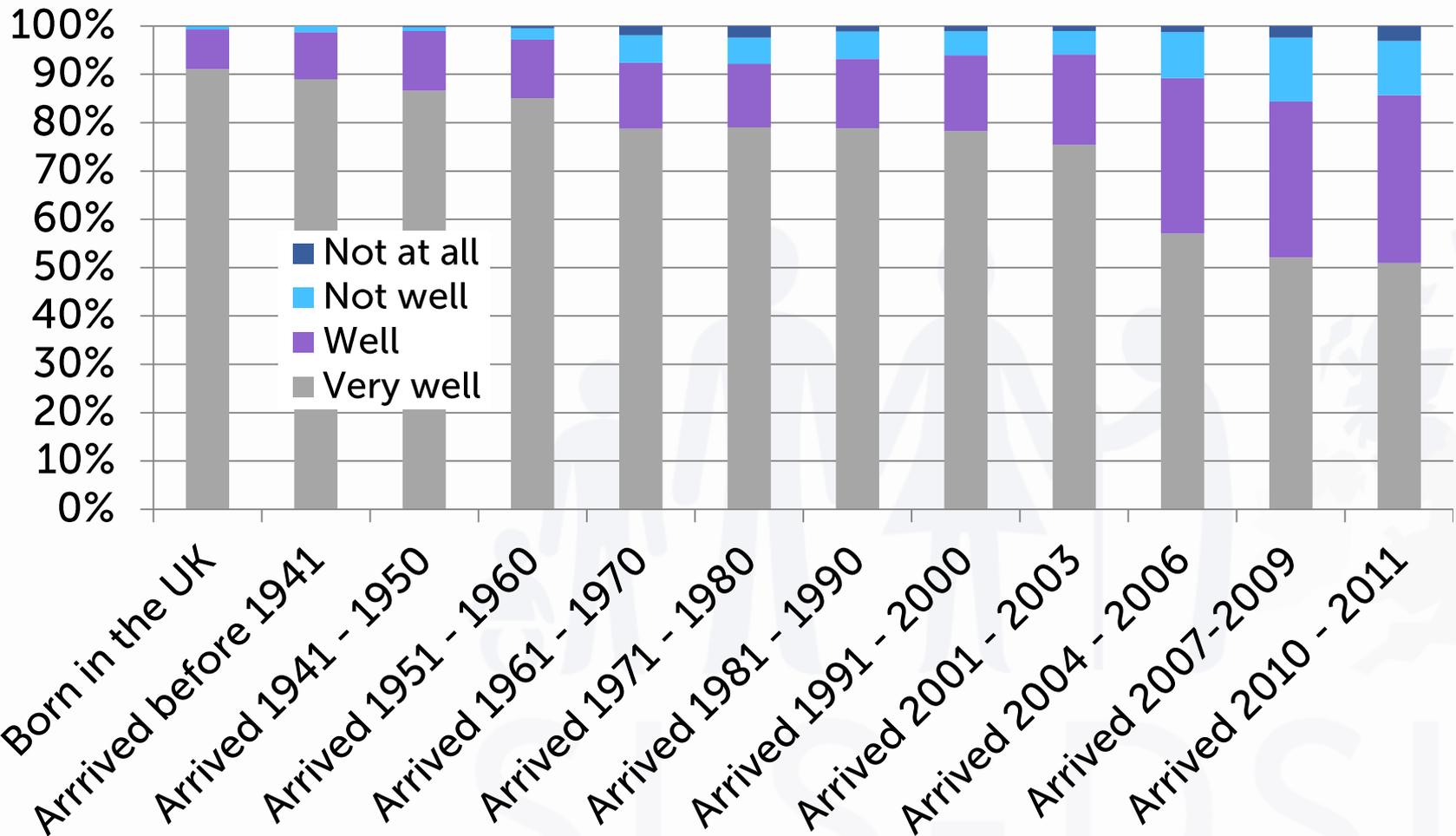
# Proficiency in English

All people aged 3 and over

	SLS		2011 Census		Representativeness Ratio
	Count	Percent	Count	Percent	
Very well	232,998	89.5%	4,555,104	89.0%	1.01
Well	24,012	9.2%	489,579	9.6%	0.96
Not well	2,799	1.1%	62,128	1.2%	0.89
Not at all	505	0.2%	11,412	0.2%	0.87
<b>Total</b>	<b>260,314</b>	<b>100.0%</b>	<b>5,118,223</b>	<b>100.0%</b>	<b>1.00</b>

Source: SLS & NRS, 2011 Census

# Proficiency in English by Year of arrival in the UK



# Language other than English used at home

All people aged 3 and over

	SLS		2011 Census		Representativeness Ratio
	Count	Percent	Count	Percent	
English only	242,507	93.2%	4,740,547	92.6%	1.01
Scots	2,914	1.1%	55,817	1.1%	1.03
Polish	2,491	1.0%	54,186	1.1%	0.90
Gaelic	1,220	0.5%	24,974	0.5%	0.96
British Sign Language	606	0.2%	12,533	0.2%	0.95
Other	10,576	4.1%	230,166	4.5%	0.90
<b>Total</b>	<b>260,314</b>	<b>100.0%</b>	<b>5,118,223</b>	<b>100.0%</b>	<b>1.00</b>

