

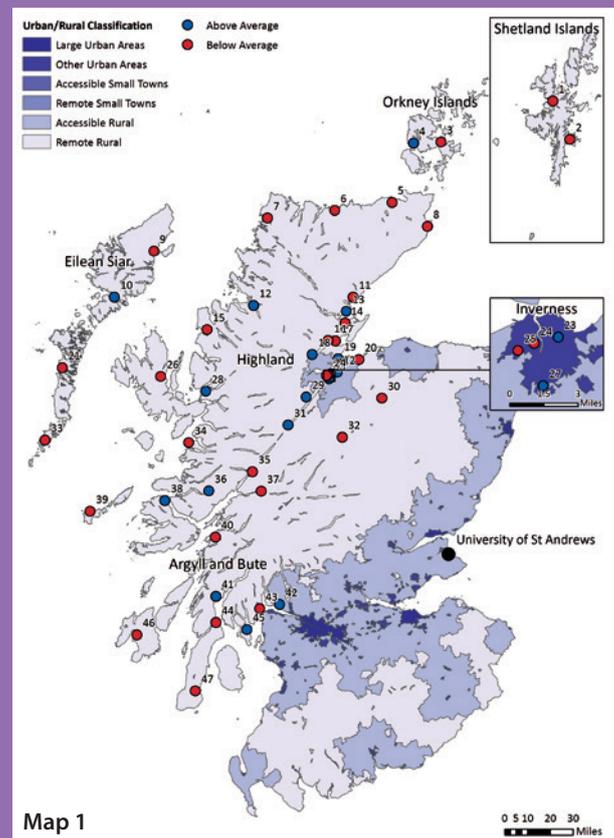
Facts Explained

Access to Higher Education for Rural Communities *An exploratory analysis*

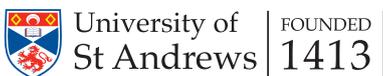
Traditional socio-economic factors cannot solely explain why state secondary schools located in Scottish rural communities tend to have (i) greater variation of progressions to Higher Education (HE) year on year than other areas of Scotland, (ii) a lower three-year average progression rate to HE than the national average of 36%.

This exploratory research examines some of the unique issues in accessing HE of pupils living in Scottish rural communities, in particular Argyll & Bute, Highland, Eilean Siar (Western Isles), Orkney Islands and Shetland Islands. Many of these communities are hard-to-reach and in some of the least deprived areas of Scotland. Despite this, some pupils come from disadvantaged socio-economic backgrounds. All pupils face large pecuniary and non-pecuniary costs to study at HE.

This map represents Scotland according to the degree of rurality (six-fold classification). It also shows the 47 state secondary schools in Argyll & Bute, Highland, Eilean Siar, Orkney Islands and Shetland Islands. The latter are distinguished by their three-year average progression rate to HE. In blue are those above the national average. In red are those that are equal or below the national average.



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Contents

Acknowledgements	2
ARC research team	2
1. ARC region in figures	4
2. ARC region in context	6
3. Hard to reach communities and hard to reach university	8
4. Young people's voices	14
5. Study portal	18

1. ARC region in figures

- 5 local authorities mostly in remote rural areas
- 47 state secondary schools (thereafter 'ARC schools') and 1 independent school
- 10 ARC schools in Argyll & Bute, 4 in Eilean Siar, 29 in Highland, 2 in Orkney Islands and 2 in Shetland Islands
- 10 ARC schools located in the 40% most deprived areas of Scotland
- 19 ARC schools located in the 40% least deprived areas of Scotland
- A progression rate to HE below the national average

ARC region – basic facts (see Map 1 and Table 1)

The ARC region comprises five local authorities: Argyll & Bute, Eilean Siar, Highland, Orkney Islands and Shetland Islands.

The 47 state secondary schools and 1 independent school are located in one of the most rural areas within Scotland.

The majority of these ARC schools are not located in the 20% or 40% most deprived areas in Scotland (thereafter 'SIMD20' or 'SIMD40') and have a lower than average progression rate to HE.

SIMD (Scottish Index of Multiple Deprivation)

No ARC school is in SIMD20.

10 ARC schools, i.e. 21%, are in SIMD40.

19 ARC schools, i.e. 41%, are among the 40% least deprived areas in Scotland and 4 ARC schools, i.e. 9%, among the 20% least deprived areas in Scotland.

This discrepancy is reflected at the local authority level.

A fifth of the ARC schools in Argyll & Bute and a quarter of the ARC schools in either Eilean Siar or Highland are in SIMD40. 70% of the ARC schools in SIMD40 are in Highland.

The vast majority of ARC schools in the 40% least deprived areas in Scotland are in Highland, i.e. 10 out of 15. No ARC schools in Eilean Siar are in the 40% least deprived areas in Scotland.

All 4 ARC schools in the 20% least deprived areas in Scotland are in Highland.

It is well known that the SIMD indicator better captures areas of deprivation in urban areas than rural areas (Rural Scotland in Focus report, 2014, p 79, www.sruc.ac.uk). In Argyll & Bute, there are only 33 SIMD20 and 40 out of 123 zones; in Eilean Siar, 14 out of 36; in Highland, 81 out of 292; in Orkney Islands, 5 out of 27 and in Shetland Islands, 1 out of 30. 'Eilean Siar, (...) Orkney Islands and Shetland Islands do not have any data zones in the 15% most deprived in the SIMD12 - this does not mean that there is no deprivation in these areas; rather that it is not concentrated in small areas.' (Scottish Government, 2012, p 7, <http://simd.scotland.gov.uk/publication-2012>).

Three-year average progression rate to HE (2010-11 / 2012-13)

The three-year Scottish average progression rate to HE is 36%.

In the ARC region, the percentage is below the national rate and is equal to 34%.

In two local authorities of the ARC region, the percentage is above the national rate. It is equal to 37% in Eilean Siar and 38% in Orkney Islands.

In the remaining three local authorities, the percentage is equal or less than the national rate. It is equal to 36% in Argyll & Bute, 34% in Highland and 28% in Shetland Islands.

This discrepancy is also reflected at the school level.

