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# Expectations of progression to university among pupils in rural communities: the role of social influences

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## ABSTRACT



This paper examines the social influences determining S5/Year 12 and S6/Year 13 (final year) pupils' expectations of progression to university in a Scottish rural context in which pupils are less likely to go to university. In particular, we investigate the extent to which perceived support from parents, peers, and school, taking into account pupils' own evaluation of their qualifications, is associated with their self-assessed likelihood of university entry. Our sample is drawn from a repeated questionnaire completed by pupils at three Scottish state secondary schools whose catchment areas are mainly rural. Our results are twofold. First, it is the perceived enthusiasm of their parents and peers, rather than their school, which is primarily correlated with pupils' expectations of progression to university all else equal. This is true whether pupils report low or high qualification barriers to university entry. Second, perceived parental support is stronger for those whose parents had themselves attended university, especially for pupils identifying low qualification barriers. Given that school support appears to lack significance in pupils' expectations of progression to university in this context, there is potentially scope for policymakers, universities and schools located in these rural communities to strengthen this influence.

## KEYWORDS

Higher education; rurality; support; pupils' expectations

## Introduction

This paper examines pupils' expectations of progression to university in three Scottish rural communities and the social influences determining those expectations. Our attention to expectations follows Anders (2017), Harrison and Waller (2018) and Harrison (2018) who argued that it is not aspirations which predict outcomes with respect to Higher Education (HE)<sup>1</sup> access but rather pupils' expectations in terms of their self-assessed likelihood that they will be able to progress to HE. Evidence is growing on the factors which affect the level and changes in these expectations. Analysing data from the Longitudinal Study of Young People in England, Anders (2017) and Anders and Micklewright (2015) identified the influence of socioeconomic status on changes in young people's expectations of applying to university between the ages of 14 and 17.

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Using data collected from widening participation practitioners in HE, Harrison and Waller (2018) and Harrison (2018) documented the importance of academic attainment and social influences in shaping pupils' expectations. Our results, derived from the first survey of pupils' expectations in three Scottish secondary schools, reinforce the evidence presented in their research and enable us to contextualise social influences on pupils' expectations of progression to university in a rural environment. Indeed, the data permit us to investigate the perceived importance of parents, peers and schools for reported barriers to HE, taking into account qualification obstacles and family background in a rural context. Living in a rural community may make university pathways less desirable due to the characteristics of the local job market, vocational training opportunities, or the prohibitive financial or social costs of migrating out of a close-knit community. Geographic isolation may limit awareness of the benefits of going to HE, reinforced by lack of access to widening participation initiatives (Bridge Group, 2019; Carrillo-Higueras & Walton, 2020; Gibson et al., 2022; Turner, 2020).

Specifically, for three mainly rural Scottish communities, we examine S5/Year 12 and S6/Year 13 (final year) pupils' own evaluation of their likelihood of progression to university using responses to a repeated questionnaire and the extent to which this is positively related to the enthusiasm pupils perceived for HE entry from key influencers. We interpret perceived enthusiasm as a measure of support or social influence experienced by pupils from those who know them best. We further evaluate how this support varies according to the strength of perceived qualification barriers to university entry and parental HE participation. To the best of our knowledge, this is the first quantitative study in the Scottish context to investigate the interplay between parents, peers and schools in shaping pupils' educational expectations. It is related to the recent work of Cunninghame et al. (2020), Vernon and Drane (2020) and Smyth (2023) in their studies of social influences on pupils' expectations. Unlike, for example, Dockery et al. (2022) and Koshy et al. (2019), we do not have data on parental expectations but rather focus on pupils' own evaluation of the support they perceive from key influencers comprising their parents, peers and schools.

Our paper is organised as follows. We first outline the context, related literature, and research questions. We then present our data and methods, report the results, discuss the research findings and draw some concluding policy implications.

## Background

Studies typically find that the probability of entry to HE depends on a range of factors, including gender, the attitudes of influential adults and peers, ethnicity, socio-economic status, prior attainment, self-efficacy, and aspirations (see, for example, Crawford & Greaves, 2015; Crawford et al., 2016; Montacute & Cullinane, 2018). However, the role of aspirations in HE pathways is a matter of some debate. In the case of the United Kingdom, it was extensively revisited by Berrington et al. (2016) who examined differences in HE aspirations and participation by gender, socioeconomic status, and ethnicity and showed the importance of parental attitudes in explaining observed disparities. On the other hand, in their case studies of three schools in London, Nottingham and Glasgow, St Clair et al. (2013) found no deficits in the HE aspirations of pupils.<sup>2</sup> Likewise, using the lens of 'possible selves' introduced by Markus and Nurius (1986), Harrison and Waller (2018) and

Harrison (2018) argued that under-representation in HE is not due to a deficit in aspirations. Even if aspirations are high, and entry into HE is considered desirable for a future self, young people may not perceive it to be a probable outcome. As a result, their incentive to pursue HE is diminished by these negative expectations. However, as Khattab (2015) found, if high aspirations are reflected in high academic achievement at school, this can have a strong positive impact on subsequent applications to university for those with initially low expectations at ages 13 to 14.

Assessments of probable future selves by adolescents are derived from their personal experiences, the socio-cultural context, their academic attainment and from the perceived influence of others' expectations and support (Oyserman & Fryberg, 2006). With respect to the latter factor, there is strong evidence that perceived support from influential adults, both parents and schools, can have a powerful impact on pupils' expectations, academic choices, motivation, and achievement (Anders & Micklewright, 2015; McCoy et al., 2014; Mulcahy & Baars, 2018; Oyserman et al., 2002; Rubie-Davies et al., 2010; Tavani & Losh, 2003; Vernon & Drane, 2020).

