Cultural Background, Student Motivation and Effort Evidence from Australia

Michele Battisti (Glasgow)
Stephanie Noronha (Sydney)
Marian Vidal-Fernandez (Sydney)

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Introduction

- Soft skills, including motivation, conscientiousness and effort, play a crucial role for a variety of educational and economic outcomes
- The interaction between cultural diversity and non-cognitive skills plays a critical role in academic achievement and labor market outcomes
- Isolating the contributions of cultural diversity is very challenging in cross-country studies (knowing what culture is, also very challenging)

This Paper

Are there differences in test behaviour (effort) and perceptions that depend on background, in a within-country context?

- The role of cultural distance on objective and subjective measures of effort of 15-year olds in Australia (common institutional environment)
- We measure cultural distance as country of origin of parents and language proximity to English
- Culturally diverse students perceive themselves as more motivated, hardworking and contentious def and have higher achievement motivation
- They exhibit if anything lower levels of observed effort in PISA

Cultural Diversity in Australia

- Around 30 percent of population is foreign born ▸ OECD ▸ OWiD Map1, 51.5 percent of the population has a parent born overseas (Australian Census 2021)
- Main countries of origin: UK, India, China, New Zealand, Philippines ▸ OWiD Map2
- Migration policy after 1966 has been based on strong selection criteria to attract highly educated migrants

Transmission of "Cultural" Traits

- Culture is linked to the development of social attitudes, educational attainment, income redistribution (Fernandez 2010)
- Culture is persistent and affects education outcomes of immigrant students in the US (Figlio et al. 2019)
- Controversial evidence by Sgroi at al. (2021) on regional differences in trust and public good provision in Italy depending on indirect measures of identity

Motivation, Effort, and Cultural Differences

- Student motivation and effort matter for academic and labor outcomes, with conscientiousness and effort predicting performance and lifetime earnings (Kappe and van der Flier 2012; Gensowski 2018)
- Cross-cultural studies (Akyol et al. 2021) reveal that low-stakes assessments might not accurately reflect student abilities due to varying levels of effort and seriousness
- Cross-cultural differences in achievement motivation and responses to incentives are influenced by cultural values and beliefs (Anaya and Zamarro 2020; Gneezy et al. 2017). Within-country variation in effort much smaller than cross country (PISA).

Measurement and Definition of Cultural Diversity

- Literature uses proxies such as nationality, country of birth, and language spoken at home (Ottaviano and Peri 2005; Alesina et al. 2003)
- Linguistic distance and immigrant success (Adsera and Pytlikova 2012)
- Recent approaches to measure cultural values using digital platform data to include things like diet, sport, political, TV preferences (Obradovich et al. 2022)

Data

- Longitudinal Survey of Australian Youth (LSAY) linked with international PISA assessment data in 2015
- The LSAY dataset includes comprehensive demographic information, Big Five personality traits, socioeconomic status, NAPLAN test scores
- PISA provides data on academic achievement, self-reported measures of motivation, and can be used to get measures of effort in the test (Anaya and Zamarro 2020)

Cultural Distance

- A measure of foreignness to Australia, actually
- Main measure: mother and/or father born overseas (around 20 percent of sample). In addition, we use linguistic distance, and can use language spoken at home
- Among those with at least one foreign-born parent, around 60 percent from non-English-speaking countries

Soft Skills

- From LSAY, Big Five Personality traits, including consciousness, as well as NAPLAN test scores (higher for those with foreign-born parents)
- From PISA, achievement motivation index and observed measured of effort
- Effort in PISA: rapid-guessing behaviour (Anaya and Zamarro 2020), non-reponse rates in background survey

Differences in Year 9 Test Scores

Mothers' Country of Origin

	Australian-born	Foreign English Speaking	Foreign Non-English Speaking	Difference
NAPLAN scores				
Reading	0.02	0.10	0.25	0.18**
	(0.98)	(0.98)	(0.99)	
Writing	-0.02	0.11	0.31	0.26***
	(0.99)	(0.89)	(0.87)	
Spelling	-0.05	0.03	0.51	0.41***
	(0.97)	(0.99)	(0.95)	
Grammar	0.01	0.06	0.34	0.24***
	(0.98)	(1.01)	(1.00)	
Numeracy	-0.02	0.07	0.49	0.37***
	(0.93)	(0.95)	(1.16)	
Observations	1,774	177	320	

Note: Summary statistics weighted. Difference test is between Australian and overseas born individuals.
Statistical significance: ***1 percent **5 percent *10 percent.

Motivation and Test Behaviour

Mothers' Country of Origin

	Australian-born	Foreign English Speaking	Foreign Non-English Speaking	Difference
		Self-reported motivation		
Achievement motivation index	0.25	0.38	0.55	0.23***
	(0.97)	(0.96)	(0.88)	
Big Five Personality Score - Conscientiousness	-0.05	-0.07	0.29	0.22***
	(1.00)	(0.94)	(0.96)	
		PISA test behaviour		
Item non-response rate	0.05	0.05	0.05	-0.01
	(0.11)	(0.1)	(0.11)	
Rapid guessing: 10% threshold	0.02	0.02	0.02	0.00
	(0.04)	(0.04)	(0.03)	
Rapid guessing: 5% threshold	0.00	0.01	0.01	0.01**
	(0.02)	(0.02)	(0.01)	
Observations	6,656	565	1,021	

Note: Summary statistics weighted. Difference test is between Australian and overseas born individuals. Statistical significance: ***1 percent **5 percent *10 percent.

