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Title**:

Analysis and Critique of Visualizations Using OECD Health Statistics

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COS30045 Data Visualisation

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**Overview**:  
Based on data from the OECD Health Statistics, three visualizations are analysed and critiqued in this paper. The context, data components, and adherence to important guidelines for efficient data visualization are evaluated in relation to the visualizations. This review aims to evaluate the visualizations' correctness, lucidity, and perceptiveness, offering recommendations for enhancement where necessary.

**A graph showing the number of people with disabilities

Description automatically generatedPoverty rates for people with disability**

**Introduction**

People with disabilities have major challenges while trying to access opportunities and resources in many different nations. The high percentage of poverty in this group is a major problem. Persons with disabilities continue to experience poverty at considerably higher rates than persons without challenges, even despite multiple law designed to combat poverty. The data from OECD nations are discussed in this paper, emphasizing the differences in poverty rates between individuals with and without problems as well as the causes of this lasting problem.  
  
**Data Overview**  
  
In this selected chart that I have chosen, it shows the relative rates of poverty among the disabled population in different OECD nations. Not only that, but it also shows the percentages of the disabled person between 208 and 2019 who live in homes earning less than 60% of the national median income. Other than that, we have found that United States is one of the highest rates of poverty of having disabled person, compared to other lower nation such as Iceland and Denmark. For instance, the average poverty rate among individuals who are disabled across all OECD nations is also marked.

**Problem**  
The data points to a continuing issue are across the OECD's member nations in 2019, 24% of individuals with disabilities lived below 60% of the median income, whereas only 14% of individuals without disabilities did the same. Lacking support systems, poor social protection, and differences in employment are the reasons for this increasing poverty break down. People with disabilities frequently struggle to meet their necessities due to the high poverty rate, which lowers their quality of life and limits their chances for economic participation.

**The problem of lacking in Criteria**  
  
1. **Missing of Particular Numerical Labels on Bars**: Although the bar heights show relative differences, hovering tips (in an interactive version) or labels with numerical data on the bars might offer more precise numbers for each nation. It is more difficult to gather accurate data quickly without specific figures.

2. **Overlapping Data Points:** The 2008 data are shown on the graphic by tiny markers (diamonds), which may be confusing because they overlap with the 2019 bars. Comparisons may be helped by a clearer comparison between the two datasets.

3. **Colour Usage**: The colours are obvious, but by giving the bars for one of the years some texture or pattern, you may make them easier to see especially for people who are colour blind. This would help the process of identifying between the two sets of data.

**Solution**

**1.Place Specific Number Labels on Bars**  
**Solution:** To display specific percentages for 2019, place numerical labels at the top of each bar. For 2008, place labels of similar kind next to the diamond markers. As a result, viewers won't have to make guesses based on bar heights in order to understand the exact values.  
**Benefit:** The exact poverty rates for each nation in 2008 and 2019 are easily accessible to viewers, increasing the accuracy of the chart and lowering the amount of thinking needed to understand it.

**2.Deal with Matching Data Points**  
**Solution:** For each country, arrange the two sets of data side by side rather than putting diamond marks on top of the 2019 bars over the 2008 data points. In addition, using different colours or designs to improve the ability to tell the years.  
**Benefit:** As a result, viewers will be better able identify between the two datasets without being confused by overlapping parts, making comparisons between 2008 and 2019 easier to understand.

**3. Improve Your Use of Colour for Accessibility  
Solution:** To make one of the data sets easier to identify, especially for people who are colour blind, use colour-blind-friendly against colour schemes such as blue and orange, or several tones of the same colour with a high contrast.  
**Benefit:** By ensuring that colour is not the only feature that separates the two data sets, this makes the chart easier to understand for all readers.

**Conclusion**

By putting these recommendations into procedure, the chart's convenience, accuracy, and clarity would all be greatly improved. The chart will be clearer and educational for a larger audience by addressing these areas of improvement.

**Reference***Health and work*. (n.d.). OECD. https://www.oecd.org/en/topics/health-and-work.html

**A graph of a number of people

Description automatically generated with medium confidenceFuture health spending**

**Introduction**When it comes to showing important patterns and projections to support well-informed decision-making, data visualizations are important. Globally, there is growing stress over rising costs for health care. The average health spending as a percentage of GDP for each of the member nations up to 2040 is shown in an OECD graphic. Despite offering important insights into future healthcare expenses, this chart fails to meet to certain display standards, which could cause confusion. Therefore, I will be explaining some solution that can help to fix the chart diagram.   
  
**Data Overview**The average health spending in each of the OECD's member nations is shown in this graph as a percentage of GDP between 2018 and 2040. It presents two scenarios: the Maximum Efficiency Scenario, in which spending could be limited to 9.5% of GDP that wasteful expenses are reduced, and digital technologies are effectively utilized, and the Baseline Scenario and the Investment for Resilience, in which health spending is predicted to rise to 11.8% of GDP by 2040. The graph emphasizes how public health systems are under increasing pressure and how important it is to modify strategies to control future medical costs.

**Problem**The main problem with this graph is that its presentation might be confusing and unclear. The Y-axis starts at 8% rather than 0, which increases the physical difference between the two cases and gives a sense that the increase in health spending is more important than it is. Furthermore, the graph's lack of numerical labels for significant years like 2020, 2030, and 2040 forces users to make conclusions about the values, which lowers the accuracy of the information shown. It is challenging to separate between the two scenarios due to the overlap of the lines that reflect them. Finally, viewers end up without crucial context for completely understanding the forecasts because the graphic does not provide a clear description of the concepts behind each scenario.

