Book Homework

Session 6

8.1

X-bar = 85

σ = 8

n = 64

Zα/2 = ±1.96

 85 ± (1.96)(8/√64)

 85 ± (1.96)(8/8)

 85 ± 1.96

83.04 ≤ μ ≤ 86.96

8.5

Out of the sample size of 100, 95% of the customers will fall in the range of the mean annual income. You are 95% confident that the mean is accounted for in the sample.

8.7

Seeing that $71,000 is included in the sample range, the confidence is correct about the mean.

8.11

X-bar = 75

S = 24

n = 36

tα/2 = 2.0301

75 ± (2.0301)(24/√36)

75 ± (2.0301)(24/6)

75 ± (2.0301)(4)

75 ± 8.1204

66.88 ≤ μ ≤ 83.12

8.17

X-bar = 195.3

S = 21.4

n = 18

1. tα/2 = 2.1098

195.3 ± (2.1098)(21.4/√18)

195.3 ± (2.1098)(21.4/4.24)

195.3 ± (2.1098)(5.05)

195.3 ± 10.6545

184.65 ≤ μ ≤ 205.95

1. A 95% confidence interval indicates the index value will be between 184.65 and 205.95. There is not enough evidence to show that the organization is not meeting the performance indicator.

C. A wear index of 210 is not a bad thing. It indicates a better quality for the customer. One wear index outside of the Range does not negate the confidence interval of the sample.

8.35

Zα/2 = ±2.58

σ = 100

e = ±20

 ((2.58)2(100)2)/(20)2

((6.6564)(10000))/400

66564/400

167

8.47

p = 315/500

p = .63

A.

 .63 ± (1.96)(√(((.63)(1 - .63))/500))

.63 ± (1.96)(√(((.63)(.37))/500))

.63 ± (1.96)(√((.2331)/500))

.63 ± (1.96)(√.004662)

.63 ± (1.96)(.0216)

.63 ± .0423

.5877 ≤ π ≤ .6723

1. There is a 95% chance that the population proportion of executives that informally monitor social networking sites to stay on top of information related to their company is between .5877 and .6723.

C.

((1.96)2((.50)(.50)))/(.01)2

((3.8416)(.25))/.0001

.9604/.0001

 9604

8.51

D-bar = 200.63/200

D-bar = 1.003

|  |  |  |
| --- | --- | --- |
| Di | Di – D-bar | (Di – D-bar)2 |
| 13.76 | 12.757 | 162.741 |
| 42.87 | 41.867 | 1752.846 |
| 34.65 | 33.647 | 1132.121 |
| 11.09 | 10.087 | 101.748 |
| 14.54 | 13.537 | 183.25 |
| 22.87 | 21.867 | 478.166 |
| 25.52 | 24.517 | 601.083 |
| 9.81 | 8.807 | 77.563 |
| 10.01 | 9.027 | 81.487 |
| 15.49 | 14.487 | 209.873 |
| 0 (x190) | -1.003 | 1.006 (x190) = 191.14 |

∑(Di – D-bar)2 = 4972.018

SD = √(4972.018/199)

SD = √24.985

SD = 4.999

tα/2 = 196

 (10000)(1.003) ± (10000)(1.96)(4.999/√200)(√((10000 – 200)/(10000 – 1)))\

 10030 ± 19600(.357)(.989998995)

 10030 ± 19600(.349)

 10030 ± 6840.40

3189.60 ≤ Total Difference ≤ 16870.40