

Family background, adolescents' educational aspirations, and Australian young adults' educational attainment

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In this longitudinal study, relationships were examined between educational aspirations and educational attainment for Australian young adults from different ethnic and social status backgrounds. Participants included 6, 811 (3, 547 women and 3, 264 men) young adults (mean age = 20.3 years) who were in Year 9 when the study began. In the analysis, the AM Statistical Software was used to take into account the design features of the sample. The results indicated (a) that family background and adolescents' aspirations combined to have large associations with young adults' educational attainment, (b) there were gender differences in the linear and curvilinear nature of relationships among family background, adolescents' aspirations, and young adults' attainment, and (c) for young adults from lower social status families there were ethnic group differences in attainment at all aspiration levels, whereas for young adults from higher social status families, ethnic group differences in attainment were minimised at high aspiration levels.

Family background, educational attainment, educational aspirations,
ethnic group differences, gender differences

INTRODUCTION

Kao and Thompson (2003) observed that although educational aspirations are an important predictor of eventual educational attainment "their position in recent social science literature is more problematic" (p.422). They indicated that the nature of the associations between aspirations and attainment for young adults from different family backgrounds continues to be unclear (also see Saha, 1997). The purpose of this study was to try and clarify the nature of the relationships between educational aspirations and educational attainment for young adults from different ethnic and social status backgrounds.

The investigation was guided by theoretical orientations, which suggest that family contexts may be defined as opportunity structures. Bankston (2004) suggested that family "theories need to probe how culture, social structures, and socioeconomic positions combine in complex ways to provide outcomes that are often unexpected and even paradoxical" (p.178). Blau (1990) proposed that family background structures, such as social status and ethnicity, constrain many individuals from realising their educational and occupational choices, while they expand such opportunities for others. In an extension of Blau's general proposition, Furlong, Biggart and Cartmel (1996) claimed that "while an individual's location within the class structure, as well as gender or racial inequalities, affect the life chances of all young people, irrespective of their social location, it can be argued that contexts potentially magnify or dilute the effects of individual attributes" (p.552).

Blau's perspective has been developed further in Bourdieu's field theory of the social trajectory of individuals. Bourdieu (1984, 1998) proposed that young adults' educational outcomes are

associated with effects that may either reinforce or offset each other. First, there is a general effect exerted directly by young adults' family social and cultural backgrounds. It is claimed that the relationships between other predictors and outcomes are moderated by individuals' family backgrounds. Second, there is a specific effect related to individual characteristics such as aspirations, and such characteristics act as mediators between family background and young adults' educational outcomes. Bourdieu (1984) claimed "all positions of arrival are not equally probable from all starting points" (p.110). While individuals are subject to the forces that structure their social space, they may resist "the forces of the field with their specific inertia, that is, their properties, which may exist in embodied form, as dispositions [aspirations], or in objectified form, in goods, qualifications, etc." (p.110).

On the basis of these general theoretical orientations, the following hypotheses were examined:

- Hypothesis 1: Family social status, ethnic background, and adolescents' educational aspirations combine to have large associations with young adults' educational attainment.
- Hypothesis 2: Relationships between adolescents' educational aspirations and young adults' educational attainment are moderated by young adults' family social status and ethnic background.
- Hypothesis 3: Relationships between family background and young adults' educational attainment are mediated by adolescents' educational aspirations.

METHOD

Sample

The data for the analyses were from the Longitudinal Survey of Australian Youth (LSAY), which provided national information on students who were in Year 9 of school in 1995 and who were contacted each year until 2000 (Ainley, Marks and Lamb, 2000; Marjoribanks, 2002a).¹ Students were selected using a two-stage probability sample framework. First, a random sample was taken of 301 schools from across Australia, and then classes within those schools were randomly selected. In this study, the sample included 6,811 young adults (3,547 women and 3,264 men), who in 2000 had an average age of 20.3 years (SD = 0.45 years).

Measures

Family background: Social status. In the first survey, the Year 9 students responded to questions about their family background. From principal components analysis of the responses, family social status was constructed from an equally weighted composite of fathers' and mothers' educational and occupational attainments. Educational attainment was assessed on a 5-point scale (1 = no secondary schooling, 5 = university education). Parents' occupational attainments were coded according to the Australian National University 4 Index, which ranks occupations in the Australian context (Jones and McMillan, 2001).

