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Profiling the Ulster-Scots Language in Northern Ireland

Shuttleworth, I., Hughes, J., Lowry, E., Ijpelaar, J., McAuley, R., & Lyness, D. (2022). *Profiling the Ulster-Scots Language in Northern Ireland*.

Document Version:

Publisher's PDF, also known as Version of record

Queen's University Belfast - Research Portal:

[Link to publication record in Queen's University Belfast Research Portal](#)

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NISRA
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Profiling the Ulster-Scots Language in Northern Ireland

Publication Date: 29 July 2022



Economic
and Social
Research Council



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Note: To ease readability, percentages and percentage changes have been presented to one decimal place. However, percentages included in the charts may not add up to 100 per cent precisely due to rounding. In Figure 4, odds ratios are centred around one with ratios R and 1/R equal and opposite in effect size (for example, 0.1 and 10). To avoid over-rounding of smaller ratios and improve precision, odds ratios are presented to two decimal places and associated percentages are rounded to the nearest whole numbers (e.g. odds ratio of 1.15 – 15% more likely to have Ulster-Scots language knowledge).

Introduction

There is considerable political, media and policy interest in the use of the Ulster-Scots and Irish^A languages in Northern Ireland. The New Decade New Approach (NDNA) Deal¹, was agreed by political parties in Northern Ireland and was published in January 2020. The Deal includes a range of identity and language measures and the requirement to develop an Ulster-Scots Language, Heritage and Culture Strategy and an Irish Language Strategy. Furthermore, the identity and Language (NI) Bill² was introduced in Westminster in May 2022. The UK Government are also giving recognition to Ulster-Scots as a National Minority under the Framework Convention for the protection of national minorities. Key sources^B of information on levels of Ulster-Scots language knowledge in Northern Ireland are the annual Continuous Household survey (CHS)³ for the adult population (16 years and over) and the ten-yearly Census of Population⁴ (3 years and over).

The overarching aim of this research is to present a detailed picture of Ulster-Scots language knowledge in Northern Ireland, over and above currently published official statistics. The research assists with addressing key knowledge gaps and boosts the evidence base on Ulster-Scots language knowledge in Northern Ireland.

The key objectives are:

- To assess the socio-demographic, household and health associations of Ulster-Scots language knowledge in 2011; and
- To examine (model) the associations of socio-demographic, health and area characteristics with self-reported Ulster-Scots language knowledge in Northern Ireland in 2011.

The analysis in this report is cross-sectional as the Ulster-Scots language question was only included in the Northern Ireland Census for the first time in 2011. This research will inform future planned longitudinal research specifically examining the correlates of change in Ulster-Scots language knowledge between 2011 and 2021.

Policy Setting

This report and an accompanying report published on the Irish language⁵ will be helpful to the development of the Ulster-Scots Language, Heritage and Culture strategy⁶ and The Irish Language Strategy⁶, led by the Department for Communities (DfC). The DfC aims to promote the use of the Ulster-Scots and Irish languages, and to encourage all Departments and their Agencies to meet their obligations under the European Charter for Regional or Minority Languages.

Report Structure

Section 1 of this report presents socio-demographic, health and area associations with Ulster-Scots language knowledge in 2011. Section 2 uses regression methods to assess the relative impacts of individual, household and area characteristics on the likelihood of having Ulster-Scots language knowledge in 2011.

^A See separate report 'Profiling the Irish Language in Northern Ireland'⁵

^B Caution should be taken when comparing information on levels of Ulster-Scots language knowledge from different data sources (see Annex 2 - Data and definitions for further information).

The study used high-quality Census data via the Northern Ireland Longitudinal Study (NILS⁷), a large sample (28%) of the Northern Ireland population, adding new evidence on key socio-demographic, household, geographical and health factors in relation to Ulster-Scots language knowledge.

Key Findings

Of those with Ulster-Scots language knowledge, nearly two-thirds (65.1%) reported living with others who had knowledge of Ulster-Scots language (36.1% with 1 other, 13.0% with 2 others and 16.0% with 3 or more others). (Table 3).

After taking account of other factors:

- Main factors linked to Ulster-Scots language knowledge: 2011** (Figure 4)
- Increasing age, in particular being older than 50 years
 - Being male
 - Others with Ulster-Scots language knowledge in the household
 - Protestant religion/religion of upbringing
 - Degree-level qualification
 - Residence in the north-east of Northern Ireland
 - Scottish and British national identities

After taking account of other factors

- Health factors and Ulster-Scots language knowledge: 2011** (Table 2 and Figure 4)
- Positive health was associated with Ulster-Scots language knowledge
 - Having a communication difficulty was negatively associated but having a hearing difficulty was positively associated with Ulster-Scots language knowledge.

Figure 1 shows the Ulster-Scots language question from the Northern Ireland Census of Population in 2011².

Figure 1: Ulster-Scots language question: Northern Ireland Census 2011

21 Can you understand, speak, read or write Irish or Ulster-Scots?
 ➔ Tick all that apply.

	No ability	Understand	Speak	Read	Write
Irish	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>
Ulster-Scots	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

The main metric of interest in this report is **knowledge** of the Ulster-Scots language, where a respondent selected at least one of the categories understand, speak, read or write. Full **proficiency** in the Ulster-Scots language, where a respondent selected all four categories, is also reported on in the analysis. The 2021 Census, which took place on 21 March 2021, included a new question on how often people speak the Ulster-Scots language. Results of the 2021 Census will be published on a phased basis with initial results on the Ulster-Scots and Irish languages planned⁸ for publication from Autumn 2022.

Section 1 Socio-demographic profile: 2011

Background

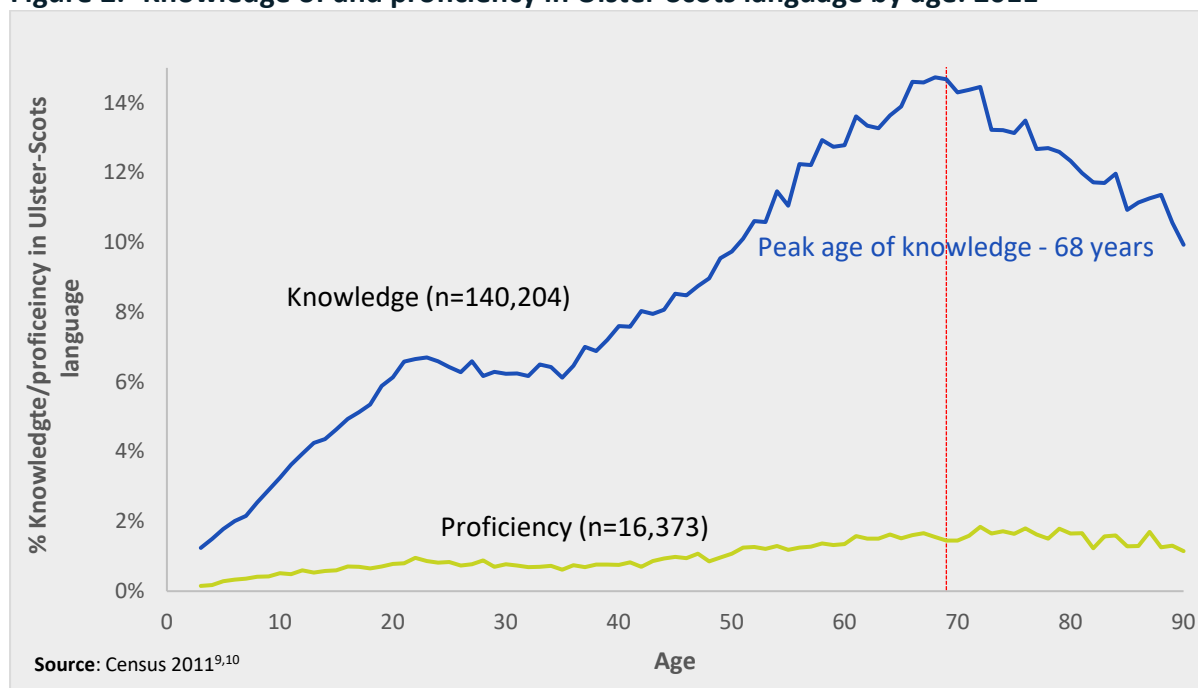
Table 1 summarises the age structure of the Census population, as well as numbers and proportions of those with Ulster-Scots language knowledge and proficiency by age group in 2011. There were 140,204 people (or 8.1% of the population) aged three and over who had some knowledge of the Ulster-Scots language in 2011. By comparison, there were 184,898 people (10.7% of the population), aged 3 and over in 2011, who had some knowledge of the Irish⁵ language. According to the 2011 Census, 16,373 usual residents in Northern Ireland aged three and over (0.9%) were proficient in the Ulster-Scots language. By comparison, 64,847 of the population aged three and over in 2011 (3.7%) were proficient in the Irish language⁵.

