

Statistics for managers individual work2 wk6

Business



Statistics for Managers of the 27, 02 Formulate and present the rationale for a hypothesis test that Par could use to compare the driving distances of the current and new golf balls?

Steps for hypothesis testing VARIANCE in Par, Inc. Model:

i. Stating the null hypothesis:

$$H_0: \sigma_1^2 = \sigma_2^2$$

$$H_a: \sigma_1^2 \neq \sigma_2^2$$

ii. The number of populations for each subject?

$$n_1 = 40, n_2 = 40,$$

iii. The alpha

$$\text{Alpha is } 0.05/2 = 0.025$$

iv. Is the population or sample variation measure given?

$$\sigma_1^2 = 76.61474$$

$$\sigma_2^2 = 97.94872$$

F Test: Two-Sample for Variances (testing for variances):

Inter-ratio data

Two populations

Normal Distribution

Interdependent random sample(s)

Therefore, we are going to proceed with t Test with Two-Samples assuming equal variances

To estimate the proportions of the current and new models, we use f-t test sample for two variances (Sawilowsky, 2002).

From the F-test results, p value = 0.2222, ($p > 0.05$)

F

$$0.782192$$

<https://assignbuster.com/statistics-for-managers-individual-work2-wk6/>

P(F > F-critical, the differences in variance between the two models are not-statistically different. We proceed to perform the t-test while assuming equal variances.

Fail to reject the null hypothesis (not in tails)

H₀: $\sigma_1^2 = \sigma_2^2$; we think variances are equal but not convinced variances are equal

Steps for hypothesis testing for Means in Par, Inc. model:

v. The alpha

Alpha is $0.05/2 = 0.025$

vi. Is the population or sample variation measure given?

H₀: μ_1 (current) = μ_2 (new)

H_a: $\mu_1 \neq \mu_2$

vii. Find value t-stat.

Df

78

t-stat

1.328362

P(T