IRISH SECONDARY SCHOOL STUDENTS' INTENTION TO PURSUE HIGHER EDUCATION: AN INVESTIGATION TO IDENTIFY THE STRONGEST PREDICTORS

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ABSTRACT

The present study aimed to identify the strongest predictors of intention to pursue higher education (HE) among a sample of Irish secondary school students. The predictors under investigation were school socio-economic status (SES), parental occupation, parental education, gender, family structure, and academic self-efficacy. One hundred and thirty nine participants took part in the study, with an even gender breakdown (70 females and 69 males) and a mean age of 16.04 years. Standard multiple regression analysis revealed that school SES was the only statistically significant predictor, explaining 11% of the variance in intention to pursue HE. Specifically, low SES schools differed from both medium and high SES schools on intentions to pursue HE but medium and high SES schools did not differ from each other. The other predictor variables did not contribute significantly to the predictive ability of the model. This provided only partial support for the hypothesis. Implications for research in the area and future directions are discussed.

INTRODUCTION

Higher education (HE) in Ireland refers to the tertiary education system which includes seven universities, 14 institutes of technology, and numerous colleges of education and private institutions. HE in Ireland has undergone a massive expansion in recent times. Participation rates of school-leavers jumped from 20% in 1980 to 60% in 2005 (Byrne, 2009). The present study aimed to identify the strongest predictors of intention to attend HE among a sample of Irish secondary school students, aged 16-17 years. The predictors under investigation were socio-economic status

(SES) of school, parental occupation, parental level of education, gender, family structure, and academic self-efficacy.

While 80% of school-leavers from professional SES backgrounds progressed onto HE in 2007, that figure was just 45% for those from unemployed and manual backgrounds (Byrne, McCoy & Watson, 2009). Students from farming and employer/managerial SES backgrounds also display relatively high rates of HE progression at 70% and 65% respectively. In 2004, just 12% of new entrants to HE came from a designated disadvantaged school (McCoy, Byrne, O'Connell, Kelly, & Doherty, 2010) even though 30% of all school-leavers attended this school type. Conversely, of the top 50 feeder schools in Ireland, approximately 60% are fee-paying schools (The Irish Times, 2009). When it is considered that only 7% of Irish secondary schools are fee-paying (Smyth, 2009) and that their students have the highest rate of HE participation (O'Connell, Clancy, & McCoy, 2006), the disparities become clear. Indeed, despite the removal of HE tuition fees in 1996, social inequality in accessibility was actually greater in 1998 than at the beginning of the 1980s (McCoy & Smyth, 2003). This phenomenon of unequal access to HE is not unique to Ireland and has been well documented internationally (OECD, 2008; Shavit, Arum, & Gamoran, 2007; Shavit & Blossfeld, 1993).

Discussion on inequality in HE has focused on students' SES background, as demonstrated in the research presented above. The concept of SES is often abstract and, by its very nature, is rooted in a national and regional economic and cultural system. Partially due to these reasons, there are conflicting views on what to base the variable of SES on within this field of research. This results in different indicators and scales being used across different studies. This inconsistency between studies makes it difficult to generalise from research findings and significantly hampers comparison between studies. For the purpose of this study, school SES and parental occupation were analysed as separate predictor variables. Thus, instead of an aggregate SES category, the relevant contribution of each could be assessed. This was done with a view to assessing the usefulness of SES indicators used in the literature.

While it has been consistently found that economic constraints present one of the major barriers to HE for those from low SES backgrounds, Lynch and O'Riordan (1998) have also highlighted the influence of social, cultural and psychological factors on Irish HE

progression rates. Therefore, an investigation of other variables is warranted.

Evidence indicates that children's level of education and cognitive development are positively related to the education level of their parents (Wolfe & Haveman, 2002). Overall, students whose parents have a degree are almost four times as likely to participate in HE than others (McCoy et al., 2010). Interpretation of the relevant literature, however, is somewhat complicated as parental education is sometimes modelled as a key causal variable, sometimes as a mediating factor, and other times as a control. The present study employed it as a predictor variable in a multiple regression model to assess its unique relative contribution to students' intention to pursue HE. Caution in analysis is warranted due the correlation between parental education and parental occupation which has previously been found in the literature (Card, 1999).