17 ARC schools, i.e. 36% of the 47 ARC schools, have a higher than average progression rate to HE. **They are marked in blue in Map 1 and Table 1.**

28 schools across the ARC region have a lower than average rate to HE and 2 schools have just attained 36%. **These are marked in red in Map 1 and Table 1.**

Table 1: The 47 ARC schools

Map #	ARC school name	LA	% Pg to HE	SIMD quintile
1	Brae High School	SI	22	4
2	Anderson High School	SI	33	3
3	Kirkwall Grammar School	OI	36	3
4	Stromness Academy	OI	39	4
5	Thurso High School	H	34	2
6	Farr High School	H	35	3
7	Kinlochbervie High School	H	34	3
8	Wick High School	H	34	2
9	The Nicolson Institute	ES	35	2
10	Sir E Scott School	ES	45	3
11	Golspie High School	H	26	3
12	Ullapool High School	H	43	4
13	Dornoch Academy	H	47	4
14	Tain Royal Academy	H	24	2
15	Gairloch High School	H	34	3
16	Alness Academy	H	12	2
17	Invergordon Academy	H	23	3
18	Dingwall Academy	H	38	3
19	Fortrose Academy	H	51	5
20	Nairn Academy	H	31	3
21	Sgoil Lionacleit	ES	35	3
22	Culloden Academy	H	37	5
23	Millburn Academy	H	43	3
24	Inverness High School	H	14	4
25	Charleston Academy	H	36	2
26	Portree High School	H	29	2
27	Inverness Royal Academy	H	41	5
28	Plockton High School	H	42	4
29	Glen Urquhart High School	H	49	4
30	Grantown Grammar School	H	28	4
31	Kilchuimen Academy	H	43	4
32	Kingussie High School	H	24	5
33	Castlebay Community School	ES	32	3
34	Mallaig High School	H	31	4
35	Lochaber High School	H	29	4
36	Ardnamurchan High School	H	43	4
37	Kinlochleven High School	H	24	2
38	Tobermory High School	A & B	49	4
39	Tiree High School	A & B	27	3
40	Oban High School	A & B	31	2
41	Lochgilphead High School	A & B	44	3
42	Hermitage Academy	A & B	41	4
43	Dunoon Grammar School	A & B	35	3
44	Tarbert Academy	A & B	35	4
45	Rothesay Academy	A & B	41	2
46	Islay High School	A & B	24	3
47	Campbeltown Grammar School	A & B	34	3

#: Number. ARC schools are numbered by latitude.

LA: Local authority. A & B: Argyll & Bute, ES: Eilean Siar, H: Highland, OI: Orkney Islands, SI: Shetland Islands

% Pg to HE: three-year average progression rate to Higher Education (2010-11 / 2012/13). **In blue are the ARC schools above the national average. In red are those equal or below the national average.**

SIMD quintile column: 1: 20% most deprived areas in Scotland; 5: 20% least deprived areas in Scotland.

Shaded in light red are the ARC schools whose postcodes are in the 40% most deprived areas in Scotland.

2. ARC region in context

Full-time students from the ARC region in 2012-13

- 5,868 full-time students (entrants or returners) from the ARC region studying a course in UK institutions, i.e. 7% of full-time Scottish students studying a course in UK institutions
 - Preferred HE institution destination: the University of Highlands and Islands
- 4,712 full-time students (entrants or returners) studying a course in a Scottish institution drawn from an ARC school, 9.4% of full-time Scottish students drawn from state secondary schools
 - Preferred HE institution destination: universities in Glasgow
- 61.7% full-time students studying a full-time course from the ARC region attended an ARC school in Highland, 18.7% in Argyll & Bute, 7.5% Eilean Siar, 6.5% Shetland Islands and 5.6% Orkney Islands.

ARC region vs Scotland – All UK HE institution destination regardless secondary schools

In 2012-13, full-time students who had a domicile in the ARC region prior to the commencement of their studies in HE were more likely than their Scottish counterparts:

- to have attended a state secondary school, in particular in Highland
- to be enrolled in a Scottish institution, in particular the University of Highlands and Islands.

As indicated in Table 2, most students coming from the ARC region were in the state sector prior to the commencement of their studies in HE. Indeed, there is only one independent school in the ARC region (in Argyll & Bute) and a few attended a Further Education college.

In terms of HE institution destination, if 4.1% of 82,242 students attended a non-Scottish HE institution, there were only 2.4% in the ARC region (see Table 2). Their top three HE institution destinations are identical, with a slight change in ranking: the University of Newcastle-upon-Tyne, the University of Cambridge and the University of Oxford.

ARC region vs Scotland – Scottish university destination and state secondary school provenance

In 2012-13, there are similar patterns in terms of Scottish HE institutions destinations between full-time students who had a domicile in the ARC region and their Scottish counterparts.

As indicated in Table 3a, their top three Scottish HE institutions are identical, but there are some differences in terms of proportion. The fourth institution is different.

Indeed if 14.2% and 14.1% of Scottish students were registered at the University of Glasgow and the University of Strathclyde, there were 11.6% and 11.1% of students from the ARC region, a difference of three percentage points. 10% of the students from the ARC region latter were registered at the University of Highlands and Islands and only 2.1% of the Scottish students.

Discrepancies in terms of Scottish university destination are noticeable between the local authorities within the ARC region (see Table 3b)

The university destination seems to be dependent on the transport links (see Map 2) and on the opportunities offered by one of the colleges and learning centres of the University of Highlands and Islands.

A large proportion of students coming from the West of Scotland go to the Glasgow area; those from Highland, Orkney Islands and Shetland Islands the Aberdeen area, the University of Highlands and Islands and to a lesser extent the Edinburgh area.

Indeed, more than 40% of students from Argyll & Bute and almost 40% from Eilean Siar were attracted to universities located in Glasgow.

Similar proportions of students from Highland, Shetland Islands and Orkney Islands were attracted to universities located in the Aberdeen area.

Similar proportions of students from those who lived in Highland, Eilean Siar and Shetland Islands were registered at the University of Highlands and Islands.

More than 20% of students from Orkney Islands were registered in a university located in Edinburgh.

Table 2: Scottish students studying on a full-time course at a UK institution in 2012-13. They were domiciled in Scotland prior to the commencement of their studies in HE.

Domicile	Scotland	ARC region
Number of students	84,242	5,868
Type of previous institution: – State schools – Independent schools – Further education colleges	61% 11% 26%	82% 3% 13%
Top 5 local authorities	14% Glasgow 12% Edinburgh 5% Fife 5% Aberdeen 4% Highland 7% <i>The ARC region</i>	63% Highland 18% Argyll & Bute 8% Eilean Siar 6% Shetland Islands 5% Orkney Islands
HE destination: – Scottish institution – Rest of UK institution	96% 4%	98% 2%
Top 5 Scottish university destinations	12% The University of Glasgow 11% The University of Strathclyde 10% Glasgow Caledonian University 10% The University of the West of Scotland 9% The University of Edinburgh	15% The University of the Highlands and Islands 10% The University of Strathclyde 10% The University of Glasgow 9% Robert Gordon University 9% The University of Edinburgh

Tables 3a and 3b: Scottish students studying for a full-time course at a Scottish institution in 2012-13. They were domiciled in Scotland and attended a state secondary school prior to the commencement of their studies in HE.

