User Behavior and Performance in the PGA Golf Tour: A Study on Home Advantage and Performance

Indicators

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Abstract

This study investigates the impact of nationality on performance outcomes in the PGA Tour, focusing on the potential home advantage of American golfers and comparing performance indicators such as drive distance and putting efficiency between American and international players. Our research aims to examine whether American golfers have an inherent advantage when competing on familiar home courses, while also analyzing how key performance metrics correlate with overall success in tournaments. We used a dataset consisting of 18,043 data points across 12 variables, providing comprehensive insights into player performance and outcomes across various PGA Tour events. Our analysis addresses three main questions: the correlation between average drive distance and tournament performance, the relationship between putting efficiency and total earnings, and the influence of tournament type and nationality on a player's ranking. Findings indicate minimal home advantage for American players regarding drive distance, though American players generally exhibited greater consistency. In terms of putting performance, international players outperformed American golfers, correlating with higher average earnings. This research provides insights into how player nationality, performance metrics, and course design contribute to competitive outcomes in professional golf.

Keywords: PGA Tour, performance analysis, drive distance, putting efficiency, home advantage, American golfers, international golfers

Introduction

Professional golf tournaments, particularly the PGA Tour, attract a diverse pool of elite golfers from around the world, competing on courses with varying designs and challenges. Courses within the United States, often meticulously landscaped with artificial hazards and longer fairways, may offer American golfers a home advantage due to their familiarity with these conditions. This study seeks to investigate if American players have a measurable advantage in PGA tournaments and if performance metrics such as drive distance and putting efficiency differ between American and international players. Additionally, we examine how different types of tournaments impact player rankings, focusing on the role of environmental familiarity and playstyle adaptation.

Research Questions

1. Does a higher average drive distance correlate with better performance in tournaments, how does this compare with Amercian player to foreign players?

We investigate whether players with longer average drives perform better, with a focus on potential differences between American and international golfers.

1. How does the number of putts per round affect a player's total earnings, how does this compare with American players to foreign players?

This question assesses whether putting efficiency is a critical determinant of earnings, examining whether international players perform differently from Americans in this aspect.

1. How does each tournament impact a golfer’s ranking in the tournament? Is there a difference between American a non-American player?

This question explores the effect of tournament type and nationality on overall player rankings.

Methodology and Results

Our analysis employs linear regression models to evaluate relationships between independent and dependent variables in the context of performance. Using nationality as a distinguishing factor, we controlled for the impact of course design and competition type to investigate potential nationality-based advantages and key performance indicators.

Analysis of Average Drive Distance and Tournament Performance

In assessing the correlation between average drive distance and tournament success, we found that American and international players exhibited similar correlations between drive distance and scoring. No significant home advantage was observed for American players based solely on drive distance. While American courses are generally longer, favoring power hitters, both American and international players demonstrated comparable average scores, indicating no significant advantage for Americans due to course length alone.

Analysis of Putting Efficiency and Total Earnings

An analysis of putting efficiency revealed that international players tended to have a lower average number of putts per round, correlating with higher total earnings compared to American players. This suggests that international players may be compensating for potential disadvantages on American-style courses through greater putting proficiency. International players, on average, earned more per tournament, potentially due to their superior putting efficiency. While American players showed more consistency in putting across tournaments, the higher standard deviation among international players indicates a broader range of performance outcomes.

Tournament Type and Impact on Player Ranking

Further analysis focused on the impact of tournament type on player rankings, with a specific look at differences between American and international players. Preliminary findings show that both American and international players performed similarly across different tournament types. However, American players showed a slight advantage in tournaments held on courses with long, well-maintained fairways and more artificial hazards, suggesting a minor familiarity advantage in specific environments.

Discussion

These results underscore the nuanced role of course familiarity and performance indicators in professional golf. While American golfers may benefit from certain course characteristics, such as course length and artificial hazards, international players often compensate with greater proficiency in key skills like putting. This dynamic highlights how player adaptability and specific skill strengths influence outcomes in international competitions.

Recommendations

1. Enhanced Training on Varied Course Conditions: Golf organizations may benefit from exposing players to a diversity of course types to ensure adaptability across different environments.

2. Focus on Key Skill Development: American players may improve earnings by enhancing putting performance, while international players could benefit from training that targets distance control on longer courses.

3. Use of Data Analytics for Strategic Preparation: Leveraging performance data across diverse course types can help players and coaches tailor preparation strategies to course conditions, potentially enhancing performance.

Limitations and Future Research

One limitation of this study is the scope of data limited to specific PGA tournaments, which may not fully capture the diversity of courses globally. Future research could explore longitudinal data across different tours to better understand how course familiarity influences performance over time.