

# Factors affecting elder care prices

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## 1 Introduction

Elder care is an issue that is growing in most industrialized nations. Due to technological advances and changing demographics, there is greater need for social services and medical care for seniors. The oldest people in society have the most need of services, and this fact has presented a challenge to welfare states. This led to my analysis of elder care prices across United States.[1] One of the interesting observations of the analysis was the variation in elder care prices between some cities are as large as 60%.

Let me demonstrate this with an example to give you an insight of the problem. Consider two cities, Prescott and Flagstaff which are 100 miles away from each other. The elder care(assisted living) prices in Prescott is \$2500 per month while Flagstaff prices are \$4000 per month. The price difference is really high for these cities, even though they are. This shocking revelation inspired this study. Therefore, examining the factors behind this wide geographic variation, equips us with a leverage to understand and impact the prices of elder care. This study focuses on identifying these factors.

We test hypothesized relationships between elder care prices and various explanatory factors. We provide evidence that state medicare expenditure levels, population density of the state and cost of living of the location are significant explanatory factors of elder care prices. We find no evidence that the quality of available facilities or agent marketing controls affect these prices. Findings of the study are useful to insurers, legislators, regulators, and others involved in the public policy debate about financing elder care and the related[2].

## 2 Why is this study important?

The overall life expectancy of the world is increasing over the years, but are we ready to sustain it? As the proportion of older people is increasing in the world, the central question is whether this aging population will be provided with improved or sustained healthcare. This expected rate of increase of life expectancy is faster in the US than most other countries.[3]

In 2012, the senior citizens (65 years or older) were 14% of the population but accounted for 34% of all health care spending. By the year 2050 this population is estimated to be about 83.7 million in the US [3].In this study , we identify the factor which affect the prices of elder care .These influencing factors gives us the handle to reduce the cost of elder care price. This identification is crucial, considering that these pricing are going to influence a considerable part of the population.

### 3 Challenges elder people face

These are the list of challenges the elder care community in entirety faces :

- Lack of awareness on eldercare information
- Lack of quality facility
- Shortage of geriatric society
- Varying prices for same quality facility

## 4 Understand Elder care

According to a survey consisting of 209 seniors , a shocking 66 percent of seniors respondents could name “off the top of their heads” a maximum of only two of the five elder care options. And 50 percent of seniors said they have neither thought about nor planned their elder care[4]. The fact that so many seniors and their families have such a poor grasp of the facts about senior care and have done so little planning for the future raises serious challenges. Here are some of the statistics according to a research by Genworth, to stress on how important senior care planning is.

## Planning mitigates stress and negative impacts



# \$8,000

Caregivers who thought action should have been taken sooner estimate that about \$8,000 in out-of-pocket costs could have been avoided.

About half of caregivers are helping cover long term care expenses



//

Plan in advance, we're all going to get old, it should not come as a big surprise!

//

*Caregiver, Spouse/Partner*

//

Be prepared financially for the unexpected, and make sure you have an emotional support system.

//

*Caregiver, Mother*

# 59%



59% of caregivers reported that feeling "less stress" was a side benefit of their loved one owning LTCI

# 1/2+

Over half of caregivers and recipients would plan better and arrange for help sooner if they had to go through the same experience again

//

Coordinate all family members and schedule tasks amongst everyone so that one person is not bearing the entire burden themselves.

//

*Caregiver, Father-in-Law*

## 4.1 Levels of care

Before we understand the different ways of funding of elder care, it is vital to be aware of the various services available in the elder care market. The five primary levels of elder care are home health care, health aide services, adult day health care, assisted living facilities, nursing home care. As we will be using these terminologies in the study, understanding of these terminologies are vital.

