

# **Psychological, Economic and Academic Predictors of the Intention to Leave School Early among a Sample of Irish Students**

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## Abstract

Early school-leaving exerts substantial costs on the individual and society. The literature indicates that quitting school early is predicted by an enmeshed group of indicators including academic and behavioural difficulties in school, deprived economic background and disengagement with the educational process. The beliefs and background of a main sample of 1,311 Junior Certificate students and a sub-sample of 188 fifth-year students were assessed. Data were gathered on Intention to leave school early, constructs of the Theory of Planned Behaviour around Leaving Certificate completion, students' academic attainment, cognitive ability, willingness to defer gratification, along with socio-demographic data. Modelling indicated that positive attitudes about the potential of the Leaving Certificate, and parents and teachers perceived to be strongly pro-school completion are key to the intention to stay on. Performing well intellectually is a contributing factor. Economic deprivation does not exert a direct influence on intention, but it strongly shapes intellectual performance.

**Key words:** early school-leaving; Theory of Planned Behaviour; economic deprivation

### Disclaimer

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## **Abbreviations**

AMOS: Analysis of Moment Structures

CSO: Central Statistics Office (Ireland)

DES: Department of Education and Science (Ireland)

ED: Electoral District

JC: Junior Certificate examination

LC: Leaving Certificate examination

NCCA: National Council for Curriculum and Assessment

NESF: National Economic and Social Forum

NSSEC: National Statistics Socio-Economic Classification (UK)

OECD: Organisation for Economic Co-operation and Development

RMSEA: Root mean square error of approximation

SAHRU: Small Area Health Research Unit

SD: Standard deviation

SEM: Structural equation modelling

SES: Socio-economic status

SPSS: (originally) Statistical Package for the Social Sciences

TPB: Theory of Planned Behaviour

## 1. Introduction

### 1.1 Background to the study

It may be helpful for readers to understand the context in which this study was planned, and the broader debates to which it is intended to make a contribution. Early school-leaving can be viewed as a topic in its own right, with its own antecedents and consequences; indeed the purpose of the literature review (below) is to outline the relevant research around early school-leaving in precisely this light. However, it is also an intellectually coherent undertaking to try to locate early school-leaving among a broader set of ways in which social inequality is created and reproduced. Specifically, many researchers and policy-makers are concerned not just about the effects of inequality but also its roots and its persistence across time and generations (see for example Blanden, Gregg and Machin, 2005). An extensive literature has arisen that seeks to identify the aetiology of the 'intergenerational persistence of inequality' (see Heckman, Stixrud and Uzrua, 2006).

While the range of possible causes mooted in the literature is extremely wide, there is a good deal of consensus that differential access to, and utilisation of formal education, is key to understanding the transmission of much of the unfairness in society (see for example Breen, 2004). It may be that there are already important existing gaps in abilities between groups of pupils categorised by region or social class by the time they access second-level schools. However, it is clear that the working of the education system from that point onwards can also act to narrow or widen those gaps by directly enhancing a person's knowledge as well as his/her qualifications and credentials for employment or further education.

It is here therefore that we see the importance of the issue of early school-leaving. We regard it as one way in which greatly different life outcomes can arise between groups of young people. One publication (OECD, 2007) characterised thinking in the mid-teenage years as having 'high horsepower [but] poor steering'. A decision made during this part of a person's life about not continuing in school can carry with it immensely



important, and usually negative, consequences. The decision may be made over a short period of time and amid the often hectic challenges of adolescence, but the consequences – very difficult to reverse – continue to shape and pattern the individual's opportunities, experiences and interactions for every year of her or (more usually) his existence. It may be that no education system can hope to take every participant through every step; our view is that the variation across educational systems suggests that certain countries may be doing a better job than others, and that objective research can identify those obstacles preventing the optimal proportion of students using the education system to the fullest degree.

In sum, we hope the reader will find that this study can make a solid contribution to the understanding of the causes of early school-leaving in an Irish context, and that this in turn will fit within a broader set of studies identifying the ways in which different routes through education can lead to, and maintain, social inequalities.

## **2. Literature review**

Early school-leaving is the culmination of a long process of disengagement from school and has a profound impact on people's employment prospects, literacy levels and quality of life (CSO, 2006). In Ireland, almost 20 per cent of students leave school early, with the figure reaching 30 per cent in the Dublin City area (DES, 2008). Despite a significant and steady improvement in the proportion of students completing second level education in Ireland, the problem of dropping out persists to the extent that it continues to have a major impact on the future lives of those who leave school early (Boldt and Devine, 1998). In short, there are strong links between educational disadvantage, early school-leaving and poverty. In particular, early school-leaving has immense implications for both the individual and society, with drop-out being associated with high personal, social and economic costs.

Historical experience demonstrates that widespread education has enormous benefits, where the introduction of compulsory schooling and the raising of the minimum school-leaving age resulted in a substantial decrease in the number of people living below the poverty line (Oreopoulos, 2006). At a time when Ireland is trying to reinvent itself as a knowledge society, in which education will likely be a critical element in enabling the state to emerge from its economic crisis, the importance of increasing the proportion of students who complete the Leaving Certificate (LC) has never been more relevant. The current literature review commences with an examination of the consequences of early school-leaving for individuals and societies both internationally and in Ireland. It will then consider the various predictors and determinants of early school-leaving and introduce a convincing framework that has been proposed for greater understanding of this critical social issue.

### **2.1 Consequences of early school-leaving**

In the US, early school-leavers are approximately three times more likely to live in poverty than are high school graduates (US Census Bureau, 1996). Of the 1 per cent of

the population in the US who are in prison, the vast majority of these left school early and many are illiterate (Mehan, 2008). According to a nationwide study of high school graduates in the US in 2000, Stanard (2003) reports that 56 per cent of early school-leavers were unemployed, compared with only 16 per cent of those who had graduated. Moreover, early school-leavers secure lower earnings than graduates and, thus, are more likely to be dependent on welfare or earnings from illegal activities (Rumberger, 1987).

In terms of personal consequences, leaving school before graduation is generally viewed as a visible form of academic failure (Rumberger, 1987). This can result in individuals being labelled as 'failures', with such a label imposing something analogous to a 'social disability' on the individual (Pallas, 1986). Pallas (1986) argues that early school-leavers are trapped by this disability, which manifests itself through poor social and interpersonal skills and often leads these individuals into anti-social behaviour (Pallas, 1986). Indeed, numerous studies have found that early school-leavers show social maladjustments, such as behavioural disorders and delinquency (Fortin and Picard, 1999; Jimerson, Anderson and Whippie, 2002).

These findings illustrate the value of school completion where, for some students, mere persistence in school is as important an achievement as academic success in terms of future options (Rumberger and Palardy, 2005; Plank, 2001). Early school-leavers are also more likely to suffer from poorer mental and physical health (US Census Bureau, 1996). For instance, early school-leavers are disproportionately at risk of alcohol misuse (McCaul, Donaldson, Coladarci and Davis, 1992) and drug misuse (Downes, 2003; Kirsch, Jungeblut, Jenkins and Kolstad, 1993). It has hardly a surprise then that early school-leavers have been found to have lower levels of self-esteem (Dooley and Prause, 1997).

In terms of social consequences, early school-leaving does not only affect those who leave but also the society in which they live. Due to the higher incidence of unemployment among early school-leavers, they are more likely to rely heavily on social

welfare and unemployment insurance than graduates (Garnier, Stein and Jacobs, 1997). In fact, early school-leaving results in a spiral of negative social outcomes including foregone national income and tax revenues, increased demand on social services, increased crime, reduced social and political participation, reduced inter-generational mobility and poorer levels of health (Hayes, Nelson, Tabin, Pearson and Worthy, 2002; Levin, 1972).

In Ireland, the negative outcomes associated with leaving school early are no different to the international pattern. Smyth and McCoy (2009) reported that early school-leavers were three to four times more likely to be unemployed than those with higher qualifications, even before the current recession. In a study of Irish youths in the 1980s, Hannan (1986) estimated that half of early school-leavers remained unemployed for up to five years and that one-third of these never secure stable employment. While Ireland of the 1980s was a very different place, the recent cull of construction and service jobs means that patterns of entrenched long-term unemployment may return, especially for those who leave school early. Indeed, Byrne, McCoy and Watson (2008) emphasise that the reliance of male early school-leavers on the construction sector is likely to have serious consequences for them in the immediate future.

A strong relationship between level of educational attainment and economic status has consistently been found and, in a recent study of school-leavers in Ireland, those leaving school without any qualifications were found to have the highest levels of unemployment (Byrne et al., 2008). Those who have completed the LC fare much better because their higher level of education opens up a greater number of employment options to them (Byrne and McCoy, 2009). Educational disadvantage in Ireland greatly increases an individual's chances of living below the poverty line, which has major implications for the physical and mental health of early school-leavers. Young women who leave school early are more likely to become lone parents, making it even more difficult for them to break through the poverty line (Smyth and McCoy, 2009). O'Donnell, Baumer and Hughes (2008) report that over half of prison inmates in Ireland have no formal education, with only 10 per cent of prisoners having completed the LC. In line

with international findings, the poorly educated in Ireland have much poorer levels of nutrition, eat fewer vegetables, eat more highly saturated fats and take less exercise (Burke, Keenaghan, O'Donovan and Quirke, 2004; Friel, 2003; Friel and Conlon, 2004). The incidence of chronic physical illness has been found to be two-and-a-half times higher for poor people than for the wealthy (Burke, Keenaghan, O'Donovan and Quirke, 2004). While poorer health is directly related to the poverty in which people find themselves living, it is also linked to a lack of education and perhaps a person's less hopeful view of his/her long-term economic prospects.

## **2.2 Predictors of early school-leaving**

Despite the promotion of education and school-completion in Ireland, early school-leaving remains a significant societal issue, predominantly for those from lower socio-economic backgrounds. This section focuses on the determinants of early school-leaving from individual, family of origin and school characteristics perspectives.

### **2.2.1 Individual factors**

Researchers have identified a range of cognitive, emotional and behavioural characteristics allowing the identification of students at risk of leaving school early. At a very simple level, gender is a predictive factor in school completion, with males being significantly<sup>1</sup> more likely to leave school early, a finding consistently found in both international and Irish studies (Byrne et al., 2008; Rumberger, 1995). A significant gender gap exists for retention rates in Ireland, with 75.5 per cent of males compared to 85.7 per cent of females completing their LC (DES, 2008). This is partly explained by the greater tendency of males to pursue training through apprenticeships rather than through academic education. Others argue that males lack the maturity in their teens to be adequately motivated and self-disciplined to succeed academically, with self-discipline argued to be a stronger predictor of academic achievement than IQ

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<sup>1</sup> The term 'statistical significance' differs from the everyday meaning of 'significance' (to describe something that is important). Instead it refers to the idea that something was unlikely to have occurred by chance. In practice, the norm of a probability level of 5 per cent (or 1 per cent) is taken as being statistically significant. In other words, if a pattern of results from a study would be expected to occur by chance in less than 1 in 20 trials, this is interpreted as a statistically significant finding. The idea of statistical significance is essential to statistical hypothesis testing and is a lynchpin in quantitative social research.

(Duckworth and Seligman, 2006). Of course, cognitive ability has been shown to have strong connections to educational outcomes, including school completion where students with high levels of intellectual performance are less likely to leave school early (Jimerson, Egeland, Sroufe and Carlson, 2000; Neisser et al., 1996). Interestingly, however, Jimerson et al. (2000) point out that poor grades at school may be more accurately regarded as the early stages of drop-out rather than as a root cause.

A student's level of school engagement comprises both academic and social integration with the school and involves behavioural (e.g. compliance and participation), affective (e.g. socio-emotional interest in school) and cognitive (e.g., motivation) factors (Fredericks, Blumenfeld and Paris, 2004). Students who display stable school engagement over the course of their school careers are less likely to drop out (Janosz, Archambault, Morizot and Pagani, 2008). Children who display early signs of disengagement such as behavioural problems or cognitive deficits during the early years of schooling have diminished chances of succeeding at school (Willms, 2002). Cognitive engagement alone would appear to be crucial, where academic performance, measured by grades, is a predictor of school completion (Jimerson, Anderson and Whippie, 2002). Many children who have difficulties with literacy develop serious behavioural problems (Rowe and Rowe, 1992). This problem continues to escalate, eventually leading to detentions, chronic truancy, suspensions and even expulsion (Walker, Grantham-McGregor, Himes, Williams and Duff, 1998), with the students themselves failing to see their lack of attendance as a problem (Davies and Lee, 2006). The lack of attendance, whether voluntary or imposed, marks a general disengagement from school, ultimately leading to drop-out (Janosz et al., 2008; Jimerson et al., 2000).

There is growing interest in possible resilience factors for people whose economic or life circumstances predispose them to negative social outcomes such as school drop-out. Much of this interest centres on so-called non-cognitive abilities, that is, a constellation of skills that enable success in life, including attainment at school (Heckman, Stixrud and Urzua, 2006). Neisser et al. (1996) argue that since measured intelligence only accounts for about 25 per cent of the variance in school success, other non-cognitive

factors such as persistence and willingness to study must be important. The value in studying non-cognitive abilities is that they are thought to be less fixed than cognitive ability, and therefore more susceptible to advancement through intervention (Heckman et al., 2006). Factors that may be important include persistence, charm, motivation and preference for long-term goals (Heckman et al., 2006; Thomas, Kuncel and Crede, 2007). It is the latter factor that is of particular interest to the present study.

Related to the 'rational choice' model, the degree of preference for long-term goals is hypothesised as central to decisions surrounding school completion (NESF, 2002).

The rational choice model is centred on the individual's perception of the costs and benefits associated with continued participation in school (Erikson and Jonsson, 1996; Goldthorpe, 1996; Smyth, 1999). According to this model, early school-leaving is seen as a choice on the part of the student, which is calculated as the direct costs associated with schooling in addition to the perceived sacrifice of potential (lost) income, sometimes known as 'delay discounting'. Delay discounting is defined as 'the extent to which the value of a reward decreases as the delay to obtaining that reward increases' (Hirsh, Morisano and Peterson, 2008:1646). Applied to education, it is hypothesised that individuals with high levels of delay discounting may fail to recognise the benefits of school completion, instead opting for the immediacy of accessible, low-paid employment.

### **2.2.2 Economic deprivation**

Internationally, early school-leaving is especially high among students from families of low SES and among ethnic minorities (Garnier et al., 1997; Jimerson, Egeland, Sroufe and Carlson, 2000; Traag and Van der Velden, 2008). In Ireland, Byrne et al. (2008) report that the level of educational qualification attained is particularly related to gender and socio-economic background. In a study of early school-leavers in Athlone, Bloomer (1997) found that the majority were from lower SES backgrounds, impeded by social, educational and economic disadvantage. Reasons behind this relate in the main to the low income of the family. Despite 'free education' being available to students, the costs

associated with educational participation in terms of uniform, books and school trips are considerable and, where parents cannot afford such expenses, children are often left with feelings of exclusion and humiliation (Boldt and Devine, 1998). School principals report that students coming from low-income families struggle in Junior Infants because they have not had comparable exposure to books or educational toys in the home (Smyth and McCoy, 2009). The parents of these children find it difficult to afford such vital early learning tools and in some instances fail to appreciate their value (McCoy and Smyth, 2009).

Students from lower SES backgrounds are often attracted to the labour market at an earlier age and are, therefore, more likely to have part-time jobs while at school (McCoy and Smyth, 2005). Studies in the UK and in Ireland show that students who work on a part-time basis while at school are at increased risk of leaving school early (Dustmann and van Soest, 2007; McCoy and Smyth, 2005). Furthermore, it has consistently been found that, for students from lower SES backgrounds in Ireland, hunger, poor diet and tiredness can create barriers to motivation and concentration in school (Boldt and Devine, 1998; Downes, Maunsell and Ivers, 2006).

While children's educational outcomes are clearly related to their parents' SES, other family factors can have a substantial impact, in addition to the effects associated with SES (Willms, 2003). There are numerous reasons for the strong relationship between parents' SES and an individual's level of educational attainment. For example, parents with higher levels of education themselves have a better understanding of the benefits of education and are, therefore, more likely to encourage their children to pursue further education. In two 19-year longitudinal studies of families, it has been found that the experiences leading to school drop-out began in the family, early in the children's lives, before they even started in school (Garnier et al., 1997; Jimerson et al., 2000). Once in school, early cumulative difficulties and family stress led to lower academic performance, lack of motivation and subsequent failure at school (Garnier et al., 1997). The level of parental involvement in their child's education and their level of expectation for their child have a significant impact on the child's willingness and ultimate success at



school (Rumberger, 1995). It has been consistently found that poor family organisation including lack of emotional support, lack of involvement in the child's school activities and inadequate supervision, were strongly associated with the risk of early school-leaving (Fortin, Marcotte, Potvin, Royer and Joly, 2006; Potvin et al., 1999).