Table 1: Northern Ireland population and Ulster-Scots language knowledge by age: 2011

	All Usual Residents	Ulster-Scots language knowledge ⁹	Ulster-Scots language proficiency ¹⁰
3-15	304,171	8,985 (3.0%)	1,278 (0.4%)
16-24	227,634	13,642 (6.0%)	1,766 (0.8%)
25-49	629,691	45,675 (7.3%)	5,071 (0.8%)
50-74	456,095	57,680 (12.6%)	6,446 (1.4%)
75+	118,120	14,222 (12.0%)	1,812 (1.5%)
All	1,735,711	140,204 (8.1%)	16,373 (0.9%)

Figure 2 shows the number of people with (i) knowledge of, and (ii) proficiency in Ulster-Scots language by single year of age, according to the 2011 Census. In 2011, the propensity to self-report Ulster-Scots language increased steadily with age until the early twenties and then generally levelled off until people were in their mid-thirties. From the age of 35, there was a general increase in Ulster-Scots language knowledge until people were in their late sixties (peak age of 68 years, 14.7%) and then a subsequent decrease steadily with age. Proficiency in Ulster-Scots language followed a similar pattern with a general increase with age (peak age of 72 years, 1.8%).

Figure 2: Knowledge of and proficiency in Ulster-Scots language by age: 2011



Socio-demographic and Health Characteristics

Design and Setting – Northern Ireland Longitudinal Study (NILS)

The NILS⁷, a representative 28% sample of the Northern Ireland population, was used to undertake cross-sectional analysis^E. NILS members are resident in Northern Ireland and are selected for inclusion in the sample if they are born on any of 104 undisclosed dates. The NILS links data from the Census with health card registrations. It therefore has information on vital events and address changes, as well as the material collected by the Census. Further details about the NILS are available online^F. Analysis was undertaken on anonymised NILS members within the secure setting in NISRA and research outputs were released only after statistical disclosure checks had taken place.

The study population for the 2011 cross-sectional analyses comprised 463,909 NILS members aged three years or older at the time of Census 2011. Within this group, 38,232 (8.2%) self-reported knowledge of Ulster-Scots language, which is like the published Census statistic (8.1%). Annex 2 provides further details on definitions and study variables. Data on socio-demographic, household and area factors can provide useful insights into the drivers behind Ulster-Scots language knowledge. For our NILS sample^G, Table 2 presents a descriptive summary of the socio-demographic and health characteristics among those who self-reported Ulster-Scots language knowledge in 2011, compared to the overall NILS sample.

Socio-demographic factors

- Compared to the full NILS sample, higher proportions of Ulster-Scots language knowledge were evident among persons 50 years and over (52.9% compared with 34.3% in the NILS sample) and lower proportions were evident for persons under 50 years (47.1% compared with 65.7% of the NILS sample).
- Higher proportions of Ulster-Scots language knowledge were found for married persons (53.6% of those reporting Ulster Scots knowledge were married, compared with 40.4% of the NILS sample) and were also evident for those with Protestant and other Christian religion/religion of upbringing^H (79.5% versus 49.7%) and for those indicating British as a national identity (69.9% compared to 49.3% in the NILS sample).

Education and Employment

- There was a higher prevalence of Ulster-Scots language knowledge compared to the NILS sample for persons with a degree level qualification (29.4% compared to 23.7%) and for those employed in the education (6.5% versus 4.1%) and agriculture sectors (3.7% versus 1.9%).

Health

- There was a higher prevalence of persons who self-reported that their activities were limited 'a little' or limited 'a lot' in those with Ulster-Scots language knowledge (26.8%) compared to the study population (22.1%).
- Apart from deafness or partial hearing loss (8.7% compared to 5.5% of the study population), there were no marked differences when comparing prevalence levels of long-term health conditions for persons with Ulster-Scots language knowledge compared to the NILS sample.

^E The Office for Research Ethics Committees Northern Ireland (ORECNI¹³) has ratified the usage of NILS for approved research.

^F <https://www.nisra.gov.uk/support/research-support/northern-ireland-longitudinal-study-nils> and <https://www.nils-rsu.co.uk/>

^G Proportions of Ulster-Scots knowledge for socio-demographic factors in the NILS sample are representative of the 2011 Census.

^H There were two religion-based questions asked in the 2011 Census. Information based solely on responses to a self-reported religion of belonging are also shown in Table 2 (NISRA uses the approach set out in the Fair Employment (Monitoring) Regulations (Northern Ireland) 1999¹⁴, see Annex 2 for more information).

Table 2: Socio-demographic and health characteristics for (i) the NILS sample, and (ii) those self-reporting Ulster-Scots knowledge in NILS sample: March 2011, three years and over

Characteristics	Value	NILS sample (%) (n=463,909)	U-S knowledge in NILS sample (%) (n=38,232)
Sex	Male	48.4	52.7
Sex	Female	51.6	47.3
Age group	3-15 years	17.5	6.3
Age group	16-24 years	12.2	8.9
Age group	25-49 years	35.9	31.9
Age group	50+ years	34.3	52.9
Marital status	Single	46.0	30.6
Marital status	Married ^l	40.4	53.6
Marital status	Separated/Divorced	7.8	8.5
Marital status	Widowed	5.8	7.3
Religion belong to	Catholic	40.5	14.3
Religion belong to	Protestant and other Christian	42.8	69.9
Religion belong to	Other/none	16.6	15.8
Religion/religion of upbringing	Catholic	44.7	16.5
Religion/religion of upbringing	Protestant and other Christian	49.7	79.5
Religion/religion of upbringing	Other/none	5.6	4.0
Country of birth	Northern Ireland	89.0	91.5
Country of birth	Republic of Ireland	2.1	1.4
Country of birth	Other	8.9	7.1
National identity^j	Any Northern Irish	29.4	33.0
National identity	Any Irish	27.9	12.8
National identity	Any British	49.3	69.9
National identity	Any Scottish	0.5	1.5
Education (16-74 years)	No qualifications	29.6	26.4
Education (16-74 years)	School level or other ^k	46.8	44.2
Education (16-74 years)	Degree level or higher	23.7	29.4
Economic activity (16-74 years)	Inactive	39.2	42.2
Economic activity (16-74 years)	Unemployed	4.4	3.4
Economic activity (16-74 years)	Employed	53.3	52.4
Economic activity (16-74 years)	Economically active full-time student	3.1	2.0
Occupation^l (16-74 years)	Working in education	4.1	6.5
Occupation (16-74 years)	Working in agriculture	1.9	3.7
Activity limitation	None	77.9	73.2
Activity limitation	Limited a little/ a lot	22.1	26.8
Self-rated health	Very good/good	78.2	74.4
Self-rated health	Fair	15.8	19.6
Self-rated health	Bad/very bad	6.0	6.0
Health condition	Communication difficulty	1.7	1.1
Health condition	Shortness of breath/ difficulty breathing	1.8	2.3
Health condition	Deafness or partial hearing loss	5.5	8.7
Health condition	An emotional, psychological or mental health condition	6.1	5.7

^l Includes those in a civil partnership, divorced includes those in dissolved civil partnerships, widowed includes surviving partner of civil partnership.