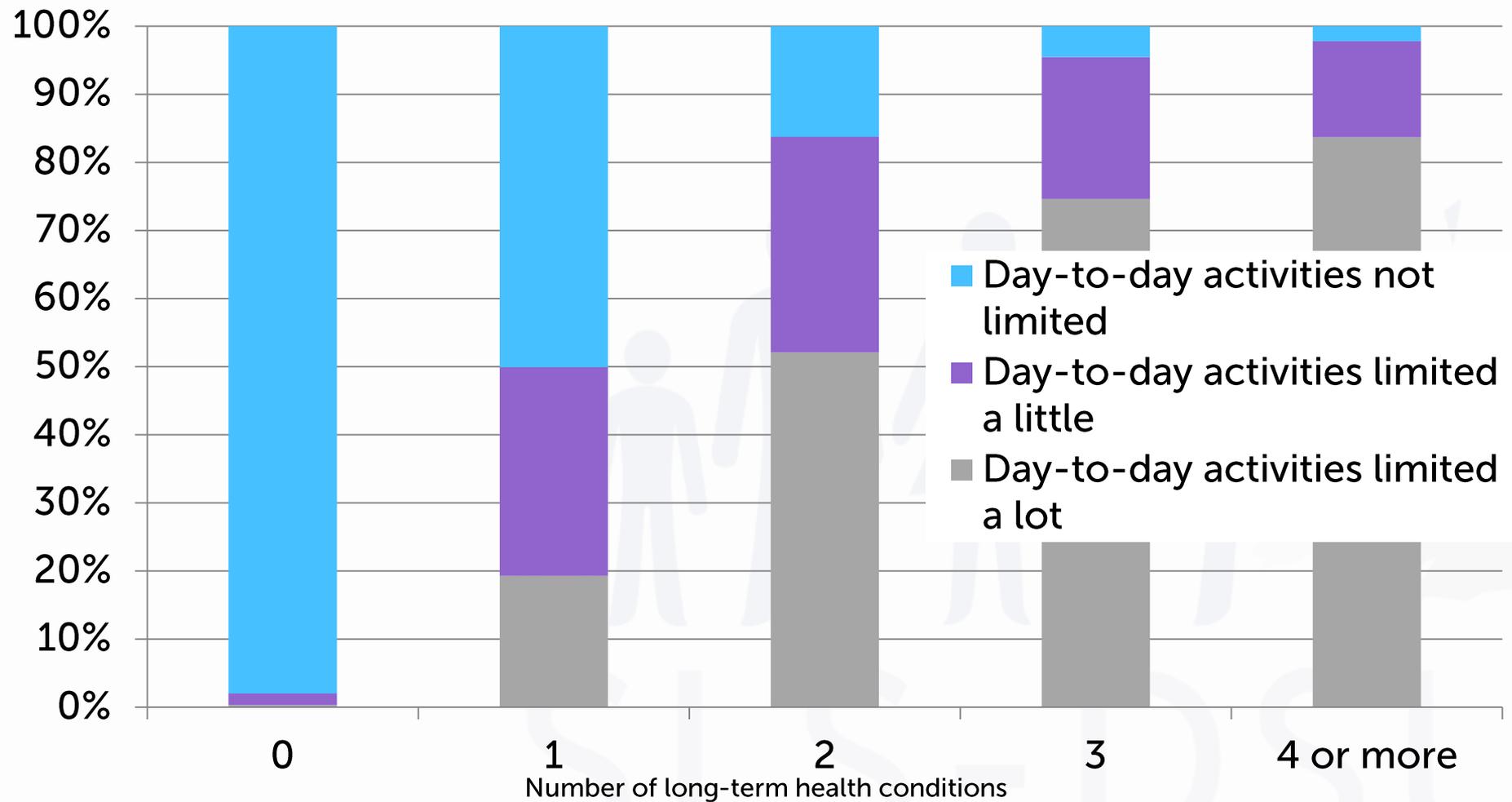


# Long term health conditions

	Count	Percent
No condition	186,793	69.5%
One or more conditions	81,921	30.5%
Deafness or partial hearing loss	18,433	6.9%
Blindness or partial sight loss	6,577	2.4%
Learning disability	1,247	0.5%
Learning difficulty	5,257	2.0%
Developmental disorder	1,593	0.6%
Physical disability	18,297	6.8%
Mental health condition	11,632	4.3%
Long-term illness, disease or condition	51,106	19.0%
Other condition	600	0.2%
<b>Total</b>	<b>268,714</b>	<b>100.0%</b>

