USAA Case Analysis

Name

Course

Tutor

Date

USAA Case Analysis

Abstract

The United Services Automobile Association (USAA) is a group of companies in financial services. The conglomerate is based in San Antonio, Texas, and includes companies such as the Texas Department of Insurance and other subsidiaries that offer investing, insurance and banking to families and individuals that served at one point or actively serving in the Armed Forces of the United States. USAA is a Fortune 500 diversified entity founded in 1922 by 25 army officers who united in San Antonio with the aim of insuring each other’s automobiles had some cover. Currently, USAA’s revenue size is 35.62 billion and is the 5th largest auto insurer as well as the 4th largest homeowners’ insurer with over 12.4 million members within its rank. Founded as an automobile insurance company, United Services Automobile Association commenced offering homeowners and life insurance in the 1960s. Later on, in the 1970s, it added brokerage and investment management services ("Enable cookies," n.d.). Today, the company also has banking services within its ranks which it introduced in the 1980s. USAA went international in 1952 when it opened its offices in Frankfurt, West Germany. This was later followed by another office in London which was opened in 1962. Previously limited to serving members of the armed forces of the United States, the company extended membership to civilians but under restricted terms around August 2013. The arrangement provided access to some of the products of the company which include most banking deposits, life insurance and investment products. However, other products such as property and auto insurance products were reserved for military members only. As of 2015, the organization had employed more than 32,000 people across its U.S and overseas offices. Charles Schwab Corporation, on July 26, 2019, made an announcement that it had acquired brokerage and investment accounts for $1.8 billion from USAA.

Discussion 1

***What percentage rates are between $800 and $1,200?***

Mean = 1034

A = 535

B = 1533

b-a = 998

= P(1200<x<800)

= 40%

***What percentage are more than $1,350?***

Mean = 1034

A = 535

B = 1533

b-a = 998

= P(x>1350

= 18%

Discussion 2

***Probability that an auto insurance rate, randomly selected in the United States would be greater than $1,750?***

Mean = 1317

Std Dev. = 324

Cutoff point X = 1750

Z = (Cutoff point X/Std Dev.)

= (1750/324)

= 1.336419753

P(z) = 0.4099

Cumulative probability = P(x>1750)

= (0.0901\*100) (expressed as a percentage)

= 9.1%

***The percentage the rates of that auto insurance would be less than $1,200?***

Mean = 1317

Std Dev. = 324

Cutoff point X = 1200

Z = (Cutoff point X/Std Dev.)

= (1200/ (324\*100))

= -0.361111111

P(x) = 0.1406

P(x<1200) = 0.3594 (expressed as a percentage)

= 35.9%

***The percentage the rates of that auto insurance would be between $1,100 and $1,500?*** Standard deviation = 324

N = 50

Mean = 1317

Cutoff point X = 1100 same as (X1= 1100)

(X2 = 1500)

Z1 = (1100/324)

= -0.669753086

Z2 = (1500/324)

= 0.564814815

P(X1) = 0.2486

P(X2) = 0.2123

P(1100<x<1500) = (0.2486/0.2123)

= 46.2%

Discussion 3

***The probability that claims for a homeowner would be 15 years or more?***

The probability that claims for a homeowner would be 15 years or more is given by

P(X = x) =

e*−λ λ*

*x*

*x*!

*x* = 0*,* 1*,* 2*,* 3*,* 4*, . . .*

Let X = No. of claims in 9 years

Events occur randomly, and the mean rate λ= 1/9 or 1.11

⇒ X ∼ Po(1.11)

We can now use the above formula to calculate the probability of observing exactly 1 claim in a period of 15 or more years.

P (X = 1) = e−1.11 (1.11)15/15! = 0.652

***What percentage of the time would it be less than 5 years between claims?***

Mean = 1.11

Std Dev. = 5

Cutoff point X = 0.652

Z = (0.652/5)

= 3.26%

***What is the average “interarrival time” for auto collisions in car years?***

The total number of collisions is given by:

On average, there are 5.59 claim collisions in every 100 car years. In one car year, the average interarrival time will be:

= {(5.59/100)\*1} 0.0559

= 0.06 collisions per a car year

***What do you think this average means? Assume that auto collisions are Poisson distributed***.

In Poisson distribution, the mean and variance are equal if the average mean or the number of collisions in a given time interval (per car year). The Poisson distribution is a discrete distribution (Bourne, 2018). It is often used as a model for the number of events (such as the claim frequency for automobile collisions per given car years or a number of telephone calls at a business as well as a number of defects products in a given surface area) in a determined period of time.

References

Bourne, M. (2018, September 20). 13. The Poisson probability distribution. Interactive Mathematics - Learn math while you play with it!. <https://www.intmath.com/counting-probability/13-poisson-probability-distribution.php#mean>

Enable cookies. (n.d.). https://www.usaa.com/?akredirect=true