^j A new question on national identity, which allowed multiple responses, was introduced in the 2011 Census. Respondents were therefore not limited to one national identity and were given the option of declaring themselves as British, Irish, Northern Irish, English, Scottish, Welsh or other.

^k School level qualification or other vocational qualification or apprenticeship.

^l Based on sub-major groups of the Standard Occupational Classification¹⁵ (SOC) 2010: 23 – ‘Teaching and educational professionals’ and 51 – ‘Skilled agricultural and related trades’.

Household and Area Characteristics

Table 3 presents a descriptive summary of the household and area-level characteristics of both the full NILS sample and for NILS members who indicated Ulster-Scots language knowledge. Only individuals identified as living in households in Census 2011 were considered in this section to allow assessment of household-level variables, such as tenure, household composition and access to a car. Individuals in communal establishments such as care homes, homeless hostels, hospitals and prisons, were therefore excluded.

- A higher proportion of persons with Ulster-Scots language were living in a couple (57.1%), compared to the study population (44.7%).
- Of those with Ulster-Scots language knowledge, nearly two-thirds (65.1%) reported living with others who had knowledge of Ulster-Scots language (36.1% with 1 other, 13.0% with 2 others and 16.0% with 3 or more others).
- There were higher proportions of persons with Ulster-Scots language knowledge in the East of Northern Ireland (33.3% lived in these areas compared to 24.7% of the study population as a whole) and the North of Northern Ireland (22.1% compared to 15.8%). The lowest proportions of those with Ulster-Scots language knowledge were in Belfast NUTS III (9.7%) and in the West & South of Northern Ireland (14.2%).
- Over half of people with Ulster-Scots language knowledge (50.3%) were individuals living in the 40% least deprived areas (Quintile 5: 25.1% and Quintile 4: 25.2%) of Northern Ireland.

Table 3: Household characteristics among (i) the study population, and (ii) those self-reporting Ulster-Scots language knowledge: March 2011, three years and over

Characteristics	Category	NILS sample (%) (n=458,543)	U-S Knowledge in NILS sample (%) (n=37,964)
Living arrangements	Live alone	11.9	15.2
Living arrangements	Live in couple	44.7	57.1
Living arrangements	Other living arrangements ^M	43.4	27.6
Housing tenure	Owner occupied	73.9	79.4
Housing tenure	Private rental	12.3	9.5
Housing tenure	Social rental	13.8	11.1
Others in household with U-S language knowledge	None	90.6	34.8
Others in household with U-S language knowledge	One	6.0	36.1
Others in household with U-S language knowledge	Two	1.8	13.0
Others in household with U-S language knowledge	Three or more	1.5	16.0
NUTS III area ^N	Belfast	15.0	9.7
NUTS III area	Outer Belfast	21.9	20.8
NUTS III area	East of NI	24.7	33.3
NUTS III area	North of NI	15.8	22.1
NUTS III area	West & South of NI	22.6	14.2
Area deprivation ^O	Quintile 1 (most deprived)	18.8	9.4
Area deprivation	Quintile 2	20.1	17.9
Area deprivation	Quintile 3	21.0	22.5
Area deprivation	Quintile 4	20.7	25.2
Area deprivation	Quintile 5 (least deprived)	19.3	25.1

^M Includes cohabiting individuals not part of a couple, for example, living with friends or other family members (e.g. as part of a multi-generational household).

^N For analytical purposes, the former 26 Local Government Districts (See Figure 3 and Table 4, Annex 2) are often aggregated into five larger NUTS III areas¹¹.

^OA measure of area disadvantage taken from the Multiple Deprivation Measure (NIMDM 2005¹⁶).

Section 2 Assessing the Impact of Individual, Household and Area Factors: 2011

The previous section examining descriptive statistics showed variation in Ulster-Scots language knowledge by a range of socio-demographic, household and area factors. In this section, logistic regression methods¹⁷ are used to examine individual, household and area factors (known to be) associated with the Ulster-Scots language knowledge. Regression analyses go beyond descriptive analyses and take account of relationships between variables. Logistic regression modelling¹⁷ is used to quantify the strength of associations between a binary outcome (having Ulster-Scots language knowledge or not) and a characteristic of interest (e.g. age), while at the same time “adjusting” for other characteristics, which may be related to both the outcome and the characteristic of interest.

Statistical Modelling

Statistical modelling was based on people who were enumerated in the 2011 Census. Only individuals living in households at the time of the 2011 Census were considered to examine the role of household-level variables, such as tenure, location and co-residency with others with Ulster-Scots language knowledge. Individuals in communal establishments such as care homes, homeless hostels, hospitals and prisons were therefore excluded. The regression model included all persons aged 16-74 years. An upper age limit of 74 years was included as responses to education and occupation questions were not processed for persons over 74 years. Full modelling estimates and confidence intervals are presented in Annex 4 (Table 5)^P. The results do not imply causality^Q.

Odds ratios

In the logistic regression models, the dependent variable is a binary variable equal to one if the individual indicated having Ulster-Scots language knowledge in 2011, otherwise it is equal to zero. Logistic regression models compare different categories against a reference category, which will always have an odds ratio (OR) of 1. The OR indicates the size of the effect relative to the reference. The further above 1 that the odds ratio is, the greater the increase in likelihood of having Ulster-Scots language knowledge; the further below 1, the lesser the likelihood.

- An OR of 1 for the comparison group indicates no difference between the reference category and the comparison group.
- An OR of greater than 1 indicates that the comparison group is more likely to have Ulster-Scots language knowledge than the reference category.
- An OR of less than 1 indicates that the comparison group is less likely to have Ulster-Scots language knowledge compared to the reference category.

ORs in Figure 4 are presented on a logarithmic (log) scale, a recommended way¹⁸ to visually present both positive (OR>1) and negative (OR<1) associations. For example, an OR of 1 (no difference between a comparison group and the reference category) is halfway between an OR of 0.5 (half as likely to have Ulster-Scots language knowledge) and an OR of 2 (twice as likely to have Ulster-Scots language knowledge).

^P Age and sex adjusted estimates are also shown in Tables 6 and 7.

^Q Regression analysis can identify statistical relationships between factors; however, it cannot imply causation.

Explanatory variables included in the model, persons 16-74 years.

Individual level:	Age, sex, country of birth, self-reported general health, hearing difficulty, communication difficulty, education, economic activity, education-related and agriculture-related occupations.
Household or area level:	Living arrangements, housing tenure, area deprivation and Local Government District.
Key variables linked with Ulster-Scots language:	Co-resident knowledge of the Ulster-Scots language, national identity, and religion/religion of upbringing.