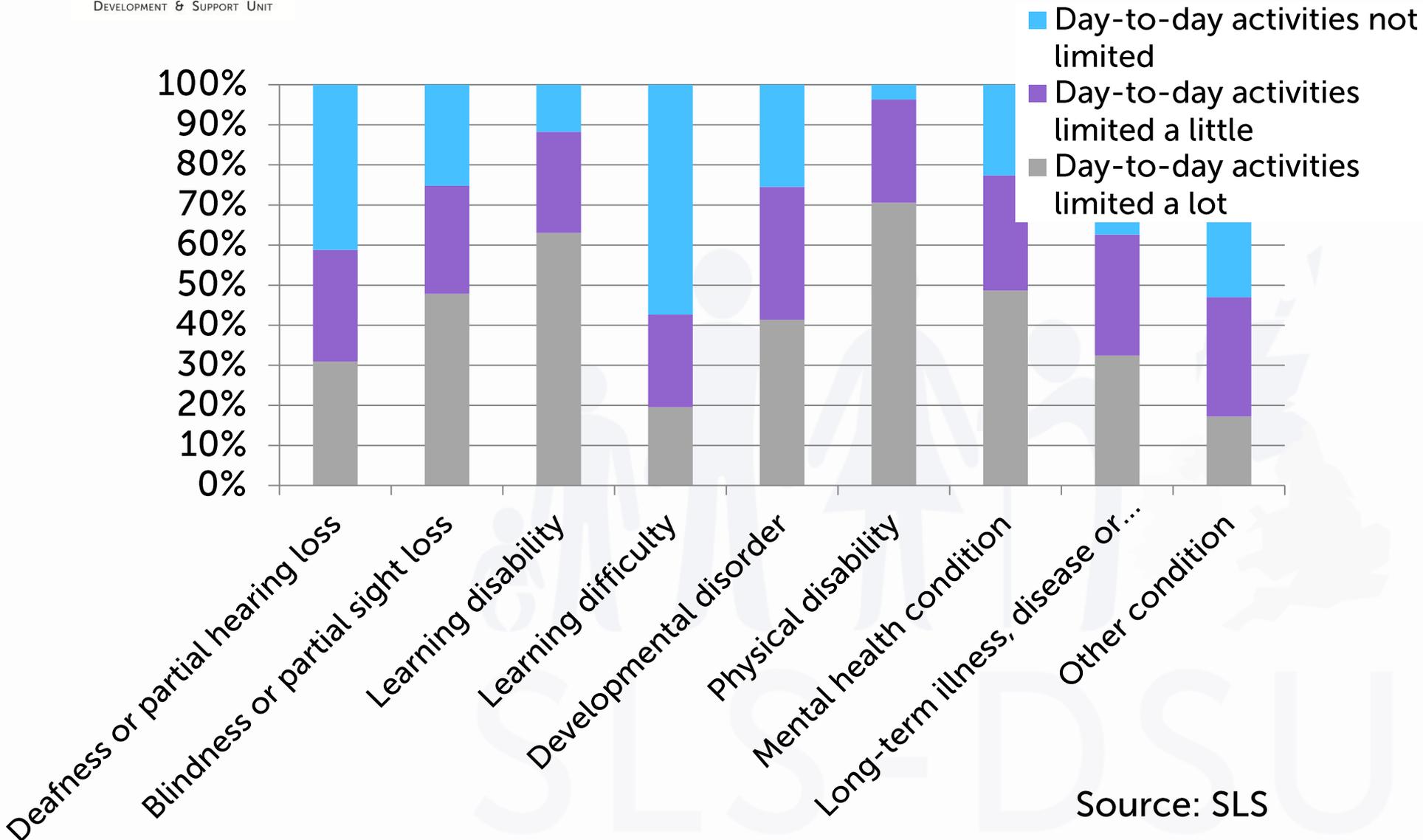
Source: SLS

# No. of long term health conditions



Source: SLS

# Type of long term health condition



# Month and year of arrival in the UK

- New question asked of all born outside UK
- To provide information on migrant trends and profiles

**8** If you were not born in the United Kingdom, when did you most recently arrive to live here?

◆ Do not count short visits away from the UK.