Beyond parental characteristics, Harding (2003) has made a strong claim that the deprivation level of the community exerts a causal effect on the drop-out rate. In his analysis, children who moved to high-poverty neighbourhoods were significantly more likely to drop out of school early than children from similar backgrounds who had moved at the same age to non high-poverty backgrounds. This is consistent with Sampson and Groves' (1989) concept of 'social disorganisation' whereby the institutions (churches, businesses and schools) of a community suffering high levels of poverty come under strain and begin to disintegrate.

### **2.2.3 School characteristics**

Since children spend so much of their time at school, the school context itself may determine to some extent whether or not they intend to stay in school. However, little empirical research exists on what school factors are pertinent to the process of early school-leaving (Christle, Jolivette and Nelson, 2007). The 'push-out' model proposes that the institutional make-up of the school is largely responsible for early school-leaving (NESF, 2002). In terms of school characteristics, the main contributory factors to be considered are classroom climate, pupil-teacher interactions and disciplinary procedures. Rumberger and Palardy (2005) found that once students' backgrounds had been controlled for, school policies and practices accounted for approximately 25 per cent of the remaining variance in school drop-out rates.

Balfanz and Legters (2004) found that some geographical areas had a substantial cluster of schools where early school-leaving was the norm. Not surprisingly, there was a high level of poverty in these locations. However, it may not be the school characteristics that are responsible for large numbers of students quitting school early but rather 'subjective norms' that are at work here. For instance, students who associate

with others who are already on the path to early school-leaving are more likely to leave school early themselves (Cairns and Cairns, 1994). Thus, it is not the school that 'causes' students to drop out but rather the subjective norms created by the cultural expectations of the community in which the school is located. Pierce (1994) reported that classroom climate and interactions between pupils and teachers affected both academic achievement and pupils' engagement with school. Relationships with teachers are particularly significant. Vallerand and Senecal (1991) found that early school-leavers perceived their teachers to be controlling, unsupportive and uninterested in them. However, the causal element here again is not entirely clear as presumably less motivated students are more likely to share negative perceptions of their teachers.

One other school characteristic that has been raised as a potential predictive factor of early school-leaving is class size, where increased teacher-pupil interactions and less disruptive behaviour can result in improved student achievement (Ehrenberg, Brewer, Gamoran and Willms, 2001). Researchers have found it difficult to establish a clear link, however, between class size and eventual drop-out and Ehrenberg et al. (2001) argue that it is the quality of the teaching instruction that actually makes a difference.

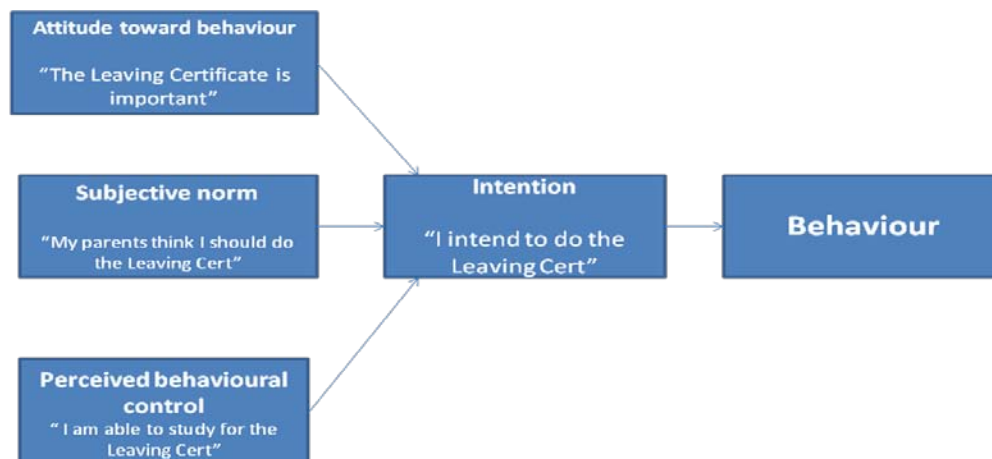
Studies in Ireland have also considered how school factors contribute to early school-leaving. Hannan (1987) argued that 'streaming', the process of dividing students into classes according to their level of ability, had a negative effect on levels of early school-leaving. Students in lower streams become labelled and, as a result, are less likely to remain in school. In a more recent Irish study, the disadvantages of streaming were again highlighted. Students in lower streams had lower educational aspirations, experienced a narrower curriculum, and were usually restricted to taking subjects at Ordinary or Foundation level (NCCA, 2007). Overall, it was found that being educated in a lower stream led to disengagement from school (NCCA, 2007). In general, it would appear that such factors operate a type of self-fulfilling prophecy, where students are in environments which indicate that they are 'failing' at school, teachers have lower expectations of them, thus creating more negative subjective norms, and this perpetuates a cycle of poor performance, disengagement from school and intention to

leave school early. Overall, the evidence in relation to school characteristics remains problematic, with no conclusively persuasive model of the causal relationship of the factors raised in relation to teachers, peers, school and community culture as well as perceived expectations.

### 2.3 Framework for understanding early school-leaving

In order to understand more fully the complexities of the intention of students to stay in or leave school, it is useful to encapsulate the predictive variables in a model. One model that has been successfully applied to the phenomenon of early school-leaving (as well as many other issues within both educational and health psychology) and that provides the conceptual framework on which the current study is based is the Theory of Planned Behaviour (TPB) (see Ajzen, 1991). In an attempt to elucidate the nature of the relationship between attitudes and behaviour, the TPB proposes that additional determinants of behaviour, along with attitudes, must be considered. According to the TPB, subjective norms and perceived behavioural control combine with attitudes towards a specific behaviour, rather than towards something very general, to influence the individual's intentions, in turn guiding but not completely determining the behaviour (see Figure 2.1).

Figure 2.1 Theory of Planned Behaviour



The TPB developed out of the TRA (Fishbein and Ajzen's Theory of Reasoned Action; 1975) and the key insight shared by these models suggests that it is not especially helpful in asking students about their attitudes towards education *generally* in order to predict whether they are likely to complete their secondary education. Instead, their attitudes, that is, favourable or unfavourable evaluations towards the *Leaving Certificate* itself provide a much more powerful indicator of their likelihood to complete secondary education. It is also important to consider subjective norms, which are comprised of two components, namely, normative beliefs and the motivation to comply with those beliefs. The former refers to students' beliefs about what the people around them think they should do. The degree to which these beliefs influence the intention to behave in accordance with these norms will depend on an individual's willingness or motivation to comply.

Ajzen (1991) argues that an individual's perceived ease or difficulty in performing the particular behaviour must also be measured. This concept is similar to that of self-efficacy (Bandura, 1986) and reflects the individual's perception of his/her capacity to execute the behaviour and attain a certain level of performance. In summary, the more favourable the attitude and subjective norm and the greater the perceived behavioural control, the stronger should be the individual's intention to pursue the behaviour. A number of studies support the TPB and its application to many varied behaviours such as weight loss, use of contraception, blood donation and career choice (see Eagly and Chaiken, 1993). In the prestigious British Journal of Social Psychology, Cooke and Sheeran (2004) have referred to the TPB as 'the dominant account of the relationship between cognitions and behaviour in social psychology' (p. 159). The search engine Scopus indicates over 8,400 separate peer-reviewed journal citations (as of 27 October 2009) for Ajzen's TPB model.

More relevant to the present study, however, is that the TPB has been used to predict high school completion (Davis, Ajzen, Saunders and Williams, 2002). It should be noted that Ajzen, the pioneering figure associated with the TPB, is one of the authors of this

study, published in the *Journal of Educational Psychology* (whose 'impact factor' of 3.60 in 2008 was second highest of the world's top 42 educational psychology journals). Thus it is clear that Ajzen regards school-leaving as precisely the kind of specific behavioural intention that can be elegantly analysed with the TPB model.

Based on the TPB, Davis et al. (2002) proposed that intention to stay in school is determined by three major factors. Firstly, the individual's attitude toward staying in school is obviously important and this is dependent on his/her beliefs about the consequences of completing secondary education. How considerable a determinant this attitude is on the outcome behaviour is, however, dependent on the subjective worth an individual places on the consequences of that behaviour. For instance, a student may hold the attitude that completing LC may prepare him/her for university but what really matters is how important being prepared for university is for that person. Secondly, intention to stay in school will be influenced by the perceived expectations of the important people surrounding the individual, such as parents, teachers and friends. A stronger influence exists when the individual is more willing to comply with the subjective norms. Similarly, the amount of influence will be tempered by the individual's lack of motivation to comply with these norms. An individual may believe that her mother thinks that it is vital that she do the LC, but if she rarely does what her mother wants her to do, this subjective norm will have less bearing on the outcome behaviour. Finally, intention to complete school is influenced by control beliefs, including self-efficacy. For example, a student may be trying to hold down a part-time job while at school but, because he believes that he has good time-management and study-skills, he does not believe that it will pose too great an obstacle to completing the LC.

In their longitudinal study of 166 African American high school students, Davis et al. (2002) tested the power of the TPB to predict high school graduation. They found that graduation from high school could be predicted from intentions to complete the school year and, particularly, from perceived behavioural control. Furthermore, actual high school graduation was predicted by intentions to complete school three years earlier, implying that individuals' intentions provide strong indications of their subsequent

behaviour. Davis et al. (2002) also found that high school completion was related predominantly to beliefs about the long-term rather than short-term consequences of staying in school. Such long-term consequences included being prepared for college, job training and doing something positive with one's life. The clear implication here is that in order to retain students through to the successful completion of their second-level education, they need to be convinced of the long-term benefits of investing years in their education. On the other hand, short-term consequences such as being able to see friends regularly and participate in sport were important in predicting completion of the current school year.

Overall, it would appear that the application of the TPB to early school-leaving provides a fairly comprehensive account of the issue. However, it must be noted that, to date, this application of the model has only been tested with African American students in the US, a group at particular risk of early school-leaving (Davis et al., 2002). It would be valuable to test the application of this model to a larger, more diverse sample of students in a different setting. By extending the investigation in this way, the comparative contribution of variables at the individual, socio-economic, family, school and psychological (as outlined in the TPB) level to school completion may be more clearly delineated.

## **2.4 Rationale for this study**

The review of the literature has clearly illustrated that early school-leaving has a profound impact on people's employment prospects, literacy levels and quality of life (CSO, 2006). National and international research has identified important structural, school, and personal correlates of early drop-out including gender, parental education, scholastic achievement, school 'climate' and class size.

This study aimed to complement research in the area by examining the impact of the beliefs of young people about the consequences of persisting with or quitting school, the influence of the perceived views of their family and peers about the usefulness of completing second-level education and the role of control factors like academic ability

and home conditions on the decision to continue second-level school to completion.

Specifically, the study

- (1) identified the proportion of students intending to leave school early in a geographically representative sample of second-level schools that includes an over-sampling of disadvantaged schools;
- (2) highlighted the beliefs about education and the perceived family and peer norms that were associated with the decision to persist in education or leave second-level school early;
- (3) encapsulated the most important beliefs determining the intention to drop out of second-level school early.

Thus, the study complemented the literature on school drop-out by identifying the personal belief dimensions that, along with structural and school factors, shaped the pattern of early school drop-out for a sample of Irish students. The identification of these belief factors will hopefully contribute to policy-formation on encouraging school persistence since these belief factors are likely to be more flexible and malleable than many structural factors underpinning educational inequality and thus present a more optimal target for change.

In this study, it was decided not to examine the impact of school characteristics on early school-leaving. This was largely a practical matter of sample size whereby the number of schools selected in the study was too small to allow for strong conclusions to be reached (see section 3.1.2 on sampling below). Thus, although school characteristics and processes may play an important causal role in determining academic outcomes, the level of analysis in this study is the individual student.

### **3. Research methodology**

#### **3.1 Sampling**

The overall sample was made up of a main sample group of Junior Certificate (JC) students from 20 schools and a smaller sub-sample group of fifth year students from five schools. JC year students were of most interest to the current study: while approximately 4 per cent of students leave school before the JC exam, the drop-out rate increases to 18.7 per cent nationally who leave school in the years following the JC (DES, 2003). Thus a sample drawn from those in JC year should include most students who will subsequently drop out.

A sub-sample of fifth year students was also asked to complete the same questionnaire as the main JC sample. The rationale for inclusion of the sub-sample was threefold:

1 The validity of the measurements can be assessed. Since we hypothesised that the fifth year student group included fewer drop-out students than the JC ones (since the drop-out rate is highest directly after the JC), as a group they should score more highly on the key predictors for staying on in school. This also generates a pseudo-longitudinal test of the validity of the findings of the sample.

2 There may be specific unknown or known experiences common to a cohort which can alter their responses in a research-significant way. The broadening of the group to avoid such a 'mono-sample' bias lessened the chance of biased findings.

3 The funding agency requested that comparative elements be included in the analysis, e.g. gender, designated disadvantaged versus other schools. This provided another dimension of comparison.

##### **3.1.1 Main sample population**

The main sample consisted of a representative group of Irish JC students but with an



over-sampling of students from schools designated as disadvantaged. The school was the sampling unit, and the population was all schools in Ireland whose student numbers were greater than 130 (this was to prevent possible respondent identifiability in very small schools, and to facilitate representativeness. These small schools make up only 7.0 per cent of all Irish second-level schools and only 1.3 per cent of all second-level school students in the 2008 intake). The sampling procedure used was systematic stratified random sampling from a population of schools provided via an Excel file on the DES website (see link to 'School listings'). Stratified random sampling was employed to select schools from the DES list of all second-level schools in the country.

### **3.1.2 Main sample size and characteristics – schools**

A target of twenty schools was included in the main sample. See Appendix A for the rationale and method of sampling these schools. See also Appendix B for a table of the raw numbers and percentages of disadvantaged and non-disadvantaged schools who took part.

### **3.1.3 Main sample size and characteristics – students**

The size of the main sample of JC students was 1,131. A greater percentage of males (60.3 per cent) than females (39.7 per cent) were included in the sample as

- (a) one more single sex boys' school than girls' school had been included,
- (b) mixed schools in Ireland have a significantly greater number of male pupils,
- (c) boys' schools (mean = 496) and mixed schools (mean = 480) selected in the sample process had bigger school populations than the girls' schools (mean = 357).

Although the greater proportion of male respondents (roughly 60 per cent) was not intended in the sampling process, it was not an unwelcome occurrence since early school-leaving has been found to be more frequent among males in Irish studies (see McCoy and Williams, 2000). See Appendix B for a table of the raw numbers and percentages of males and females who took part.

The mean age was fourteen years and seven months with a standard deviation of just

under seven months.

Statistics are gathered on the community deprivation level of census and electoral district (ED) areas in Ireland. The mean population size of Ireland's 3,409 EDs is 1,243, and the median 'deprivation' score for the EDs is -0.43 (higher scores indicate greater deprivation), with 20 per cent of the EDs falling into the poorest two deciles. Looking at the EDs (or communities) from which the study school samples were drawn, the median deprivation score was much higher at 1.57 and 55 per cent fell into the two poorest deciles. This suggests that the sampling procedure had successfully oversampled more deprived areas.

The response rate within schools was 68.84 per cent which slightly exceeded the 66.67 per cent hoped for. There was a correlation (though not a significant one) which indicated that the response rate from more deprived communities was lower ( $r = -0.19$ ,  $p = 0.41$ ) than higher. As noted above, 27.6 per cent of Irish post-primary schools are designated as disadvantaged. In this sample, 39.3 per cent of the respondents attended schools that were disadvantaged. Assuming the proportion of *students* attending disadvantaged schools is similar to the proportion of *schools* that are disadvantaged, this suggests that students from disadvantaged schools were over-represented by about a rate of 1.42 in this sample.

Thus it seems reasonable to conclude that this sample successfully oversampled those from deprived communities despite slight trends among poorer schools, and students in schools in more deprived areas, not to participate. The sample includes a disproportionate number of males and is geographically representative of post-primary schools in Ireland in 2008.

