

Using Simple Descriptive Statistics to See Advantage

By David A. Mitchell

Being human, we are emotional creatures and are subject to bias in our decisions. This should not be viewed negatively. Rather, it is just something that comes with being a person. Where can we see bias as a coach? An example can be seen when it

comes to comparing players who are close in skill level. We might inadvertently inject bias into our decisions because we might know the girl's parents or we coached her sister or because of the school she goes, etc. The bias can actually cause a coach to do different things. For example, put a player in the match (play favorites) or not put a player into the match (making sure not to play favorites). Most of us can relate to seeing bias in decisions, both in volleyball and in other situations in our day-to-day endeavors.

A proper approach is to recognize that bias is a natural part of being human and one of our jobs as the coach is to minimize its effect on our decisions. This is where the coach should leverage player and team statistics.

A recent application of leveraging simple descriptive statistics to help us see through bias was in preparing our high school varsity squad for the state tournament. I wanted to determine our optimum lineups and rotations. I already knew who the best hitters, blockers and passer were (because we collect those statistics), but I wanted to make sure I did my best to prepare our team by finding any other advantage. Knowing the strength of the rotations would help increase our chances at being successful, and analyzing our rotations was necessary because we often changed lineups (a player is injured, having a bad day or the lineup is not working, and so on).

An excellent source for this information was the score book; using it does not require any additional statistics to be recorded.

Scanning the score book, one can see the points earned and the points given up for each rotation. If players are substituted at predefined rotations and other substitutions are minimized, then the analysis is easier.

I used a simple spread sheet to record this information.

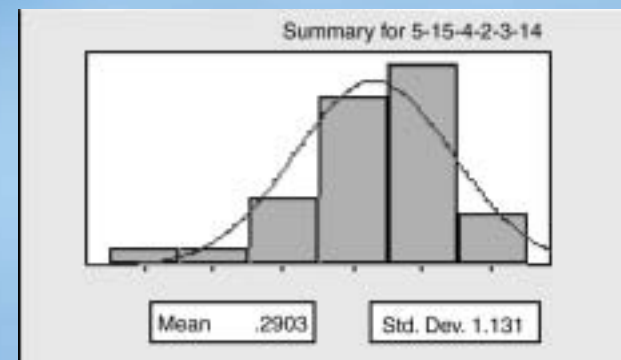
Date	Opponent	Game	Game Rotation	ID	OH Hitter Id	MH Hitter Id	Setter	Points Earned	Points Given	Net Points
25-Aug-04	Team A	1	1	3-14-5-12-4-2	14	5	3	4	1	3
25-Aug-04	Team A	1	2	14-5-12-4-2-3	4	5	3	2	1	1
25-Aug-04	Team A	1	3	5-12-4-2-3-14	4	2	3	1	1	0

To identify the ID of a rotation, I started with the player in position 1 (the server) as the first number and proceeded from there in serve order to make additional rows. Then I

recorded the OH, MH, Setter (we run a 6-2 offense), Point Earned and Points Given. The spreadsheet calculates the Net points (Points Earned Minus Points Given) for each entry. See the example in Figure 2.

Finally, we sorted the spreadsheet data first by date, then by game, then by ID.

We wanted two views of the information. The first view was a distribution of the Net Points, keying on the Mean (average) and Standard Deviation. In simple terms, the Mean tells us how "good" the rotation is and the Standard Deviation indicates the rotation's consistency. Thus, we were looking for the rotations with a large Mean for Net Points (good net points earned) and a small Standard Deviation (good consistency). An example of this view can be seen in Figure 3.



The second view we needed was a trend over time. We were looking to see if the rotation trended upward, downward or was flat. We were looking for rotations that showed an upward trend. We compared this to our knowledge of teams played, their competition level, the players' attitudes that day, etc. See Figure 4 for this trend view.

Date	Opponent	Game	Game Rotation	ID	OH Hitter Id	MH Hitter Id	Setter	Points Earned	Points Given	Net Points

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