UNIVERSITY OF SOUTHAMPTON

SCHOOL OR COLLEGE? THE IMPACT OF SCHOOL-SPECIFIC ATTACHMENTS ON PUPIL TURNOVER

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MARCH 1998

UNIVERSITY OF SOUTHAMPTON

ABSTRACT

SOCIAL SCIENCES

ECONOMICS

Master of Philosophy

SCHOOL OR COLLEGE? THE IMPACT OF SCHOOL-SPECIFIC
ATTACHMENTS ON PUPIL TURNOVER

by Malcolm Andrew Walter

This project is based on the notion that pupils build up specific attachments to their school while receiving their education, which are analogous to the attachments formed by workers to their firms arising from investment in firm-specific training as identified by G. S. Becker in Human Capital (1964). A model is developed that explores the link between these school-specific attachments and pupil turnover, along similar lines to Becker's analysis of the effect of firm-specific training on worker turnover, the hypothesis being that pupils with greater school-specific attachment are less likely to quit their school. The model is tested in the context of pupil turnover between school and sixth form college at the end of Year 11, using pupil participation in extra-curricular activities as the main source of school-specific attachment. Data gathered from Year 11 pupils at two of Hampshire's leading independent day schools in 1996 is used to estimate the model. The results reveal that the main factors significantly reducing the probability of a pupil's departure from school to college are involvement in certain extra-curricular activities, favourable pupil attitudes to school and having a majority of school friends staying on. It is concluded that school-specific attachments appear to exist, influence pupil decision making and hence affect pupil turnover. Some policy issues arising from the findings are considered.

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ACKNOWLEDGEMENTS

There are many people to whom I owe thanks for their assistance in helping me to complete this research, which was undertaken while registered as a part time postgraduate student at the University of Southampton between February 1995 and February 1998.

First my thanks go to the governors of King Edward VI School, Southampton for their generous financial backing and for granting me a period of sabbatical leave from my teaching duties to initiate the project; headmasters of the school during the period of my research, Mr Tommy Cookson and Mr Peter Hamilton; my teaching colleagues; the staff of Portsmouth Grammar School, especially deputy headmistress, Miss Caroline Thompson, and the pupils of both schools. Without all their support and co-operation my research would not have been possible.

I am also indebted to several staff from the Department of Economics at the University of Southampton. My project supervisor, Professor Barry McCormick, deserves particular thanks. He has been a constant source of inspiration, wisdom and encouragement throughout the three years. Thanks also to Dr Pat Rice, who helped to renovate my knowledge of econometerics after years of neglect; to Dr Jackie Wahba, who helped to unravel the mysteries of computer programs, and to Dr Anthony Hesketh from the University's Department of Education, who advised me on my questionnaire.

Last, but by no means least, special thanks go to my wife, Elaine, and children, Helen and James, for their patience, support and understanding. Hopefully we will be able to see more of each other during school holidays and at the weekends.

CHAPTER 1 - INTRODUCTION

During the past two decades educational issues have attracted an enormous amount of public and political attention. As rapidly changing and ever more complex technology raises the demand for skilled labour, there is widespread concern that Britain's education system is failing to meet this demand. International comparisons of educational standards reveal a worrying gap between the attainment of British pupils and their counterparts in rival developed and developing countries. Prais (1995) highlights this shortfall in pupil performance drawing on evidence from various international tests over the past thirty years. As far back as 1963-4 the International Study of Achievements In Mathematics found that England had 2-3 times more low attainers among its thirteen-year-olds than its leading European industrial competitors. It was estimated that the English lagged behind the Germans by just over two years of English schooling in terms of mathematics. Subsequent tests have generated similar results, the most recent being the 1990 International Assessment of Educational Progress, which tested the mathematics of pupils aged thirteen in twenty countries. The average test score among English pupils was 60% compared to 64% for France and Italy, 68% for Hungary, 71% for Switzerland and 73% for Korea and Taiwan. A consolation in 1963-4 was that England's high attainers performed better than many of their European contemporaries, but by 1990 this advantage had vanished.

Unfortunately, Britain's poor showing in mathematics is mirrored in other subjects. Bierhoff and Prais (1997) report on the inferiority of British pupils in comparison to Swiss pupils in both science and practical subjects such as metalwork and technical drawing, key disciplines in preparing pupils for vocational qualifications.

There could be many reasons for the disparity of educational standards between countries. Allocation of teaching time, resourcing of schools, teaching methods, the structure of the curriculum and streaming based on ability are just some of the potential influences. However, material issues like resources, and organisational factors like the curriculum, are only part of the story in terms of explaining pupil performance. The pupil's latent ability and attitude towards school and education are likely to exert considerable influence over attainment as well. There is no reason for the distribution of ability to vary between countries, but attitudes may well differ. It is posited in this research that pupils build up attachments to their schools as a result of their education, which may well affect both their attitude towards and attainment in education.

Recent research by Barber (1994a) into pupil attitudes to school paints a rather gloomy picture. From a sample of 7,000-8,000 secondary school pupils surveyed, 17% of those in Year 10 and 20% of those in Year 11 admitted to truanting 'sometimes' or 'often'. Figures from the Department for Education and Employment (DfEE) (1997a) show that of the 2.79 million pupils of compulsory school age attending maintained secondary schools in England during 1996/7, 1% of half days in the school year were missed because of unauthorised absence, and on average, 20 half days were missed per absent pupil. Taking a figure of 380 half days per school year, these figures equate to a total of just over 10.6 million unauthorised absences, and 530,100 pupils with at least one unauthorised absence. This figure seems to add weight to Barber's findings, although a degree of caution is necessary as truancy is only one possible reason for an unauthorised absence. Equally, as Barber pointed out, because a pupil claims to truant on a questionnaire return, it does not mean that they actually truant. Nevertheless, the reluctance of a significant minority to attend school would seem to suggest that any attachments formed are weak for many pupils.

Behaviour in school could be viewed as another manifestation of attachment, with those pupils who have few, if any, attachments to school more likely to be disruptive. Once again evidence from the DfEE (1997b) makes dismal reading. For the school year 1995/96, there were 10,344 permanent exclusions from secondary schools in England. This represents just over 0.3% of the total secondary school population, a fairly modest figure in isolation, but when set alongside data for recent years, it forms part of an alarming upward trend that has seen annual exclusions increase by 250% since 1990. The 1995/96 figure alone was a 12% increase on 1994/95 when there were 9,197 permanent exclusions from secondary schools. There could be many reasons for this trend, such as the integration of pupils with Special Educational Needs into regular schools and the erosion of other disciplinary sanctions within schools. However, it could also be viewed as a consequence of a decline in pupil attachments to their schools.

The aim of this project is to explore the existence and extent of pupil attachment to their school because such factors could clearly be influential in pupil decision making, affecting educational outcomes in many ways. The economic framework is analogous to worker turnover from firms; a much studied aspect of the human capital theory devised by Becker (1964), which states that workers receiving firm-specific training, and a higher wage as a consequence, are less likely to quit or behave in a way likely to cause their dismissal. Indeed the purpose of the firm increasing wages to such workers is to reduce the likelihood of departures. The premise in this research is that pupils will build up school-specific attachments through their involvement in extra-curricular activities up to their GCSEs and hence be less likely to quit school for sixth form college at the end of Year 11. If true, this relationship provides an incentive to schools seeking to prevent pupil turnover to invest in activities that promote school-specific attachments. Hence, the broadening of the curriculum beyond the classroom may be driven not purely from the

standpoint of pupil needs for cultural enlightenment, but also from a school's concern to achieve high educational objectives.

The development of school-specific attachments by pupils during their education is a largely unexplored research area that poses several key questions. For example, how important are such attachments in determining a pupil's benefit from schooling? If they can be shown to carry significant weight then perhaps schools, and the state, should be looking to promote more strongly the activities by which such attachments are formed. What activities develop these attachments? Are they to be found within the main curriculum or are they largely extra-curricular? The answers to these questions will have important implications for resource allocation within schools. If participation in school sport, for example, is found to build up strong attachments which promote educational achievement then a case can be made for the retention, and possible extension, of school playing fields and other sporting facilities, and it may be necessary to review attitudes towards competitive sport. How are the pupil benefits of school-specific attachments reaped? Do they lead to better academic performance, an improved social experience or are they felt in some other way?

As a starting point for research into the role of school-specific attachments, this project focuses on their influence over pupil choice of institution for their sixth form education. This provides a useful context in which to assess such attachments because pupils have normally been in their school for at least four years, giving them plenty of opportunity to establish any links, and it is quite common practice among pupils to review the alternatives available in the market on entry to the sixth form.

Since 1980 various legislative changes have encouraged the development of market attitudes in the world of education and introduced a more competitive

approach to pupil recruitment and retention. The Education Act of 1980 provided parents with greater choice, while that of 1988 introduced a standardised product in the form of the National Curriculum. Key Stage testing, the publication of performance league tables and a more rigorous system of school inspection improved parental knowledge of the market place. The main aim of these changes was to raise standards during the years of compulsory education by providing greater choice for parents and promoting increased competition between schools. Bridges and McLaughlin (1994) have brought together a series of articles discussing both the philosophical and practical issues of fostering market attitudes in the education of children up to the school leaving age.

This project aims to broaden the research into educational markets by investigating the sixth form sector, an area which found itself moving to the market place following the 1992 Further and Higher Education Act. The main changes introduced by this legislation were an end to the distinction between Colleges of Further Education and sixth form colleges, and the introduction of a system of formula funding from the Further Education Funding Council. These developments encouraged the establishment of corporate colleges with more commercial outlooks and practices. With college finances linked to student numbers, various marketing strategies have been deployed to attract students, such as offering a wider range of subjects to try to cater for both academic and vocational needs, modular courses to run alongside the traditional linear approach and financial inducements. National press reports in September 1995 (Times Educational Supplement 1/9/95 and Daily Mail 2/9/95) revealed that Teesside Tertiary College was offering scholarships of up to £1,200 over two years to attract able students, while others were trying to tempt students with vouchers for local cinemas and restaurants. In seeking to recruit additional students, colleges face competition not only from each other, but from school sixth forms. It is this latter aspect of the market that is the

focus of this research, in particular the competition between sixth form colleges and schools in the independent sector.

Independent schools are no strangers to the market place and have long prided themselves on their sixth form record as a strong selling point. Halsey, et al (1984) claimed that the chances of a school leaver obtaining 3 or more A Level passes were significantly better in the independent sector compared to the state sector, and rising. In 1971 the odds ratio[1] for school leavers with 3+ A Levels was 7.4:1[2] in favour of the independents rising to 10.8:1 in 1981. The figure for 1991 works out at 9.8:1. However, it should be stressed that these statistics are based on the entire population of school leavers, including the large number not entered for A Level. Table 1 below arguably provides a more meaningful comparison as the figures are based only on A Level entries. It illustrates growth in A Level candidature in both sixth form colleges and the independent sector, especially the former, and an improved level of performance by students in terms of those securing 3 or more passes.

TABLE 1

Number of candidates entered for 3+ A Levels or equivalent and percentage achieving 3+ passes in England 1981-1995

	1981		1986		1991		1995	
	Cands	%pass	Cands	%pass	Cands	%pass	Cands	%pass
All maintained schools	78.75	61.8	79.08	63.2	85.72	69.3	74.66	76.0
Sixth form colleges	13.43	67.1	16.80	64.9	23.06	73.2	27.36	74.6
Independent schools	25.67	77.7	26.41	78.4	32.42	84.2	30.16	87.8

[Candidate numbers in thousands]

[Source: Statistics of Education 1981,1986, 1991 & 1995]

1 The odds ratio measured the relative chances that pupils who entered different types of school succeeded or failed in the competition to gain 3+ A Levels.
2 Direct grant schools included as independent schools in 1971.

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If odds ratios are calculated using the figures in Table 1, a slightly different picture emerges as shown in Table 2.

TABLE 2

Odds ratios for candidates entered in 3+ A Levels or equivalent obtaining 3+ passes in maintained and independent schools in England 1981-1995

Odds ratio	1981	1986	1991	1995
Independent : Maintained	2.15:1	2.11:1	2.36:1	2.27:1
Independent : Sixth form college	1.71:1	1.96:1	1.95:1	2.45:1

[Source: Adapted from Statistics of Education 1981,1986,1991 & 1995]

The independent sector's superiority in odds identified by Halsey et al is confirmed by these figures, although the gap is much narrower if candidates rather than leavers are considered. Halsey et al suggested that the more modest sixth form expansion in the independent sector, evident in Table 1, may have helped to contribute to its superiority by providing scope for greater selectivity prior to 1981. Tables 1 and 2 offer some support for such a notion beyond 1981, but the independent sector has little room for complacency in terms of its sixth form because in some respects its competitors are hot on its heels. Table 3 below illustrates this point, displaying the growth in market share of the sixth form colleges within the A/AS Level market, a traditional stronghold of the independent sector.

TABLE 3

Percentage of full time A/AS Level students by Institution
in 16-18 age group in England 1979/80-1995/96

	Independent schools	Sixth form colleges	Total number of full time students
1979/80	17.2	11.7	326.9
1987/88	18.2	14.1	346.8
1995/96	15.6	17.8	438.2

[Student numbers in thousands]

[Source: Adapted from DFE Statistical Bulletin 14/92, 10/94 and DfEE News 159/97]

However, given the Higher Education aspirations of an increasing number of sixth formers and their parents, it is perhaps the quality of A/AS Level performance in the different institutions that should be compared. This is done in Table 4.

TABLE 4

GCE A/AS Level examination point scores of 17-year-old candidates
in England by the end of 1994/95

	Number of candidates	Average point score per candidate	Percentage of candidates achieving a point score of			
			0-9	10-19	20-29	30+
Independent schools	28,433	22.1	13.3	26.3	33.6	26.7
Sixth form colleges	29,929	15.4	31.9	33.6	23.7	10.8

[Source: Statistics of Education 1995]

Table 4 reveals a clear advantage in the independent sector with regard to the quality of academic performance by pupils. Nevertheless, despite this

superiority, Stephen's article (1992) focussing on the situation in Cambridge, highlights the point that the national picture can conceal substantial local variations, and in some markets, the threat posed by sixth form colleges is very real. In the Cambridge market, there were two colleges in competition with the independent school of which Stephen was headteacher, one regularly achieving over 50% A and B grades with A Level candidates.

In terms of the national picture, the Independent Schools Information Service (ISIS) Annual Census (1997) reveals that for schools belonging to the Headmasters' and Headmistresses' Conference (HMC), the leading group of independent schools, from a cohort of 25,088 15-year-old pupils in January 1996, the loss immediately after GCSE examinations was 4,126 (16.5%). Of these pupils, some 1,743 (7%) were bound for Further Education Colleges. Nationally, the figure appears fairly modest, but as has already been stated, local market conditions can be such that the drain of pupils to colleges is at least three times this rate. Much seems to depend on the availability and reputations of colleges and whether the state schools operate sixth forms.

Clearly the loss of pupils from independent schools is potentially a serious issue, which in some cases could threaten their survival unless pupil numbers can be topped up by sixth form recruitment. Many independent boys' schools opened up their sixth forms to girls in the 1980's to bolster numbers. The ISIS figures reveal that HMC schools successfully topped up with 5,162 new sixth formers in 1996, 56.8% of whom were girls. However, an increasing number of these schools have now opted for complete co-education in the 1990's, thus potentially reducing the scope for a sixth form top up. Once again, it should be remembered that the national picture does not necessarily reflect local markets and some schools may be struggling to make good their losses in the sixth form. Pupil losses also threaten other aspects of school performance, which are often used when marketing independent schools. The results of the

school's sports teams may suffer or the quality of its orchestra may deteriorate and reduce the school's appeal, staff recruitment may become harder if only a modest amount of sixth form teaching is available, and, perhaps most serious of all, the school's position in the A Level league table could start to slide. However, as Stephen (1992, p15) pointed out, competition can be a force for good if independent schools are forced to review and improve their product. As he concluded, 'if we cannot prove we are worth the money we charge for a service provided free by the state we do not deserve to exist.'

The aim of this research is to investigate the choice that pupils make between staying on at school in the independent sector for the sixth form or leaving to pursue their sixth form education at a state sector school or college. In particular, it is seeking to establish whether pupils build up school-specific attachments during the years up to GCSE, which make them less likely to quit the school for the sixth form. Pupil participation in extra-curricular activities is viewed as the potential source of school-specific attachment, the hypothesis being that the more a pupil is involved in such activities, the stronger will be the pupil's attachment to the school and the lower the probability that the pupil will quit for the sixth form.

The existing research material of relevance to this project focuses mainly on two issues of choice, and pays little attention to the concept of school-specific attachment. First, the decision to stay on in full time education post sixteen has been investigated at some length, and secondly parental choices of primary and secondary schools, particularly in the state sector, have been examined quite extensively. Decision making with regard to the sixth form years has attracted more attention in the aftermath of the 1992 legislation, but research has largely concentrated on the choices of institution and courses of study by pupils in the state sector.