Results

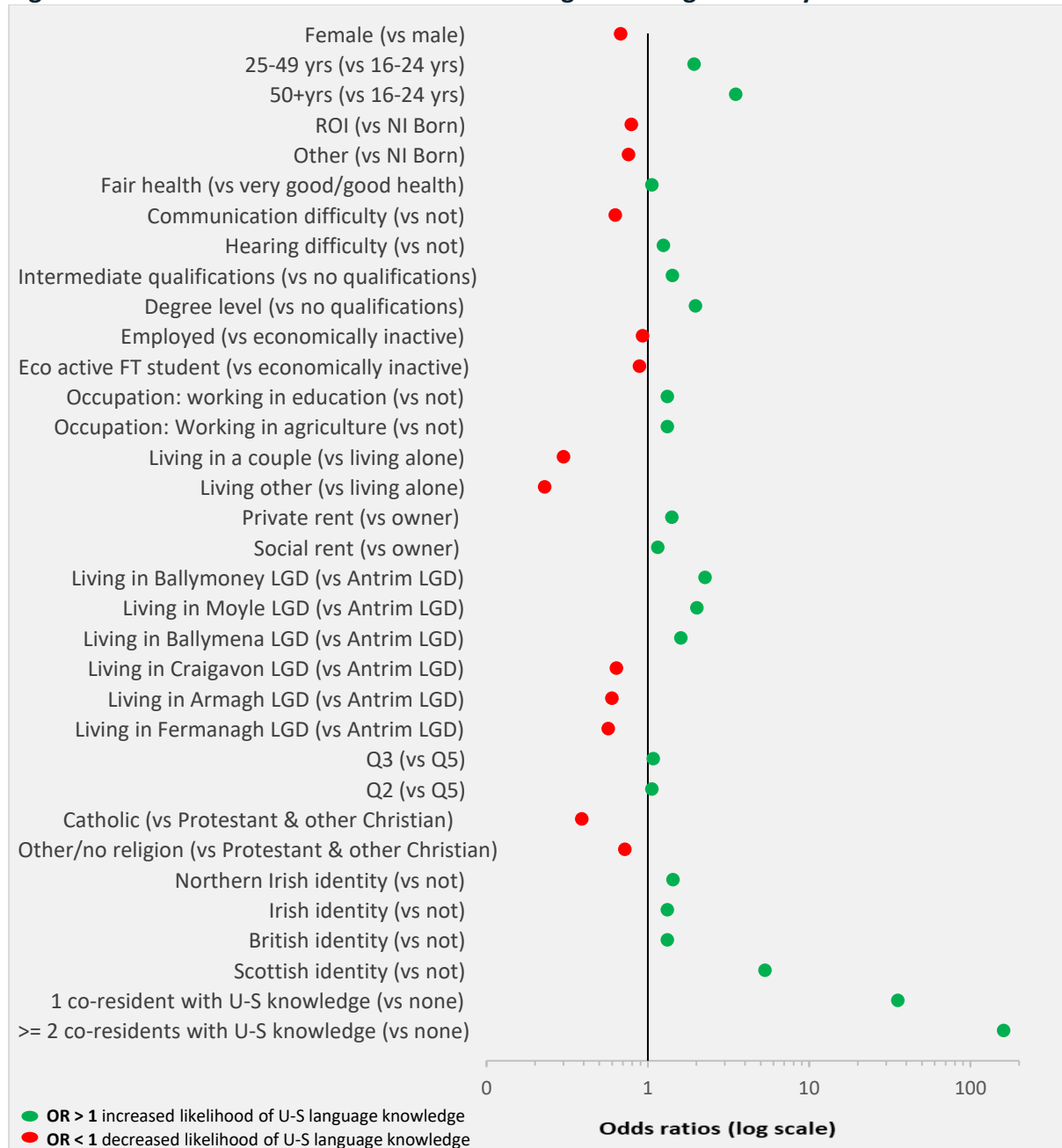
Significant predictors from the regression model are summarised in Figure 4, with full results presented in tabular form in Table 5 (Annex 4). After adjusting for the effect of other study variables in the model, we found for persons aged to 16-74 years that:

- Females were 32% less likely (OR:0.68) to have Ulster-Scots knowledge compared to males.
- Compared with persons 16-24 years old, there was nearly a two-fold greater likelihood of Ulster-Scots language knowledge for persons aged 25-49 years (OR:1.93) and over a three-fold greater likelihood for persons aged 50-74 years (OR:3.50).
- Relative to being born in Northern Ireland, there was a 21% reduced likelihood of Ulster-Scots language knowledge for persons born in the Republic of Ireland (OR: 0.79) and a 24% lesser likelihood for persons born in other countries (OR: 0.76).
- Compared to having (very) good health, there was an 6% increased likelihood of Ulster-Scots language knowledge for those indicating fair health (OR:1.06). Having a communication difficulty reduced the likelihood of indicating Ulster-Scots language knowledge by 37% (OR: 0.63), while having a hearing difficulty increased the likelihood of indicating Ulster-Scots language knowledge by 25% (OR:1.25).
- Compared with having no educational qualifications, people with secondary-level education (OR: 1.42) and degree level education (OR:1.97) were more likely to indicate Ulster-Scots language knowledge. Compared to being economically inactive, people were 7% less likely to have Ulster-Scots language knowledge if they were employed (OR:0.93). There was also a higher likelihood of having Ulster-Scots language knowledge for people working in the education sector (32% more likely) and for people working in agriculture (32% more likely).
- Compared to living in owner occupied accommodation, there was an 41% increased likelihood of Ulster-Scots language knowledge for those living in private-rented accommodation (OR:1.41) and a 15% greater likelihood for those living in social-rented accommodation (OR:1.15).
- Compared to living in the former Antrim LGD (reference category), the LGDs with the greatest likelihood of Ulster-Scots language knowledge were Ballymoney (OR: 2.26) Moyle (OR: 2.01) and Ballymena (OR: 1.60). Compared to living in Antrim LGD, the LGDs least likely to be associated with Ulster-Scots language knowledge were Fermanagh (43% less likely), Armagh (40% less likely) and Craigavon (36% less likely). For further detail, see Ulster-Scots language knowledge and area section and Figure 6.
- Compared to those indicating a Protestant religion/religion of upbringing, there was a reduced likelihood of having Ulster-Scots language knowledge for Catholics (OR:0.39: 61% less likely) and for persons indicating other religion/no religion (OR:0.72: 28% less likely).
- There was over a five-fold increased likelihood to have Ulster-Scots language knowledge for those indicating a Scottish national identity (OR:5.31); other national identities that increased

the likelihood of having Ulster-Scots language knowledge were Northern Irish (OR:1.43, 43% more likely), Irish (OR: 1.32, 32% more likely) and British (OR:1.32, 32% more likely).

- Co-residence with others with Ulster-Scots language knowledge markedly increased the likelihood of indicating Ulster-Scots language knowledge (living with 1 other, OR: 35.37 and living with 2 or more others, OR:160.45).