### **3.1.4 Fifth year sub-sample characteristics**

Data were also gathered from a sub-sample of fifth year students for the reasons outlined in the rationale in 3.1. It had originally been planned to look at 'transitional year' students as the sub-sample group; however, it became clear that not all schools include

a 'transition year' after JC. There seemed to be anecdotal evidence of a bias against schools in more deprived areas using the transition year. This was not the case for fifth year (which is of course non-optional, unlike transition year) so fifth year students were selected instead. The students were accessed by extending the data-gathering in one quarter (five) of the schools to include not just the JC students of the school but also the fifth year students.

Of the five schools, three were designated 'disadvantaged' by the DES and two were not. In this sub-sample were 188 students of whom 92 (48.9 per cent) attended a school designated as 'disadvantaged'. The mean age of the fifth year students was 16 years and one month, with a standard deviation of 8 months. The gender breakdown in the sub-sample was 64.7 per cent male and 35.3 per cent female. The fifth year students completed the same questionnaire as the main sample of JC students.

### **3.2 Questionnaire and measures**

The students were asked to complete a confidential questionnaire assessing their intention to stay in school, their beliefs about education and the costs and benefits of persisting in school versus dropping out, the perceived views of their family and peers, as well as control issues such as having the resources to continue in school (see Appendix C). This questionnaire was a modified version of that used by Davis et al. (2002) with a group of 'at-risk-of drop-out' US high school (second-level school) students. Questions related to socio-economic status, academic achievement and demographic factors were also included, as were a short cognitive ability test and a number of questions intended to assess the students' 'delay-discounting' – a measure of how willing they were to trade-off smaller current rewards in order to obtain larger but more long-term gains. While the questionnaire consisted of 90 questions, the analysis (below) of the main sample was largely conducted using one dependent (or outcome) measure – intention to leave school early – and six composite independent (or predictor) measures.

#### **3.2.1 Dependent measure**

The dependent measure was the self-assessment of the likelihood of early school-

leaving. Respondents were asked to respond to the statement 'I intend to stay in school until I complete my Leaving Certificate' through a seven-point scale, ranging from 'strongly agree' (1) to 'strongly disagree' (7). Thus higher scores on 'intention' indicated a greater likelihood that the person saw himself/herself as leaving school prior to the LC.

### **3.2.2 Independent measures**

#### **3.2.2.1 TPB Measure 1 – Attitudes towards education**

The respondents were asked to indicate their view through a seven-point scale from 'very likely' (1) to 'very unlikely' (7) on the likely outcomes of completing their education. There were fourteen items, replicated from Davis et al.'s (2002) study, of which 10 were positive outcomes (e.g. 'give me new challenges') and four were negative (e.g. 'waste my time') (see Appendix C, section 2). Respondents were also asked to indicate their evaluation of the same fourteen outcomes as either positive or negative on a seven-point scale from 'very positive' (1) to 'very negative' (7). To produce an overall score, the ten negative items were reversed and the likelihood scores were multiplied by the evaluation scores and summed in order to produce a single score. This ( $\sum L \times E$ ) is the standard procedure to obtain the 'Attitude' measure under the TPB. Higher scores indicated a more positive attitude towards completing the LC.

#### **3.2.2.2 TPB Measure 2 – The subjective norm**

The respondents were asked to indicate their perception on how people who were close to them felt about their (the respondent) completing the LC, e.g. my mother thinks I should complete the LC. A seven-point scale was used ranging from 'strongly agree' (1) to 'strongly disagree' (7). They were also asked how likely it was that they would comply with that person (e.g. 'I usually do what my mother thinks I should') and responded through a seven-point scale ranging from 'strongly agree' (1) to 'strongly disagree' (7). To produce an overall single value, Subjective Norm, the two scores were multiplied (as is the standard procedure, see Icek Ajzen's webpage <http://www.people.umass.edu/ajzen/pdf/tpb.measurement.pdf>) and an average score taken (rather than an overall sum, since some respondents for example did not live with

one of their parents, or had no boyfriend or girlfriend) from the seven possible close family and friends group (see Appendix C, section 3). Higher scores indicate less positive pressure towards completion of the LC from family and friends.

### **3.2.2.3 TPB Measure 3 – Perceived behavioural control**

The respondents were asked to indicate the difficulty they felt about fifteen possible obstacles represented to them in attempting to complete the LC. These fifteen items were replicated from Davis et al., aside from some minor changes to make them fit to an Irish sample group. One example is 'Being busy with family obligations' and respondents used a seven-point scale ranging from 'not a problem at all for me' (1) to 'a huge problem for me' (7). A total single value was computed by adding the responses for the fifteen items to generate an 'Obstacles' score. Higher scores indicated greater perceived obstacles to LC completion.

### **3.2.2.4 Delay discounting**

The respondents were asked to indicate how likely they were to seek out immediate goals, or their willingness to wait if the rewards were greater. Four questions were used: the first asked if the respondent was willing to wait longer to collect a raffle prize if the prize money increased; the second asked if the respondent was willing to take job training to increase his/her chance of a future dream job; the third and fourth asked respondents whether they felt they were the kind of person who thought only about immediate problems or issues, or who tended to think about the future (see Appendix C, section 1). The fourth item was reversed and the responses to the third and fourth were recalculated to a seven-point scale. The four items in section 1 were then summed to produce a single measure of 'Delay discounting', with greater scores indicating people who were more likely to wait longer for greater rewards.

### **3.2.2.5 Proxy cognitive score**

The respondents were asked ten questions to produce a single proxy score intended to correspond to a cognitive ability measure (see Appendix C, section 6). The first five were intended to measure general knowledge; respondents were given multiple choice questions on political recognition (identify Mary Harney from the photographs of four

female politicians), sports (identify Pádraig Harrington from the photographs of four Irish male sports stars), identify the capital of Bulgaria from a list of four cities, identify the final year of World War 1 from a list of four years, and identify the play not written by Shakespeare from a list of four. The four subsequent questions asked the respondents to recall a list of digits read out by the researcher. The list was comprised of six digits, nine digits, six digits reverse recall, and nine digits reverse recall. Finally they were asked to identify, from a list of four, the correct spelling of 'vacuum'. The total number of correct answers was summed to produce the cognitive ability value, with higher scores obviously indicating greater ability on these measures.

Of course, it is acknowledged that this is not the optimal measure. To use a standard cognitive ability measure for children like the WISC-IV would have required 60-90 minutes with each participant. This Junior Certificate group of students was the ideal group to assess, but in their exam year it was impossible to get permission from parents or school to survey them for more than a 'lesson' length (40 minutes) in the schools visited by the researchers. On the other hand, a significant body of literature suggests that intention to leave school early **is** associated with both cognitive ability and academic results, so these variables could not be overlooked. The actual measures included are an attempt to find a compromise between scarce time and resources and the need to generate imperfect but necessary assessments of certain measures, focusing mainly on measures of cultural knowledge, digit recall and vocabulary, analogous to tasks in the WISC. The students' cognitive ability scores were not used directly in the main analysis but combined with an academic achievement score to produce a latent variable called 'intellectual performance'.

### **3.2.2.6 Academic achievement**

Respondents were asked to recall their most recent set of school exams and the grades received. Up to ten exam results were included although the grades for 'Religion' and 'CSPE' looked almost uniformly high for all students and were not included. The grades were translated into a number value using the LC points system per grade; this meant that grades attained at the 'Ordinary' level scored less well than those taken at the

'Higher' level. Because the number of reported grades varied considerably, an average was taken of all the points of a respondent, and this was the 'Academic Mean' value.

### **3.2.2.7 Economic deprivation**

The respondents were asked to indicate the occupation(s) of their parents or guardians. These were recoded into one of seven occupational groups and – as used in the UK NSSEC classification (2005) – the respondent was assigned a parental/guardian SES value of the lower-scoring (which indicated higher SES) parent. Each school was also identified by electoral district in the Irish census system of classification. The deprivation score for each census electoral district has been calculated by SAHRU (2007), with higher values indicating greater deprivation. Each person attending a school was assigned the community deprivation value of his/her school. While the researchers were aware that school pupils' deprivation does not always correspond to that of their school, it was felt that this was the optimal available proxy for a potentially important measure like community deprivation. The two scores (individual SES and community deprivation) were combined via the latent measure construction on the SPSS structural equation modelling package, AMOS 7.0 (see in results section below).

### **3.3 Ethical clearance**

The study had to address a number of ethical issues before clearance could be granted by the UCD Human Research Ethics Committee. An extensive application form was completed and submitted to the ethics committee and permission was granted to collect the data. Only the key ethical concerns and how the researchers dealt with these are presented here. The first of these was that the population of interest fell into the vulnerable category, i.e. students under 18 years of age. The ethical dilemma that could have arisen is that these participants may have felt under undue pressure to participate. In order to circumvent this, the researchers reminded participants at every opportunity that their participation was entirely voluntary and that, up until they submitted their completed questionnaires, they could have withdrawn at any time. As the participants were under 18, the researchers, in collaboration with the school staff, ensured that informed written consent had been obtained from parents/guardians before they were given a questionnaire to complete.

Secondly, the researchers were also present to help any student who had difficulty in completing the questionnaire. Should the questionnaire have raised any anxieties for the students regarding the pressure to succeed or the fear of failure, the students were assured that they could speak to the researchers or to any of their teachers. Details of a helpline aimed specifically at teenagers, 'Teen-line', were also placed at the end of the questionnaire. Once the questionnaires were collected from the students, a debriefing took place where participants were given the opportunity to raise any issues or concerns they had with the researchers. It must be noted that at no occasion during the collection of data across the 20 schools did any participant become visibly upset or anxious. On the contrary, the vast majority of students openly acknowledged their enjoyment of the questionnaire. Students and teachers were also informed that they would receive a one-page summary of the findings once the data had been fully analysed by the researchers.

The final ethical issue was the management of confidentiality and the protection of the data collected. As participants were asked to provide their most recent academic results as well as their parents' occupations, it was vital that confidentiality could be guaranteed. Thus, questionnaires were anonymous and had no identification number assigned to them at the point of data collection. Although consent forms contained students' names, these were kept separate from the questionnaires at all times. Therefore, there was no way of identifying an individual student and, thus, confidentiality can be assured. Furthermore, the hard copies of the questionnaires have been safely stored in a secured room and the electronic data is held in password protected files.

### **3.4 Protocol for school surveying**

The details of the fieldwork are provided in Appendix D.



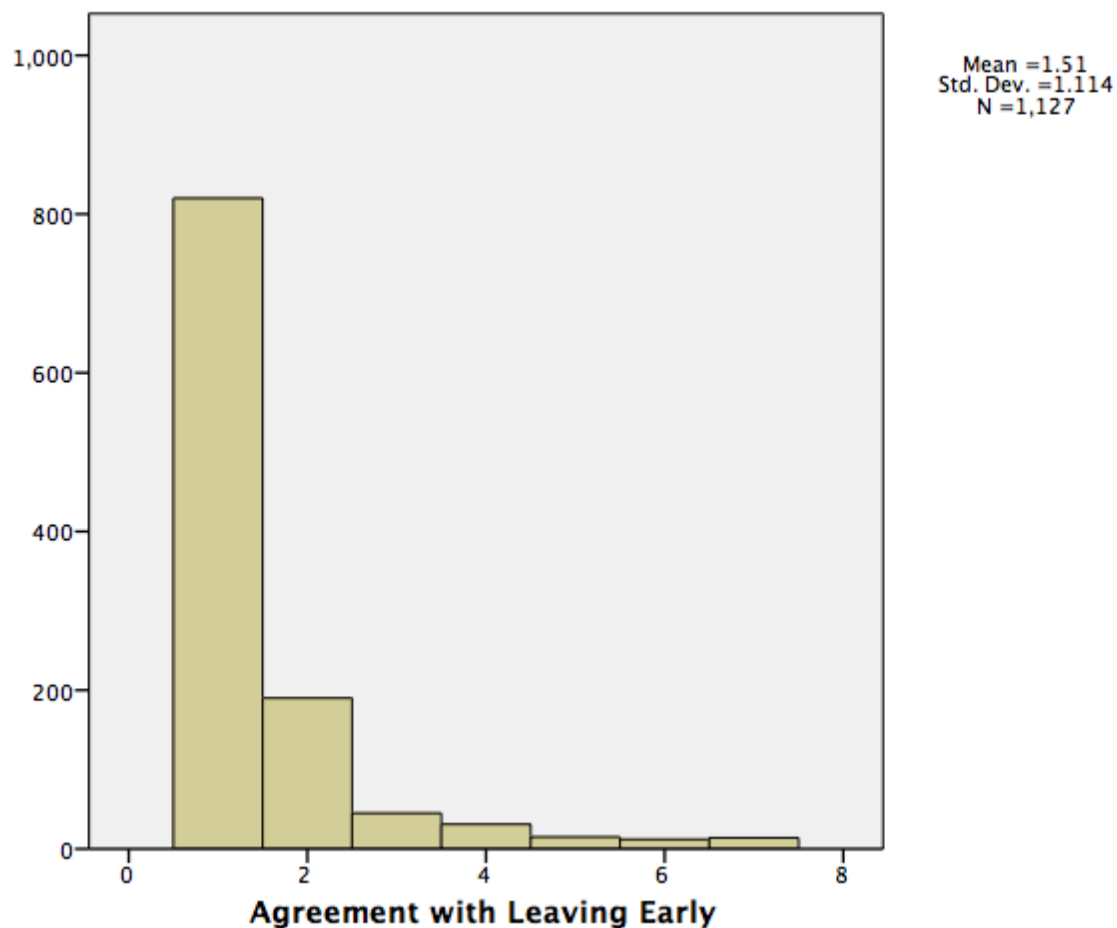
## **4. Results**

The analysis in the main section here is based on the 1,131 cases of JC students.

There is an analysis of the sub-set of fifth year students and their JC school cohorts in the final subsection of the Results section.

### **4.1 Summary information and bivariate correlations**

The frequency distribution for intention to leave school early is presented in Figure 4.1 below. The distribution is highly skewed as 72.8 per cent of students 'strongly agreed' that they intended to stay on in school until completion of their LC. A further 16.9 per cent 'agreed' that they would, and the remaining 10.6 per cent are spread across the other five responses.



**Figure 4.1** Intention to leave school early

The frequency distributions for the key independent measures are presented in Appendix E. The reliability scores for the TPB component measures are presented in Appendix F. The Cronbach's Alpha is satisfactorily high in each case (respectively 0.768 for Attitude, 0.806 for Subjective Norm and 0.912 for Perceived Behavioural Control).

The following are the correlations among the key independent variables and the dependent measure, intention to leave school early: Attitude,  $r = -0.35$ ,  $p < 0.01$ , Subnorm,  $r = 0.45$ ,  $p < 0.01$ , Obstacles,  $r = -0.10$ ,  $p < 0.01$ , Delay Discount,  $r = -0.20$ ,

$p < 0.01$ , Proxy Cognitive Score,  $r = -0.09$ ,  $p < 0.01$ , Academic Mean,  $r = -0.25$ ,  $p < 0.01$ , SES,  $r = 0.05$ ,  $p = 0.13$ . See Appendix G for correlation matrix of all the relationships.

Females were somewhat although not significantly lower on the intention to leave early. Keeping in mind that it is a seven-point scale, with higher scores indicating a greater intention to leave early, the mean score for the males ( $n=680$ ) was 1.56 (s.d. = 1.17) and for the females ( $n=445$ ) was 1.45 (s.d. = 1.02). A t-test comparing the means produced a t value of 1.646, which, with this sample size, corresponds to a  $p = 0.10$ .