### 4.1.1 Home health care

Services providing help with household tasks that cannot be managed alone. Homemaker services includes “hands-off” care such as cooking, cleaning and running errands. [5]

### 4.1.2 Health Aide Services

Home health aides offer services to people who need more extensive care. It is “hands-on” personal care, but not medical care. This is the rate charged by a non-Medicare certified, licensed agency. [5]

### 4.1.3 Adult Day Health Care (ADC)

Provides social and support services in a community-based, protective setting. Various models are designed to offer socialization, supervision and structured activities. Some programs may provide personal care, transportation, medical management and meals.[5]

### 4.1.4 Assisted Living Facility (ALF)

Residential arrangements providing personal care and health services. The level of care may not be as extensive as that of a nursing home. Assisted living is often an alternative to a nursing home, or an intermediate level of long term care. [5]

### 4.1.5 Nursing Home Care

These facilities often provide a higher level of supervision and care than Assisted Living Facilities. They offer residents personal care assistance, room and board, supervision, medication, therapies and rehabilitation, and on-site nursing care 24 hours a day.[5]

## 4.2 Elder care funding

There are several ways to pay for elder care. The most conventional ways of funding your senior care are through government programs like – Medicare and Medicaid, private long term care insurances and spending out of your own pocket.

### 4.2.1 Medicare

Medicare is national health insurance that all Americans receive when they turn 65. Medicare can cover short-term rehab stays at a nursing home, for example, after a hospitalization. It can also pay for rehab and therapy at home for a limited period and when prescribed by a doctor.

But it's vitally important to recognize that Medicare does not pay for custodial care. Medicare should primarily be considered health insurance. This means Medicare does not pay for the following types of senior care:

- Assisted living
- Long term care at a nursing home
- Residential care homes
- Any long term care.[6]

### 4.2.2 Medicaid

Medicaid is the foremost government assistance program paying for long term care for people who can't afford it on their own. It is administered cooperatively by the federal government and states. While the majority of its funding comes from the federal government, each state has some discretion in its individual rules, regulations and eligibility requirements.[6]

### 4.2.3 Long term care Insurance

Long-term care insurance (LTC or LTCI) is an insurance product, , that helps pay for the cost of long-term care. Long-term care insurance covers care generally not covered by health insurance, Medicare, or Medicaid.

Individuals who require long-term care are generally not sick in the traditional sense, but instead, are unable to perform two of the six activities of daily living (ADLs) such as dressing, bathing, eating, toileting, continence, transferring (getting in and out of a bed or chair), and walking. Age is not a determining factor in needing long-term care. About 70 percent of individuals over age 65 will require at least some type of long-term care services during their lifetime. [7]

It is also interesting to note that ,private long-term care insurance policy sales have experienced slow growth despite the growing need for elder care. On average only about 7 percent of the population aged 65 and older has long-term care insurance.[2]

### 4.2.4 Out of pocket

Out of pocket is another way to pay for the nursing home but given its high cost, is a less affordable option for most senior population.



## 5 Cost of care maps

This section, gives you a visual illustration of geographic variations of different levels of care across states and cities. Click on this tableau link for an interactive understanding of prices across United States.

[https://public.tableau.com/views/ElderCareAnalysis/ElderCareAnalysis?:embed=y&:display\\_count=yes](https://public.tableau.com/views/ElderCareAnalysis/ElderCareAnalysis?:embed=y&:display_count=yes)