Walford (1991, p1) observed 'In Britain there is surprisingly little research on private schooling, and debate is often conducted more in terms of polemic than rational debate.' Barber et al (1997, p1) when discussing the growing interest in school improvement and rising education standards noted that attention has moved beyond academic performance alone to look at the broader contributions of schools and education to society, concluding that 'A deeper understanding of extra-curricular provision, which has much to contribute in both respects, is therefore timely.'

It is hoped that this exploration of the possible relationship between pupil involvement in extra-curricular activities at independent schools and their choice of institution for the sixth form will open up a new field of educational research, and help to close the gaps implicit in the quotations above.

CHAPTER 2 - THE MODEL

Consumption and investment within education

It is widely recognised by economists that education combines elements of consumption and investment (Vaizey, 1973). The enjoyment of consumption can be derived from many educational activities, such as gaining knowledge, acquiring and improving a set of academic and non-academic skills, forming friendships and achieving examination success. The utility levels obtained from such consumption activities will probably vary between pupils and activities, depending on factors like the nature of the activity, the level of compulsion, the method of delivery and the tastes and talents of the individual. As such, some education outputs will be more enjoyable than others for the pupils involved. For example, a voluntary games practice giving individual coaching advice to pupils while playing a sport they like will for most pupils probably give more utility than a practical demonstration by a teacher involving limited pupil participation during a compulsory lesson. However, the scope for these consumption benefits extends beyond the classroom to areas such as enjoying the company of friends during lunch breaks and involvement in activities not included in the timetable, like acting in a school play.

Utility enjoyed from the consumption component of various educational activities represents an immediate benefit from education, but there are also longer term investment benefits to be considered. Many educational activities enhance the individual's long term labour productivity by providing the necessary knowledge and skills for the labour market. Investment in such capital generates a return to the individual in the form of a higher marginal product that will earn a higher wage. As with consumption, the amount of investment offered by various educational activities is likely to vary according to factors like the nature of the activity, mode of delivery and the talents of the

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pupil. Lessons in core subjects, such as English and mathematics, provide key skills in literacy and numeracy and for most students may carry more investment potential than lessons in other disciplines. A clearly structured teacher-led method of teaching may enable pupils to master key skills more effectively than a pupil-centred approach, and hence offers more investment potential.

There is scope for both consumption and investment in most educational activities, be they part of the formal curriculum or extra-curricular. However, the extent to which a pupil derives consumption or investment benefits from participation in the activity is likely to vary according to the nature of the activity, the degree of compulsion and the pupil's ability and preferences. In the context of school-specific attachments, it is within the investment component of activities that these links are most likely to be formed, making it necessary for pupils to stay on at school if they wish to reap fully the potential future benefits.

The consumption and investment benefits provided by education are enjoyed primarily by the pupil, although there are other beneficiaries, such as the state. As with all economic decisions, there are constraints imposed, which inevitably limit the level of benefit derived from education. Both the pupil and the state act to influence the market provision of consumption and investment offered by schools, and the balance of curricular and extra-curricular activities. The state, on behalf of society, exerts influence in various ways, such as by legislating on compulsory schooling and providing the finance for schools, teachers, playing fields and other educational resources. Pupils, often in conjunction with parents, make choices on the school to attend, whether to supplement basic schooling with extra tuition, how much effort to devote to the process of learning and whether to extend their education beyond the classroom through extra-curricular activities. In analysing the choices of the pupil and state it

might be assumed that each behaves rationally in order that education be provided with a combination of consumption and investment activities that reaches a social optimum.

School-specific attachments

The economics of education draws heavily on the theory of human capital. Becker (1964) in one of the seminal works in the field likened schooling to the provision of general worker on-the-job training by firms. In Becker's view (1964, p29), a school was 'an institution specializing in the production of training', and he showed that while in school a student's net earnings were equal to the difference between the student's potential earnings and the total cost of the student's education, thus placing it on a par with the provision of general training by firms. There are certain implications that follow if schooling is seen in this light. The costs of education will be borne by the pupil not the school because all the benefits of the education are reaped by the pupil. Hence, the pupil's main concern will be to minimise the cost of whatever quantity of education is undertaken. It follows, that school choice will made on cost considerations, depending on factors like travel costs and fee levels.

The basic premise of this research is that education is not usually a purely general training activity, but contains an element of school-specific training as well. In other words, there are aspects of the current structures of educating a school pupil that are specific to the particular school that the pupil attends, in the same way that Becker identified aspects of on-the-job training as being specific to the firm providing the training. Examples of school-specific attachments formed during education include pupil familiarity with the rules, routines and systems of a school, the formation of relationships with certain teachers at a school, the formation of friendships with other pupils at the school and participation in extra-curricular activities, such as sport and music,

often representing the school in competition. It is clear that some of these sources of school attachment can be more easily controlled by the school than others, and as such, could become instruments for school policy, should attachments prove to be important. The provision of extra-curricular activities and the rules and routine of the school day are two such areas that could be addressed.

It is perhaps necessary to distinguish between school-specific attachments and their potential for providing consumption and investment benefits. Pupil familiarity with the rules, routines and systems of a school will carry little, if any, long term investment potential, but will provide consumption benefits, such as the feeling of security brought about by knowing where to be and when, and a short term return in the form of time saved by both pupil and staff during the school day. On the other hand, participation in extra-curricular activities may carry more potential for the future returns of investment as well as consumption benefits. For example, participating in the Duke of Edinburgh Award Scheme may create an attachment to the school because the pupil may wish to complete the scheme under the guidance of the same expedition leader, but it could also teach the pupil important lessons in independence and initiative, which will be of value both to the pupil and school during the remainder of the pupil's school career, and to the pupil in later life after leaving school. However, pupils may be less aware of the longer term benefits offered by such activities and concentrate mainly on consumption considerations like the friends they have made. In fact, the consumption aspect of these activities is likely to generate a degree of brand loyalty to reinforce pupil attachment to their school.

If Becker's theory is applied to the school context it would predict that in schools where a larger amount of specific attachments are formed these schools may benefit in various ways. For instance, pupils forming specific

attachments to their school are probably more likely to conform to the school's expectations and be better motivated, thus providing good role models to other pupils. These benefits, together with better staff-pupil relationships that school-specific attachments are likely to foster, will hopefully mean that less behavioural problems will be experienced, so schools need tie up fewer resources addressing these problems. It is also the case that pupils who have invested in school-specific activities will arguably be less likely to get involved in behaviour that could jeopardise their chance of receiving the full return on their investment. An exclusion or expulsion from school would reduce the return from existing attachments and could lead to additional costs if new attachments have to be formed at a different school. Further benefits to accrue to schools could include improved attendance records and in some cases a better school reputation arising from greater pupil satisfaction and performance. With extra-curricular activities, the school's reputation may be enhanced if its teams and representatives achieve success in their ventures. Overall, the school can hope to benefit from school-specific attachments by enjoying a more harmonious and effective learning environment that will probably improve both its academic and non-academic performance, and lead to a lower pupil turnover.

Barber et al (1997) found evidence of a positive correlation between the quality of schools as reflected in OFSTED inspection findings and the level of extra-curricular activities provided by the schools. Of the fourteen secondary schools studied, the seven cited by Her Majesty's Chief Inspector as worthy of special recognition in January 1996, offered more activities, achieved greater pupil participation and attracted more positive parental backing for their activities. The findings of Barber et al appear to support the notion that specific attachments can be beneficial to schools by improving their performance and reputation, both of which are important marketing points.

There are, however, costs of building up school-specific attachments that the school will incur. These include the opportunity cost of facilities used for the activities, the value of staff time devoted to organising and running the activities and the purchase of any equipment necessary for the activities.

The pupils can benefit from extra-curricular activities that form school-specific attachments in various ways. The enjoyment of participation, the formation of more and/or closer friendships with their peers, the development of better relationships with their teachers, the acquisition or improvement of knowledge and skills and the attainment of awards and prizes are some of the possible returns. Barber et al (1997) found that pupils perceived these to be among the many benefits from involvement in extra-curricular activities.

The costs to pupils of establishing school-specific capital in this way include the opportunity cost of the time spent participating in the activities, any charges that may be levied by the school and the possible purchase of equipment.

Viewing education as a mixture of general and school-specific factors in this way poses some important questions for researchers to address.

- What is the optimal mix of general and school-specific factors?
- Are the school-specific factors of central or marginal importance?
- How do the school-specific factors exert their impact?
- Does an increased investment in school-specific factors improve a child's return from schooling?
- Do different school-specific factors have different effects?

In seeking to answer these questions, however, there are several difficulties to be overcome. First, it is not always easy to identify the school-specific attachments arising during education. Many activities will arguably combine both general and specific elements. For example, during a lesson the material

being taught is essentially general, but the method of instruction could be viewed as specific to the school. One could be delivering the material via information technology, another using a more traditional approach of 'chalk and talk'. A second problem is that having identified a school-specific factor, it may not be easy to measure its effect or the value placed upon it. Thirdly, the structure of education is such that there is a shortage of situations where the behaviour of decision makers can be observed. For instance, there are key decisions to be made on entry to the system when the child is four years old and then subsequently at ages seven (Year 2), eleven (Year 6) and sixteen (Year 11), which are the usual points of transfer from one stage in education to another, often accompanied by a change of school.

School-specific attachment and pupil turnover

As a starting point for research into the possible impact of school-specific attachments on the education process and decision making, this project concentrates on the sixth form choices of pupils as they approach the end of Year 11.

Having made the distinction between general and specific training, Becker developed the relationship between specific training and worker turnover, pointing out that specific training will produce a lower rate of turnover. Firms have less incentive to lay off specifically trained workers because they will have to pay to train any replacements that they recruit. Equally workers who have contributed to the cost of their specific training will be less likely to quit because they will not reap the full return on their investment.

This concept can be taken and applied to the decision making behaviour of pupils at age sixteen where it is possible to study pupil turnover between school and college. Except for those attending 11-16 schools, most pupils face

a choice between their own school sixth form and a local further education college if they wish to continue in full time education. The idea being postulated is that those choosing to quit school at this point will be pupils who have built up fewer specific attachments to their school than those choosing to stay on. If such attachments are significant in pupil decision making, it should be possible to quantify their effect.

For the purposes of this investigation, extra-curricular activities will be studied as the source of school-specific attachments. All other things being equal, a school will want to retain in the sixth form a pupil who has been a regular member of a sports team up to Year 11 in order to get the full return on the staff time and other resources devoted to training the pupil to this point. Potentially the returns on this school-specific attachment are greatest during the sixth form when the team matures and can exploit the benefits of teamwork produced by having played together over the years. In many schools the results achieved by the 1st XV or 1st XI are viewed as important indicators of athletic achievement, so the retention of players for the sixth form to secure a successful season would be regarded as a good return for the school on the school-specific capital. Loss of players through quitting for college would lead to additional costs to the school as replacements would need extra coaching to try to reach the standard sought from the team. Clearly, if the quitter is a key player, these costs will be greater and the return to the school on its specific capital smaller. If results are disappointing the school's productivity drops, which could be detrimental to its reputation.

The pupil who has played in a school sports team can also enjoy benefits from any school-specific attachments by staying on in the sixth form. The friendships established within the team may enhance his or her enjoyment from the sport, the existing relationship with a coach aware of the pupil's strengths and weaknesses may lead to more rapid progress in the sport and

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the possibility of gaining recognition and status within the school in the form of sporting colours could all be possible benefits. A decision to leave may also create costs for the pupil who will not necessarily secure a place in the college sports team and may need to spend additional time establishing his or her sporting credentials in a new institution.

Mention has already been made of the various ways in which participation in extra-curricular activities might be of value. If the participant is only deriving personal enjoyment from them, then they are likely to view them as cheap or free alternatives to purchasing activities in the leisure services market. There is, however, a condition attached to the consumption, which is that the student has to attend lessons in accordance with the school's curriculum and timetable. Provided that the same activities are offered by competing schools and colleges, there will be no effect on quitting because there is no investment taking place from which to gain a return.

A second value to arise from the activities is that they may well carry the potential for human capital investment. They can provide new knowledge and skills in the specific activity to enhance the pupil's overall learning and improve performance in curriculum subjects by raising pupil motivation. Such investment should generate productivity improvement from the education process. There could be an impact here in terms of pupil turnover, but it will depend on the proportion of the return on the investment that is school-specific. Pupils will be less likely to quit if they feel that the bulk of the return on the investment is dependent on the school-specific attachments.

Finally, activities offer scope for social development through the formation of friendships with peers and better relationships with teachers. Networks build up within the pupil body and between pupils and staff, which are specific to the school. There is an element of consumption and investment at work in this

social development. Friendships provide immediate enjoyment, but they also provide experience of dealing with others; a skill that can be used productively in later life. If this is the only reason for participation in the activities then there will be strong school attachments established and pupils are unlikely to quit.

The value that a pupil gains from an extra-curricular activity will probably be a combination of all three areas, but not necessarily in equal measure. For instance, a naturally gifted sports player may gain little from playing for the school team in terms of investment in skill and consumption because he/she can probably play to a better standard out of school. The bulk of any benefit, therefore, is likely to be social and hence specific to the school, so there is less chance of quitting for the sixth form years.

Clearly when deciding whether to stay on at school or to quit for college, pupils will need to weigh up all the costs and benefits of the alternatives. Macfarlane (1993) provided a good comparison of the pros and cons of the school sixth form and the sixth form college, highlighting issues such as the range of courses available, student freedoms, uniform requirements, posts of responsibility, class sizes and extra-curricular activities. Deciding to quit school for college will carry costs, such as leaving known routines, friends, teachers, teams, clubs and societies, but it will offer potential benefits, such as a less formal atmosphere, no uniform and the advantage of attending a specialist sixth form institution. Financially, the decision could result in higher or lower travel costs and, in the case of independent schools, the possibility of saving fees will need to be added to the equation. Johnson (1987, p68 & p69) found that the headteachers she interviewed from independent schools reported a 'distinctive shift in their pupil population at this stage' and that as a result 'some pupils for a variety of reasons were choosing not to reap the benefit of what was perceived as the best these schools had to give,' a clear suggestion that school-specific attachments exist.

The rational pupil will choose to stay on at school rather than quit for college if there is a positive net benefit offered by the school sixth form. The net benefit of sixth form education will be composed of both general and specific factors, and will cover investment and consumption considerations. By definition, any general factors should be independent of the institution, so the critical consideration will be the specific factors. Unfortunately, many of the costs and benefits that go to make up the net benefit are unobservable, so it is necessary to use the pupil's stay or quit choice as a latent variable. In essence therefore, the hypothesis that is being derived from the model is that ceteris paribus pupils participating in extra-curricular activities in school up to the end of Year 11 will build up school-specific attachments that make them less likely to quit the school in favour of a sixth form college at the end of Year 11.

In assessing the impact of school-specific attachments established through participation in extra-curricular activities on pupil turnover, the independent sector arguably provides a better testing ground than the state schools. Within the state sector, if 11-16 schools were used for the research, those pupils quitting pre-sixteen would probably be leaving their school because of a complex mixture of reasons covering both school-specific and social capital considerations. A study based on this type of school could have difficulty separating these different sets of factors. It is also the case that many quits from such schools may not be the result of free choice. Independent schools, whilst not immune from such considerations, will probably have greater uniformity in the social capital of their pupils and fewer involuntary quitters.

For 11-18 state schools, Payne et al (1996) found from the Youth Cohort Study that 6% of Year 11 pupils left school to spend their sixth form years in a sixth form college, compared to 9% of Year 11 pupils from independent schools. The figures for Further Education colleges were 27% and 10% respectively. On the basis of this data it would appear that 11-18 state schools have a

higher quit rate at the end of Year 11, but with regard to sixth form colleges the independent sector experiences a higher turnover. Independent schools probably also have more resources to devote to extra-curricular activities so any school-specific attachments are likely to be stronger and more sophisticated than in 11-18 state schools and, because they charge fees, the costs of pupils entering their sixth forms are much higher, so the pull of school-specific attachments will need to be greater to retain pupils than in an equivalent 'free' state school. However, there is clearly scope for a subsequent extension of the research into the state sector.

In fact, the model offers several possibilities for further research through an extension of the idea of school-specific attachments to a notion of school system-specific attachments. Pupils may build up school system-specific capital during their school years that makes them less likely to quit full time education at the age of sixteen because they can only get the full return on their investment by staying in the system until the age of eighteen.

CHAPTER 3 - LITERATURE REVIEW

It has already been pointed out that the issue under investigation is a relatively unexplored area, although it can draw upon existing research findings in several other fields. One such area that has attracted the interest of economists is the decision to continue education beyond the age of sixteen. Work by Pissarides (1981), Rice (1987) and Micklewright (1989) all sought to explore this continuation decision because of Britain's poor staying on rates relative to other industrialised nations. All three used human capital theory and dummy dependent variable models, similar to that used in this research, but the dependent variable in each case was concerned with the choice to stay or leave full time education, rather than assuming that education will continue beyond sixteen and looking at the choice between school or college sixth form, which is the focus here. This is not an unreasonable assumption to make in the context of independent schools because the vast majority of their pupils continue in full time sixth form education. ISIS figures for HMC schools in 1996 reveal that of 25,088 15-year-olds just 296 (0.01%) left independent schools post GCSE for destinations other than school or Further Education.