ARC REGION

Number of students: 4,712

Top 5 university destinations

- Strathclyde – 12%
- Glasgow – 11%
- Edinburgh – 10%
- Highlands and Islands – 10%
- Robert Gordon – 9%

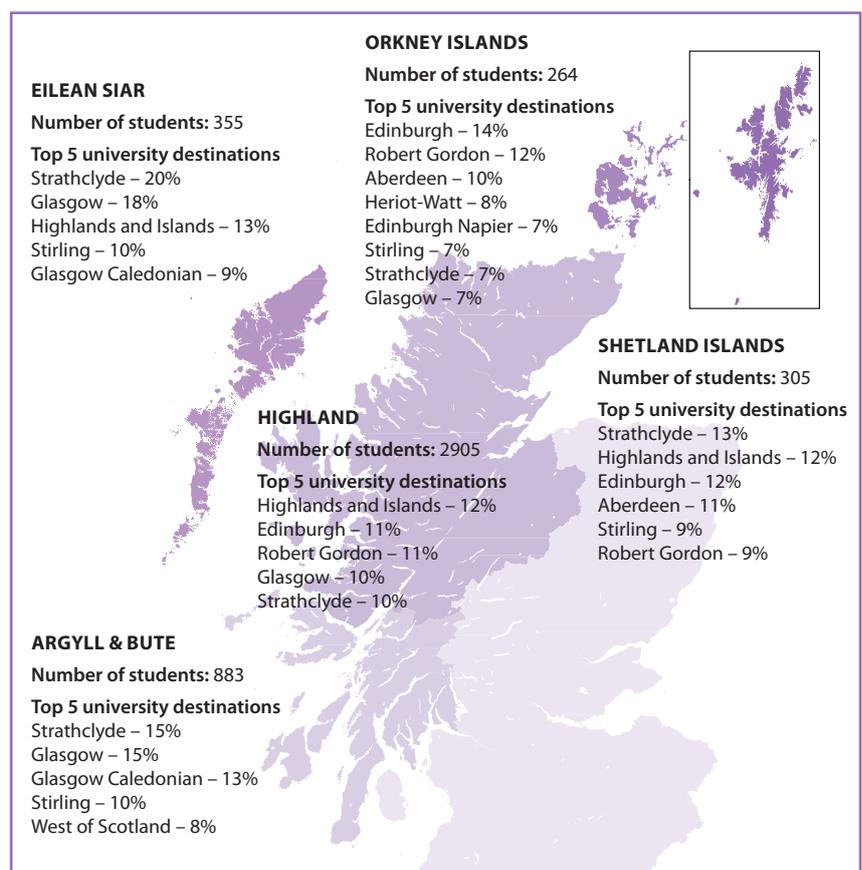
SCOTLAND

Number of students: 50,130

Top 5 university destinations

- Strathclyde – 14%
- Glasgow – 14%
- Edinburgh – 10%
- Glasgow Caledonian – 9%
- Aberdeen – 7%

Source: Higher Education Statistics Agency (2014)



Created by Duncan Stewart.

"It's difficult to get to all Open Days that I wanted to, but I only managed to get to one because it's quite expensive and there are limited buses. I applied to Dundee and Edinburgh, but even it was difficult getting there, that'd be three buses or something."
(Male pupil, S6, ARC school, February 2015)

3. Hard to reach communities and hard to reach university

Briefly speaking, when people think about distance or travel, they take various factors into account and their means of transport. The three most commonly used factors are the road mileage, the cost of the journey and the journey duration. When making the decision of travelling by private transport or by public transport, people will most likely weigh the cost and duration of the former with that of the latter.

How far is far?

The easiest way to represent the 'distance' between the 47 ARC schools and the University of St Andrews is to indicate their location on a map. However, without transport links, cost journeys or duration journeys, Map 1 can be misleading.

Example: school 5 and school 39

Mileage

In a straight line, school 5 is as far away from the University of St Andrews as school 39, i.e. almost 160 miles. But in terms of road mileage, school 39 is much closer, 196 miles against 257.

Journey duration

If the travel is done by private transport, the journey from school 5 to the University of St Andrews takes 6 hours, whereas the journey from school 39 takes almost 7 hours.

If the travel is done by public transport, the journey from school 5 to the University takes almost 7 hours, whereas the journey from school 39 takes almost 13 hours.

If travelling by public transport from the University to school 5 for an October weekend is possible, it is impossible to do so for school 39.

Journey cost

Travelling by private transport from school 5 to the University of St Andrews costs only £34, but almost £84 from school 39. Travelling by public transport from school 39 is much cheaper, it only costs £42, i.e. £13 less than from school 5.

⇒ Some people would say that school 5 is the furthest from the university because of road mileage. Others would say that school 39 is the furthest because of the travel duration. But if the travel must be done by public transport and be the cheapest, school 5 becomes the furthest.

Comparing mileage, journey duration and journey cost from the 47 ARC schools to the University of St Andrews

Mileage from an ARC school to the University of St Andrews

- No ARC school is twice as far from the University by road than in a straight line.
- 5 ARC schools are more than 1.8 times by road than in a straight line.

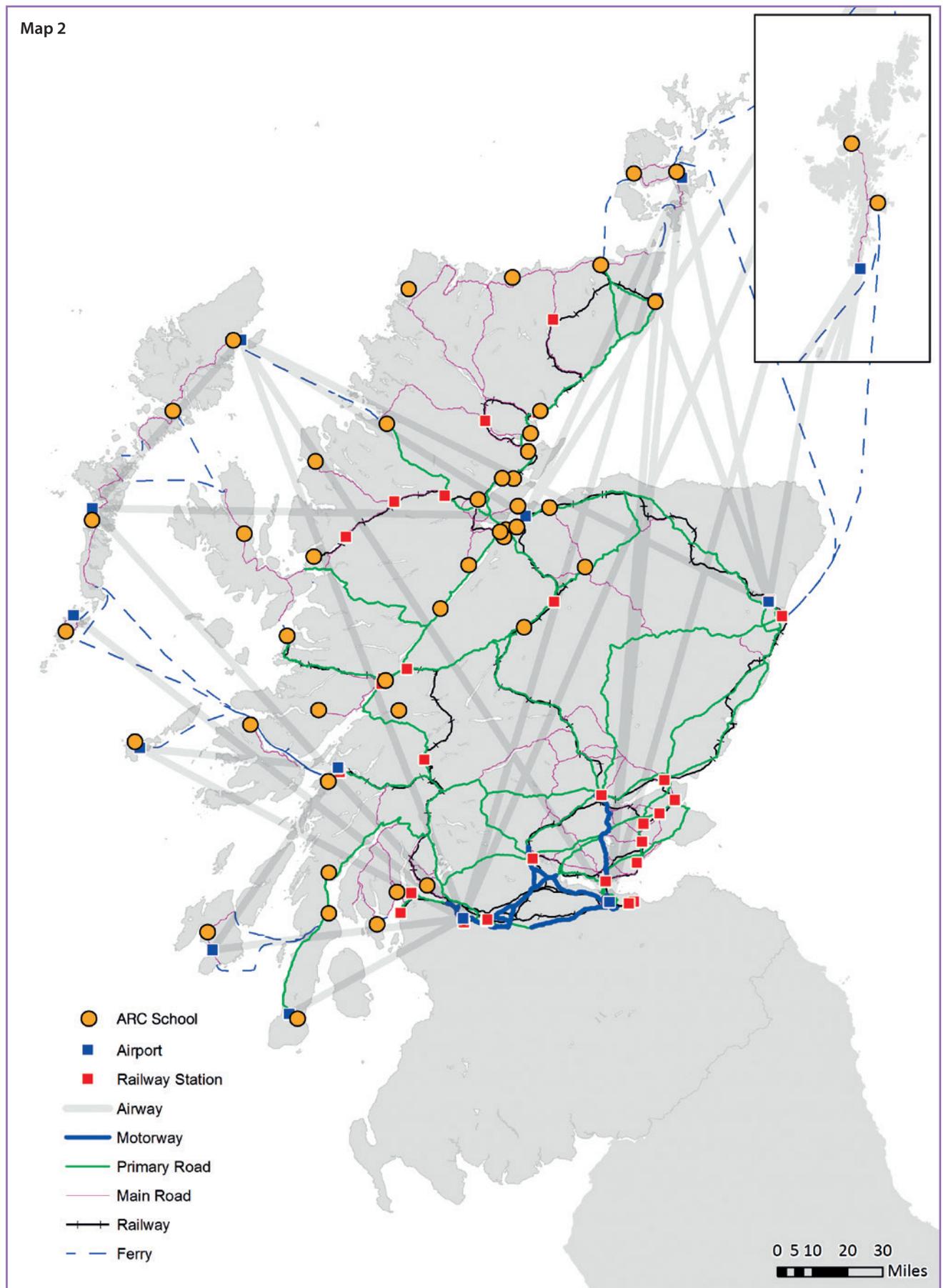
Journey duration from an ARC school to the University of St Andrews