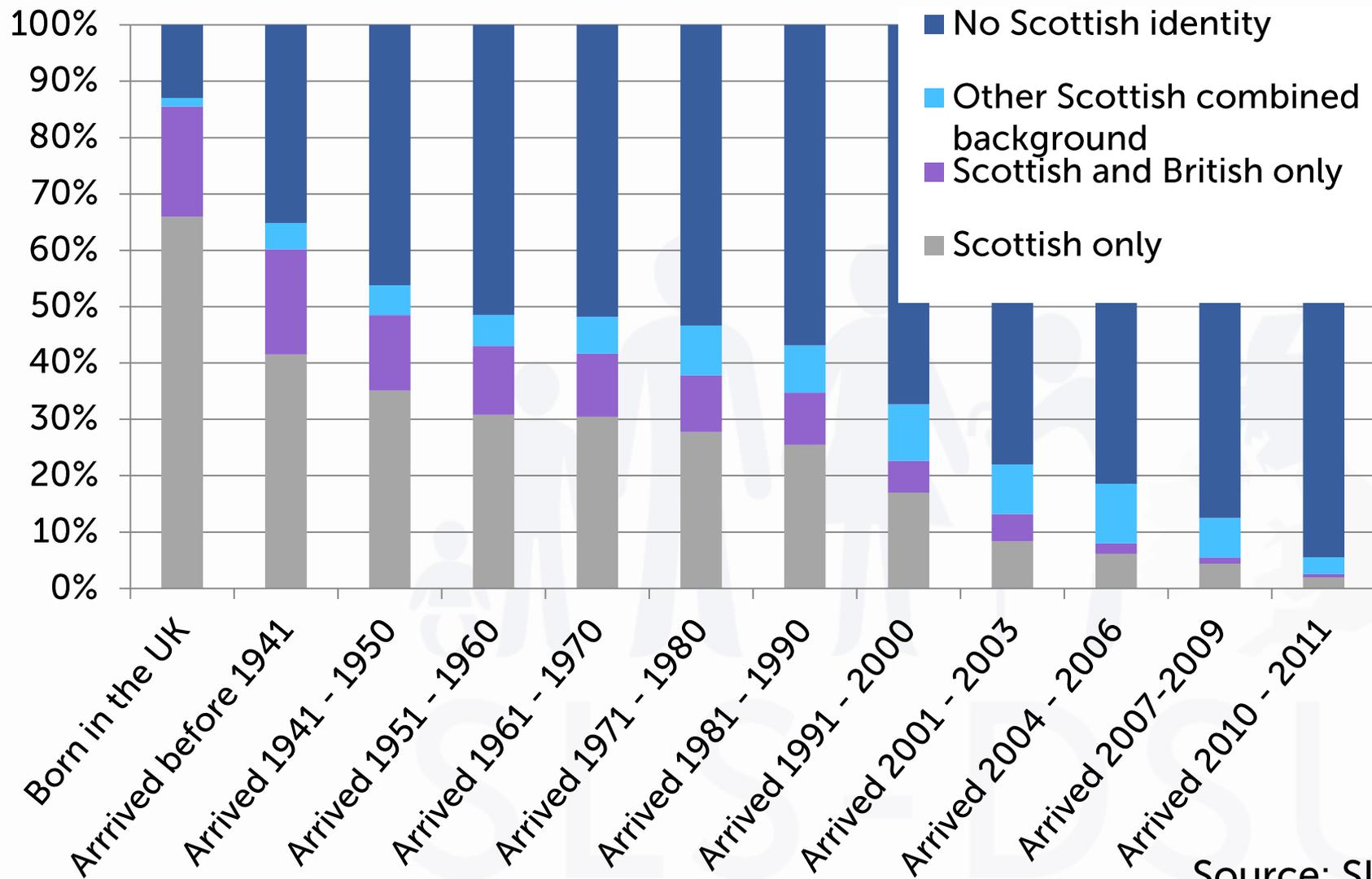
Month

Year

# Year of arrival in the UK

	SLS		2011 Census		Representativeness Ratio
	Count	Percent	Count	Percent	
Born in the UK	251,688	93.7%	4,926,119	93.0%	1.01
Arrived before 1941	236	0.1%	4,495	0.1%	1.03
Arrived 1941 - 1950	396	0.1%	7,480	0.1%	1.04
Arrived 1951 - 1960	676	0.3%	13,070	0.2%	1.02
Arrived 1961 - 1970	1,224	0.5%	22,764	0.4%	1.06
Arrived 1971 - 1980	1,256	0.5%	23,649	0.4%	1.05
Arrived 1981 - 1990	1,134	0.4%	22,949	0.4%	0.97
Arrived 1991 - 2000	2,160	0.8%	42,344	0.8%	1.01
Arrived 2001 - 2003	1,379	0.5%	28,751	0.5%	0.95
Arrived 2004 - 2006	3,122	1.2%	66,218	1.3%	0.93
Arrived 2007-2009	3,452	1.3%	79,366	1.5%	0.86
Arrived 2010 - 2011	1,991	0.7%	58,198	1.1%	0.67
<b>Total</b>	<b>268,714</b>	<b>100.0%</b>	<b>5,295,403</b>	<b>100.0%</b>	<b>1.0</b>

# National Identity by Year of arrival in the UK



# Acknowledgements

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# For more information

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**Training seminar – 1.30pm, 10<sup>th</sup> December  
New Register House**