

# Employees of axolotl corporation essay sample



**ASSIGN  
BUSTER**

Employees of Axolotl Corporation were sampled at random from pay records and asked to complete an anonymous job satisfaction survey, yielding the tabulation shown. Research question: at  $\alpha = .05$ , is job satisfaction independent of pay category?

Employees;

	Satisfied	neutral	dissatisfied	total
Pay type				
salaried	20	13	2	35
Hourly	135	127	58	320
Total	155	140	60	355

Step 1: State the Hypotheses

Job satisfaction is independent of pay category.

Job satisfaction is dependent of pay category.

Step 2: State the Decision Rule

For the pay records contingency table,

$r = 2$  rows, and  $c = 3$  columns. Therefore degree of freedom is

$$df = (r - 1)(c - 1) = (2 - 1)(3 - 1) = 2$$

At  $\alpha = 0.05$  and  $df = 2$ , the right-tail critical value is 5.991.

For  $\alpha = 0.05$  in a right-tailed test, the decision rule is:

Reject if  $> 5.991$ . Otherwise, do not reject.

Step 3: Calculate the Expected Frequencies

The expected frequency in row  $j$  and column  $k$  is

		Satisfied	Neutral	Dissatisfied	Total
Pay type salaried	Observed	20	13	2	35
	Expected	15.28	13.80	5.92	35.00
Hourly	Observed	135	127	58	320
	Expected	139.72	126.20	54.08	320.00
Total	Observed	155	140	60	355
	Expected	155.00	140.00	60.00	355.00

## Step 4: Calculate the Test Statistic

Using Excel MegaStat, The chi-square test statistic is  $= 4.54$ .

## Chi-square Contingency Table Test for Independence

		Satisfie d	Neutral	Dissatisfie d	Total
Pay type salaried	Observed	20	13	2	35
	Expected	15.28	13.80	5.92	35.00
	O - E	4.72	-0.80	-3.92	0.00
	$(O - E)^2 / E$	1.46	0.05	2.59	4.10
Hourly	Observed	135	127	58	320
	Expected	139.72	126.20	54.08	320.00
	O - E	-4.72	0.80	3.92	0.00
	$(O - E)^2 / E$	0.16	0.01	0.28	0.45
Total	Observed	155	140	60	355

Expected	155.00	140.00	60.00	355.00
O - E	0.00	0.00	0.00	0.00
(O - E) <sup>2</sup> / E	1.62	0.05	2.88	4.54
	4.54			chi- square
	2			df
	.1032			p-value

#### Step 5: Make the Decision

The test statistic = 4.54 is less than the critical value 5.991.

Decision: Do not reject .

This is also confirmed by p-value (0.1032).

At level of significance,  $\alpha = 0.05$ , the data provide sufficient evidence to conclude that job satisfaction is independent of pay category.