- All ARC schools are further from the University by public transport than by private transport.
- 8 ARC schools are more than twice as far by public transport than by private transport.

Journey cost from an ARC school to the University of St Andrews

- 1 ARC school costs the same to travel to the University by private transport or by public transport.
- 8 ARC schools are twice as expensive to travel to by public transport than by private transport
- 5 ARC schools are two times less expensive to travel to by public transport than by private transport.

It is impossible to travel by public transport from the University of St Andrews to 17 ARC schools for a weekend in late October.



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Data and research methods

Data is provided by National Records of Scotland (NRS) data © Crown copyright and database right 2014, Ordnance Survey data © Crown Copyright and database right 2014; ViaMichelin Maps and route planner (2014); Traveline Scotland (2014).

As this is exploratory research, the ARC school postcode was used for origin and the St Andrews bus station was used for destination. The journey origin can be misleading as the school catchment area can be very large. The journey destination is less problematic. St Andrews bus station represents a place most evenly accessible to university halls of residence and place of registration.

The calculations of the road mileage and cost by private transport were done by using ViaMichelin. The following conditions were applied: 'quickest route', 'type of car: hatchback', 'currency: GBP', 'fuel type: petrol', 'fuel cost per litre: 130p'. Ferry miles and traffic and ferry timetables were excluded.

Journey durations and journey costs by public transport were calculated using Traveline Scotland. Both were computed in September and in October.

In September, we follow the University calendar. Students have to arrive in St Andrews for the official registration process in Orientation Week. To meet this condition, they have to depart from their ARC school after 17:00 on Friday 5 September or after 7:00 on Saturday 6 September.

The October journey rationale: After a few weeks, students may wish to go home for a weekend. Their means of transport is public transport. Students have to depart after 17:00 on Friday 24 October or after 7:00 on Saturday 25 October and return to St Andrews before 9:00 on Monday 27 October. Additional following conditions were applied. The travel time that gives the longest duration at the ARC school was always chosen. In the event when multiple results were given, the route with the least changes was always selected.

The difference between private and public transport costs needs to be interpreted with caution. In this analysis, priority on public transport choice was given to duration over distance and cost. This difference may be less extreme had greater priority to the cost than the duration of the journeys be given.

Weekend at home at the end of October (see opposite page)

All regions allow the journey. However, not all ARC schools are accessible.

For more than a third of the ARC schools, i.e. 17 ARC schools, it is impossible to do this journey. These are crossed in Map 3. This can be due to two reasons.

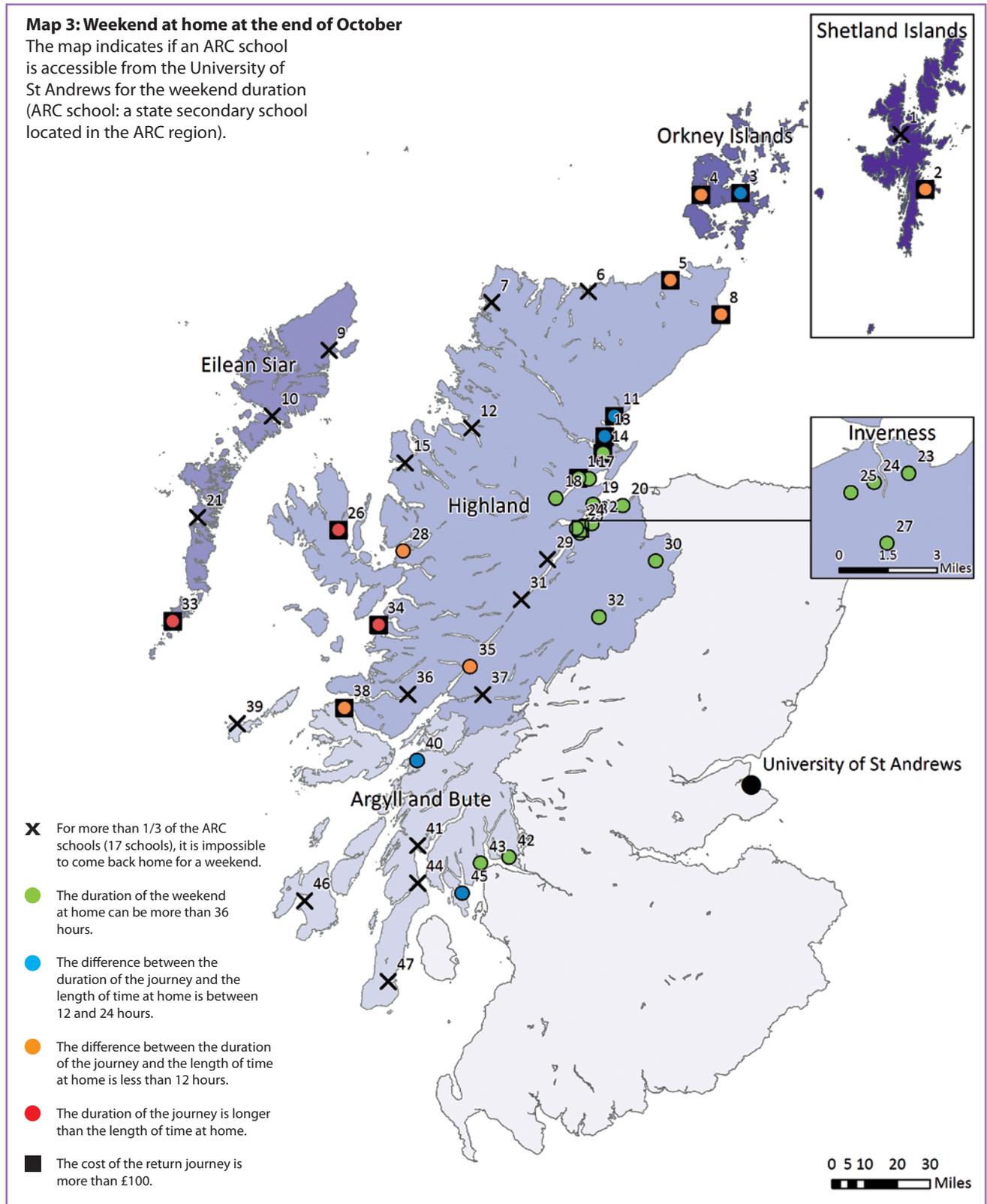
1. The return journey takes more hours than the number of hours in the weekend.
There are 8 ARC schools in this case: 7, 9, 10, 21, 36, 39, 46 and 47.
2. If it is possible to do the outward journey by public transport, it is impossible to come back to St Andrews for the 9am lecture/tutorial/seminar or laboratory.
There are 9 ARC schools in this case: 1, 6, 12, 15, 29, 31, 37, 41 and 44.