Figure 4: Odds Ratios for Ulster-Scots Knowledge 2011: Ages 16-74 years



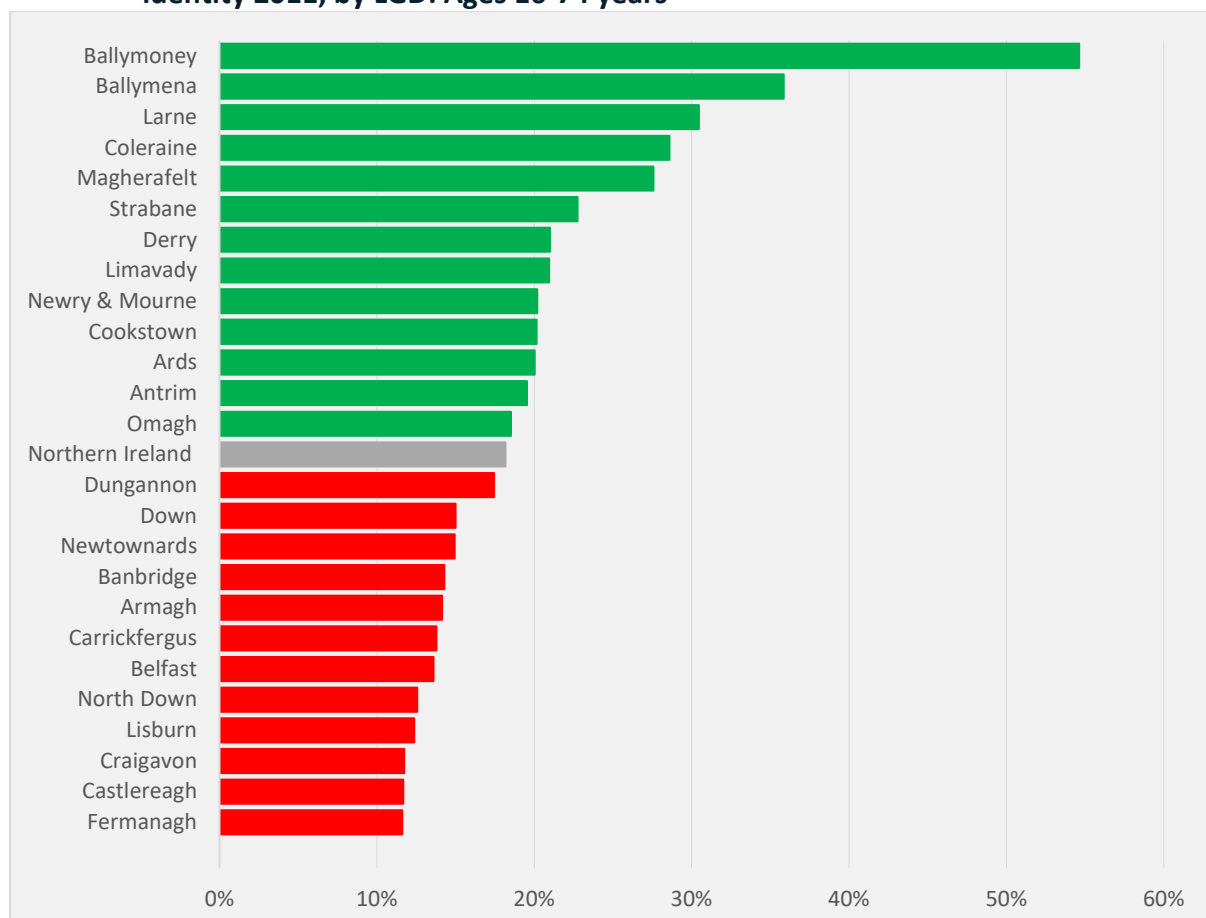
Note: Figure 4 includes LGDs most (OR>1) and least likely (OR<1) to have Irish language knowledge. Odds ratios for all LGDs are shown in Annex 5, Table 6.

Ulster-Scots Language knowledge and Area

The regression modelling results (Figure 4 and Table 5, Annex 4) assessing associations of Ulster-Scots language in 2011 accounted for spatial variations by including the 26 pre-2014 LGDs. Even after accounting for the population composition of NLS members in each of the LGDs (in age, highest qualification, social deprivation, housing tenure, household co-resident knowledge, religion, and national identity), most of the LGDs differ significantly from the Antrim LGD reference category. Some LGDs (Ballymena, Ballymoney, Larne, and Moyle) have greater shares of NLS members with Ulster-Scots knowledge than would be **expected** given their population make-up in religion and identity¹⁹, others, such as Fermanagh, Armagh, Belfast, and Craigavon have fewer NLS members.

Another perspective on this is provided in Figure 5 below, using NLS data. This chart shows the relationship for the 26 LGDs between Ulster-Scots language knowledge and (any) British national identity. LGDs below the Northern Ireland average (red bars) have lower proportions of the Ulster-Scots language knowledge than would be expected given their British identity share, those in green bars have higher proportions of Ulster-Scots language knowledge than would be expected (given their British identity share). Some LGDs like Ballymoney, Ballymena, Larne and Coleraine are markedly above the Northern Ireland average; the percentage with British identity is a poor predictor of Ulster-Scots knowledge in these LGDs. Some LGDs (Fermanagh, Castlereagh, Craigavon and Lisburn) are considerably below the Northern Ireland average; there are fewer here with knowledge of Ulster-Scots than would be expected. Future work will undertake multilevel modelling²⁰ to consider further how the effects of religion and national identity vary spatially in relation to the Ulster-Scots language knowledge.

Figure 5: Ulster-Scots language knowledge as a proportion of (any) British national identity 2011, by LGD: Ages 16-74 years



Conclusion

The production of high-level official statistics is vital to inform patterns and trends in Ulster-Scots language knowledge. The study findings illustrate that as well as indicating British identity and having Protestant religion/religion of upbringing, the reporting of Ulster-Scots language knowledge was influenced by a range of factors including being over 50 years old, being married and having a degree level qualification. In terms of area factors, living in the East and North of Northern Ireland and residing in the 20% least deprived areas were strongly associated with Ulster-Scots language knowledge. Having a hearing difficulty was positively associated, and having communications difficulties was negatively associated with knowledge of Ulster-Scots language. The most notable finding, however, was the strong household concentration of knowledge of Ulster-Scots language. Closer examination of the household context of Ulster-Scots language knowledge would make an interesting focus for future research to inform strategies to promote the use of Ulster-Scots and meet obligations under the European Charter for Regional or Minority Languages.

Study Strengths and Limitations

The study is based on a high-quality dataset with a large sample size (28% of the Northern Ireland population) enabling a deep and rich understanding of knowledge of Ulster-Scots language. The study uses rich socio-demographic (e.g. religion/religion of upbringing, educational qualifications and health), individual-level and household-level data sourced from the Census. No other equivalent administrative or survey data with such large population coverage exists. Selection bias is minimised because Census coverage in 2011 was high and linkage of NILS members present in Northern Ireland in 2011 to the 2011 Census exceeded 95%. However, there are also some weaknesses. These concern processes and deeper understandings that can only be collected by surveys and interviews about how and why, for instance, households are significant. Using the NILS, we can show that these patterns exist, and that they are statistically significant, but to understand causation more information and thought is needed.

Scope for Future Analyses

Clustering of people who have Ulster-Scots language knowledge within households

The clustering of people who know Ulster-Scots language within households could be partially artefactual and result from the household head completing the Census form on behalf of others, particularly younger household members, and ascribing knowledge to them. One way to investigate this topic would be to interview on the experience of completing the Census, but before this we can get some solid hints about what is happening through the deeper analysis of the NILS data.

Knowledge of the Ulster-Scots language among Catholics

Although the majority of those who claimed in the 2011 Census to have known Ulster-Scots had Protestant religion/religion of upbringing, there was a small but appreciable minority with Catholic religion/religion of upbringing who also reported that they knew Ulster-Scots. These 6,305 NILS members (reported number in the 2011 Census²¹ for the Northern Ireland population was 23,869 people), differ in some important ways from Protestants who know the Ulster-Scots language. The main dimensions of difference include social deprivation and educational qualification. A greater proportion of Catholics (36.6%) reporting knowledge of Ulster-Scots had a degree-level qualification (compared to 27.8% of Protestants reporting knowledge of Ulster-Scots). A higher proportion of Catholics (20.1%) who know Ulster-Scots language lived in the most 20% most deprived areas (7.0% of Protestants knowing Ulster-Scots language lived in the 20% most deprived areas). Furthermore, Catholics knowing Ulster-Scots (compared to Protestants knowing Ulster-Scots) had higher concentrations proportionally in Belfast (14.4% vs 8.3%), in the North (27.5% vs 21.3%) and in the West and South (23.7% vs 12.5%) of Northern Ireland. This is merely an exploratory 'first look' and it is something that can be developed further with the addition of 2021 Census data to the NILS.