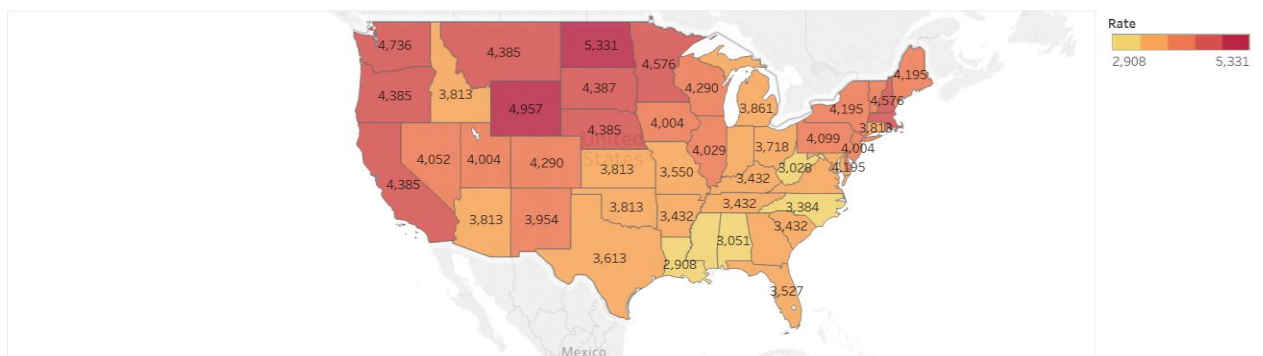
Feel free to play round and observe the price variations of 150 cities and all the 50 states. You will be able to view the variations, under two filters:

- Level of care
- City or State

Here are two quick snapshots of the tableau demonstration.

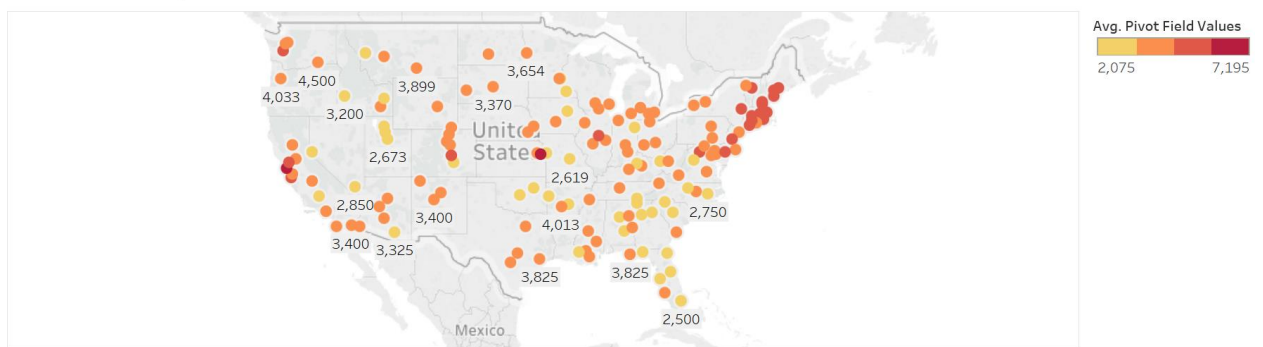
### 1) Variation of Homemaker Services Prices for all the states

Elder care analysis across states



### 2) Variation of Assisted Living Prices for some cities

Elder Care Analysis



## 6 Analysis

This section focuses on analyzing the explanatory factors such as population density, elder people population, medicare costs for all the states against the elder care prices. For analysis on individual cities, we consider factors like cost of living, crime rates against the elder care prices. I have listed out the correlation coefficients, scatter plots and links to the tableau scatter plots for all the factors considered. Pearson p-value is considered for this study.

Findings on factors against prices of elder care:

### 6.1 Population Density vs elder care prices

Population Density is the number of people living in a square mile of area. In this section we analyze if the density of the states influences the eldercare prices .