Pissarides successfully captured both consumption and investment aspects of education decision making in his model. As a consumption activity, education post sixteen was found to be a luxury commodity, displaying a high elasticity for staying on with respect to per capita real consumption expenditure. This perhaps helps to explain the high staying on rates among independent school pupils reported above, given that most parents will be drawn from the upper half of the income distribution. With regard to investment, he found significant links between staying on and the relative starting salaries for stayers and leavers, between staying on and the relative growth rates of lifetime incomes for stayers and leavers, and between staying on and the relative unemployment rates for stayers and leavers. On the whole, however, the

staying rates for girls were found to be less responsive to these economic incentives than was the case for boys. Pissarides' research was significant in that it was one of the earliest ventures into this field, but its macroeconomic approach limits its value in the context of this investigation.

Rice and Micklewright both studied education continuation decisions in a microeconomic context. Rice was primarily interested in the effect of household income on the continuation decision, finding that it was a significant influence for girls, but not for boys. Perhaps more usefully, she established that factors, such as the occupational and industrial backgrounds of the household and its location, had a marked effect on educational decisions. This was confirmed by Micklewright who found significant results on school continuation decisions for parental educational backgrounds, parental occupations, number of siblings and regional location. Of more relevance to this project, however, is the inclusion of school and ability variables in Micklewright's work. When introduced to the model, they reduced the impact of family background, but produced significant coefficients. Pupils attending independent schools and state grammar schools had higher probabilities of staying on post sixteen than those at comprehensive or secondary modern schools. While this could be viewed as evidence that different types of school achieve different levels of attachment for pupils and hence different staying on rates, there could be many other explanations as Micklewright pointed out. For instance, school type may reflect differing levels of peer pressure, parental incomes, parental preferences and pupil ability. Nevertheless having controlled for ability, which was itself a significant factor over the continuation decision, the school variables remained influential. While the work of Rice and Micklewright provides some helpful guidance for this project, both used national data sets, the Family Expenditure Survey and the National Child Development Survey respectively, whereas this project is essentially a study of a local market, and neither set of data was gathered specifically for the task in

hand. This posed problems, especially for Micklewright who had difficulty estimating the impact of income because of data deficiencies.

Further studies on school continuation decisions have been conducted by Mare (1980) and Robertson (1993). Neither is directly comparable to the work of Rice and Micklewright because they considered different countries and hence different education systems, although both found that family background factors were influential. Mare's study from America concluded that any influence of family background variables declined in magnitude with each successive grade in schooling once the compulsory years of education were completed. However, Mare's survey was based purely on a cohort of white American male military veterans born before 1950 so its results need to be treated with caution. Robertson's research was closer to home centering on Scotland in the 1980's. Like Micklewright he included school variables in his model, establishing that schools with larger numbers of pupils in the last year of compulsory schooling produced higher staying on rates. Again, it could be suggested that larger schools provide more opportunities for pupils to establish school attachments, via extra-curricular activities for example, which encouraged them to stay on, but again there could be other explanations for the relationship, such as the scope for a larger school to offer a broader range of courses to attract more stayers. In fact, Robertson concluded that the greater flexibility offered by the Scottish examination system of O Levels, Highers and A Levels provided scope for students to have one or two years in the sixth form and tended to encourage greater post sixteen participation.

Andrews and Bradley (1997) took a local market in their detailed investigation into post GCSE decision making, studying the choices made by Lancashire's 14,000 Year 11 pupils in 1991. Among the school variables considered, the strongest effects came from the school size, as measured by the number of pupils in Year 11, and academic quality, captured by the proportion of Year 11

pupils attaining 5 or more GCSEs with grades A-C. Contrary to Robertson's results, they found that pupils in larger schools were less likely to stay on in continuing education, especially of a non-vocational nature. It may be that bigger pupil populations generate a feeling of insignificance and make it less likely that pupils build up school-specific attachments. Their findings with respect to the academic quality of schools showed that 'better' schools generated higher staying on rates, even controlling for the individual pupil's academic ability. Clearly, there could be many reasons why some schools perform better than others, some exogenous, such as catchment area, and others endogenous, like class sizes. Within this latter category, there might be school-specific factors at work helping to generate lower quit rates among pupils.

In recent years, attention seems to have shifted away from the education continuation decision because as Table 5 below indicates there has been a marked improvement in post sixteen staying on rates in England. The table only looks at 16-year-olds, but a similar picture of rising participation rates exists for 17- and 18-year-olds.

TABLE 5

Percentage of estimated population of 16-year-olds in England
in full time education 1979/80-1995/96

	1979/80	1983/84	1987/88	1991/92	1995/96
All Courses	41.7	47.8	48.5	66.6	70.7
A/AS Levels	20.8	21.7	23.8	34.2	36.0
Sixth form colleges	2.5	2.8	3.2	5.4	6.4
Independent schools	3.8	3.7	4.5	5.7	5.4
Total population	772.7	761.7	720.7	576.3	600.5

[Population figures in thousands]

[Source: DFE Statistical Bulletins 14/92, 10/94 and DfEE News 159/97]

Following on from the continuation decision some researchers have investigated the choice of institution for the sixth form years, while others have looked at the reasons behind pupil decisions, both to stay on post sixteen and to enter a particular institution for the sixth form. Dean et al (1979) conducted an extensive national research project into all of these areas. Unfortunately, independent schools were excluded from their survey and their work pre-dated the significant changes to the post sixteen market. Nevertheless, it may be that their results for state grammar schools can be of value because many such schools joined the ranks of the independent sector in the late 1970's after the removal of direct grant status in 1975. Not surprisingly, when asked for the main reason for staying on post sixteen, pupils were largely pragmatic, seeking to further career prospects and gain access to Higher Education. Eglin (1984) confirmed these findings in his survey of state and private school sixth formers in London, although his approach differed slightly in that pupils could give more than one reason for their choice. He found that parents and peers exerted some influence, but the fact that these were of negligible importance in Dean et al would suggest that their impact is largely secondary in nature. Foskett and Hesketh (1996) in their national survey of decision making by 15/ 16-year-olds established similar results, with career and Higher Education considerations dominating the choice process when both multiple reasons and single reasons were sought from pupils.

With regard to their reasons for choosing a particular institution, Dean et al found 72% of grammar school pupils were happy to stay at the same school, which could mean that some adhesion was taking place, but the reasons for their contentment with their existing school were not explored. However, for those entering Further Education colleges results were available for pupils transferring from independent school. The main reasons for their switch were to follow courses not available at school, especially practical courses, and to enter a more adult environment. If this latter group is added to those

expressing a dislike of their school, about a third of those leaving the independent sector were rejecting the school's product, suggesting that maybe few school-specific bonds had been formed during their time at the school.

Foskett and Hesketh's results on factors affecting the choice of institution were somewhat different from Dean et al. Only 16% of the sample stated that the main reason for their choice was that they wanted to stay in their school's sixth form. The academic reputation of the institution, its location and the desire to follow a particular course not offered elsewhere were the other main reasons given by pupils for their choices. Reputation and location were particularly significant for pupils deciding to stay on at their present schools. When asked to reveal any factors that had exerted some influence over their decisions the top factors to emerge were academic reputation and location. There was no evidence of school-specific attachments, but the questionnaire was not really designed to illicit such details so they cannot be ruled out. Parents and peer groups were again a secondary choice factor.

The 1992 Further and Higher Education Act heralded an upturn in research into sixth form education, the findings of which have recently been published. Schagen et al (1996) conducted an investigation of sixth forms in state schools, but unfortunately only surveyed those choosing to stay on at school. Therefore, the reported reasons given for pupils leaving schools to enter colleges must be treated with caution as they were not obtained from the leavers themselves. Nevertheless, the prime reasons given, namely to enjoy greater freedom, a change of ethos and to take advantage of a wider range of courses do concur with the results of others. Perhaps the most useful product of this research, is that it identified the reasons given by pupils for staying on at school, some of which could be viewed as school-specific attachments. Continuity of teaching and familiarity with the school environment were two such features. Pupils also valued the presence of their friends, a more

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structured and disciplined learning environment, smaller class sizes and, if the school possessed one, a good reputation. On a more practical note, a convenient location was also presented as a choice factor. Unfortunately, having produced this list of reasons, no attempt was made to test their validity or to quantify their relative importance within the decision making process. This was largely because the questionnaires and interviews used by the research team were rather open ended.

Payne et al (1996) used data from the England and Wales Youth Cohort Survey to examine the determinants of pupils' staying on decisions. They made the observation that post sixteen staying on rates were better in 11-18 than 11-16 schools in the state sector, which could indicate that pupils establish school attachments. The presence of a sixth form in a school might encourage a higher proportion of pupils to continue in full time education because of the attachments that they have established. If these links are forcibly broken because the school does not have a sixth form, this is enough to make some pupils decide to cease full time schooling. Obviously, this is only one possible interpretation of the situation, and further research would be needed to test its validity.

Payne et al tried to examine whether school factors influenced staying on choices by running a logit regression on a dependent variable of stay/leave full time education and including some school features among the explanatory variables, but not whether the school attended was 11-16 or 11-18. Other explanatory variables covered family background and regional factors and generally produced similar findings to those of Micklewright and others. Of the school variables, age adjusted pupil:teacher ratio, staffing and staffing experience all proved insignificant. The status of the school in terms of single sex or co-education exerted some influence, with girls' schools having higher stay on rates than co-educational schools, which in turn were slightly higher

than boys' schools. The size of the school's sixth form relative to the size of Years 10 and 11 was also influential; the larger the sixth form, the higher the stay on rate. Staff turnover had a significant impact as well; a higher turnover was associated with a lower staying on rate, which could indicate that pupils had less chance to build up attachments with specific teachers and hence were more likely to quit full-time education. Finally, there was a strong negative correlation between the percentage of post sixteen pupils attending college in the area and the staying on rate. This suggests that schools were more successful at retaining pupils post sixteen, which again might indicate that there may have been attachment factors at work. For this aspect of their work, Payne et al used only data for pupils in English state schools, thus once again excluding the independent sector.

Another research field that should be acknowledged is the considerable body of work into school choice decisions. The bulk of material here focuses on parental choice of primary and secondary school within the state sector. Walford (1994) provides a good summary of the state of play. Typically the factors to emerge as important in parents' choice of a secondary school are its location, whether they feel their child will be happy at the school, whether their child has expressed a preference for the school and the presence of siblings and/or friends at the school. Issues like discipline, school facilities and academic record are relatively minor considerations. The most recent, and extensive, survey of parental attitudes conducted at Keele University's Centre for Successful Schools and reported by Barber (1996) confirmed this picture, although Barber pointed out that school examination results seem to be featuring more prominently in decision making as league tables of performance become an accepted part of education. Not surprisingly, school attachment factors do not appear in any of this work because the transfer to secondary school inevitably involves a change of institution at age 11 or 12.

The same is not necessarily true in the independent sector where preparatory school pupils often have the option to transfer to secondary school at age 11 or 13. This offers scope for attachment factors to operate within preparatory schools to retain pupils for an additional two years. It is also the case that some independent secondary schools operate their own junior/primary schools, which again allows for continuity of school at age 11 when the normal point of transfer is reached. Unfortunately, there does not appear to have been any research into this aspect of independent school pupil decision making at age 11.

Fox (1985) and Johnson (1987) are the major contributors to the study of parental choice of school in the independent sector. Both adopt a sociological approach to the issue. Fox's research was based on a series of 190 interviews with parents of boys attending HMC schools conducted in 1979/80, and Johnson interviewed headteachers, Local Education Authority officials and parents from an area of south east England in 1984. Johnson's sample of just 25 parents was chosen using a rather debatable method and her results were largely qualitative rather than quantitative, so only Fox's findings will be considered. In stark contrast to the work on the state sector, she found that the top two reasons given by parents for choosing a school in the independent sector were better academic results, and character and discipline training. Other key reasons that were given by at least a third of the parents surveyed were that they believed their children would be treated as individuals, receive better teaching, benefit from favourable class sizes and enjoy a fuller education. This last reason brings extra-curricular activities into the picture as something valued by parents. Fox (1985, p154) claimed 'Many parents view the maintained schools as nine to five institutions, leaving the pupils to pursue their own interests outside this period of time. The private schools, by contrast, with their numerous activities - societies, music, sports, chess, metalwork and so on, are seen as providing their pupils with the chance to sample many

different aspects of life'. This is by no means proof of the existence of school attachments, but Fox found that most of the parents expressing support for extra-curricular activities had links with either independent schools or state grammars, and had thus benefited from such activities themselves. On this basis, extra-curricular activities may not be school-specific, but they do seem to build parental attachments to certain types of school.

Fox is not alone in finding parents expressing support for extra-curricular activities. Edwards et al (1989) found a similar proportion of fee-paying parents in their sample viewing extra-curricular activities as 'very important' in their choice of secondary school. Among the state school parents and Assisted Place holders in their survey, there was slightly less enthusiasm with between a fifth and a quarter of parents claiming that their decisions were influenced by such activities. However, in line with Fox, other factors were found to be more significant, such as examination results, school facilities, school ethos, career prospects and Higher Education prospects.

Away from the independent sector, Barber (1994b, p4) found that about 50% of parents wanted more information on school extra-curricular activities and suggested that 'This may be an indirect plea for more provision of this kind.' However, he later pointed out (Barber, 1996) that the parents may not have been solely motivated by a desire to improve the breadth and depth of their child's education - some were probably looking to find a convenient child minding service! Nevertheless, the fact that a substantial proportion of parents showed an interest in the provision of such activities implies that they see them as being of value to their children. Unfortunately, his research did not extend into why parents wanted additional information on these activities.

Despite the fact that according to Walford (1994) many parents take the wishes of their children into account when choosing schools, often involving

them directly in the decision making process, there has been relatively little research into the choice determinants of children. However, Barber (1996, p82) reporting on the Keele University survey of pupil attitudes claimed that 'The enthusiasm of many pupils, especially in inner-city schools, for involvement in extra-curricular activities is one of the most positive aspects of the picture pupils paint of their school experience.' No attempt is made to establish why pupils are so positive about these activities, so it is impossible to discover if there are school-specific factors at work. Barber et al (1997) took things a stage further asking pupils what they perceived to be the benefits from their involvement in extra-curricular activities. Pupils could identify any number of benefits and no attempt was made to rank or quantify them. Nevertheless, the top four benefits acknowledged by over 75% of pupils sampled were enjoyment of the activities, the chance to learn more, making friends and gaining confidence. Just under 50% said that the activities made school more enjoyable, just over 40% thought they improved pupil-teacher relationships while between 30% and 40% said that they improved school performance, gained the admiration of others and enhanced prospects for employment, examinations and college entry. There are some school-specific issues evident in this list, such as the development of friendships and better relationships with teachers, although it must be remembered that the research is based on pupil perceptions and is not proof of the existence of links between extra-curricular activities and the other variables.

Delamont's (1984) small scale sociological research into classroom lesson participation and social groupings among girls in a Scottish independent school found that friendships formed in school were influential in many ways. Three groups of girls formed the mainstay of pupils staying on for the school's sixth form - The Boarders, whose title was self explanatory; The Debs and Dollies, who adopted a 'grown up' adolescent lifestyle; and The Swots and Weeds, who were the academic elite. The Boarders and Debs and Dollies

dominated the sports teams and held many school offices arguably building up substantial school attachments, which made them less likely to leave at sixteen. This view was reinforced by the Swots and Weeds who were also significant holders of school offices and had the highest staying on rate of all groups. Again there could be other factors at work to explain the staying on so a degree of caution is necessary. For example, the Boarders may have been faced with very little alternative but to stay on if their parents were abroad and so they were boarding out of necessity. Equally, most of the girls staying on were the more able pupils, so it could have been academic ability rather than school attachment that mattered.

In summary, it would appear that the twin issues of sixth form choices and extra-curricular activities are currently attracting greater attention among researchers. However, on the strength of this review, there is little concrete evidence to support the notion that a link exists between school attachment factors and pupil sixth form decision making.