Parental expectations and level of support in turn depend on the academic abilities of their offspring (Dockery et al., 2022; Gorard & See, 2013; Harrison & Waller, 2018) parental educational experience, ethnicity, occupation and income (Anders & Jerrim, 2014; Apps & Christie, 2018; Connor et al., 2004; Gemici et al., 2014; Koshy et al., 2019; Lippman et al., 2008). Schools also have influence on educational and occupational trajectories. They build pupils' confidence and provide guidance and information about transition from school to work or post-secondary education (Marson-Smith et al., 2009). The level of school support varies depending on various factors, including the type of school and neighbourhood (Ferguson & Griffiths, 2018; Montacute & Cullinane, 2018; Owens & Candipan, 2019).

Our focus on rurality is motivated by a growing literature which insists that rural communities may be particularly disadvantaged in accessing HE (Chenoweth & Galliher, 2004; Cuervo, 2016; Montacute & Cullinane, 2018; Petrin et al., 2014; Roberts & Green, 2013; Schafft, 2016). As recently well summarised by Echazarra and Radinger (2019), the disadvantage arises when pupils in rural areas face greater geographical barriers to university in the form of higher transport costs and the psychological challenge of moving to larger metropolitan areas where HE institutions are usually located. The valuations pupils place on these costs will naturally be influenced significantly by their social context, including the attitudes of peers, parents, and schools. These social interactions can matter across the range of academic ability such that pupils with otherwise very similar characteristics may make different HE participation choices. Indeed, the most recent data on attainment and progression in Scotland (Scottish Government, 2021) show that, although there is no large difference between urban and rural residents' attainment in terms of the Scottish Higher qualifications required for university entry, those living in rural communities are less likely to have gained a degree level qualification.

Furthermore, studying expectations for HE specifically in rural communities is particularly desirable for two reasons. Firstly, some jobs vital to rural communities can only be filled by people with graduate qualifications, such as high school teachers. These jobs are more likely to be appealing to young people of local origin given their existing strong community networks (Laven & Wilkinson, 2003; Petrin et al., 2014). Secondly, insofar as tertiary educated young people return to their communities of origin, this will foster local

development and also provide role models and sources of career information for younger people attempting to imagine their possible future selves (Petrin et al., 2014; Schafft, 2016). Examining rural youths' expectations using the lens of possible selves draws attention to the limits a rural environment can place on the range of educational and occupational pathways considered as probable future selves compared to their urban peers. In particular, the limited range of occupations and the lack of graduate jobs, role models, or other career information and support may diminish the perception that entry to HE is probable for rural pupils relative to those in more advantaged urban areas (Oyserman & Fryberg, 2006; Shepard, 2003).

Access to HE for young people from disadvantaged backgrounds in Scotland was previously investigated by Forsyth and Furlong (2003). They studied how academic attainment, financial constraints, and social pressure influenced choice of institutions and student progression within HE. Financial and emotional burdens were also highlighted by Pavis et al. (2000) who examined the complex reasons for dropping out of HE for some young rural Scots. Lasselle (2016, 2017) confirmed the role of financial, educational, personal and geographical barriers to HE progression using evidence collected from participants living in several rural Scottish communities. The current paper extends her exploratory work by investigating two research questions: (1) To what extent are pupils' expectations shaped by perceptions of educational obstacles and the enthusiasm of parents, peers, and schools for their progression to university? (2) To what extent is parental educational background important for perceived barriers to university in terms of qualifications and support? To anticipate the results, we find that across the range of qualification barriers, it is variation in the perceived support from parents and peers which matters much more than school enthusiasm for pupils' expectations of progression to university. We also find that parental support is perceived as stronger from those parents who had themselves attended university and especially by those pupils reporting low qualification barriers to university entry.

## Data and descriptive statistics

We use data from a repeated questionnaire<sup>3</sup> completed by S5 and S6 pupils in November 2014 and March 2015 in three Scottish state secondary schools. The three schools are closely related to their local communities and primarily rural. The majority of their pupils do not continue their studies in HE. Indeed, at the time of the research, their three-year progression rate to HE was equal or less than the Scottish national average of 36% and the three schools had just started to participate in a pioneering programme<sup>4</sup> aimed at increasing awareness of HE for Scottish rural communities and funded by the Scottish Government, the Scottish Funding Council and the University of St Andrews. The smallest school (labelled School A) with an enrolment of around 150 pupils is located on one of the Scottish islands. The other two schools (B and C) are medium sized with enrolments of approximately 700 and 400 pupils respectively, with the former drawing a minority of pupils from an urban settlement. Unfortunately, we do not have information on the rurality of individual pupil residence. Compared to schools in urban areas, few of their pupils are from minority ethnic groups or registered for free-school meals, a government benefit only available to children from low income households. As such, it is important to caution when interpreting the results that they may not be

representative of even all rural schools and we have no data from urban schools for comparison. Note that applications to HE courses delivered by Scottish HE institutions are usually submitted by S6 pupils. Entry requirements to these courses are based on attainment in Scottish Higher qualifications. Higher examinations are typically taken by S5 pupils. As a result, S6 pupils usually know their Higher grades at the time of their application to HE and can take additional Highers in their final year at secondary school with results published the following summer.

The repeated questionnaire has three sections covering (i) demographic information; (ii) respondents' expected academic and labour market pathways on leaving school and; (iii) respondents' attitudes to HE, and the enthusiasm they perceive from parents/guardians,<sup>5</sup> peers, and school towards their potential entry into university. This third section of the questionnaire comprised a list of statements. For each, the participants could choose between five options from 'Strongly Agree' or 'Very Likely' to 'Strongly Disagree' or 'Very Unlikely'. The middle option of this five-point Likert scale was the neutral one: 'Neither Agree/Neither Disagree' or 'Neither Likely/Neither Unlikely'. The questionnaires were distributed to all S5 and S6 pupils who had consented to participate in the research and were present in the classroom on the day(s) agreed with the researchers, relevant teachers and headteachers.

