

UNDER PRESSURE: HOW GAME SITUATIONS AFFECT SWING MECHANICS

By Anthony Babich, Farzan Ustad, and Andy Wang





WHY ANALYZE PRESSURE?





DATA AND VARIABLES



CALCULATE THE PRESSURE SCORE

- Which inning?
- Number of strikes and balls
- Current scores for both teams
- Number of outs
- If there are players on each base
- Batting score
- Runner up
- ...



bat_score_diff – difference between the batter's team score and the fielding team's score

close_game – indicates games with a score difference of two runs or fewer

losing_or_tied – shows when the batter's team is tied or behind

late_game – marks plate appearances in the 7th inning or later

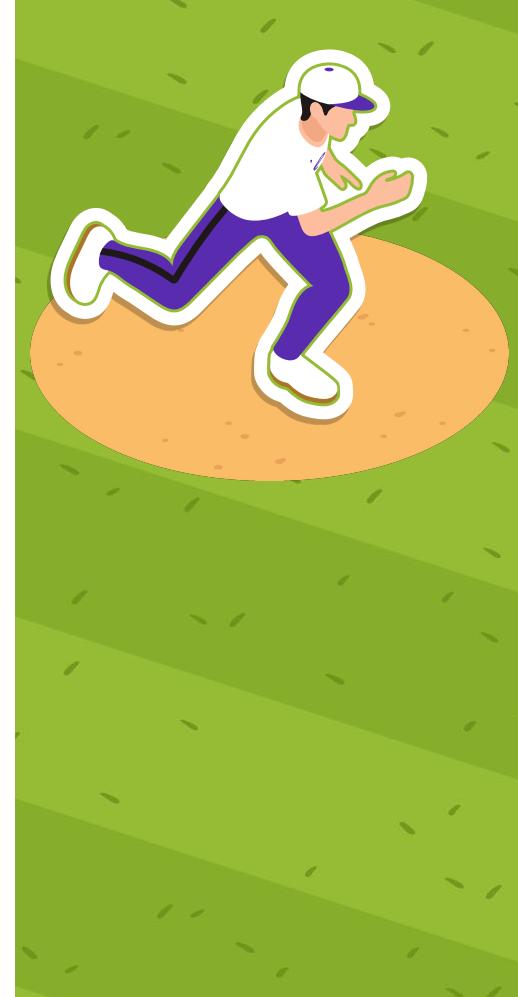
runners_on – identifies situations where any base is occupied