2021 Census results

Some avenues for future work are suggested immediately and there will also be a massive increase in research capacity with the release of the 2021 Census data and their linkage to the NILS. The addition of 2021 data will enable understanding of how knowledge of Ulster-Scots language has developed over a ten-year period between 2011 and 2021. The more detailed question on frequency of Ulster-Scots language use in 2021 (Figure 6) will add more to our collective understanding about how, where, and amongst whom competence in the language is distributed.

Figure 6: Ulster-Scots language question: Northern Ireland Census 2021

18 Can you understand, speak, read or write Ulster-Scots?
Tick all that apply.

No ability	Understand	Speak	Read	Write
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

How often do you speak Ulster-Scots?

Daily	Weekly	Less often	Never
<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>	<input type="checkbox"/>

Acknowledgements

The help provided by the NILS Research Support Unit is acknowledged. The NILS is funded by the Health and Social Care Research and Development Division of the Public Health Agency (HSC R&D Division) and NISRA. The NILS-RSU is funded by the Economic & Social Research Council²² which is part of the UK Research and Innovation²³ and the Northern Ireland Government. The authors alone are responsible for the interpretation of the data and any views or opinions presented are solely those of the author and do not necessarily represent those of NISRA/NILS. We also thank colleagues in the Northern Ireland Statistics & Research Agency and Department for Communities who sat on the project steering group and who contributed with comments and knowledge to an earlier version of the report.

About ADR UK²⁴ and ADR-NI

ADR UK (Administrative Data Research UK) is a partnership transforming the way researchers access the UK's wealth of public sector data, to enable better informed policy decisions that improve people's lives. ADR UK is made up of three national partnerships (ADR Scotland, ADR Wales, and ADR NI) and the Office for National Statistics (ONS). It is funded by the Economic & Social Research Council which is part of the UK Research and Innovation.

Administrative Data Research Northern Ireland (ADR NI) is a partnership between the Administrative Data Research Centre Northern Ireland (ADRC NI, comprising Queen's University Belfast and Ulster University), and the Northern Ireland Statistics and Research Agency (NISRA). Together they support the acquisition, linking and analysis of administrative data sets, developing cutting-edge research to improve knowledge, policymaking and public service delivery.

Feedback: Your comments and suggestions are welcome and will assist the research team and ADR NI in continuously developing research outputs. Please send your comments to:

I.Shuttleworth@qub.ac.uk or John.Hughes@nisra.gov.uk

Annexes

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Ulster-Scots language knowledge

To define Ulster-Scots language in this publication we refer to the self-reported question from the 2011 Census (Figure 1). The main metric of interest in this report is Ulster-Scots language knowledge, where a respondent selected at least one of the categories understand, speak, read or write. Full **proficiency** in Ulster-Scots language where a respondent selected all categories is also reported on in the analysis. A new question on how often people speak Ulster-Scots language was included in the most recently undertaken 2021 Census which took place on 21 March 2021. Results of the 2021 Census will be published on a phased basis with initial results on Ulster-Scots language and Irish language planned for publication from autumn 2022⁸.

Religion /religion of upbringing

The religion question in the 2011 Census in Northern Ireland⁴: was ‘What religion, religious denomination or body do you belong to?’ A follow-up question was asked for those with no current religion: ‘What religion, religious denomination or body were you brought up in?’

Two separate religion measures are included are included in Table 2. The ‘religion belong to’ is based on response to (i) above and the ‘Religion/religion of upbringing’ is a derived category based on response provided to both religion questions above. The categories used in both measures are in line with the main religious groups typically reported for the Northern Ireland population. These are (i) Catholic (ii) Protestant and other Christian, (iii) other religion, and (iv) no religion or religion not stated. The Protestant category includes persons brought up in or belonging to the Presbyterian Church in Ireland, Church of Ireland, Methodist Church in Ireland and other (non-Catholic) Christian related denominations.

Activity limitation and long-term health conditions

This study used self-reported health problem/disability, as collected in the 2011 Census in Northern Ireland. A distinction was made between those reporting that their day-to-day activities were ‘limited a little’ or ‘limited a lot’ due to a health condition or disability which has lasted, or is expected to last at least 12 months. People who reported no limitation to their activities are categorised as having ‘no activity limitation’. This definition of disability is broadly consistent with the Government Statistical Service (GSS) harmonised standard and Disability Discrimination Act (DDA) 1995 definition²⁵. The self-reported long-term health conditions question, ‘Do you have any of the following conditions which have lasted, or are expected to last, at least twelve months’ was used to measure the presence of chronic health problems at the population level.

Following the question above, respondents selected relevant condition/s from categories including the following reported in Table 1:

- Deafness or partial hearing loss;
- Communication difficulty (a difficulty with speaking or making yourself understood);
- Shortness of breath or difficulty breathing (such as asthma); and
- An emotional, psychological or mental health condition (such as depression or schizophrenia).

Local Government Districts

A geography variable based on the former 26 Local Government Districts (LGDs) in Northern Ireland was included in the modelling analysis. The former 26 Districts were aggregated into five larger geographical NUTS III areas, in use at the time of Census 2011 (Table 4). In 2008, the Northern Ireland Assembly approved the reform of Local Government. The change resulted in 26 former LGD’s (LGD1992) being replaced by the current 11 LGDs (LGD2014). The 11 new Districts became operational in April 2015²⁶. The current NUTS III areas align with the 11 LGDs.

Table 4: Former NUTS III Areas and former Districts in Northern Ireland

NUTS III Area	Local Government Districts (LGD1992) included
Belfast	Belfast
Outer Belfast	Carrickfergus, Castlereagh, Lisburn, Newtownabbey and North Down
East	Antrim, Ards, Ballymena, Banbridge, Craigavon, Down and Larne
North	Ballymoney, Coleraine, Derry, Limavady, Moyle and Strabane
South & West	Armagh, Cookstown, Dungannon, Fermanagh, Magherafelt, Newry & Mourne, and Omagh

Area Deprivation

The Northern Ireland Multiple Deprivation Measure 2005 (NIMDM 2005) is a measure of multiple deprivation at the small geographical area level. The NIMDM 2005 income domain was used to assign individuals into one of five equal groups (or quintiles) ranging from most deprived to least deprived. Further detail can be found from the NISRA Website¹⁶.

Economic Activity

Economic Activity comprised four groups: employed active full-time student, employed, unemployed and the economically inactive. The economically inactive included those who are retired, the long-term sick, people looking after their family and home and people who are inactive for other reasons such as temporarily sick, injured and discouraged workers.

Logistic Regression

Logistic regression analysis allows for the relationship between an explanatory variable and the outcome variable to be examined, whilst at the same time taking into consideration other explanatory variables that influence the outcome. Logistic regression models compare different categories against a reference category, which will always have an odds ratio (OR) of 1. The OR indicates the size of the effect. The further above 1 that the odds ratio is, the greater the increase in likelihood of having Ulster-Scots language.

- An OR of 1 for the comparison group indicates no difference between the reference category and the comparison group.
- An OR of greater than 1 indicates that the comparison group is more likely to have Ulster-Scots language knowledge than the reference category.
- An OR of less than 1 indicates that the comparison group is less likely to have Ulster-Scots language knowledge compared to the reference category.