Family background: Ethnicity. Family ethnicity was defined in categories that were labelled as Anglo Australian, (5,409 families), Asian (422), English (269), Middle Eastern (149), New Zealand (81), Other European (125), and Southern European (283). Families that could not be classified into these categories were labelled as Other (73 families). Families were defined as

¹ Support for the longitudinal study was provided by the Australian government and the Australian Council for Educational Research, and the data for the study were supplied by the Social Science Data Archives of the Australian National University. Those who carried out the original investigation and collection of the data bear no responsibility for the further analysis and interpretation of the data that appear in this article.

Anglo Australian if both parents were born in Australia and English was the language spoken in the home. English and New Zealand families were defined by both parents being born in England or New Zealand, respectively, with English being the language spoken in the home. The remainder of the families were classified as belonging to a broad ethnic category if both parents were born in a country from a particular geographic region. It is realised that the general ethnic categories are a potential limitation of the study as they may conceal differences that could be revealed with the use of more refined group definitions. The small sample size in some of the immigrant groups, however, would have restricted the use of multivariate statistics. In addition, when immigrant group differences within the broad categories were examined, few significant variations were found in the mean scores of the variables under investigation, whereas there were many between-category differences. Therefore, these broad categories were adopted as an acceptable, if not ideal, categorisation of adolescents' family ethnic background.

Adolescents' educational aspirations. In the first three surveys, educational aspirations were measured with the adolescents indicating when they planned to leave school and how much education they hoped to attain afterward. The successive responses were rated on a 5-point scale (1 = leave school as soon as possible, or I have left school; 5 = attend university).

Young adults' educational attainment. In the sixth survey, in 2000, the young adults indicated their level of educational attainment. Responses were rated on a 10-point scale (1 = did not complete Year 10, 10 = studying for a university degree).

Gender. In addition, gender was included as a predictor, as investigations have demonstrated gender-related differences among family background, individual characteristics, and educational outcomes (Marjoribanks, 2002a, 2002b; Keeves and Slade, 2003).

The measures used in the longitudinal investigation were designed by the Australian Council for Educational Research, which has a long tradition of developing scales to be used in the Australian educational context.

RESULTS

Multistage Regression Analysis

In the initial analysis, multistage regression was used to examine (a) whether family background moderated relationships between adolescents' aspirations and young adults' attainment, and (b) to what extent adolescents' aspirations mediated relationships between family background and young adults' educational attainment.

For the analysis, variables were added successively to the regression equations. In Model 1, family social status, ethnicity, and gender were included. Then in successive models, the educational aspiration scores from three surveys were added. In addition, interactions between the predictors were included to test for possible moderation effects. In the regression equations, weighted effects coding was used to represent family ethnic background, with the base group including those families designated as Other. Such coding allows the different sample sizes of ethnic groups to be taken into account. The unstandardised regression coefficients represent the differences between the ethnic group mean scores with the weighted educational attainment mean for the total sample (Cohen et al., 2003).

For the analysis, the continuous predictors were centred on their means, which helps to reduce nonessential multicollinearity between first-order predictors and predictors that carry their interaction with other predictors. Further, missing data in the predictor variables were coded with a constant and dummy variables were formed that identified cases with missing data. The

inclusion of such variables allows the potential effects of missing data to be partialled from the regression relationships (Graham and Hofer, 2000).

In the analysis, the AM Statistical Software, designed by The American Institutes for Research, was used to take into account the design features of the clustered sample². AM provides appropriate robust Taylor series standard errors, further adjusted, in this study, for clustering within schools. In addition, the models were weighted by the LSAY 2000 panel weights.

The findings in Model 1 of Table 1 indicated that after taking into account family social status and gender differences, Asian, Middle Eastern, and Southern European young adults had above average attainment. In contrast, the attainment of Anglo Australian, English, and New Zealand young adults was below the mean of the total sample. After taking into account the other predictors, young adults from middle social status families had higher attainment scores than did those from lower social status families, and women had higher attainment scores than did men. The significant interaction term showed that in Asian families, family social status had a smaller impact on attainment than it did for other young adults. Ethnicity, family social status, and gender combined to have a medium association with differences in young adults' educational attainment ($R^2 = 15.21\%$, $ES = 0.18$).