⇒ So out of 47 ARC schools, only 30 allow the short break.

For 3 ARC schools, the stay at home is shorter than the length of the journey. The three schools are in the West coast of Scotland and necessitate various means of public transport to be reached. **These are in red in Map 3.**

For some ARC schools, the stay at home can be more than 36 hours. These schools are either in the Inverness area or close to Glasgow. In most cases, a railway station is close by. **These are in green in Map 3.**

If we now consider the cost of travel by public transport at that time of the year, the three cheapest journeys are for school 22 (£49), school 42 (£57) and school 24 (£64). The three most expensive are for school 4 (£162), school 2 (£136) and school 8 (£133). Note that it costs 3.3 times more to go by public transport from St Andrews to school 4 than to school 22 for a weekend.



An alternative visual representation to the notion of distance between an ARC school and the University of St Andrews

Research methods

Three ratios giving the perception of distance were calculated for each ARC school:

- The ratio between the road mileage and the straight line mileage
- The ratio between the journey duration by public transport and the journey duration by private transport
- The ratio between the journey cost by public transport and the journey cost by private transport.

The *mileage ratio* is the ratio between the road mileage and the straight line mileage.

It captures the misleading visual perception of proximity derived from Map 1 (the scale of the map being in miles).

This ratio is always greater than 1. School 31 has a ratio equal to 1.19, i.e. the road mileage is equal to 1.2 the straight line mileage. In other words, the road mileage is 20% higher than the straight line mileage.

The ARC schools with the largest ratios, i.e. above 1.75, are located in the South West of Scotland, in Argyll & Bute and around Inverness.

Ratios whose values are between 1.19 and 1.50 are for ARC schools located in the North of Eilean Siar and those in the North West of the Highlands.

The *duration ratio* is the ratio between the journey duration by public transport and the journey duration by private transport.

It captures the opportunity cost in terms of duration to take public transport.

In our case, this ratio is always greater than 1. For instance, school 37 has a ratio equal to 2.03, i.e. the journey duration by public transport is equal to 2.03 journey duration by private transport. In other words, the duration of the journey by public transport is twice longer than the duration of the journey by private transport.

The ARC schools with the largest ratios, i.e. above 1.75 are located in the West of the Highland and Argyll & Bute.

The smaller ratios are usually found for the ARC schools located in Inverness and in the North East of the Highlands.

The *cost ratio* is the ratio between the journey cost by public transport and the journey cost by private transport.

It captures the opportunity cost in terms of cost to take public transport.

In our case, this ratio can be lower or greater than 1. For instance, school 33 has a ratio equal to 2.01, i.e. the journey cost by public transport is equal to 2.01 journey cost by private transport. In other words, public transport is twice more expensive than private transport.

The ARC schools requiring the use of the ferry have usually a ratio less than 1. Indeed travelling on foot is always cheaper than travelling with a car in this situation.

Second, the ratio for one school is almost 1 (school 21).

The larger ratios are usually for ARC schools located in the North-West or West areas in the Highlands.

Visual representation (see opposite page)

All ARC schools are first distinguished by the cost ratio. The first category gathers all ARC schools whose public transport costs are smaller than or almost equivalent to private transport costs. The second category gathers all ARC schools whose public transport are at least twice more expensive than private transport. The third category gathers all ARC schools whose public transport costs are slightly more expensive than private transport but no more than twice more expensive.

In each category, the ARC schools are then distinguished by the difference between the duration ratio and the mileage ratio. The ARC schools whose mileage ratio is higher than the duration ratio are first grouped together. This captures the idea that the ARC school may not be as far as people think. Indeed the opportunity cost of travelling by public transport is not large, but the road mileage is relatively large compared to the straight line mileage.

This visual representation gathers information on relative mileage, duration and cost. It allows an alternative grouping of schools, independent of the local authorities.

An alternative visual representation to the notion of distance:

The cost of using public transport is always cheaper or equivalent to the cost of using a car.



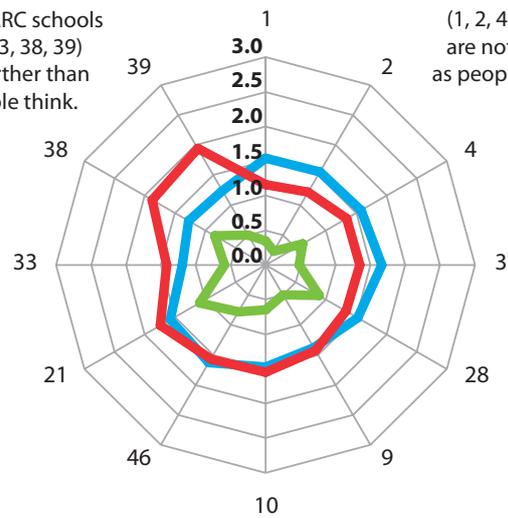
The road mileage is always greater than the straight line mileage.



The journey duration using public transport is always greater or equivalent to the journey duration of using a car.



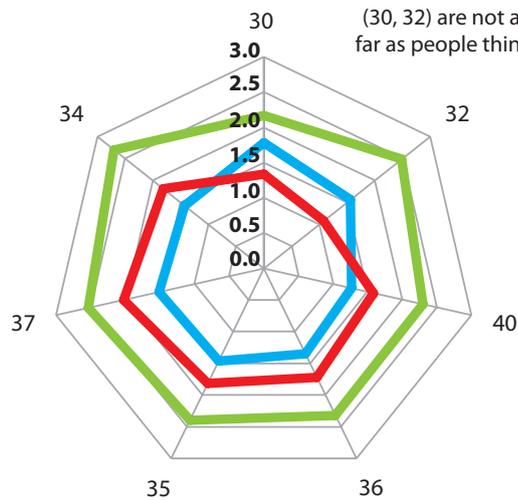
These ARC schools (21, 33, 38, 39) are further than people think.