In total, 218 questionnaires were completed in November. Ten of these were disregarded due to partial completion. The descriptive statistics for our most

**Table 1.** Descriptive statistics at each date (five-point Likert scale).

	(1) November 2014	(2) November 2014	(3) March 2015
	Percentage Strongly Agree/ Agree	Percentage Strongly Agree/ Agree	Percentage Strongly Agree/ Agree
Sample size	208	172	172
How likely do you think it is that you will go on to university when you leave school?	56.3	57.0	54.7
I do not feel that there are any obstacles to my going to university.	38.0	39.0	39.0
I would like to attend a university as close to home as possible.	25.0	26.8	26.7
I feel concerned that it will cost too much for me to go to university.	50.0	51.8	42.4
I do not think I will have the right qualifications to go to university.	34.6	33.7	28.5
I feel that I will enjoy going to university.	72.0	74.3	67.7
I am motivated to go to university.	61.1	64.0	59.9
My parents/guardians are enthusiastic about me going to university.	68.8	69.2	64.5
My peers are enthusiastic about me going to university.	48.1	47.7	50.6
My school is enthusiastic about me going to university.	57.2	57.6	64.5
<b>Percentages for binary variables</b>			
Female	50.0	50.6	50.6
At least one parent attended university	33.2	33.8	33.8
S6	43.8	47.7	47.7
School A	11.5	14.0	14.0
School B	26.4	29.6	29.6
School C	62.1	56.4	56.4

important variables are listed in Table 1 below. As shown in column (1), our final sample of 208 respondents<sup>6</sup> is evenly split by gender. One third indicated that at least one parent attended university. Around 44% of the pupils were in S5, the rest in S6. In November, those from both cohorts wishing to enter HE were in the process of completing their university (UCAS)<sup>7</sup> application form given the submission deadline of 15 January 2015. By March, most pupils would know whether their application had been either rejected or accepted with or without conditions. They had also received a signal of their prospective grades in forthcoming summer examinations, having completed their in-school preliminary (mock) examinations during the period between November and March.

The descriptive statistics indicate that the majority of respondents expected to go to university. More stated that they would enjoy going there and were motivated by its prospect. While over one third reported no obstacles to university entry, half of the respondents expressed a concern about its costs and one third cited qualification barriers to university entry. In terms of the enthusiasm perceived by pupils from key influencers, many pupils felt strongly supported by their social network, in particular parents and schools, with fewer reporting high enthusiasm from their peers.<sup>8</sup> There is some sample attrition between November and March with the number of usable questionnaire responses declining from 208 to 172. Column (2) of Table 1 documents the characteristics of the smaller 172 pupil sample in November. All these pupils completed the original questionnaire. Reassuringly, comparing columns (1) and (2), the pupils in the smaller sample are very similar along all dimensions to those in the larger sample at the November date. Formal z-tests of the equality of the proportions in columns (1) and (2) cannot reject the null hypothesis that the reported percentages are the same for each variable at standard significance levels. In terms of the composition of the samples, this finding provides reassurance that the attrition is essentially random and should not bias any comparisons over time. Column (3) describes the sample characteristics in March. Compared to the November sample, there is evidence of some limited decline in expectations of progression, enjoyment and motivation to university but also a diminution of perceived cost and qualification barriers on average. Interestingly, perceived enthusiasm from the school for university progression catches up with that of parents as the former increases and the latter declines somewhat.

## Statistical methods

To investigate our research questions further, we specify the following baseline statistical model:

$$\text{Univprob}_i^* = \alpha + \beta\text{Support}_i + \delta\text{Quals}_i + \theta X_i + u_i$$

$\text{Univprob}_i^*$  is an underlying latent variable for pupil's likelihood to attend university. This variable is not directly observed. Instead, we observe an ordered categorical response on the five-point Likert scale denoting the extent of the pupil's agreement with the statement of how likely it is that they will progress to university. Assuming the random error term  $u_i$  follows a logistic distribution, the equation is estimated as an Ordered Logit model using maximum likelihood methods. In the Ordered Logit, the probability that each

alternative outcome  $j$  (here  $j = 1, 2, \dots, 5$ ) is chosen is the probability that the latent variable  $\text{Univprob}_i^*$  is between the two boundaries  $\gamma_{j-1}$  and  $\gamma_j$

$$\Pr(\text{Univprob}_i = j) = \Pr(\gamma_{j-1} < \text{Univprob}_i^* \leq \gamma_j)$$

where  $\gamma_0 = -\infty$  and  $\gamma_5 = \infty$ . These  $\gamma_j$  cutpoints are estimated together with the unknown coefficients.

*Support* is a set of three support variables defined as pupils' perceptions of the enthusiasm of their parents, peers, and school for their university progression. For each respondent, we coded the response from one for 'Strongly Disagree' to five for 'Strongly Agree' with the statement that the relevant party is enthusiastic about the pupil attending university. The *Quals* variable is our measure of the intensity of perceived qualification barriers. It is constructed using pupils' responses to the statement, 'I don't think I will have the right qualifications to go to university'. These are also coded from one for 'Strongly Disagree' (low qualification barriers) to five for 'Strongly Agree' (high barriers). *Support* and *Quals* are the main variables of interest. It is important to note that both of these may be endogenous. This could be due to reverse causality such that expectations of university progression affect perceptions of the enthusiasm of others and pupils' judgements about having the right qualifications. In addition, endogeneity of the explanatory variables may arise from unmeasured pupil attributes, such as academic ability, which induce a covariance between the error term and the explanatory variables. The consequence is that the estimated statistical associations, while suggestive, do not establish a causal relationship.

The set of variables  $X_i$  controls for individual characteristics which may be relevant to the likelihood to enter university including pecuniary (*Money*) and geographical (*Distance*) barriers to university, dummy variables for the school (*A*, *B*), gender (*Female*), whether at least one parent attended university (*Univ Parent*) and year of study (*S6*).

## Results

The Ordered Logit coefficient estimates are presented in [Table 2](#) and precise definitions of the variables are given below the table.

