



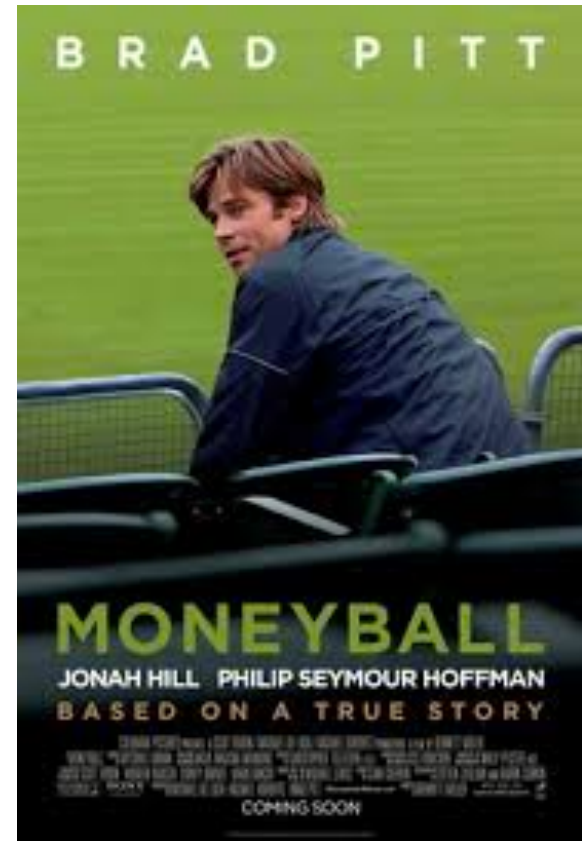
NBA DATA ANALYTICS

Kaushik Vasudevan

Data in Sports

- Role Data Plays
 - ▣ Optimization of winning

- Baseball
 - ▣ *Moneyball*
- Tennis
- NFL



Data in Basketball



- “Regular Stats”

- ▣ Pts, ast, reb, fg%, etc.

- “Advanced Stats”

- ▣ usg, ortg, drtg, ast/to, ts%, etc.

- “Really Advanced Stats”

- ▣ Play type stats, etc.

Future of Data

- Tech tattoos
 - ▣ Tattoos that track arm movement
- Dragonfly Glasses
 - ▣ Give players 360 degree view
- Defensive Stats
- Teamwork Flow Stats



My Project



- Sociology + NBA
- Model to predict win percentage of a team
- Where did the data come from
- Tools Used

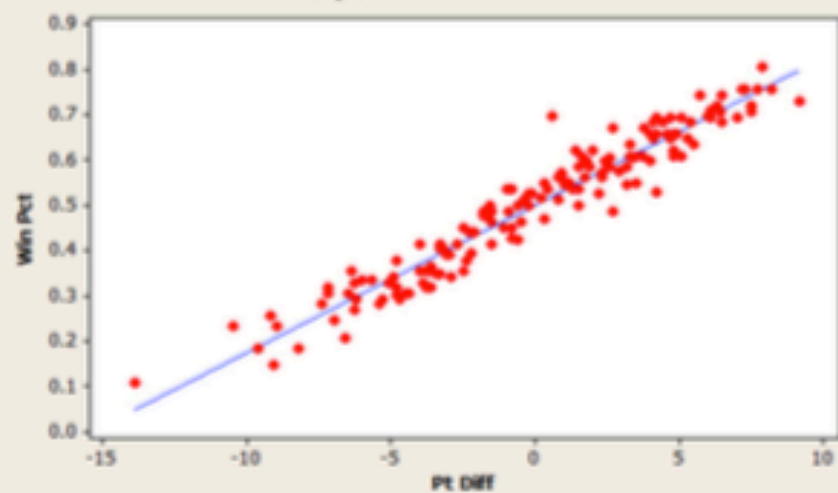
Sample Table

Team	Wins	Win Pct	PtDiff	Pts	OffRtg	Blocks	Steals	Pace	DefRtg	PtsPerMin
Atlanta	38	0.463414634	-0.5	101	103.4	4	8.3	96.87	104.1	2.09
Boston	25	0.304878049	-4.5	96.2	99.7	4.2	7.1	95.88	105.2	2
Brooklyn	44	0.536585366	-1	98.5	104.4	3.8	8.6	93.68	104.9	2.03
Charlotte	43	0.524390244	-0.2	96.9	101.2	5.1	6.1	94.73	101.2	1.99

