A cross cultural examination of the relative age effect in professional rugby union

Philip Kearney

Department of Sport & Exercise Sciences, University of Chichester

INTRODUCTION

The relative age effect (RAE) refers to the higher representation of players born early in the year on youth and professional sporting teams (Cobley, Baker, Wattie, & McKenna, 2009).

Although the RAE is a well-established phenomenon across a range of sports, relatively little research has examined the RAE in rugby union (Delorme, Boiche, & Raspaud, 2009).

In particular, the influence of sport culture specific to the country under investigation has received limited attention (Lidor, Côté, Arnon, Zeev, & Cohen-Moaz, 2010).

Establishing an RAE in senior professional sport would suggest an underlying problem in the youth development system of that country.

PROJECT AIMS

- To examine whether an RAE existed in each of the eight top ranked countries in rugby during the 2014/15 season.
- To examine whether RAEs within a country are moderated by the skill level of the players.

METHODS

Participants: Dates of birth were available for a total of 3726 players (364 Australian, 646 English, 779 French, 216 Irish, 546 New Zealanders, 135 Scots, 773 South Africans and 267 Welsh).

Procedure: Participant birth dates were collected from a rugby statistics website (http://www.itsrugby.co.uk/) and validated using team rosters available on the official websites of the relevant clubs.

Super Rugby, English Premiership, French Top 14 and Pro12 were classified as Top Tier tournaments. The Currie Cup, ITM Cup, National Rugby League, English Championship and French Pro D2 were classified as Second Tier tournaments. No second tier tournaments were identified for Ireland, Wales or Scotland.

Data Analysis: For each nation and playing level, chi-squared goodness of fit tests were used to examine the frequency of players born in each quarter relative to a predicted even distribution.

RESULTS

Table 1

*Percentage of second tier professional players born in each quarter of the year. Shading and * indicates $p < 0.05$.*

Nationality	Quarter of Birth			
	First	Second	Third	Fourth
Australia* (N = 164)	29.3%	30.5%	23.2%	17.1%
England (N = 297)	28.6%	23.9%	24.6%	22.9%
France* (N = 418)	28.7%	27.3%	25.6%	18.5%
New Zealand (N = 235)	26.8%	26%	22.1%	25.1%
South Africa* (N = 492)	33.5%	23.8%	24.2%	18.5%

RESULTS (continued)

No RAE observed: Irish, Scottish and Welsh samples.

RAE observed in second tier, but not top tier samples: English (χ^2 = 15.67, p = 0.001, w = 0.21) and New Zealand (χ^2 = 11.50, p = 0.009, w = 0.26) samples.

RAE observed in top tier, but not second tier samples: French (χ^2 = 11.26, p = 0.01, w = 0.16) and Australian (χ^2 = 8.01, p = 0.04, w = 0.22) samples.

RAE observed in both top and second tier samples: South African top (χ^2 = 9.46, p = 0.02, w = 0.26) and second tier players (χ^2 = 24.98, p < 0.001, w = 0.23).

Table 2

*Percentage of top tier professional players born in each quarter of the year. Shading and * indicates $p < 0.05$.*

Nationality	Quarter of Birth			
	First	Second	Third	Fourth
Australia (N = 114)	25.4%	29.8%	26.3%	18.4%
England* (N = 346)	34.1%	22%	22.5%	21.4%
France (N = 361)	26.4%	27.2%	22.8%	23.6%
Ireland (N = 149)	24.2%	21.5%	30.2%	24.2%
New Zealand* (N = 171)	35.7%	22.8%	21.6%	19.9%
Scotland (N = 114)	27.2%	18.4%	26.3%	28.1%
South Africa* (N = 137)	32.8%	29.2%	21.2%	16.8%
Wales (N = 230)	23.5%	27.4%	27%	22.2%

CONCLUSIONS

- **The presence of an RAE in professional rugby union is influenced by both player nationality and playing level.**
- **The existence of an RAE in senior professional rugby suggests an underpinning problem at the youth level in selected countries.**

- **Future research should examine youth coaches' awareness of, and strategies for addressing, RAEs.**

REFERENCES

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Contact: p.kearney@chi.ac.uk @kearney_phil