The Australian and New Zealand Comparative and International Education Society (ANZCIES)

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Meeting of Comparative Minds: Education in all its forms

ANZCIES 08 Conference Proceedings of the 36th Annual Conference

**Curtin University
Perth, Western Australia
24 - 27 November 2008**

**Edited by Brian D Denman, Centre for Higher Education Management and Policy,
University of New England**

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Graphic Designer
University of New England

Luke Warren
Webmaster
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ANZCIES 08 CONFERENCE OVERVIEW

MONDAY, 24 NOVEMBER 2008			
Time	Event	Location	
5-7pm	Conference registration	Foyer	
6-7:00pm	Opening reception (with WA wines, drinks, and nibbles) <ul style="list-style-type: none">• Welcome to 2008 ANZCIES Conference• Introduction to Curtin Business School	Function room	
TUESDAY, 25 NOVEMBER 2008			
Time	Event	Location	
ALL DAY	Conference registration	Foyer	
9-10am	ANZCIES/IEJ Special Symposium: Comparative Study of Research Assessments Jan Currie, Lesley Vidovich, and Siobhan Austin Brian Denman, Chair	room 205	
10-10:30am	Morning Tea	Function room	
10:30-Noon	BREAKOUT SESSION #1	room 205	
		Educational transfer and the globalisation of education 1.1	
		Educational development and quality/inequalities in education 1.2	
Noon-1pm	LUNCH	room 213	
1-2pm	Invited Address: The End of Methodology Professor David Turner, University of Glamorgan, UK	Function room	
2-3:00pm	BREAKOUT SESSION #2	Room 205	
		Educational transfer and the globalisation of education 2.1	
		Educational development and quality/inequalities in education 2.2	
3-3:30pm	Afternoon Tea	Room 213	
		Function room	

3:30-4:30pm	BREAKOUT SESSION #3	Educational transfer and the globalisation of education 3.1	Room 205
		Educational development and quality/inequalities in education 3.2	Room 213
7:00	CONFERENCE DINNER	Monterey's Sheraton Perth Hotel 207 Adelaide Terrace Perth, WA 6000, Australia	
WEDNESDAY, 26 NOVEMBER 2008			
Time	Event	Location	
ALL DAY	Conference registration	Function room	
9-10am	ANZCIES 08 Keynote Address: 'Southern Theory' and its Relevance for Comparative Education Professor Crain Soudien, WCCES President, University of Cape Town, SA Brian Denman, Chair	Function room	
10-10:30am	Morning Tea	Function room/foyer	
10:30-12:00noon	BREAKOUT SESSION #4	Educational transfer and the globalisation of education 4.1	Room 205
		Educational development and quality/inequalities in education 4.2	Room 213
Noon-2:15pm	LUNCH		
2:30-3:30pm	BREAKOUT SESSION #5	Educational transfer and the globalisation of education 5.1	Room 205
		Educational development and quality/inequalities in education 5.2	Room 213
3:30-4:00pm	Afternoon Tea	Function room	
4:00-5:00pm	Book Launch: <i>Researching International Pedagogies</i> Meeri Hellstén, Macquarie University	Function room	

THURSDAY, 27 NOVEMBER 2008			
Time	Event	Location	
9:30-10:30am	BREAKOUT SESSION #6	Room 205	
		Educational transfer and the globalisation of education 6.1	
		Room 213	
		Educational development and quality/inequalities in education 6.2	
10-10:30am	Morning Tea	Function room/foyer	
10:30-11:45am	BREAKOUT SESSION #7	Room 205	
		Educational transfer and the globalisation of education 7.1	
		Room 213	
		Educational development and quality/inequalities in education 7.2	
Noon-2:00pm	LUNCH/AGM	Function room	
2:00-3:00pm	Invited Workshop: Designing your Literature Review Di Cullen, Australia Catholic University	Room 213	
3:00-3:30pm	Invited Panel: Conference Wrap-Up	Room 213	

Please note : there may be room changes on the day so please check with the Conference Registration Desk.

DIRECTORY OF PRESENTERS AND SESSION CHAIRS

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Askarbek Kussainov Comparative research of education strategies in Central Asian countries	25-Nov-2008	Educational development/quality	1.1	Tom Griffiths
Janice Dudley Higher Education and the Market Citizen	25-Nov-2008	Educational Transfer/Globalisation	1.1	Tom Griffiths
Brian Denman Higher Education by Distance: Transformations and repercussions	25-Nov-2008	Educational development/quality	1.1	Tom Griffiths
Hsiao-chin Hsieh and Peiying Chen Gender and Fields of Study in Higher Education: The case of Taiwan	25-Nov-2008	Inequities in education	1.2	Laura Perry
Anne Hickling-Hudson, Pooja Chugani, and Julie McLaughlin Discussing Gender Discourse with Papua New Guinean Teacher Educators to Support HIV/AIDS Education	25-Nov-2008	Inequities in education	1.2	Laura Perry
Tom Griffiths Wallerstein, World-Systems Analysis and Comparative Education	25-Nov-2008	Educational Transfer/Globalisation	2.1	Brian Denman
Christine Fox Comparative minds across nations and regions: Putting our heads together for comparative research on quality in education	25-Nov-2008	Educational Transfer/Globalisation	2.1	Brian Denman
Margaret Freund This school is harder than any I have ever worked in: School principals, emotional labour and haeccity	25-Nov-2008	Inequities in education	2.2	Di Cullen
Judith Gill Does the principal matter?	25-Nov-2008	Inequities in education	2.2	Di Cullen

Anthony Fenton Actionable Internationalization at Universities in Japan: Accessing the possibilities	25-Nov-2008	Educational Transfer/Globalisation	3.1	Jan Currie
Linda Furuto Mathematics Achievement and Factors of Diversity in Japan and the U.S.	25-Nov-2008	Educational development/quality	3.1	Jan Currie
Markose and Hellstén All the kids hate school	25-Nov-2008	Educational development/quality	3.2	Nattavud Pimpa
Suwadee Mongkol Instructional Leadership and the Primary School Principal in Thailand's National Education Reform	25-Nov-2008	Educational development/quality	3.2	Nattavud Pimpa
Nattavud Pimpa and Ponsan Rojanapanich Globalisation, Social Imaginary and Higher Education Reform in Thailand	26-Nov-2008	Educational Transfer/Globalisation	4.1	Lesley Vidovich
Vann Moniroth and Nattavud Pimpa Transitions in Cambodian Higher Education	26-Nov-2008	Educational Transfer/Globalisation	4.1	Lesley Vidovich
Di Cullen Teacher Education - What model of policy will work best?	26-Nov-2008	Educational development/quality	4.2	Valery Jackson
Audrey-Marie Schuh Moore, Joesph DeStefano, Arushi Terway, and David Balwanz The Expansion of Secondary Education and the Need for Teachers: How big is the gap?	26-Nov-2008	Educational development/quality	4.2	Valery Jackson
Laura B Perry Why are some national systems of education more equitable than others?	26-Nov-2008	Inequities in education	5.1	Christine Fox
Anne Hickling-Hudson Cuba, Venezuela and South-South Collaboration in Health and Education: The solidarity principle	26-Nov-2008	Educational development/quality	5.1	Christine Fox
Margaret Scrimgeour and Terry Dunbar Indigenous research: Take it away or give and take? Supporting collaborative research in Indigenous community contexts	26-Nov-2008	Inequities in education	5.2	Bill Palmer
Beverley Hall A Comparative Study of Indigenous Early Childhood	26-Nov-2008	Inequities in education	5.2	Bill Palmer

