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STAT 3010 Final Project Poster

Efficiency With NBA Players' Contracts

SECTION 1: OVERVIEW

In our project we set out to identify a correlation between how much an NBA player is paid, along with their age, to their production on the court. The dataset used consists of two hundred randomly selected contracts of NBA players that were fulfilled sometime within the years 2010-2020. It contains information about the player name, time span of the contract, average salary per year, and all stats that the player accumulated during the NBA season before signing a contract. **Null hypothesis**: If a player is paid more and is more experienced, then their stats are more productive. **Alternative**: Salary and/or age have no correlation to the productivity of a player.

SECTION 2: DATA EXPLORATION

The table on the **left** is the data we focused on from the sample. This includes two categorical variables created. The table to its **right** depicts how the average salary is correlated to production.

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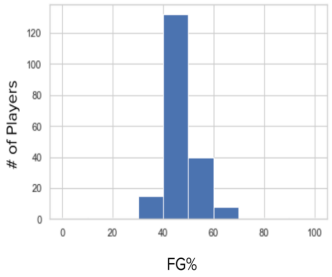
	AVG_SALARY	AGE	W	PTS	GP	FG%	AGE_Range	AVG_Salary_Range
0	2564753.0	32.0	27.0	840.0	69.0	40.0	old	low
1	21165675.0	27.0	34.0	1236.0	72.0	51.3	mid	high
2	10759763.5	22.0	31.0	566.0	80.0	68.6	young	med
3	8143323.5	25.0	39.0	1258.0	82.0	46.5	young	med
4	13410739.0	32.0	35.0	1347.0	81.0	55.5	old	med

SECTION 3: TESTS & ANOVA RESEARCH

The table on the **left** depicts the normal distribution of FG%. We did normality, equal variance tests, etc. in this project to prove this. With our Two-Way **ANOVA** table it is formulated with our two stated categorical variables.



	sum_sq	df	F	PR(>F)
C(AVG_Salary_Range)	519.098175	2.0	4.021843	0.019467
C(AGE_Range)	50.599748	2.0	0.392034	0.676226
C(AVG_Salary_Range):C(AGE_Range)	138.463386	4.0	0.536390	0.709161
Residual	12261.622883	190.0	NaN	NaN

SECTION 4: CONCLUSION FROM DATA

When exploring our data, we found that players who on average score more points are more likely to accumulate more wins. **It also shows that age does not necessarily impact success, while high salary players tend to perform** better on average. Young players are not proven and do not make the same salary as "Mid" or "Old" players. **These tests show that the High and Low Salary Ranges consist of values with normal distribution regarding FG%.** FG% was the only variable that we could find that was normally distributed. This concludes us to believe that **stars and medium paid players score at a higher efficiency rating, which proves our original hypothesis.** On average it is worth it to **pay your most productive players.**