Table 1. Multiple regression for relationships between family background, adolescents' educational aspirations, and young adults' educational attainment

Predictor variable	Unstandardised regression coefficients			
	Model 1	Model 2	Model 3	Model 4
Family background				
Ethnicity				
Anglo Australian	-0.15***	-0.11***	-0.11***	-0.07***
Asian	1.67***	1.32***	1.24***	0.79***
English	-0.35*	-0.33*	-0.27*	-0.10
Middle Eastern	0.78***	0.71***	0.58***	0.37**
New Zealand	-0.86***	-0.80***	-0.66***	-0.66***
Other European	0.36	0.34	0.31	0.20
Southern European	0.53***	0.45***	0.44**	0.25
Family social status				
Gender (men = 1)	0.21***	0.15***	0.11***	0.07***
Anglo Australian x status	-0.56***	-0.39***	-0.29***	-0.18***
Asian x status	0.01***	0.01***	0.01***	0.006**
Asian x status	-0.14***	-0.16***	-0.13***	-0.08***
Educational aspirations, 95				
Status x aspirations, 95		0.41***	0.25***	0.14***
Educational aspirations, 96				
Australian x aspirations, 96			0.03***	0.02***
Asian x aspirations, 96			0.33***	0.18***
Gender x aspirations, 96			0.008***	0.003
Gender x aspirations, 96			-0.07**	-0.02
Gender x aspirations, 96			0.03*	0.01
Educational aspirations, 97				
Multiple R	0.39***	0.48***	0.58***	0.67***
R^2 (%)	15.21	23.04	33.40	44.89
Effect size	0.18 ^a	0.30 ^b	0.50 ^b	0.81 ^b
R^2 % change		7.83	10.36	11.49
Effect size, R^2 % change		0.10 ^a	0.16 ^a	0.21 ^b

Note. In the regression equations, Other is the omitted category. Only significant interactions have been presented. Effect size: ^amedium, ^blarge. Significance levels: * $p < 0.05$ ** $p < 0.01$ *** $p < 0.001$

In Model 2, the results showed that the new variables made an independent contribution to explaining differences in attainment scores (extra $R^2 = 7.83\%$, $ES = 0.10$). The interaction term suggested that increases in aspirations were more strongly related to changes in young adults' attainment in middle, rather than in lower, social status families. Aspirations from the first survey

² The AM Statistical Software is available at <http://am.air.org>

mediated only modestly relationships between family background, gender, and attainment. Social status differences in attainment, for example, were reduced by about 29 per cent (b in Model 1 = 0.21, b in Model 2 = 0.15), while gender differences were reduced by about 30 per cent ($b_1 = -0.56$, $b_2 = -0.39$).

In Model 3, the findings showed that the additional variables, involving aspirations from the second survey, were related to an extra 10.36 per cent ($ES = 0.16$) of the variance in attainment scores. The interaction terms indicated that increases in aspirations were more strongly associated with increments in the attainment of Anglo Australians, than they were for Asian young adults.

Educational aspirations, in Model 4, accounted for an extra 11.49 per cent ($ES = 0.21$) of the differences in attainment scores. The final regression coefficients showed that the cumulative impact of aspirations mediated substantially many of the relationships between the background measures and young adults' educational attainment. Differences for English and Southern European young adults, for example, became nonsignificant, while gender and social status differences were reduced by about two thirds. In addition, attainment differences for Anglo Australian, Asian, and Middle Eastern young adults were reduced by about 50 per cent.

Overall, the final regression equation showed that the background and aspiration variables combined to be associated with a large amount of variance in young adults' educational attainment, which provided support for the first hypothesis. Also, the multistage regression analysis provided initial support for the other hypotheses of the study. A number of relationships between educational aspirations and educational attainment were moderated by the young adults' family social status and ethnicity. In addition, the intervening educational aspiration measures mediated, or partially mediated, relationships between family background and young adults' educational attainment.

Regression Surface Analysis

Eckenrode et al. (1995) observed that when there is evidence of moderation or mediation among a set of relationships, the nature of the associations among predictors and outcomes should be explored further. They indicated the need to examine possible curvilinear relationships. Because the study was attempting to clarify the nature of the relations among family background, aspirations, and attainment, regression surface analysis was used to examine associations between aspirations and attainment at various levels of family social status, for young adults from different ethnic backgrounds.

Regression surfaces were generated from models that included product and squared terms to test for possible interaction and curvilinear relations. The models were of the form

$$Z = aX + bY + cX.Y + dX^2 + eY^2 + \text{constant},$$

where Z , X , and Y represented measures of young adults' educational attainment, family social status, and adolescents' educational aspirations, respectively. Because of space limitations, it was not possible to present all the surfaces that were constructed from the regression models. Instead, surfaces are presented that reflect the nature of the different associations among the measures. Scores for the surfaces were standardised with means of 50 and standard deviations of 10.