Education between Australia and New Zealand			
Marlene Lebreton	Additional Language Teaching within the International Baccalaureate Primary Years Programme: A comparative case study	27-Nov-2008	Educational development/quality
Christiane Charon	Bilingual Programs in Comparison	27-Nov-2008	Educational development/quality
Joanna Sikora and Lawrence Saha	Gender and Professional Career Plans of High School Students in Comparative Perspective	27-Nov-2008	Educational development/quality
Laurel Bornholt, Rosalie Robinson and Pam Maras	Planned pathways from school to study, work and family life in regional Australia	27-Nov-2008	Inequities in education
Peiyang Chen	Transformative Learning and Ethnic Identity: Empowered learning of indigenous college students	27-Nov-2008	Inequities in education
Bill Palmer	Higher Education in Tanzania: A volunteer's view	27-Nov-2008	Educational Transfer/Globalisation
Jan Currie and Leslie Vidovich	University Governing Bodies: Trust and the public good	27-Nov-2008	Educational development/quality
Kath Lynch	Academics' Preparation for Teaching in Australian University Transnational Programs	27-Nov-2008	Educational development/quality
Jae-Youn Park			
Yutaka Otsuka			

Gender and Professional Career Plans of High School Students in Comparative Perspective

Joanna Sikora

Australian National University

Joanna.Sikora@anu.edu.au

Lawrence J. Saha

Australian National University

Lawrence.Saha@anu.edu.au

Abstract:

The time when girls left the labour force upon marriage and thus had more modest educational and occupational expectations than boys belongs to history. Recent studies show that girls across many different cultures plan to attain more education and are more determined to enter professional careers than boys. For example, studies in the USA and Canada show that girls form career plans earlier than boys. This is significant because adolescent career expectations are critical for subsequent success in adulthood (Feliciano and Rumbaut 2005; Jacobs, Chhin and Bleeker 2006).

In this study we analyse the data from the 2000, 2003 and 2006 rounds of the OECD's Program for International Student Assessment (PISA), conducted in over 50 countries. Firstly we establish whether girls are more ambitious across countries when we control for students' academic ability and home environment. Secondly we examine the possibility that the attraction to professional occupations can be explained by gender-typed choices i.e. girls' preference for nursing and teaching versus boys' determination to enter more 'masculine' jobs. Thirdly we consider how likely are girls, compared to boys, to answer questions about career plans, because any gender differences in missing data might change the overall conclusions. Finally, we examine how school characteristics, i.e. the proportion of females among both students and teachers, as well as the macro-social contexts, i.e. labour market opportunities open to women, may help girls set higher achievement goals. We conclude by discussing the policy implications of these gender differences, with a special focus on the variations between the countries in our study.

Keywords: Gender, occupational expectations, PISA

Gender and Professional Career Plans of High School Students in Comparative Perspective

Joanna Sikora

Australian National University

Joanna.Sikora@anu.edu.au

Lawrence J. Saha

Australian National University

Lawrence.Saha@anu.edu.au

Abstract:

The time when young women left the labour force upon marriage, and thus had much more modest educational and occupational expectations than young men, belongs to history. Recent studies in the USA and Canada show that at 15, girls now plan to attain higher levels of education and are more determined to enter professional careers than boys. We seek to establish whether this is the case in many different cultures and socio-economic conditions.

To this end, we analyse the data from the 2006 round of the OECD's Program for International Student Assessment (PISA), conducted in over 50 nations.

First we establish whether girls are more ambitious than boys across countries when we control for the variation in academic ability, home and school environments. Second we examine the possibility that the attraction to professional occupations can be explained by gender-typed choices, i.e. girls' preference for nursing and teaching versus boys' determination to enter more 'masculine' jobs. Third, we consider how likely are girls, compared to boys, to answer questions about career plans, because any gender bias in the patterns missing data might change the overall conclusions. Finally, we examine how school characteristics, i.e. the proportion of female students, school resources, socio-economic characteristics of parents as well as the macro-social contexts, i.e. labour market opportunities open to women, may help girls set higher achievement goals. We conclude by discussing the policy implications of these gender differences, with a special focus on the variations between the countries in our study.

Keywords: Gender, occupational expectations, PISA, school students, comparative education

Gender and Professional Career Plans of High School Students in Comparative Perspective

Introduction

Decades ago young women had modest occupational expectations compared to young men. However, today in younger cohorts women match or even exceed the ambitions of their male counterparts. This is not surprising since the comparative literature on gender inequality in education has shown that while class differences in educational outcomes have persisted over time, in most developed countries gender inequalities have diminished or even reversed direction (Blossfeld and Shavit 1993: 77; Marks 2008). As women achieve parity and even overtake men in educational attainment in many fields, their occupational expectations are likely to rise accordingly. Indeed Buchmann and Dalton (2002) found that, in eight out of twelve countries, girls were more likely than boys to plan to go to university and thus, by implication, are more likely to pursue a professional career.

Occupational expectations are important because, although the actual relevance of expectations for predicting ultimate behaviour has been subject to many debates (Saha 1997), recent studies have confirmed that adolescent expectations are crucial for subsequent success in early adulthood (Feliciano and Rumbaut 2005; Jacobs, Chhin and Bleeker 2006). Therefore the timing of the formation of occupational plans, as well as their contents, are crucial for actual educational and occupational attainments, at least in early adulthood.

Taking advantage of the rich cross-national PISA data, we focus in this paper on establishing the extent to which gender differentiates between the occupational plans of adolescents in a uniform manner, net of influences exerted by varying institutional, economic and cultural milieus.

In this context we raise a number of questions. Do more girls expect professional careers while the majority of boys seem content with the prospect of vocational employment? Can the differences in occupational plans between boys and girls be fully explained by the gap in academic performance between genders? Do these differences hold after a large number of individual and school as well as some country characteristics are taken into account? Finally, to what extent, based on the examination of missing data patterns, which we interpret as a sign of uncertainty, can we assume that boys might form their ambitions for entering particular careers later than girls? Thus, can what we observe at age 15 change dramatically over the next couple of years, during which time these adolescents will be in the secondary education system?

We ask these questions in a comparative framework with the understanding that particular gender symbolisms, identities and organisations may result in a range of dramatically different occupational plans for individual adolescents (McCall 1992). At the same time, at some level it is plausible to expect universal gender trends which are attributable to the influence of a globalized ideology which informs educational policies and permeates cultures in many countries.

Aspirations, Expectations, Attainments and Gender

For more than fifty years social scientists have known that educational attainment was directly related to occupational attainment (Dronkers 1997). Hence authors of recent studies tend to take the strong relationship between educational attainment and occupational outcomes for granted (Breen and Yaish 2006). The importance of occupational plans are reflected in Bourdieu's theory of social order, which highlights the importance of an occupation "as the primary organising variable for the positions in social structure" (McCall 1992).

The research on career plans has been traditionally undertaken by sociologists in two traditions: 1) the social psychological/socialisation tradition and 2) the stratification/allocation tradition.³ In addition, psychologists of career development have focused their efforts on understanding how to best match occupations to individual personalities and thus provide adolescents with suitable counselling (Holland 1997).

The social psychological/socialisation tradition has placed emphasis on individual determinants of career plans, for instance, "ambitions" as discussed by Turner (1964), and societies' levels of "need for achievement" as discussed by McClelland (1961). In this tradition "aspiration" and "expectation" became distinguished as non-equivalent. While the first concept was seen as possibly "unrealistic", the second was perceived as more "realistic", that is, formed with the recognition of existing social restraints (Caro and Pihlblad 1965; Desoran 1977/1978; Empey 1956; Han 1969; Saha 1983; Saha 1997). This perspective corresponds to the parallel tradition of research in developmental psychology, which has focused on personality traits, modified by "environmental factors" and their role in career choice formation (Holland 1997). The adherents of this tradition expect boys and girls to have different career expectations because of the contents of their socialisation experiences, that is, through the cultivation of typically feminine and masculine traits and personality differences (Tang, Pan and Newmeyer 2008; Turner et al. 2008).

