Monotony in the Division of Earnings from Sports League Broadcasting

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Abstract

In relation to the issue of dividing up the profits from broadcasting sports leagues, we investigate the implications of the monotonicity principle. We define a number of axioms for sharing rules in this context, formalizing various forms of this principle. They provide axiomatic characterizations of focal rules for this problem as well as families of rules compromising among them, as we demonstrate when they are combined with two additional fundamental axioms-equal treatment of equals and additivity. The normative appeal of the (focal) equal-split rule is highlighted by these results.

Keywords: Game theory • Resource allocation • Broadcasting • Monotonicity

Introduction

The games business has appreciated productive development somewhat recently, dominating the Gross domestic product development of most nations. According to KPMG, the global sports market which includes training, infrastructure, events, and sports goods-is valued between $600 and $700 billion annually. As a result, the operations research community is increasingly interested in studying various aspects of the sports industry. To name two recent instances, examine the performance of National Basket Association teams investigate the impact of managers in Major League Baseball, while Elitzur investigates the use of data analytics in the league. The impact of game scheduling on European football leagues is examined in manage the plan of rivalries. For surveys of the rapidly expanding literature, the reader should consult respectively [1-3].

Description

We will focus on a significant aspect of the sports industry in this paper: broadcasting. It is assessed that the 2016 Olympic Summer Games had worldwide crowd of roughly 3.2 billion, and the last round of the 2018 FIFA World Cup a consolidated 3.572 billion watchers (the greater part of the worldwide populace matured four and over). The National Football League games in the United States were watched by an average of 16.4 million people during the 2019 regular season, while the Super Bowl was watched by an average of 99.9 million people during that same season. Ticket sales, merchandise sales, and sponsorships are less common sources of revenue for sports organizations than the sale of media rights and broadcasting rights. From 2014 to 2021, the NFL's national TV deal with ESPN was worth a total of 15.2 billion US dollars [4].

The management of sports organizations relies heavily on the allocation of the substantial proceeds from the sale of broadcasting rights. We introduced a formal model in that bases the allocation process on the (broadcasting) audiences generated by games throughout the season. In that, we concentrated on the issue hypothetically and observationally (applying our hypothetical outcomes to the Spanish football association). We have also theoretically investigated additional aspects of the issue. The main contribution of this paper is, in fact, to investigate in that setting the implications of axioms formalizing the principle of monotonicity, which had not been explored in our previous work. In this paper, we take the axiomatic approach for such a model to derive appropriate [5-7].

Monotonicity is an overall guideline of fair division with a long practice inside the financial matters and tasks research writing. It says that the solution should change when the problem's underlying data change in a certain way. Monotony in the aggregate: at the point when the complete crowd of the competition increments, Consistent monotony: when all tournament games attract more spectators, pairwise monotonicity: When a larger number of people watch the games that each team plays, team similitude: when a particular team's games attract more spectators, team monotony is weak: when a particular team's game-day crowd grows while the rest of the crowd stays the same, the opposite of monotony: when the number of people watching games that a team doesn't play goes down while the number of people watching those games stays the same [8,9].

We will investigate the ramifications of every one of the above aphorisms, in mix with two other fundamental adages: equal treatment of equals (teams whose audiences are the same should receive the same treatment) and additive Combining the monotonicity axioms with the aforementioned fundamental axioms yields our results, which are summarized below, which provide characterizations for some of the preceding rules and families as well as several extensions of them. To be more specific, we demonstrate that the equal-split rule is the unique rule satisfying team monotonicity while the uniform rule is the unique rule satisfying aggregate monotonicity (additivity is not required for these results). A rule only satisfies pairwise or overall monotonicity if it is a linear (but not necessarily convex) combination of the two rules. Only if it is a linear (but not necessarily convex) combination of the uniform rule and the concede-and-divide strategy does a rule satisfy weak team monotonicity. At last, a standard fulfills proportional monotonicity if and provided that it is a sure straight (yet not really raised) mix of the equivalent split rule and yield and-separation. From the summary of the results that were just presented, we can deduce that monotonicity axioms are a useful tool for figuring out how the problem of sharing the revenue from broadcasting sports leagues is structured. This is similar to some other problems that are related. There have been recent instances in which these axioms have characterized rules (or families of rules) in related problems, such as the ones just mentioned, as well as bargaining problems, or games, among others, beyond the classical references for the use of monotonicity mentioned above [10].

Conclusion

For the broadcasting problem of sharing the revenues from broadcasting sports leagues, we have considered a number of monotonicity axioms. Monotonicity axioms proved to be extremely strong in other problem domains, sometimes even contradicting the most fundamental requirements of fairness and efficiency. Similar to this, Csató, 2019a, 2019b, and 2019c have recently argued that monotonicity typically indicates impossibility in pairwise data-based models. We have combined them with two fundamental axioms-additivity and equal treatment of equals-to produce a number of characterizations, despite the fact that they are not very strong to carry out impossibilities in our context7. The uniform rule and the equal-split rule are two examples of single rules where the characterizations are used.

Acknowledgement

None.

Conflict of Interest

None.

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