two_outs – indicates that there are two outs in the inning

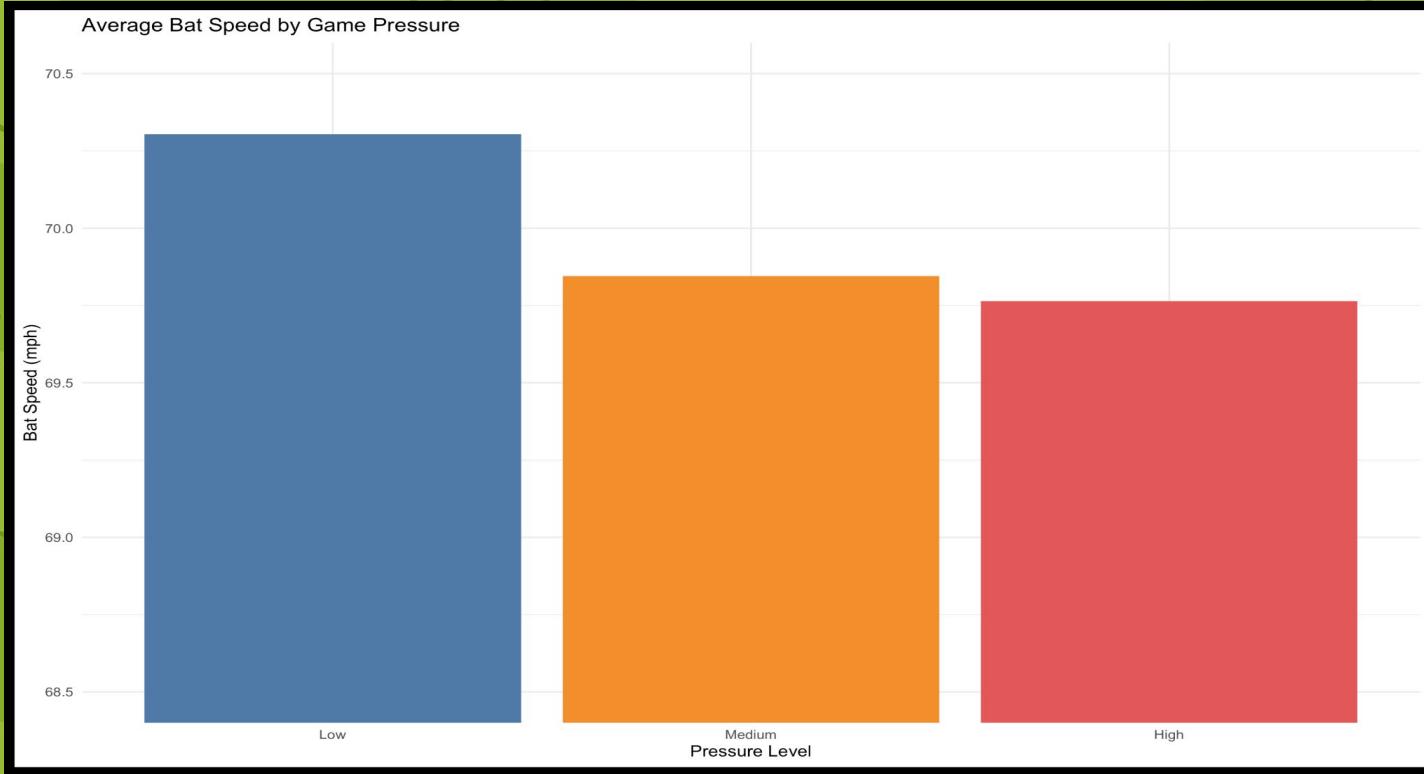
two_strikes – marks at-bats where the batter has two strikes