The social allocation perspective has focused on social structural constraints, that is, race, ethnicity, institutional settings such as features of particular schools or school systems or labour market characteristics, along with social psychological variables. Individual drive, ability and personal attributes are limited by these structural boundaries and the career plans of youth, as they reach the age of 15, begin to reflect the recognition of these structural constraints. For a more detailed review of the social allocation tradition see Sikora and Saha (2007) and Saha and Sikora (2008).

Taking into account these traditions, the literature which has focussed specifically on gender differences in the formation of expectations and aspirations, has been growing in recent years. While some authors argue that gender differences in this area are diminishing (Beutel and Marini 1995; Regan and Roland 1982) others have emphasised that 'the idea of pervasive gender differences in the transitions to

³ We acknowledge that some of the literature could be located in more than one research tradition. However, for the sake of simplicity, we have allocated each reference into only one category.

work ... is not new' (Looker and Magee 2000: 77) . Feminist extensions of Bourdieu's theory of social order emphasise that occupational choices are persistently gender circumscribed, although it would be misleading to always expect females to choose feminine-linked occupations, and males to choose masculine-linked occupations (McCall 1992). This tradition of research opens up the possibility that women may increasingly prefer masculine occupations and succeed in entering them, although cultural definitions of gender will continue to define their experiences.

But this tradition also recognises that young women may incorporate the prospect of parenthood into their career plans differently from men, and they tend to lean toward 'artistic' and 'social' occupations compared to boys' preference for 'investigative' and 'realistic' careers. This is in accordance with Holland's typology of occupational choice. Looker and Magee (2000) review the relevant literature which asserts that adolescent women are aware of their future responsibilities as mothers and adjust their career plans accordingly, that is, they are guided by the perceived motherhood friendliness of their future jobs. They thus opt for middle status, low pay and traditionally female occupations. The opponents of this view argue that women opt out of having children or reduce their number to meet their professional career desires. This perspective assumes that women aim to work in professional and demanding fields and adjust their parenting roles accordingly. If this is the case, most girls will have quite ambitious occupational plans.

The emphasis on social organisation relates to the neo-institutionalist perspective, which is informed by modernisation theory, and which stipulates that educational policy and its outcomes are likely to evolve towards a global and homogeneous format, driven by universal goals as exemplified by the Millennium Development Goals (United Nations 2008: Goals 2 and 3). Gender equity in education has been on the agenda of many governments, and if the actual equity has not been achieved, the neo-institutionalist ideology is likely to influence the perception that young women can and should achieve as much as men. Moreover, adjustments to the curricula over the last couple of decades have been arguably introduced purposefully to take advantage of the traditional strengths of female students, which may in turn boost both their expectations and achievement.

These are some of the important issues which are related to our investigation of the determinants and the outcomes of gender-specific career plans. With these issues in mind, we now turn our attention to the hypotheses which will guide our analysis.

Hypotheses

Schofer and Meyer (2005) argued that countries in both the centres and the peripheries of the world embrace education models in which the prospect of professional employment in globalising markets and the commonality of the university experience are increasingly taken for granted. This argument, known as neo-institutionalism or the global education approach, stipulates a convergence between genders in occupational expectations over time, as the patriarchal organisation of social life becomes eroded by world-wide industrialisation.

The discernible focus of this global policy on gender equity in the context of traditional disadvantage for girls may lead to more concerted efforts by policymakers to encourage the higher educational attainment of females. This leads us to expect that, in all nations included in this study, girls, more frequently than boys, will report their intention to work in professional occupations (Hypothesis 1, or H1). Because we know that most young people do want to have families and children, this would imply that ambitious plans among girls do not have to, in their view, signify giving up on the dream of having a family and children. In Australia, for example, surveys of young people indicate that at 20, almost 70 per cent of men and more than that proportion of women want to have children (Qu and Weston 2004). But as parenthood comes later in life in developed countries, where the average age of the mother at birth of the first child exceeds 30, it is reasonable to assume that girls expect to be established in their professional careers before starting a family. Moreover, professional women are seen by some as having more power to negotiate more family friendly work environments (Burkett 2000). Thus the ambitious career plans of young women may not seem to them as compromising their plans for a family.

This, in combination with a curriculum development policy to reduce gender inequality, leads to the expectation that, in terms of occupations most frequently chosen by girls, there should be less preference for feminised nursing and primary school teaching as the dominant choice. Thus our second hypothesis is that the occupational expectations of girls will not be dominated by traditional feminine careers (H2).

We also hypothesise that macro-social conditions have an influence on what careers girls expect to have. Based on our prior research, we expect the girls in more developed and egalitarian countries, with high levels of female participation in labour market and politics, to be less focused on entering professional occupations than girls growing up in countries where economic opportunity structures, available to women, are more limited and the political representation of women is weaker (H3).

Finally, it is well known that girls are on average better at English than boys, while in many countries, boys outperform girls in mathematics (OECD Organization for Economic Cooperation and Development 2007). Moreover, strong academic performance is known to boost both educational and occupational plans. Therefore, in assessing the effects of gender on career choice, we control for academic ability as measured by reading scores. However, because we expect broader cultural changes as well as opportunity structures to be responsible for the gender gap, our hypothesis is that the difference between girls and boys in their career plans will persist, even after the variation in gender specific academic performance has been factored out (H4).

Data, Measurement and Methods

Our dependent variable is derived from a single question which was asked in all three surveys.

What kind of job do you expect to have when you are about 30 years old?

Write the job title: _____

In PISA 2006 we have the data from over 50 countries. Although PISA participation continues to be dominated by OECD countries, the presence of some 'lower-middle income' countries, using the World Bank terminology, makes the analysis of these data suitable, although not ideal, for investigating our research questions. Ideally we would like to have data from a larger number of poor and developing countries to investigate whether patterns we find in our study apply to countries across the full continuum of development.

Measurement

The PISA occupational data were recoded into the ISEI index of occupational prestige (Ganzeboom and Treiman 1996), which, as a measure of occupational expectation, is our dependent variable. The lowest score on the index is 10 and it denotes people working as farm hands or other unskilled labourers. The highest score is 90 and it indicates the most highly qualified professionals such as medical specialists, senior lawyers or scientists.

Our independent variables comprise crucial individual student and family characteristics, a broad range of school characteristics and two key country level characteristics, one of which reflects economic opportunity structures available to women.

Many characteristics at the country level are closely interrelated. This means that GDP per capita is strongly correlated with social inequality (denoted by the Gini coefficient), the proportion of women who hold seats in parliament in each country, the proportion of females in the labour force relative to total employment, the proportion of women who are employed in services, and the proportion of women who work for pay relative to the whole female population aged between 15 and 64 years of age. This means that the use of all these measures simultaneously in our analysis is redundant. But it needs to be borne in mind that they are interrelated and the positive association between occupational plans and each one of them implies a positive association between these plans and others. We use the proportion of female employment relative to the total female population aged 15 to 64 as an indicator of labour market opportunities for women, and the Gini coefficient, as the measure of country inequality (World Bank 2007). The latter is relevant as women are known to account for a greater than statistically expected proportion of the poor in countries with higher levels of inequality. We treat both these variables as indicative of institutional settings where women have more economic and political power.

At the school level we control for: 1) averaged parents' SES, which identifies schools with higher proportions of students from privileged backgrounds, 2) the proportion of girls at school, 3) school ownership ranging from exclusively public, through private with government involvement to exclusively private. Moreover, we control for 4) school selectivity i.e. the existence of a school policy of using academic ability as an admission criterion (coded 0 for schools that do not have such a policy and 1 for those that do), 5) the number of Internet enabled computers in a school, 6) school size and the size of town in which each school is

located. All of these factors are known to boost students' academic performance, and by analogy, can be expected to boost their occupational expectations (OECD Organization for Economic Cooperation and Development 2007).