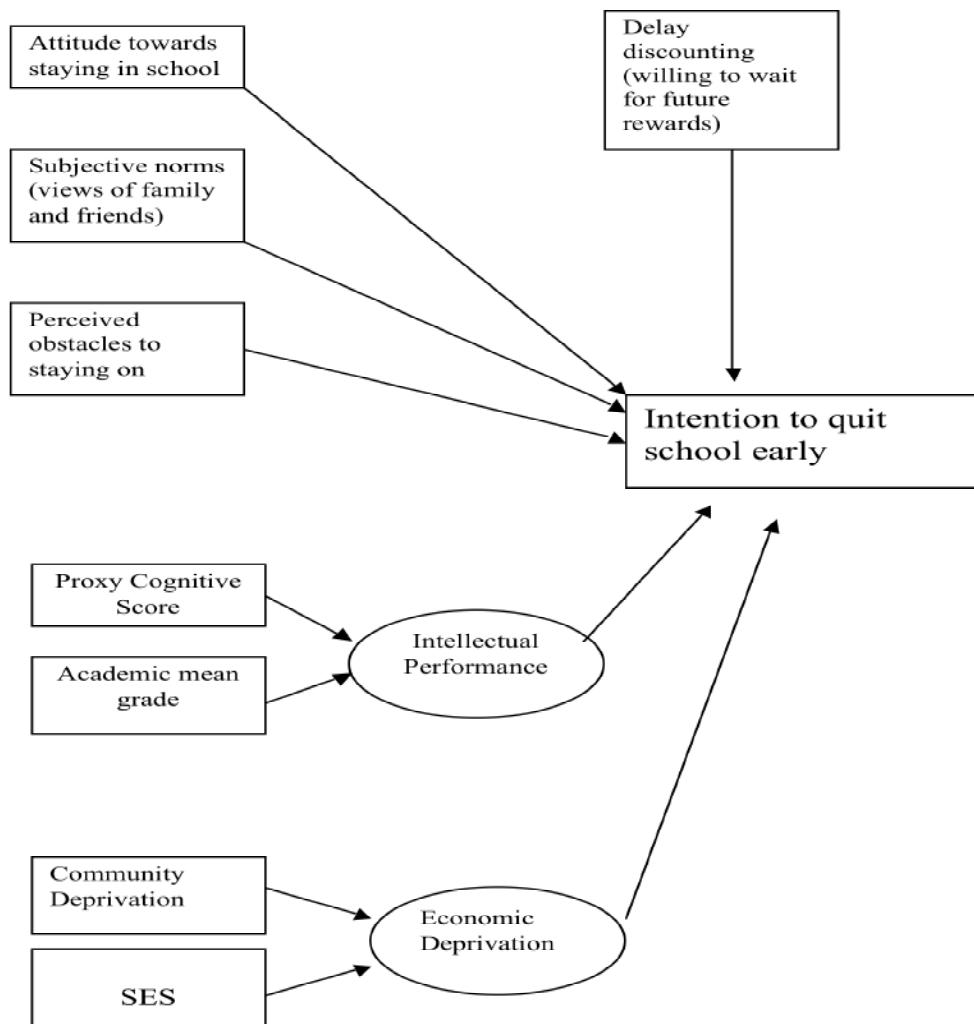
The statistical significances of most of the correlations are merely a reflection of the large sample sizes, not the strengths of the relationships, since the  $r$  scores range from low to moderate. This in turn may be a reflection of the fact that the frequency of the dependent or outcome measure is not modelled by the normal distribution. However, the very large sample size compensates for the skewed distribution and justifies the use of parametric inferential statistics; 'it is always safe to relax the normality assumption' when sample size  $n > 100$  (Sirkin, 2006: 245). The bivariate relationships all indicate a significant correlation between 'intention' and the independent variables except in the case of SES. The direction of the relationships make intuitive sense, with people more likely to intend to leave school early if: their attitude to education is negative; there is poorer normative pressure towards staying on from the people close to them; they perceive more obstacles to completion; their preference is for early rewards over later, greater ones; their cognitive score is lower; their academic average grades are weaker; and their social class categorisation is lower.

Given that there are inter-correlations between these independent measures, it is important to examine a multivariate analysis of the predictors of 'Intention to leave school early' in order to control for and assess the contribution of each independent measure while controlling for, or partialling out, the others.

#### **4.2 Multivariate analysis using AMOS Structural Equation Modelling**

In order to assess the simultaneous contribution of a number of potentially important

explanatory or predictive variables on the outcome of intention to leave school early, causal modelling (or more formally, SEM – ‘structural equation modelling’) was employed. The latest versions of the widely-used statistical package SPSS includes AMOS, a programme for visual SEM. This allows the researcher to specify (draw) a visual model, test it, and then modify it to find the ‘best-fit’ model. The initial model for early school-leaving is presented in Figure 4.2 below.

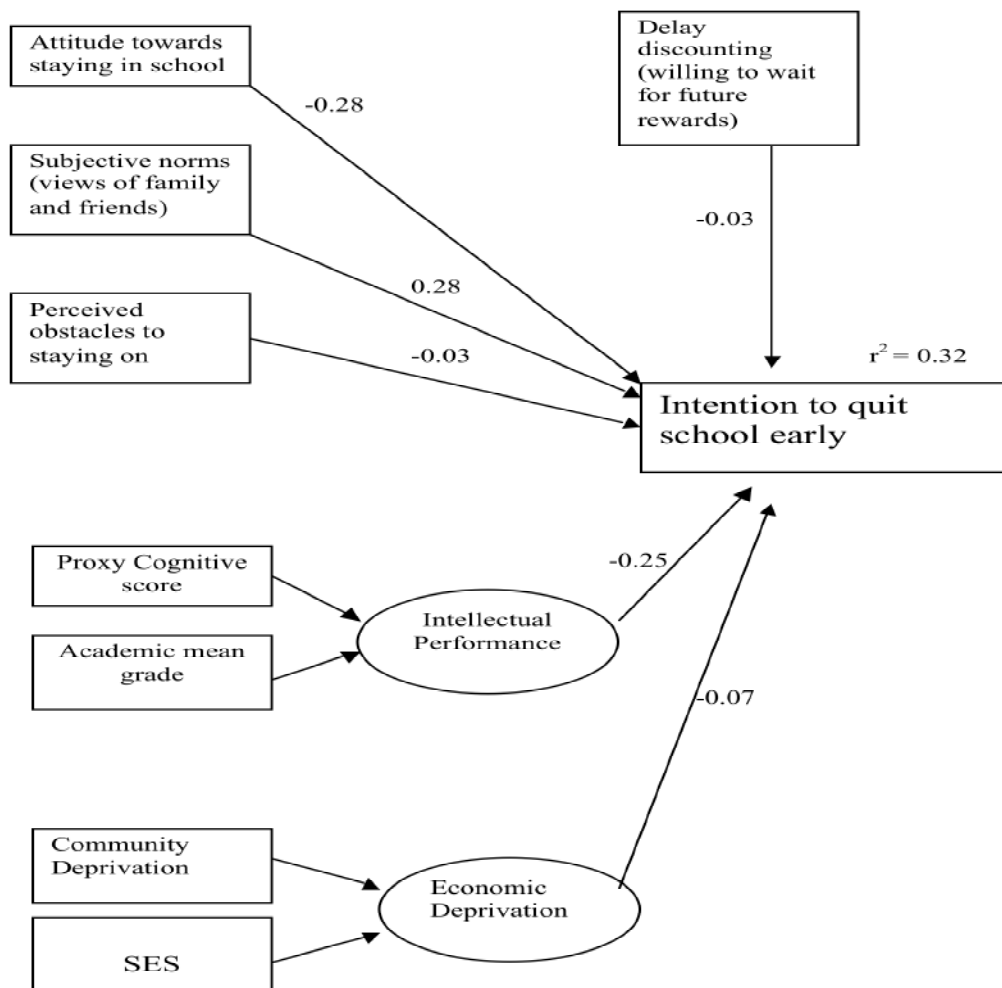


**Figure 4.2** Initial specified model for early school-leaving

In this model, the combined variance explained in the outcome or dependent measure, ‘Intention to leave school early’, is assessed. There are six independent or predictor

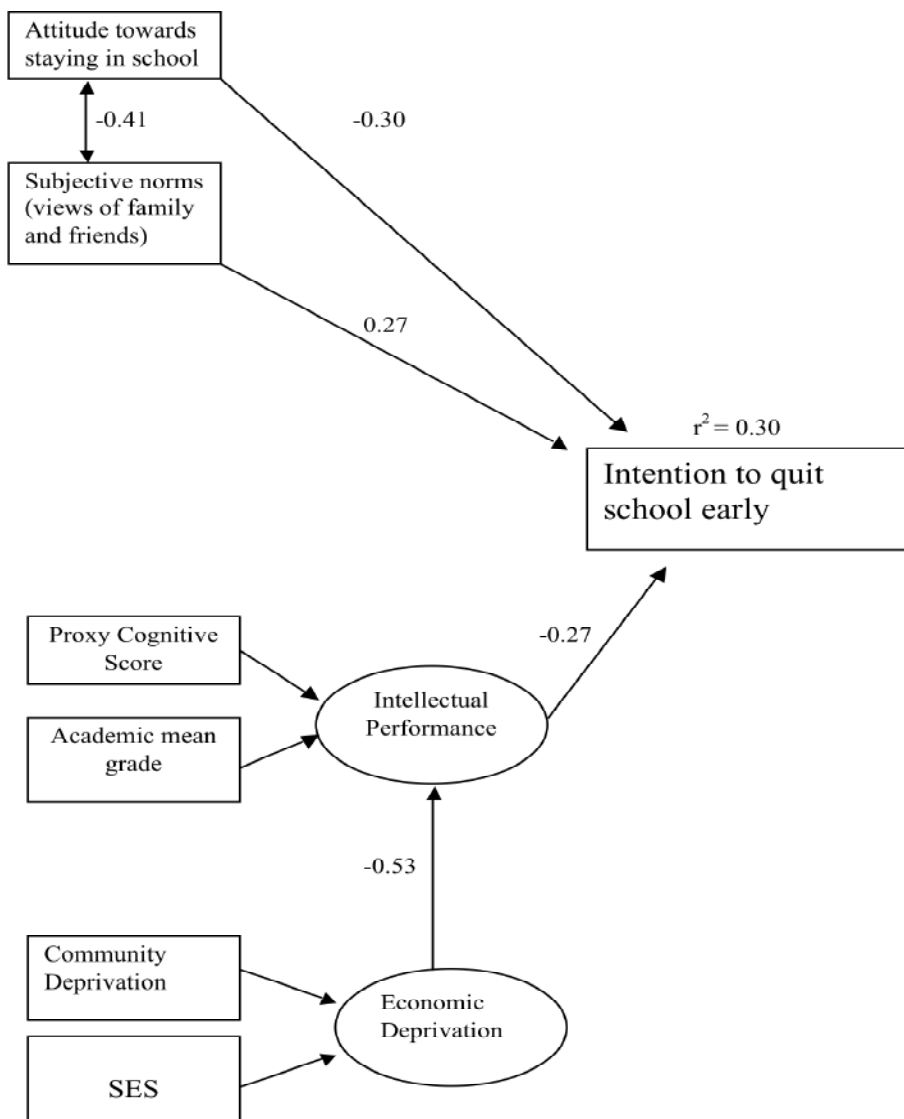
measures. Four of these – attitude, subjective norms, delay discounting and perceived obstacles – are ‘observed’ composite measures whose calculation was explained in the methodology section above. Two independent measures are ‘latent’ or unobserved (essentially, computed by AMOS): the proxy cognitive score and academic mean grade are modelled as indicators of a single underlying variable, ‘Intellectual Performance’; community deprivation score and SES are modelled as indicators of a single underlying variable, ‘Economic Deprivation’. In order to maintain visual simplicity, the model in Figure 4.2 does not include the double-headed arrows between all the independent variables indicating that they are permitted to co-vary in the analysis. Prior to the analysis, missing values were imputed using AMOS’s Full Information Maximum Likelihood (FIML) algorithm.

The initial model was tested and found not to be a very good fit of the data with a chi-square minimum of 22.2,  $df = 11$ , and  $p = 0.022$ . (Better fits in SEM are indicated by lower chi values and higher values of  $p$ , since the researcher is looking to accept the default model, not reject it as in conventional inferential statistical tests.) Figure 4.3 presents the standardised regression scores for the initial model. Alternatively, the analysis is presented via a more traditional regression table in Appendix H.



**Figure 4.3** Calculations of regression estimates for initial model

As an inspection of Figure 4.3 reveals, overall about 32 per cent of the variance of the outcome measure (intention to quit early) is explained by the independent measures. This is reasonably good, given the skewed distribution of the measure. However, some independent measures are contributing very little to the prediction, once the other measures have been controlled for. In particular, the personality measure, 'delay discounting' and the perceived obstacles measure contribute virtually nothing to the model. To modify it, these were omitted from the subsequent model. Within AMOS, a sub-routine called 'model specification' was also then used which seeks to find the best-fit model for the remaining measures. This is presented in Figure 4.4 below. (See Appendix H for a more orthodox linear multiple regression expression of data.)



**Figure 4.4** Final best-fit model for early school-leaving intention

While the overall variance explained in Figure 4.4 is a little lower, at 30 per cent, because of the elimination of a number of predictors, from the point of view of an elegant explanation of the outcome the model looks much more parsimonious. The goodness-of-fit measures are much improved with chi-square minimum value now at 10.5,  $df = 9$ , and  $p = 0.308$ . An additional measure of model fitness (which does mimic

more traditional measures of 'significance'), the RMSEA = 0.012, an indication of good model-fit. The numbers in Figure 4.4 are standardised regression coefficients and mean that, for example, controlling for subjective norms and intellectual performance, an increase of one standard deviation in the attitude measure produces a change of -0.30 standard deviations in the outcome measure. The model also suggests that there is an important and significant negative correlation between attitudes and subjective norms (so people with more negative attitudes towards education have family and friends who provide less positive influence towards staying on in school). This is not surprising but perhaps the model's assessment of the role of economic deprivation is. It suggests that deprivation has an important role in the intention to leave school – this is of course well flagged in the literature (see section 2.2.2 above), but in this model the role is indirect and is mediated through intellectual performance. In other words, greater deprivation is linked to lower intellectual performance, and a lower intellectual performance is then predictive of a greater intention to leave school early. This would imply for example that two children, one from a wealthy background and one from a poor background, who both experienced academic difficulties in school, would be roughly equal in their intention to leave early. The difference is that coming from a more economically deprived background predicts a greater likelihood of experiencing academic difficulties.

#### **4.3 Deconstructing the measurement of attitudes and subjective norms**

Having simplified the relationship to a certain extent in the previous section, we can also now break down the composite measures of attitude and subjective norm so as to see which individual elements are especially important in predicting intention to leave school early. Correlations of the fourteen attitude products (Likelihood x Evaluation) with intention to leave school early were examined. The five elements that were most powerful in association with intention to leave early were (with the strongest measure first) the attitudes that:

- the LC would not be a step towards college,
- LC completion would not contribute towards a more positive life,
- continuing school was a waste of time,



- LC completion would not help in securing a well-paid job,
- L.C. completion would not give the individual a sense of success.

So in a nutshell, the individual is more likely to intend leaving when he/she does not see how continuing in school will help in improving his/her life chances, and is thus a waste of time.

With regard to the subjective norms, perhaps not unexpectedly there were really two distinct forces at work; one was family, relatives and teachers, and the other was peers – classmates, friends and boy/girlfriends. A principal component analysis (a statistical technique designed to reduce many measures to few) confirmed this by compacting the seven different normative forces into two, and these explained over 64 per cent of the variance of the original seven. Mother, father, teachers and relatives loaded on the first component, while peers, classmates and boy/girlfriend loaded on the second. The analysis of the relationship with intention to leave early showed that although the peer component is important ( $r = 0.23$ ), perceiving that parents, teachers and relatives are strongly in favour of one's continuing to complete the LC is much more closely associated with intention not to quit early ( $r = 0.42$  between this component and intention to stay on).