The results in column (1) show that the coefficients on the main variables of interest have the expected signs. Expecting not to have the right qualifications is naturally a barrier to university progression. Perceived enthusiasm from other key influencers is positively related to pupils' self-reported likelihood of entering university. Notably, it is perceived support from peers and parents which matters much more than enthusiasm from schools, given that the estimated coefficient of the *School* variable is quantitatively small and not statistically significant. Results for the remaining variables show that parental participation in university positively predicts pupils' perceived likelihood of entering university. Financial considerations do not appear to be important and female pupils have weaker expectations of going to university. The preference to attend a university as close to home as possible did not seem to matter for expected progression in terms of the magnitude and (lack of) statistical significance of the estimated coefficient on the *Distance* variable. It should be cautioned that, as the sample is small, this makes it more challenging to detect statistical relationships and this could partly explain the insignificance of the *Money* and *Distance* variables.



**Table 2.** Ordered Logit estimates for progression to university variables: November.

VARIABLES	(1) Univprob	(2) Univprob
Peers	0.69*** (0.15)	0.71*** (0.15)
Parents	0.73*** (0.16)	0.75*** (0.16)
School	0.10 (0.16)	0.06 (0.15)
Money	0.15 (0.13)	0.11 (0.13)
Quals	-0.67*** (0.14)	-0.65*** (0.13)
Distance	-0.07 (0.13)	-0.11 (0.12)
Female	-0.54* (0.30)	-0.51* (0.30)
Univ Parent	0.51* (0.30)	0.52* (0.29)
School A	-1.06** (0.45)	
School B	-0.07 (0.32)	
S6	0.02 (0.29)	0.07 (0.28)
Observations	208	208

Notes: Robust standard errors in parentheses, \*\*\* $p < 0.01$ , \*\* $p < 0.05$ , \* $p < 0.1$ , cut points suppressed.

*Variable Definitions:*

*Univprob:* 'How likely do you think it is that you will go on to university when you leave school?', answers on an ordered five-point Likert scale, where 5 is coded as Very Likely and 1 is Very Unlikely.

*Support variables.*

*Peers:* 'My peers are enthusiastic about me going to university'.

*Parents:* 'My parents/guardians are enthusiastic about me going to university'.

*School:* 'My school is enthusiastic about me going to university'.

All are answered on a five-point Likert scale, where 5 = Strongly Agree and 1 = Strongly Disagree.

*Other variables.*

*Money:* 'I feel concerned that it will cost too much money for me to go to university', 5 = Strongly Agree, 1 = Strongly Disagree.

*Quals:* 'I do not think I will have the right qualifications to go to university', 5 = Strongly Agree, 1 = Strongly Disagree.

*Distance:* 'I would like to attend a university as close to home as possible', 5 = Strongly Agree, 1 = Strongly Disagree.

*Female:* a binary dummy variable coded to 1 for female respondents and 0 for males.

*Univ Parent:* a binary dummy variable coded to 1 for respondents with a parent who attended university and 0 otherwise.

*School A, School B:* indicator variables for schools.

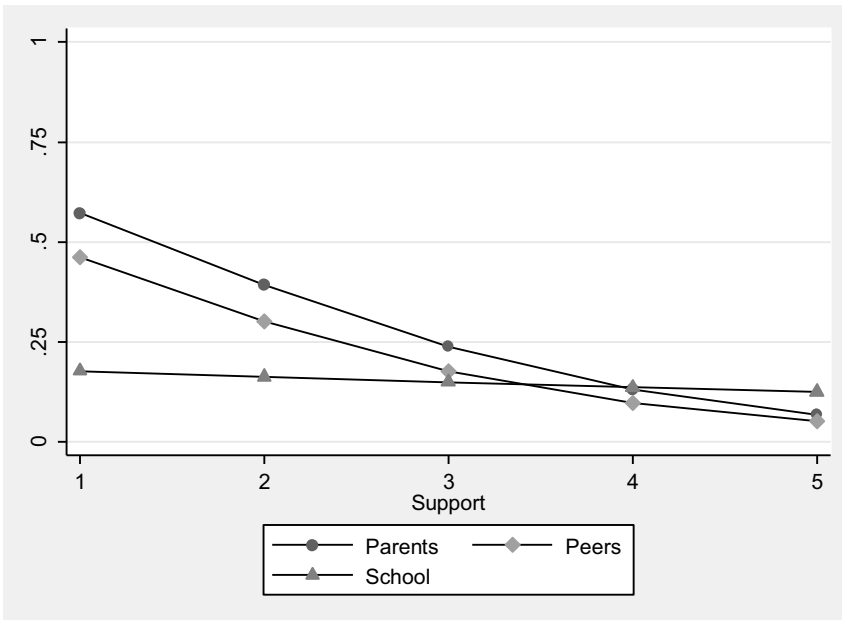
*S6:* a binary dummy variable set to 1 for pupils in sixth year (S6) and to 0 for those in fifth year (S5).

With respect to the school dummy variables, the size and statistical significance of the estimated negative coefficient of School A dummy variable suggests that pupils in this school have much lower expectations of university progression compared to the other two schools. There is clearly some factor correlated with the schools which matters for

expectations. One plausible explanation cited by those familiar with school A relates to its specific context. It is located on an island in which opportunities in local industry are highly attractive and this powerfully reduces the career incentives for university attendance. Consistent with this labour market explanation, the Scottish Government’s measures for pupil literacy and numeracy are more favourable at School A than at the other two schools suggesting that it is less likely to be factors relating to pupil academic achievement which are driving this result, though we cannot exclude other plausible explanations based on school characteristics (Anders & Micklewright, 2015).<sup>9</sup>

One concern is that the school dummy variables may be partly capturing the impact of school enthusiasm. To check this, the specification is re-estimated excluding these school fixed effects and the results reported in column (2). The estimated coefficient of the *School* perceived enthusiasm variable declines to 0.06 (0.15). Estimating the equation for each school separately in unreported regressions, the school support estimate remains statistically insignificant in all cases.