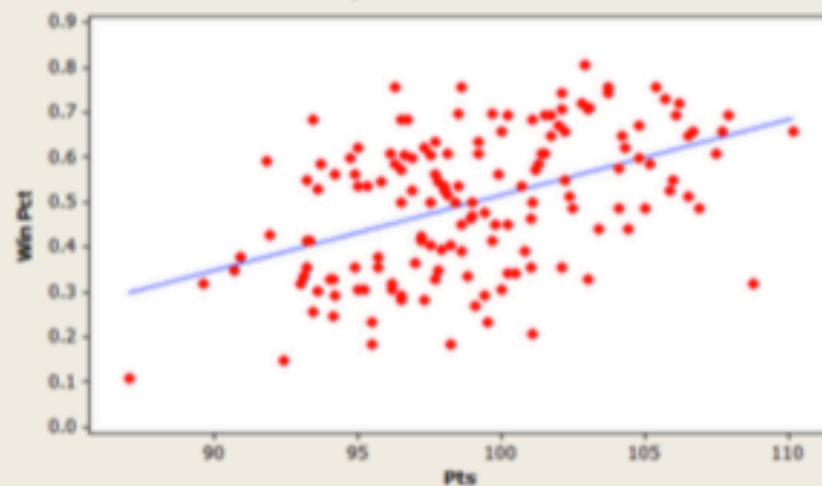
Social Data

Team	Wins	Win Pct	Coaching	Salary	Rainfall	High	Low	Age	Black	White	Income
Atlanta Hawks	38	0.46341	1	\$58,477,559	47.64	72	52.5	33.1	52.20%	40.50%	\$46,485
Boston Celtics	25	0.30487	1	\$70,644,150	45.26	58.6	43.7	31.7	24.10%	52.90%	\$53,583
Brooklyn Nets	44	0.53658	1	\$102,928,076	50.77	61.2	47.6	34.4	34.10%	43.00%	\$47,520
CharlotteHornets	43	0.52439	1	\$62,824,677	45.46	71	48.8	33.3	35.90%	49.80%	\$51,034