Plots of odds ratios (Figure 4) are reported on a log scale for the x-axis to support the interpretation. For example, an odds ratio of "0.5" is an equivalent departure from "1" as an odds ratio of 2 and this is more easily visualized on log scale than only by using a log scale that you can visually compare the magnitudes of confidence intervals and standard errors in an odds ratio plot.

95% Confidence Intervals (CI's) are a range of values around the odds ratio, representing a 95% likelihood that the true odds ratio lies within this range. CI's that do not cross 1 are statistically significant while CI's that do cross 1 are not statistically significant.

Comparing Census 2011 and the Continuous Household Survey

Caution should be taken when comparing levels of Ulster-Scots language knowledge derived from the Census 2011 and the 2011 Continuous Household survey. There are several possible reasons why a Census based figure for Ulster-Scots language knowledge could be different than a survey derived estimate. For example, the Census is a statutory self-completion questionnaire, while the Continuous Household Survey is a voluntary survey which used face-to-face interviews.

Annex 3 Ulster-Scots Language Knowledge by Area: 2011

Figure 7: Persons with Ulster-Scots language knowledge (n=140,204) by former Local Government District (LGD1992): 2011

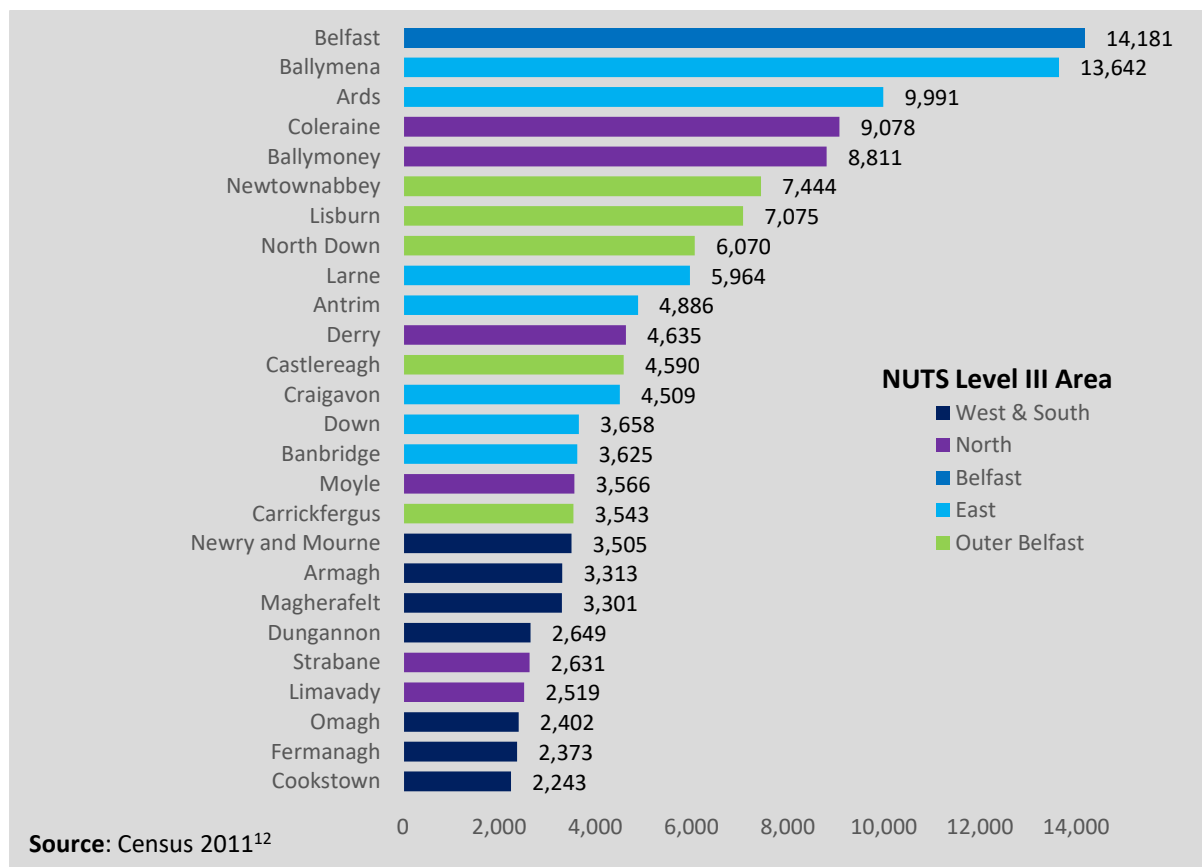
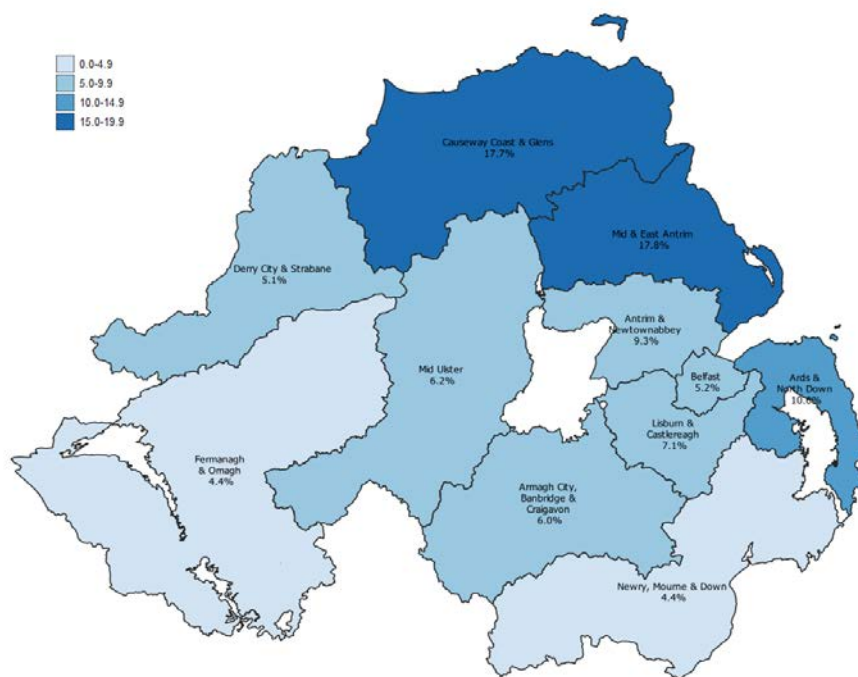


Figure 8: Proportion of population with Ulster-Scots language knowledge (n=140,204) by Former Local Government District (LGD1992): 2011



Source: Census 2011¹²

Table 5: Logistic regression analysis: Odds Ratios (ORs) with 95% Confidence Intervals for Factors Associated with Ulster-Scots language knowledge, 16-74 years