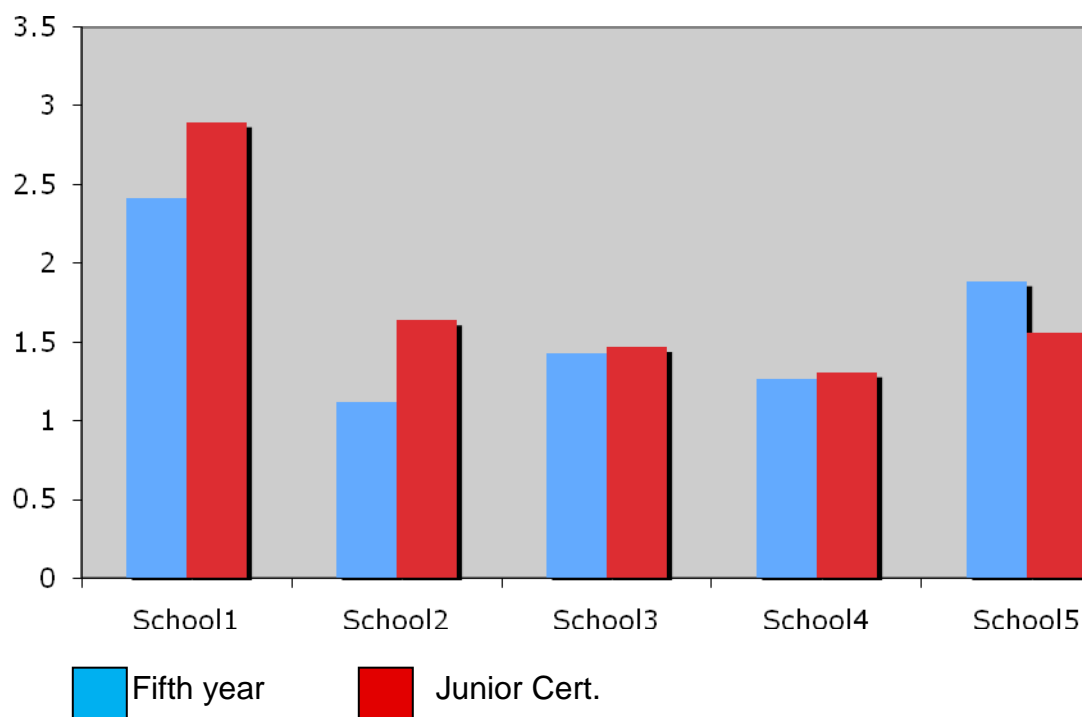
In summary, the analysis shows that having positive attitudes about the potential of the LC to enhance one's life, and having parents, relatives and teachers one perceives to be strongly pro-LC completion are the key to intending to stay on. Performing well intellectually is also a contributing factor. Economic deprivation does not exert a direct influence on intention to stay on or leave but it strongly shapes intellectual performance; thus is indirectly influences intention. Factors thought to be of great importance in elements of the literature but which proved less significant as predictors in this analysis were peer pressure, practical obstacles to continuing in school, and an inability to defer gratification.

A plausible way that 'intention to leave early' could arise might be as follows: Some

young people, disproportionately from more deprived backgrounds find themselves struggling to keep up academically. This produces a sense of disengagement from the school process and a desire to separate themselves from a chronic source of disappointment in their lives. To maintain consistency, they devalue the potential of education and educational qualifications. The figures of authority in their lives like parents and teachers are perceived – whether this is actually the case or not we cannot tell from these data – as failing to challenge their negative verdict on education.

#### 4.4 Analysis of fifth year sub-sample

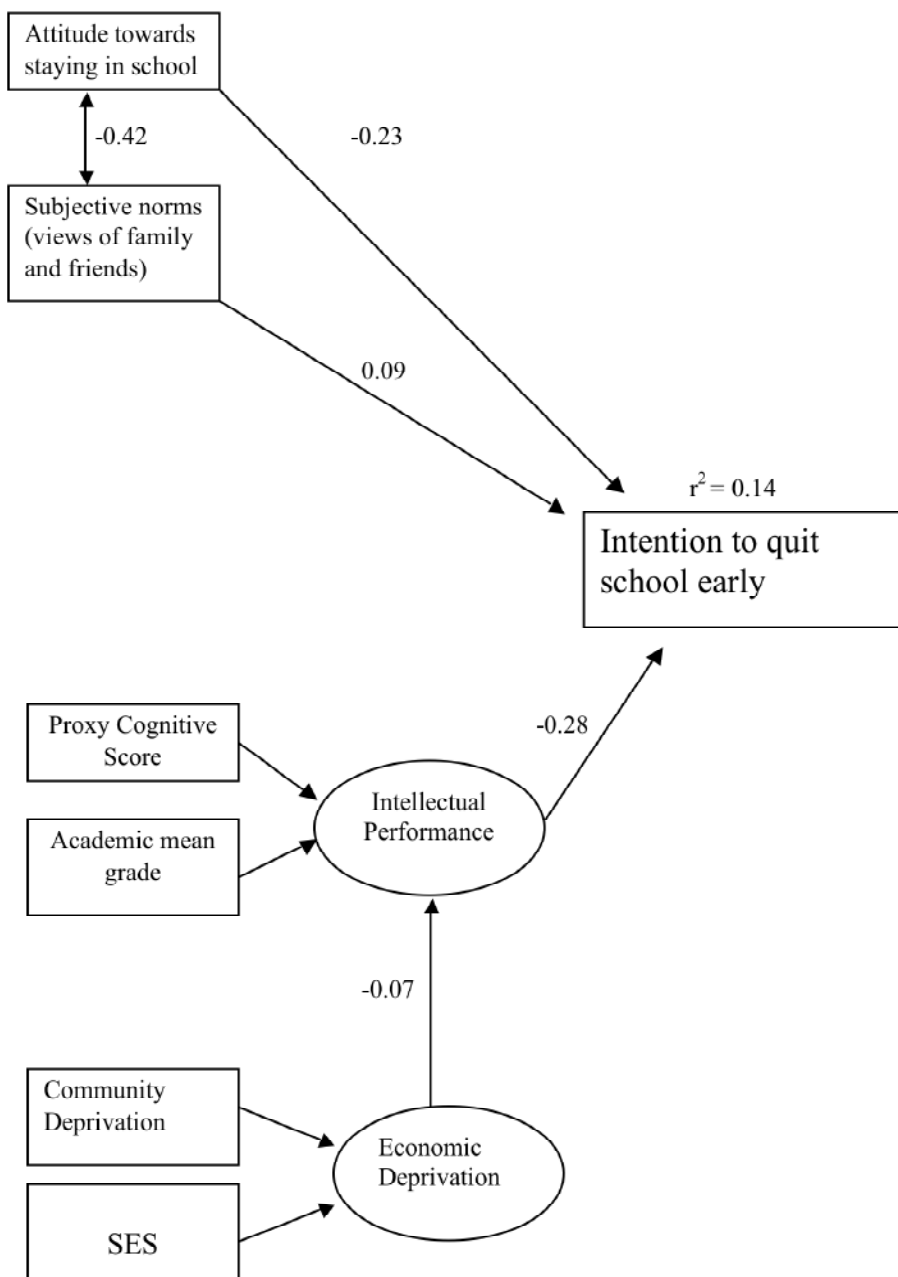
The literature suggests that the time of greatest attrition of students from Irish second-level schools is in the years following the JC exam. Thus, it was anticipated that, *ceteris paribus*, intention to leave school should be lower among fifth year students than JC students since the ranks of the former will have already been thinned a little by early drop-outs. In comparing the sub-sample of fifth years in this group with their respective JC schoolmates, there seems to be evidence for this claim. Figure 4.5 presents a bar-chart of the mean 'intention to quit' score by school for fifth and JC years.



**Figure 4.5** Mean score of 'intention to leave early' by school and class

As can be seen in Figure 4.5, in four of the five schools, the JC students score more highly on intention to leave school early. In two schools the difference is substantial, and in two it is very marginal. In one school, the fifth years were more intent on leaving than the JC students, but overall the hypothesis finds moderate support. A formal analysis of variance (ANOVA) was carried out with 'intention' as the dependent variable, and school year (Junior Certificate versus Fifth year) and school (one of five where both groups were surveyed) as the independent variables. The results indicated that fifth year intention to leave earlier was lower but this did not reach statistical significance in the ANOVA ( $F = 1.54$ ,  $df = 1$ ,  $p = 0.21$ ).

The best-fit model identified above, and presented in Figure 4.4, was tested on the smaller fifth year sub-sample. The results of this AMOS SEM analysis are presented in Figure 4.6.



**Figure 4.6** Final best-fit model applied to Fifth Year sub-sample ( $n= 188$ )

The pattern of the path diagram in Figure 4.6 appears to correspond to the research expectations. The overall variance explained in the sub-sample's intention to leave early is 14 per cent; among the main (Junior Certificate) sample, the comparable figure is 31 per cent. The sample size is also a great deal smaller. Of the remaining variance,

intellectual performance is a relatively strong predictor, and 'attitude' is slightly less. However, 'subjective norms' are far less predictive of the outcome; this is likely to be a reflection of the declining spread or variance of subjective norms among the fifth year group compared to their JC schoolmates (s.d. of the subjective norm of the former group = 3.68 versus s.d.= 4.81 of the latter). Economic deprivation no longer plays a powerful indirect role for this group in shaping intellectual performance. In summary, the fifth year sub-sample group demonstrates a moderate decline in intention to leave early probably as a result of a thinning out process after JC year. Attitude towards completing the LC and Intellectual performance continue to be significant negative predictors of intention to leave early but subjective norms are not so important. Economic deprivation is no longer an indirect factor with a powerful determining influence on 'Intellectual performance'. A separate regression analysis also confirmed that the 'delay discounting' measure, and the 'perceived obstacles' did not have a significant association with the intention to leave early – similar to the findings reported for the main sample above in section 4.2.

## **5. Summary of key study findings and concordance with the literature on early school-leaving**

### **5.1 Summary of the key findings**

The TPB provided the underlying framework for the present study, the aim of which was to investigate the comparative contribution of a number of variables to early school-leaving. The most appropriate starting point for the discussion of the results is, therefore, to examine the model that emerged as the most comprehensive, yet parsimonious explanation of early school-leaving and further scrutinise how this model compares to the TPB.

The best-fit model to emerge from the analysis suggests that intention to quit school early is directly predicted by the individual's attitudes towards staying in school, subjective norms that are based on the views of the young person's parents, family and teachers as well as their level of intellectual performance. In addition to these direct relationships, intention to leave school early is only indirectly predicted by the individual's level of economic deprivation. Thus, the more positive the individual's attitude towards staying in school, the more pro-LC completion the individual perceives his/her parents, family and teachers to be and the greater his/her intellectual performance, the less likely he/she is to be intending to leave school early. Those individuals coming from a more economically deprived background are more likely to experience academic difficulties and it is because of these difficulties and not their deprived circumstances that they are likely to become increasingly disengaged from school, ultimately resulting in drop-out for many. Finally, perceived behavioural control, a key element of the TPB, was not a significant predictor of intention to leave school early.

Delving into the attitudes towards school completion a little more deeply, a number of attitudes emerged as being more pertinent to the intention to quit school, particularly those related to long-term goals. Thus, individuals who are able to see the LC as a step

towards third-level education; as contributing to a more positive life; not as a waste of time; as helping to secure a well-paid job in the future; and, finally, as giving the individual a sense of success in life, are those who have greater intentions of completing the LC. Thus, it would appear that the notion of an individual's ability to set long-term goals may be an important factor in his/her intention to complete secondary school education.

Finally, looking at the comparison between the third and fifth year samples, intention to leave school early was significantly less pronounced in the more senior group. Focusing on this more senior group, intellectual performance remains as an important predictor of intention to leave early, as do attitudes towards LC completion, albeit on a weaker basis than in the third year sample. At this stage, subjective norms appear to exert little influence on the individual's intention to complete school. Economic deprivation does not even have an indirect effect on intention to leave school early at this point.

## **5.2 Concordance with the literature**

The present findings replicate and expand on a number of previous studies. Firstly, in relation to the TPB, they support some of the findings of Davis et al. (2002) in that they highlight the importance of long-term attitudes. In line with Davis et al. (2002), they demonstrate that it is long-term consequences such as being a stepping-stone to college and securing well-paid employment in the future that drive intentions to complete school rather than short-term goals such as being able to see friends on a day-to-day basis or being able to participate in sport. However, the present findings also conflict with Davis et al. (2002) in that they fail to show that perceived behavioural control significantly predicts intention to leave school early. Thus, unlike the sample in Davis et al. (2002), perceived obstacles do not seem to influence the intentions of individuals in the present study to complete the LC.

Another area of discrepancy with the literature that falls within the TPB framework is the relative importance of subjective norms. The influence of peers did not emerge as a key predictor of intention to stay in school in the present study. This is contrary to findings

by Cairns and Cairns (1994) who reported that students who associate with others who are already intending to leave school early are more at risk of dropping out themselves. On the other hand, the finding that teachers hold influence over students' intentions to stay or leave school is in line with findings in the literature that show teachers to be a significant factor in early school-leaving (Vallerand and Senecal, 1991). The findings from the present study also show that the role of subjective norms is far less relevant for fifth year students. The strong relationship between social norms and attitudes indicates that people's attitudes are influenced by significant others, and consequently these two constructs do not operate independently. Thus, attitudes, having already been influenced by significant others, predict more strongly students' intentions to complete or quit school while the norms have an indirect influence through attitudes. It is possible that the older the students become, the less the subjective norms influence their intentions to leave and the greater their own attitudes predict their intention to stay in or leave school. Another explanation could be based on the assumption that the fifth year group only includes those who actually complete school (since those who drop out will have already done so), and may suggest that subjective norms are more relevant to those who drop out, than for those who complete school.

The finding that economic deprivation does not directly predict intention to leave school is in line with previous findings in the literature. For example, in their longitudinal study, Garnier et al. (1997) also found that SES only indirectly predicted drop-out through school performance, firstly in Grades 1 and 6 and later through high school performance. This may suggest that students disproportionately from more deprived backgrounds find themselves struggling at school, they become increasingly disengaged from school, in some cases displaying behavioural problems, and the significant people in their lives do not appear to try to alter this trajectory of failure. There are numerous reasons for why this is the case, a number of which were raised in the literature review. For example, numerous Irish studies show that lower SES is associated with other variables that can impact on intellectual performance such as parents being unable to afford the full costs of education (Boldt and Devine, 1998), students holding down part-time jobs while at school (McCoy and Smyth, 2005) and



hunger interfering with concentration (Downes et al., 2006). Thus, it is perhaps not surprising that there are mediating factors between the individual's level of economic deprivation and the likelihood of that person completing or quitting school.

The significance of the role of intellectual performance is in line with many previous studies. At one end of the scale, Willms (2002) notes that children with cognitive deficits have diminished chances of succeeding in school. The results are also in line with findings by Jimerson et al. (2000), which show that students with higher levels of intellectual performance are less likely to leave school early. Furthermore, academic performance, measured by grades, as in the present study, has also been found to be a strong predictor of school completion in the past (Jimerson et al., 2002).

While females were found to be slightly less intent on leaving school early than males, the differences were not significant, a finding somewhat in contrast to the bulk of both the Irish and international literature, which consistently shows males to be more likely to drop out (Byrne et al., 2008; Rumberger, 2005). While it is impossible to tell, it is tentatively suggested that this may be a somewhat positive finding in that it may reflect males' increased awareness of the lack of opportunities available to them without the LC, given the current economic climate and the shortage of construction jobs.

Finally, it was hypothesised that delay discounting would be a significant predictor of intentions to leave school early. However, this variable was found to contribute very little to the proposed model. There is little previous empirical research in the literature with which to compare this finding although it has been suggested that adolescents' decisions regarding school completion are based on a calculation of the direct costs associated with schooling in addition to the perceived sacrifice of potential income (Erikson and Jonsson, 1996). Thus, the present findings failed to show a direct link between students' future versus immediate orientation and their intentions towards school completion. However, it should also be reiterated at this point that attitudes towards long-term consequences of school completion emerged as more significant (negative) predictors of intentions to leave school early than short-term consequences

and, therefore, the link between time preference and early school-leaving cannot be entirely rejected. The failure to find a strong direct or even indirect relationship between delay discounting and early school-leaving intentions may be due to the methodological difficulties associated with the reliable measurement of delay discounting, as has been noted by previous researchers (Daly, Delaney and Harmon, 2008).

In summary, the present findings both support and conflict with previous research on early school-leaving. They are partly in line with Davis et al. (2002) in terms of the importance of attitudes towards long-term consequences of school completion as well as the influence of subjective norms of parents, family and teachers. Two key differences, however, were that perceived behavioural control and subjective norms created by peers were not significant in the present study. Gender was not found to be as strong a predictor of intention to leave as usually found in the literature. Finally, economic deprivation was found only indirectly to predict intention to leave school early through the impact it has on intellectual performance. Thus, in line with previous findings (e.g. Garnier et al., 1997), poor intellectual performance at school was found to be a strong predictor of intention to quit school.

## 6. Concluding Reflection on Policy

The specific purpose of this study was to examine the TPB in relation to the intention to leave second-level school before completion of the LC. So it is reasonable to interpret the results in this light, i.e. as an abstract test of the efficacy of a theoretical model. However, it is also the case that we rarely approach these kinds of investigations only with a scientific dispassion. It is natural to ask, especially when the study has been supported by the Combat Poverty Agency, what the study might mean for social policy generally, and governmental intervention specifically. To make a wise decision about appropriate budgetary priorities and actions needs of course much more than empirical evidence; but it nonetheless usually does require hard data and inference as well. So how hopeful a policy picture might this study support?