In Ireland, there is a consistent gender imbalance in students participating in HE. This imbalance has been present since the mid-1990s, and, currently, approximately 64% of female school-leavers progress to HE, compared to 57% of males (Smyth & Hannan, 2000). While this pattern may be partially explained by superior Leaving Certificate performance by girls, it does not entirely explain the disparity (Byrne et al., 2009). Similar HE gender patterns have been noted in the UK, America, and other Western countries (HEFCE, 2005; Snyder & Dillow, 2007). Gender can represent both a demographic and psychological variable and, due to its ease of measurement, provided the present study with a reliable and valid comparison to previous research findings.

Within the literature, family structure represents a distal influencing factor on a student's progression to HE. As such, it has rarely been explicitly studied, especially not in an Irish context. When gender, race, and SES are controlled for, family structure is the single greatest predictor of academic achievement (Jeynes, 2005). However, this finding is not Irish, not specific to HE progression, and hasn't always been replicated. In addition, studies often fail to control for other variables identified as being correlated with both family structure and HE progression, such as parental education (Lerman, 1996). As such, the present study required adequate statistical controls to control for this (and any other) possible inter-correlation. In keeping with much of the research, and due to sample

size limitations, the present study identified family structure based on a one or two-parent distinction.

The concept of academic self-efficacy, which this project employed as a predictor variable, was devised by Albert Bandura (Bandura, 1977). This is a domain-specific form of the original global self-efficacy concept proposed by Bandura and is defined as a person's convictions about undertaking a given academic task at a designated level. Within the literature, academic self-efficacy has been examined in relation to subsequent academic performance, usually within an immediate or close temporal proximity. It has also been found that students high in academic self-efficacy set higher academic goals (Zimmerman, Bandura, & Martinez-Pons, 1992) and willingly choose more challenging academic tasks (Bandura & Schunk, 1981). In the present study, academic self-efficacy was employed in a novel situation; to be entered as a predictor variable for students' intention to attend HE. Theoretically, it could be predicted that those higher in self-efficacy and who set higher academic goals for themselves, would be more likely to intend to purse HE than those students lower in self-efficacy.

The overarching theoretical framework, within which psychological researchers place HE progression studies, is the Ecological Systems Theory (Bronfebrenner, 1979). This model acknowledges the interactions between variables and how they operate at different levels of influence. For example, researchers working within this framework investigate the impact of proximal and distal factors and direct and mediating variables. The ecological framework also acknowledges other influences on the measure of interest, even though they may not be under direct inspection in a specific study at the time. The research on HE progression stems from diverse disciplines; psychology, sociology, economics, and, thus, the ecological framework remains practically relevant. This model allows for disparate literature to be nested together and integrated into a common context, allowing for further interpretation and analysis. Thus, the Ecological Systems approach remains a useful theoretical model in which to place the present research.

With the exception of academic self-efficacy, previous studies have ascertained the relationship between the presently employed factors and HE pursuit. However, very few studies have attempted to define which factors exercise the strongest influence in this regard. Therefore, the aim

of the present study was not to identify potential predictors of students' intention to pursue HE, the aim was to assess the strength of influence that each of the respective factors has on students' intentions. The predictors employed by the study ranged from the very well established (school SES, parental occupation), to the established but unclear (parental education, family structure), and also the novel (academic-self efficacy). This was done to incorporate research from separate fields and to elucidate any potentially interesting patterns. In addition to this somewhat novel analysis, the present study provides a prospective view to HE progression research. The overwhelming majority of research in this field takes a retrospective approach, focusing on the characteristics of students who are already participating or not in HE. This study focused on secondary school students providing data on future intentions. This approach was deemed suitable as it was felt that the retrospective methodology could be missing out on important and interesting findings.

The students who were the focus of this study were aged 16-17 years. This chosen age range was due in part to ensure that the participants could provide accurate answers on the demographic questionnaire. However, it was also guided by both theory and empirical research. Findings suggest that up until approximately 15 years of age, teenagers are somewhat unduly influenced by their emotional state, displaying overtly negative attitudes towards education. This is before their emotions and opinions stabilise at 16 years (Maras, Carmichael, Patel, & Wills, 2007). Therefore, a small age bracket of upper-secondary school students could potentially control for this developmental consideration.

It was hypothesised that school SES and parental occupation would be the strongest predictors of intention to pursue HE. Also, it was hypothesised that parental education and academic self-efficacy would be positively correlated with intentions and that females and students from two-parent families would have higher intentions to pursue HE than males and those from one-parent families.

