CS5346 Task D- Visualization with Tableau

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Tableau Link: [Link](#)

Introduction

In the tech industry, mental health has emerged as a critical yet often overlooked issue. To shed light on this important topic, I have chosen to visualize data from OSMI Mental Health in Tech Survey 2014 with over 1200 respondents, that explores attitudes towards mental health and the frequency of mental health disorders in the tech workplace. Through Tableau data visualization, I aim to raise awareness, inspire action, and contribute to positive social change by highlighting key insights into the prevalence of mental health disorders, attitudes towards seeking treatment, and the impact of workplace policies on mental health and productivity. By visualizing this data, we can gain a deeper understanding of the challenges faced by individuals in the tech industry and work towards creating a more supportive and inclusive work environment for all.

Dataset

1. **Data Origin:** The dataset is from the OSMI(Open Sourcing Mental Health) Mental Health in Tech Survey, which collected responses from over 1200 individuals in the tech industry in 2014 regarding their attitudes towards mental health and the frequency of mental health disorders. (https://osmhhelp.org/research.html) or ([Kaggle](#))
2. **Dataset Contents**: The dataset contains information on various aspects of mental health in the tech workplace, such as attitudes towards seeking treatment, the impact of workplace policies, and the prevalence of mental health disorders.
    I chose this dataset because mental health in the tech industry is a significant and often overlooked issue. Visualizing this data can help raise awareness and potentially lead to positive changes in how mental health is addressed in the tech workplace.
3. **Features:** The dataset contains the following features:

Feature Name	Description	Data Type
Age	Age of the respondent.	Quantitative
Country	Country where the respondent works.	Categorical
Family_History	Whether the respondent has a family history of mental illness.	Categorical

Treatment	Whether the respondent has sought treatment for a mental health condition.	Categorical
Leave	How easy is it for the respondent to take medical leave for a mental health condition?	Categorical
Benefits	Whether the respondent's employer provides mental health benefits.	Categorical
Care_Options	Whether the respondent knows the options for mental health care provided by their employer.	Categorical
Wellness_Program	Whether the respondent's employer has ever discussed mental health as part of an employee wellness program.	Categorical
Seek_Help	Whether the respondent's employer provides resources to learn more about mental health issues and how to seek help.	Categorical

Purpose of Visualization:

The purpose of these given visualizations is to help provide insights into various aspects of mental health in the tech workplace, including access to benefits, treatment-seeking behavior, and global disparities in mental health support. They are described in detail below.

1. **Percentage of People with Employer-Provided Mental Health Benefits using Donut Chart:** The purpose of this visualization is to understand the proportion of individuals in the tech community who have access to mental health benefits through their employers. This can shed light on the availability of resources for addressing mental health concerns within organizations. And will help to highlight the need for greater support and resources for mental health in certain workplaces or industries.

2. **Comparison of Mental Health Treatment Seeking in the Tech Community Based on Age and Family History using a Stacked Bar Chart**: This visualization aims to compare the rates of mental health treatment seeking among different age groups in the tech community, further categorized by family history of mental illness and see How age and family history influence treatment-seeking behavior.

3. **Ease of Taking Medical Leave for Mental Health Condition using Bubble Chart:** The purpose of this visualization is to illustrate the ease of taking medical leave for a mental health condition among individuals in the tech community.

4. **Global Distribution of Individuals Seeking Treatment for Mental Health Conditions using Geographical Map:** This visualization aims to provide a global overview of individuals seeking treatment for mental health conditions in the tech community

Some of the queries we aim to address include:

1. *What percentage of tech workers have access to mental health benefits through their employers?*
2. *Does having a family history of mental health conditions influence someone's decision to seek treatment?*
3. *Are there any age groups within the tech industry where treatment-seeking behavior is more prevalent?*
4. *Where are the highest concentrations of individuals seeking mental health treatment located?*

Visualization:

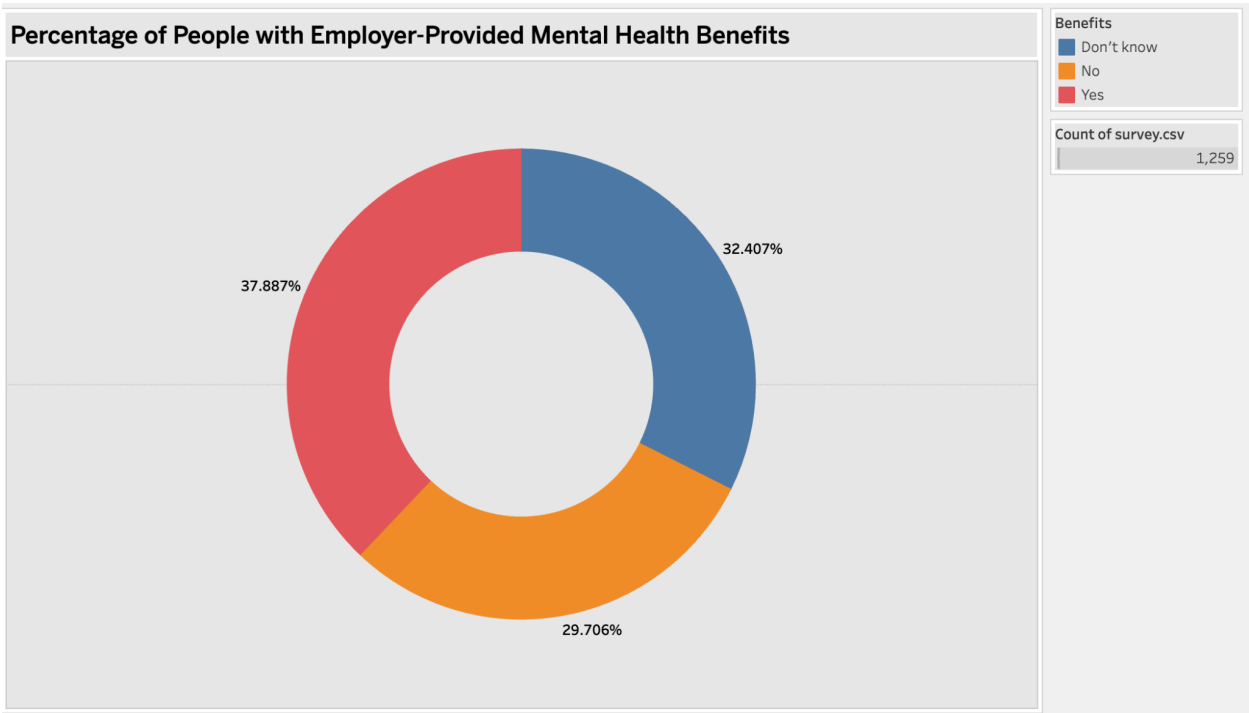1. **Donut Chart showing Percentage of People with Employer-Provided Mental Health Benefits**

Figure 1.1

Visual Encoding used in the Donut Chart in Figure 1.1

Data	Data Type	Encoding	Description
Percentage of People with Benefits	Nominal	Arc Length & Color (Red)	The length of the red arc segment corresponds to the percentage of respondents who reported having employer-provided mental health benefits.
Percentage of People without Benefits	Nominal	Arc Length & Color (Orange)	The length of the orange arc segment corresponds to the percentage of respondents who reported not having employer-provided mental health benefits.
Percentage of People	Nominal	Arc Length & Color	The length of the blue arc segment corresponds to the percentage of respondents

Unsure		(Blue)	who were unsure if their employer offered mental health benefits.

Insights & Findings:

- **Uncertainty about benefits**: A significant portion of respondents (32.4%) were unsure if they had employer-provided mental health benefits. This highlights a potential lack of awareness or clear communication about mental health benefits among employers in the tech industry.
- **Potential for improvement:** While nearly 40% of respondents (37.9%) reported having employer-provided benefits, there is still room for improvement. Companies in the tech industry could be doing more to offer and promote mental health benefits to their employees.