At the individual level we include gender and parents' socioeconomic status created from the information on parents' average ISEI score and average years of schooling completed, using the template provided by the 2003 PISA manual (OECD 2005). Education and occupation contribute equally to our measure of parents' SES. Although family income information became available for 16 countries in 2006, in this analysis we do not control for this variable due to the small sample size at the country level. Following prior research based on the PISA data (Buchmann and Park 2005), we included the combined reading scale as an indicator of prior academic achievement, as the actual data on prior academic achievement are not available. We also control for students' participation in either vocationally or pre-vocationally-oriented programs within the school.

Method

In addition to presenting univariate and bi-variate descriptive statistics, we employ a random intercept three-level linear model, as available in HLM version 6.06, in which students are clustered in schools and schools are clustered in countries, as in Eq. 1. This model allows us to take into account country, school and student characteristics.

Eq 1:

$$\begin{aligned} \text{Expected_Occupation}_{ijk} = & \text{constant}_{ijk} + \text{Gini}_{ik} + \text{Proportion_Women_in_Labour_Force}_{ik} \\ & + \text{Average_Parents_SES_in_school}_{jk} + \text{Proportion_of_Girls_in_school}_{jk} + \text{Private_school}_{jk} + \\ & \text{Selective_admission_policy_in_school}_{jk} + \text{Computers_with_Internet_at_school}_{jk} + \\ & \text{School_size}_{jk} + \text{Size of town}_{jk} \\ & + \text{Male}_{ijk} + \text{Parents_SES}_{ijk} + \text{Vocational_Program}_{ijk} + \text{Reading_score}_{ijk} + v_{0k} + u_{0jk} + e_{0ijk} \end{aligned}$$

All our estimations are weighted by the country factor which ensures that each country contributes equally to the analysis (OECD Organization for Economic Cooperation and Development 2008). As we rely on linear models which are sensitive to departures from normality assumptions, all the analyses have been performed with robust standard errors.

Results

We first turn to the examination of average occupational expectations of boys and girls across countries. Table 1 presents average ISEI scores which range from a low 10 to the high 90. Low ISEI scores denote unskilled, manual occupations, while the highest scores correspond to the professional, specialised jobs, which usually require a university degree at entry point. To facilitate the examination of the estimates in Table 1, we have organised countries into panels by geographic region. Moreover, we grouped together the former soviet republics and the former satellite countries of the Soviet Union. Some nations, such as Tunisia or Jordan, do not naturally belong in any of the groups, so we retain them as 'stand alone' cases for comparison.

The most striking feature of the data in Table 1 is that in almost all countries, regardless of the political culture, region or level of economic development, girls at 15 have more ambitious plans than boys. This supports Hypothesis 1.

Table 1. Average occupational expectations in ISEI scores by gender and by country PISA 2006

Nations		PISA 2006					
		Girls			Boys		
		Mean	Std error	N	Mean	Std error	N
	Tunisia	71	0.33	2010	66	0.38	1620
	Jordan	69	0.28	2583	67	0.35	1874
Latin and South America	Colombia	70	0.32	2152	68	0.32	1756
	Brazil	70	0.26	3991	62	0.31	3101
	Uruguay	69	0.35	1971	61	0.42	1699
	Mexico	68	0.13	12619	67	0.15	10606
	Turkey	67	0.31	1944	65	0.31	2029
	Argentina	67	0.37	1913	61	0.44	1594
	Chile	66	0.40	1904	63	0.37	2132
Post-soviet countries (Asian and European)							
	Azerbaijan	72	0.33	1568	66	0.44	1516
	Kyrgyzstan	69	0.41	2186	64	0.51	1379
	Bulgaria	67	0.50	1517	64	0.51	1547
	Russia	66	0.34	2342	58	0.41	1950
	Lithuania	63	0.40	1755	57	0.43	1710
	Romania	62	0.37	2270	54	0.39	2179
	Poland	62	0.40	2214	56	0.39	2118
	Slovenia	62	0.34	2557	57	0.36	2317
	Estonia	61	0.43	1788	54	0.45	1799
	Latvia	60	0.40	1918	55	0.48	1538
	Slovakia	59	0.44	1749	54	0.43	1720
	Croatia	59	0.43	1748	50	0.39	1666
	Czech Rep	55	0.44	1777	51	0.37	2044
	Hungary	55	0.51	1436	51	0.48	1456
Asia	Indonesia	63	0.30	3613	60	0.29	3845
	Thailand	62	0.34	2602	58	0.47	1507
	Korea (ROK)	60	0.30	2321	62	0.28	2338
	Hong Kong	58	0.35	2021	59	0.38	1793
	Chinese Taipei	56	0.29	3491	61	0.27	3586
	Japan	56	0.37	1917	54	0.34	1926
	Canada	64	0.18	8954	59	0.20	8375
Australia and New Zealand	New Zealand	60	0.42	1913	55	0.46	1580
	Australia	58	0.23	5658	56	0.25	5509
Europe	Spain	63	0.21	7507	58	0.22	6611
	Greece	63	0.36	1870	59	0.39	1546
	Italy	63	0.19	8791	57	0.19	8660
	Iceland	62	0.52	1411	59	0.54	1290
	Portugal	63	0.41	2096	60	0.37	1837
	Ireland	59	0.41	1871	57	0.43	1768
	Norway	59	0.48	1553	54	0.48	1551
	United Kingdom	57	0.26	5222	56	0.25	4936
	Belgium	57	0.32	3228	54	0.31	3506
	Denmark	55	0.52	1379	53	0.47	1441
	Sweden	55	0.44	1752	52	0.41	1732
	Austria	54	0.44	1612	50	0.45	1578
	Netherlands	54	0.39	2057	54	0.36	2047
	Finland	53	0.46	1867	49	0.45	1589
	Germany	52	0.46	1531	52	0.47	1444
	Switzerland	50	0.27	4581	49	0.26	4920
(N)				138727			128268

[1] Note: All estimates are weighted

Countries are ordered by decreasing difference in expectations between girls and boys in PISA 2006

Estimates in bold print and italics are not significantly different between boys and girls within each country and surveys. Others are significantly different from zero at $p = 0.01$ within each country and survey.

Table 2. Twelve most commonly expected occupations (ISCO 1988) in countries with low (less than 54%) and high (over 70%) female labour force participation^A.

				Girls		Boys	
				Countries with female labour force participation of less than 54%		Countries with female labour force participation of more than 70%	
ISCO				%	ISCO	%	
2221	medical doctors			13.7	2221	medical doctors	9.0
2421	lawyers			6.8	2140	architects, engineers etc professionals	4.5
2300	teaching professionals			6.6	2421	lawyers	4.4
2321	sec. teachers, academic track [incl. middle school teacher]			3.5	3475	athletes, sports persons etc associate professionals	3.4
2445	psychologists			3.2	2149	architects engineers etc professionals nec [incl. consultant]	3.0
2320	secondary education teaching professionals			2.8	2300	teaching professionals	2.8
2230	nursing & midwifery profess. [incl. registered nurses, midwives]			2.8	2144	electronics & telecommunications engineers	2.4
2411	accountants [incl. auditor]			2.5	2411	accountants [incl. auditor]	2.3
2332	pre-primary educ. teaching professionals [incl. kindergarten]			2.3	2320	secondary education teaching professionals	2.1
2140	architects, engineers etc professionals			2.0	1310	small enterprise general managers [incl. businessman, trader]	2.1
2451	authors journalists & other writers [incl. editor, techn. writer]			1.7	2321	sec. teachers, academic track [incl. middle school teacher]	2.0
2149	architects engineers etc professionals nec [incl. consultant]			1.7	2132	computer programmers	1.9
Total				49.6			39.9
Total N ^B				33379			29126
				Girls		Boys	
				Countries with female labour force participation of less than 54%		Countries with female labour force participation of more than 70%	
ISCO				%	ISCO	%	
2221	medical doctors			8.0	7231	motor vehicle mechanics & fitters [incl. bicycle repairman]	4.4
5141	hairstylists, barbers, beauticians etc workers			6.3	2221	medical doctors	4.4
3471	decorators & commercial designers			3.9	3475	athletes, sports persons etc associate professionals	4.0
2445	psychologists			3.4	2140	architects, engineers etc professionals	3.5
2421	lawyers			3.2	7124	carpenters & joiners	3.4
2451	authors journalists & other writers [incl. editor, techn. writer]			3.2	5162	police officers [incl. policeman, constable, marshal]	2.8
2230	nursing & midwifery profess. [incl. registered nurses, midwives]			3.1	5122	cooks	2.3
2223	veterinarians			3.0	2141	architects town & traffic planners [incl. landscape architect]	2.1
2300	teaching professionals			2.4	3143	aircraft pilots etc associate professionals	2.0
2141	architects town & traffic planners [incl. landscape architect]			2.4	7137	building etc electricians	1.9
3320	pre-primary education teaching associate professionals			2.1	1310	small enterprise general managers [incl. businessman, trader]	1.8
2455	film, stage etc actors & directors			1.9	2421	lawyers	1.8
Total				42.9			34.4
Total N				32818			25180

