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Relative Age Effect among Youth Male Football Players in Singapore

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Introduction

As the primary objective of professional football academies around the world is to identify and develop talents. Studies had identified that one of the many aspects that may influence the scope of talent identification in football: Relative Age[1,3].

Relative Age (RA): Determined by the competition age group's cut-off date and date of birth of the athlete.

Relative Age Effect (RAE): An over-representation of players born earlier in the competition year Age[2,3].

Objective

To examine RAE on player selection in youth developmental league of professional football in Singapore and its relationship with anthropometric measurements, playing positions and starting line-ups.

Visualizing RAE

Method

Sample

Centre of Excellence (COE) League, 2019 season participants (Overall)

n = 409

- Under 15 (U15) *n = 261*
- Under 18 (U18) *n = 148*

Data collection

Player's data and match information were collected before and after the match through:

- Match reports
- Portable weighing scale & stadiometer (anthropometry)

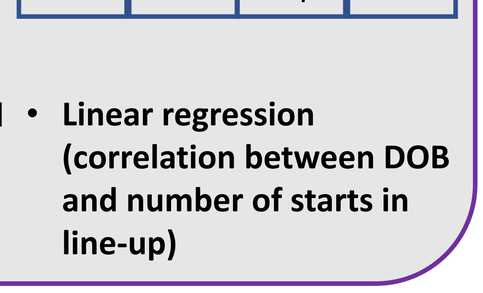
Variables

- Date of Birth (DOB)
- Weight & height
- Playing position
- Starting line-up

Data Analysis

RAE:

- Grouped into Birth Quarters (Q1–Q4).
- Cut-off date – 1st of January
- 3 sample groups (U15, U18 & Overall)

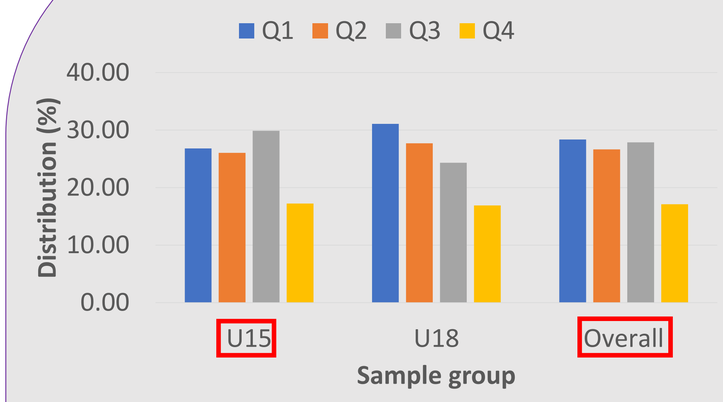


Statistical test?

- Chi-square test (Observed vs Expected distribution)
- One-way ANOVA and Tukey HSD (anthropometric differences)
- Linear regression (correlation between DOB and number of starts in line-up)

Results

Distribution of Players by Birth Quarters



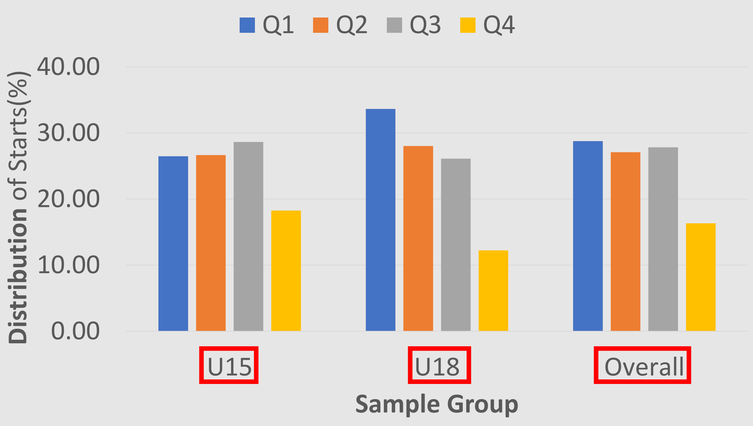
U15: $\chi^2 = 9.24$, $p \leq 0.05$; Overall: $\chi^2 = 13.82$, $p \leq 0.01$

*Defender Position: U18: $\chi^2 = 11.51$, $p \leq 0.01$; Overall: $\chi^2 = 11.62$, $p \leq 0.01$

Weight & Height of Players by Birth Quarters

No significant statistical differences were identified.