To illustrate the results for the perceived enthusiasm variables, Figure 1 uses the estimates from column (1) of Table 2. It shows the extent to which stronger perceived support from parents and peers is associated with a declining probability of selecting either ‘Unlikely’ or ‘Very Unlikely’ for going to university, holding other variables constant at their mean values. It is important to emphasise that the finding that the variation in perceived school support has very little impact on the probability that a pupil will choose the ‘Unlikely’/‘Very Unlikely’ responses does not mean that schools are lacking enthusiasm. The descriptive statistics in Table 1 show that the majority of pupils perceive their school as enthusiastic, indeed more enthusiastic on average than their peers and not far below that of their parents. Rather, the point is that variation in perceived school support



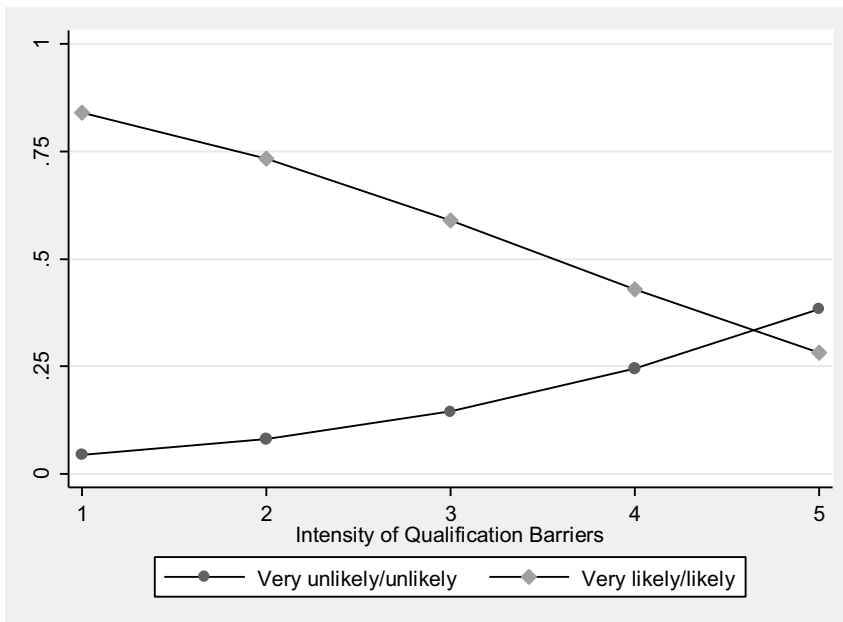
**Figure 1.** Predicted probability of selecting ‘Very Unlikely’/‘Unlikely’ to progress to university by level of support in each category.

across pupils within each school does not appear to be associated with pupils' expectations.

With respect to the quantitative importance of the qualification variable, [Figure 2](#) illustrates the association of the perception of qualification barriers on expectations of progression to university. Again, the probabilities are estimated at mean values of the other explanatory variables and the neutral response category with a value of three is omitted from the plot. Unsurprisingly, the figure shows that for barriers which are perceived to be low, the respondent is predicted with high probability to choose the categories 'Likely' or 'Very Likely' to progress to university. This probability declines from above 80% to below 30% as qualification barriers increase from their minimum to their maximum level. It is only when barriers are at their most intense that the pupil has a higher predicted probability of selecting 'Very Unlikely'/'Unlikely' rather than 'Very Likely'/'Likely' categories. Still, even in this case, the difference between the estimated probabilities is fairly small, suggesting that perceptions of high qualification barriers alone are not necessarily as prohibitive a deterrent as might have been anticipated.

### ***Subsample analysis by perception of qualification barriers***

Ignoring the neutral category, we next divide the sample into those who perceived high qualification barriers to attending university and those who perceived low (or no) qualification barriers and estimate the model for each subsample. For parsimony, we report only the results for the support variables and gender in [Table 3](#) below. The estimated coefficients for other variables were mostly not statistically significant or quantitatively as important.



**Figure 2.** Predicted probability of progression to university by intensity of perceived qualification barriers.

**Table 3.** Ordered Logit estimates for expectations of progression to university by qualification barriers: November questionnaire.

Variables	(1)	(2)
	Univprob <i>High qualification barriers</i>	Univprob <i>Low qualification barriers</i>
Peers	0.49** (0.21)	0.88*** (0.32)
Parents	0.60** (0.23)	0.86*** (0.33)
School	-0.12 (0.29)	0.28 (0.26)
Female	-0.10 (0.53)	-0.42 (0.52)
Observations	72 (53% female)	79 (49% female)

Notes: Robust standard errors in parentheses.

\*\*\* $p < 0.01$ , \*\* $p < 0.05$ , \* $p < 0.1$ .

The regressions also include all the predictor variables reported in Table 2.

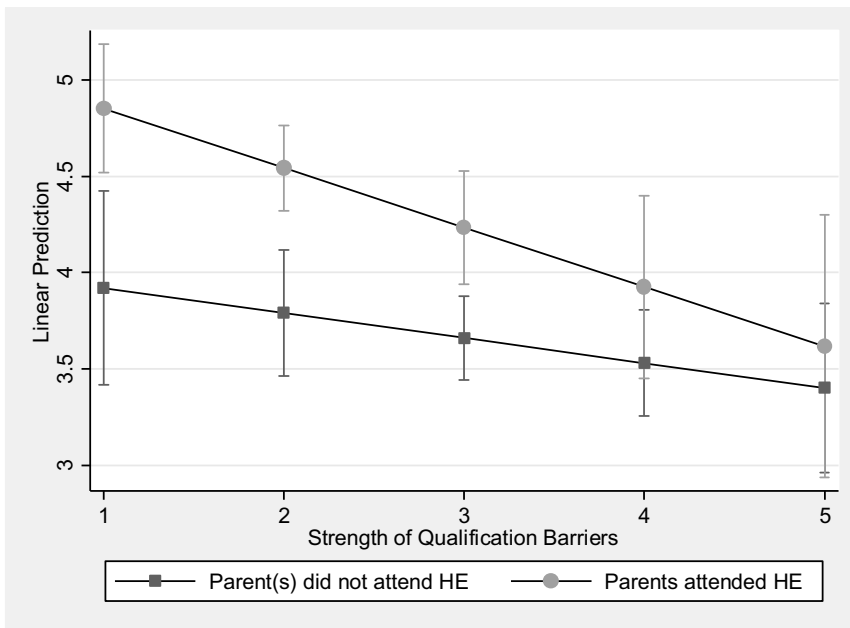
The results show that the association between perceived support from both parents and peers and expectations of progression to university applies whether pupils self-reported relatively few or many qualification obstacles. However, in neither case did school support appear to make a difference, consistent with the lack of a role for variation in school enthusiasm highlighted in Figure 1.