In Figure 1, the surfaces show the regression-fitted relations among family social status (1995), adolescents' educational aspirations (1997), and young adults' educational attainment (2000), for women from different ethnic groups. The surface for Asian women indicated that family social status was not related to attainment scores, whereas family status had a significant linear association with attainment in the Anglo Australian and Middle Eastern groups. In addition, the shapes of the surfaces show that aspirations had a curvilinear association with attainment in Asian and Anglo Australian families. For Asian women, aspirations acted as a threshold variable. At low

aspiration levels, changes in aspirations were not related to attainment scores. After mean aspiration levels were attained, however, further increments in educational aspirations were related to sizeable increases in attainment. In contrast, successive increases in aspirations were associated with smaller increments in attainment scores for Anglo Australian women. For Middle Eastern women, at each family social status level, educational aspirations had a substantial linear association with educational attainment.

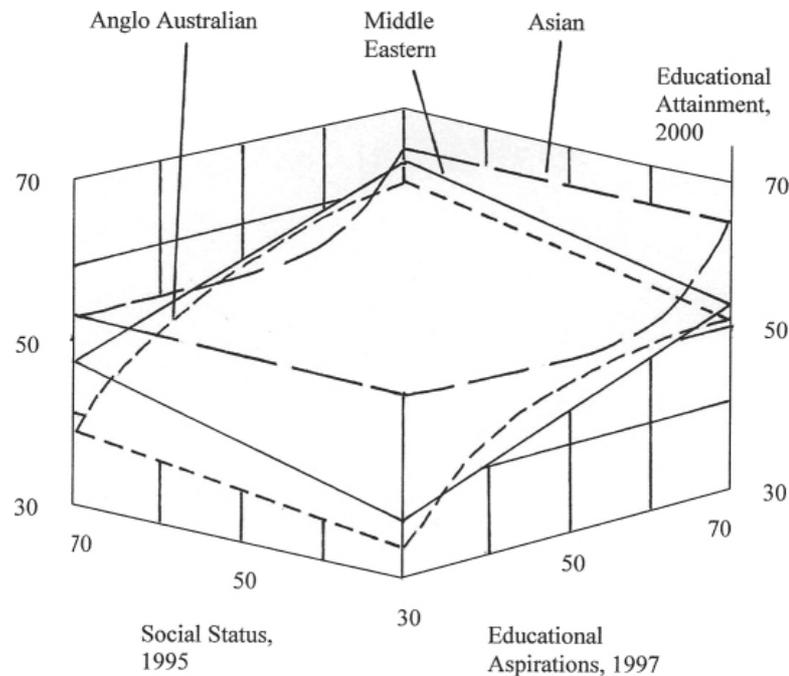


Figure 1. Fitted-regression relations among family social status, adolescents' educational aspirations, and educational attainment for young adult women from different ethnic groups

The elevated surface for Asian women and the lack of a relationship between social status and attainment in the Asian group provided further support for the findings in Table 1. That is, Asian young adults had the highest attainment levels and family social status was less important a predictor of attainment in Asian families than in other ethnic groups. In addition, the surfaces show that in each ethnic group, high social status and aspiration levels tended to reinforce each other, resulting in a minimisation of ethnic group differences in women's educational attainment.

In Figure 2, the surfaces show regression-fitted associations for young men. The potential complexity of relationships among family social status, aspirations, and attainment is revealed in the surface for Asian men, with the surface indicating the presence of significant curvilinear and interaction relationships. At low aspiration levels, family social status had a strong positive curvilinear association with attainment, whereas at high aspiration levels, family social status was not related to attainment scores. In addition, at low family social status levels, successive increases in the educational aspirations of Asian men were related to large increments in their educational attainment. At high social status values, however, increases in educational aspirations had a more modest association with attainment, reflecting the presence of a significant interaction between family social status and educational aspirations.

In the Anglo Australian group, changes in family social status had a strong negatively increasing curvilinear association with the attainment scores, whereas aspirations had a more modest positive curvilinear association with attainment. For Middle Eastern males, there was a curvilinear association involving family social status while aspirations had a significant linear association with attainment. The surfaces show that at high family social status and educational aspiration

levels there was a coalescence of educational attainment, for the men from each ethnic group. That is, while there were substantial ethnic group differences in men's attainment when low status levels were associated with high aspirations, the ethnic group differences were essentially eliminated when high status was combined with strong aspirations.