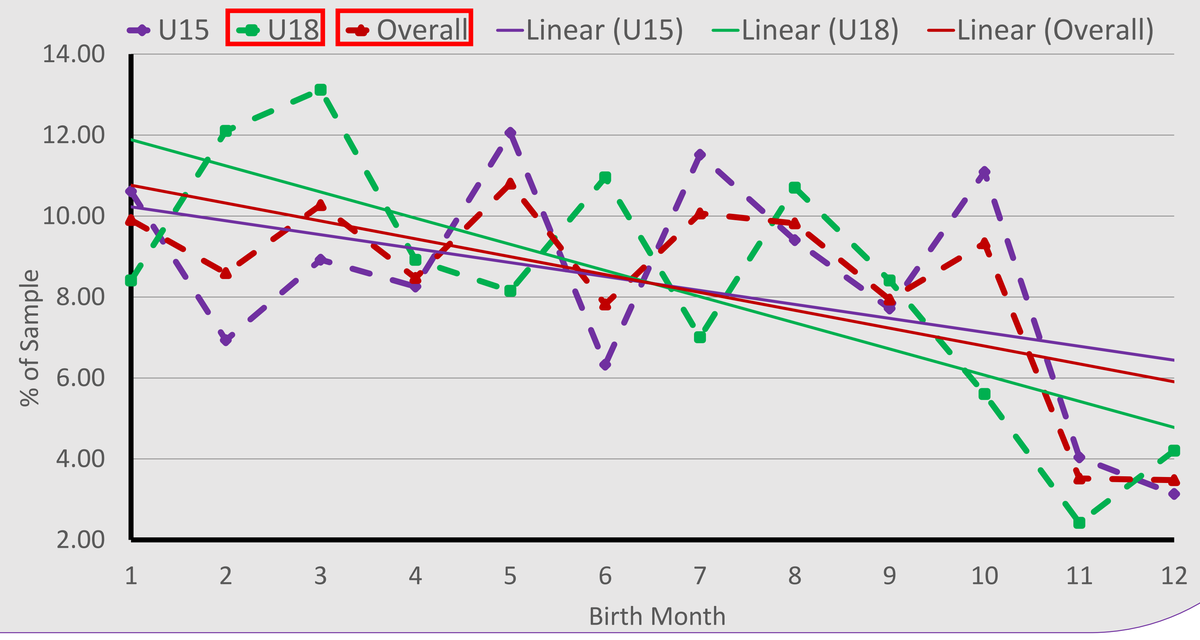
Proportion of Starts by Birth Quarters



U15: $\chi^2 = 42.07$, $p \leq 0.000$;
U18: $\chi^2 = 77.86$, $p \leq 0.000$;
Overall: $\chi^2 = 99.46$, $p \leq 0.000$

U18: $r = 0.73$, $p \leq 0.01$;
Overall: $r = 0.65$, $p \leq 0.05$

Correlation between Proportion of Starts & Month of Birth



Conclusions

- RAE was identified in youth developmental teams of Singapore professional football clubs.
- Selection bias towards chronologically older players exist at the youth level while also noting the trend fades as age group gets older.
- While height and weight did not differ significantly, the defender position was found to consist of players born earlier in the competition year.
- Older players were more often selected in starting line-ups, which may lead to less playing time for younger players.
- This phenomenon may cause younger players to quit the sport early. A missed opportunity for teams to uncover potential talents.

Reference: (1) Sarmento, H., Anguera, M. T., Pereira, A., & Araújo, D. (2018). Talent Identification and Development in Male Football: A Systematic Review. *Sports Medicine, 48*(4), 907-931. doi:10.1007/s40279-017-0851-7. **(2)**Sierra-Díaz MJ, González-Víllora S, Pastor-Vicedo JC, Serra-Olivares J. Soccer and Relative Age Effect: A Walk among Elite Players and Young Players. Sports (Basel). 2017 Jan 11;5(1):5. doi: 10.3390/sports5010005. PMID: 29910365; PMCID: PMC5969014.**(3)**Helsen, W. F., van Winckel, J., & Williams, A. M. (2005). The relative age effect in youth soccer across Europe. *Journal of Sports Sciences*, *23*(6), 629–636. https://doi.org/10.1080/02640410400021310