**The problem of lacking in Criteria  
1. Y-axis Does Not Start at 0:**The Y-axis in the chart starts at 8% rather than 0%. This leads to a distortion that increases the visual mismatch between the two scenarios and gives the impression that the increase in healthcare spending is much greater than truly is. The Y-axis should begin at 0 for the most effective visualization to correctly represent the data.

**2. Key Points Have No Numerical Labels:**The graph displays the rising trends in healthcare spending, although important years (2020, 2030, and 2040) are not given numerical labels. This decreases the accuracy of the chart and causes the viewer to calculate the percentages.  
  
**3. Problem with the use of chart:**  
The line chart does not provide accurate and clear year-by-year data points, making it difficult to extract precise information. However, by using column chart will help to make the chart like more clearly than before.

**Solution  
1. Start the Y-axis at 0:**  
Set the Y-axis' initial value to 0%. As a result, the trends will be visually represented with greater accuracy and less deception, avoiding overstated gaps between the two scenarios.

**2. Add Numeric Labels:**  
Put numerical labels on both lines at strategic intervals. This will provide accurate information to viewers as well as quick understanding of the data.  
  
**3. Changing the chart:**By changing the line chart to column chart, which make the chart information more clearly to be seen and to make sure that the percentage value for each year. Not only that, using two separate sets of columns to show that the projections of health spending over the years.

**Conclusion**

The graphic does a good job of illustrating projected healthcare spending estimates for OECD nations, but it is deficient in a few important areas. Its accuracy and clarity are reduced by the Y-axis beginning above 0, overlapping data series, missing numerical labels, and poor explanation context. The chart can be made more accurate and inclusive for demonstrating significant patterns in healthcare spending by resolving several problems, such as beginning the Y-axis at zero, adding labels, better separating data series, and enhancing accessibility.

**Reference**  
*Health spending and financial sustainability*. (n.d.-c). OECD. https://www.oecd.org/en/topics/policy-issues/health-spending-and-financial-sustainability.html

A screenshot of a graph

Description automatically generated**Public Social Spending**

**Introduction**  
Public social spending is a key factor in determining residents' welfare and standard of living in different countries. It includes the money that governments spend on housing, healthcare, education, and social protection to assist the weaker members of society. A nation's commitment to its social welfare programs can be gauged by looking at the share of GDP that goes into public social spending. The information on this topic, particularly from OECD nations, sheds light on the various amounts of government spending on social safety.

**Data Overview**The chosen chart shows "Public social spending" as a percentage of GDP for 2022, or the most recent year available, for several OECD nations. The graph is a bar graph that shows the percentage of social spending in each country, ranked from highest to lowest. With about 30% of GDP devoted to social investment, France is the leader, closely followed by Germany, Austria, and Belgium. However, public social expenditure is far smaller in nations like Mexico, Ireland, Korea, and Switzerland, where it makes up less than 15% of GDP.

**Problem**

These graphic draws focus on a number of problems, including the large disparities in public social spending between OECD nations. Some nations—especially Korea, Mexico, and Ireland—allocate significantly less of their GDP to social programs than do nations like France, Italy, and Austria. This variation may be the result of changes in welfare state models, economic capacities, or governmental goals.  
  
Low social spending creates a risk of leaving vulnerable populations with less safety, even with dealing with healthcare, unemployment benefits, and pensions. Lower social expenditure nations may have higher rates of poverty and inequality. However, nations that spend too much on social programs may have problems managing their debt and maintaining a sustainable budget.

**The problem of lacking in Criteria  
1. Lack of Detailed Numerical Labels on Bars**

While bar heights indicate relative differences, labels or hover tips containing numerical data on the bars might provide more accurate figures for each country. Without numbers, it is more difficult to collect reliable data rapidly.  
**2. Missing of Context**

The graph only displays social spending as a percentage of GDP, which is unable to fully convey the success rate of that spending. Spending more money might not always turn into better health, less poverty, or support for the people that couldn’t work, as this data shows clearly.  
**3. Missing of Spending Breakdown**

A summary of the categories to which public social spending is given, such as medical care, retirement, or education, is missing from the chart. A deeper understanding of each nation's priorities could be possible with the use of this information.

**4.Inappropriate Labelling**

Although each country's bar is labelled, no information is provided regarding the causes that can affect the amount of money that certain countries spend. The size of the population, the breakdown of the economy, and the level of public loans that can all affected by social spending.

**Solution  
1.Adding numerical label**Adding the number of labels beside the bar chart to make viewer less confusion about the percentages of the output of the chart. It also helps the viewer to read it easily and clearly in the chart. **2. Provide Context Information:**

To provide a more thorough viewpoints, additional context information like yearly social expense or social results should be included with the GDP percentage spent.

**3. Specific Industries Breakdowns:**

A summary of cost categories, such as healthcare, unemployed assistance and benefits, would provide more clarity on how governments allocate their resources among various social welfare programs.

**4.Improve Visualization:**

Better labelling that describes the variables effecting spending in different nations would be beneficial for the chart. Furthermore, using specific colours for different locations or expenses categories may improve viewer understanding and interest.

**Conclusion**  
A description of how the countries of the OECD spend less than one percent of their GDP to social welfare programs can be seen in the public social spending chart. However, the chart needs to provide more context and a breakdown of the data to provide a deeper grasp of the social welfare landscape. To reduce inequality and protect disadvantaged populations, public social investment is important. However, to evaluate the efficiency of these expenses, it is important to look beyond basic spending information. A more complex and detailed chart would offer a better understanding of how other countries invest their social systems and the results of those investments.

References  
  
*Social policy*. (n.d.). OECD. https://www.oecd.org/en/topics/social-policy.html