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Title:

Finding the Formula of Success for English Premier Teams by Analyzing Statistics of Play

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Abstract:

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Background: The financial and emotional stakes for English Premier League (EPL) teams are high, and it benefits those invested in the clubs to create a formula to win. This study looks at which pieces of play correlate to the best season outcomes. We hypothesize that “Offense” will have the most significant relationship with “SeasonSuccess” and “SeasonWinner”, and that “CleanSheets” will have a significant relationship with “Relegated”.

Methods: The data were acquired from the EPL online database. We began with Exploratory Factor Analysis, using eigenvalues, loading matrices, and varimax rotation to find factors among the variables. The calculated factors and variables were made into a path diagram, and corresponding relationships were examined using Structural Equation Modeling (SEM). SEM was used to see if any of the independent variables/factors had a significant influence on the dependent variables/factors.

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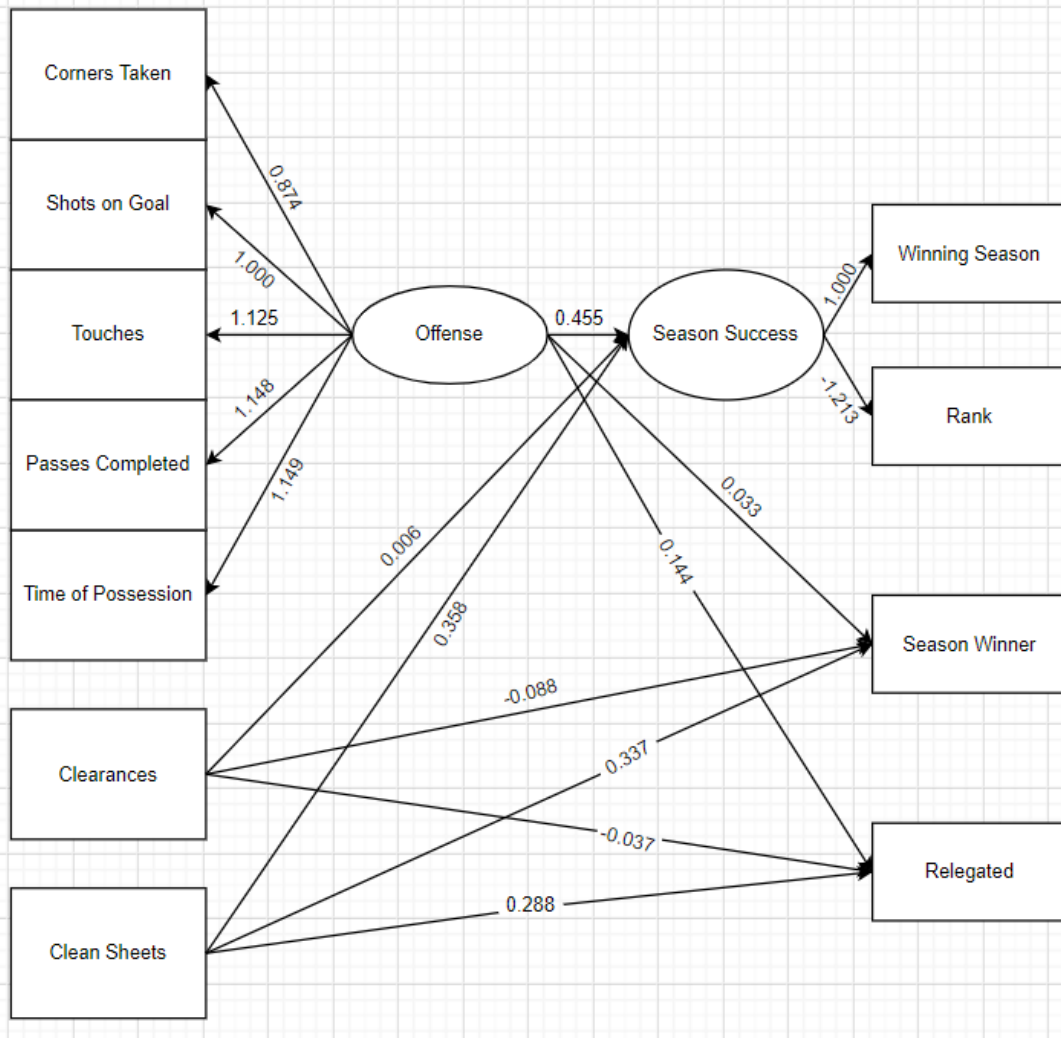


Figure 1.1: Path Diagram

Results: The independent variables “Shots on Goal”, “Corners Taken”, “Passes Completed”, “Touches”, and “Time of Possession”, all load onto one supervariable, called “Offense”. The dependent variables “Winning Season” and “Rank” load onto one supervariable, called “Season Success”. “CleanSheets” has a significant correlation with “Relegated”, “SeasonWinner”, and “Season Success”. “Offense” has a significant correlation with “SeasonSuccess”.

Conclusion: The “Offense” variable makes sense in the context of soccer because a team that spends more time with possession, has more opportunity to complete passes, take shots, and win corners.

Coaches and managers of the team can use this information to strategize, so that they can come up with an effective formula for their team. Since “CleanSheets” had significant effects on a team's success, who won the season, and who was relegated, teams should push a more defensive strategy, as eliminating any allowed goals correlates with success and avoiding relegation.

In a future study, we would replace “CleanSheets” with “GoalsAllowed”.