

Exploring Regression to the Mean in an Australian Cohort of Young Melbourne Heavy Drinkers

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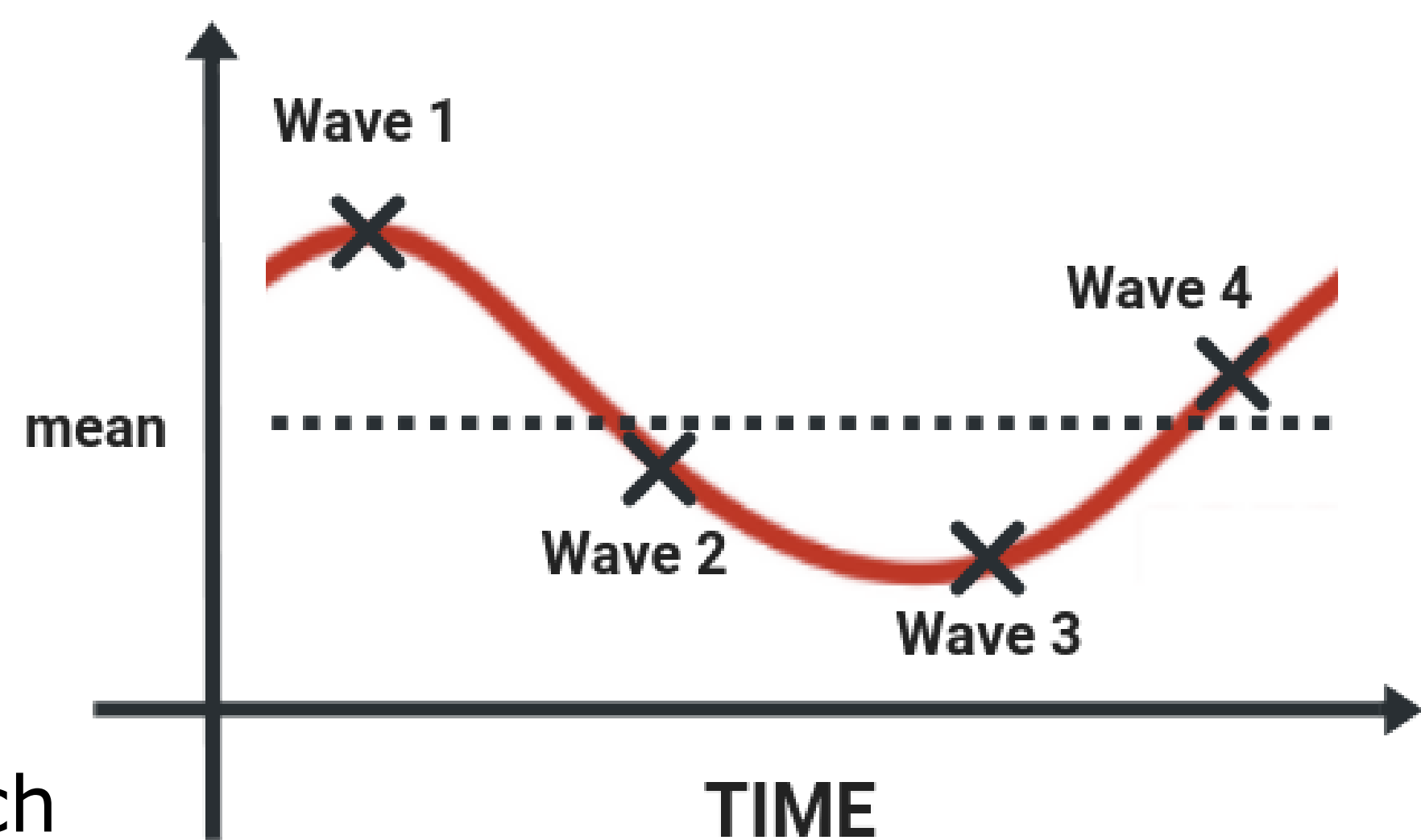
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Introduction

Typical measures of alcohol consumption, such as Average Weekly Consumption, display Regression to the Mean (RTM) in longitudinal studies¹.

RTM is a statistical phenomenon whereby observations of a group tend towards the mean of that group over repeated measures.



There is new interest in Peak Consumption, which estimates total amount of consumption from single drinking occasions. Papers have found peak measures to be a good predictor of alcohol related harm², but limited studies have examined whether it is prone to RTM.