These ARC schools (1, 2, 4, 3, 28) are not as far as people think.

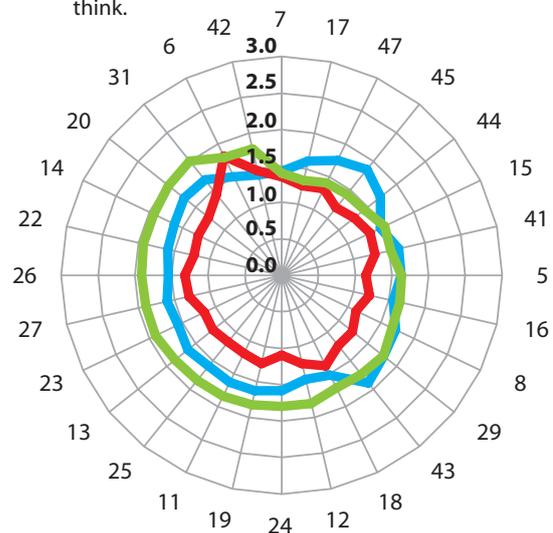
These ARC schools (9, 10, 46) are neither further nor closer than people think.

These ARC schools (30, 32) are not as far as people think.



These ARC schools (40, 36, 35, 37, 34) are further than people think.

These ARC schools (7, 42) are neither further nor closer than people think.
This ARC school (6) is further than people think.



These ARC schools (17, 47, 45, 44, 15, 41, 5, 16, 8, 29, 43, 18, 12, 24, 19, 11, 25, 13, 23, 27, 26, 22, 14, 20, 31) are not as far as people think.

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"You need to pay a lot for accommodation, and most of us don't have that kind of money so you're relying on your mum and dad, or you have to get a student loan. But then again that's the same for a lot of people, but then we have the added costs of transport and travel."

(Female pupil, S6, ARC school, February 2015)

4. Young people's voices

Young people's voices regarding 'university'

- Barriers to university might not be geographical
- Costs or qualifications may not be obstacles to university
- Perceived obstacles to university tend to decrease over time
- Overwhelming enthusiasm from parents and schools about going to university.

Young people's voices regarding 'the University of St Andrews'

- Barriers to the University of St Andrews are perceived to be higher than the barriers to other universities
- Obstacles to the University of St Andrews might not be geographical
- Costs may not be an obstacle to the University of St Andrews, but qualifications are
- Parents, schools and peers were perceived less enthusiastic about the University of St Andrews.

Research methods

A questionnaire was designed to establish students' attitudes towards HE, in particular towards the University of St Andrews. It comprised two sections. The first section evaluated young people's attitudes towards the labour market and education once they completed their Highers. The second section addressed the pupils' perception of barriers to HE, in particular to the University of St Andrews.

The questionnaire was distributed in November 2014 (see Tables 4a and 4b) and in March 2015. The questions about the University of St Andrews were not repeated in March.

At the time of the first round, S6 pupils and some S5 pupils wishing to enter into HE were in the process of completing their UCAS application form. The submission deadline to UCAS was 15 January 2015. At the time of the second round, most knew if their application was either rejected, or accepted with or without conditions.

Table 4a: First extract from the questionnaire (November 2014)

ARC – Access for Rural Communities – November 2014		
Last Name:		
First Name:		
Letter	Number	
X		
	Number	
I would like to know about your hopes and intentions in relation to Higher Education. For this purpose, you are invited to complete this questionnaire today and you will be invited to fill in another questionnaire in March or April 2015.		
All the information given will be treated with the strictest confidence: your identity will not be revealed. This information will only be used for research purposes by one member of the University of St Andrews.		
Please tick the box (✓) or cross (X) against the response that most closely reflects your own.		
1. What is your gender?		
	Male	<input type="checkbox"/>
	Female	<input type="checkbox"/>
2. How old are you?		
	15	<input type="checkbox"/>
	16	<input type="checkbox"/>
	More than 16	<input type="checkbox"/>

Data

218 S5 and S6 pupils from 3 ARC schools responded to the questionnaire. Each school has a three-year average progression rate to HE equal or less than 36%.

The majority of these participants were in S5 (57.3%), 16 years old (59.6%) and female (50.9%).

Almost all pupils lived with their parents or guardians during weekdays and weekends during school term.

A minority of parents or guardians, i.e. 27.1% had gone to university and completed a degree course at university. 17.0% of the pupils were unable to say if one of their parents or guardians had attended university and 23.9% were unable to say if one of their parents or guardians had completed a degree course at university. 70.6% of the pupils had one of their relatives who had gone to university.

Finally, the vast majority of pupils had both parents or guardians in paid work.

All participants who gave blank responses or those who did not follow the instructions were excluded from the dataset.

⇒ 161 participants responded to all questions regarding 'university' in general in November 2014 and March 2015. This sample is similar to the original dataset.

⇒ 126 participants responded to all questions regarding 'university' and 'the University of St Andrews' in November 2014. The sample is similar to the original dataset in terms of class, age and gender. However, the proportion of relatives who went to university is much higher. Indeed, 37.3% of parents or guardians of pupils went to university and completed a degree course. Only 9.5% of the pupils were unable to say if one of their parents or guardians had gone to university and 13.5% were unable to say if one of their parents or guardians had completed a degree course at university. Finally, 81% of the pupils had at least one relative who went, or had been to university.

Table 4b: Second extract from the questionnaire (November 2014)

On a scale of 1-5, with 1 being 'Strongly Agree' and 5 being 'Strongly Disagree', please provide a response that best reflects how strongly you agree or disagree with the following statements.				
21. I do not feel that there are any obstacles to my going to university.				
Strongly agree				Strongly disagree
1. <input type="checkbox"/>	2. <input type="checkbox"/>	3. <input type="checkbox"/>	4. <input type="checkbox"/>	5. <input type="checkbox"/>
22. I would like to attend a university as close to home as possible.				
Strongly agree				Strongly disagree
1. <input type="checkbox"/>	2. <input type="checkbox"/>	3. <input type="checkbox"/>	4. <input type="checkbox"/>	5. <input type="checkbox"/>
23. I am motivated to go to university.				
Strongly agree				Strongly disagree
1. <input type="checkbox"/>	2. <input type="checkbox"/>	3. <input type="checkbox"/>	4. <input type="checkbox"/>	5. <input type="checkbox"/>
24. My parents are enthusiastic about me going to university.				
Strongly agree				Strongly disagree
1. <input type="checkbox"/>	2. <input type="checkbox"/>	3. <input type="checkbox"/>	4. <input type="checkbox"/>	5. <input type="checkbox"/>
25. My peers are enthusiastic about me going to university.				
Strongly agree				Strongly disagree
1. <input type="checkbox"/>	2. <input type="checkbox"/>	3. <input type="checkbox"/>	4. <input type="checkbox"/>	5. <input type="checkbox"/>
26. I feel support for me going to university within my general community.				
Strongly agree				Strongly disagree
1. <input type="checkbox"/>	2. <input type="checkbox"/>	3. <input type="checkbox"/>	4. <input type="checkbox"/>	5. <input type="checkbox"/>
27. My school is enthusiastic about me going to university.				
Strongly agree				Strongly disagree
1. <input type="checkbox"/>	2. <input type="checkbox"/>	3. <input type="checkbox"/>	4. <input type="checkbox"/>	5. <input type="checkbox"/>
28. I feel concerned that it will cost too much money for me to go to university.				
Strongly agree				Strongly disagree
1. <input type="checkbox"/>	2. <input type="checkbox"/>	3. <input type="checkbox"/>	4. <input type="checkbox"/>	5. <input type="checkbox"/>
29. I do not need a degree to do what I want to do in my life.				
Strongly agree				Strongly disagree
1. <input type="checkbox"/>	2. <input type="checkbox"/>	3. <input type="checkbox"/>	4. <input type="checkbox"/>	5. <input type="checkbox"/>