Source: PISA 2006

^A Labor force participation rate, female (% of female population ages 15-64)

^B All students

The only exceptions to this prevalent pattern are the Netherlands, Switzerland and Germany where there are no gender differences, and a couple of Asian countries, i.e. Korea and Taiwan (denoted as Chinese Taipei) where boys still outdo girls in their commitment to pursuing professional careers.

The gender gap varies significantly from country to country, and in some locations, e.g. the UK, Australia and Japan, the gap is merely one or two ISEI points, while in others, such as Brazil, it exceeds several ISEI points. Despite the variation in the size of this gap, the consistency of the overall direction of this pattern (i.e. more ambitious girls) is noteworthy. Moreover, while the variation between countries is significant, it is clear that the students in the Central and South American countries where economic inequalities are greater than in Western Europe, and in the only Middle East and only African country for which we have data, report very ambitious career plans, compared with their peers in the developed West. A similar tendency is observed within the post-Soviet block where the poorer and more unequal conditions inspire more ambitious plans among high school students. As we examined the influence of these macro-economic factors in detail in our previous research (Sikora and Saha 2007), here we will only note that, in line with Hypothesis 1, the gender gap is evident in the poor and the wealthy countries, as well as in capitalist and post-socialist contexts.

Next, to examine the evidence related to our Hypothesis 2, we turn our attention to gender specific preferences in two sub-sets of countries: 1) those with relatively low female representation in the labour force, and 2) those where such representation is significantly higher. In the group of 48 nations¹ for which we have the data, we first selected a group of countries for which the female labour force participation rate, understood as the percentage of female population aged 15-64 in the labour force, did not exceed 54 per cent in 2006. Such countries include Bulgaria, Chile, Italy, Jordan, Mexico, Tunisia and Turkey, a group quite diverse in terms of political and economic characteristics. On the other hand, for the second group, we chose countries in which the female labour force participation rate exceeded 70 per cent, and, in our study, these countries included Canada, Denmark, Finland, the Netherlands, New Zealand, Sweden and Switzerland. This group represents more similar, wealthy economies with well developed, although diverse, welfare states systems.

Table 2 lists the 12 most popular expected occupations for girls and boys in each group of countries. We first turn to gender differences. The examination of occupational titles listed for boys and girls provides support for both the traditional gender typing of occupations, and signs of convergence in some occupational choices (assuming these choices were more gender-typed in the past). The latter is exemplified by the universal attractiveness of medicine as the most preferred career. In the Holland typology (1997), medicine typifies 'investigative' occupations while law is a typical 'enterprising' occupation, and both are usually assumed to be typical boy's choices (Turner et al. 2008). But law and medicine here come across as areas of employment that attract both boys and girls in different cultural and economic contexts. Moreover the 'social' occupations, for example teaching, also seem to be attractive to both boys and girls. Finally girls, relative to boys, prefer psychology which is another 'investigative' type of a career.

However, the gender differences do persist. Boys more often choose engineering careers, and ‘realistic’ occupations such as car mechanics, although some types of engineering, related to architecture, and thus ‘artistic’ careers, appear in the preferences of girls. But while engineering dominates boys’ preferences it is almost absent from girls’ choices. Nursing, as expected, is absent from the list of popular choices among boys, but features prominently in girls’ preferences. Girls still opt more frequently for ‘artistic’ careers such as writing, acting or decorating.

Table 3. Occupational expectations PISA 2006. Coefficients from three-level random intercept models with robust standard errors.

	Model 1			Model 2		
	Coeff	Standard Error		Coeff	Standard Error	
Fixed effects						
<i>Country characteristics</i>						
Gini	0.39 **	0.15		0.40 **	0.13	
Proportion of women in labor force	-0.10 *	0.05		-0.10 *	0.05	
<i>School characteristics</i>						
Parents' SES averaged by school	0.20 **	0.04		0.20 **	0.04	
Proportion of girls at school	8.82 **	1.92		8.85 **	1.92	
Private school	3.08 **	0.72		3.08 **	0.72	
Academic achievement used as admission criterion	2.68 **	0.49		2.69 **	0.49	
Computers connected to the Internet at school	0.95 **	0.49		0.94 **	0.49	
School size	0.003 **	0.00		0.003 **	0.00	
Size of town (millions of inhabitants)	1.55 **	0.35		1.55 **	0.35	
<i>Individual characteristics</i>						
Male	-3.26 **	0.36		-1.56 **	0.31	
Parents' SES (education & ISEI)	0.16 **	0.02		0.12 **	0.01	
Studying in vocationally oriented program	-5.50 **	1.95		-4.93 **	1.33	
Reading score (proxy for academic ability)	-	-		0.06 **	0.00	
(constant)	59.42 **	0.57		59.41 **	0.57	
Random effects						
Variance & [explained variance] at country level	12.1	4% [66%]		12.1	4% [66%]	
Variance & [explained variance] at school level	44.0	15% [16%]		44.8	16% [14%]	
Variance & [explained variance] at student level	246.5	81% [3%]		232.1	80% [8%]	
[Per cent total explained variance]		[9%]			[13%]	
Number of countries	45			45		
Number of schools	9981			9981		
Number of students	200206			200206		

** statistically different from zero at $p=0.01$, * statistically different from zero at $p=0.05$

All analyses weighted with final student weights corrected for missing data and the country factor computed so that each country contributes equally to the analysis. No school weights have been used

¹ We use data for a larger number of countries in bi-variate analysis (48) and the data from a smaller set of countries (45) in multivariate analysis. This is because not all the countries had the information on all the variables we utilise in multivariate models.

Another distinctive feature of Table 2 is that the focus on professional occupations is stronger in nations where female labour force participation is lower as predicted by our Hypothesis 3. Boys' and girls' modal career choices in the top panel of Table 2 are almost exclusively accounted for by ISCO codes starting from digit 2, which are indicative of professional occupations. This is most likely the function not only of the gender composition of labour markets but also the industrialisation and relative attractiveness of skilled service versus professional employment. Many girls in richer countries plan to become hairdressers while boys opt to work as car mechanics. This, as we found in our prior research, can be explained by both the better work conditions of these lower service jobs in developed economies, and also the higher secondary education participation rates which include youth in vocational programs. So overall, while our Hypothesis 3 is supported, the evidence regarding our Hypothesis 2 is mixed. We see strong elements of convergence between boys' and girls' occupational plans, but the traditional preference of girls for artistic and caring occupations is still evident in our data.