### 6.1 The half-empty glass

To a degree, the data gathered here – fairly unsurprisingly – continue to paint a picture of early school-leaving, and its likely causes, as intractable and thorny problems. Economic deprivation at both the individual and community level plays a powerful if indirect role in shaping intention to leave early. There is a widespread perception that income inequality increased in Ireland during the ‘Celtic Tiger’ years (1993-2007); in fact it was a time that witnessed both rapid growth and a moderate decline in income inequality according to an influential OECD (2008) publication. Worryingly, though, the data-gathering process in this school-leaving study probably coincided with a highpoint of national income and equality, and yet deprivation still played a powerful indirect role. And furthermore, one could easily imagine that both the resources and appetite to tackle elements of social inequality like early school-leaving may well be depleted for the fiscally challenged short- to medium-term period ahead.

Part of the broader problem of poverty is its transmission across generations, reflected most glaringly in the significant correlations found for example in surveys comparing the earnings of fathers and sons (Sorenson, 2006). In this study, the subjective perception

of how the children felt their parents and teachers perceived the usefulness of completing the LC was significantly associated with intention to leave early. It is possible that the students' perceptions were either incorrect or self-serving. However, it seems to us more likely that much of this perception was probably valid, and that children intending to leave early are much more likely to have parents who left school early and whose lukewarm evaluation of the benefits of education may be transmitted to their children. Cycles of poverty are notoriously difficult to break.

And yet the most serious concern may lie in the importance of intellectual performance as a key predictor of the outcome. One of the authors recalls taking classes with a charismatic statistics lecturer (yes, there are such creatures) part of whose lectures consisted of exposing the follies of the media in their imparting of basic research findings. A favourite howler involved newspaper headlines breathlessly reporting that half of a given population were 'below average' on some measure. This, as he never tired of pointing out, is in fact the definition of a mean score (half the population lying above it, and half lying below it). Although we are reluctant as adults to say it, the same is true for academic ability – half of a class will be in the bottom half of the ability distribution of that class. Even if the adults don't say it out loud, children in a class tend to be perfectly aware of their ranking in the class. The problem for those near the bottom of the class is that their relatively low ability implies that what school means to them is a chronic source of disappointment. Not surprisingly, many of them then undergo dis-identification with this institution and its goals. Given variability in ability, it is difficult to imagine eradicating these feelings.

## **6.2 More positively ...**

And yet, positive elements do emerge from the study. Overall, the vast majority of students intend to go on to complete their LC, reflecting an understanding of the importance of that exam for learning, and to open doors to many types of employment and also third level education. The gender gap is also quite narrow, and this is not because many girls want to get out of school early, but because relatively few boys do.

Studies of poorly performing schools in the US indicate that there exist problems of peer pressure for some young people when they behave studiously in school, in so-called cases of 'nerd-harassment'. The evidence in our study though was that even for those who intended to leave early, peer-pressure was not a strong influence compared to parents, relatives and teachers. This can be interpreted optimistically since it is feasible to imagine an intervention persuading the latter groups to give a more positive picture about education to their children or pupils, but far less so their peers who have negative and disruptive views. Parents certainly will almost always want what's best for their children in the long-term.

And finally, while it is true that not everyone can be a winner in the academic stakes, one must remember that Gardner's (1983) theory of 'multiple intelligences' is widely accepted in educational circles. Children who do not excel in domains like say mathematics may instead have high abilities in spatial, musical or interpersonal intelligence. It is often more important for teenagers to be popular in school than to be clever. Some of these abilities may not translate into LC points, but not every child will be necessarily focused on getting into university for a traditional BA course, nor should they be. What is important for encouraging the greatest number of teenagers to stay committed to the school process is that the education system is broad enough to offer different curricula and career trajectories to both those with high-levels of academic ability and those with strong alternative interests and skills.

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## 8. Appendices

### 8.1 Appendix A: Sampling

A sample size of twenty schools was based on the following rationale: In order to obtain findings that can be reported with a 95 per cent confidence level, and with  $\pm 3$  per cent confidence intervals (standard research norms), a sample size of 1042 was required. With approximately 57,000 students in JC year across 731 schools in Ireland, there was a mean of 79 students per JC year in each school. Including 20 schools in the study would generate a total sample pool of approximately 1,580 students ( $20 \times 79$ ). If a response rate of 66.6 per cent is predicted for each participating school, a total sample size of 1,052 is generated, just slightly exceeding the necessary sample size. Although a 66.6 per cent response rate may be considered optimistically high, according to Dillman (1978, 2000), 70+ per cent response rates are feasible when questionnaires are administered in person. Indeed, Brady (1989) achieved a 90 per cent response rate in a study conducted in secondary schools in Ohio using Dillman's technique.

The DES listed 731 post-primary schools in Ireland for 2008. It designated 202 of these schools as disadvantaged. The sampling procedure explicitly oversampled schools in deprived areas: these schools make up 27.6 per cent of all Irish post-primary schools but 50 per cent of the sample of 20 schools to be selected in this study. Thus this oversampling meant that disadvantaged schools made up roughly 1 in 2 of the study sample versus 1 in 4 nationally. There were two reasons for the oversampling of students from disadvantaged schools:

A central aim of the study was to determine predictors of early school-leaving, and more students drop out from disadvantaged schools (DES, 2003);

There are various threats to representativeness in survey responses, of which a prominent one is social class (or income) whereby poorer respondents are systematically less likely to participate (see Sudman and Bradburn, 1974). Given that one of the key predictors for early school drop-out is a disadvantaged background, the



over-sampling of students from disadvantaged schools was intended as a way to compensate for the survey response bias.

Following this step, the ten disadvantaged and ten non-disadvantaged schools were selected on a geographical proportional (population size) basis: seven schools were selected from Leinster (excluding central Dublin), five schools from central Dublin city (i.e. Dublin city council area: for the purpose of sampling this excluded Fingal, Dun Laoghaire-Rathdown and South Dublin which were included in the 'Leinster' sampling), five schools from Munster and three schools from Connaught-Ulster. This proportion of schools chosen by region was in direct proportion to the size of the 13-14 year old population by region recorded in the 2006 Census two years prior to this research. Systematic random sampling was used within each of the five regions to generate the required number of schools for the sample. This method employs a random start on a population list, and then the selection of each element (school) from the sampling frame falling after an interval  $i$  ( $i$  in this case was the number of schools in each region divided by the desired sample size). The sampling procedure continued until ten disadvantaged and ten non-disadvantaged schools were selected from the four regions (with Leinster/non-Dublin city = 7, Dublin city = 5, Munster = 5 and Connaught-Ulster = 3). Of the schools selected 11 were co-educational, 5 were boys-only schools and 4 were girls-only schools.

A reserve sample list of schools was drawn up using the same criteria as the first sample as some school-refusals were anticipated. In the event, 12 schools (60 per cent) from the first sample group consented to the research process, with 8 refusing on either grounds of current participation in other research, school issues, or simply refusing to communicate despite letters, telephone calls, fax and email communications. More designated-disadvantaged schools from the initial list refused than did non-disadvantaged ones (six to two). Six schools from the reserve list agreed to participate. Two further schools which matched the geographical and designation criteria and where one of the research team had contacts to the school authorities were used to make up the complement of 20 schools.

## 8.2: Appendix B: School Designation by Gender

Non-disadvantaged by disadvantaged by gender

N = 1,129 (2 non-responses on gender).

**Table 8.1:** School designation by gender among main sample

			<b>Sex</b>		
			<b>Males</b>	<b>Females</b>	<b>Total</b>
<b>Designation</b>	<b>Non-dis</b>	<b>Count</b>	426	259	685
		<b>% within desig</b>	62.2%	37.8%	100.0%
		<b>% within Sex</b>	62.6%	57.8%	60.7%
	<b>Dis-advan.</b>	<b>Count</b>	255	189	444
		<b>% within desig</b>	57.4%	42.6%	100.0%
		<b>% within Sex</b>	37.4%	42.2%	39.3%
	<b>Total</b>	<b>Count</b>	681	448	1129
		<b>% within desig</b>	60.3%	39.7%	100.0%
		<b>% within Sex</b>	100.0%	100.0%	100.0%

### **8.3 Appendix C: Questionnaire**

## **Questionnaire**

**Section 1 – ‘Now or Later?’ Questions**

1. Imagine that this evening you are told that you have won a raffle. As a prize you can choose to take your winnings (100 euro) now, or wait for some time and get a bigger prize. Which option below do you think you would choose? *(Please tick one box.)*
  - a. Choose to collect your €100 winnings this evening ☐
  - b. Wait one week from today and get €110 ☐
  - c. Wait two weeks from today and get €115 ☐
  - d. Wait one month from today and get €125 ☐
  - e. Wait three months from today and get €150 ☐
  - f. Wait six months from today and get €175 ☐
  - g. Wait one year from today and get €200 ☐
  
2. Imagine that you have the chance to get your dream job. The manager of the company says that you can have an interview for the job today, or do an unpaid training programme *first* and *then* interview for the job after, improving your chances of getting offered that dream job. Which option below do you think you would choose? *(Please tick one box.)*
  - a. Interview for the job today and have a 1% chance of getting it ☐
  - b. Do a week's unpaid training and have a 10% chance of getting the job ☐
  - c. Do two weeks' unpaid training and have a 15% chance of getting the job ☐
  - d. Do a month's unpaid training and have a 25% chance of getting the job ☐
  - e. Do three months' unpaid training and have a 50% chance of getting the job ☐
  - f. Do six months' unpaid training and have a 75% chance of getting the job ☐
  - g. Do a year's unpaid training and definitely (100%) get the job ☐
  
3. How much is the following line like you? *(Please tick one box.)*  
***“I only worry about immediate problems or issues: the future will take care of itself.”***
  - a. Very much like me. ☐
  - b. Somewhat like me. ☐
  - c. Neither like me nor unlike me. ☐
  - d. Somewhat unlike me. ☐
  - e. Very unlike me. ☐
  
4. How much is the following line like you? *(Please tick one box.)*  
***“I think about how things will be in the future, and try to influence those things with my day-to-day actions.”***
  - a. Very much like me. ☐
  - b. Somewhat like me. ☐
  - c. Neither like me nor unlike me. ☐
  - d. Somewhat unlike me. ☐
  - e. Very unlike me. ☐

## Section 2 – The Leaving Certificate

How strongly do you agree with the following statement? (*Please tick one box below*)

***“I intend to stay in school until I complete my Leaving Certificate”***

- |                            |                          |
|----------------------------|--------------------------|
| Strongly agree             | <input type="checkbox"/> |
| Agree                      | <input type="checkbox"/> |
| Somewhat agree             | <input type="checkbox"/> |
| Neither agree nor disagree | <input type="checkbox"/> |
| Somewhat disagree          | <input type="checkbox"/> |
| Disagree                   | <input type="checkbox"/> |
| Strongly disagree          | <input type="checkbox"/> |

**Section 2 – The Leaving Certificate [Continued]**

***‘Completing the Leaving Certificate will ...’*** Please respond by ticking the box closest to your opinion.

	<b>Very likely</b>	<b>Likely</b>	<b>Somewhat likely</b>	<b>Neither likely nor unlikely</b>	<b>Somewhat unlikely</b>	<b>Unlikely</b>	<b>Very unlikely</b>
Prepare me for college/university							
Prepare me for a job							
Allow me to see friends on a regular basis							
Waste my time							
Allow me to learn new things							
Give me new challenges							
Allow me to participate in sports							
Keep me out of trouble							
Mean I have to study							
Mean I will be told by others what to do							
Help me get a well-paid job							
Give me a sense of success							
Mean I have less time for fun							
Help me do something positive with my life							

***How negative or positive do you think the following goals are? (Please tick the box closest to your opinion.)***

	Very positive	Positive	Somewhat positive	Neither negative nor positive	Somewhat negative	Negative	Very negative
Being prepared for college/university							
Being prepared for a job							
Being able to see friends on a regular basis							
Wasting my time							
Being able to learn new things							
Being provided with new challenges							
Being able to participate in sport							
Staying out of trouble							
Studying hard							
Being told what to do by others							
Getting a well-paid job.							
Feeling a sense of success							
Having less time for fun							
Doing something positive with my life							

### Section 3 – The Views of your Family and Friends.

Please tell us what you think of the following things by ticking the box closest to your opinion.

**If the person mentioned in a box isn't relevant for you, just leave that row blank.**

	Strongly agree	Agree	Somewhat agree	Neither agree nor disagree	Somewhat disagree	Disagree	Strongly disagree
My <b>mother</b> thinks I should complete my Leaving Cert.							
I usually do what my <b>mother</b> thinks I should							
My <b>father</b> thinks I should complete my Leaving Cert.							
I usually do what my <b>father</b> thinks I should.							
My <b>close family relatives</b> think I should complete my Leaving Cert.							
I usually do what my <b>close family relatives</b> think I should.							
My <b>boy/girl-friend</b> thinks I should complete my Leaving Cert.							
I usually do what my <b>boy/girl-friend</b> thinks I should.							
My <b>teachers</b> think I should complete my Leaving Cert.							
I usually do what my <b>teachers</b> think I should							
My <b>classmates</b> think I should complete my Leaving Cert.							
I usually do what my <b>classmates</b> think I should.							
My <b>close friends</b> think I should complete my Leaving Cert.							
I usually do what my <b>close friends</b> think I should.							



### Section 4 – Problems to Deal With

The following is a list of possible problems facing a Leaving Certificate student. Consider each of them and think about how easy or difficult a problem it would be for YOU to handle. (*Please circle a number in each row - for example, circle '1' if it's not a problem at all, circle '2' if it's a bit of a problem for you to handle, etc.*)

	Not a problem at all	Somewhat of a problem	A huge problem
Being sick	1-----2-----3-----4-----5-----6-----7		
Being busy with family obligations	1-----2-----3-----4-----5-----6-----7		
Being busy with other commitments	1-----2-----3-----4-----5-----6-----7		
Being too tired	1-----2-----3-----4-----5-----6-----7		
Not being able to get to school	1-----2-----3-----4-----5-----6-----7		
Forgetting to go to school	1-----2-----3-----4-----5-----6-----7		
Not getting my homework done	1-----2-----3-----4-----5-----6-----7		
Not knowing how to study	1-----2-----3-----4-----5-----6-----7		
Not understanding what is taught	1-----2-----3-----4-----5-----6-----7		
Not getting encouragement from teachers	1-----2-----3-----4-----5-----6-----7		
Not getting encouragement from family	1-----2-----3-----4-----5-----6-----7		
Not getting on with other students	1-----2-----3-----4-----5-----6-----7		
Not getting on with teachers	1-----2-----3-----4-----5-----6-----7		
Not having confidence in myself	1-----2-----3-----4-----5-----6-----7		
Watching too much television	1-----2-----3-----4-----5-----6-----7		

### Section 5 – Tell Us About You

Please answer the following questions about yourself and your parents / guardians.

1. Please write in your age: \_\_\_\_\_

2. Are you...Male ☐ Female ☐ (*Please tick as appropriate*)

3. Were you born in Ireland ? Yes No (*Please circle right answer*)

If 'no', then please tell us where you were born. \_\_\_\_\_

4. Please state your father's (or male guardian's) job? \_\_\_\_\_

5. Please state your mother's (or female guardian's) job?

\_\_\_\_\_

6. Are there any specific problems you experience in relation to learning in school you would like to let us know about? (e.g. "dyslexia").