Variable	Category	(a) +Age +sex ^R	(b) + Socio- demographic + household	(c) + religion + national identity + co-residency with U-S 'knowers' ST
Sex	Males (ref)	1	1	1
	Females	0.79 (0.78,0.81)	0.80 (0.78,0.82)	0.68 (0.66,0.70)
Age	16-24 (ref)	1	1	1
	25-49	1.26 (1.21,1.31)	1.13 (1.07,1.18)	1.93 (1.81,2.07)
	50-74	2.34 (2.25,2.43)	2.13 (2.02,2.24)	3.50 (3.26,3.76)
County of birth	Northern Ireland (ref)	1	1	1
	Republic of Ireland	0.51 (0.46,0.60)	0.63 (0.57,0.70)	0.79 (0.70,0.89)
	Other	0.74 (0.71,0.78)	0.74 (0.70,0.77)	0.76 (0.71,0.81)
Self-rated health	Very good/good (ref)	1	1	1
	Fair	0.91 (0.88,0.94)	1.06 (1.02,1.10)	1.06 (1.01,1.10)
	Bad/very bad	0.70 (0.67,0.74)	0.93 (0.88,0.98)	0.96 (0.89,1.03)
Communication Difficulty	Yes (versus not)	0.63 (0.56,0.72)	0.77 (0.68,0.88)	0.63 (0.54,0.74)
Hearing Difficulty	Yes (versus not)	1.21 (1.15,1.27)	1.26 (1.20,1.33)	1.25 (1.17,1.33)
Area Deprivation	Quintile 5 (least deprived) (ref)	1	1	1
	Quintile 4	0.97 (0.93,1.00)	0.96 (0.93,1.00)	1.04 (1.00,1.10)
	Quintile 3	0.83 (0.80,0.86)	0.91 (0.87,0.95)	1.08 (1.03,1.14)
	Quintile 2	0.68 (0.66,0.71)	0.79 (0.76,0.83)	1.06 (1.00,1.11)
	Quintile 1 (most deprived)	0.38 (0.36,0.39)	0.58 (0.55,0.61)	0.99 (0.93,1.06)
Living Arrangements	Alone (ref)	1	1	1
	Couple	1.05 (1.07,1.18)	0.91 (0.87,0.94)	0.30 (0.28,0.31)
	Other living arrangements	0.86 (1.07,1.18)	0.85 (0.81,0.89)	0.23 (0.22,0.25)
Housing Tenure	Owner occupied (ref)	1	1	1
	Private rent	0.83 (0.80,0.87)	0.98 (0.94,1.02)	1.41 (1.34,1.48)
	Social rent	0.72 (0.70,0.75)	1.02 (0.98,1.06)	1.15 (1.09,1.21)
Local Government District	Antrim (ref)	1	1	1
	Ards	1.37 (1.27,1.48)	1.32 (1.22,1.42)	1.02 (0.93,1.13)
	Armagh	0.55 (0.49,0.60)	0.56 (0.51,0.62)	0.60 (0.53,0.68)
	Ballymena	2.67 (2.48,2.87)	2.69 (2.50,2.90)	1.60 (1.45,1.77)
	Ballymoney	4.19 (3.86,4.55)	4.42 (4.07,4.81)	2.26 (2.01,2.54)
	Banbridge	0.78 (0.71,0.86)	0.75 (0.68,0.83)	0.75 (0.66,0.85)
	Belfast	0.52 (0.48,0.56)	0.62 (0.57,0.66)	0.73 (0.67,0.81)
	Carrickfergus	0.95 (0.87,1.05)	0.92 (0.84,1.01)	0.82 (0.72,0.93)
	Castlereagh	0.67 (1.07,1.18)	0.61 (0.56,0.67)	0.65 (0.58,0.73)
	Coleraine	1.81 (1.67,1.95)	1.88 (1.74,2.04)	1.31 (1.18,1.46)
	Cookstown	0.68 (0.61,0.76)	0.78 (0.70,0.87)	0.85 (0.74,0.98)
	Craigavon	0.49 (0.39,0.47)	0.53 (0.48,0.57)	0.64 (0.57,0.72)
Derry	0.43 (0.39,0.47)	0.54 (0.49,0.59)	0.76 (0.68,0.85)	

^R Unadjusted estimates are included to show the independent effect for each predictor variable. Age and sex are likely to influence the impact of each predictor variable and have therefore been taken into account or 'controlled' for.

^S The fully adjusted estimates (Table 5 – column c) take into effect all of the additional predictor variables where all variables were entered into the model simultaneously i.e. the estimates show the independent effect for each predictor variable while holding all other variables in the model constant.

^T Multi-collinearity tests²⁷ were undertaken for the final model (column c) and no critical thresholds were breached.

Variable	Category	(a) +Age +sex ^R	(b) + Socio- demographic + household	(c) + religion + national identity + co-residency with U-S 'knowers' ST
	Down	0.53 (0.48,0.58)	0.52 (0.47,0.57)	0.78 (0.69,0.88)
	Dungannon	0.48 (0.43,0.53)	0.54 (0.49,0.60)	0.69 (0.61,0.79)
	Fermanagh	0.37 (0.33,0.41)	0.41 (0.37,0.46)	0.57 (0.50,0.66)
	Larne	2.14 (1.96,2.33)	2.12 (1.94,2.31)	1.48 (1.32,1.66)
	Limavady	0.80 (0.72,0.89)	0.90 (0.81,1.00)	0.94 (0.82,1.08)
	Lisburn	0.61 (1.07,1.18)	0.60 (0.55,0.65)	0.68 (0.61,0.75)
	Magherafelt	0.81 (0.74,0.90)	0.84 (0.76,0.93)	1.00 (0.87,1.14)
	Moyle	2.58 (2.33,2.86)	2.81 (2.53,3.12)	2.01 (1.74,2.33)
	Newry and Mourne	0.34 (0.31,0.38)	0.42 (0.38,0.46)	0.65 (0.57,0.73)
	Newtownabbey	0.90 (0.83,0.97)	0.90 (0.83,0.98)	0.83 (0.75,0.92)
	North Down	0.77 (0.71,0.84)	0.70 (0.64,0.76)	0.71 (0.64,0.79)
	Omagh	0.46 (0.41,0.51)	0.50 (0.44,0.55)	0.73 (0.63,0.83)
	Strabane	0.66 (0.60,0.74)	0.88 (0.79,0.98)	0.85 (0.74,0.98)
Educational attainment	No qualifications (ref)	1	1	1
	School level or other ^U	1.43 (1.40,1.48)	1.42 (1.37,1.47)	1.42 (1.36,1.48)
	Degree level or higher	1.88 (1.82,1.94)	1.85 (1.78,1.93)	1.97 (1.87,2.07)
Economic Activity	Inactive (ref)	1	1	1
	Unemployed	0.93 (0.88,0.99)	0.95 (0.89,1.01)	0.93 (0.86,1.01)
	Employed	1.13 (1.10,1.16)	0.91 (0.89,0.94)	0.93 (0.90,0.97)
	Economically active student ^V	1.03 (0.94,1.12)	0.94 (0.86,1.02)	0.89 (0.79,1.00)
Education-related occupation	Yes (versus not)	1.68 (1.60,1.76)	1.27 (1.21,1.34)	1.32 (1.23,1.42)
Agriculture-related occupation	Yes (versus not)	1.73 (1.62,1.85)	1.87 (1.75,2.01)	1.32 (1.20,1.45)
Co-residents with U-S language knowledge	0 (ref)	1		1
	1	33.16(32.05,34.30)		35.37 (34.05,36.76)
	2 or more	149.91(141.97,158.30)		160.45 (151.32,170.14)
Religion/ religion of upbringing	Protestant ^W (ref)	1		1
	Catholic	0.23 (0.22,0.24)		0.39 (0.37,0.41)
	Other/none	0.54 (0.51,0.57)		0.72 (0.67,0.78)
National identity	Northern Irish (versus not)	1.25 (1.21,1.28)		1.43 (1.07,1.18)
	Irish (versus not)	0.39 (0.38,0.40)		1.32 (1.25,1.40)
	British (versus not)	2.42 (2.36,2.48)		1.32 (1.26,1.38)
	Scottish (versus not)	3.12 (2.81,3.47)		5.31 (4.58,6.15)

1 - reference category, **OR <1** decreased likelihood of Ulster-Scots language knowledge,

OR >1 increased likelihood of Ulster-Scots language knowledge.

Shaded odds ratios, P<.05

^U School level qualification or other vocational qualification or apprenticeship.

^V Full-time student

^W Protestant and other Christian