We now turn to the results of our multivariate analysis where we test Hypothesis 4 which posits that gender differences in career plans cannot be attributed solely to the differences in academic performance between males and females. In testing this proposition we must take into account factors influencing occupational plans at the family, school and country levels. Table 3 presents two relevant analytic models. The difference between the two models is that in Model 1, reading score at the individual is not included, whereas it is included in Model 2. By contrasting both models we see clearly that boys are significantly less likely to name professional careers as their expected occupational attainment than girls (see the negative coefficients in bold type in Table 3, -3.26 and -1.56). This difference in favour of girls remains significant after we take into account many factors that affect career choices at the three levels of our hierarchical models. About half of this gender effect can be attributed to girls' better performance at school (i.e. the difference between -3.26 and -1.56 is the part of the gender effect explained by the inclusion of reading score, a proxy for academic performance, in Model 2).

If we keep in mind that the high occupational expectations for girls across these countries represents a fairly recent reversal of the traditional male dominance in this area, what other variables besides academic achievement can explain this reversal? Given our earlier discussion of global changes in gender equity concerns the other half of the gender difference has to be explained by the changes in both cultural contexts, i.e. gender symbolism and organisation as well as perceived opportunity structures among adolescent girls in this sample of countries. The convergence trend noted in the discussion of Table 2 juxtaposed to the results from the multilevel model in Table 3 makes it clear that girls rely less than they might have before in opting for the traditional artistic and social occupations, but when they choose them, their preferences cluster heavily at the professional, that is, highly skilled end of occupational hierarchies within these career fields.

An important caveat that applies to our model in Table 3 is that it assumes slopes to be the same across countries. It does not highlight country differences in the size of gender effect. However, additional analyses, which we have performed separately in 48 countries, reveal that only in 26 of them are girls significantly more ambitious than boys, after we control for the key school and individual characteristics, including academic ability as measured by reading (See Appendix

Table 1). In eight countries boys tend to be a little more ambitious than girls, which is the trend most pronounced in Taiwan and South Korea, whereas in the remaining 14 countries the gender differences are not statistically significant after academic ability is taken into account. This emphasises the importance of country-specific conditions, educational policy and cultural contexts and makes our conclusions regarding the overall trend more tentative.

A second important limitation of the PISA data, and therefore our study, is the high proportion of missing data on expected occupation, which varies systematically by gender. As Figure 1 illustrates, in most countries boys are less likely than girls to answer the question about their future career. This may be understood possibly as a gender difference in the typical stage when adolescents form their expectations regarding their future adult lives. Some studies have reported a gender lag, i.e. the systematic difference between boys and girls in the timing of career-plan-formulation. Should this be the case, it is possible that girls develop ideas about their future employment earlier than boys. Alternatively, however, the administration of PISA questionnaires at school may enhance the effect of academic performance on

response rates to the study. That is, students who are academically more motivated, may feel obliged to answer the question about their occupational plans as they would feel compelled to give an answer to a school test question. We cannot judge between these two explanations, but the relationship between gender and the likelihood of giving an answer to the question about the future career seems to hold in most of our countries. This calls for a future systematic investigation into the effects of missing data, as all conclusions drawn from the PISA data on this subject are bound to be affected by this bias.

Summary and Discussion

Our analysis of gender-typed occupational expectations of adolescents in many countries finds clear gender differences in unadjusted occupational plans. However, when gender differences in academic performance are taken into account, and we control for home and school environments, we find only mixed evidence supporting the hypothesis that girls are more likely to plan professional careers. The net gender difference hypothesis is supported in a little more than half of the countries analysed in this study.

The examination of modal occupational choices of boys and girls in various national economic contexts shows that the traditional division in gender-typed choices, where girls opt for artistic and caring occupations while boys elect 'investigative', 'enterprising' or 'realistic' careers, is no longer the dominant pattern.

Academic performance, measured by the gender differences in reading comprehension, accounts for a large part of the gender gap in adolescent occupational plans. Better students, who are more likely in many contexts to be girls, report opting for professional careers. But academic performance cannot explain away the gender difference. In countries where girls are more ambitious than boys, introducing various controls at individual and school levels, including factoring out academic ability, does not account for the higher levels of ambition amongst females. Moreover it also appears that girls from poorer countries, in which women do not enjoy very high levels of labour market participation, strive for higher achievement than girls from more gender egalitarian countries.

These results highlight the complexity of factors influencing adolescent career choices, which go far beyond matching personalities with occupations, as stipulated by the traditional theory of vocational choices. Firstly, while individual factors are very important in determining career plans, as they account for about 80 per cent of overall variation, systematic institutional influences impose constraints on the scope of this variation.

First, our analysis indicates that most likely, over time the traditional perceptions of the gender-typed occupational choices have ceased being an accurate representation of what young women aspire to. Although we cannot confirm the greater importance that adolescent females place on professional careers, we have shown evidence that girls are determined to enter many occupations formerly thought of as strongly preferred by boys. Where they opt for traditional caring and artistic occupations, their focus is more strongly on the professional end of the occupations' hierarchy.

To the extent that these far reaching plans prevail among girls in different cultures and economic conditions, we can talk of influences of the globalised education model, as proposed by neo-institutionalists, which assumes gender equality and thus equal chances of entering skilled service occupations for all. But the diversity of country-specific settings, with the variation of educational policy and diverse cultural influences, produces patterns which are not uniformly consistent across nations. While in many countries, particularly the less developed ones, girls are clearly more ambitious, in other countries we observe no discernible difference between genders. Furthermore in Asia, boys outdo girls in making ambitious career plans. Of course we need to bear in mind that despite having included many countries in this study, many, particularly poorer developing nations, have not been considered here and their patterns may diverge from our findings in this sample of countries. Nevertheless the spectrum of various educational systems and cultural settings presented by us in this paper is sufficiently broad to confidently note the impact of these country-level differences.

Although the task of evaluating these gender patterns can be approached from many angles, it is vital to ask which type of pattern should be considered as desirable. Traditionally the less ambitious plans among girls have been seen as an indicator of the prevailing patriarchal structure of oppression in both formal education and the labour market. But conversely, the very high levels of ambition among girls, where boys opt for more vocationally oriented careers, might be seen as a source of potential problems, both when girls are confronted with the realities of gender differentiation in labour market outcomes, and their individual decisions regarding balancing work and family. Our final thought is that the lack of gender differences in professional careers desired by high school students is not necessarily equivalent to gender neutrality. As we have demonstrated, even among strictly professional careers preferred by boys and girls, gender-typing can be clearly detected. What may be changing, however, are the occupational locations of this gender-typing, as nursing and teaching give way to psychology, commercial design or creative writing.

Appendix Table 1: Occupational expectations by country: two-level random intercepts models (PISA 2006). Countries ordered by gender gap in career pla