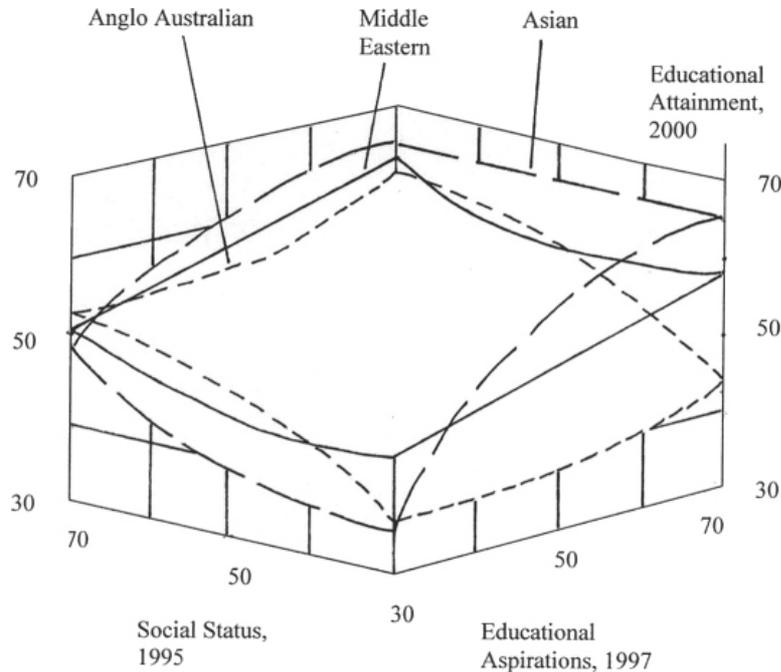


Figure 2. Fitted-regression relations among family social status, adolescents' educational aspirations, and educational attainment for young adult men from different ethnic groups

DISCUSSION

In general, the investigation provides support for the propositions that, in the Australian context:

- family social status, ethnic background, and adolescents' educational aspirations combine to have large associations with young adults' educational attainment;
- relationships between educational aspirations and attainment are moderated, in part, by young adults' family social status and ethnicity;
- successive educational aspiration measures mediate, or partially mediate, the associations between family background and young adults' attainment; and
- there are gender differences in the linear and curvilinear nature of relationships among family background, adolescents' aspirations, and young adults' educational attainment.

More specifically, the study provided support for the theoretical framework that family social status and ethnicity provide varying opportunity structures for young adults. Within these opportunity structures, adolescents' educational aspirations have differential associations with young adults' attainment. At lower family social status levels, for example, there continued to be ethnic group differences in attainment at all aspiration levels. In contrast, for young adults from higher social status families, ethnic group differences in attainment were minimised at high aspiration levels.

This investigation was generated from the concern expressed by Kao and Thompson (2003) that our understanding of the relationships among family background, educational aspirations, and educational attainment remains unclear. The present findings suggest that to explain how similar

aspirations are translated into different attainment levels, it is necessary to examine how family social status and ethnicity combine to provide varying educational experiences for young people. Hao and Bonstead-Bruns (1998) proposed that when examining immigrant-group differences in young adults' outcomes, investigations should measure within-family and between-family social capital. Within-family social capital refers to opportunities, encouragement, and support provided by parents in education-related activities. In contrast, between-family social capital is generated from relationships that develop among families, schools, and other institutions.

For immigrant-groups, Hao and Bonstead-Bruns observed that between-family capital is reflected in the premium that some groups place on education, ambition, and persistence. Another form of such capital relates to trustworthiness and solidarity that allow some ethnic/immigrant communities to share economic and educational resources to support their children's education. Saha (2003) has observed, for example, the need to examine how social and cultural capital may interact differently in families from various ethnic groups. Similarly, Kao (2004) indicated that unless family capital is defined more clearly, there will be little advance in "the little we know about how families and peer groups affect educational outcomes among minority and immigrant groups" (p.175).

Much research has examined the relations between within-group family social capital and measures of young adults' educational outcomes. The present findings suggest that such research needs to be complemented by examining differences in the between-group experiences that families from various social status and ethnic or immigrant groups are able to provide for their children. That is, what are the experiences and conditions that families from certain ethnic or immigrant groups provide that allow their children's aspirations to be expanded into high educational attainment, when family social status conditions might be expected to constrain relationships between aspirations and attainment? This is the challenge that now confronts researchers who attempt to extend the explanation of family background differences in young adults' educational outcomes.

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