Correlation coefficient : 0.379

P-Value = 0.0

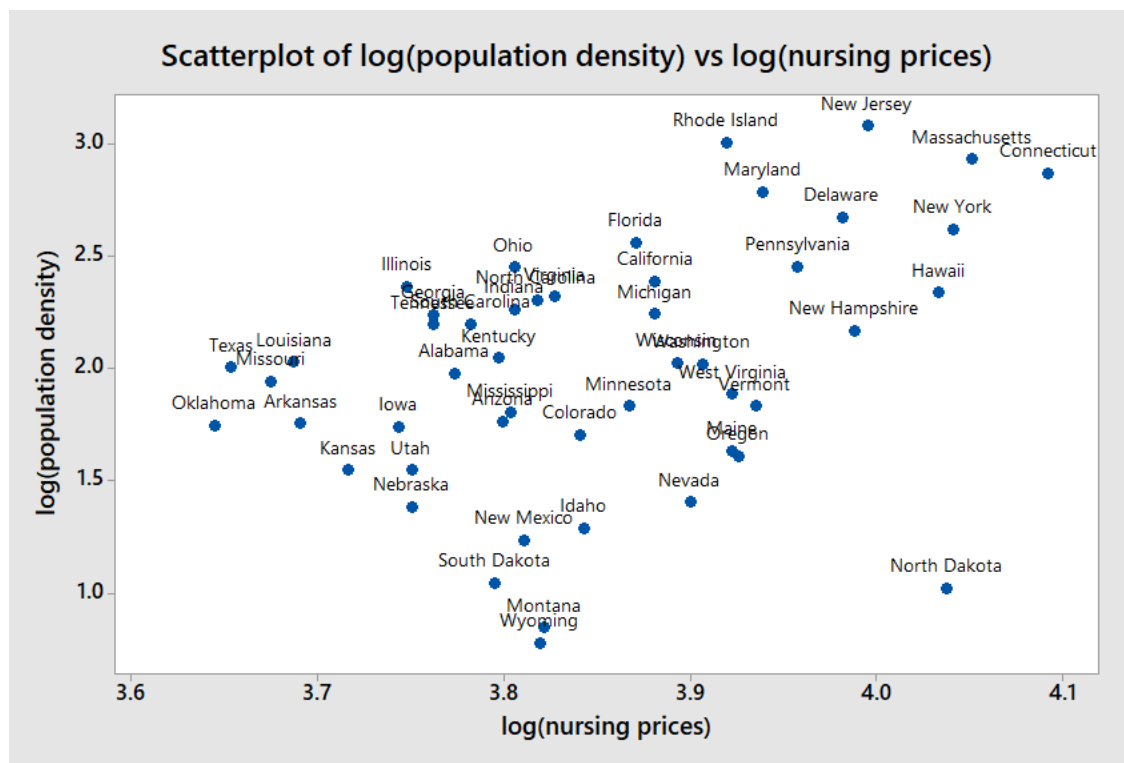


Tableau link: [https://public.tableau.com/views/populationdensity\\_states/Sheet1?embed=y&:display\\_count=yes](https://public.tableau.com/views/populationdensity_states/Sheet1?embed=y&:display_count=yes)  
Since the correlation coefficient approximately 0.4 . Population density has a faint influence on the elder care prices.

## 6.2 Population of elderly people vs elder care prices

Population of elderly people in every state is the the number of elder people in the state. In this section we analyze if the number of elder people in a state influences the eldercare prices.

