Estimation of Golf Course Ratings from Player Scores

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Golf handicaps are used to give players of different golf ability a roughly equal chance of winning a competition. However, for golfers on handicaps above zero, some courses are much harder to play than others. Players from hard courses are likely to have higher handicaps than players of the same ability from easy courses. When a player from a hard course goes to play at another easy course, that player's chance of winning may be greater because of the higher handicap. The United States Golf Association has developed a system called Slope to deal with this effect. Two separate Ratings, called Scratch and Bogey Ratings, are determined from physical measurements of a course. These Ratings are used in a formula which adjusts players' handicaps when they play at different courses. Considerable work is required to carry out the physical measurement and analysis to generate the Ratings for all golf courses. There are questions about how accurately these measured Ratings actually reflect the scores that players achieve on the courses. A methodology for estimating the Ratings from recorded golf scores is proposed here. The scores of players who play the course regularly, i.e. home players, cannot be used, because their handicaps have adjusted to their home course. Therefore the methodology principally uses the scores of visitors to a course to estimate the Ratings of that course. However where there are different tees in use at a course, as is very common, home players' scores can be used to estimate the difference in Ratings between the different tees. The methodology is being trialled in Australia. It requires a comprehensive database of golf scores and related information, such as the type of competition that was played. The formulae for estimation of golf course Ratings from scores are presented in this paper. Once the methodology is proven satisfactory, it has the potential to be implemented as an automated process which is much more economical and accurate than the current approach. It could reduce the need for physical measurement of golf courses to estimate course Ratings around the world.

Key Words: golf scores, scratch and bogey Ratings, golf course Slope, parameter estimation.