

## The Value of Information in Simple Competitive Games

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### ABSTRACT:

History is full of examples where the correct information made the decisive difference in military engagement as well as situations in sports and business. In this simulation the effects of different types of information were assessed in simple competitive games. The games were based roughly on the card game War with several added components in order to allow players to adjust their forces and affect the outcome of the game. Players had the option to adjust their strategy, intensity, and allocation of forces. If a player chose correctly, these values could make a difference significant enough to offset a player's disadvantage in raw power. In order to make choices in a manner that was not random a player was given different types of information about his opponent's disposition, in regards to strength, allocation and strategy. The value of information was then measured as the percentage of strength that a player could give up and still achieve a given win percentage in repeated trials of the game. Through many trials of different types and combinations of information, the value of that information was determined. The games were developed and tested as a spreadsheet in excel and each variation was run several thousand times in order to establish consistent values of information.

**KEYWORDS:** Value of Information, Zero Sum Games

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