pressure_raw – total count of these pressure conditions (range 0-6)

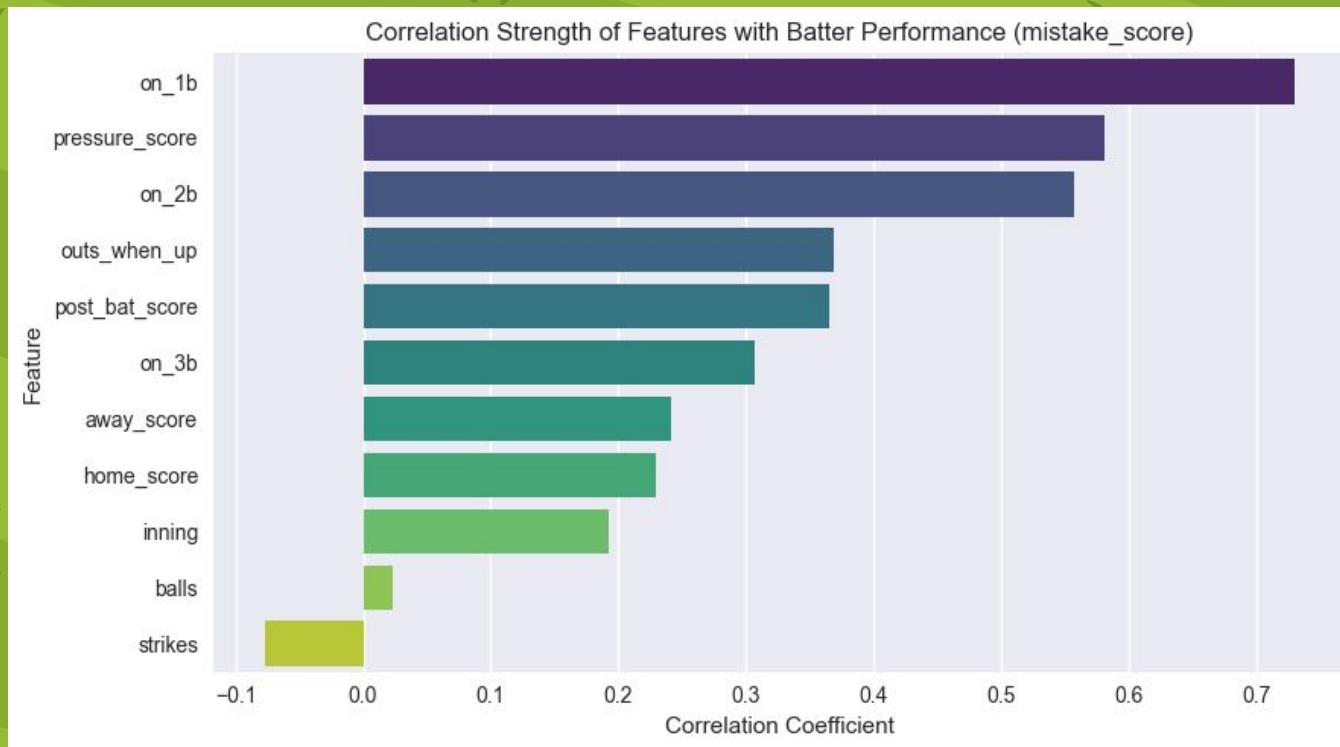
pressure_lvl – categorical variable summarizing pressure level as Low, Medium, or High