	Male			SES			Reading Score			Vocational program			Parents' occupation in school (average)			Selective admission			Town size millions of inhabitants			(Constant)			Intraclass correlation	N
	Coeff.	Sig.	SE	Coeff.	Sig.	SE	Coeff.	Sig.	SE	Coeff.	Sig.	SE	Coeff.	Sig.	SE	Coeff.	Sig.	SE	Coeff.	Sig.	SE	Coeff.	Sig.	SE		
Brazil	-7.4 **		0.4	0.00 ns		0.01	0.02 **		0.00	0a ·		0.00	0.05 ns		0.07	3.4 *		1.0	-1.1 *		0.5	59.5 **		4.3	0.05	7020
Uruguay	-5.8 **		0.5	0.06 **		0.02	0.04 **		0.00	-10.09 **		1.18	0.03 ns		0.17	-0.3 ns		1.3	-1.1 ns		0.6	48.7 **		10.8	0.09	3670
Russia	-5.4 **		0.5	0.17 **		0.02	0.05 **		0.00	-10.62 **		1.42	0.35 ns		0.23	1.1 ns		1.5	-0.5 ns		0.9	13.0 ns		15.2	0.09	4260
Argentina	-5.1 **		0.6	0.05 **		0.01	0.01 **		0.00	-3.11 ns		2.13	-0.35 ns		0.30	4.2 **		1.6	0.8 ns		1.0	79.5 **		19.7	0.08	3507
Azerbaijan	-4.9 **		0.5	0.07 **		0.02	0.03 **		0.01	-17.34 **		3.68	0.02 ns		0.25	0.4 ns		1.1	0.5 ns		0.8	52.4 **		16.3	0.05	3084
Estonia	-4.7 **		0.6	0.27 **		0.03	0.08 **		0.00	0a ·		0.00	-0.39 ns		0.26	3.2 *		1.4	0.6 ns		1.8	28.6 ns		16.9	0.05	3587
Romania	-4.1 **		0.5	0.12 **		0.02	0.04 **		0.00	-10.49 **		1.12	0.70 *		0.30	3.9 **		1.3	2.2 ns		1.1	-13.7 ns		20.0	0.11	4449
Kyrgyzstan	-3.6 **		0.7	0.07 **		0.03	0.04 **		0.00	1.55 ns		3.43	0.21 **		0.07	0.0 ns		1.3	-9.1 **		1.8	40.7 **		4.2	0.05	3550
Canada	-3.3 **		0.3	0.14 **		0.01	0.05 **		0.00	0a ·		0.00	0.00 ns		0.04	0.3 ns		0.6	2.8 **		0.4	22.3 **		2.5	0.05	17140
Poland	-3.2 **		0.5	0.25 **		0.03	0.08 **		0.00	0a ·		0.00	0.03 ns		0.18	-0.2 ns		1.1	-1.6 ns		1.3	3.5 ns		11.9	0.03	4332
Croatia	-3.1 **		0.5	0.09 **		0.02	0.05 **		0.00	-12.52 **		0.95	0.02 ns		0.32	12.3 **		2.7	0.6 ns		0.9	24.0 ns		20.6	0.15	3414
New Zealand	-3.1 **		0.6	0.11 **		0.02	0.07 **		0.00	0a ·		0.00	0.26 ns		0.21	0.0 ns		1.1	2.3 **		0.6	-4.5 ns		13.7	0.02	3493
Latvia	-3.1 **		0.6	0.15 **		0.02	0.06 **		0.00	-4.48 **		1.67	0.33 ns		0.25	2.9 *		1.3	3.8 *		1.6	-7.0 ns		16.1	0.04	3456
Tunisia	-3.0 **		0.5	0.01 ns		0.01	0.04 **		0.00	0a ·		0.00	0.04 ns		0.25	1.9 ns		1.0	-3.0 **		1.2	48.8 **		16.0	0.06	3611
Spain	-3.0 **		0.3	0.13 **		0.01	0.08 **		0.00	0a ·		0.00	0.00 ns		0.05	1.2 ns		1.2	1.2 *		0.5	11.8 **		3.2	0.04	14118
Italy	-2.5 **		0.3	0.10 **		0.01	0.01 **		0.00	-12.62 **		0.65	0.14 *		0.07	-0.9 ns		1.0	3.1 **		0.8	44.4 **		4.4	0.17	17423
Chile	-2.4 **		0.5	0.11 **		0.02	0.04 **		0.00	-2.75 ns		1.44	0.19 ns		0.25	5.4 **		1.2	-0.7 ns		0.7	26.6 ns		16.3	0.05	3988
Colombia	-2.4 **		0.5	0.06 **		0.01	0.01 **		0.00	-0.92 ns		0.63	-0.24 ns		0.17	2.2 **		0.8	-0.9 *		0.4	78.1 **		11.0	0.01	3907
Norway	-2.4 **		0.6	0.25 **		0.03	0.07 **		0.00	0a ·		0.00	0.33 ns		0.20	-3.6 ns		6.5	3.8 ns		2.0	-20.3 ns		13.3	0.02	3104
Lithuania	-2.3 **		0.6	0.12 **		0.02	0.06 **		0.00	-12.99 *		5.54	0.09 ns		0.04	-1.1 ns		1.1	1.3 ns		1.1	16.1 **		2.8	0.01	3465
Bulgaria	-2.1 **		0.8	0.01 ns		0.03	0.01 *		0.00	-0.54 ns		1.02	-0.28 ns		0.31	4.7 **		1.7	1.4 ns		1.0	75.2 **		20.0	0.05	3064
Slovak Rep	-1.9 **		0.5	0.15 **		0.02	0.07 **		0.00	-5.01 **		1.15	0.19 ns		0.29	4.3 **		1.4	1.1 ns		2.9	1.4 ns		18.8	0.13	3463
Portugal	-1.2 *		0.5	0.12 **		0.01	0.07 **		0.00	-2.77 **		0.74	-0.03 ns		0.19	2.0 ns		1.1	-0.5 ns		0.8	27.3 *		12.5	0.02	3906
Sweden	-1.2 *		0.6	0.22 **		0.02	0.06 **		0.00	-8.09 ns		4.24	-0.02 ns		0.21	5.9 **		2.4	3.5 **		1.1	7.8 ns		13.9	0.04	3427
Turkey	-1.2 **		0.4	0.02 ns		0.01	0.04 **		0.00	-7.14 **		0.81	0.35 ns		0.25	-0.2 ns		1.0	-1.3 ns		0.7	26.8 ns		16.3	0.10	3913
Austria	-1.1 ns		0.6	0.12 **		0.02	0.03 **		0.00	-8.23 **		1.20	-0.22 ns		0.32	9.1 **		1.4	3.8 **		1.1	41.7 *		21.2	0.22	3190
Iceland	-0.9 ns		0.7	0.21 **		0.03	0.06 **		0.00	0a ·		0.00	0.25 ns		0.35	2.5 ns		3.0	5.3 *		2.3	-5.8 ns		22.6	0.05	2701
Japan	-0.8 ns		0.5	0.10 **		0.02	0.03 **		0.00	-4.28 **		0.98	-0.10 ns		0.24	1.6 ns		2.0	1.4 *		0.7	36.5 *		15.9	0.08	3843
Slovenia	-0.7 ns		0.5	0.07 **		0.02	0.04 **		0.00	-9.87 **		1.08	0.17 ns		0.17	2.9 *		1.3	1.5 ns		2.1	27.6 **		11.1	0.25	4874
Mexico	-0.7 **		0.2	0.04 **		0.01	0.02 **		0.00	-1.82 **		0.36	0.00 ns		0.02	0.9 ns		0.5	-1.6 **		0.3	57.0 **		1.3	0.08	23077
Greece	-0.5 ns		0.5	0.11 **		0.02	0.06 **		0.00	-8.64 **		1.06	0.18 ns		0.20	-0.4 ns		1.6	-0.9 ns		0.7	13.0 ns		13.4	0.05	3384
Indonesia	-0.4 ns		0.4	0.00 ns		0.01	0.02 **		0.00	-6.18 **		1.69	-0.10 ns		0.22	2.9 ns		1.9	2.4 ns		1.9	56.5 **		14.3	0.29	7309
Jordan	-0.3 ns		0.5	0.05 **		0.01	0.05 **		0.00	0a ·		0.00	-0.23 ns		0.15	-1.2 ns		0.7	-1.3 **		0.5	57.0 **		9.6	0.02	4457
Thailand	-0.2 ns		0.6	0.04 *		0.02	0.07 **		0.00	-3.88 **		1.26	0.04 ns		0.04	2.1 ns		1.2	-0.4 ns		1.2	24.2 **		2.4	0.05	4109
Czech Rep	-0.2 ns		0.5	0.20 **		0.02	0.07 **		0.00	-8.22 **		1.01	-0.21 ns		0.20	5.3 **		1.1	0.0 ns		1.0	18.3 ns		12.9	0.10	3777
Denmark	-0.1 ns		0.6	0.18 **		0.02	0.09 **		0.00	0a ·		0.00	0.10 ns		0.23	2.2 ns		1.8	-0.3 ns		1.4	-14.5 ns		15.0	0.04	2820
Ireland	0.1 ns		0.6	0.15 **		0.02	0.08 **		0.00	-6.84 **		2.33	-0.34 ns		0.23	3.1 ns		1.7	0.5 ns		0.6	27.2 ns		15.1	0.03	3639
Hungary	0.1 ns		0.6	0.08 **		0.02	0.05 **		0.01	-8.16 **		1.15	0.38 ns		0.32	14.4 **		2.0	-0.1 ns		1.0	-8.4 ns		21.2	0.14	2892
Australia	0.3 ns		0.3	0.12 **		0.01	0.09 **		0.00	-5.99 **		0.52	-0.03 ns		0.07	1.4 *		0.7	1.6 **		0.3	4.4 ns		4.6	0.02	11167
UK	0.7 *		0.3	0.08 **		0.01	0.08 **		0.00	0a ·		0.00	-0.12 ns		0.07	1.1 ns		0.8	4.3 **		0.5	11.9 *		4.9	0.05	10158
Finland	1.0 ns		0.6	0.21 **		0.02	0.09 **		0.00	0a ·		0.00	0.08 ns		0.24	0.9 ns		1.7	3.8 *		1.9	-22 ns		16.0	0.03	3456
Belgium	1.3 **		0.4	0.08 **		0.01	0.05 **		0.00	-12.00 **		0.53	0.40 **		0.15	0.5 ns		0.9	4.8 **		1.5	-0.2 ns		9.8	0.09	6714
Netherlands	1.5 **		0.5	0.07 **		0.02	0.06 **		0.00	-5.86 **		0.72	0.09 ns		0.22	2.4 ns		1.3	5.4 **		1.7	11.2 ns		14.8	0.09	4104
Switzerland	1.7 **		0.4	0.17 **		0.02	0.05 **		0.00	-2.50 ns		1.31	0.16 ns		0.09	2.2 **		0.7	12.8 **		1.8	-1.7 ns		6.1	0.09	9474
Germany	1.9 **		0.6	0.19 **		0.02	0.06 **		0.00	-2.57 ns		2.62	0.07 ns		0.24	4.6 **		1.1	1.4 ns		1.0	-3.1 ns		15.4	0.09	2971
Korea	3.6 **		0.4	0.09 **		0.02	0.05 **		0.00	-3.70 **		0.69	0.21 ns		0.16	0.5 ns		0.7	0.2 ns		0.5	11.8 ns		10.7	0.03	4659
Hong Kong	3.7 **		0.5	0.08 **		0.02	0.05 **		0.00	-1.23 ns		1.19	0.23 ns		0.19	3.9 *		1.6	0a ·		0.0	4.3 ns		12.5	0.01	3814
Ch. Taipei	5.1 **		0.4	0.07 **		0.01	0.06 **		0.00	-2.76 **		0.56	0.12 ns		0.14	3.4 **		0.7	-0.3 ns		0.5	9.8 ns		9.1	0.03	7077

