Hello Adeyinka,

Your analysis of the unemployment rate trends in Boston is very insightful! The graph you provided shows the non-linear relationship between time and unemployment rates, especially during periods of economic instability.

Feedback on Your Conclusion: You correctly identified that the relationship is non-linear, as shown by the scatter plot and the blue curve. The rapid rise in unemployment during early 2020, followed by a significant decline in 2021 and 2022, highlights how external factors like the pandemic and economic recovery efforts play a major role in shaping these trends. However, it would be beneficial to emphasize how these shifts are not just due to random fluctuations but are deeply connected to specific economic events, as seen in the sharp peak during 2020 (BLS, 2023).

Alternative Interpretation: The scatter plot shows that the unemployment rate does not follow a simple upward or downward trend but rather has distinct peaks and valleys. This pattern suggests a cyclical nature often associated with economic booms and busts. The steep increase around early 2020 corresponds with the COVID-19 pandemic's impact, and the subsequent drop aligns with recovery measures. Highlighting the timing of these peaks and dips relative to known events can strengthen your explanation of why the relationship behaves as it does (CRSreports, 2022).

Suggested Curve: The use of a smoothing curve in your graph effectively captures the dramatic rise and fall of unemployment rates. A quadratic or polynomial regression line, as you suggested, is a great fit since it models the steep changes more accurately than a linear fit would. You could also explore piecewise linear regression to account for the abrupt transitions, which may further illustrate the impact of specific policy measures or economic shocks (GraphPad, n.d.; Neutrium, n.d.).

Additional Thoughts: Your analysis would be even stronger if you highlighted specific data points from the graph, such as the highest unemployment rate in mid-2020 and the gradual recovery afterward. This would tie the visual representation directly to your explanation, making it clear how external factors influence the non-linear behavior of unemployment rates (CRSreports, 2022).

Overall, your work provides a thorough look at how unemployment rates are influenced by complex, dynamic factors, and your approach to using a non-linear model captures these changes well. Great job!

All The Best!

Avinash

References

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