Changes in perceived barriers and attitudes over time

Sample: 161 S5 and S6 students attending 3 ARC schools. Data collected in November 2014 and March 2015. (Figures given as percentages and percentage difference over a given time period)

Perceived barriers If over time and overall, our participants did not seem to have changed their perception about obstacles to going to university, their perception about geographical, qualifications or pecuniary obstacles seemed to have declined in March 2015. This decline could be explained twofold. Firstly, our participants might have decided not to go to university. Secondly, they might have received offers from the universities they had applied for. In both cases, the obstacles became less of an issue.

The level of **personal enthusiasm and motivation** about going to university is high. Indeed, a strong majority of participants felt that they would enjoy going to university and were motivated to go to university in November 2014. This feeling declined over time and could be explained twofold. If the participant's application was rejected in March 2015 or if the conditional offer was unlikely to be met, the motivation or enthusiasm could only decrease. If the participant's application was accepted, the motivation and enthusiasm would decrease as the goal to receive an offer had been met.

Support The level of enthusiasm about going to university felt from parents, the school and peers is high. Indeed, a large majority of participants felt that their parents were enthusiastic about them going to university. This feeling declined over time in favour of the 'undecided' category. The majority of participants felt that their peers were enthusiastic about them going to university. This feeling increased over time at the expense of the 'disagree/strongly disagree' category.

The majority of participants felt that their school was enthusiastic about them going to university. This feeling increased over time at the expense of the 'undecided' category. As time went by, the decline in perceived enthusiasm levels coming from parents may be explained by the outcomes of the university applications or the participants' decisions regarding HE (see above). The increase in perceived enthusiasm levels coming from the school may be explained by the fact that the school might give more information about university to current S5 pupils in March 2015 or the looming examinations period.

"I do not feel that there are any obstacles to my going to university"

	November 2014	March 2015
Strongly agree / agree	39.1	+0.0
Disagree / strongly disagree	28.6	-0.6

"I would like to attend a university as close to home as possible"

	November 2014	March 2015
Strongly agree / agree	25.5	-1.2
Disagree / strongly disagree	46.6	+5.0

"I feel concerned that it will cost too much money for me to go to university"

	November 2014	March 2015
Strongly agree / agree	52.2	-8.1
Disagree / strongly disagree	23.0	+8.1

"I do not think I will have the right qualifications to go to university"

	November 2014	March 2015
Strongly agree / agree	32.9	-3.1
Disagree / strongly disagree	37.9	+1.9

"My _____ are/is enthusiastic about me going to university"

	November 2014	March 2015
Parents: Strongly agree / agree	70.2	-5.0
Peers: Strongly agree / agree	49.7	+1.9
School: Strongly agree / agree	58.4	+6.8

"I feel that I will enjoy going to university"

	November 2014	March 2015
Strongly agree / agree	73.9	-6.2
Disagree/strongly disagree	8.1	+8.1

"I am motivated to go to university"

	November 2014	March 2015
Strongly agree / agree	64.6	-3.7
Disagree/strongly disagree	19.9	+7.5

Changes in perceived barriers and attitudes between the University of St Andrews and ‘university’

Sample: 126 S5 and S6 students attending 3 ARC schools. Data collected in November 2014.

(Figures given as percentages and percentage difference between the generic statement and the St Andrews statement)

“I do not feel that there are any obstacles to my going to ____.”

	University	University of St Andrews
Strongly agree / agree	42.9	-19.0
Disagree / strongly disagree	23	+18.3

“I would like to attend a university as close to home as possible / I would like to attend a university as close to home as possible and the University of St Andrews is too far from me”

	University	University of St Andrews
Strongly agree / agree	21.4	+11.1
Disagree / strongly disagree	55.6	+18.3

“I feel concerned that it will cost too much money for me to ____.”

	University	University of St Andrews
Strongly agree / agree	46.8	-9.5
Disagree / strongly disagree	26.2	+9.5

“I do not think I will have the right qualifications to go to ____.”

	University	University of St Andrews
Strongly agree / agree	23.0	+16.7
Disagree / strongly disagree	49.2	-21.4

“My ____ are/is enthusiastic about me going to ____.”

	University	University of St Andrews
Parents: Strongly agree / agree	84.9	-66.7
Peers: Strongly agree / agree	59.5	-50.0
School: Strongly agree / agree	68.3	-52.4

“I feel that I will enjoy going to ____.”

	University	University of St Andrews
Strongly agree / agree	90.5	-50.8
Disagree/strongly disagree	2.4	+16.7

“I am motivated to go to ____.”

	University	University of St Andrews
Strongly agree / agree	86.5	-63.5
Disagree/strongly disagree	4.0	+50.0

Perceived barriers

Our participants felt that there were more obstacles to the University of St Andrews than to other universities. However, these barriers were not geographical. Almost three quarters did not feel that St Andrews is too far from home. These barriers were not pecuniary. Fewer pupils felt concerned that it will cost too much to go to the University of St Andrews than to another university. But a larger proportion of pupils did not think that they had the right qualifications to go to the University of St Andrews as opposed to another university.

Personal enthusiasm and motivation

The combination of various factors may explain why they felt that they were less motivated to attend the University of St Andrews or that they would not enjoy going to this university. As we emphasised above, more pupils did not think they would meet the University of St Andrews entrance qualifications.

This needs to be read alongside two additional figures and the image of the University of St Andrews. Firstly, almost 40% felt that the University of St Andrews did not offer the degree that they wished to study. Secondly, more than 55% indicated that they did not know enough about the University of St Andrews. Finally, the University of St Andrews is a highly competitive and cosmopolitan university in a non-urban location. These three elements might not attract these pupils.

Support

This lack of enthusiasm or motivation may be explained by a feeling that their parents, peers and school were less enthusiastic about them going to the University of St Andrews.

“Well, not everyone knows what they want to do if they want to go to university, we’re not aware of what courses are available and what subjects and qualifications are needed to actually get to them. I’m just kind of going by what I like and not by what I actually need. I know some that I think I need.”

