

Course Project Part B

MTH 534 - Applied Managerial Statistics

Summary Report

Speculation 1:

The first speculation manager thinks that the average sales per week should be more than 42.5. In the sample the workers averaged was higher at about 43.63 sales, But when we ran the test, the p-value was about 0.066, greater than 0.05. This can mean we can't confidently say the true average is above 42.5. The average in our sample was higher, but the figures were not strong

enough to confidently say. The 99% confidence interval also shows that the real average may be lower than 42.5.

Speculation 2:

The manager also said that less than 55% of employees got online training. In the data, only 43% got online training. The hypothesis test gave a p-value of 0.0079, which is way smaller than 0.05. That means the data clearly supports what the manager believed. We can confidently say the true proportion is less than 55%. The 99% confidence interval was also below 0.55, so everything lines up. hypothesis test gave a p-value of 0.0079

For speculation 2 the manager had also said less than 55% of employees but in the data only 43% got training and the hypothesis test gave a p-value of 0.0079, smaller than .05 by a lot. Meaning the data clearly supports what the manager believed, and we can confidently say the true proportion is less than 55%. The 99% confidence interval was also below 0.55, so everything lines up. hypothesis test gave a p-value of 0.0079

Speculation 3:

Another belief is that workers with no training make at least 145 calls. The sample average for that group was 144.35, which is still close to 145 and the p-value was around 0.428, which is high and we can't really say the true average is lower than 145. But we also can't say for sure that it's above 145 either. The confidence interval goes above and below 145, so we basically don't have enough information to have a strong conclusion.

Speculation 4:

Finally, the last claim is that the average call time is 14.7 minutes. The sample that we used had an average of about 14.95 minutes, being pretty close. The p-value was about 0.289, which means no real evidence that the real average is different from 14.7. The 99% confidence interval also includes 14.7, meaning they have a sound judgment there.

Run Hypothesis Test #1 (Sales > 42.5)

1. Claim: The manager believes mean weekly sales exceed 42.5.

2. Hypotheses:

$H_0: \mu = 42.5$