Correlation coefficient: -0.305

P-Value = 0.052

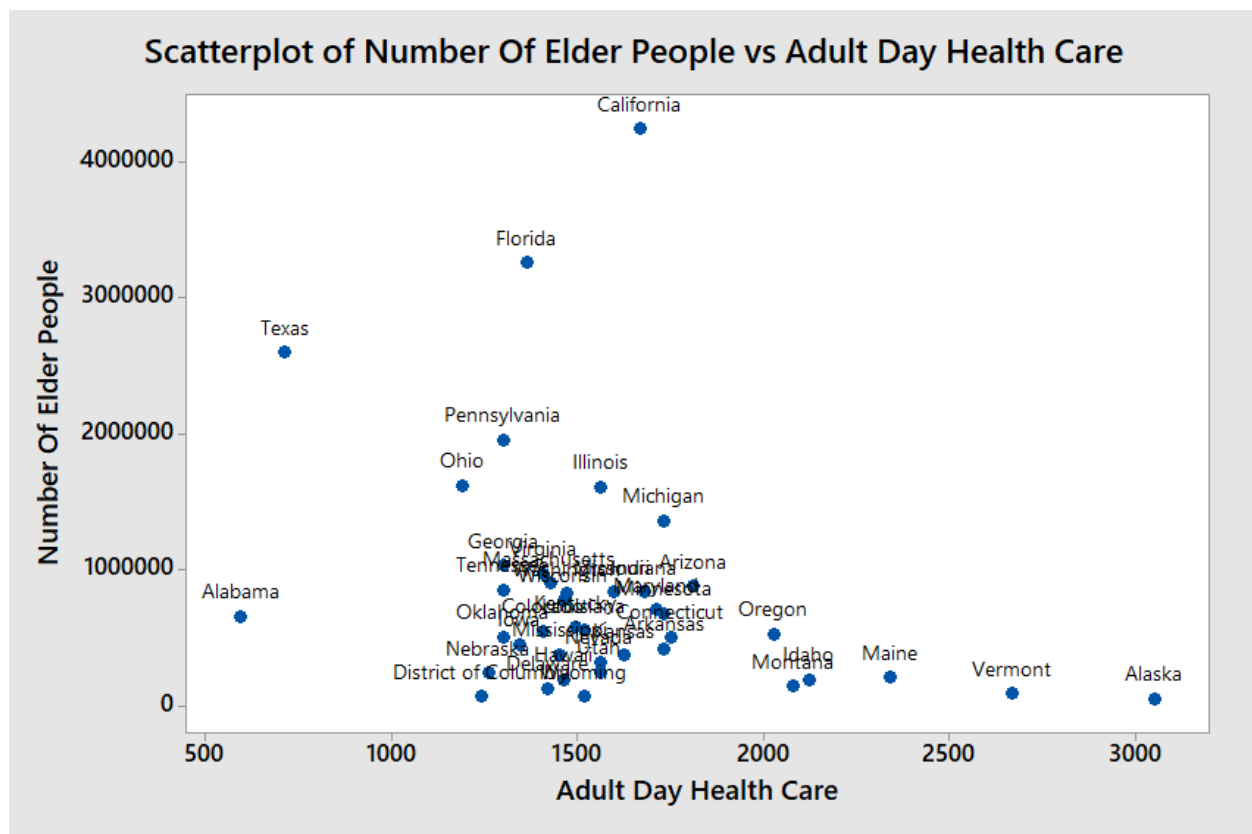


Tableau link:

[https://public.tableau.com/views/Percentofelderpopulation/Sheet1?:embed=y&:display\\_count=yes](https://public.tableau.com/views/Percentofelderpopulation/Sheet1?:embed=y&:display_count=yes)

Since the correlation coefficient approximately is negative. The inference, we can make is, lesser the number of elder people, greater the prices of the elder care.

### 6.3 Medicare cost vs elder care prices

The parameter we are considering here is the , per capita medicare cost of every state. That is, we are observing the amount of medicare cost the state spends on every elder person. In this section, we analyze if the per capita medicare cost influences the eldercare prices.