### ***The interaction between qualifications, parental experience of university and support***

Given the importance of perceived support for expectations of university progression, this section investigates factors associated with differences in the experienced level of support. In particular, in the light of the influence of parental enthusiasm, we look at the importance of parental university attendance. It is already evident from the coefficient of the *Paruniva* variable reported in Table 2 that parental experience of university is positively associated with a pupil's expectation of entry to university. Here, we explore whether pupils whose parents attended university perceived greater enthusiasm for their university progression from others than those pupils with no such parental history, all else equal. We allow the size of the effect of parental HE background to depend on perceived qualification barriers using an interaction term. This captures whether any association of parental education and general enthusiasm for their offspring's entry to university is related to perceptions of qualification obstacles. For ease of interpretation, we investigated this interaction by estimating the following linear equation by OLS:

$$\text{Parents}_i = \mu + \pi \text{Quals}_i + \vartheta \text{Paruniva}_i + \tau(\text{Quals}_i \times \text{Paruniva}_i) + \rho X_i + \varepsilon_i$$

The dependent variable is the level of parental enthusiasm (*Parents*) specified as function of perceived qualification barriers (*Quals*), parental participation in university (*Paruniva*), the interaction between these two variables, and a set of controls ( $X_i$ ) comprising gender, distance and money variables, and school dummies for pupils in for the November sample, a dummy for year of schooling, and the error term  $\varepsilon_i$ .



**Figure 3.** Predicted parental support for progression to university.

Using the estimates from this equation, [Figure 3](#) plots the predicted values for parental enthusiasm by level of qualification barrier, separately for pupils with at least one parent who attended HE and those with no parent who attended, holding all other variables fixed at their mean values. It also displays the predictive margins for a 95% confidence interval around the predictions.

The graph shows that predicted parental support declines with increasing perceived qualification barriers. Whatever the level of the intensity of these barriers, estimated parental support of those pupils for whom at least one parent attended university was always higher than those with no parental history of university participation. In other words, for any given level of perceived qualification barriers, there are differences in the experienced level of parental support. It is striking that this difference is largest and statistically significant for those pupils who perceived the fewest barriers (Quals=1 or 2). For those with the highest qualification barriers (Quals=4 or 5), the confidence interval shows that parental support gap is not statistically significant.

If we re-estimate the equation separately with peer or school support as the dependent variable in turn, the pattern described above is very similar across each dimension. This difference in perceived enthusiasm from other key influencers for the most academically able pupils to attend university for those whose parents are not graduates compared to those with a family history of university is a policy concern given the earlier finding that perceived social support matters for expectations of progression to university for our respondents.

### Changes in expectations from November to March

Thus far, the empirical investigation is entirely cross-sectional. However, the November questionnaire was reapplied four months later in March to the *same* pupils to assess how responses had changed following their mock examinations and receipt of offers of university places (or not) for those pupils who had submitted university applications. Unfortunately, we do not have data on these offer outcomes. The second wave experienced some modest attrition with a loss of 17% of the total sample. We estimated an equation for the change in perceived likelihood of progression to university as a function of a change in the perceived enthusiasm of parents, peers, and the school, the changes in the perception of other barriers (qualification, money, distance) and demographic characteristics. The results are reported in Table 4. Column (1) shows the results for all pupils and columns (2) and (3) use subsamples of pupils in S5 and S6 respectively. *A priori*, we would expect that pupils in S5 would be more likely to revise their perceptions of barriers and to be more sensitive to feedback given that they would be much more uncertain of their own academic quality towards the beginning of their studies at Higher than in March following outcomes of their mock examinations. In the table, the  $\Delta$  symbol indicates the change in the value of the variable between the two questionnaires, constructed for each variable as its value in March minus the value in November. Defined in this way, the dependent variable can vary between  $-4$  and  $4$  where  $-4$  represents a shift in response

**Table 4.** OLS estimates for change in expectations of progression to university, November to March.

VARIABLES	(1)	(2)	(3)
	All $\Delta$ Univprob	S5 $\Delta$ Univprob	S6 $\Delta$ Univprob
$\Delta$ Peers	0.17* (0.09)	0.30** (0.13)	0.01 (0.12)
$\Delta$ Parents	0.19 (0.12)	0.20 (0.22)	0.24* (0.12)
$\Delta$ School	0.02 (0.11)	-0.10 (0.14)	0.08 (0.18)
$\Delta$ Money	-0.04 (0.07)	-0.14 (0.10)	0.06 (0.10)
$\Delta$ Quals	-0.13** (0.06)	-0.17 (0.11)	-0.12 (0.08)
$\Delta$ Distance	0.01 (0.08)	0.05 (0.10)	-0.04 (0.11)
Female	0.33** (0.16)	0.54*** (0.20)	0.12 (0.29)
Paruniva	0.12 (0.16)	0.00 (0.22)	0.12 (0.27)
School A	0.04 (0.28)	-0.26 (0.28)	0.61 (0.57)
School B	-0.09 (0.17)	-0.13 (0.24)	0.01 (0.26)
S6	-0.03 (0.16)		
Constant	-0.38** (0.18)	-0.43** (0.19)	-0.35 (0.35)
Observations	172	90	82
R-squared	0.15	0.30	0.12