2. **Stacked Chart for the Comparison of Mental Health Treatment Seeking in the Tech Community Based on Age and Family History.**
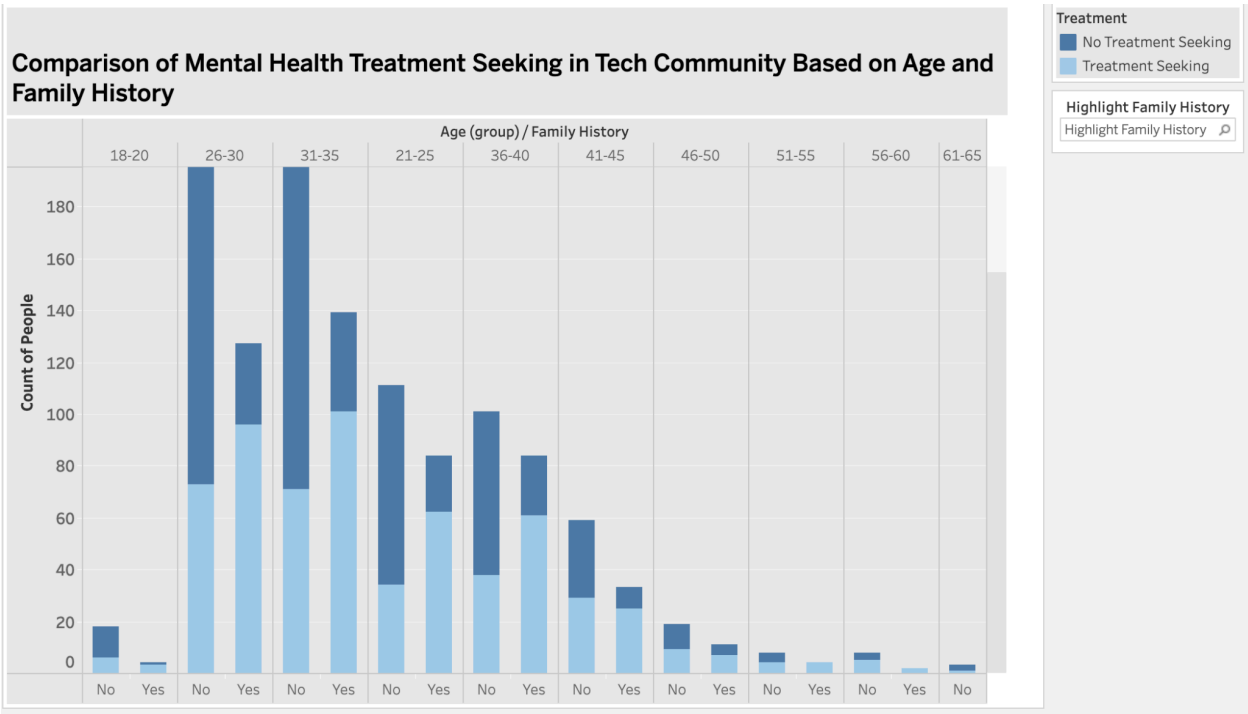

Figure 1.2

Visual Encoding used in the Stacked Chart in Figure 1.2

Data	Data Type	Encoding	Description
Age group	Quantitative	X-axis Position	Each bar segment represents a specific age group (e.g., 18-25, 26-30, ..., 61-65)
Count of People Who are Treatment Seeking or Not (By Family History)	Qualitative, Nominal	Length(Bar height)	The length of each colored segment within the bar represents the percentage of respondents in that age group who do and do not seek treatment according to their family history. The stacked bar is divided to represent treatment seeking based on family history.
Treatment Seeking/Non-Treatment Seeking	Categorical	Color	* Blue segment: Respondents who seek Treatment. * Gray segment: Respondents who do not seek Treatment

Insights & Findings:

