The Relative Returns to Skill of PGA and LPGA Players
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I. Abstract

This study identifies differences between the returns to skill for 50 PGA and 50 LPGA Tour golfers using a cross-sectional model. Our measure of returns to skill is a normalized earnings figure given by the total earnings for a golfer during the year divided by the sum of their earning potential. We estimate the returns to skill as a function of driving accuracy, driving distance, putting average, greens in regulation, number of events played, majors played, slope rating, and a dummy variable for gender. We find that the same skills are important for both PGA and LPGA golfers but to varying degrees. We conclude that putting and greens in regulation are the most important variables explaining winning percentage, but these skills are both relatively less important for LPGA players than for PGA players. We also find that driving accuracy is important in explaining winning percentage, and that the importance of this variable is the same for PGA and LPGA players. Our results can be used by golfers to focus their practice time on the skills that may affect their return.

II. Empirical Model and Variables

WIN = Winning percentage for the ith player in 2012
DIST = Average driving distance for the ith player in 2012
GIR = Driving accuracy for the ith player in 2012
PUTT = Putting average for the ith player in 2012
SAND = Sand saves of the ith player in 2012
SLOPE = Average slope rating for the ith player in 2012
G = Dummy variable for gender

WIN = β0 + β1DIST + β2GIR + β3PUTT + β4GIR + β5PUTT + γG

III. Theory and Hypotheses

We specify player’s winning percentage as a function of the following variables:

DIST is hypothesized to have a positive relationship with WIN because when a player is able to hit the ball further off the tee, their next shot is closer to the hole, making it easier to score well.

GIR is hypothesized to have a positive relationship with WIN because the more often a player hits the ball into the fairway versus the rough off the tee, the greater opportunity they have to hit a more precise shot onto the green.

PUTT is hypothesized to have a negative relationship with WIN because the lower amount of putts a player has during a round the lower their score will be, increasing their winning percentage.

IV. Data

Cross-sectional data set of 50 PGA and 50 LPGA Tour Players
Sample size: 100

Data Challenges and Limitations:

• Slope rating data set:
  o USGA reports on course and slope ratings
  o Some courses were not reported on
  o Slope ratings may not have been the accurate rating for the specific tournament or tee box
  • Sample selection: some players did not have complete statistics listed

Data Sources:

• Most data came from the PGA Tour website and LPGA website
• Most slope ratings were found on the USGA Course Rating and Slope Database
• LPGA first place prize came from the YAHOO! Sports LPGA Leaderboard
• Other slope ratings came from: o Golf Digest o World Golf o Golf Australia

V. Empirical Results

Variable | Coefficient | Std. Error | t-Statistic | P-value
---|---|---|---|---
WIN | -0.102302 | 0.067377 | -0.079960 | 0.9359
DIST | 0.275270 | 0.080847 | 3.426701 | 0.0010
GIR | 0.00439 | 0.002913 | 1.408181 | 0.0001
PUTT | -0.083923 | 0.001499 | -5.839230 | 0.0000
SAND | 0.076933 | 0.003343 | 0.006978 | 0.4907
SLOPE | 0.000000 | 0.001170 | 0.000000 | 0.0000
G | 0.219700 | 0.106381 | 1.069506 | 0.0010

R-squared: 0.506969
Adjusted R-squared: 0.467730

VI. Conclusions

• Our adjusted R-squared indicates 46.7% of the variation in winning percentage is explained by our model.

Putting average is statistically significant in explaining winning percentage for both PGA and LPGA players, but to a lesser degree for LPGA players than PGA players.

Greens in regulation is statistically significant in explaining winning percentage for both PGA and LPGA players, but to a lesser degree for LPGA players than PGA players.

Driving accuracy is statistically significant in explaining winning percentage for both PGA and LPGA players and has the same effect on men and women.

Major tournaments in is statistically significant in explaining winning percentage for both PGA and LPGA players and has the same effect on men and women.

Our results can be used by golfers to focus their practice time on the skills that may increase their return.