CHAPTER 4 - ECONOMETRIC IMPLEMENTATION OF THE MODEL

4.1 THE ECONOMETRIC MODEL

The basic premise of the model is that the individual pupil (i) will make the decision about whether to stay at their present school or quit to spend their sixth form elsewhere according to the net benefit (Y_i) they receive from staying on. Net benefit will be a function of certain observed explanatory variables relating to the pupil's school-specific attachments, home background, geographical location in relation to their school, academic ability and tastes (X_{ji}) and an unobserved component (u_i).

$$Y_i = Y(X_{ji}, u_i) \text{ where } j=1,.....k$$

If a linear functional relationship is adopted, then

$$Y_i = \beta_0 + \beta_1 X_{1i} + \beta_2 X_{2i} + ... + \beta_k X_{ki} + u_i$$

Unfortunately, net benefit, the dependent variable in the model, is a latent variable because some of the costs and benefits that determine its value cannot be measured. However, assuming that the pupils behave rationally, they will stay on at the same school if they obtain a positive net benefit from so doing $(Y_i > 0)$. The decision to stay or leave is observed and can be captured by an alternative dependent variable S_i, which takes the value 1 if the pupil stays and 0 if they quit.

$$S_i = 1 \text{ if } Y_i > 0$$

The introduction of S_i generates a model with a dummy dependent variable, in which the probability of a pupil staying on (P_i) becomes the main focus of attention.

$$P_i = \text{Pr}(S_i = 1) = \text{Pr}(Y_i > 0)$$

$$= \text{Pr}[(\beta_0 + \beta_1 X_{1i} + \beta_2 X_{2i} + \ldots + \beta_k X_{ki} + u_i) > 0]$$

$$= \text{Pr}[u_i > -(\beta_0 + \beta_1 X_{1i} + \beta_2 X_{2i} + \ldots + \beta_k X_{ki})]$$

$$= 1 - F[-(\beta_0 + \beta_1 X_{1i} + \beta_2 X_{2i} + \ldots + \beta_k X_{ki})]$$

$$= F(\beta_0 + \beta_1 X_{1i} + \beta_2 X_{2i} + \ldots + \beta_k X_{ki})$$

The probability that the pupil stays is a non-linear function of the explanatory variables, the precise nature of the function depending on the cumulative distribution function (F) of the error term. A logistic distribution is assumed for the purpose of this model so that

$$P_i = \exp(\beta_0 + \beta_1 X_{1i} + \beta_2 X_{2i} + \ldots + \beta_k X_{ki}) / [1 + \exp(\beta_0 + \beta_1 X_{1i} + \beta_2 X_{2i} + \ldots + \beta_k X_{ki})]$$

$$= 1 / [1 + \exp{-}(\beta_0 + \beta_1 X_{1i} + \beta_2 X_{2i} + \ldots + \beta_k X_{ki})]$$

Having established the probability that the pupil stays for the sixth form, it is possible to obtain the probability that the pupil quits ($1 - P_i$).

$$1 - P_i = 1 / [1 + \exp(\beta_0 + \beta_1 X_{1i} + \beta_2 X_{2i} + \ldots + \beta_k X_{ki})]$$

Taking the natural logarithm of the odds ratio in favour of staying for the sixth form the logit (L_i) is obtained.

$$L_i = \ln[P_i / (1 - P_i)]$$

$$= \beta_0 + \beta_1 X_{1i} + \beta_2 X_{2i} + \ldots + \beta_k X_{ki}$$

This equation can be estimated using the maximum likelihood method such that

$$L = \prod_{Si=1} 1/[1+exp-(\beta_0+\beta_1 X_{1i}+\beta_2 X_{2i}+...+\beta_k X_{ki})] \; \prod_{Si=0} exp-(\beta_0+\beta_1 X_{1i}+\beta_2 X_{2i}+...+\beta_k X_{ki}) /$$

$$[1 + exp-(\beta_0+\beta_1 X_{1i}+\beta_2 X_{2i}+...+\beta_k X_{ki})]$$

Each parameter estimated in the model represents the change in the log of the odds ratio in favour of the pupil staying on at school for an incremental change in the respective explanatory variable, X_j.

$$\delta P_i/\delta X_{ji} = P_i(1 - P_i)\beta_j$$

$$\delta(logP_i/1 - P_i)/\delta X_{ji} = \beta_j$$

The effect of a unit change in X_j will be at its greatest when $P_i = 0.5$. Under this condition, the effect of a unit change in the explanatory variable on the probability of a pupil staying on for the sixth form will be $\beta_j/4$.

4.2 DATA COLLECTION AND METHOD

The schools and the sixth form market

The logit model was estimated using data collected from two leading independent day schools in Hampshire. Hampshire was chosen because it was at the forefront of the sixth form college movement in the late 1960's and early 1970's. As stated by Macfarlane (1978, p40), 'Southampton was the first Local Education Authority whose secondary reorganization plans showed a complete departure from the traditional idea of the sixth form' when it opened three 'open-access' sixth form colleges in 1967. Hampshire went a step further promoting a system of 11-16 comprehensive schools and 16+ sixth form colleges from 1969 onwards. Many of these early colleges were developed from former state grammar schools, which enabled them to build up strong academic reputations from the outset, and hence pose a threat to the sixth forms of independent schools. The sixth form college is therefore very well established in Hampshire, and along with further education and tertiary colleges, represents for most the only real alternative to the independent school sixth form. For the majority of sixth formers, college attendance is the norm and the colleges have a high profile. In the DfEE School and College Performance Tables (1996) there were 20 colleges, 17 independent schools and 10 state schools registering A Level candidates. This latter group averaged just under 40 candidates per school, while independent schools averaged 60 per school and the colleges dominated with over 345 per college. Therefore, the market in sixth form education in Hampshire is one in which the independent school faces intense competition from colleges.

Of the 20 colleges in Hampshire, half are classified as sixth form colleges and half further education and tertiary colleges. Over 50% of them are concentrated in the two geographical areas around Southampton and

Portsmouth, so it was decided to focus the research on these areas.

Hampshire contains 27 independent secondary schools, but only 17 of them operate sixth forms. One of this number is a nationally renowned boarding school, which makes it peripheral to the local market, and another specialises in pupils with learning difficulties. Of the remainder, 6 schools are located in or around Southampton and 3 in or around Portsmouth. The largest day school from each of these groups was chosen for the research because they offered the greatest potential for competing with the local sixth form colleges.

Appendix A provides some details on the two schools, which henceforth will be referred to as School A and School B.

Extra-curricular activities

Extra-curricular activities featured prominently in the prospectus of each school. The headmaster of School A stated 'Your daughter or your son will be challenged by an exciting curriculum allied to a whole wealth of sporting, musical, dramatic and cultural activities......' while School B's headmaster claimed 'In close partnership with parents and within a firm but sensitive pastoral structure, its staff ensure that every pupil may find fulfilment in scholastic and extra-curricular spheres.' Both prospectuses also contained a double page devoted to each of sport, the arts and clubs, emphasising the number and breadth of options on offer. Table 6 shows the number of activities mentioned in these prospectuses.

TABLE 6

Number of extra-curricular activities mentioned in the
prospectuses of SchoolA and School B

	School A	School B
Sports	21	19
Arts activities (Music, Drama, Art)	23	12
Clubs and Societies	44	27
Other activities (eg Duke of Edinburgh Award, Community Service, Combined Cadet Force)	10	4

[Source: School prospectuses]

A degree of caution should be taken when studying these figures because School A split some of its clubs into junior and senior sections and had many separate art and drama activities, which inflated some of its figures. Equally, neither school gave any indication of the regularity with which the clubs met and hence the extent to which they formed part of the routine life of the school. Nevertheless, from the evidence presented in the prospectuses there is little doubt that extra-curricular activities were viewed as a vital ingredient to the success of the individual pupil and the school.

Pupil questionnaire and variable creation

Having identified the schools, a questionnaire was administered to all Year 11 pupils on 15th May 1996, just prior to their GCSE examination leave. This gave the pupils maximum time to decide on their sixth form plans and to establish school-specific attachments. A copy of the questionnaire appears as Appendix B. The results from the questionnaire were combined with the GCSE results of the pupils and details of their final sixth form decisions. This additional information was supplied by the participating schools in September 1996.

The questionnaire sought information on various areas that were felt to be

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potentially influential in sixth form decision making. First, details were required on the pupil's recent involvement in extra-curricular activities, as the likely source of school-specific attachments. Barber (1996) found that in the state sector initial pupil enthusiasm for secondary school faded over time to be replaced by a general disenchantment. However, during Year 11 he observed a return of slightly more positive attitudes. It is likely that during the secondary school years, adolescence and other influences like peer pressure, will cause a pupil's tastes to change and with them their involvement in activities. Attachments built up during their initial years may weaken as a result, so it was decided to concentrate on Year 11 activities to minimise any effect of such changes. The expectation was that involvement in activities would reduce the probability of pupil quits because of the school-specific attachments established by this involvement. Clearly, if the significance of school attachment can be shown in this way, there are further research issues that can be pursued, in particular, when these attachments are formed and how permanent they are.

Activities were divided into three main groups; sport, music and others to see if they exerted different influences, and information was gathered on the number of activities, the extent of pupil involvement and the enjoyment derived. Pupil involvement was assessed by using a major/minor classification system. A major activity required a pupil to attend half or more of its events, be they practices, matches, performances, rehearsals, expeditions or meetings. Minor activities involved the pupil attending less than half of the events associated with that activity. Trying to capture pupil commitment in this way would hopefully reveal whether it is mere participation that builds up attachment or intensity of involvement. Soliciting details on the enjoyment derived from activities was intended to assess the significance of any consumption effects arising from activity participation. Those deriving more enjoyment from their activities would be generally expected to carry a higher probability of staying,

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although in some activities, such as sport, pressure may be put on players to represent the school against their wishes. They may find the actual sport very enjoyable when playing, but the coercion used is likely to cut the enjoyment factor for the pupil, and reduce their consumption benefit. It may also lead to deteriorating teacher-pupil relations creating a negative impact on school attachment. Pupils were also given the opportunity to suggest activities not offered by their schools in which they would involve themselves to see if this was a factor driving them away to colleges.

Secondly, information was gathered on certain family background variables, such as parental occupations, number of siblings and their ages relative to the pupil concerned, whether the pupil's natural parents were still together, distance travelled to school and any fee assistance received by the pupils. As already stated in chapter 3, location and family background have been found to be significant factors in school decision making by previous researchers. This influence could work in various ways in this project, such as income considerations, travel costs, tastes and preferences. With regard to fee assistance, where pupils indicated that they did not know if they received help, the schools were contacted for the necessary information.

The parental occupation data was classified according to the Standard Occupational Classification (Office of Population Censuses and Surveys, 1995) and used as a proxy variable for income by matching it to gross average weekly earnings figures for the Standard Occupational Classifications taken from the New Earnings Survey (Office for National Statistics, 1996). Various occupational dummy variables were created using different income groupings and several permutations of these dummies were entered in the logit function. Experiments were also undertaken with occupational difference variables to see if changing financial circumstances within families influenced the staying on decision.

Given the burden of paying fees for two years if a pupil stays on at an independent school for the sixth form, a negative correlation was anticipated between the likelihood of the pupil staying and the level of family income. Therefore, pupils with parents in lower income occupations should be less likely to stay, as indeed might those from larger families, where the presence of siblings puts additional financial demands on the family budget. A similar outcome was expected if the occupational status of the pupil's parents dropped after the pupil's school career had started. Conversely, an improvement in the family's income arising from an improvement in occupation or the return to work of a parent would ease the burden of fees and make the pupil more likely to stay.

Fee assistance was entered into the logit function in various ways. It was treated as an separate variable, and also interacted with parental occupation because most help took the form of Assisted Places, with the level of assistance determined by parental means. A variable was also created for any change in fee assistance status on entry to the sixth form because it was possible for pupils both to gain and lose help. In School A, for example, academic scholarships awarded lower down the school were for a finite period only and may not be renewed, so a pupil could lose their assistance. However, others could gain new help, especially through the re-allocation of Assisted Places previously held by pupils who were quitting the school for the sixth form. A change in fee assistance would effectively alter the price of the pupil's education. Additional help granted on entry to the sixth form would reduce the price of independent schooling and, assuming that private education is a normal good, would generate positive income and substitution effects, thus raising demand and the chances of the pupil staying. Any loss of fee remission would be likely to have the opposite effect, raising the price of education and with it the probability of the pupil quitting.

Dummy variables for the distance travelled to school by the pupil were included among the explanatory variables because the costs involved in such travel might be quite substantial, especially in view of the large catchment areas of the two schools. The obvious financial costs of transportation would be known by parents when the initial decision was made to choose the school so were unlikely to be influential, but pupils living a long way from their school would incur significant time costs travelling to and from school. These could affect attachment in various ways. On the one hand, they might limit the pupil's participation in extra-curricular activities because they have buses or trains to catch after school or they may have to use their lunchtimes to keep up with homework. On the other, travelling together on the bus or train may promote the formation of school friendships, which enhance attachment. Depending on which of these influences was the stronger, pupils living further away from school may be less or more likely to stay.

The third area covered by the questionnaire was the pupil's sixth form plans in terms of their intention to stay or leave, their destination if they were leaving and their proposed courses of study. The data gathered here would reveal the extent of the drain of pupils and whether specific colleges were attracting most of the leavers. It would also show if the rather limited curriculum in terms of A Level subjects offered the schools was a key factor in the quit decision. Other things being equal, any pupil wishing to study a subject not available at their school was more likely to quit. To capture this effect, a dummy variable (NTRA) was created taking the value 1 if a pupil chose at least one 'new' or non-traditional A Level subject and 0 otherwise.[3]

The last section of questions focussed mainly on friendships and attitudes. As stated in chapter 2, friendships formed in school may well generate significant attachments, so details were required on the pupil's school friendships

3 A list of subjects viewed as traditional subjects appears in the definitions of variables in Appendix C. Any subject not on this list was viewed as 'new' or non-traditional.

relative to his/her total friendships and the sixth form intentions of school friends. The expectation was that the absence of friends would weaken school attachments, increasing the likelihood of the pupil's departure.

Akerlof (1997, p1020) when discussing the importance of social interaction on economic decision making observed that 'the education sought by most people will be the education that meets the approval of friends and relatives'. The key issue here is that the social dimension in many decisions generates significant externalities which need to be considered when choices are being analysed. Pupils may be conformist, looking to move closer to their friends in social space, or status seeking, looking to distance themselves from their friends. A pupil deciding to quit school for the sixth form will lose contact with friends incurring private costs for themselves and external costs for their friends. If this pupil has a strong wish to conform, he or she may choose to stay in view of these costs, so their social interactions have helped shape their choice. Blatchford (1996) in a longitudinal study of the perspectives on school of pupils from over 30 Inner London Educational Authority schools found that by Year 11, 41% of pupils stated that their friends were the thing that they liked best about school, indicating that school friendships were clearly valued by many pupils.

School uniform and rules are two aspects of school life that generate specific attachments, and on which most pupils are likely to have opinions. Their views were therefore sought on both issues, the expectation being that those opposed to either would be less likely to form attachments and more disposed to quit for the sixth form.

Two final areas of interest viewed as possible influences over the decision to stay or leave school for the sixth form were the post sixth form plans of the pupil and the degree of parental involvement in decision making. Pupils with

Higher Education aspirations may be aware that applications are usually made during the fourth term of the sixth form, which means that leavers have relatively little time to make an impression at college before a reference is written. By staying on at school they might feel that they could capitalise on any specific attachments more fully. Equally, any pupil who had established few attachments or 'negative' attachments, such as a bad reputation arising from a poor disciplinary record, would be more likely to quit to reduce the possibility of an adverse reference. The level of parental involvement in the sixth form choice was required to get an indication of the extent to which pupil attachments were allowed to exert their influence, and to see if there might be parental attachments at work.

The information gathered on GCSE grades was used as an indicator of the pupil's academic ability; a key determinant in sixth form choices in past research. Given the selective nature of the schools, there was a limited range for this variable so it was decided to input the information based on the pupil's position within the sample. Pupils were allocated points on the basis of their GCSE grades and an average taken across the subjects studied by each individual pupil[4]. A set of dummy variables was then created based on the quartiles in the distribution of these average GCSE grade scores.

4 GCSE grades were converted into points on the basis of 10 points for A or A*, 9 points for B, 8 points for C, etc and then the average points score per subject calculated for each pupil across the total number of subjects taken by the pupil.

Summary statistics

There was a 92.7% return rate on the questionnaire, with 243 replies from a potential sample of 262. School A performed better with just 1 non-reply out of 135 pupils, while School B had 18 non-replies out of 127. The main reason for non-replies was absence on the day of the questionnaire. A small number of returns were incomplete or spoiled and had to be treated as non-replies. Not surprisingly, of the 19 non-repliers, 12 were leavers who were arguably less likely to co-operate with research of this nature at this time in their school careers.

Of the 243 replies received, 182 pupils expressed their intention to stay on in their school's sixth form at the time of the questionnaire, with the remaining 61 planning to leave. Relatively few changed their minds following their GCSE results. In fact, there were eventually 67 actual leavers (27.6% of the sample). At School A, 3 original leavers subsequently stayed on and 5 planning to stay actually left, while at School B, no pupil planning to leave had a change of heart, but 4 intending to stay changed their minds and left. Hence, there were 12 pupils (4.9% of the sample) who changed their plans. A comparison of the schools reveals remarkably similar quit rates of 27.7% and 27.5% at School A and School B respectively, while the comparison for boys and girls shows a much higher quit rate for boys at 29.5% with girls at 15.1%. However, it should be pointed out that there were only 33 girls within the sample of 243 pupils.