Correlation coefficient: 0.223

P-Value = 0.116

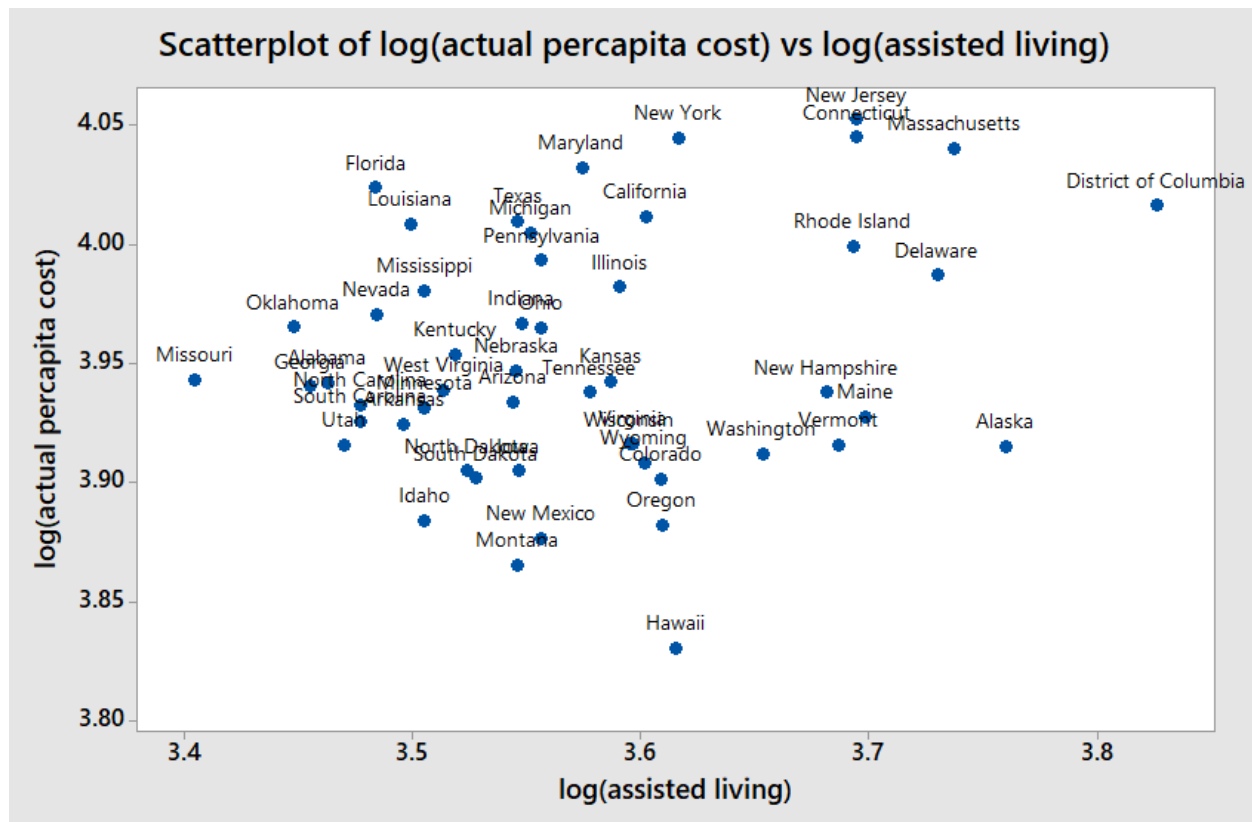


Tableau link:

[https://public.tableau.com/views/medicarecostsvseldercareprices/Sheet1?:embed=y&:display\\_count=yes&public=yes](https://public.tableau.com/views/medicarecostsvseldercareprices/Sheet1?:embed=y&:display_count=yes&public=yes)

Since the correlation coefficient approximately is positive ,but not too high. The inference we can make is, the percentage of medicare contribution on elder care doesnot greatly impact the elder care prices

## 6.4 Crime rate vs elder care prices

The parameter we are considering here is the, crime rate of every state. In this section, we analyze if the per capita medicare cost influences the eldercare prices.

