

RESULTS

Hypothesis 1:

Null Hypothesis: The average number of unemployment claims raised by female identifying people is equal to the average number of unemployment claims raised by male identifying people.

Test: 2 tailed Z test

Test Results:

test statistic: -0.16969006442715895, p-value:0.8652538881885855

Conclusion: Since the p value is much greater than 0.05, we do not have sufficient evidence to reject the null hypothesis. This means the average number of unemployment claims raised by both male and female identifying population are equal.

Hypothesis 2:

Null Hypothesis: The average number of unemployment claims raised by people with Hispanic background is equal to the average number of unemployment claims raised by people with non-Hispanic background.

Test: 2 tailed Z test

Test Results:

test statistic: 1.9897214640854368, p-value:0.04662162691004829

Conclusion: Since the p value is less than 0.05, we have enough evidence to reject the null hypothesis. This means the average number of unemployment claims raised by people of Hispanic background is not equal to that raised by people of non-Hispanic background.

Hypothesis 3:

Test: Pairwise Z-test

Null Hypothesis: The average unemployment claims of all groups are equal.

Test Results:

S. No.	Group 1	Group 2	Test Statistic	p value
1.	White	African-American	-4.430770905568302	9.38968036676055e-06
2.	White	Asian	-1.936438272083813	0.0528140458792887
3.	White	American Indian/ Alaskan Natives	-7.552437276075564	4.27187395892061e-15
4.	White	Native Hawaiian/ Pacific Islanders	-9.070888939099634	1.18049927655561e-21
5.	African-American	Asian	1.900258513184823	0.05739920285609601

6.	African-American	American Indian/ Alaskan Natives	-4.292536298822846	1.76643661024265e-05
7.	African-American	Native Hawaiian/ Pacific Islanders	-7.380336251221838	1.57890258488529e-13
8.	Asian	American Indian/ Alaskan Natives	-5.593555230632853	2.22466412323793e-08
9.	Asian	Native Hawaiian/ Pacific Islanders	-8.11640224774663	4.80207182166821e-16
10.	American Indian/ Alaskan Natives	Native Hawaiian/ Pacific Islanders	-4.65015580297311	3.31684364696965e-06

Conclusion:

1. The p-value is greater than 0.05 for White race and Asian race which means we do not have sufficient evidence to reject the null hypothesis that the average unemployment claims raised by people of white race is equal to the average unemployment claims raised by Asian people.
2. The p-value is greater than 0.05 for Black race and Asian race which means we do not have sufficient evidence to reject the null hypothesis that the average unemployment claims raised by people of black race is equal to the average unemployment claims raised by Asian people.
3. For all other comparisons the p value is less than 0.5, which means that we have sufficient evidence to reject the null hypothesis. The number of unemployment claims are not equal among all other groups. Which indicates that certain groups have been more impacted than others by the onset of the pandemic.