- **Treatment Seeking Decreases with Age:** Overall, the heights of the stacked bars trend downwards across the age groups, indicating that a greater percentage of younger people seek treatment compared to older age groups regardless of family history. For example, the stacked bar for the 21-25 age group seeking treatment is likely taller than the one for the 41-45 age group. This could be due to several factors, such as:
    - Younger adults might be more aware of mental health resources and more comfortable seeking help.
    - The stigma surrounding mental health might be lower for younger generations.
- **Family History Encourages Treatment Seeking Across Age Groups:** In almost all age groups, the segment with a count of respondents with a family history seeking treatment is higher than the segment respondents with no family history seeking treatment within each stacked bars group. This suggests that having a family history of mental illness is generally associated with a higher likelihood of seeking treatment across all age groups. This is because they may become more aware of mental health issues and more comfortable seeking help.
- **Strongest Influence in Younger Age Groups:** The blue segment(Seeking treatment) height seems to be the greatest in the younger age groups (26-30 and 30-35) having a family history. This suggests that family history might have a stronger influence on treatment-seeking behavior for younger tech workers. Younger adults have grown up in a household where mental health was openly discussed due to a family member struggling with it. This exposure could make them more knowledgeable and comfortable seeking help when they experience similar challenges.

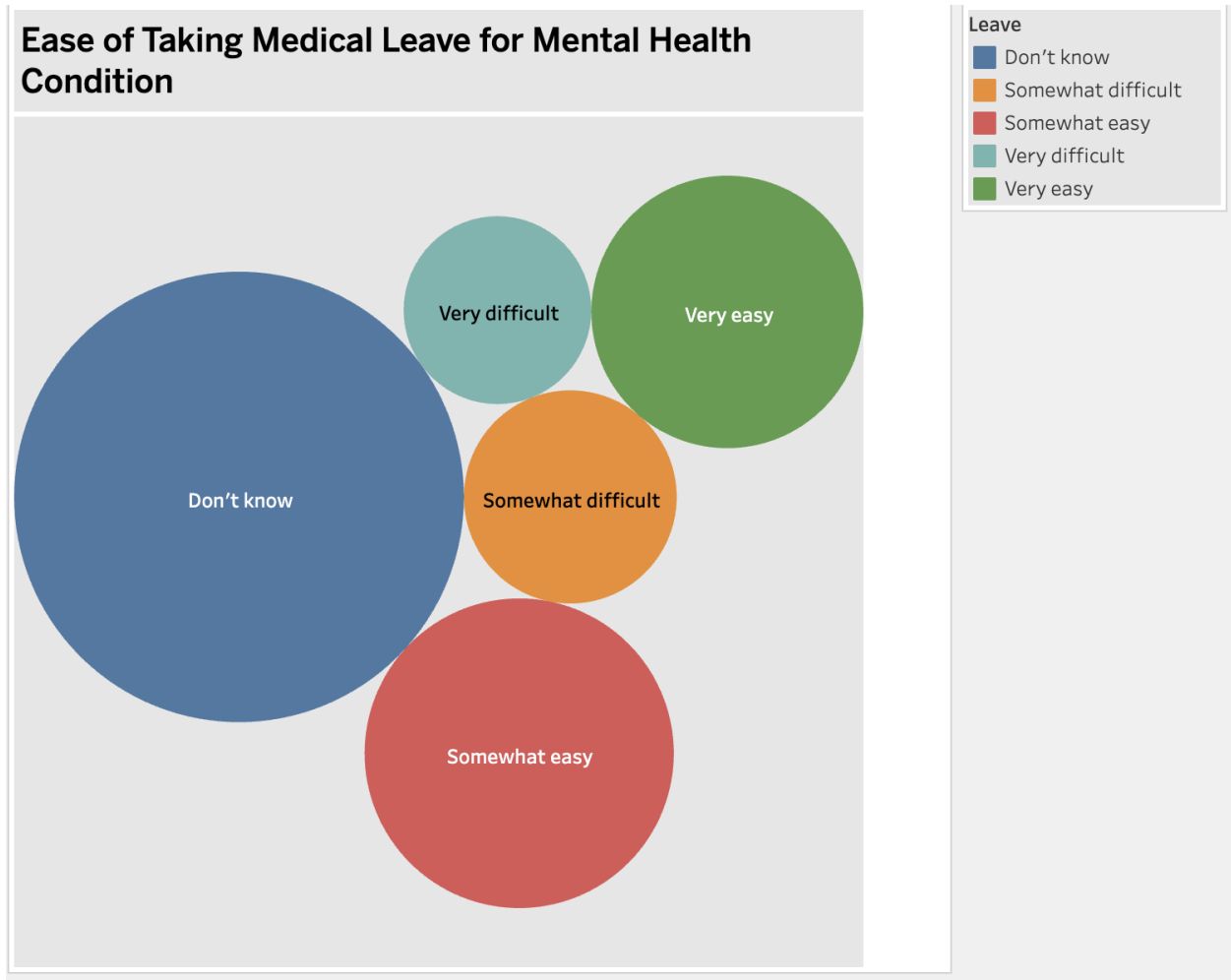3.   Bubble Chart showing the Ease of Taking Medical Leave for Mental Health Conditions:

