Statistic project

Science, Statistics

Statistical Analyses Statistical Analyses Outline of the survey A survey that was reflected in the Parliament of Canada site d July 29th, 2010 focused on the wage differential between the male and the female genders. The survey was contacted by the Social Affairs Division and largely aimed to ascertain the proposition that, women have continued to earn less than their male counterparts in Canada. Additionally, this phenomenon was not new to the other OECD countries, globally, despite the fact that women caught up with men in the labour force participation.

Therefore, the survey focused on measuring the gender wage gap using three approaches; the hourly wage gap, the annual earnings of these two genders and full-year, full- time salary gap (Julie, 2010). However, the average hourly wage gap was the most convincing and considered two variables, sex and occupation. From a population of 100 occupations, a sample of ten occupations was considered with each having a male and a female then their wage differential calculated.

Table 1: Showing the wage differential results on hourly average basis (Julie, 2010)

The above data can be ascertained using the ANOVA formula to reject or accept the hypothesis that there exists the wage gap between the two sexes. Assuming the data is normally distributed, a confidence level of 95% the data can be evaluated as follows;

Hypotheses statement

H0: Mean wage rates for male = Mean wage rates for female

H1: Mean wage rates for male ≠ mean wage rates for female

The data can be presented as follows

Male (Group 1)

Female (Group 2)

Sample size

10

10

Sample mean

$ 25. 71

$ 21. 35

Sample standard deviation

$ 5. 43

$ 5. 81

The standard deviations of the two means are calculated using this formula;

or

The test statistic is the F-test that is given by the formula;

F value = Variance 1 / Variance 2 (Df1 = n-1, Df2 = N-k)

Variance is given as ð2 which from the above data is (5. 43)2 and (5. 81)2,

therefore;

Variance 1 = 29. 48 and variance 2 = 33. 75

F value = 29. 48 / 33. 75 = 0. 87

From the F distribution tables the P value associated with F = 0. 87 = 0.

5674

The above uses; Degrees of freedom = 9 for the numerator and 18 for the

denominator

Therefore, the Probability = 0. 5674

Rule of thumb: Reject H0 if P < 0. 05

From the above P = 0. 5674 > 0. 05; therefore Accept H0

Conclusion; There is wage differential between males and females in Canada.

References

Julie, C. (2010) Wage Gap between Women and Men. Social Affairs Division. Library of Parliament Research Publications, Publication No. 2010-30-E. retrieved from http://www. parl. gc. ca/content/lop/researchpublications/2010-30-e. pdf

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