\_\_\_\_\_

7. Can you remember your results from last summer's school tests? If so, please write down your mark (or grade) in any subject below that you took? (Can you also let us know whether it was Higher, Ordinary or Foundation level by circling either a H, O or F after the result?) Don't worry if you can't remember some results.

a. Maths \_\_\_\_\_ H O F

b. English \_\_\_\_\_ H O F

c. Irish \_\_\_\_\_ H O F

d. History \_\_\_\_\_ H O

e. Geography \_\_\_\_\_ H O

f. Science \_\_\_\_\_ H O

g. Other(s) \_\_\_\_\_ H O

\_\_\_\_\_ H O

\_\_\_\_\_ H O

### Section 6 – Some General Knowledge and Number Recall questions

1. Which one of the following is Minister Mary Harney? *(Please circle the letter under one photo.)*



A



B



C



D

2. Which one of the following is Padraig Harrington? *(Please circle the letter under one photo.)*



A



B



C



D

3. Which of the following is the capital of Bulgaria? (*Please circle one.*)

- a. Sofia
- b. Zagreb
- c. Budapest
- d. Bucharest

4. In which year did World War I end? (*Please circle one.*)

1916

1918

1920

1922

5. Which of the following is **not** a play by Shakespeare? (*Please circle one,*)

- a. King Lear
- b. Macbeth
- c. Othello
- d. Uncle Vanya

**WHEN FINISHED QUESTION 5, PLEASE STOP AND WAIT!!**

**For questions 5-10, please listen to the researcher and write down your responses in the space provided.**

6. Number Recall \_\_\_\_

7. Number Recall \_\_\_\_

8. Number Recall (Reversed) \_\_\_\_

9. Number Recall (Reversed) \_\_\_\_ \_\_\_\_ \_\_\_\_ \_\_\_\_ \_\_\_\_

10. Please circle correct spelling when the spelling word is read out

**Vaccuum**

**Vacuum**

**Vacum**

**Vacume**

**Is there any comment you would like to add about any of the issues raised in this questionnaire?**

---

---

---

---

If any of the issues in this questionnaire have made you worry about anything, please inform the researcher. If you do not wish to speak to either the researcher or one of your teachers, you might like to contact the helpline below:

The Teenline helpline is open on Wednesdays 3pm - 6pm; Thursdays, Fridays and Saturdays 9pm - 12 midnight; and on Sundays from 8pm - 11pm. Freephone 1800 833 634.

**Thank you for taking the time to complete this questionnaire**

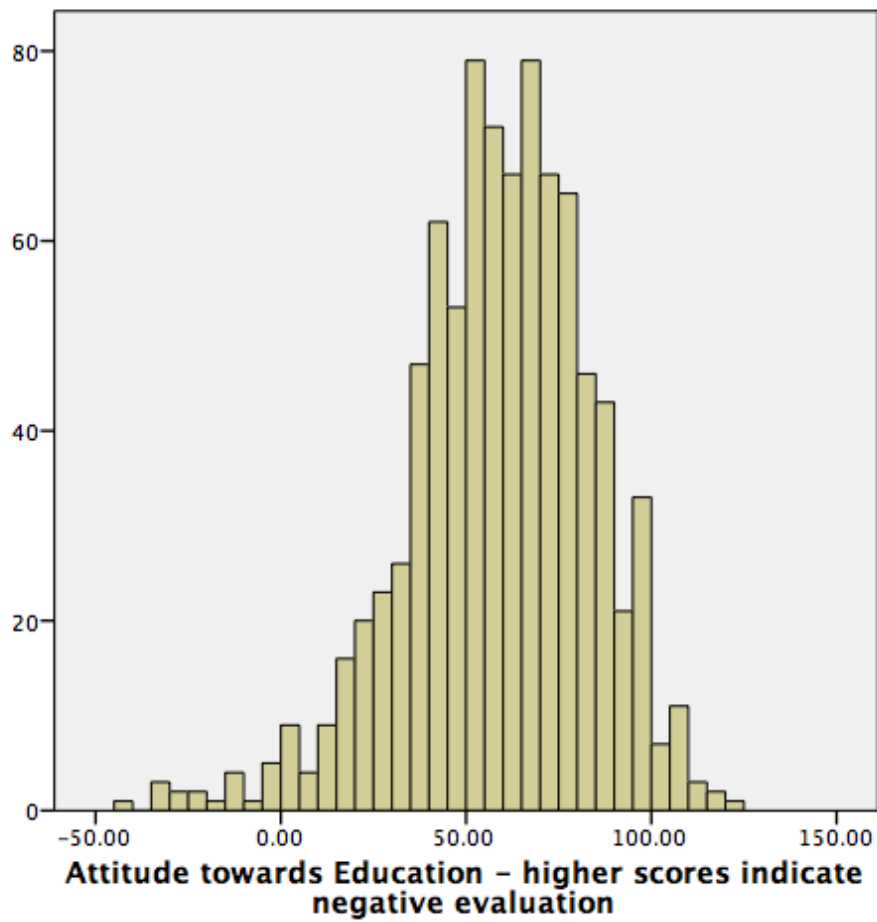
Data code for researchers

#### **8.4 Appendix D: Fieldwork Details**

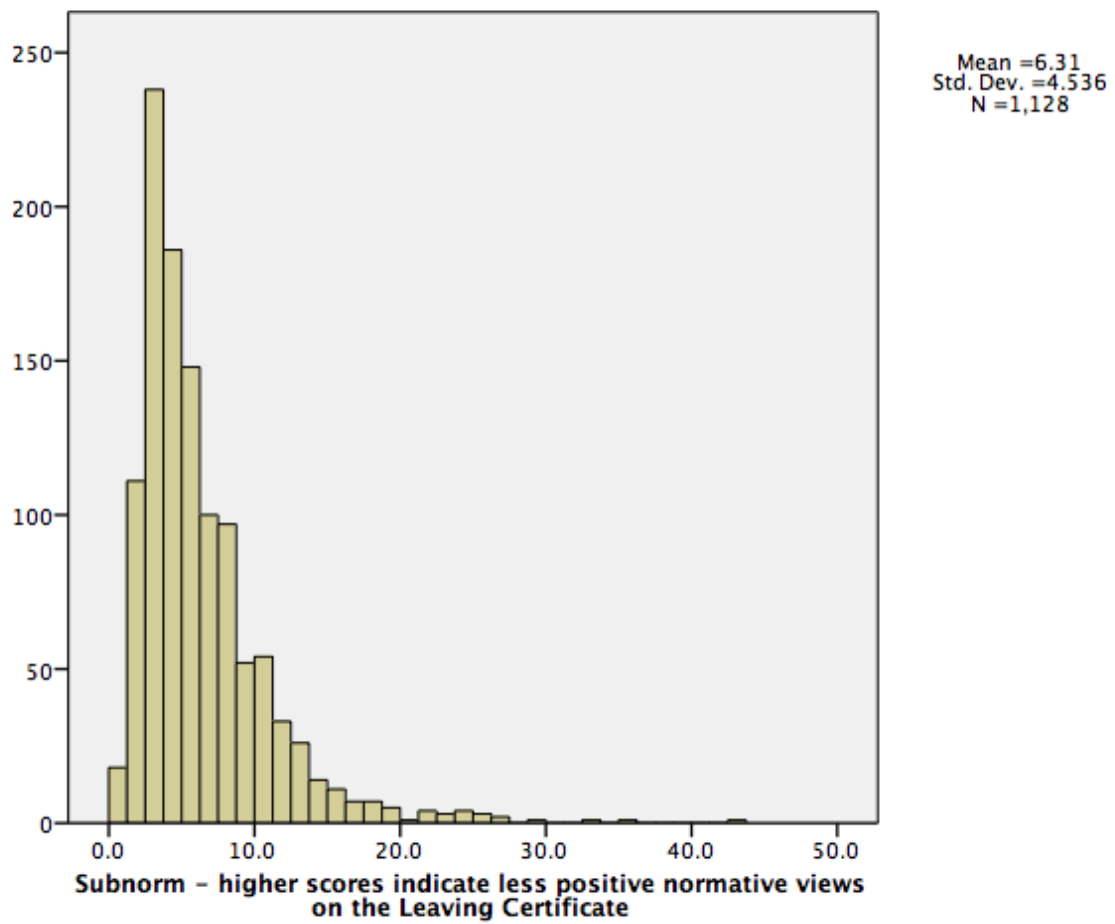
Once the school principal had agreed to participate in the study, an information and consent pack was sent to either the principal him/herself or to a nominated member of staff. In some cases, this other member of staff was the Year Head or the Home School Liaison Officer. The pack included an information sheet for every student, detailing the purpose of the study, the voluntary and confidential nature of the study, the risks and benefits of participation, the use of data, and informing them of their rights to withdraw at any stage up until they have handed in their questionnaires. In addition to this, there was an information sheet for every parent/guardian, with similar information to that received by the students as well as a consent form and return envelope. The pack was sent out approximately two weeks before the scheduled visit to the school, allowing time for distribution and collection of consent forms. The students were told that if they wished to participate, they must return the signed consent forms to the designated staff member but even where their consent forms were returned, they did not have to participate if they did not wish. The schools were asked to keep a list of all students who had returned their consent forms.

Arrangements were made to visit the schools at a time that suited the students' timetable. It was envisaged that the questionnaire would not take longer than one class period to complete. In some schools, the facilities were available to collect the data from the students during one single class period in one large room. In other schools, the researchers had to administer the questionnaires in consecutive classes. The teachers and researchers ensured that all students had submitted consent forms before they were given a questionnaire. Once assembled, the students were again reminded of their freedom to withdraw, they were assured confidentiality and they were given verbal instructions. They were told to raise their hands if they had any questions and that if there was any question that they did not wish to answer, they did not have to respond. At the same time, they were reminded of the importance and value of the study and were asked to complete it honestly. They were asked to respond independently and not confer with their classmates. It was also noted that students work at different paces so

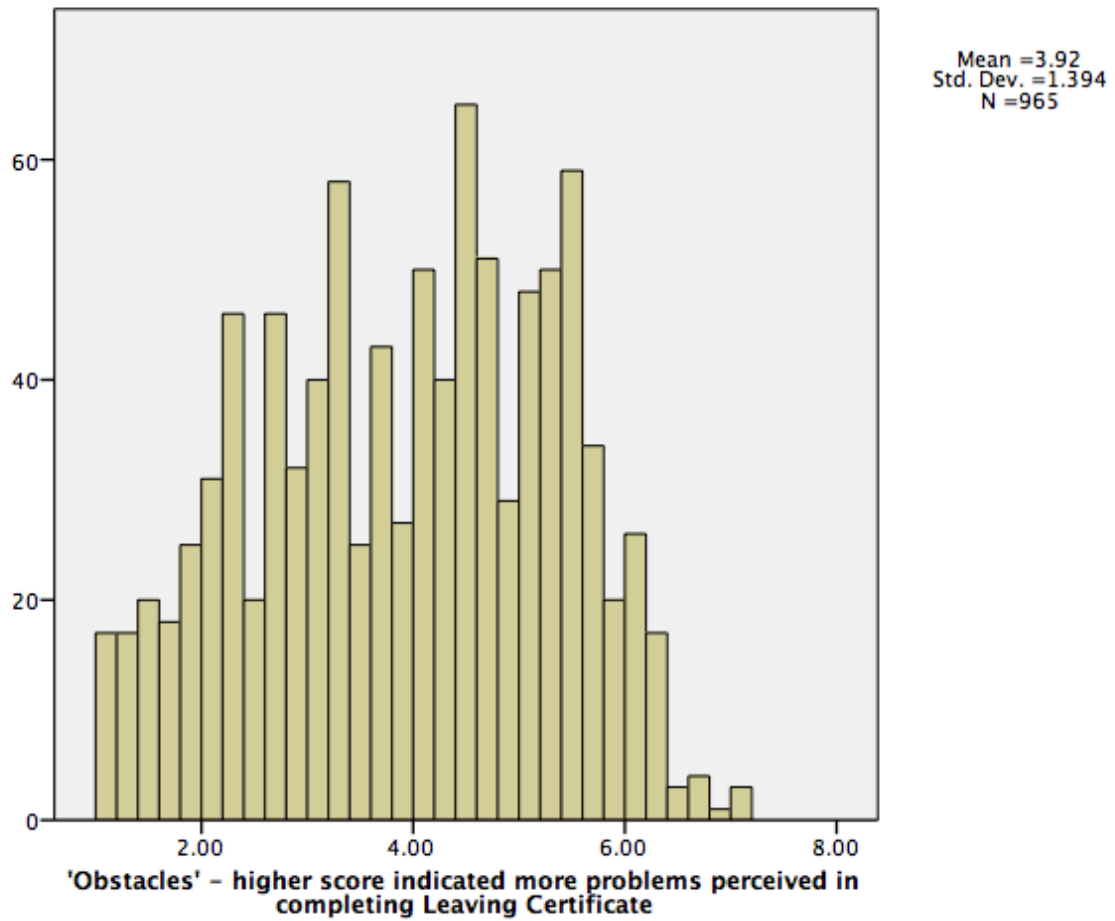
that they should take their time, answer the questions carefully and not pay attention to those that finish very quickly. If students finished very quickly, they were asked to double check all of their answers in case they might have unintentionally skipped any items. The students worked their way through the questionnaires, with the researchers helping those that appeared to be struggling. The researchers did not commence the 'number recall' questions (in the latter part of section 6) until all students had reached that point. Once all the respondents had completed and reviewed their questionnaires for errors, the researchers collected them and the students were thanked for their participation. Following the data collection visits, the schools were sent letters of gratitude for accommodating the research.