Correlation coefficient: -0.038

P-Value = 0.816

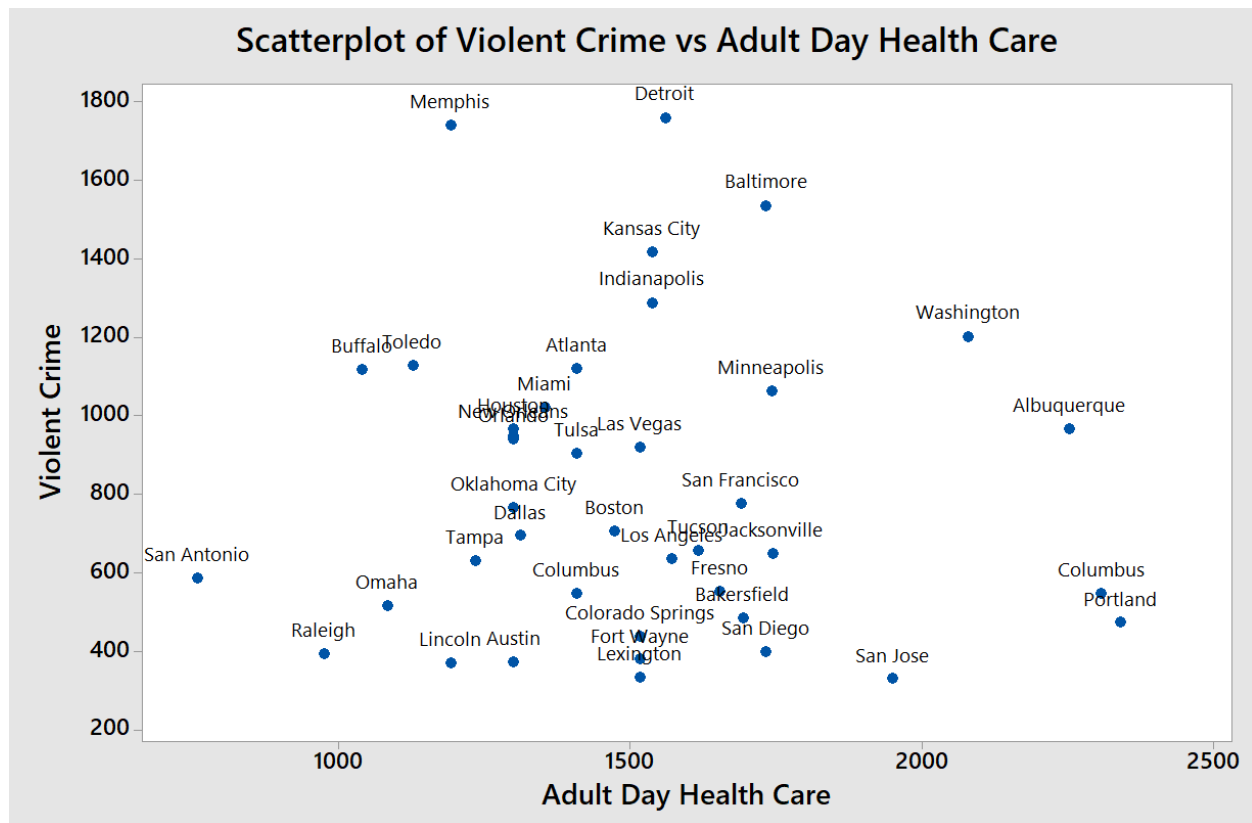


Tableau link: [https://public.tableau.com/views/CARRIER/Sheet1?:embed=y&:display\\_count=yes](https://public.tableau.com/views/CARRIER/Sheet1?:embed=y&:display_count=yes)

Since the correlation coefficient is almost 0 , we can conclude that crime rate has no influence oon the elder care prices .

## 6.5 Cost of living vs elder care prices

The parameter we are considering here is the, cost of living in every state. That is, we are observing the cost renting a 1 bed room house in the city. In this section, we analyze if the cost of living plays an important role in the elder care prices.

