Asynchronous assignment

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Two bonding agents, A and B, are available for making a laminated beam. Out of 50 beams made with Agent A, 11 failed a stress test, whereas 19 of the 50 beams made with Agent B failed. At the 0.05 level, can we conclude that the performance of Agent A is same as Agent B?

p1=proportion of failed bonding agents of type A p2=proportion of failed bonding agents of type B

p1=11/50  
p2=19/50

sucess=failed bonding agents of type A

success=failed bonding agents of type B

x=c(11,19)  
n=c(50,50)

H0: p1=p2 (Performance of agent A is same as agent B)

H1: p1!=p2 (Performance of agent A is not same as agent B)

#library(dplyr)  
prop.test(x,n,alternative='two.sided',conf.level=0.95)

##   
## 2-sample test for equality of proportions with continuity correction  
##   
## data: x out of n  
## X-squared = 2.3333, df = 1, p-value = 0.1266  
## alternative hypothesis: two.sided  
## 95 percent confidence interval:  
## -0.35687521 0.03687521  
## sample estimates:  
## prop 1 prop 2   
## 0.22 0.38

Since p-value is greater than 0.05(which is our significance level), we fail to reject H0. Therefore,we can conclude that the performance of Agent A is same as Agent B