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DATA 6560 – Sports Analytics

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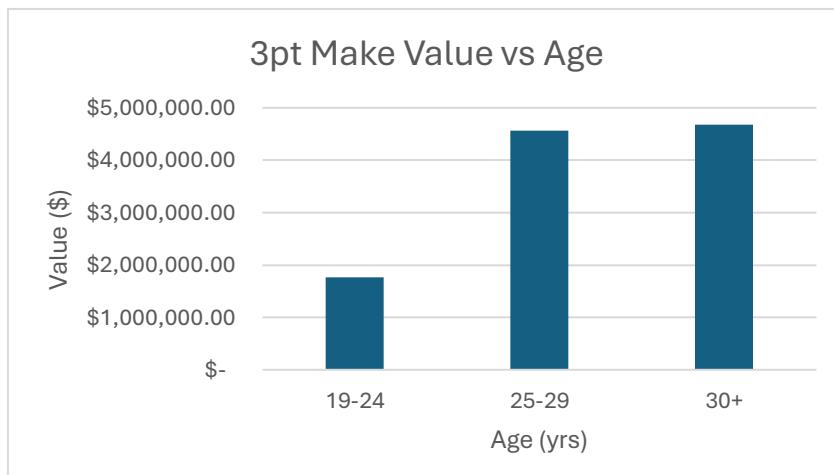
Executive Summary

The Value of 3pt Shooting as Players Age

NBA teams need to decide how to allocate salary to aging players with their declining athleticism and additional 3pt skills. This project focuses on how much salary to pay players for their 3pt shot as they age, by determining the relative value of a 3pt shot for different age ranges. The project has successfully returned fair-market value for a 3pt make for aging players by determining the value that the 3pt make generates in terms of win shares.

The project used shooting and per-game data from the 2024-2025 NBA season gathered from basketball-reference.com. The data was refined using the Preprocessing pipeline procedure outlined in Bauer_Alexander_CP4.pdf to eliminate any outliers and irrelevant data points, such as players with little games played, extraordinary MVP candidates, and Lebron James. This pre-processing allowed me to accurately draw relationships and analyze the issue at hand.

I first had to define the value (in dollars) of one win share for the 2024-2025 season, which was found to be \$6,047,978.45. This value allowed me to determine how much money a 3pt make was worth based on its level of contribution to a win share. After removing statistically insignificant variables and modifying the age brackets slightly, I performed regressions to determine the significance of the 3pt make's contribution to win shares at 3 different age groups (19-24, 25-29, 30+). For players over the age of 30, the 3pt shot was the most significant attribute to their game,]. I also found that the relative value of the 3pt shot increased with age by multiplying the regression coefficients by the value of a win share.



For players age 30+, each additional 3pt make per game was worth \$4,680,482.61 in win share value, higher than any other age group. This finding accurately answers what this project sought out to accomplish, quantifying the 3pt shooting value of aging NBA players for accurate contract evaluation. NBA executives should place greater weight on 3pt shooting when structuring contracts for aging players, as this skill becomes increasingly more valuable as players age.

Before delivering my final report, I will validate my results by re-running my project to ensure that it is replicable and no errors were made along the way. I will also define process steps on how to achieve the same results that I did, so that this project can be used to examine future years of NBA seasons.