

Week 5 ANNOVA Exercises

This study aimed at testing the difference in the overall satisfaction of a woman's satisfaction based on housing. 960 woman participants were analysed in the study from the data in the dataset Polit2SetA SPSS, in which 367 women had no problems with housing (Group 1), 264 women had atleast one problem with housing (Group 2), and 304 women were found to have two or more problems with housing (Group 3). The mean overall satisfaction scores (Bernhardt & Kennett, 2000) for the women in Group 1 was 12.71(2.35), the scores of Group 2 was 11.97(2.58), and the scores of Group 3 was 10.57(2.59).

The null hypothesis H_0 – The status of housing of a woman has no significant impact on their levels of overall satisfaction

The alternate hypothesis H_1 – The status of housing of a woman has a statistically significant impact on their levels of overall satisfaction, fewer housing problems meaning higher levels of overall satisfaction.

The analysis that was performed was a One-Way ANNOVA, using Levene's test of Equality of Variances to compare the means of the overall satisfaction scores of the three groups.

The p-value of the samples in the Levene's test is 0.122, which is greater than 0.05. This implies no statistically significant variance between the overall satisfaction scores in all the three groups of women in the study.

Table 1 – The *F*statistic, the *p*value and degrees of freedom.

Overall satisfaction, material well-being

	Sum of Squares	df	Mean Square	F	Sig.
Between Groups	771.072	2	385.536	61.674	.000
Within Groups	5826.111	932	6.251		
Total	6597.183	934			

The results show that there is a statistically significant difference ($p=0.000$) in the satisfaction levels of all the three groups of women in the study, assuming equal variances.

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Table 2 – The post-hoc test.

Tukey HSD

(I) Housing Problems	(J) Housing Problems	Mean Difference (I-J)	Std. Error	Sig.	95% Confidence Interval	
					Lower Bound	Upper Bound
No Housing Problem	One Housing Problem	.739 [*]	.202	.001	.27	1.21
	Two or More Housing Problems	2.139 [*]	.194	.000	1.68	2.59
One Housing Problem	No Housing Problem	-.739 [*]	.202	.001	-1.21	-.27
	Two or More Housing Problems	1.401 [*]	.210	.000	.91	1.89
Two or More Housing Problems	No Housing Problem	-2.139 [*]	.194	.000	-2.59	-1.68
	One Housing Problem	-1.401 [*]	.210	.000	-1.89	-.91

*. The mean difference is significant at the 0.05 level.

A Tukey post-hoc test (Demšar, 2006) revealed that the levels of overall satisfaction was statistically lower with 2 or more housing problems, than in women with one or no housing problems. Thus, the alternate hypothesis is proved, disproving the null hypothesis by statistical analysis



EssayCorp 5 years ★★★★★

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Bibliography

Bernhardt, K. L., & Kennett, P. A. (2000). A longitudinal analysis of satisfaction and profitability. *Journal of Business Research* , 161-171.

Demšar, J. (2006). Statistical comparisons of classifiers over multiple data sets. *Journal of Machine learning research* , 1-30.