METHOD

Participants

Participants comprised of 139 secondary school students. The age range was 16-17 years with a mean age of 16.04 years. The sample had an almost

even gender balance, consisting of 70 females and 69 males. Participants were recruited voluntarily through their respective schools, all of which were located in the Dublin area. Both same-sex and mixed schools took part. Three school categories were sought to represent the school SES variable. These consisted of schools with official DEIS status (low SES), schools representing the median Irish SES (medium SES), and fee-paying schools (high SES). Approximately equal numbers of students were recruited from each school SES category (low SES = 50, medium SES = 43, high SES = 46).

Materials

The Attitudes to Higher Education Questionnaire (AHEQ) (Appendix E*) is a 62-item self-report measure. In the present study, this provided the dependent variable of intention to pursue HE. The AHEQ had never before been used with an Irish sample, but was judged to be a suitable measure due to the similarity of the cultural and educational systems between Ireland and the countries in which it was developed.

The Perceived Academic Efficacy Scale (Appendix F) was adopted from the Multidimensional Scales of Perceived Self-Efficacy (Bandura, 1990). In the present study, the Perceived Academic Efficacy Scale was utilized to gain a measure of students' academic self-efficacy construct. The questionnaire assesses self-efficacy in nine domains. These are; enlisting social resources, academic achievement, self-regulated learning, leisure-time skills and extracurricular activities, self-regulatory efficacy (to resist peer pressure for high risk behaviors), self-efficacy to meet others' expectations, social self-efficacy, self-assertive efficacy, and enlisting parental and community support. Bandura (Bandura, Barbaranelli, Caprara, & Pastorelli, 2001) combines the two sub-scales of self-regulated learning and academic achievement to form its own mini-scale of Perceived Academic Efficacy and this is the measure which the present study employed.

A demographic questionnaire (Appendix G) was designed specifically for the current research. It provided predictor variable data (parental occupation, parental education, gender, and family structure). The questionnaire consisted of questions relating to the participants

* See www.tcd.ie/pscychology/spj for appendices

themselves (e.g. age, gender, nationality, family structure) and also asked for information in relation to their parents' employment situation and level of education. The categories for parental occupation (e.g., student, unemployed, individual stated occupation) were based on the methodology used in the New Entrants Data 2004 survey (McCoy, et al., 2010). The responses are coded into pre-defined parental occupation categories (manual, semi-skilled, skilled, and professional/managerial). These categories are often used as an index of general SES status and are based on data from the Census of Population (1996). The highest ranking occupation was taken as the index. The parental education categories were adopted from those used in the Annual School Leavers Surveys (Byrne et al., 2009; McCoy, Kelly, & Watson, 2007). As with parental occupation, the highest ranking education level was taken as the index. Family structure could be described as either one-parent or two-parent family.

Procedure

Schools were contacted on the basis of their general SES status. The low and high SES schools were identified from a database of DEIS and fee-paying secondary schools, respectively, on the Department of Education's website. As no other school SES grading system exists, the medium SES schools were identified according to their location in areas in Dublin which represent near national-average median SES. This was determined by analysing the "Social Class and Socio-economic Group" information from Census 2006 located on the Central Statistics Office website (Central Statistics Office, 2007). When permission from the individual schools was obtained, students aged 16 and 17 years were invited to take part in the study. Either the researcher or a teacher within the school carried out the fieldwork within a school classroom. When a teacher carried this out they were provided with explicit written instructions by the researcher (Appendix D). Detailed information was provided to prospective participants (Appendix A) and consent was obtained prior to their taking part (Appendix B). Each participating student filled out the questionnaires. Students were debriefed (Appendix C) and thanked for their participation. All data was collected and statistically analysed using SPSS 16.0.

RESULTS

Preliminary analyses were performed, where applicable, to confirm normality, linearity, homogeneity of variance, and homoscedasticity. A two-tailed correlation matrix (Pearson's) including all variables (intention to pursue to HE-measured by scores on AHEQ, school SES, parental occupation, parental education, gender, family structure and academic self-efficacy) was produced. Significant positive correlations were observed for intention to pursue HE and school SES, $r = .37$, $n = 139$, $p < .01$; parental occupation and school SES, $r = .19$, $n= 139$, $p < .05$; parental education and school SES, $r = .2$, $n = 139$, $p < .05$. The positive correlation between intention to pursue HE and parental education was approaching significance at the 5% level ($r = .15$, $n = 139$). There were no significant correlations between intention to pursue HE and parental occupation, gender, family structure and academic self-efficacy.