**8.5 Appendix E: Frequency distributions for the key independent measures****Figure 8.1** Attitudes towards education

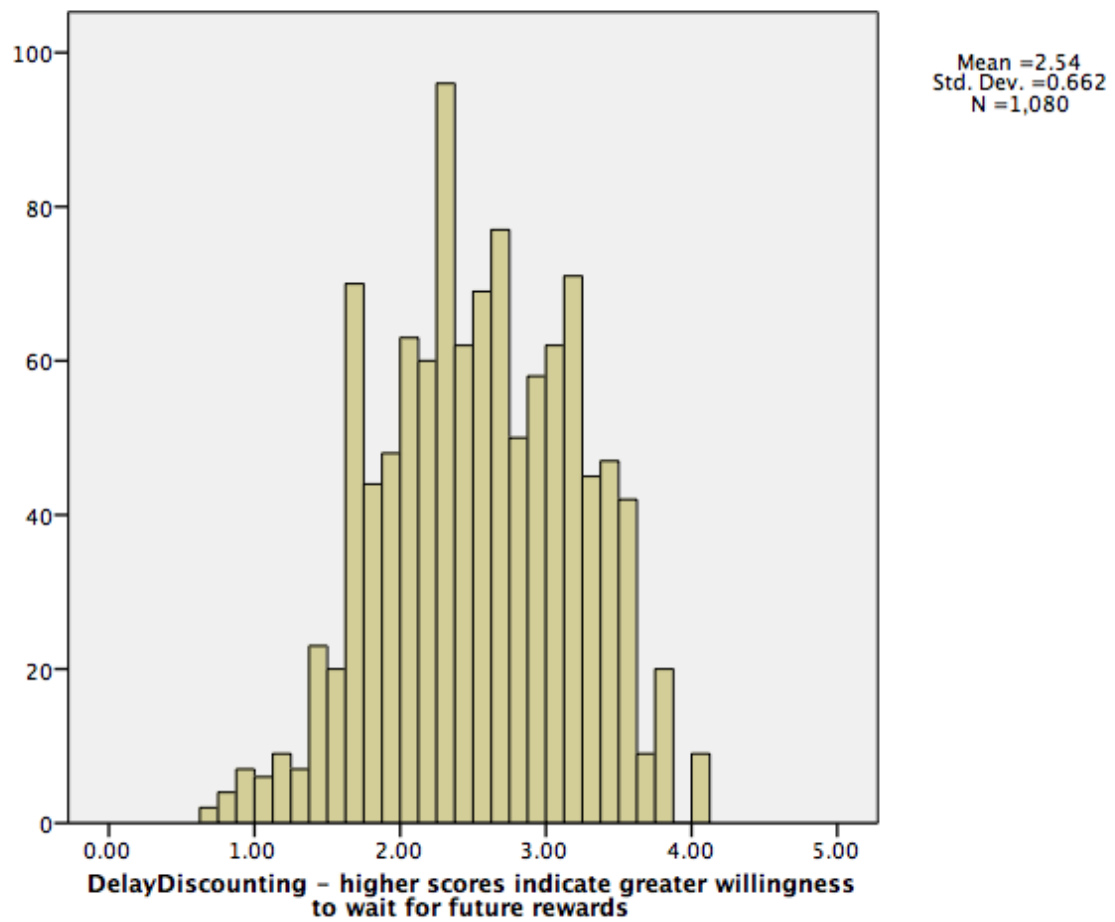




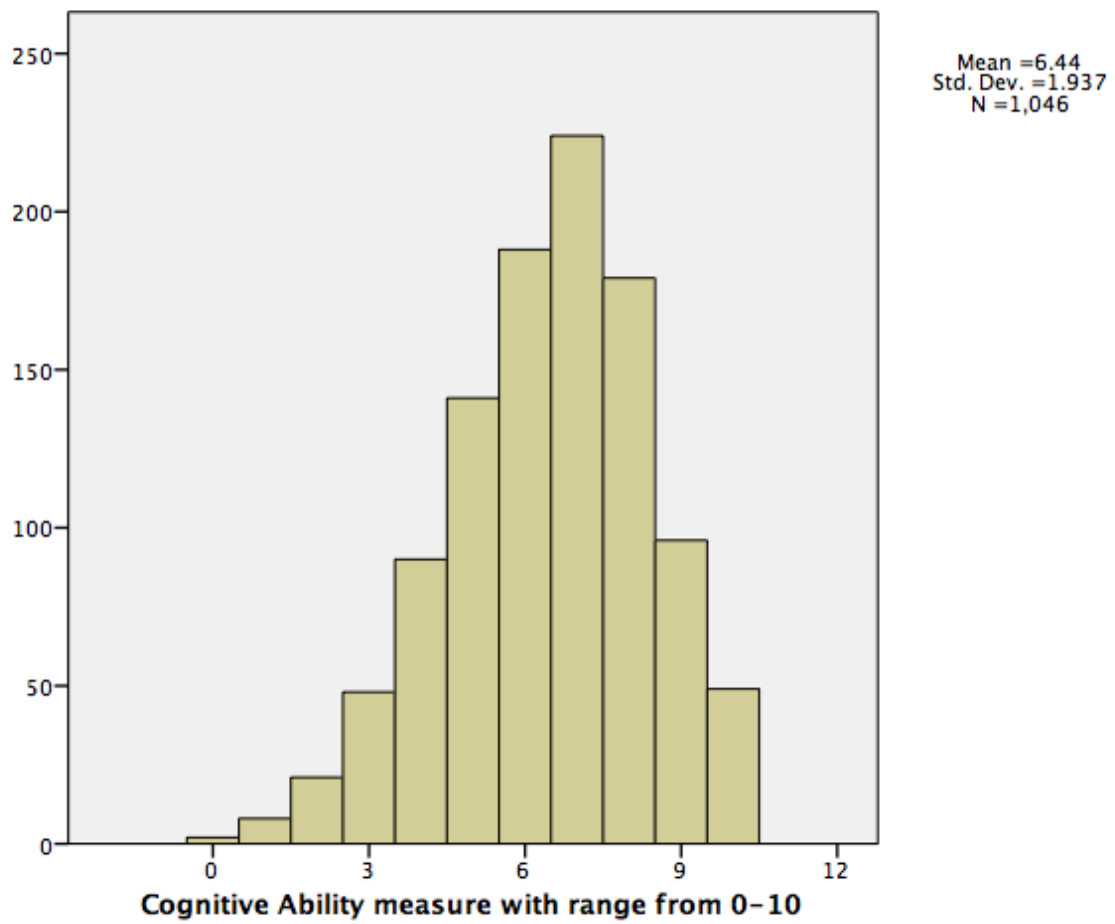
**Figure 8.2** Subjective norm scores



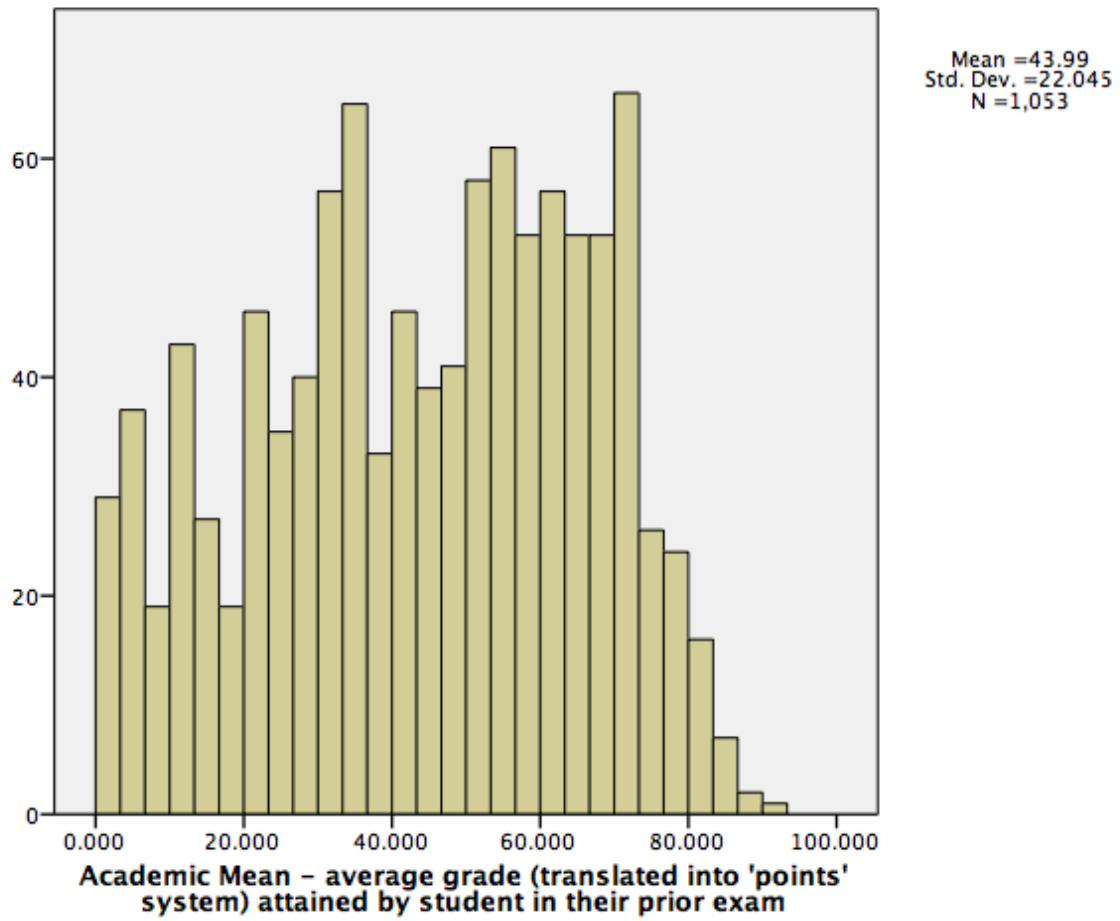
**Figure 8.3** Perceived behavioural control scores



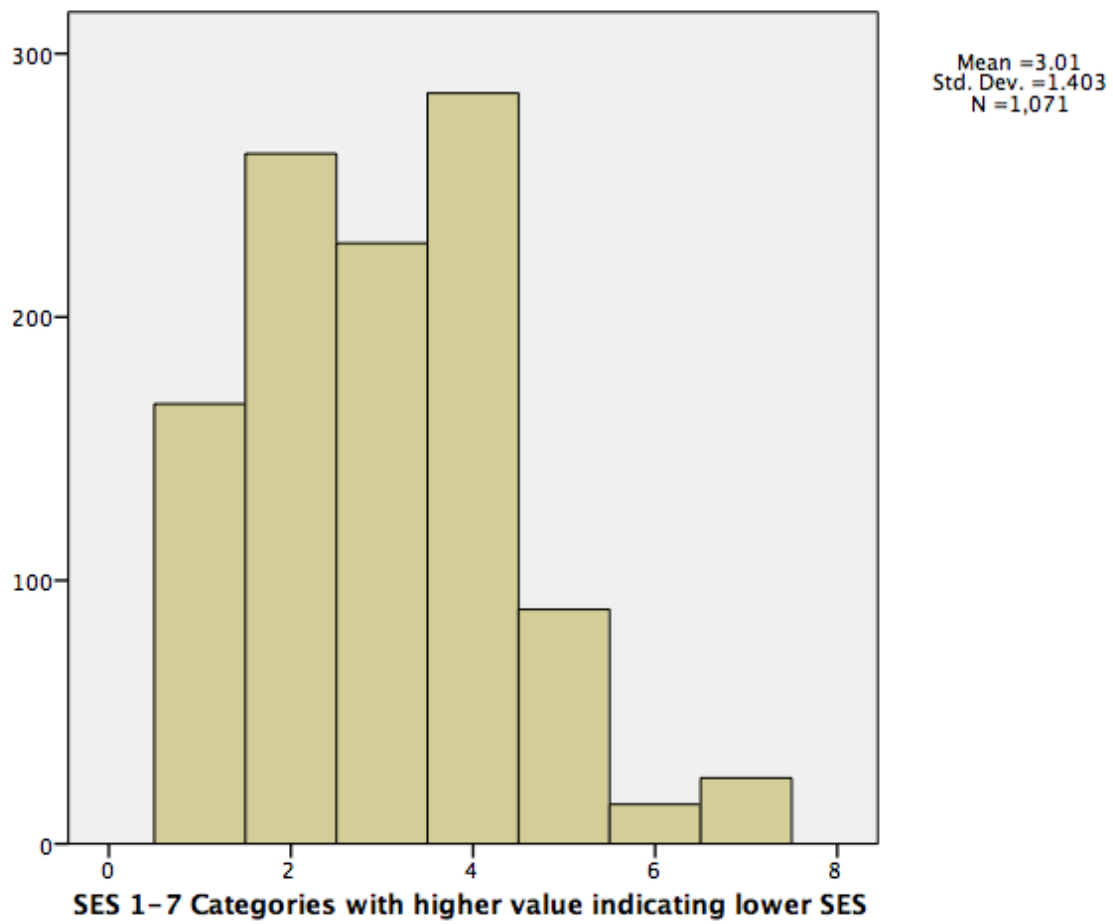
**Figure 8.4** Delay discounting scores



**Figure 8.5** Proxy cognitive scores



**Figure 8.6** Academic mean scores



**Figure 8.7** SES categories

## 8.6 Appendix F: Reliability scores for TPB composite measures, (1) 'Attitude', (2) 'Subjective Norm' and (3) 'Perceived Behavioural Control'

(1) **Attitude measure** reliability scores – tables 8.2 and 8.3.

**Table 8.2:** Reliability statistics for the composite Attitude measure (14 component parts – see below in table 8.3) towards staying on to do the Leaving Certificate

<b>Reliability Statistics</b>			
<b>Cronbach's Alpha Based on</b>			
<b>Cronbach's Alpha</b>	<b>Standardized Items</b>	<b>N of Items</b>	
.768	.789	14	

**Table 8.3:** Reliability statistics if single item deleted for composite Attitude measure towards staying on to do the Leaving Certificate

<b>Item-Total Statistics</b>					
<b>Attitude towards ...</b>	<b>Scale Mean if Item Deleted</b>	<b>Scale Variance if Item Deleted</b>	<b>Corrected Item-Total Correlation</b>	<b>Squared Multiple Correlation</b>	<b>Cronbach's Alpha if Item Deleted</b>
College	52.4174	544.391	.447	.313	.749
Work	52.7828	542.370	.423	.248	.750
See friends	55.3880	567.162	.201	.161	.773
Waste time	53.7941	540.628	.347	.177	.758
Learning	52.9400	537.096	.562	.443	.741
New Challenge	53.6787	536.193	.533	.422	.742
Sport	55.8518	565.658	.209	.167	.772
Stay out trouble	55.5894	542.095	.360	.146	.756
Studying Hard	54.3959	533.678	.372	.207	.756
Told what to do	57.4446	549.697	.291	.151	.764
Well-paid job	51.7387	539.323	.516	.397	.744
Sense of Success	52.4378	537.193	.532	.418	.742
Less time for fun	58.5249	555.998	.242	.139	.770
Positive life	51.5894	534.451	.556	.410	.740

**(2) Subjective Norm** reliability scores – tables 8.4 and 8.5.**Table 8.4:** Reliability statistics for the composite 'Subjective Norm' measure (see individual parts in table 8.5 below).

<b>Reliability Statistics</b>	
<b>Cronbach's Alpha</b>	<b>N of Items</b>
.806	7

**Table 8.5:** Reliability statistics if single item deleted for composite 'Subjective Norm' measure towards staying on to do the Leaving Certificate.

<b>Item-Total Statistics</b>				
<b>Norm in relation to ...</b>	<b>Scale Mean if Item Deleted</b>	<b>Scale Variance if Item Deleted</b>	<b>Corrected Item-Total Correlation</b>	<b>Cronbach's Alpha if Item Deleted</b>
Father	41.31	913.864	.547	.780
Close relatives	39.82	874.681	.624	.767
Boy/girlfriend	38.28	838.454	.466	.801
Teacher	41.79	949.173	.576	.780
Classmates	35.47	752.838	.591	.777
Close friends	39.86	840.145	.611	.767
Mother	42.13	998.380	.535	.790

**(3) Perceived Behaviour Control** reliability scores – tables 8.6 and 8.7.**Table 8.6:** Reliability statistics for the composite 'Perceived Behaviour Control' measure (see individual parts in table 8.7 below).

<b>Reliability Statistics</b>	
<b>Cronbach's Alpha</b>	<b>N of Items</b>
.912	15



**Table 8.7: Reliability statistics if single item deleted for composite measure 'Perceived Behaviour Control' in relation to doing the Leaving Certificate**

Item-Total Statistics				
Controllability of ...	Scale Mean if Item Deleted	Scale Variance if Item Deleted	Corrected Item-Total Correlation	Cronbach's Alpha if Item Deleted
Sickness	55.64	407.639	.402	.912
Family obligations	55.56	407.192	.406	.912
Commitments	55.48	407.188	.394	.913
Tiredness	54.93	395.998	.457	.911
Getting to school	54.99	365.731	.722	.902
Remembering school	54.95	360.861	.713	.903
Homework completion	54.86	382.087	.649	.905
Study	54.15	375.750	.700	.903
	54.14	375.498	.723	.903
Teacher encouragement	54.61	376.084	.678	.904
Family encouragement	54.68	365.418	.737	.902
Getting on with other students	55.10	381.223	.642	.905
Getting on with teachers	54.59	382.246	.623	.906
Self-confidence	54.39	369.586	.716	.902
TV viewing	55.05	392.676	.498	.910

## 8.7 Appendix G: Correlation matrix for 'Intention' score

**Table 8.8:** Correlation matrix for 'Intention' score with seven measures. Pearson's  $r$  (and probability)

	Attitude	Subnorm	Obstacles	Delay Dis.	Proxy Cog. Score	Acad. Mean	SES
Intention	-0.35 $p<0.01$	0.45 $p<0.01$	-0.10 $p<0.01$	-0.20 $p<0.01$	-0.09 $p<0.01$	-0.25 $p<0.01$	0.05 $p<0.05$
Attitude		-0.35 $p<0.01$	0.11 $p<0.01$	0.15 $p<0.01$	-0.04 $p=0.27$	0.03 $p=0.42$	0.03 $p=0.35$
Subnorm			-0.07 $p<0.01$	-0.18 $p<0.01$	-0.08 $p<0.01$	-0.18 $p<0.01$	0.04 $p=0.23$
Obstacles				0.07 $p<0.05$	-0.00 $p=0.95$	-0.07 $p<0.05$	-0.03 $p=0.35$
Delay Dis.					0.12 $p<0.01$	0.28 $p<0.01$	-0.11 $p<0.01$
Proxy Cog. Score						0.44 $p<0.01$	-0.27 $p<0.01$
Acad. Mean							-0.33 $p<0.01$

## 8.8 Appendix H: SPSS output of multiple regression in two tables, 8.9 and 8.10

Dependent variable is 'Intend' to stay on in school. Independent measures are 'Attitude', 'Subjective Norm', Obstacles (PBCmean in output), Delay Discounting, Proxy cognitive score ('cogabil' in output), Academic mean score ('Acadmean' in output) and SES. N= 1,311 (missing cases imputed via FIML method).

**Table 8.9:** Model Summary – Seven predictors (plus constant).

Model	R	R Square	Adjusted R Square	Std. Error of the Estimate
1	.55	.31	.30	.93

**Table 8.10:** Regression Coefficients

Model	Coefficients <sup>a</sup>				
	Unstandardized Coefficients	Std. Error	Standardized Coefficients	t	Sig.
(Constant)	2.655	.215		12.362	.000
Attitude	-.013	.001	-.276	-9.997	.000
Sub. Norm.	.071	.007	.288	10.364	.000
PBC mean	-.027	.022	-.031	-1.252	.211
Delay Discounting	-.077	.045	-.045	-1.699	.090
Proxy Cognitive measure	.005	.017	.008	.274	.784
Academic Mean Score	-.011	.002	-.207	-6.781	.000
SES	-.024	.022	-.030	-1.124	.261

a. Dependent Variable: Intend