Taking the total potential sample of 262 pupils, there were 79 leavers for the sixth form, a quit rate of 30.1%, which is significantly higher than the national average for HMC independent schools. It would seem that the threat of competition from sixth form colleges is a serious one for the independent schools in this market.

This view is reinforced when the destinations of the leavers are considered. Unfortunately, no details on destinations were available for those pupils who belatedly chose to leave, but Table 7 provides details of the choices of the 61 planning to quit at the time of the questionnaire.

TABLE 7

Destinations of Year 11 pupils planning to leave
School A and School B for the sixth form

Destination of leaver	School A	School B	Total
Sixth form college	28	19	47
Another school's sixth form	3	3	6
Other/undecided	4	4	8

It can be seen that 77% of leavers were destined for sixth form college. The table does not name the actual colleges chosen, but the vast majority of leavers (40 of 47) were heading for one of two institutions. Both of these were former grammar schools with long-standing academic reputations as schools and colleges.

Table 8 summarises the bulk of the data gathered from the questionnaire in the form of the mean values of the possible explanatory variables affecting sixth form quits at the two participating schools. Several differences are evident between the two schools with regard to the data. First, it should be noted that only School B has girl pupils among its Year 11 cohort and that even here they represent just over 30% of the sample. As has already been suggested, a degree of caution will need to be exercised when considering the SEX variable given the rather limited size of this sample.

Regarding the family background variables, School A has slightly more parents with SOC1 occupations, the category with the highest gross average weekly earnings, and a smaller average family size, with a higher percentage of single child families. This suggests that perhaps income constraints will be less of a

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TABLE 8

Summary statistics : variable means and definitions

Variable name	School A mean	School B mean	Variable definition[1]
STAY	0.723	0.725	1 if stay at school for sixth form, 0 otherwise
SEX	0.000	0.303	1 if girl, 0 otherwise
FOCC	0.716	0.780	1 if Father's occupation not SOC1, 0 otherwise
MOCC	0.843	0.945	1 if Mother's occupation not SOC1, 0 otherwise
YNGSIBS	0.687	0.725	Number of younger siblings in family
OLDSIBS	0.739	0.752	Number of older siblings in family
ONLYCH	0.105	0.064	1 if only child in family, 0 otherwise
PARENT	0.799	0.789	1 if live with both natural parents, 0 otherwise
DISTD1	0.455	0.468	1 if travel 6-15 miles to school, 0 otherwise
DISTD2	0.209	0.128	1 if travel 16+ miles to school, 0 otherwise
FEEASS	0.313	0.266	1 if receive fee assistance, 0 otherwise
VIFEEAS	0.164	0.073	1 if get new VI Form fee assistance, 0 otherwise
SPORT	0.515	0.578	1 if play sport for the school, 0 otherwise
MUSIC	0.097	0.257	1 if play music at the school, 0 otherwise
ACTIVITY	0.560	0.679	1 if involved in school club/activity, 0 otherwise
OTHACT	0.575	0.486	1 if would join sport,etc not offered, 0 otherwise
PARATT	0.134	0.147	1 if parents had more say in choice, 0 otherwise
FRIENDS	0.843	0.807	1 if majority of friends at school, 0 otherwise
SCHFRD	0.739	0.771	1 if majority of school friends stay, 0 otherwise
GCSE1	0.328	0.156	1 if ave GCSE grade in last quartile, 0 otherwise
GCSE2	0.269	0.229	1 if ave GCSE grade in 3rd quartile, 0 otherwise
GCSE3	0.194	0.321	1 if ave GCSE grade in 2nd quartile, 0 otherwise
NTRA	0.201	0.128	1 if taking at least 1 'new' A Level, 0 otherwise
UNIATT	1.948	1.963	Attitude to school uniform[2]
SCHATT	1.440	1.349	Attitude to school rules[3]
Sample size	134	109	

Notes
1. Full definitions of the variables are given in Appendix C.
2. Attitude to uniform is measured on a positivity scale of 1 (against) to 3 (for).
3. Attitude to school is measured on a positivity scale of 1 (against) to 3 (for).

factor with respect to its quit rate. School A also provides fee assistance to a greater proportion of its pupils, especially on entry to its sixth form. This again should tend to reduce the financial constraints on the quit decision.

Catchment areas differ between the schools in that School B draws a higher share of its pupil population from the immediate vicinity (under 6 miles), while School A attracts more pupils from the 16+ mile radius. Given the costs in terms of time and transport that a wider catchment area carries, one would expect this to have an adverse effect on the quit rate from School A.

In the field of extra-curricular activities, there is a similar pattern in both schools, with MUSIC attracting far fewer participants than either SPORT or ACTIVITY. Of these latter areas, there is a slightly smaller percentage of pupils involved in SPORT, but this is probably only to be expected given the multifarious nature of clubs, societies and other activities offered by the schools in comparison to a relatively limited range of sports as shown in Table 6. The figures also show that School B is able to attract a higher proportion of its pupils to get involved across all three areas, its superiority being particularly marked in MUSIC, which could be the result of its co-educational in-take.

Table 9 provides the summary data for the replies to the supplementary questions asked only of those participating in the various activities, again providing the mean values for the separate schools. On the whole, School B is able to extract a higher level of involvement from its pupils within the three activity fields, but again there is a notable pattern. Fewer pupils may be involved in MUSIC, but their level of involvement is greater in both schools than for the other two areas. This is perhaps because musical skills are more readily transferrable than the skills required for other extra-curricular activities. A pianist can play in an orchestra, jazz band or pop group, whereas it does not necessarily follow that a good rugby player is a good footballer. It is also

TABLE 9

Summary statistics : variable means and definitions for supplementary questions

Sports Questions

Variable name	School A mean	School B mean	Variable definition[1]
ASPORT	0.986	1.154	Number of major school sports played
BSPORT	0.592	0.555	Number of minor school sports played
SPINV	0.623	0.460	1 if sport played found very enjoyable, 0 otherwise
Sample size	69	63	

Music Questions

Variable name	School A mean	School B mean	Variable definition[1]
AMUSIC	1.286	2.143	Number of major school music activities
BMUSIC	0.071	0.036	Number of minor school music activities
MUSINV	0.429	0.643	1 if musical activity found very enjoyable, 0 otherwise
Sample size	14	28	

Activity Questions

Variable name	School A mean	School B mean	Variable definition[1]
ACTA	1.053	1.405	Number of major school clubs/activities
ACTB	0.253	0.297	Number of minor school clubs/activites
ACTINV	0.400	0.392	1 if clubs/activites found very enjoyable, 0 otherwise
Sample size	75	74	

Note
1 Full definitions of the variables are given in Appendix C

evident that the pupils involved in music do so in a 'major' way, attending over half the rehearsals and performances associated with the activity. There is very little 'minor' musical activity at both schools, which is again a largely predictable result. The high level of practice necessary to learn an instrument is such that those involved in musical activities are likely to be committed to the cause. Given the very small number of minor musical activities recorded, a combined variable (ABMUSIC) was entered in the logit estimations.

ACTIVITY takes second place behind MUSIC, with the emphasis once again on 'major' activities (ACTA) and a relatively low take up for 'minor' activities (ACTB). This is probably to be expected because with several of the activities involved, the Duke of Edinburgh Award Scheme and Combined Cadet Force for example, pupils joining will need to show a high level of commitment and attendance to complete the requirements of the scheme, so they will have to be treated as 'major' activities. With clubs and societies, there is scope for more occasional attendance by pupils, which probably explains the higher reading for ACTB than for BMUSIC.

SPORT comes third in terms of the number of sports played per participant. However, there is a much higher reading for BSPORT, which indicates a much higher level of involvement on a 'minor' basis than in other activities. A possible explanation for this is that once fixtures are arranged, schools will make every effort to honour them, so in the event of injury to or loss of regular team members for some other reason, the reserves will be pressed into action. Pupils may have relatively little choice in this matter and this compulsion makes it more likely that 'minor' sporting involvement will take place. The same would also apply if the school had a programme of B team fixtures in some or all of its sports.

In terms of the enjoyment derived from the activities undertaken by pupils, very

few respondents said that they found activities unenjoyable, so the initial three category variable was replaced by a simple set of dummy variables drawing the distinction between those who found their activities very enjoyable and the rest. The results reported are for these dummies. School B retains its superiority in the MUSIC field, with pupils deriving a higher level of enjoyment from their involvement, but in SPORT, School A pupils register higher levels of enjoyment from the sport they play. The figures for ACTIVITY are virtually the same for both schools. These differences in enjoyment levels could be explained by many factors. The attitude and teaching/coaching methods of staff, the success achieved by pupils in the activity, the level of compulsion brought to bear on pupils and the other pupils on the activity are all possible determinants.

A higher proportion of pupils in School A showed a willingness to get involved in extra-curricular activities that were not currently offered by their school. Appendix D provides details of the activities that the respondents wished to have available to them. Additional sports, especially soccer, attracted the most support, suggesting that for this sample school-specific attachments are more likely to be formed through involvement in sport. Clearly, if quit rates can be reduced by school-specific attachments built up through participation in such activities, schools may wish to consider broadening the range of activities that they offer in the light of this information. However, schools contemplating an expansion of activities need to be careful because Appendix D illustrates that many of the additional activities suggested by pupils attracted insufficient support to be viable. Equally, the introduction of new activities could prove detrimental to others already on offer, leaving no net improvement to the provision.

Academically, the pupils in School B performed better at GCSE within the sample, although both schools achieved highly respectable average GCSE

scores. School A scored 9.34 points per subject per pupil while School B gained 9.71 points per subject per pupil. Given these results it is no surprise that 98.9% of pupils sampled intended to pursue sixth form courses that were either exclusively A Level or predominantly A Level. In accordance with its slightly inferior GCSE results, School A had a higher proportion pupils including at least one 'new'/non-traditional A Level in their selection of subjects. Beyond the sixth form, 94.2% of those sampled expressed their intention to enter university, another result consistent with the GCSE performance and A Level aspirations of the pupils.

There was relatively little to choose between the schools in terms of the friendships and attitudes of their pupils. Parents were marginally more influential in decision making in School B, and its pupils were slightly more in favour of school uniform. School A's pupils however, were a little more positive in their attitudes towards their school's rules and regulations.

Having gathered the data, a series of logit models were estimated using the LIMDEP program.

CHAPTER 5 - RESULTS

The results of four versions of the logit model are presented in Tables 10 and 12. Each table reports the maximum likelihood estimates of the parameters of the logit function, their asymptotic t values and a set of diagnostic statistics. Table 10 concentrates on the explanatory variables of the basic model, excluding those variables intended to capture pupil attitudes and enjoyment levels. These 'subjective' variables are subsequently added, with the results given in Table 12.

In the initial model, Table 10(a), the dummy variables take the value 0 for a male pupil, who has at least one brother or sister and whose father holds an SOC1 occupation. The pupil attends School A, is in the top quartile of the sample's ability distribution and lives within 6 miles of the school, which is not attended by the majority of his friends. The majority of his school friends intend to quit the school for the sixth form. Any positive coefficients in the model indicate a positive relationship between the variable and the probability that the pupil stays on for the sixth form, while negative coefficients are an indication that the characteristics concerned raise the probability that the pupil will quit.

The coefficients in Table 10(a) generally carry the expected signs, but relatively few emerge with strong statistical significance. However, the variables intended to capture the effect of any school-specific attachments built up by the pupils generally perform well, with several registering significance at a 95% confidence level. Participation in sport in both a major and minor way significantly raises the probability that the pupil stays on. Musical activities also raise the likelihood of the pupil staying on, but the coefficient is smaller and fails to achieve significance above a 50% confidence level. This could be because there is something inherent in musical activities that means that pupils do not form strong school-specific attachments. They may be more individually based, building up skills without developing the same sense of

TABLE 10

Maximum likelihood estimates of parameters of logit function: basic model variables only

Variable	(a) Parameter	(a) t ratio	(b) Parameter	(b) t ratio
CONST	-1.0463	-1.350	-0.7112	-0.869
SCH	-0.2537	-0.656	-0.3151	-0.762
SEX	-0.5331	-0.736	-0.2103	-0.280
ONLYCH	0.3738	0.607	0.4039	0.594
FOCC	-0.0938	-0.235	-0.4091	-0.928
FOCDIF	0.6702	0.453	0.1314	0.094
FEEASDIF	-1.0679	-0.915	-0.3923	-0.375
DISTD1	-0.4053	-1.034	-0.0975	-0.232
DISTD2	0.1782	0.346	0.1276	0.239
ASPORT	0.5355	2.143	0.4542	1.770
BSPORT	0.7485	2.048	0.7955	2.131
ABMUSIC	0.2604	1.057	0.2185	0.911
ACTA	0.7679	2.840	0.6970	2.474
ACTB	-0.1461	-0.389	-0.1959	-0.501
FRIENDS	0.5150	1.159	0.6145	1.318
SCHFRD	1.7593	4.606	1.6195	4.006
GCSE1	-0.6716	-1.303	0.0376	0.065
GCSE2	-0.2351	-0.454	-0.0604	-0.112
GCSE3	-0.0033	-0.006	0.0139	0.026
NTRA			-2.0912	-3.901

Log Likelihood	-108.8139	-100.5430
Chi Squared	68.5608	85.1026
DF	18	19
Pseudo R^2	0.240	0.297
Sample Size	243	243

Notes
1. t ratio figures test the hypothesis the individual coefficients are zero.
   Test statistic = parameter value/standard error of variable
2. Chi squared figure tests the hypothesis that all the slope coefficients are jointly zero.
   Test statistic = 2(model log likelihood - log likelihood with optimal constant only)
3. Pseudo R^2 uses McFadden R^2 which is the associated likelihood ratio index 1 - (model log likelihood/log likelihood with optimal constant only)

belonging acquired through participation in team activities. On the other hand, this result could merely be showing that these schools provide their musical activities in ways that do not promote the formation of school attachment. Pupil involvement in clubs and activities, such as the Duke of Edinburgh Award Scheme, in a major way produces the largest coefficient among the extra-curricular activities and the highest significance level. At this point, it should be noted that for each of these variables, the coefficient represents the increased likelihood of the pupil staying on per activity, so pupils with multiple involvements either in one area or across all three will be much more likely to stay.

The coefficient on the minor activity variable does not carry the expected sign and suggests that pupils participating here are more likely to quit the school. A possible explanation for this is that the quality of clubs and societies varies within the schools. Pupils with a keen interest in a particular activity may be frustrated if the associated club is poorly run so they only attend on a minor basis and ultimately are inclined to quit because their interests are not being well served by their school: attachments in this case have a negative impact. However, the coefficient on the variable is small and statistically insignificant.

In contrast to the negative impact of minor activity, pupil participation in minor sport seems to generate strong positive attachments to the school. Several possible reasons could explain this result for minor sport. The pupils concerned may not be good enough to be selected for teams outside school so this is their best chance for competitive sport. On the other hand they might be aware that some of their more talented contemporaries may quit for the sixth form so they are biding their time in the hope of gaining more regular selection in the future. They may also have realised that during their school careers, the composition of teams has changed as players have matured and improved at different rates and they may believe that they could yet get

recognition. Finally, the element of compulsion and the high degree of organisation in practices and fixtures that accompanies sport may promote the formation of strong attachment on behalf of pupils, even if their involvement is only on a minor basis.

The coefficients on both the friendship variables carry the expected signs, and in the case of the actions of school friends the parameter is very well defined. This would suggest that social interaction associated with friendship groups is a powerful influence on pupil decision making. If their friends are staying on there appears to be a wish to conform with this behaviour, generating something of a multiplier effect. Some important issues follow in terms of whether certain dominant individuals set the agenda for friendship groups because their decisions regarding the sixth form could affect the choices of others. Schools may wish to target these individuals to persuade them to stay on as they could keep others at the school with them. The composition and dynamics of friendship groups lies beyond the scope of this project and would require further investigation, but they clearly could have important implications for the size of the sixth form populations in the schools.

Many permutations of the control variables were tried in the function, and as with the reported versions, most carried the expected signs, but were disappointing in terms of statistical significance. With regard to the family background variables, income considerations do not appear to influence the decision to stay or quit. Pupils with brothers and sisters were more likely to quit, as were those with fathers in occupations other than SOC1, and thus receiving gross average weekly earnings below the highest level associated with SOC1 occupations. The lack of significance on either variable could reflect the fact that when opting for an independent secondary school parents include the possibility of having to pay sixth form fees in their budgeting. In fact, given that such schools often sell themselves on their success at A Level

it is highly likely that parents and pupils will be expecting to stay on for the sixth form at the outset. On this basis, the main circumstance that may cause a change of plans could be a change of occupation. However, when included as an explanatory variable, this too failed to generate a significant parameter, although there were relatively few in the sample whose occupational status altered.