Figure 1.3

Visual Encoding used in the Bubble chart in Figure 1.3

Data	Data Type	Encoding	Description
Prevalence	Quantitative	Bubble Size	The size of the bubble represents the percentage of respondents who reported that specific combination of leave difficulty and availability. Larger bubbles represent a higher percentage of respondents.
Leave response category	Categorical	Hue	Each response on the qn '*How easy is it for you to take medical leave for a mental health condition?*' is represented by different colors.

Insights & Findings:

- **Uncertainty about Leave Options:** The largest bubble is positioned at "Don't Know" on the Y-axis, indicating a significant portion of respondents are unsure about how easy it is to obtain mental health leave. This highlights a potential lack of awareness or clear communication about leave policies within some tech companies

- **Challenges in Taking Leave:** Bubbles positioned at "very Difficult" suggests that some respondents perceive taking medical leave for mental health as somewhat or very difficult. This could be due to factors like fear of job security, stigma, or unclear company policy guidelines.

- **Positive Perceptions and Accessibility**: The larger bubble sizes on the "Somewhat Easy" and "Very Easy" sides compared with one related to "very Difficult" indicate that a significant portion of respondents perceive taking leave for mental health to be achievable. This suggests that some companies in the tech industry have implemented clear and accessible mental health leave policies and have proper awareness regarding mental health.

