**Project Report**

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**Introduction**

The Annual Business Survey provides information on selected economic and demographic characteristics for businesses and business owners by sex, ethnicity, race and veteran status. Using the data provided by the Census Bureau, we looked to understand how a person’s background affects their business ownership and employer status. We were also interested in the number of employees across many different demographic groups such as race, ethnicity and veteran status.

**Data Sources**

Bureau, U. S. C. (2021, October 14). *Annual Business Survey (ABS) apis*. Census.gov. Retrieved April 22, 2022, from https://www.census.gov/data/developers/data-sets/abs.2019.html

**Company Summary (Firm Size Exploration)**

While searching through the company summary dataset, we noticed that the firms could be sectioned by firm size. Immediate questions revolved around the firms and employee size.  Additional values that interested us included: sex and ethinic group. We wanted to see the distribution of employee size with the firms, the difference between Male and Female within the firms employee size, and finally the distribution of Hispanic/Non-Hispanic/Total via employee size. In regards to the employee size, we wanted to see what group held the most employees. We predicted that the largest group would be *firms with employees 250-499*. *Male* vs. *Female*, we believed that the dominating group would be Male as most businesses have majority *Male* employees. Finally, the last question would revolve around seeing how *Hispanic/Non-Hispanic/Total* compare within the firm's employee size. We believed Non-Hispanic would have the majority of employees.

**Business Employees and Employers**

Looking through the business dataset our group wanted to know how many employees were in each state. We think that the state with the most employees would be the state with the most population which would be California. Another question we wanted to include would be if the same state would have the highest number of employers given that this would also relate to how many employees there were. We believe that this conclusion would be true as well. The more employers there are the more employees there would be as well. The final question in looking into this topic was if there was any correlation with the amount of employers to employees. Would there be an overwhelming amount of employees to employers or vice versa. Our prediction is that there is a correlation but would vary from state to state.

Chart, bar chart

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First image represents the distribution of employee size for the firms represented within the dataset. As noted with the graph, the largest group for employee size is the *firms with 1-4 employees*. We predicted the largest group to be *firms with employees 250-499*, that was not the case. Conclusion as to why this may be the case include businesses like small-businesses, family owned, and smaller market businesses. Additional information may prove to be helpful in determining what business size the data is from.

Chart, bar chart

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The following visual includes the difference in firms via sex, specifically looking at Male vs Female. There were other categories of sex but, we were interested in these two. As shown above and as predicted, the Male category was the largest in all groups. The visual allows us to see how employee distribution via sex looks like. One thing to note, the Female group was not as far behind the Males as initially predicted.

Chart, bar chart

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Lastly, the graph above represents the Distribution of Ethnicity(*Hispanic/Non-Hispanic/Total)* by Firm Size. As predicted, the Non-Hispanic group totaled more employees compared to the Hispanic group. Also shown, the total valuation of Firms with x amount of employees is graphed to show the difference *Hispanic/Non-Hispanic* vs. *Total.*As a surprise, the Non-Hispanic group looks small in value compared to the grand total. A reason for that may be because other employees could fall into other categories rather than just Non-Hispanic. It is important to note as this visual could be misleading depending on how it is portrayed.

**Employees and Employers by State**

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The amount of employees in each state was one fact we were intrigued to find out. Looking at the above graph portrays the top 10 states with the highest number of employees. The major states generally have the highest number of employees. Our prediction came true with California being the state with the highest amount of employees. We will see in the next graph if California is also the state with the most amount of employers.

A picture containing chart

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In the above graph we can conclude that California is the state with the most employers as well. Although the top 10 states with the highest number of employees does not entirely match the top 10 states with the highest number of employers. Some states such as North Carolina are in the top 10 states for employers but not employees.

Chart, scatter chart

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From this graph we can see that there is a correlation with the number of employers to employees. The line of best fit shows a strong positive correlation with employers to employees. There is about a 200:1 ratio with the amount of employees to employers. Although not all the states fall above this line. Thus our prediction is correct that there is a strong correlation with employers to employees that differ from state to state.

**Number of Employees by Demographic Factors**

We were interested in finding how different groups were represented in the workplace. The first table below looks into how different races are represented in companies across America.

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As you can see in this graph, white people represent the majority of employees across America and it is not even close. Secondly, we can look below at how different ethnic groups are represented in the workplace.

Chart

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Unsurprisingly, non-hispanic Americans are the largest ethnic group in the United States. Lastly for demographic factors, we can look into the veteran status of employees.

Chart

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Again, it comes as no surprise that non-veterans are the largest group for the veteran status factor. For all of these different demographic factors, the largest group has not been surprising, but it is much more interesting to look at just how low the representation is for other groups. It is also notable that most of the minority groups have similar representation.

**Business Owner Characteristics**

Looking at the business characteristics of the business owners, we were curious about the breakdown of education level and age between the genders of the owners along with veteran status and education level of the owners.

From the figure below, we can tell that the number of male owners is more than double the female owners in almost every education level category. With the education level, bachelor’s degree is the most popular amongst our business owners with the second being high school degree. The education level with the least amount of business owners for both genders are less than high school and doctorate, which actually makes sense as well.

Chart, bar chart

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Next we have the breakdown of owners by age and gender, which resemble a left skewed normal distribution curve. The majority of our business owners were about 45-64 in 2018. The curve between the male and female business owner just about matches with each other. Not surprisingly, there are not many business owners under 25.

Chart, bar chart

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When looking at education level and veteran status of business owners, we realized there are far more non-veterans than veterans making the charts even more difficult to differentiate so we decided to look at education level within business owners who are veterans. Within that, it follows closely to what we discover when looking at business owners’ genders. The education level with the most veteran business owners are bachelor’s degree and high school degree. The education level with the least are doctorate and less than high school, although doctorate is second to last rather than last, which is only slightly different from business owner genders.

**Chart, bar chart

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**Conclusion**

With such broad and deep economic and demographic characteristics for businesses and business owners by sex, ethnicity, race and veteran status, even technology use by companies, the above variables within the Annual Business Survey are what we thought was worth a look with initial exploration. More variables, relationships, and depth can be added and explored in future discoveries.