The term a “hot hand” was initially used in basketball to describe a basketball player who had been very successful in scoring over a short period. The notion is “If you have been winning, you are more likely to win again.” Suppose you are betting on a game of chance or sports outcomes and have been winning. Do you believe you are more likely to win again the next time you bet? Read this article and comment on what you might do to keep your winning streak going. http://www.businessinsider.com/the-gamblers-fallacy-and-the-hot-hand-2014-4#ixzz3ImAt8MDi (Links to an external site.).

If you don’t believe in the “hot hand” phenomenon, try to share something from your personal life where past performance or new information would change your opinion regarding the conditional probability of an event happening.

I have to say I do believe in the hot hand. Based on the evidence provided by the article in Business Insider, it’s hard to argue that it does exist. But, I will try to make a case for it. In my opinion the hot hand does exist, but depends on what you are participating in. If I am betting on a race, and I have no influence on the outcome then I would say the “hot hand” fallacy does not exist. Since the following bet would be an independent event, it’s hard to disagree with the results outlined by Kiersz.

However, if I’m playing basketball then my skillset comes into play. I have some control of whether or not the ball goes in. I found a really great article that speaks to this from Grantland2. The article outlines all the human elements that come into play when making a shot in basketball: the skill of the player, the defenders distance, the size of the defender, a player’s psychology when taking the shot. For example, Lowe argues that a player that makes a couple of shots in a row can become over confident and will take a tough shot thinking they are hot. This will also affect the results. I can attest to this, more than often if I’ve hit a few shots in a row, something happens where you feel invincible.

Based on the analysis of the researcher, “If shot no. 6 is on average, given its difficulty level, a 40 percent proposition, having even a single extra make in the recent rearview appears to nudge that shooting percentage up to 42 or 43 percent. That’s not a huge effect, something the authors readily concede. “It’s not like NBA Jam, with players having flames shoot out of them,” Ezekowitz says. But it’s also not nothing, and it’s certainly not evidence that players shoot worse after making a shot or two.”2. From this analysis, one can say that the hot hand can exist in some activities.

1. Kiersz, A. (2014, April 24). Researchers Tested The 'Gambler's Fallacy' On Real-Life Gamblers And Stumbled Upon An Amazing Realization. Retrieved April 13, 2017, from <http://www.businessinsider.com/the-gamblers-fallacy-and-the-hot-hand-2014-4#ixzz3ImAt8MDi>
2. Lowe, Z. (2013, September 20). Biting the Hot Hand: Basketball's Enduring Streakiness Debate Rages On. Retrieved April 13, 2017, from <http://grantland.com/the-triangle/biting-the-hot-hand-basketballs-enduring-streakiness-debate-rages-on/>

Discussion Problem

Probability seems to be my weakest area so to get some review I chose a problem to help calculate the unions and intersects in R using a matrix. I’ve chosen to do 4.35. Later I’ll attempt a DB analysis question to hone my skills.

# Week 3 Dicussion Problem

#Problem 4.35

mat <- matrix(c(10, 15, 30, 20, 5, 15), nrow=3, ncol=2)

#create the variables as vectors\

Var1 <- c("A", "B", "C")

Var2 <- c("D", "E")

#Rename the rows and colunms

rownames(mat) <- Var1

colnames(mat) <- Var2

print(mat)

#create sum of the matrix

total <- sum(mat)

print(total)

#a - Probability of E

pE <- sum(mat[,2])/total

pE

#b - Probability of B Union D

sumB <- sum(mat[2,])

sumB

sumD <- sum(mat[,1])

sumD

#subtract 15 since it'll be counted twice

pBUD <- (sum(sumB + sumD) - 15)/total

pBUD

#c - Probability of A Intersect E

pAnE <- mat[1,2]/total

pAnE

#d - Probability of B Given E

pBgE <- mat[2,2]/sum(mat[,2])

pBgE

#e - Probability of A Union B

sumB <- sum(mat[2,])

sumB

sumA <- sum(mat[1,])

sumA

#subtract 15 since it'll be counted twice

pAUB <- (sum(sumA + sumB))/total

pAUB

If something is not clear in the code above, please let me know, I’d be happy to explain