No figures are reported for the mother's occupation variable because when included it produced parameters that were persistently insignificant and usually had a counter-intuitive sign. Pupils were more likely to stay if their mother held a lower paid occupation. This unexpected finding could be the result of the rather crude proxy variable that was used to capture the income effect, the implicit assumption being that both parents worked full time. In the case of mothers this may not be the case, and a variable distinguishing between full and part time employment may have performed better. However, as information was not gathered on this aspect of parental employment in the questionnaire, no such variable could be constructed.

The change in the pupil's fee assistance status emerged as one of the more potent control variables, but still failed to achieve meaningful statistical significance. Pupils who gained additional fee remission for the sixth form were more likely to stay on because the price of their education had fallen. Equally, those losing fee help were more likely to quit because they effectively faced a price increase on their schooling. The coefficient on the variable interacting father's occupation with changing pupil fee assistance does not have the expected sign as pupils with fathers in lower income occupations who are granted fee assistance for the sixth form have a higher probability of quitting. However, the parameter is insignificant and becomes increasingly so as the model becomes more complex.

The variables for the location of a pupil's household relative to their school produce mixed results. For pupils travelling from the middle distance of 6-15 miles, there is a negative coefficient, indicating that they are more likely to quit than those living within 6 miles of their school. For pupils living 16 miles or over away from school, a somewhat counter-intuitive result emerges with a positive coefficient showing that the pupils who travel furthest, and hence have the highest transport costs, both financially and in terms of time, are more likely to stay than those living within 6 miles of their school. A possible explanation for this is that school dominates the lives of these pupils to such an extent, in terms of travel, lessons, homework and extra-curricular activities that they form stronger attachments than for pupils living closer. However, it could be that these pupils have the greatest commitment to their school from the outset, which motivates them to commute from such distances. If this is the case, then their motivation will arguably promote stronger attachment to their school. Time spent travelling may also encourage stronger attachment to school through the development of friendships between pupils sharing buses or trains. However, the t ratio on each coefficient is such that it is impossible to reject the null hypothesis of a zero parameter for both variables.

The pupil ability variables perform as expected with weaker pupils more likely to quit, but the parameters are small and only that on the weakest group approaches significance. Rather surprisingly, it appears that academic ability plays little part in the quit decision. However, the introduction into the model of a variable for A Level subject choice produces a notable result in this respect, as demonstrated by Table 10(b). A very well determined coefficient is generated on the variable with pupils who plan to take at least one non-traditional A Level subject having a significantly lower probability of staying on. Unfortunately, the parameters on the pupil ability variables, though not initially significant in 10(a), collapse and offer negligible explanatory power. This suggests that there is a potential identification problem within the model.

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The decision to stay or quit appears to be a function of the pupil's desire to study at least one non-traditional A Level subject. This is as expected, given the rather limited choice of subjects that schools can offer compared to sixth form colleges. It could also be the case that the choice of at least one non-traditional A Level subject is a function of the pupil's decision to stay or leave school, with pupils who leave more likely to opt for such subjects because of their wider availability in colleges. Hence, there is an element of simultaneity here.

This suspicion is confirmed by Table 11, which reports the results of a logit regression of pupil choice of non-traditional A Levels on pupil GCSE performance and father's occupation. Micklewright (1989), Mare (1980) and Robertson (1993) all found that the educational backgrounds of parents exerted significant influence over the decision by pupils to continue in post-compulsory education. With this in mind, it may well be the case that the subjects chosen by pupils are also shaped by parental experience. Pupils with parents in the higher paid managerial and professional occupations, may be more likely to select traditional A Level subjects because their parents will probably have studied such disciplines to gain entry into these occupations. The variable for father's occupation is FOCC, which takes the value 1 if the pupil's father holds an occupation that is not SOC1 and 0 otherwise. Hence, the reference pupil for this regression, taking 0 values for the dummy variables, is in the top quartile of the sample's ability distribution based on GCSE performance, and has a father with an SOC1 occupation (managers and administrators).

TABLE 11

Maximum likelihood estimates of parameters of logit function of pupil choice of non-traditional A Levels

Variable	Parameter	t ratio
CONST	-2.6695	-3.557
GCSE1	3.1715	4.100
GCSE2	1.7255	2.120
GCSE3	0.5093	0.543
FOCC	-1.1300	-2.776

Log Likelihood	-84.3117
Chi Squared	51.9513
DF	4
Pseudo R^2	0.236
Sample Size	243

The coefficients on the variables for pupil GCSE score all have the expected signs and reveal a strong correlation between pupil ability and the probability that a pupil will choose to study at least one non-traditional A Level. For the lower two ability quartiles, GCSE1 and GCSE2, the parameters are highly significant, clearly indicating that weaker pupils are more likely to opt for such courses. This could be because these subjects are perceived to be less demanding academically, or they offer forms of assessment, such as a high proportion of coursework, that appeal to weaker pupils. It may also be the case that having struggled for years with a traditional diet of subjects, these pupils are more prepared to risk an exploration in pastures new. On the basis of these results, it seems that the effect of academic ability in the main model is largely being captured by the pupil's wish to pursue non-traditional A Levels.

The variable for father's occupation also produces a significant parameter, but it carries an unexpected sign, which shows that pupils whose fathers work in less well paid occupations (not SOC1) are less likely to select these non-

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traditional courses, while pupils with fathers from the highest paid occupations are more likely to choose them. This is contrary to the expectation that there is a higher probability that traditional subjects will be chosen by pupils whose parents hold the highest paid occupations because these are the subjects that paved the way for their parents' entry to these occupations. A possible explanation for this result is that the non-traditional A Level variable is reflecting the demand for greater variety in subjects for the sixth form. Parents in the highest occupational group may be better informed about the range of subjects on offer, and as such give their children better information about their options, making it more likely that they will select something 'new'. Equally they may suspect that the newer subjects are not of comparable difficulty to the traditional and advise their children to opt for greater choice to enhance their prospects of success on their courses. Whatever the reason, it seems that while occupational considerations do not influence the quit decision directly, they appear to exert an indirect effect through the desire for greater choice at A Level. Nevertheless, on the whole any impact is marginal.

Aside from the identification issue raised by the addition of the A Level subject choice variable, this alteration to the model slightly reduces the impact of the major sport, major activity and school friends variables. Unfortunately, major sport drops to a 90% significance level, but on the whole the results confirm the importance of school-specific attachments. Conversely, the minor sport variable becomes stronger, supporting the notion established earlier that pupils participating in a sport occasionally seem to build up strong attachments to their school. Once again, the control variables fail to record statistically significant results, although their signs are consistent with the first model.

On the basis of these results from the regressions using the basic model there is substantial support for the notion that all other things being equal, pupil involvement in extra-curricular activities forms school-specific attachments that

increase the probability of the pupil staying on at the same school for the sixth form. Even stronger school-specific attachments arise from the pupil's friendship groups within the school, with the chances of a pupil staying on for the sixth form being greatly enhanced if the majority of the pupil's friends at the school are staying.

Table 12 records the findings of two additional versions of the model that include the more 'subjective' variables on pupil attitudes to school and their enjoyment of any extra-curricular activities in which they participate. Table 12(a) introduces variables to capture pupil attitudes on school uniform and discipline in terms of rules and regulations. Both carry the expected sign, indicating that pupils favouring uniform and the ways of their school are more likely to stay than those who are indifferent about such matters, and those expressing indifference are more likely to stay than those opposed to these aspects of school life. Clearly, pupils in tune with the ethos of their school appear to build up attachments that make them happy to stay. Attachments such as the comfort of knowing the system could generate a return for the pupils in the sixth form because they may be given prefect responsibilities to discharge; an experience that may well impress prospective employers in the future. Quitting will break these attachments and incur costs for the pupil of having to learn the routines of a new institution. Pupil views on uniform, a traditional bone of contention, generate a highly significant parameter, but the coefficient on the school rules variable can only be accepted at an 80% level of confidence.

The third variable added concerns the individual pupil's perception of whether their parents had more say than them in the quit decision. Its positive coefficient indicates that if parents have the greater say the pupil is more likely to stay, suggesting that parents have a degree of attachment to their child's school. For example, they may feel more comfortable dealing with teachers

TABLE 12

Maximum likelihood estimates of parameters of logit function: basic model with subjective variables

Variable	(a) Parameter	t ratio	(b) Parameter	t ratio
CONST	-3.0351	-2.659	-2.8448	-2.439
SCH	-0.3408	-0.794	-0.2848	-0.656
SEX	0.0362	0.047	-0.1570	-0.195
ONLYCH	0.2209	0.302	0.3296	0.446
FOCC	-0.2318	-0.499	-0.3117	-0.660
FOCDIF	0.3055	0.206	-0.0098	-0.007
FEEASDIF	-0.5697	-0.523	-0.3295	-0.304
DISTD1	-0.0092	-0.021	-0.1030	-0.227
DISTD2	0.2156	0.396	0.1386	0.250
ASPORT	0.3354	1.271	0.5274	1.546
BSPORT	0.8223	2.071	0.9866	2.313
ABMUSIC	0.1736	0.722	0.1698	0.477
ACTA	0.5751	2.027	0.3648	1.163
ACTB	-0.2738	-0.660	-0.3338	-0.811
FRIENDS	0.5046	1.035	0.6350	1.253
SCHFRD	1.6458	3.886	1.6898	3.932
GCSE1	0.4203	0.672	0.2958	0.467
GCSE2	0.0551	0.097	0.0021	0.004
GCSE3	0.1393	0.255	0.0594	0.105
NTRA	-2.1575	-3.831	-2.0823	-3.666
UNIATT	0.6854	2.260	0.6474	2.098
SCHATT	0.6346	1.502	0.5664	1.306
PARATT	0.5215	0.849	0.3985	0.636
SPINV			-0.5789	-1.023
MUSINV			0.0273	0.024
ACTINV			0.9499	1.542

Log Likelihood	-95.52398		-93.82348
Chi Squared	95.14072		98.54173
DF	22		25
Pseudo R^2	0.332		0.344
Sample Size	243		243

Notes
1. t ratio figures test the hypothesis the individual coefficients are zero.
   Test statistic = parameter value/standard error of variable
2. Chi squared figure tests the hypothesis that all the slope coefficients are jointly zero.
   Test statistic = 2(model log likelihood - log likelihood with optimal constant only)
3. Pseudo R^2 uses McFadden R^2 which is the associated likelihood ratio index 1 - (model log likelihood/log likelihood with optimal constant only)

that they already know and a pastoral system with which they are familiar. However, any influence exerted by this variable is likely to be minimal because its parameter is statistically insignificant.

Once again the addition of these extra explanatory variables reduces the impact of some of the the school-specific attachments previously identified, in particular the effect of major sport participation, which slips to an 80% confidence level. The coefficients on both minor sport and major activity also lose some of their explanatory power, although they remain significant. On balance, however, the inclusion of the pupil attitude variables seems to strengthen the case that pupils acquire school-specific attachments that make them less likely to quit their school for the sixth form.

Thus far pupil involvement in extra-curricular activities has been characterised by participation alone rather than by the pupil's subjective assessment of the enjoyment derived from participation. Table 12(b) develops the model one step further testing the extent to which pupil enjoyment of their activities builds up attachments. None of the variables generates a significant parameter, although two suggest that they could possibly be influential. The coefficient for sporting enjoyment carries an unexpected negative sign, which implies that the pupils who enjoy their sport the most are more likely to quit. Hence, there is a somewhat conflicting picture whereby participation in school sport builds up quite strong attachments for the pupil, but enjoyment of the sport has the opposite effect. A possible explanation for this outcome is that those enjoying their sport the most are likely be the most enthusiastic players who will probably be the more talented, and as such, more likely play sport out of school. This alternative to the school sport could be of a better standard, so despite finding the school sport very enjoyable, it does not attract them to stay. In fact, the better players will be more confident of gaining selection elsewhere so are less inclined to stay. Another possible explanation is that the enjoyment

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variable reflects academic ability to a certain extent, with those who find sport most enjoyable being among the less able pupils. If this is the case, the greater likelihood of their departure arises because they may not feel that they can cope with the academic demands of the school sixth form.

The variable relating to pupil enjoyment of activity participation has the expected sign, suggesting that those pupils deriving a great deal of pleasure from their involvement in activities are more likely to stay. Unfortunately, the parameter is not significant, and its introduction has the effect of reducing the value of the parameter on activity involvement, taking it below an 80% confidence level. Given that neither variable achieves independent significance, a test of their combined significance was undertaken, the results of which are given in Table 13. The null hypothesis that the sum of the two parameters equals zero is rejected with 95% confidence, which implies that pupils involved in school activities are only likely to form significant attachments to their school if they find the activities very enjoyable.

These findings suggest that the schools should consider the quality of the activities they provide and the extent to which they meet the needs of their pupils because merely providing activities is not sufficient for attachment to occur. The same is not necessarily true of sport, where participation alone seems to be sufficient, and providing something that the pupils find very enjoyable is counter productive because the pupils are more likely to leave.

Aside from the effects already discussed, the introduction of the enjoyment variables causes few notable changes to the model, both in terms of the attachment and control variables. The sports variables increase their explanatory powers, and, although not reported, a combined variable for the total number of sports played by the pupil (ABSPORT) produces a positive and highly significant coefficient.

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TABLE 13

Maximum likelihood estimates of parameters of logit functions testing the combined significance of activity involvement and enjoyment

Variable	(Unrestricted Model) Parameter	t ratio	(Restricted Model) Parameter	t ratio
CONST	-2.8512	-2.462	-2.9497	-2.578
SCH	-0.3082	-0.711	-0.4150	-0.974
SEX	0.0500	0.063	0.3255	0.443
ONLYCH	0.3171	0.430	0.1490	0.203
FOCC	-0.3313	-0.701	-0.2058	-0.442
FOCDIF	0.4078	0.286	0.2977	0.202
FEEASDIF	-0.2576	-0.243	-0.3185	-0.291
DISTD1	-0.0627	-0.140	-0.0053	-0.012
DISTD2	0.1366	0.246	0.1101	0.202
ASPORT	0.5226	1.536	0.5052	1.488
BSPORT	1.0311	2.432	0.9484	2.230
ABMUSIC	0.1687	0.478	0.1988	0.530
ACTAB	0.1177	0.477		
ACTDIF			0.2642	0.886
FRIENDS	0.6735	1.329	0.5946	1.210
SCHFRD	1.7307	4.046	1.7035	4.047
GCSE1	0.2280	0.361	0.3600	0.574
GCSE2	-0.0230	-0.040	0.0369	0.065
GCSE3	0.0651	0.115	0.0874	0.159
NTRA	-2.0837	-3.676	-2.2537	-4.037
UNIATT	0.6651	2.179	0.7527	2.502
SCHATT	0.5553	1.275	0.5981	1.404
PARATT	0.2465	0.409	0.4998	0.839
SPINV	-0.5172	-0.925	-0.4123	-0.737
MUSINV	-0.1091	-0.098	-0.2092	-0.189
ACTINV	1.1121	1.852		

Log Likelihood	-94.68370		-97.18004
Chi Squared	96.82129		91.82861
DF	24		23
Pseudo R^2	0.338		0.321
Sample Size	243		243

Notes
1. ACTAB = ACTA + ACTB and ACTDIF = ACTAB - ACTINV
2. The null hypothesis being tested is $H_o : \beta_1 + \beta_2 = 0$ where β_1 is the parameter on ACTAB and β_2 is the parameter on ACTINV
3. Test statistic = 2(-94.68370+97.18004) = 4.99268 ~ X^2 with 1 degree of freedom. The null hypothesis is rejected at a 95% level of confidence

On the basis of the parameter estimates in Table 12(b), the impact of potential sources of school-specific attachments on the probability that a pupil stays on at school for the sixth form can be assessed. The reference pupil for this assessment is a boy from a family with at least one brother or sister, and a father whose occupation is SOC1. He attends School A, has no change in his fee assistance status for entry to the sixth form and lives within 6 miles of the school. He is in the top quartile of the ability range, but is not involved in any sport, music or other school activities. The majority of his friends are out of school, and most of his school friends are not staying on for the sixth form. He had at least as much say as his parents in his sixth form choice and intends to study only traditional A Level subjects. With regard to school uniform and school rules he has no strong views either way. The estimated probability that he stays at school for the sixth form is 0.397. The effects on this estimated probability of varying the pupil's characteristics are shown in Table 14.