A one-way between-groups ANOVA compared intention to pursue HE across three levels of school SES (low SES, medium SES and high SES). A statistically significant difference was found; $F(2, 136) = 12.17$, $p < .001$. Post-hoc comparisons using the Tukey HSD test indicated that the mean score for low SES ($M = 31.52$, $SD = 4.41$) was significantly different from both medium SES ($M = 34.49$, $SD = 3.94$) and high SES ($M = 35.15$, $SD = 3.03$). Medium and high SES did not differ significantly. This effect is illustrated in Figure 1.

On the basis of the correlation matrix finding, a one-way between-groups ANOVA was carried out to compare the effect of parental occupation (manual, semi-skilled, skilled and professional/managerial) on school SES. There was no statistically significant difference found, $F (3, 135) = 1.85$, $p > .05$.Also, on the basis of the correlation matrix results, a one-way between groups ANOVA was conducted to explore the impact of parental education (primary, lower secondary, upper secondary, plc, cert/diploma, degree) on school SES. There was a statistically significant difference found in school SES for the six parental education levels, $F (5, 133) = 2.85$, $p. <.05$. A one-way between-groups ANOVA was carried out to compare the effect of parental education on intention to pursue HE. There was no statistically significant difference found: $F (5, 133) = 0.95$, $p > .05$.

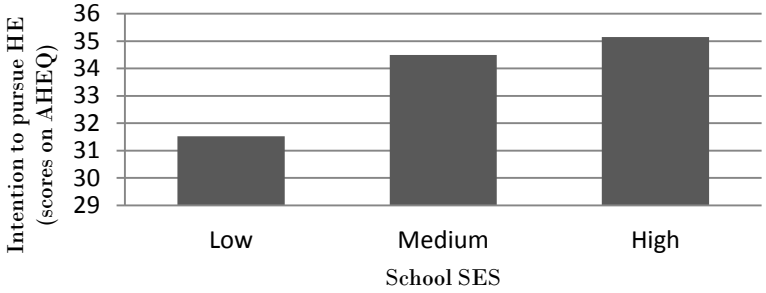

Figure 1. Mean scores of intention to pursue HE (Measured on AHEQ) across school SES.

Due to the statistically significant effect of school SES on intention to pursue HE, in addition to the statistically significant effect of parental education on school SES, an ANCOVA was performed. This would assess, and potentially control for, the possible mediating effect of parental education on intention to pursue HE. Additional preliminary checks ensured presence of homogeneity of regression slopes and reliable measurement of the covariate. After controlling for parental education there was still a statistically significant difference between school SES type and intention to pursue HE, $F(1, 27) = 10.67$, $p < .001$.

A standard multiple regression was used to assess the ability of the six measures (school SES, parental occupation, parental education, gender, family structure and academic self-efficacy) to predict level of intention to pursue HE. For the purpose of multiple regression, preliminary analysis ensured there was no violation of multicollinearity and sample size ratio requirements. As a whole, the model explained 16% of the total variance in intention to pursue HE, $F(6, 132) = 4.2$, $p < .01$. However, the only significant predictor was school SES, with its unique contribution explaining 11% of the variance ($\beta = .35$, $p < .001$). No other measures predicted a statistically significant unique variance in intention to pursue HE.

CONCLUSION

The purpose of the present research was to identify the strongest predictors of intention to pursue HE among a sample of Irish secondary school students. The results of the study provide only partial support for the hypotheses put forward in the introduction. Only school SES was a statistically significant predictor of intention to pursue to HE, explaining 11% of the variance, while the others did not contribute significantly to the predictive ability of the model. Low SES schools differed from both medium and high SES schools on intentions to pursue HE, but medium and high SES schools did not differ from each other. Parental occupation and parental education were positively correlated with school SES but they did not impact upon school SES's relationship with intention to pursue HE.

When placing the present findings in the context of previous research it is necessary to be aware that most findings have been extrapolated from retrospective studies of students, whereas the present study is based on their prospective intentions. Therefore, findings need to be interpreted with extra caution. The findings highlight the need for clarification with regard to the SES indicators used in studies. Some studies use parental occupation alone as indication of a student's SES background, others use school SES measures alone, while other studies use different measures again. This study found that different SES indicators (school SES and parental occupation), while correlating with each other, do not have the same impact on intention to pursue HE. The former was predictive of the outcome, while the latter was not.