4. **Geographical Map showing the Global Distribution of Individuals Seeking Treatment for Mental Health Conditions:**
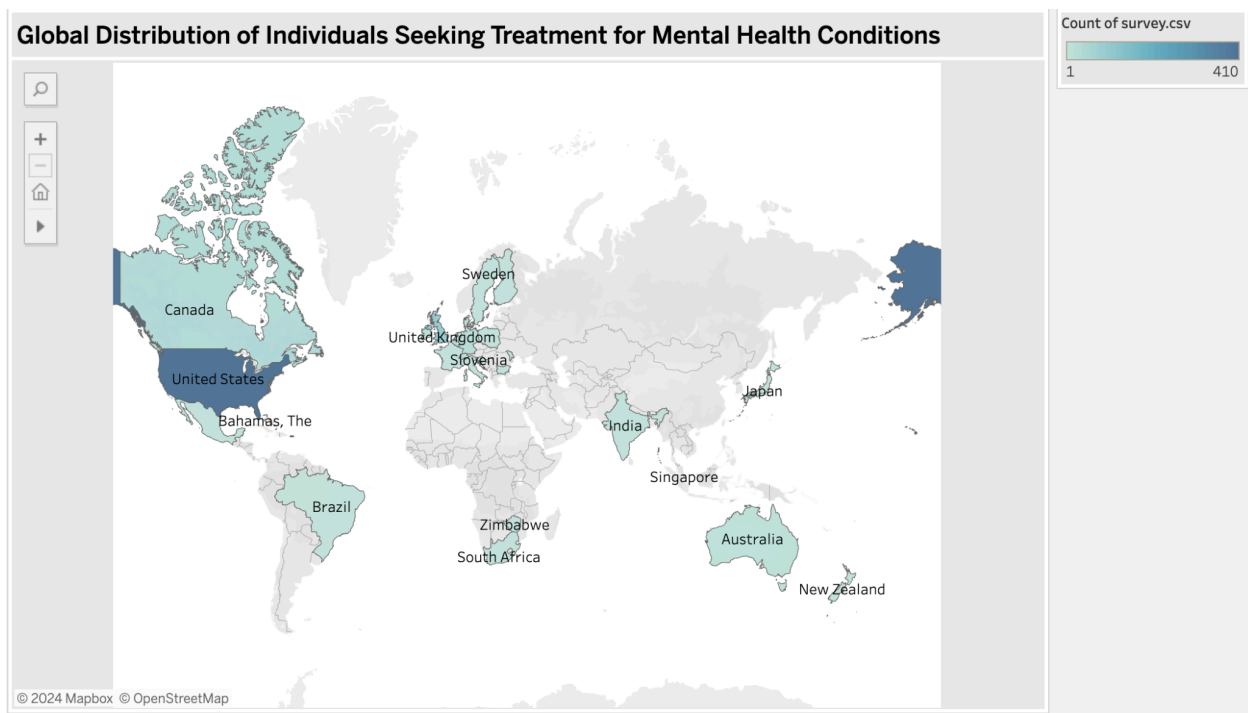

Figure 1.4

Visual Encoding used in the Geo Map in Figure 1.4

Data	Data Type	Encoding	Description
Country	Categorical	Color	The color distinguishes different hosted countries with their count of respective individual seeking mental health treatment.

Insights & Findings:

- The Graph reveals that United states have a higher concentration of tech workers seeking treatment based on survey responses. Whereas countries like Japan, Bahamas have low concentration of tech workers seeking treatment based on the survey .

Query Answers:

Query 1: *What percentage of tech workers have access to mental health benefits through their employers? [Figure 1.1]*

The data in Figure 1.1 shows that 37.89% of tech workers have access to mental health benefits through their employers. However, it's important to consider that a significant portion of respondents (32.40%) were unsure if their employer offered mental health benefits, suggesting a potential lack of awareness or clear communication about mental health benefits among some employers in the tech industry.

Query 2: *Does having a family history of mental health conditions influence someone's decision to seek treatment?[Figure 1.2]*

Yes. Figure 1.2 shows people with a family history are more likely to seek treatment compared to those without a family history, especially Younger adults, those with a family history might be more aware of mental health issues due to exposure in their family environment. This awareness could lead them to seek help sooner.

Query 3: *Are there any age groups within the tech industry where treatment-seeking behavior is more prevalent? [Figure 1.2]*

Figure 1.2 shows that younger age groups (26-30, 31-35)have a higher percentage of people seeking treatment compared to older ones.

Query 4: *Where are the highest concentrations of individuals seeking mental health treatment located??
[Figure 1.4]*

    The *Figure 1.4* reveals that United states have a higher concentration of tech workers
seeking treatment based on survey responses.

Target Audience:

- **Tech Industry Professionals:** This includes employees (developers, designers, etc.) and managers/leaders in tech companies. Visualizations could highlight the prevalence of mental health issues within the industry, encouraging open conversations and support systems.
- **Human Resources (HR) Departments:** HR professionals play a crucial role in employee well-being. Visualizations could showcase the impact of mental health on work performance and absenteeism, prompting HR to implement better mental health resources and programs.
- **Policymakers and Investors:** Data can inform policies that promote mental health awareness and support in the tech sector. Investors might be interested in understanding the potential economic impact of mental health issues on tech companies.
- **General Public:** Raising public awareness about mental health challenges specific to the tech industry can foster empathy and understanding. This could encourage broader discussions about mental health in the workplace.