Notes: Robust standard errors in parentheses, \*\*\* $p < 0.01$ , \*\* $p < 0.05$ , \* $p < 0.1$ .  $\Delta$  refers to the change in the value of a variable between November and March.

from 'Strongly Agree' to 'Strongly Disagree' and a value of 4 indicates the opposite change. Note that performing arithmetic on an ordered scale is contentious and this measure of the extent of a change should be interpreted with caution. Inspecting the raw data shows that there is strong stability in the response variable over the time interval. For example, more than half of the sample (54.6%) have not changed their expectation of university entry and 85.5% of pupils have only changed by at most one point on the scale.

The signs of the estimated coefficients are largely as would be expected though many of the estimates are not statistically significant. This reflects the fact that, with relatively small sample sizes and stability of responses, it is a challenge to detect influences on changes in expectations.<sup>10</sup> The negative sign for the perception of qualification barriers indicates that, to the extent that these have heightened, this has reduced the self-reported likelihood of university progression. Relative to male pupils, the expectations of female pupils for a future in HE have increased in March compared to the previous November, following feedback on practice examination performance and responses to their university applications. This suggests that the female pupils were more pessimistic than male pupils at an earlier stage in their studies when their academic capabilities were less certain. In terms of support, an increase in the level of perceived enthusiasm of parents and peers is positively related to an expectation of progression to university. Once again, pupils did not perceive any influence from their schools on the change in their expected likelihood of entering university.

## Discussion

This study of pupils' expectations of progression to university at three Scottish state secondary schools in rural communities aligns with the literature emphasising that perceptions of both having the right qualifications and receiving enthusiastic support from key influencers significantly lowers perceived barriers to university. The most striking result is that variation in the level of perceived support from parents and peers appears to matter much more than that from schools. The finding is not simply that these pupils typically considered schools less enthusiastic than their parents. Rather, the point is that whether the level of school support was perceived by pupils as high or low, it seems to make little difference to their expectations. This result holds whatever the perceived intensity of qualification barriers to university entry. The absence of school influence in the cross-section data is also evident when investigating changes over time. Similar results are evident in the Australian literature. Vernon and Drane (2020) summarised the consensus as showing that parents and friends are more influential than teachers in shaping pupil expectations.

The significance of parents and the seeming unimportance of the perceived influence of school support for pupils' expectations for university progression in these three schools is open to complementary interpretations given our data. Indeed, the distinction between school support and parental support might be blurred in our context. In these schools, parents could be more likely to be heavily involved in school activities and themselves regularly influenced by contact with teachers, and family members may also work at the school. As such, some of the enthusiasm for university progression which pupils are attributing to their parents may ultimately originate from parental interaction with the school, making it difficult to disentangle these influences (cf. the anecdotal outcomes in

Lasselle [2016]). In addition, there may also be an experimenter effect. The very fact of participation of their school in a project on HE awareness could signal to pupils that their progression to HE is problematic and induce an undervaluation of school support.

A second finding, consistent with previous research (e.g. Gemici et al., 2014), is that the extent of perceived support from parents for expected progression to university is positively associated with parental attendance at university. For our sample, this relationship is especially strong for pupils with the lowest self-reported qualification barriers, for whom the extent of enthusiasm they perceive is heavily dependent on parental education background. When these barriers are high, parental participation in HE makes much less difference, perhaps because such parents are pragmatic and realistic as well as ambitious for their children (Dockery et al., 2022; Koshy et al., 2019). This is evidence for the importance of distinguishing between parents' aspirations for their children's future (*'they want them to succeed through education'*) and parents' expectations (*'they may not expect them to do so'*) as highlighted by Harrison and Waller (2018, p. 921). As Schmitt-Wilson and Byun (2022, p. 160) emphasised in their review of American literature, parental expectations are *'imperative'*.

Guidance and enthusiasm from the school are especially important then for those pupils whose parents did not themselves attend university. As our results show, when qualification barriers are self-reported as low, such pupils perceive much lower levels of parental enthusiasm for university entry compared to their peers whose parents are graduates. This outcome is a concern insofar as well-qualified pupils do not pursue HE due to a lack of encouragement, resources or knowledge of HE pathways in the home which is not counterbalanced by the school. In these cases, a focus on raising attainment alone may not be sufficient to foster progression to university. Targeted interventions are desirable to provide such pupils with greater school support and the confidence to believe that progression to HE is an achievable future self and a worthwhile educational outcome. These could include repeated visits and contributions from recent school alumni currently in HE who can serve as role models, challenging pupil expectations of probable future selves, providing reassurance and advice on the transition from school to university via participation in summer schools or campus visits, and a better appreciation of potential career trajectories. Similarly, in the Australian context, Vernon et al. (2018, 2019) recommend the development of school-university partnerships in non-metropolitan areas to support pupil pathways to university. And Cunninghame et al. (2020) emphasise the value of setting up interventions in school culture to strengthen pupil-teacher relationships in which the former feel seen and heard to improve student engagement and develop their expectations to go to university.

Given that schools and parents have strong ties in a close-knit rural community, this dense social network gives schools great leverage potential to raise the expectations and ambitions of their pupils both directly through career counselling and guidance processes as already described but also indirectly through influencing the expectations of parents for their children, especially targeting those parents without tertiary level education whose (lack of) support is a key influence on young people's HE expectations. Following the recommendations<sup>11</sup> of Mulcahy and Baars (2018), one way for schools to achieve this is through providing a locus for engaging parents with partner universities. This could include schools and universities together coordinating the attendance of parents at university open days and inviting HE institutions to participate regularly in parents'



evenings and other school events or specific HE-related activities. These mechanisms allow parental concerns to be addressed in relation to the financial costs of HE, future employment prospects, the pastoral care of students at university, and how best to support their children in their studies. To the extent that schools can facilitate knowledge transfer from universities to parents who have no prior experience of HE, such parents are better equipped to perceive and support a probable future self for their child which includes a university education.