Motivation and Test Behaviour

Fathers' Country of Origin

	Australian-born	Foreign English Speaking	Foreign Non-English Speaking	Difference
		Self-reported motivation		
Achievement motivation index	0.25	0.35	0.58	0.24***
	(0.97)	(0.96)	(0.87)	
Big Five Personality Score - Conscientiousness	-0.03	-0.08	0.20	0.14**
	(1.00)	(1.08)	(0.94)	
		PISA test behaviour		
Item non-response rate	0.05	0.05	0.05	-0.01**
	(0.11)	(0.1)	(0.1)	
Rapid guessing: 10% threshold	0.02	0.02	0.02	0.00
	(0.04)	(0.04)	(0.03)	
Rapid guessing: 5% threshold	0.00	0.01	0.01	0.01**
	(0.02)	(0.02)	(0.02)	
Observations	6,656	565	1,021	

Note: Summary statistics weighted. Difference test is between Australian and overseas born individuals. Statistical significance: ***1 percent **5 percent *10 percent.

Empirical Strategy

Main regression equation

$$y_{iscr} = \beta_0 + \beta_1 CDM_i + \beta_2 CDF_i + \alpha X_i' + \alpha_s + \alpha_c + \alpha_r + \epsilon_{iscr} \quad (1)$$

- y_{iscr} measures motivation, conscientiousness score, and PISA test behaviour
- α_r, α_s, and α_c represent fixed effects for region (urban/rural), state and school sector (Catholic, government, independent)
- CDM_i and CDF_i denote the cultural distance of a mother and father's country of origin (country exposure and language proximity)
- X includes age, gender, indigenous status, dummy for single-parent HH
- in some specification, dummies for born overseas in an English (ESC) or non-English-speaking country (NESC), language proximity index, English is the main language spoken at home

Achievement Motivation Index

	(1)	(2)	(3)
Panel A: Country of origin			
Mother born overseas	-0.00	-0.07	
	(0.06)	(0.07)	
Father born overseas	0.21***	0.15*	
	(0.06)	(0.07)	
Mother born overseas*Father born overseas		0.15	
		(0.10)	
Panel B: English-speaking country			
Mother born in ESC			0.10
			(0.08)
Mother born in NESC			-0.09
			(0.07)
Father born in ESC			0.19*
			(0.08)
Father born in NESC			0.26***
			(0.07)
Year 9 NAPLAN	Yes	Yes	Yes
ESCS Index	Yes	Yes	Yes
Number of observations	2297	2297	2297

Conscientiousness Score

	(1)	(2)	(3)
Panel A: Country of origin			
Mother born overseas	0.21**	0.16	
	(0.06)	(0.08)	
Father born overseas	0.08	0.03	
	(0.08)	(0.09)	
Mother born overseas*Father born overseas		0.14	
		(0.14)	
Panel B: English-speaking country			
Mother born in ESC			0.02
			(0.08)
Mother born in NESC			0.34***
			(0.08)
Father born in ESC			-0.03
			(0.10)
Father born in NESC			0.09
			(0.10)
Year 9 NAPLAN	Yes	Yes	Yes
ESCS Index	Yes	Yes	Yes
Number of observations	1715	1715	1715

Item Non-Response

	(1)	(2)	(3)
Panel A: Country of origin			
Mother born overseas	0.01	0.03	
	(0.03)	(0.04)	
Father born overseas	-0.03	-0.01	
	(0.03)	(0.03)	
Mother born overseas*Father born overseas		-0.05	
		(0.05)	
Panel B: English-speaking country			
Mother born in ESC			0.03
			(0.04)
Mother born in NESC			0.01
			(0.03)
Father born in ESC			-0.00
			(0.04)
Father born in NESC			-0.04
			(0.03)
ESCS Index	Yes	Yes	Yes
Number of observations	8242	8242	8242

Rapid Guessing Behaviour

	(1)	(2)	(3)
Panel A: Country of origin			
Mother born overseas	0.07	0.01	
	(0.04)	(0.04)	
Father born overseas	0.04	-0.03	
	(0.04)	(0.04)	
Mother born overseas*Father born overseas		0.16*	
		(0.08)	
Panel B: English-speaking country			
Mother born in ESC			0.01
			(0.05)
Mother born in NESC			0.11*
			(0.04)
Father born in ESC			-0.00
			(0.04)
Father born in NESC			0.05
			(0.05)
Year 9 NAPLAN	Yes	Yes	Yes
ESCS Index	Yes	Yes	Yes
Number of observations	2304	2304	2304

Robustness Checks

Our main results are not significantly affects by adding

- Parental involvement in child's educational efforts and performance (Doepke and Zilibotti 2017)
- Feeling of belonging at school (from PISA)
- Test anxiety (again from PISA)

Concluding

- Data from 15-year old students shows that culturally diverse students perceive themselves as harder working, more motivated and more conscientious
- However, differences is test behaviour are smaller, and if anything go the opposite way
- Differences in scores in low-stake tests may be in part given by differences in test-taking behaviour
- PISA, PIAAC and others measure a mix of skills and intrinsic motivation

(Some of the Many) Limitations and Next Steps

- Compare results to PISA of origin countries
- Roles of norms/culture at parents' origin country: analysis by country of origin of parents, using the World Value Survey
- Roles of mothers and fathers
- Not too much we can say on specific mechanisms
- 1.5 generation vs second generation

Thanks a lot for your attention and feedback!