While research has found a consistent relationship between level of parental education and participation in HE, that relationship was not evident from the present findings. Although the cited relevant Irish research has been retrospective, the relationship found is strong enough to advise against discounting parental education as a predictor in future research. Possible explanations as to the lack of relationship found in the present study relate to the small sample size compared to other HE research and the number of parental education coding categories employed.

The lack of a relationship between gender and intention to pursue HE is also in contrast to previous research, both prospective and

retrospective. The issue of superior Leaving Certificate performance by females may warrant further investigation.

Family structure has not been previously examined in an Irish prospective study, and so the lack of a relationship with the outcome variable needs consideration. Family structure is acknowledged as playing a mediating role on HE participation and due to the comparatively small sample size it may be the case that this relationship was not detected. Also due to the small sample size was the inability to record the many varied family types found in Ireland today. Instead, they were coded into either one or two-parent family, and this could result in reduced statistical power masking indirect effects.

While there is a plethora of research linking academic self-efficacy and academic performance, the operation of variables in the present study was novel. The self-efficacy measured in the present study was domain-specific and assessed using an established measure. While it may be premature to discount its effect on the basis of one study (with its inherent limitations), no tangible evidence of a relationship with intention to pursue HE was found. The method used to measure intention to pursue HE has been specially designed for use in HE progression research and so could be regarded as reliable and valid. However, it is necessary to bear in mind that no measure can capture a particular concept in its entirety, especially an intangible one such as intentions.

The results of the present research can be integrated within the Ecological Systems Theory model. The aim of this model is not to find a "perfect fit", but to acknowledge and synthesise findings in order to build an understanding of a given phenomena. As stated previously, this model does not exclude the recognition of other influencing variables, even though they may not be under direct investigation by a given study at the time. Based on the present findings, and in addition to previous research, this theoretical concept can be appreciated. This is because it allows a wider interpretation in relation to the variables that were not under investigation which may be incorporated into future research. This becomes particularly obvious with the use of regression analysis, as even highly predictive models cannot explain all the variance on a particular outcome. Future research within the Ecological Model could focus on peer and sibling influences and the macro-societal context.

The results from the study regarding the predictive value of school SES and parental occupation may have implications regarding the measurement of student's SES background in future studies. However, caution in interpretation is needed. As outlined previously, there are various methods for streaming various jobs into particular SES groups. This study employed a method used by the New Entrants Data 2004 survey (McCoy et al., 2010) which is comprised of four categories. There are other methods frequently used by Irish studies which contain six (Central Statistics Office, 2006) and eight categories (McCoy et al., 2007). These provide a greater level of specificity which the present study was unable to attempt due to sample size limitations. This specificity may provide a greater predictive ability of parental occupation, a hypothesis which may be tested in future research.

The only variable which showed a significant difference in intention to pursue HE was school SES and only a difference between low SES and both medium and high SES schools was shown. This raises interesting questions about the school processes taking place within the respective institutions. This issue remains relatively understudied in the literature. However, an Irish study by Smyth and Hannan (2007) found that flexible subject choices, good career guidance, and the general expectational climate of the school resulted in higher HE applications. Importantly, this was found in spite of students' family background. Further research is merited to clarify and expand on these findings.

In contrast to previous research, parental occupation, parental education and gender did not have an effect on intention to pursue HE. As mentioned above, interpretation must acknowledge that this study was prospective in nature, as opposed to retrospective. An important theoretical and practical consideration can be raised from this observation; that of the intention-behaviour gap. While it is acknowledged that intentions are the best available predictors of actual behaviour (Azjen, 1991), analysis has revealed that they explain only 28% of future behaviour variance (Sutton, 1998). So it may be the case that students whose parents are in lower status occupations, have lower levels of education, and are themselves male, *intend* on pursuing HE, but in their actual subsequent *behaviour*, do not. This is a tentative postulation based on the present prospective study. Future longitudinal research could test these predictions.

The prospective methodology adopted in the present study aimed to contribute a somewhat novel approach in a field filled with retrospective data. However, further research is merited on the basis of inherent methodological issues and the recognition of alternative proposals and explanatory factors. This is noted in recognition of the potential contribution to policy formation and service provision.

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