Given the results also indicate the importance of the enthusiasm of peers for expectations of progression to university, there is a further potential multiplier effect arising from greater effort by schools and parents to foster pupils' participation in HE. This occurs through positive peer-to-peer spillovers as greater perceived enthusiasm from parents and schools for HE is transmitted from one pupil to another through social interactions and influence across peer networks. As the formation and evolution of pupil expectations takes place over many years, earlier influence and intervention will likely be the most powerful. This is especially important given evidence from English schools that, over six teenage years, pupil expectations about application to university are lower and decline faster for pupils whose parents are in the lowest educational group (Anders & Micklewright, 2015).

Finally, while geographical distance per se was not perceived as a strong barrier to expectations of entering university, geography may still affect progression to university. Insofar as rural schools may be less well-resourced or teachers less qualified to deliver the subjects they are asked to teach (see for instance Schmitt-Wilson & Byun, 2022), this could affect expectations of university entry in our model through an adverse impact on the qualification barriers variable.

## Conclusion

The study contributes an econometric analysis of a new data set on pupils' expectations of progression to university in three Scottish state schools. To the best of our knowledge, these are the only pupil expectations data in this form which exist for Scotland. The findings extend the cross-national evidence base on perceived barriers to going to university in a rural context. Our work investigates one side of the reciprocal relationship between pupils' expectations of progressing to university and those of their key influencers, namely, parents, peers and schools in a rural context. It has focused on the extent to which pupils' expectations, as articulated in their survey responses, are associated with the perceived enthusiasm of those who know them best. In practice, we find that, for three secondary schools in rural Scotland, compared to the two other key influencers, perceived school enthusiasm is not as significant for pupils' expectations of university entry. It is not that such enthusiasm is deficient but rather, within each school, it is not possible to explain variation in expectations. To the extent that this finding is related to insufficient information or resources, there is scope for policymakers to support schools to have more impact on pupils' expectations of progression to university. This suggestion assumes that our results have external validity, that is, they can be generalised to other schools, in particular those in remote rural locations, which have a history of relatively low HE progression and may lack detailed information and experience of the HE sector with which to enthuse and advise pupils. The results apply most directly where perceived

school enthusiasm does not compensate for a lack of influence in favour of HE from parents who may themselves have little prior university experience. Where this is the case, there are likely further benefits from an intensification of existing widening access initiatives in which schools and HE institutions work together to enhance pupils' expectations of progression to HE.

Further research is desirable in at least two directions. Firstly, our study only considers three secondary schools in rural Scotland with no urban schools to act as controls and no variable for the rurality of a pupil's parental residence. Contrasting these results with those that could be obtained from pupils residing in non-rural areas would be a natural extension. Secondly, we do not have data on actual university applications or entry for our sample. A simple longitudinal study adding information on these variables would allow exploration of interdependencies between aspirations and expectations for predicting outcomes in the Scottish case.

## Notes

1. While Higher Education (HE) courses can also be delivered at Further Education colleges in Scotland, the tertiary institution we considered in our data collection for this paper is the university and our usage of 'HE' terminology should be interpreted accordingly.
2. Evidence from non-metropolitan regions in Australia also suggests that there is no deficit in aspirations among disadvantaged pupils to attend HE (cited in Vernon et al., 2018). See also the discussion in Gale (2015).
3. Informed consent from parents/guardians and participants was sought prior to completion of the questionnaire. Questionnaires were administered in class by teachers. Each participant was allocated an identifier known only to the researchers. Respondents could skip questions and withdraw from the research at any time. The questionnaire and the exploratory analysis of its responses are presented in Lasselle (2017). Cf. Data Availability Statement and Ethical Guidelines Sections.
4. More information at <https://www.st-andrews.ac.uk/study/access/projects/arc/>. In total, all secondary schools (47), mostly in remote rural areas, in five local authority regions, were contacted and eight agreed to participate in at least one component of the research but only schools A, B and C consented to take part in all aspects of the project, including the questionnaires.
5. Hereafter, we will use 'parents' as shorthand for 'parents/guardians'.
6. The overall pupil response rate is 53%. By school, the rates are 69% (School A), 39% (School B) and 58% (School C). Disaggregating further by cohort, the response rates are: School A, 80% (S5) and 53% (S6); School B, 29% (S5) and 51% (S6); School C, 60% (S5) and 56% (S6). The pupil enrolment numbers used to calculate the response rates are drawn from Scottish Government school data for September 2014, <https://www.gov.scot/publications/school-level-pupil-numbers-by-stage/>.
7. The Universities and Colleges Admissions Services (UCAS) centralises all applications to courses delivered by British universities and colleges.
8. We examined further the association between parental support and school support by cross-tabulating responses to the perceived parental and school enthusiasm items. We found a strong correlation between the two variables. For brevity, we do not report this table in the paper, but results are available upon request.
9. The numeracy and literacy data are taken from Scottish government School information dashboard for 2015/16 at <https://education.gov.scot/parentzone/my-school/school-information-dashboard/>. The comparison is made at the Scottish Qualifications Framework (SCQF) level 5, corresponding to attainment at age 16. The proportion of pupils achieving this level of literacy and numeracy is 75% (School A), 63% (School B) and 71% (School C).
10. We thank a reviewer for this observation.
11. See Stone et al. (2022) in an Australian rural context.

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## Data availability statement

The data cannot be publicly shared because of privacy regulations on pupils' data. Participants were informed that only researchers have access to the data which will be treated as strictly confidential.

## Ethical guidelines

The research underwent the University of St Andrews ethical review and approval process (UTREC code: MN11198).

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