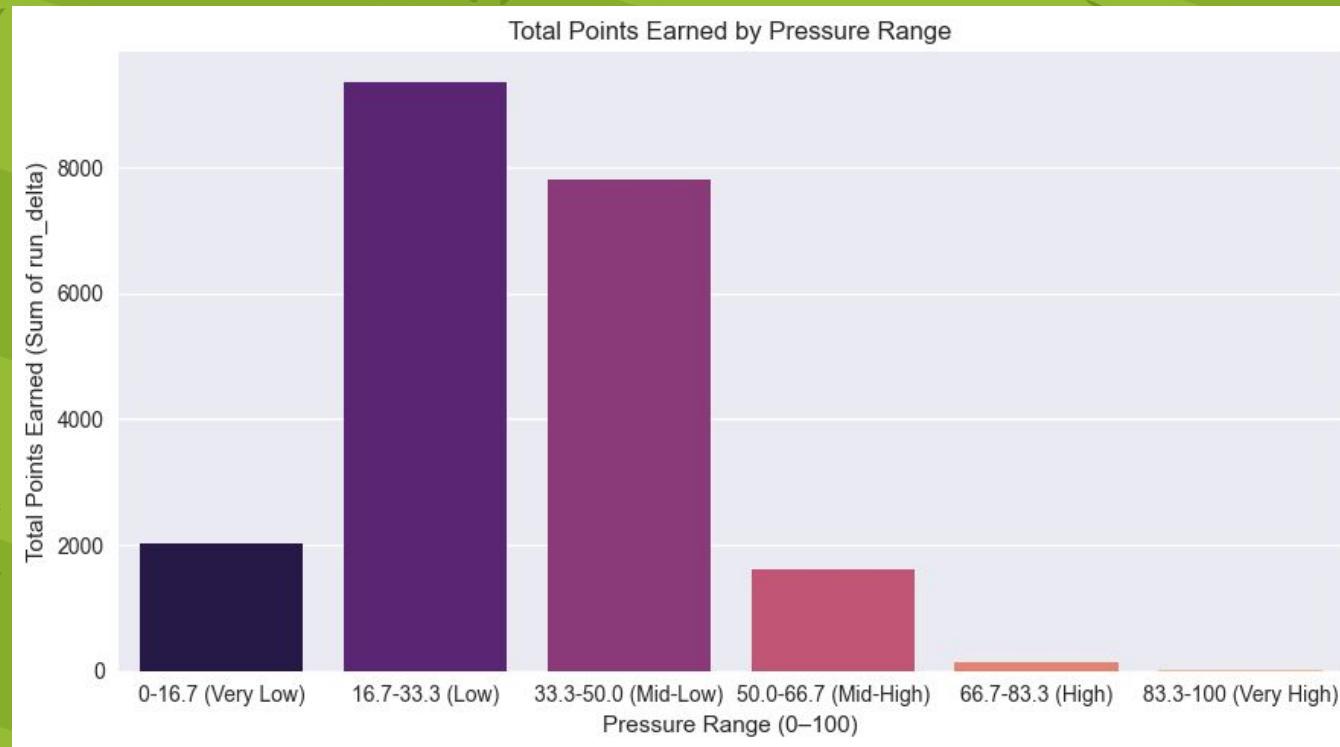
AVERAGE BAT SPEED BY GAME PRESSURE



CORRELATION ANALYSIS

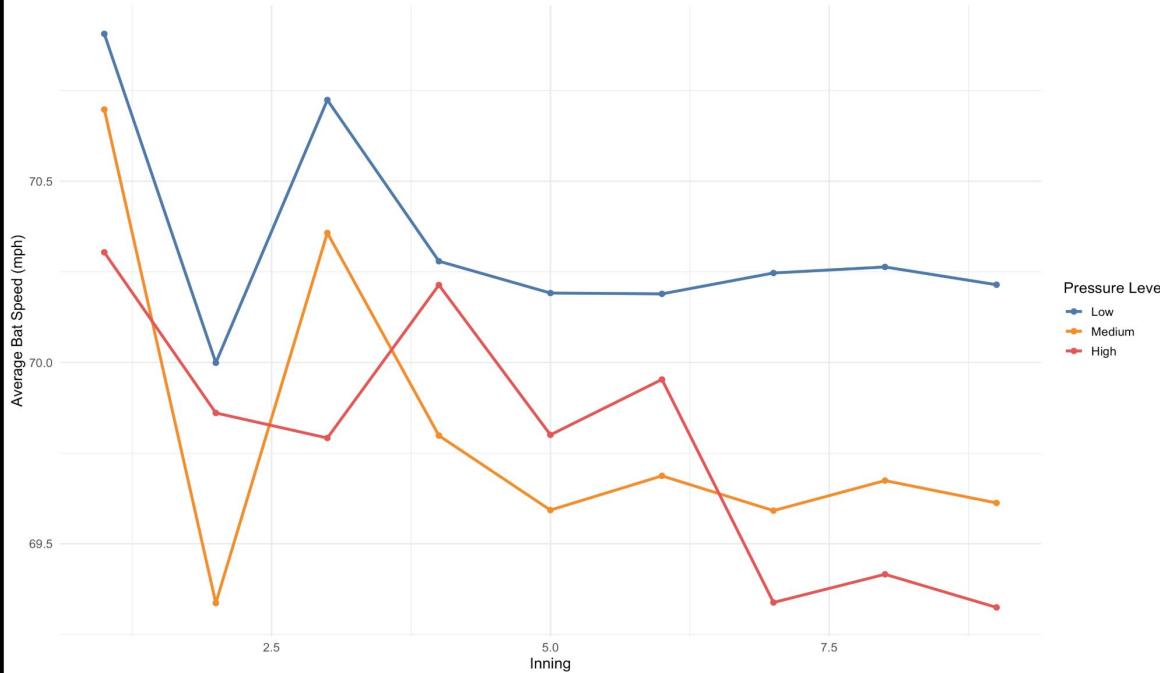


TOTAL POINTS EARNED BY PRESSURE



INSIGHTS

Average Bat Speed Across Innings by Game Pressure
Batters slightly reduce swing speed as pressure and innings increase



THE CONCLUSION