(Female pupil, S6, ARC school, February 2015)

5. Study portal

Prospective students can gather information about HE courses from various sources. However, it may be difficult for them to decide which degree they wish to study at university.

Our study portal helps pupils to finalise a decision about degree programme or subjects they wish to study at university from their own interests.

Our study portal allows:

- pupils living in remote areas to access information about subjects, degree programmes and professions from an alternative perspective
- pupils to make a more informed decision about subjects and degree programme they wish to study at university.



Participant Information: Matching Careers, Interests and Degree Programmes

Research Project

Matching Careers, Interests and Degree Programmes

Researchers

Dr Graham Kirby from the School of Computer Science and Dr Laurence Lasselle from the School of Management. Our contact details are below.

Thank you for your interest in our research. This page explains its purpose and what you will be required to do should you wish to participate in this research. Please take the time to read it.

You can gather information about Higher Education courses from various sources. However, it may be difficult to decide which degree they wish to read at University.

Our research aims to assist you in this decision-making process. We are developing a portal that will guide students like yourself in picking academic subjects and degree programmes (e.g. Economics, Divinity, Computer Science) that they may wish to read at university, by matching them to activities they may enjoy or are willing to try (e.g. collecting data, giving travel advice), and professions that they may want to do or are interested in trying after university (e.g. architect, nurse).

Background and rationale

HESA statistics indicate that 6.2% of full-time first-year HE students who attended a Scottish university in 2012-13 dropped out (the UK average is 5.7%). There are large discrepancies between institutions. The lowest drop-out rate is achieved by the University of St Andrews (1.8%), the highest by the University of the West of Scotland (14.4%).

It is commonly acknowledged that adequate support and information during the study choice process could prevent dropping-out and improve success rates.

Our study portal is in its exploratory phase and mirrors some essential elements of ‘SIMON’, a portal designed by the University of Ghent. We are benefiting from Ghent’s experience at this stage of development.

SIMON is an interest inventory based on the RIASEC test. Flemish secondary pupils and students who are in search of a degree are asked to indicate in a yes-no format whether they would enjoy some activities and professions (evaluation of interests phase). They then go through a basic mathematics test, a basic vocabulary test and a self-efficacy test (evaluation of capacities). From these tests, students are presented with a variety of degrees they might be interested to study at a Flemish tertiary institution.

The **RIASEC** test (or Holland Codes) is derived from the theory of careers and vocational choice based upon personality types developed by the psychologist John L Holland in 1985. Each letter or code stands for a particular "type": Realistic (Doers), Investigative (Thinkers), Artistic (Creators), Social (Helpers), Enterprising (Persuaders), and Conventional (Organisers). This test has been adapted to non-vocational subjects and is frequently used in some US HE institutions to link interests, academic subjects, degree programmes and careers.

Questionnaire Part 1: Activities

- Select "Like" for activities you enjoy doing, or you would like to try.
- Select "Don't like" for activities you would not like to do.
- If you really don't know what the activity involves, select "Don't understand".
- If you don't want to answer, select "Prefer not to answer".

Activities	Like	Don't like	Don't understand	Prefer not to answer
Developing electronic systems	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Analysing the grammatical structure of a sentence	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Helping people with speech disorders	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Recruiting a job candidate	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Monitoring quality standards for food safety and hygiene	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>
Analysing and interpreting research results	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Repairing malfunctioning electrical equipment	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Carrying out laboratory analyses	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Designing a poster for an exhibition	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Helping others with their personal problems	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Organising a conference	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>

Questionnaire Part 2: Occupations

- Select "Like" for occupations you would like to practise or that you would like to try.
- Select "Don't like" for occupations you would not like to do.
- If you really don't know what the occupation involves, select "Don't understand".
- If you don't want to answer, select "Prefer not to answer".

Occupations	Like	Don't like	Don't understand	Prefer not to answer
Civil engineer	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Fashion designer	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Policy adviser in political and international relations	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Recruitment and selection adviser	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Damage expert	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Agricultural technician	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>
Teacher	<input type="radio"/>	<input checked="" type="radio"/>	<input type="radio"/>	<input type="radio"/>
Business economist	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>
Accountant	<input type="radio"/>	<input type="radio"/>	<input type="radio"/>	<input checked="" type="radio"/>

Current phase of the project development

As of today, we are only considering the evaluation of interests phase. In other words, we are only focusing on the academic choices of prospective students, aiming to give them a clearer idea about the academic subjects they would like to study at university and to which careers they can move into.

Students need to respond in a yes-no format to a series of very short questions about activities and professions they would enjoy (see above). From the aggregation of their responses the portal deduces their three main personality types and offers suggestions for the subject(s) they may be interested in studying at university. Students are given feedback in terms of potential subjects, careers prospects and professions of St Andrews graduates in those subjects (see right hand side).

Results

Thank you for choosing to complete this optional survey. Please tell us about the accuracy of your profile in the feedback box at the end.

Your interest code is: EIR

People in this category often:

- prefer to work with objects and things
- like to solve problems, perform experiments, and conduct research
- prefer activities selling and promoting

You seem to be particularly interested in these subjects. Click on a section to show relevant links.

- ▶ Ecology
- ▶ Environmental Biology
 - Job search on Prospects.ac.uk
 - Employment Case Studies (St Andrews)
 - Work Experience Case Studies (St Andrews)
- ▶ Materials Science
- ▶ Physics
- ▶ Zoology

If your school would like to use this innovative study portal, don't forget to sign up!

Fill in the response card inserted in the ARC brochure and return it ASAP.

Please provide the following details and return the card ASAP.

Study portal: a link to more than 100 degree programmes, 50 subjects and graduate professions.

- Yes, my school wishes to use the portal.
- Yes, my school wishes to receive more information about the portal.

(Please print clearly in BLOCK CAPITALS)

First name: _____

Last name: _____

Job title: _____

Email address: _____

Headteacher's first name: _____

Headteacher's last name: _____

Name of the school: _____

Address of the school: _____

More information:

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School of Management

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ARC* region:

Argyll & Bute,
Eilean Siar,
Highland,
Orkney Islands
and
Shetland Islands

47%

of pupils**
would not like to
attend a university
close to home
(November 2014)

52%

of pupils**
would not like to
attend a university
close to home
(March 2015)

TOP100

World University
(QS ranking)

TOP 20

Research University

47

ARC state secondary
schools

47%

of pupils**
felt concerned
that it will cost too
much for them to
go to university
(November 2014)

37%

of pupils**
felt concerned that
it will cost too much
for them to go to the
University of St Andrews
(November 2014)

**Stunning
coastal
location**

**Rural
communities**

For more than
1/4
of the ARC schools,
it costs less to travel
to St Andrews by
public transport
than by car

It is impossible to travel
by public transport
from the University to

17

ARC schools for a
weekend in late
October

**Cosmopolitan
community**

* ARC: Access for Rural Communities

** Sample of ARC S5/S6 pupils

www.st-andrews.ac.uk/study/access/school-college-projects/arc