Aim

This exploratory study aimed to examine whether peak measures are susceptible to RTM

Methods

Data were drawn from three waves (2012, 2013, 2015) of the Young Adults and Alcohol Study (YAAS)³, a prospective cohort study of young Melbourne drinkers. Consumption was calculated in Australian Standard Drinks (ASD):

- Average Weekly Consumption was derived from past-year graduated quantity-frequency questions
- Peak Consumption was estimated from self-reports of the total amount consumed over a single heavy drinking occasion

Participant Characteristics:

- Total n = 186 over three waves
- Aged 18 to 25 in 2012
- Heavy drinkers, selected based on peak consumption over one single drinking occasion
- Tercile categorisation based on 2012 ASD amounts into "Low", "Medium", "High" (33% each)

	Male ♂	Female ♀
n	90	96
Selection Criteria	≥11ASD	≥8ASD

Survey Method	Low	Medium	High
Average Weekly Consumption	< 9.7	9.7 – 23.4	> 23.4
Peak Consumption	< 6.6	6.6 – 14.8	> 14.8

Results

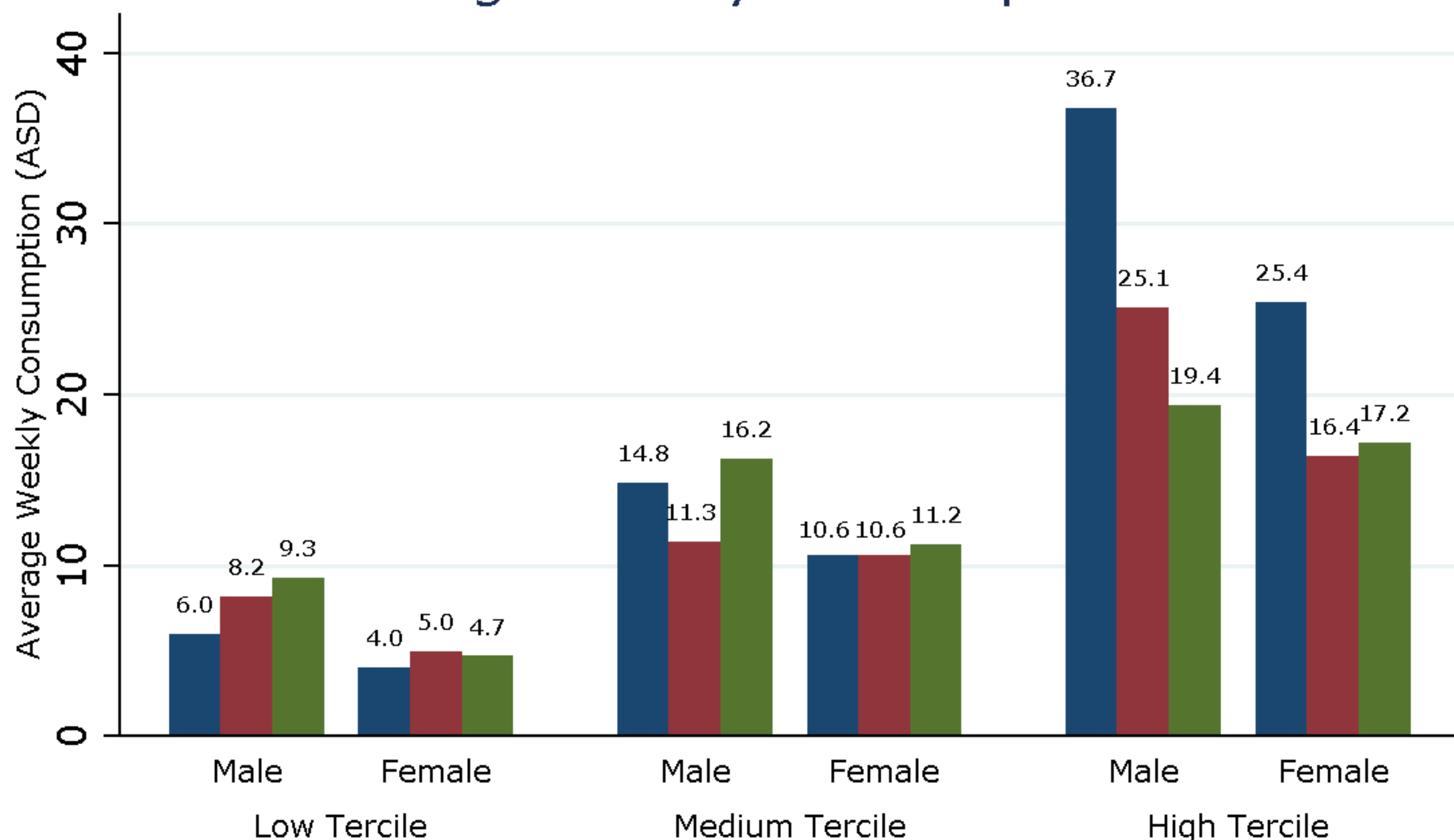
RTM-like patterns in Average Weekly Consumption were observed for sex and consumption tercile:

- ↗ Low Tercile drinkers increased their consumption
- Medium Tercile drinkers remained relatively consistent
- ↘ High Tercile drinkers decreased their consumption

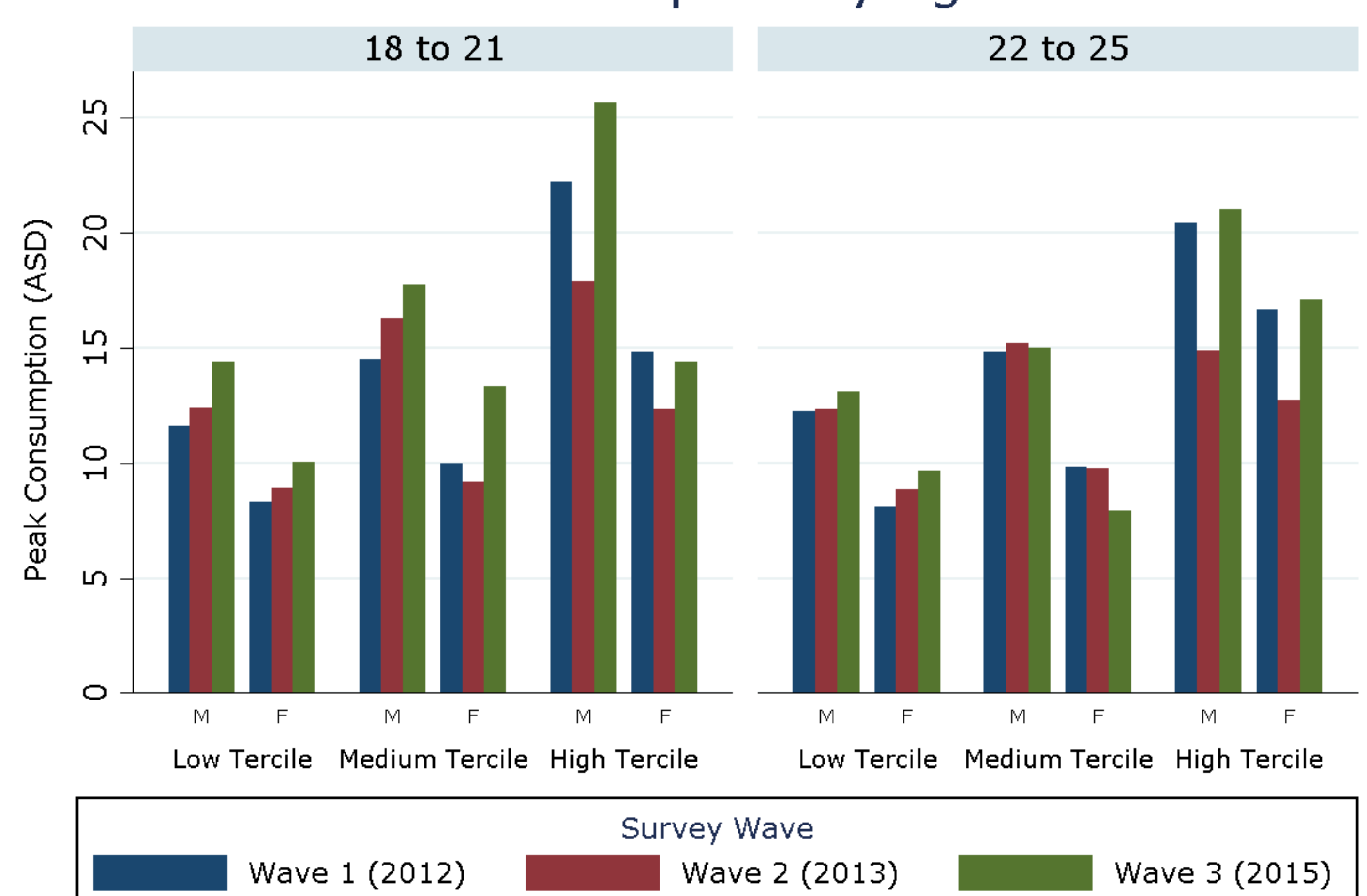
Little evidence of RTM in Peak Consumption, but an effect of age was detected:

- ↗ The younger age group (18 to 21 years) displayed a general increase in alcohol consumption
- The older age group (22 to 25 years) remained relatively consistent

YAAS Average Weekly Consumption over Time



YAAS Peak Consumption by Age over Time



Discussion

Our exploratory findings suggest that **Peak Consumption** may be less susceptible to RTM than Average Weekly Consumption amongst heavy drinkers, suggesting its utility in measuring alcohol consumption trajectories.

Age effects observed in Peak Consumption may be explained by younger drinkers moving towards the age of maximum ASD consumption, whereas older drinkers are moving away from it⁴. This may need further exploration.

References

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