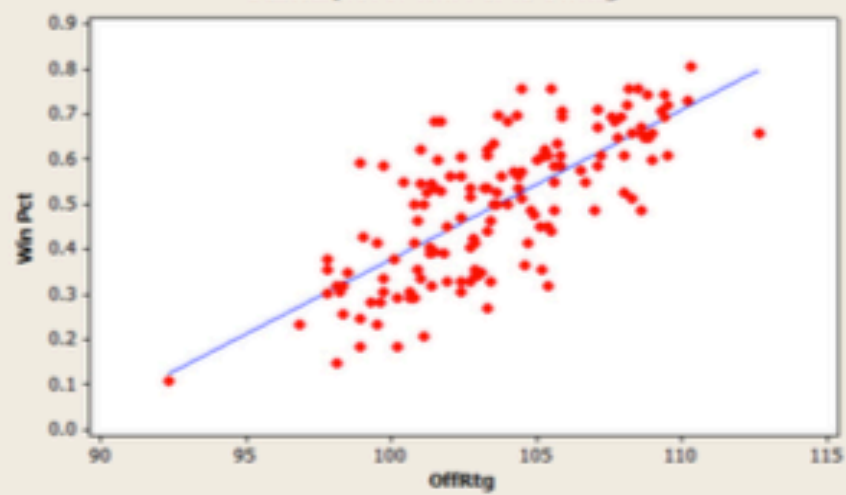
Scatterplot of Win Pct vs Pt Diff



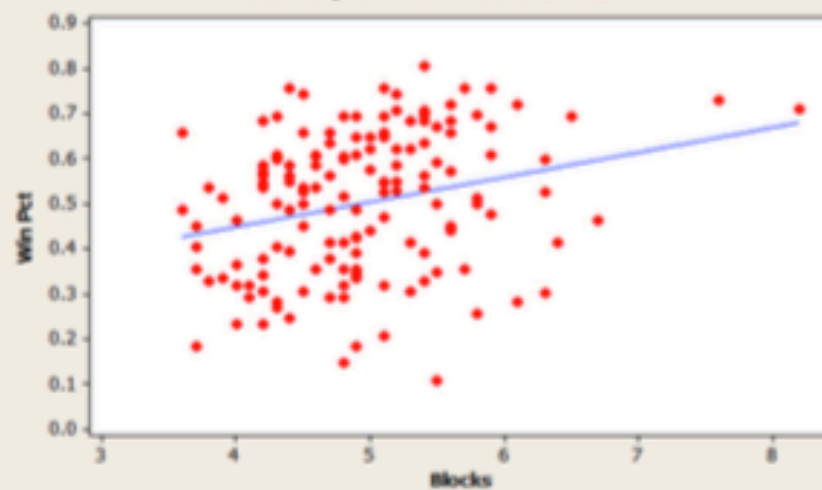
Scatterplot of Win Pct vs Pts



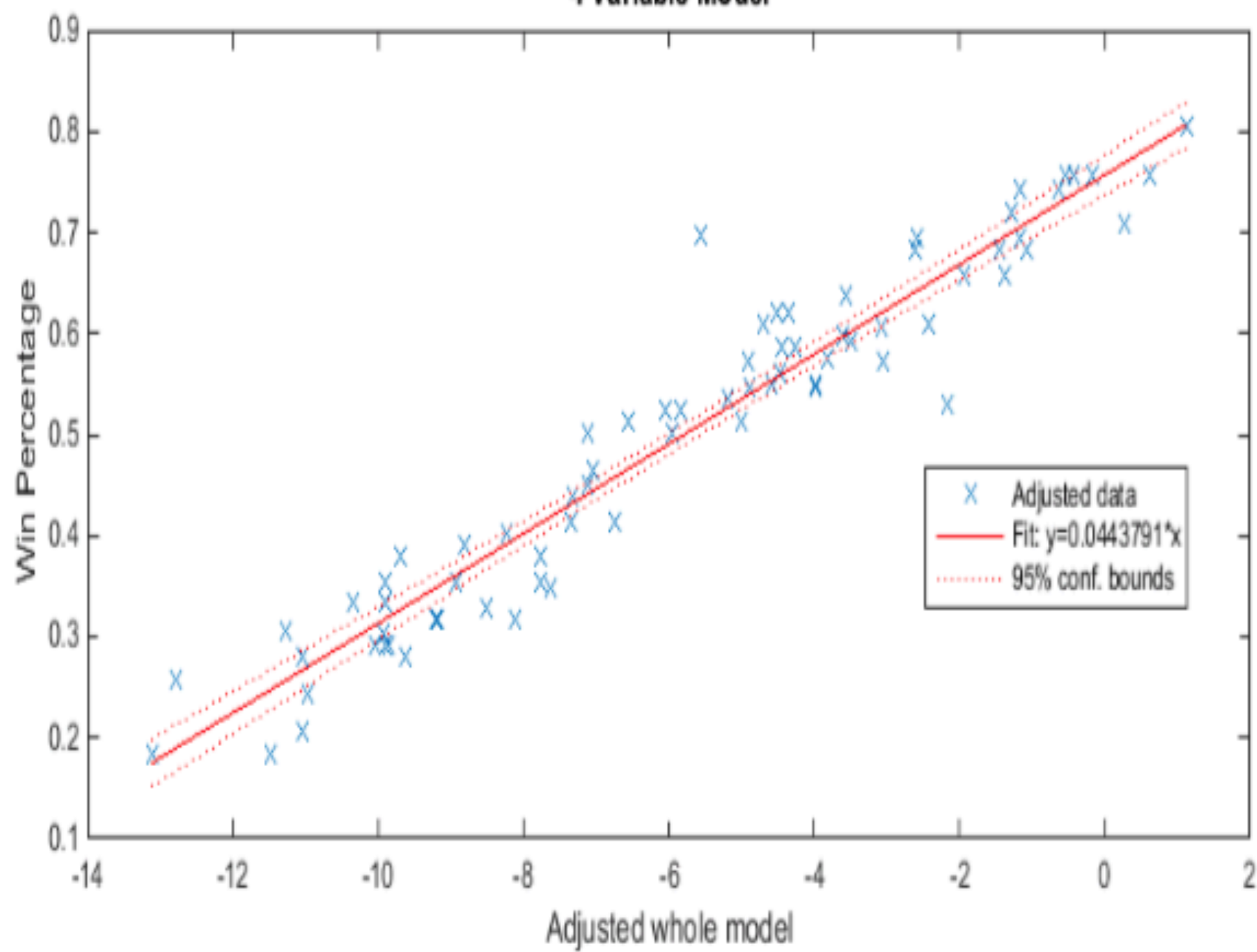
Scatterplot of Win Pct vs OffRtg



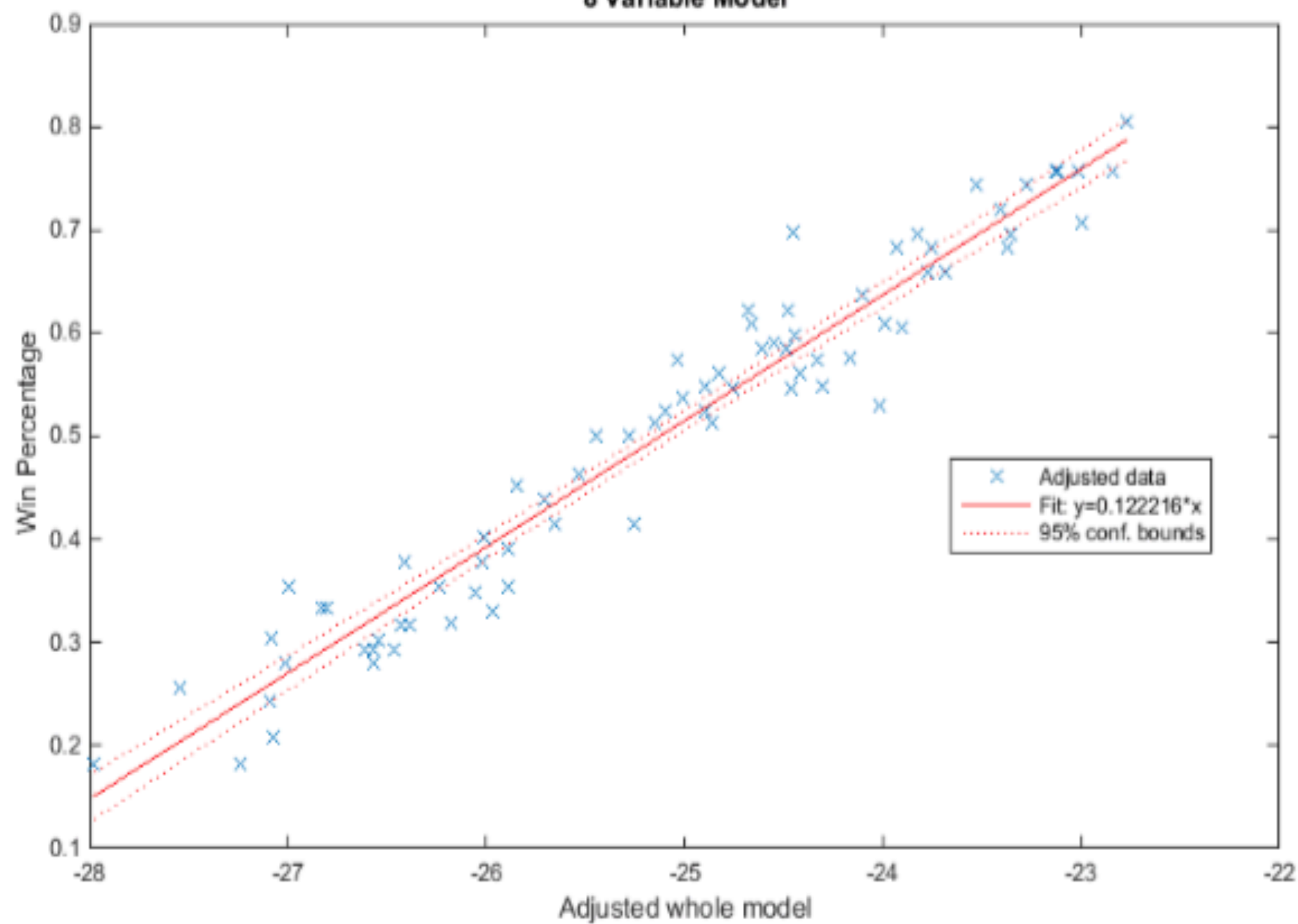
Scatterplot of Win Pct vs Blocks



4 Variable Model



8 Variable Model



Accuracy of Models

Comparison	R^2 : Training Set	R^2 : Test Set
4-Variable Model	0.92908	0.93035
8-Variable Model	0.94393	0.91488

Trying Social Data

pValue	
0.54414	
0.90937	High Temperature
0.39186	Low Temperature
0.017896	Coaching Stability
0.76361	Age
0.36834	Income
0.19109	PCT Black
0.46891	PCT White
0.59697	Rainfall
0.0017402	Salary

Conclusion



- Fantasy Basketball League