A variety of pupil types is represented in the columns of the table, each involved in different levels and combinations of extra-curricular activities. The reference pupil has no involvement and is therefore least likely to build up school attachments. The remaining four types take the characteristics of the reference pupil in every respect other than activity involvement. The pupils represented are a sports player involved in two major sports and one minor, a musician involved in three school musical activities, an activity pupil participating in two major clubs or activities and an all rounder involved in one major sport, one musical activity and one major club or activity. Reading across the top row of the table it is evident that all else being equal involvement in extra-curricular activities has a marked impact on the probability of staying, especially in sport. The probability of the sporting pupil staying on for the sixth form is 0.835, over twice that of the reference pupil. Involvement in music has the least impact, but still raises the probability that the pupil stays to 0.523. It is clearly the case that participation in extra-curricular activities

TABLE 14

Predicted probabilities of staying on in the sixth form for different pupil types

	Reference Pupil[1]	Sporting Pupil[2]	Musical Pupil[3]	Activity Pupil[4]	All Rounder[5]
Standard (1)	0.397	0.835	0.523	0.578	0.656
(1) except against uniform & school rules (2)	0.164	0.601	0.246	0.288	0.362
(1) except favours uniform & school rules (3)	0.689	0.948	0.787	0.822	0.865
(2) except most friends at school & most school friends staying (4)	0.667	0.939	0.769	0.806	0.853
(3) except most friends at school & most school friends staying (5)	0.958	0.995	0.974	0.979	0.985
(1) except most friends at school & most school friends staying	0.871	0.981	0.918	0.933	0.951
(4) except finds any extra-curricular activities very enjoyable	0.667	0.896	0.774	0.915	0.896
(5) except finds any extra-curricular activities very enjoyable	0.958	0.990	0.975	0.992	0.990
(1) except finds any extra-curricular activities very enjoyable	0.397	0.740	0.530	0.780	0.775
(4) except studying at least one non-traditional A Level	0.200	0.658	0.293	0.341	0.419
(5) except studying at least one non-traditional A Level	0.739	0.956	0.825	0.854	0.891
(1) except studying at least one non-traditional A Level	0.076	0.387	0.120	0.146	0.192

Notes : Pupil characteristics
1 Reference pupil : boy at School A, in top ability quartile, with no extra-curricular activities, majority of friends out of school and majority of school friends leaving for sixth form. Plans to study traditional A Levels and has no strong views on uniform or school rules. Father's occupation SOC1, lives within 6 miles of school, not an only child, has at least as much say as parents in choice and no change in fee assistance for sixth form.
2 Sporting pupil : reference pupil except plays 2 major sports and 1 minor sport.
3 Musical pupil : reference pupil except involved in 3 musical activities.
4 Activity pupil : reference pupil except involved in 2 major clubs or activities.
5 All rounder : reference pupil except plays 1 major sport, involved in 1 musical activity and 1 major club or activity.

reduces the likelihood of pupil turnover.

For each of the pupil types the effect on the predicted probability of staying of different combinations of other key explanatory variables is given by the columns in Table 14. It is evident that for all pupil types, a favourable attitude towards school, both in terms of uniform and rules, markedly raises the probability that the pupil will stay. Conversely, a negative set of attitudes will significantly reduce the chances of a pupil staying, even if the pupil has a high level of extra-curricular involvement. For example, the probability of the 'all rounder' pupil staying increases from 0.656 to 0.865 if the pupil favours the school's uniform and rules, but drops to only 0.362 if the pupil is against these aspects of school life.

Equally, having a majority of friends at school, most of whom intend to stay on will dramatically reduce the chances of the pupil's departure, even for a pupil with no extra-curricular involvement. The chances of the reference pupil staying rises from 0.397 to 0.871 if most of the pupil's friends are at the school, and the majority of them intend to stay. The chances of the musical pupil staying on if favourable friendship influences are at work leap from 0.523 to 0.918. The overriding conclusion that can be drawn from this is that friendships clearly matter a great deal as a school-specific attachment, and can go a long way to offsetting some of the negative influences on pupil decision making. For instance, the chances of the 'activity pupil' staying on, despite being anti-school with regard to uniform and rules, rises from 0.288 to 0.806 if the pupil's friendship variables reveal a majority of the pupil's friends at the school, most of whom intend to stay on.

The level of enjoyment derived from extra-curricular involvement only really generates a notable impact on the probability of staying for the 'activity pupil' and the 'all rounder' when the enjoyment variable is added to the standard

characteristics. For the former, the probability rises from 0.578 to 0.780, while for the latter it rises from 0.656 to 0.775.

The wish to study at least one non-traditional A Level subject substantially reduces the probability of the pupil staying across all pupil types, although its effects can be counteracted with positive pupil attitudes towards the school and favourable friendship variables. For example, the 'sporting pupil' will experience a sharp fall in the probability of staying from 0.835 to 0.387 if at least one non-traditional A Level is selected and the standard characteristics apply, but if the pupil favours the school's uniform and rules, and has the majority of his/her friends at the school, most of whom are staying, then the effect of choosing at least one non-traditional A Level is to reduce the chance of staying from 0.995 to just 0.956.

From the data in Table 14, the pupil most likely to quit is not involved in any school activities outside the classroom, has an anti-school outlook, relatively few school friends, most of whom intend to quit, and a desire to pursue at least one non-traditional A Level. For such a pupil there is a minimal chance of 0.076 that the pupil stays. Conversely, the pupil most likely to stay with a 0.995 probability plays two major sports and one minor, has most of their friends at the school, the majority of whom intend to stay on, plans to study only traditional A Level subjects and has positive attitudes towards the school.

To date nothing has been said about the dummy variables included in the model to capture the effect of the school attended by the pupil and the pupil's gender. It is evident from Tables 10 and 12 that the school variable consistently carries a negative parameter, indicating that a pupil has a slightly higher chance of quitting from School B. However, the parameter has little explanatory power and is statistically insignificant, which implies that the school attended by the pupil makes no noticeable difference in the decision to

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stay or quit. To explore if there are differences between the schools a little more, two further steps were taken. First a test of parameter stability was performed, using the results in Table 15. The school and sex dummies were dropped from the model, the latter because only School B had girls, and the model was estimated for each school separately, to obtain the unrestricted parameters, and then across the whole sample, to get the restricted parameters. As can be seen from the footnotes to the table, the hypothesis that the parameters were equal in both schools is accepted at a 95% level of confidence. This result confirms the notion that there is no discernible difference between the schools.

The second test undertaken was to run a parsimonious version of the model using the data for the two schools separately. Only the most significant explanatory variables were used, including a combined sports variable (ABSPORT). Table 16 presents these results and confirms the existence of parameter stability between the two schools. However, there are some points of contrast worthy of comment. Regarding sport, pupil participation matters more in School B than in A, but if enjoyment is taken into consideration, those pupils who enjoy their school sport a great deal are much more likely to quit School B. This could reflect a difference in the sporting success enjoyed by the two schools. Teams at School B may win fewer matches, thus discouraging the better players from staying on.

Activities paint a slightly different picture with participation carrying very little explanatory power in School A, but considerably more in School B. However, the enjoyment of participation matters a great deal more to pupil attachment in School A than in School B. On the basis of these findings, School B should adopt a quantity not quality strategy in order to promote pupil involvement in as many activities as possible, while School A should consider the opposite strategy providing quality activities that the pupils will enjoy because this will

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TABLE 15

Maximum likelihood estimates of parameters of logit functions for testing the parameter stability between School A and School B

Variable	(School A) Parameter	t ratio	(School B) Parameter	t ratio	(Total) Parameter	t ratio
CONST	-3.3063	-2.111	-2.2641	-0.974	-3.0198	-2.648
ONLYCH	-0.7486	-0.760	1.0499	0.651	0.3453	0.474
FOCC	-0.4819	-0.710	-1.3063	-1.268	-0.3383	-0.721
FOCDIF	-2.7823	-1.297	18.2350	0.133	0.0076	0.005
FEEASDIF	1.3863	1.020	-15.3890	-0.112	-0.4250	-0.391
DISTD1	-0.4868	-0.743	0.3932	0.460	-0.0699	-0.155
DISTD2	0.0073	0.009	0.2738	0.250	0.1942	0.355
ASPORT	0.4976	0.948	1.0407	1.424	0.4890	1.483
BSPORT	1.1266	1.816	2.2091	1.881	0.9969	2.332
ABMUSIC	0.5318	0.456	-0.1998	-0.370	0.1285	0.372
ACTA	0.1425	0.261	0.7881	1.377	0.3274	1.066
ACTB	-0.2727	-0.405	-0.6419	-0.851	-0.3417	-0.842
FRIENDS	0.2671	0.360	1.5716	1.597	0.6891	1.377
SCHFRD	2.1326	3.389	1.9366	2.291	1.6785	3.967
GCSE1	0.6165	0.652	0.2792	0.278	0.3397	0.543
GCSE2	0.4228	0.476	-0.5140	-0.460	0.0341	0.059
GCSE3	-0.4377	-0.493	1.2503	1.204	0.0490	0.087
NTRA	-1.9922	-2.532	-1.8181	-1.562	-2.0830	-3.735
UNIATT	0.7992	1.671	0.4549	0.847	0.6542	2.149
SCHATT	0.9414	1.453	-0.3149	-0.363	0.5666	1.311
PARATT	0.5782	0.656	-0.4781	-0.421	0.3931	0.629
SPINV	-0.5546	-0.654	-1.2211	-1.044	-0.5328	-0.948
MUSINV	0.3081	0.163	1.8004	0.804	0.0333	0.030
ACTINV	0.8925	1.016	0.1336	0.120	0.9811	1.599

Log Likelihood	-50.53247		-31.90233		-94.12580
Chi Squared	56.85428		64.46459		97.93708
DF	23		23		23
Pseudo R^2	0.360		0.503		0.342
Sample Size	134		109		243

Notes
1. The null hypothesis being tested is H_o : $\underline{B}^A = \underline{B}^B$ where $\underline{B}^A$ is the vector of parameters for School A and $\underline{B}^B$ is the vector of parameters for Schhol B.
2. Unresticted log likelihood = -(50.53247+31.90233) = -82.4348
   Restricted log likelihood = -94.12580
3. Test statistic = 2(-82.4348+94.12580) = 23.382 ~ X^2 with 23 degrees of freedom.
   The null hypothesis is accepted at a 95% level of confidence

TABLE 16

Maximum likelihood estimates of parameters of logit functions: comparison of School A and School B

Variable	(School A) Parameter	t ratio	(School B) Parameter	t ratio	(Total) Parameter	t ratio
CONST	-3.1243	-2.661	-2.3349	-1.869	-2.9058	-3.525
ABSPORT	0.5311	1.500	0.7974	1.835	0.6831	2.596
ACTA	-0.0270	-0.056	0.4854	1.216	0.2146	0.769
FRIENDS	0.0403	0.060	1.1451	1.619	0.6186	1.315
SCHFRD	1.8904	3.496	1.6459	2.436	1.7397	4.275
NTRA	-1.6738	-2.914	-2.6825	-2.653	-1.8098	-3.908
UNIATT	0.6513	1.631	0.4594	1.072	0.5708	2.025
SCHATT	1.0734	1.866	-0.0854	-0.136	0.5649	1.376
SPINV	-0.1369	-0.202	-1.0762	-1.275	-0.5443	-1.062
ACTINV	1.1747	1.432	0.5715	0.609	1.0049	1.702

Log Likelihood	-54.04556		-39.21937	-96.27782
Chi Squared	49.82809		49.83050	93.63305
DF	9		9	9
Pseudo R^2	0.316		0.388	0.327
Sample Size	134		109	243

Notes

1. The null hypothesis being tested is H_o : $\underline{\beta}^A = \underline{\beta}^B$ where $\underline{\beta}^A$ is the vector of parameters for School A and $\underline{\beta}^B$ is the vector of parameters for Schhol B.

2. Unresticted log likelihood = -(54.04556+39.21937) = -93.26493
   Restricted log likelihood = -96.27782

3. Test statistic = 2(-93.26493+96.27782) = 6.02578 ~ X^2 with 9 degrees of freedom.
   The null hypothesis is accepted at a 95% level of confidence

give them a better chance of retaining their pupils.

A further point of contrast concerns pupil attitudes to school uniform and rules. Both seem to matter considerably to pupils in School A with those pupils in favour of both more likely to stay. In School B the parameter on the rules variable is counter intuitive, suggesting that those in favour are more likely to quit than those against. This could be the result of different systems of rules operating between the two schools, with School B having a system that is less likely to promote pupil attachment, so that even those pupils who favour the system are not tempted to stay at school as a result of the rules.

The composition of a pupil's friendships carries quite significant weight in School B, but virtually none in School A, where it does not matter whether most of the pupil's friends attend the school or not. However, the influence of peer group factors is stronger in School A with pupils much more likely to stay if most of their school friends stay.

Finally, the decision to study at least one non-traditional A Level is a major determinant raising the chance that a pupil will quit in both schools, although it carries greater significance in School A. If this variable is largely a reflection of academic ability, as has been suggested, then the schools may not worry too much about these quits, but if it is an indication that pupils desire a greater choice of subjects, the schools may want to contemplate curriculum change to provide more variety of courses in the sixth from.

Tables 10 and 12 consistently show a negative coefficient on the gender variable (SEX), the implication being that girls are more likely to quit school for the sixth form. However, the coefficients are generally small and have no statistical significance, and in view of the very small number of girls in the sample, few conclusions can be drawn. The paucity of data means that only

very restricted versions of the model can be run for boys and girls separately. Table 17 presents the results of two such estimations.

In both models the parameters for the boys are well defined and show good significance. To be expected, these findings are consistent with those of the main model, in which boys dominate the sample. The boys build up school-specific attachments through their participation in sport and activities, and via their friendship groups. All three increase the probability of staying quite markedly, as does a favourable attitude towards school uniform. Model B reveals that the selection of a non-traditional A Level produces a greater likelihood of quitting.

With the exception of activity involvement in Model A, all of these results are confirmed for the girls in terms of the signs of the parameters. In Model A, it seems that girls participating in activities are more likely to quit. This could be a reflection of the nature of the activities available In School B, which was passing through the transition to full co-educational status. The girls may feel a degree of bias in favour of boys in this respect, giving rise to a 'negative' attachment. Despite its negative sign, however, the parameter is not significant. In fact, the only parameter for girls that approaches significance in Model A is sporting involvement, which is a more potent influence on the quit choice than is the case for the boys. Again this could be a reflection of the small cohort of girls in School B, which means that there is a good chance that they will be selected for a school team, thus giving them more opportunity to establish school attachments. Unfortunately, there is little else that can be deduced from the results for the girls, especially if the non-traditional A Level choice variable is added, effectively destroying any prospect of statistical significance.

TABLE 17

Maximum likelihood estimates of parameters of logit functions: comparison of boys and girls

Model A

Variable	(Boys)		(Girls)	
	Parameter	t ratio	Parameter	t ratio
CONST	-2.4450	-3.867	-3.5540	-0.720
ABSPORT	0.3883	1.796	3.3564	1.939
ACTA	0.7867	2.755	-0.5252	-0.666
SCHFRD	2.0405	5.353	2.5647	0.568
UNIATT	0.6734	2.550	0.5075	0.506
Log Likelihood	-99.07612		-6.353591	
Chi Squared	56.69342		15.36448	
DF	4		4	
Pseudo R^2	0.222		0.453	
Sample Size	210		33	

Model B

Variable	(Boys)		(Girls)	
	Parameter	t ratio	Parameter	t ratio
CONST	-1.8468	-2.732	-73.596	-0.027
ABSPORT	0.3765	1.755	1.304	0.005
ACTA	0.6308	2.137	21.785	0.067
SCHFRD	1.8189	4.537	41.927	0.016
NTRA	-1.5282	-3.321	-90.408	-0.065
UNIATT	0.6400	2.317	20.870	0.043
Log Likelihood	-93.39073		-0.000054349	
Chi Squared	68.06421		28.07156	
DF	5		5	
Pseudo R^2	0.267		0.999	
Sample Size	210		33	

CHAPTER 6 - CONCLUSION

The key finding of this research is that pupils appear to build up school-specific attachments that affect their behaviour. In the precise context of the investigation, it has been found that other things being equal, pupil participation in extra-curricular activities leads to the acquisition of school-specific attachments that reduce the chance of pupil turnover between school and sixth form college, in much the same way that Becker (1964) found a lower turnover among workers investing in firm-specific training.

The results show that the strength of pupil attachment varies across different extra-curricular activities and according to the intensity of pupil involvement. In the basic model controlling for the pupil's academic ability, certain family background characteristics and the location of the pupil's home relative to school, it has been found that participation in a school club or activity, like the Duke of Edinburgh Award Scheme, on a major basis is the most influential source of pupil attachment to their school via extra-curricular activities. Membership of a sports team also establishes strong links between pupil and school, with a minor involvement exerting slightly more influence than a major commitment. The inference is that the more sports teams and major activities a pupil joins, the greater the probability that the pupil will stay on at the same school for the sixth form. However, musical activities do not seem to form any significant attachments between school and pupil, perhaps because the 'team' element in such activities is intrinsically less, while a minor involvement in a school club or activity generates an insignificant attachment.