** significantly different from zero at $p=0.01$; * significantly different from zero at $p=0.05$; 0* variable not available

^The model controlled also for the home library size and speaking primarily a non-national language at home.

Residuals are weighted by std_wgt.

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Joanna Sikora

From: Brian Denman [bdenman@une.edu.au]
Sent: Monday, 20 October 2008 3:14 PM
To: Joanna Sikora; Lawrence Saha
Subject: anzcies 08 paper review complete

Dear Joanna and Larry,

After a reasonable turnaround, we have received two anonymous external reviews regarding your ANZCIES submission. Although the reviewers agree that your topic is highly relevant and appropriate, both indicated that there were a few minor things in the paper that needed to be addressed. Based on their reviews and our own reading of your paper, we want to give you the chance to read the reviews and see if you are willing to make substantial revisions to the manuscript based on their recommendations.

Rather than summarise the reviewers' comments, I have pasted each reviewer's comments below so you can see exactly what they are. After you've had a chance to see what the reviewers say, let us know by email whether or not you would like to address these comments in a revised manuscript. If you are willing/able to revise the paper, we will need the revised version at your earliest convenience. My hope is that you will revise the paper, as it is very fitting for the conference. Please be sure to know that your paper HAS been approved for presentation at ANZCIES 2008 regardless.

Finally, I personally am very pleased with your co-authored submission and subsequent feedback. I hope you will view the feedback constructive rather than critical.

All best,

Brian

Reviewer 1

Title of Paper: Gender and professional career plans of high school students in comparative perspective

Over-all Referee recommendation: Please type YES to one of the following:

Accept as refereed? YES
 Accept as non-refereed?
 Accept with minor revision? (just one suggestion below)
 Accept with major revision?
 Reject?

Referee Comments: (for provision to editors and author/s. Names of reviewers will be withheld to maintain anonymity)

Please frame your comments in relation to :

o relevance to conference theme

This paper is particularly relevant to the conference theme. The paper discusses the data from the 2006 round of OECD's PISA results looking at a particular aspect of the data: gender and career plans of high school students, comparing across countries

o scholarship in terms of reference to other research, practice or theory

The authors establish their familiarity with the material, using relevant and up to date research.

There is one concern with the discussion of the results, in that where the authors refer to ALL nations, presumably they are referring to all nations in their study. It would be useful to include a comment that the countries and regions at the lower end of the scale are not included and may possibly reveal different results were they to be included. E.g. on page 4, after the sub-heading Data...and before the minor heading Measurement, suggest the authors change that sentence that claims the data are suitable and relevant to discussing the economic disparities between countries. Yes, the paper does this admirably within the limits of the 50 countries. However, given that all the countries studied are either in the developed high income countries, or they are dealing with middle-income levels, there needs to be a caveat that low income countries may not reveal the same interesting results for the small percentage of students reaching the end of high school (of course, they may but we don't have that information!)

o clarity of expression

2/12/2008

Very clear, very interesting. Good use of your Hypotheses to structure the paper and discuss the data. (Note spelling of "born" change to "borne" p5 line 7)

o **contribution to the field of comparative and international education**

A good follow up to a previous article, and an excellent contribution to the issues.

If you believe this paper should be considered for the *International Education Journal: Comparative Perspectives*, please include this in your commentary.
YES.

Reviewer 2

Accept as refereed? YES

Accept as non-refereed?

Accept with minor revision?

Accept with major revision?

Reject?

Referee Comments: (for provision to editors and author/s. Names of reviewers will be withheld to maintain anonymity)

Please frame your comments in relation to :

o **relevance to conference theme**

A strong comparative and international element using OECD PISA international data set (2006) - of contemporary interest and relevance.

o **scholarship in terms of reference to other research, practice or theory**

Reference is made to other research, although the theoretical framing is not as well developed as it might be. Limitations of the method and assumptions (some potentially severe) are largely acknowledged in the paper, and may be the source of some interesting discussion.

o **clarity of expression**

Well written, with almost no technical errors. Large tables might be rendered more 'user friendly' by highlighting certain selected examples for more detailed discussion in the body of the paper.

o **potential for effective presentation**

The quantitative design and analysis will be opaque to some, and therefore will need clear and careful explanation in the presentation. Perhaps a handout of key tables and highlighting of selected examples for consideration, or the construction of more limited tables of exemplars - as existing tables will not present well in powerpoint?

o **contribution to the field of comparative and international education**

Should raise pertinent discussion, including, perhaps, commentary on the trends towards the use of such data sets for international comparisons ie looking at the phenomenon of PISA testing itself.

Worthy of publication, perhaps with some consideration of points made above.

--

Dr Brian D Denman

President, ANZCIES

Editor-in-Chief, *International Education Journal: Comparative Perspectives*

School of Business, Economics, and Public Policy

University of New England

Armidale NSW 2351

Australia

+61 2 6773-2269 telephone

+61 2 6773-3363 fax

bdenman@une.edu.au

<http://www.anzcies.org/>

<http://www.iejcomparative.org/>