Hypothesis testing is really a systematic way to test claims or ideas about a group or population. In hypothesis testing, data is collected to show that the null hypothesis is not true, based on the likelihood of selecting a sample mean from a population. The level of significance is typically set at 5% in behavioral research studies.

When the probability of obtaining a sample mean is less than 5% if the null hypothesis were true, then we conclude that the sample we selected is too unlikely and so we reject the null hypothesis. Level of significance, or significance level, refers to a criterion of judgment upon which a decision is made regarding the value stated in a null hypothesis. The criterion is based on the probability of obtaining a statistic measured in a sample if the value stated in the null hypothesis were true. The null hypothesis (H0), stated as the null, is a statement about a population parameter, such as the population mean, that is assumed to be true.

The null hypothesis is a starting point; testing whether the value stated in the null hypothesis is likely to be true. An alternative hypothesis (H1) is a statement that directly contradicts a null hypothesis by stating that that the actual value of a population parameter is less than, greater than, or not equal to the value stated in the null hypothesis.

A sample of 124 graduate students from a population of 900 participated in a survey that consisted of the ten questions listed below.

1. What is your role in the aviation industry?
   1. Responses

Commercial Flight Crew = 7

Military Flight Crew = 10

Corporate Flight Crew = 1

Aviation Manufacturing = 17

College Student = 34

Other = 62

* 1. Level of significance

2. Do you feel there is a need for research into the subject of corporate pilot fatigue?

a. Responses

Yes = 90

No = 7

I have no idea = 27

b. Level of significance

H0: There is no significant difference between the proportions of those who feel there is a need for research into the subject of corporate pilot fatigue

Ha: There is a difference between the proportions of those who feel there is a need for research into the subject of corporate pilot fatigue

1. What has the greatest impact to your fatigue levels?

a. Responses

Sleep quality and sleep length = 72

Work Schedule = 37

High workload factors = 19

Initial fatigue level before work = 9

Personal issues or domestic situations = 13

Emotional tension = 12

b. Level of Significance

H0: There is no significant difference between the proportions of what is the greatest impact to fatigue levels

Ha: There is a difference between the proportions of what is the greatest impact to fatigue levels

1. My motivation is lower when I am fatigued.

a. Responses

Strongly Disagree = 3

Disagree = 3

Slightly Disagree = 3

Neutral = 13

Slightly Agree = 13

Agree = 62

Strongly Agree = 35

b. Level of Significance

H0: There is no significant difference between the proportions of the motivation level to lower fatigue

Ha: There is a difference between the proportions of the motivation level to lower fatigue

1. I am easily fatigued.

a. Responses

Strongly Disagree = 8

Disagree = 43

Slightly Disagree = 24

Neutral = 24

Slightly Agree = 15

Agree = 5

Strongly Agree = 2

b. Level of Significance

H0: There is no significant difference between those individuals who believe that they are easily fatigued

Ha: There is a difference between those individuals who believe that they are easily fatigued.

6. Fatigue interferes with my work performance.

a. Responses

Strongly Disagree = 4

Disagree = 4

Slightly Disagree = 7

Neutral = 8

Slightly Agree = 37

Agree = 47

Strongly Agree = 16

b. Level if Significance

H0: There is no significant difference between those individuals who believe that fatigue interferes with work performance

Ha: There is a difference between those individuals who believe that fatigue interferes with work performance

7. Fatigue causes frequent problems for me.

a. Responses

Strongly Disagree = 6

Disagree = 35

Slightly Disagree = 21

Neutral = 23

Slightly Agree = 19

Agree = 16

Strongly Agree 3

b. Level of Significance

H0: There is no significant difference between those individuals who believe that fatigue causes frequent problems for themselves

Ha: There is a difference between those individuals who believe that fatigue causes frequent problems for themselves

8. I have experienced fatigue that prevented sustained work performance.

a. Responses

Strongly Disagree = 4

Disagree = 16

Slightly Disagree = 9

Neutral = 15

Slightly Agree = 30

Agree = 43

Strongly Agree = 6

b. Level of Significance

H0: There is no significant difference between those individuals who believe that fatigue experienced fatigue that prevented sustained work performance

Ha: There is a difference between those individuals who believe that fatigue experienced fatigue that prevented sustained work performance

9. Fatigue interferes with carrying out certain work duties and responsibilities.

a. Responses

Strongly Disagree = 3

Disagree = 17

Slightly Disagree = 8

Neutral = 6

Slightly Agree = 33

Agree = 46

Strongly Agree = 9

b. Level of Significance

H0: There is no significant difference between those individuals who believe that fatigue interferes with carrying out certain work duties and responsibilities

Ha: There is a difference between those individuals who believe that fatigue interferes with carrying out certain work duties and responsibilities

10. Fatigue interferes with my work, family or social life.

a. Responses

Strongly Disagree = 7

Disagree = 15

Slightly Disagree = 10

Neutral = 13

Slightly Agree = 34

Agree = 32

Strongly Agree 12

b. Level of Significance

H0: There is no significant difference between those individuals who believe that interferes with my work, family or social life

Ha: There is a difference between those individuals who believe that fatigue interferes with my work, family or social life