Correlation coefficient: 0.499

P-Value = 0.0

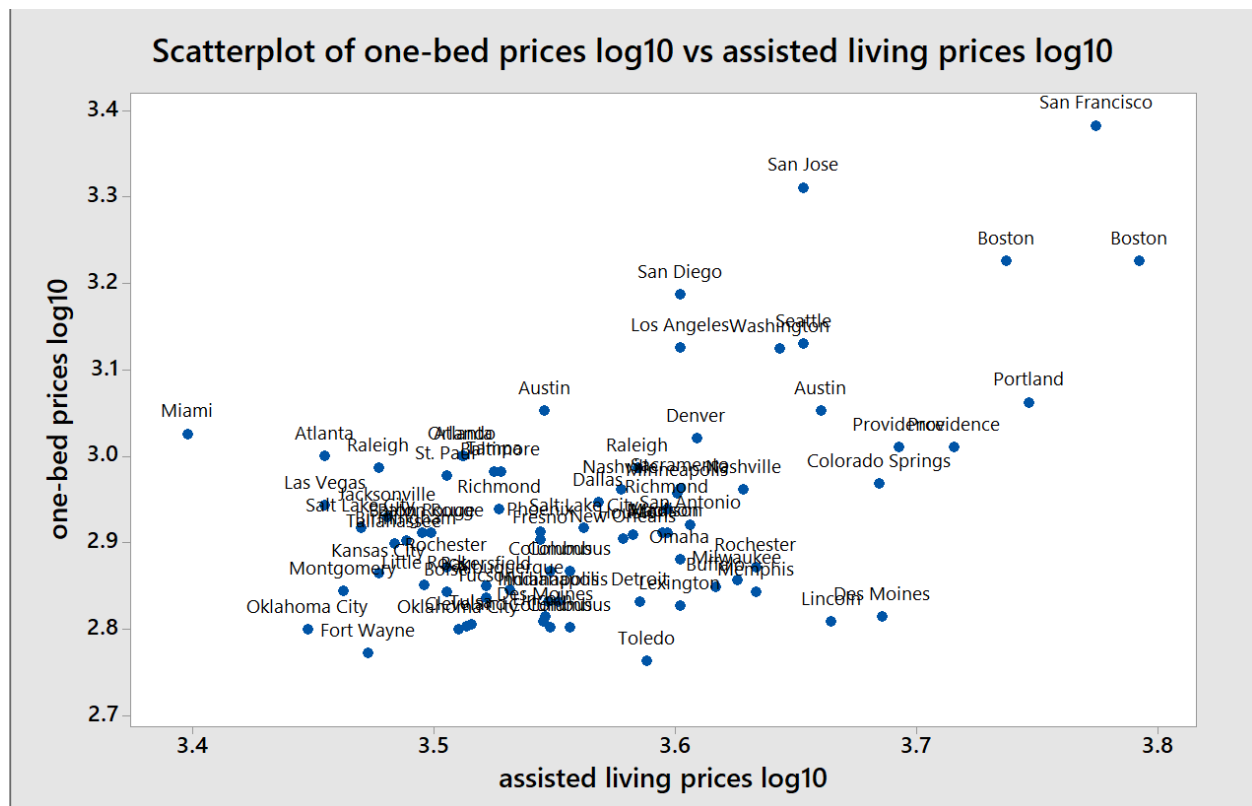


Tableau link:

[https://public.tableau.com/views/Eldercarevscostofliving/Sheet1?embed=y&:display\\_count=yes](https://public.tableau.com/views/Eldercarevscostofliving/Sheet1?embed=y&:display_count=yes)

Since the correlation coefficient is almost 0.5 , we can infer that cost of living has a great influence on the elder care prices.

## 7 Conclusion

Based on the analysis we made in the previous section, we can conclude that,

- Crime rate has no influence on the elder care prices
- Cost of living affects the elder care prices in a great extent
- Medicare expenditure has a mild influence on the prices
- Factors like population density and elder care population negatively influence the cost. That is greater the percentage of elderly people in the area, lower the cost.

Another interesting factor to note is that elder care prices are greatly correlated with the health care prices of the state. Healthcare prices are highly impacted by the insurance providing companies. Prices will be lower when insurers have more bargaining power than providers and vice versa. From this, we can infer that insurer's bargaining power can influence even the elder care prices.

Also, from the analysis, we can use cost of living as our biggest leverage to affect the elder care prices.

## References

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