Extra-curricular activities are not the only important source of school-specific attachment identified by the model. Friendships formed at school appear to matter greatly to pupils who seem to want to conform to the behaviour of their school friends. If the majority of their friends are staying on, there is a marked

increase in the probability that the pupil stays at the school. This suggests the existence of a dynamic process whereby a pupil who decides to quit increases the probability that each of his or her friends quits. They in turn may overlap with other groups of friends within the school, creating a ripple effect that is potentially very significant for pupil turnover.

Expanding the model to incorporate pupil attitude variables adds to the significant school-specific attachments that affect behaviour. Pupils with positive attitudes towards their school's uniform and rules are found to be more likely to stay. The introduction of variables to capture pupil enjoyment from their extra-curricular activities suggests that different activities exert their influence in different ways. In sport, attachments are formed by participation alone, but for activities participation needs to be accompanied by a high level of pupil enjoyment to generate a significant attachment. Hence, the conclusions from the basic model needs some modification because whilst it may be true that the more sports teams a pupil joins the better, this is not the case with activities, which will only retain pupils if they find them very enjoyable.

The only notable variable found to reduce the probability of a pupil staying on is the choice to study at least one non-traditional A Level, a variable that seems to be picking up the influence of the pupil's academic ability. Less able pupils who would arguably struggle to cope with the academic sixth forms at the schools are more likely to choose these non-traditional subjects, which increases the chance of their departure from the school.

It is evident from these findings that the development of school-specific attachments by pupils motivates them to stay on at their school for the sixth form. This motivation could well have important consequences for their attainment and attitude. For instance, in seeking to capitalise on their

attachments pupils may work harder, which could lead to a better academic performance. Alternatively, the benefits from attachment may be behavioural, with pupils adopting more positive attitudes towards school because they can socialise with their friends. The precise effects of school attachment on pupil attainment and attitude lie beyond the immediate scope of this research, but are clearly areas that warrant further investigation because they could have major policy implications for schools.

This project, by identifying some potential sources of school-specific attachment, has raised certain policy issues. If pupil attachments are to be promoted by schools to deepen pupil commitment to academic study or to reduce pupil turnover, then there is obviously much to be gained by encouraging pupil participation in extra-curricular activities. This may require a wider choice of activities to be made available or an improvement in the quality of existing activities. Any expansion of extra-curricular activities along these lines will have effects for resources and staffing that schools will need to address. For example, can additional resources be found for the activities or will they need to be re-allocated from the main curriculum? Will staff contributions to any extra-curricular programme be on a voluntary basis or will a degree of compulsion be introduced?

In addition to the provision of extra-curricular activities already discussed, schools may want to look at more fundamental areas like the length and structure of the school day to see if they can be altered to promote pupil attachment. The timing of breaks and lunch times could be crucial in terms of providing opportunities for the development of pupil friendships, and the scope for running extra-curricular activities. If pupils spend longer at school they have more time with their friends and more chance to involve themselves in sport and activities, thus raising the likelihood of attachments forming. The pastoral system could be reformed to foster stronger ties perhaps by developing a

house system with an accompanying set of allegiances that will indirectly help to attach pupils to their school. School uniform and rules could also be reviewed to ensure that they meet with the approval of pupils because the greater the support for such aspects of school life, the stronger the attachment of pupils.

The evidence of this research suggests that schools may need different policy responses to promote pupil attachment. In terms of pupil retention for the sixth form, both of the schools investigated should endeavour to promote involvement in sports teams, even on a minor basis. This may require a broadening of the sports offered by the school or the development of more B teams and fixtures. School B will need to be careful to ensure that pupils find the sports offered very enjoyable, but School A needs to concentrate on quantity more than quality. A similar picture emerges for clubs and activities, although the roles are reversed with School A having to concentrate on providing activities that pupils find very enjoyable because this will be more likely to encourage participation on a major basis and promote attachment, while School B can focus more on getting its pupils involved in as many major activities as possible. The situation for musical activities is less straightforward. If there is something intrinsic in playing music that means pupils do not form school-specific attachments then there is little that schools can do, but if the problem lies with the way that musical activities are currently provided, schools may wish to review their provision to see if an alternative approach promotes stronger attachment.

Away from extra-curricular activities, School A could benefit from a review of its rules and uniform to ensure pupil support, but School B seems to have little to gain from such an exercise. The sixth form curriculum could also be an area for reform in both schools, given the importance of non-traditional A Level subject choices on turnover. If this variable is only capturing the effect of pupil

ability then schools will probably not worry if their limited curriculum is driving away their weaker students, but there is a possibility that the variable might be picking up a desire for greater subject choice, in which case schools may want to broaden their range of subjects to increase the chance of pupil retention.

In conclusion, this project supports the hypothesis that pupils develop school-specific attachments which influence their decision making. Several sources of attachment have been identified, and found to exert significant affect on pupil turnover between school and sixth form college. Whilst this finding has important repercussions for schools seeking to retain pupils in the face of mounting competition in their markets, it also paves the way for further research into the formation of pupil attachments and their effects on behaviour and performance.

APPENDIX A

TABLE 18

Background details of School A and School B

	School A	School B
Foundation date	1553	1732
Date of independence	1979	1976
Original status of the school	boys only	boys only
Date adopted co-education in sixth form	1983	1976
Date adopted co-education throughout	1994	1991
Size of school (no. of pupils)	950	775
Size of sixth form (no. of pupils)	290	250
Teaching staff	84	84
Number of A Level subjects offered	20	18
Average A Level points per subject entry (1996)	7.9	7.4
Average A Level points per candidate (1996)	24.6	24.0

[Sources of data: School prospectuses and DfEE School and College Performance Tables 16-18 Age Group 1996]

The above table shows that the schools researched shared many common characteristics, thus reducing the possibility of quit rates being influenced by extraneous factors.

APPENDIX B

SIXTH FORM - SCHOOL OR COLLEGE?

This questionnaire from the University of Southampton is being issued as part of a research project into sixth form choices made by pupils in independent schools.

Please answer all questions.

Read each question carefully, and follow the instructions given in brackets as to how to answer the question.

Your answers will be combined with those of students from another school so that your individual responses will not be identifiable to anybody reading the results when published.

At this stage in the research it is helpful to have your name on the questionnaire in case any answers need to be checked with you at a later date. However, when the results are entered on a database for the project, your name will not be recorded.

STUDENT NAME _____

1. What sex are you?
   (*Please tick the appropriate box*)

Male	
Female	

2. What are the current occupations of your parents /guardians?
   (*Please write occupations in the appropriate boxes*)

Father / guardian 1	
Mother / guardian 2	

3. What were the occupations of your parents /guardians when you joined the school?
   (*Please write occupations in the appropriate boxes*)

Father / guardian 1	
Mother / guardian 2	

Turn over

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4. How many older and younger brothers and sisters do you have?
   (Please enter the appropriate figures in the table)

	Older	Younger
No. of brothers		
No. of sisters		

5. Do you currently live with **both** of your natural parents?
   (Please tick the appropriate box)

Yes	
No	

6. How far do you travel to school each morning?
   (Please give the distance to the nearest mile)

	miles

7. Do you currently hold an Assisted Place, scholarship or bursary at the school?
   (Please tick the appropriate box)

Yes	
No	
Do not know	

8. Have you been awarded a scholarship, bursary or studentship for the school's sixth form?
   (Please tick the appropriate box)

Yes	
No	
Do not know	

9. Have you played sport for the school during the last year?
   (Please tick the appropriate box)

Yes	
No	

If **no**, go to question 11.

If **yes**, please complete the table below, and answer question 10.
(Please tick Column 1 alongside any sports where you have played in half or more of the A Team fixtures, and Column 2 alongside any sports where you have played less than half the A Team fixtures or where you have played for the B Team. If injury has affected your participation please tick the column where you would have appeared but for injury, and place an 'I' next to the tick.)

	1	2
Rugby		
Hockey		
Cricket		
Basketball		
Netball		
Rounders		
Tennis		
Other (please specify)		

10. Overall, how much have you enjoyed the sport that you have played for the school?
    (*Please tick the appropriate box*)

Very enjoyable	
Enjoyable	
Not enjoyable	

11. Have you participated in school musical activities during the last year?
    (*Please tick the appropriate box*)

Yes	
No	

If **no**, go to question 13.

If **yes**, please complete the table below, and answer question 12.
(*Please tick **Column 1** alongside those activities where you have attended **half or more of the practices and performances**, and **Column 2** alongside those activities where you have attended **less than half the practices and performances**.*)

	1	2
Orchestra		
Choir		
Jazz band		
Other (please specify)		

Turn over

12. Overall, how much have you enjoyed your participation in school musical activities?
(Please tick the appropriate box)

Very enjoyable	
Enjoyable	
Not enjoyable	

13. Have you participated in any other school clubs or activities (eg Duke of Edinburgh's Award Scheme or CCF) during the last year?
(Please tick the appropriate box)

Yes	
No	

If **no**, go to question 15.

If **yes,** complete the table below, and answer question 14
(Please enter the name of the club or activity in the appropriate column. Tick **column 1** *if you have attended* **half or more of the activity's meetings** *and tick* **column 2** *if you have attended* **less than half of its meetings.)*

Club / Activity	1	2

14. Overall, how much have you enjoyed your participation in these other school activities?
(Please tick the appropriate box)

Very enjoyable	
Enjoyable	
Not enjoyable	

15. Are there any sports, musical activities or other activities not currently offered by your school in which you would participate if they were available?
(Please tick the appropriate box)

Yes	
No	

If no, go to question 16.

If yes, list the sports and activities below.
(Please enter the names of any sports and activities in the table)

Name of Sport / Activity

16. Do you intend to stay at your current school or leave after your GCSE's?
(Please tick the appropriate box)

Stay	
Leave	

If stay, go to question 17.

If leave, complete the table below, indicating what you plan to do.
(Please tick the appropriate box)

Attend a sixth form college	
Attend another independent school's sixth form	
Attend a state school's sixth form	
Something else (please give details)	

Please write the name of the college or school you hope to attend

College / School _____

17. What courses do you intend to study after GCSE?
    (Please tick the appropriate box)

A Levels	
GNVQs	
A Levels with GNVQs	
A Levels with some GCSEs	
Other (please give details)	

18. What subjects do you intend to take?
    (Please write the subject names in the appropriate columns)

A Levels	GNVQs	GCSEs	Other

19. Have your parents had more say than you in making the decision to stay at or leave your current school?
    (Please tick the appropriate box)

Yes	
No	

20. Do the majority of your friends attend the same school as you or are they at other schools?
    (Please tick the appropriate box)

Same school	
Other schools	

21. Of your friends at the same school as you, how many are intending to stay on at the school for the sixth form?
    (Please tick the appropriate box)

Half or more	
Less than half	

22. What do you currently intend to do at the end of the sixth form?
    (*Please tick the appropriate box*)

Enter university	
Enter some other Higher Education	
Enter employment	
Something else (please give details)	

23. Finally, we would like your opinions on a couple of aspects of school life.
    (*Please tick the box that most closely reflects your view in each of the following tables*)

I am in favour of school uniform	
I am against school uniform	
I have no strong views about school uniform	

I find school life too structured and regulated - there should be more independence for students.	
I find school life has too much independence for students - there should be more stucture and regulation.	
I find school life has about the right balance between independence for students and structure and regulation.	

THANK YOU FOR YOUR HELP

APPENDIX C

Definitions of Variables Used in the Model

Variable	Definition
STAY	1 if pupil stays on at school for the sixth form 0 otherwise
SCH	1 if pupil attends School B 0 otherwise
SEX	1 if pupil female 0 otherwise
FOCC	1 if Father's current occupation anything but SOC1 0 otherwise
MOCC	1 if Mother's current occupation anything but SOC1 0 otherwise
YNGSIBS	Number of younger siblings in the pupil's family
OLDSIBS	Number of older siblings in the pupil's family
ONLYCH	1 if pupil is the only child in the family 0 otherwise
PARENT	1 if the pupil lives with both natural parents 0 otherwise
DISTD1	1 if pupil travels 6-15 miles to school 0 otherwise
DISTD2	1 if pupil travels 16 miles or more to school 0 otherwise
FEEASS	1 if pupil holds Assisted Place or receives other fee assistance in Year 11 0 otherwise
VIFEEAS	1 if pupil awarded fee assistance for the sixth form at school 0 otherwise
FEEASDIF	-1 if pupil gained extra fee assistance on entry to sixth form 0 if fee assistance status unchanged on entry to sixth form +1 if pupil lost fee assistance on entry to sixth form
FOCDIF	FOCCxFEEASDIF
SPORT	1 if pupil plays sport for the school in Year 11 0 otherwise
ASPORT[1]	Number of major sports pupil plays for the school during Year 11
BSPORT[2]	Number of minor sports pupil plays for the school during Year 11

Variable	Definition
ABSPORT	ASPORT + BSPORT
MUSIC	1 if pupil participates in school musical activities in Year 11 0 otherwise
AMUSIC[3]	Number of major school musical activities that pupil follows during Year 11
BMUSIC[4]	Number of minor school musical activities that pupil follows during Year 11
ABMUSIC	AMUSIC + BMUSIC
ACTIVITY	1 if pupil participates in school clubs and other activities during Year 11 0 otherwise
ACTA[5]	Number of clubs and other activities at school that pupil follows in a major manner during Year 11
ACTB[6]	Number of clubs and other activities at school that pupil follows in a minor manner during Year 11
ACTAB	ACTA + ACTB
OTHACT	1 if pupil would participate in an activity not currently offered by their school 0 otherwise
PARATT	1 if the pupil feels that his/her parents had the greater say in the sixth form decision 0 otherwise
FRIENDS	1 if majority of pupil's friends attend the same school as the pupil 0 otherwise
SCHFRD	1 if majority of pupil's school friends intend to stay on at school for the sixth form 0 otherwise
GCSE1	1 if the pupil's average GCSE grade across the subjects taken by the pupil is in the bottom quartile of the sample 0 otherwise
GCSE2	1 if pupil's average GCSE grade across the subjects taken by the pupil is in the second quartile of the sample 0 otherwise
GCSE3	1 if pupil's average GCSE grade across the subjects taken by the pupil is in the third quartile of the sample 0 otherwise
NTRA[7]	1 if pupil is planning to study at least one non-traditional A Level subject 0 otherwise

Variable	Definition
UNIATT	1 if pupil is against school uniform
	2 if pupil has no strong view on school uniform
	3 if pupil favours school uniform
SCHATT	1 if pupil finds school life too structured in terms of its rules and regulations
	2 if pupil finds the balance of rules and regulations in school life about right
	3 if pupil finds school life too relaxed in terms of its rules and regulations
SPINV	1 if pupil participates in school sport and finds it very enjoyable
	0 otherwise
MUSINV	1 if pupil participates in school musical activity and finds it very enjoyable
	0 otherwise
ACTINV	1 if pupil participates in school clubs and other activities and finds it very enjoyable
	0 otherwise
ACTDIF	ACTAB - ACTINV

Notes

1 A major sport is one in which the pupil plays in half or more school A team fixtures

2 A minor sport is one in which the pupil plays in less than half school A team fixtures or for the school B team

3 A major musical activity is one in which the pupil attends half or more of its practices and performances

4 A minor musical activity is one in which the pupil attends less than half of its practices and performances

5 A major club or activity is one in which the pupil attends half or more of its meetings and events

6 A minor club or activity is one in which the pupil attends less than half of its meetings and events

7 For the purpose of this project, traditional A Levels were Mathematics, Further Mathematics, Chemistry, Physics, Biology, English Literature, History, Geography, Economics, Religious Studies, Classical Civilisation, German, Spanish, French, Latin, Greek, Art, Design Technology and Music. Any subject not included in this list is defined as a 'new' or non-traditional A Level.

TABLE 19

A Summary of pupil replies to question 15

Are there any sports, musical activities or other activities not currently offered by your school in which you would participate if they were available?[1]

Activity	School A	School B	Total
Football	37	27	64
Basketball	-	19	19
Climbing/abseiling	1	9	10
Swimming	7	1	8
Martial Arts	5	2	7
Snooker	-	-	7
Golf	3	1	4
Baseball/softball	2	2	4
Rock band/Electric Guitar Club	5	-	5
CCF	3	-	3
Canoeing	-	3	3
Senior Drama Club	-	3	3
Athletics	2	-	2
Lacrosse	1	1	2
Aerobics	-	2	2
Table Tennis	-	2	2
Boxing	2	-	2
Self Defence Club	2	-	2
Shooting	1	1	2
Model Car Club	2	-	2
Ice Hockey	1	-	1
Cycling	1	-	1
Electronics Club	1	-	1
Ramp Skating	1	-	1
Fishing	1	-	1
Model Club	1	-	1
Film Club	1	-	1
Bridge Club	-	1	1
Archery	-	1	1
Model Railway Club	-	1	1
Sailing	-	1	1
Italian Club	-	1	1
Number of pupils responding to the question	77	53	130
Total Sample Size	134	109	243

Note

1 Pupils could indicate any number of additional activities in response to this question.

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