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**Report: The statistic explanation of the US crime data.**

We extend our sincere gratitude to all the esteemed reviewers who have diligently reviewed our report and provided insightful comments. In the following section, we have addressed the comments of each reviewer individually.

[CAI Bibi](https://github.com/yao-lab/yao-lab.github.io/blob/master/course/csic5011/2023/project1/0.peer-review/CAI_Bibi_review.pdf" \o "CAI_Bibi_review.pdf)

1.Figure s-1 and Figure s-2 are not pointed out in this report.

2.No relevant paper is cited, discussed, or compared to the presented work.

We appreciate your valuable feedback and would like to address the following points:

1. As noted on page 5 of our report, we have provided a detailed discussion of Figures s-1 and s-2. To facilitate ease of access, we will also add hyperlinks for these figures in the revised version of our report.

2. While we have cited relevant papers in our report, the space limitations have restricted our ability to discuss and compare our results with these studies. However, we plan to conduct a comprehensive comparison with the presented works in our future research endeavors.

[HAO Yifan](https://github.com/yao-lab/yao-lab.github.io/blob/master/course/csic5011/2023/project1/0.peer-review/HAO_Yifan_review.pdf" \o "HAO_Yifan_review.pdf)

It may be better if taking use of more data reduction methods.

Thank you for your valuable suggestions. We acknowledge that the space limitations of the report only allowed for the application of a limited number of data reduction methods. In our future work, we intend to conduct a more comprehensive experiment by utilizing additional data reduction methods and presenting a more detailed analysis.

HUANG Zhi

1.The report lacks performance testing procedures for linear regression models. It will be better if the reduced data can improve the prediction performance.

2.It’s better to make a comparison of feature selection methods. Because the report highlights that the data reduction methods are helpful for the prediction mode.

3.There are minor issues with grammar, but they do not detract from the overall quality of the paper.

4.The method's instability when dealing with highly damaged images is a significant limitation. The authors could improve their work by comparing their method with other image inpainting techniques and exploring other potential improvements, such as using image patches for constructing the dictionary.

Thank you for your insightful recommendations. We have taken note of your feedback and would like to address the following points:

1. To ensure a more complete report, we will include performance testing procedures in the revised version.

2. In the revised version, we will provide a brief comparison of data reduction methods, and in our future work, we intend to conduct a more detailed analysis within a wider range of data reduction methods.

3. We acknowledge the importance of grammatical accuracy and will diligently review our report to correct any identified errors.

4. In our future work, we will incorporate a comparison between the presented methods and other image inpainting techniques, while also exploring potential avenues for improvement.

LIN Hangyu

More detailed discussion about the results will be better, like section 3.3, if there are some explanations related to the crime it will be more clear.

Thank you for your valuable suggestions. We recognize that the space limitations of the report restricted our ability to provide an in-depth analysis of our results. In our future work, we plan to conduct a more extensive experiment and present a more detailed analysis of our findings.

LIU Chen

Deeper insight and possible solutions could be given.

Thank you for your valuable feedback. We will take your comments into consideration and endeavor to conduct a more thorough analysis in our future work.

LUO Yuanhui

It would be better if more interpretations are given to the constructed principal components.

Thank you for your insightful comments. In our report, we have provided interpretations for the first and fourth principal components. However, regarding the second and third principal components, we have observed that there is no clear correlation between the contributing indexes. The second principal component, for example, shows the highest loadings on the percentage of population residing in female-headed households, the population percentage within the age range of 25-29, indicator variables for cities with four-year mayoral terms, and the percentage of black population. As such, it is difficult to provide a straightforward and intuitive interpretation for the second and third principal components.

MA Ruochen

1.During data preprocessing, data with missing values was simply deleted. Instead of deleting them, perhaps imputing them such as replacing them with mean would leave more available data for further analysis?

2.Most of the figure legends and descriptions are either lacking or not clear. For example, I am confused with what message the authors wanted to confer through figure 3 and 4. They were not clearly explained in the main text and they have exactly the same legends which is quite misleading.

3.While the report cited relevant papers and compared the presented work to them, there is room for additional discussion and critique of the literature. The authors could provide a more detailed comparison between their approach and existing literature, highlighting the strengths and limitations of each method.

Thank you for taking the time to review our report and providing valuable feedback. We appreciate your insights and would like to address the following points:

1. We agree that handling incomplete data is an interesting problem, and in our future work, we plan to utilize more sophisticated algorithms to improve our approach.

2. Regarding Figures 3 and 4, we understand that more explanation may be necessary to fully grasp their significance. These figures display the centered and scaled crime data of 85 cities in 1975 and 1985, respectively, projected onto the first and second principal components. While we have included some basic explanations in the picture titles, we acknowledge that these may not be sufficient. As such, we will provide additional explanations in the revised version of our report to ensure that readers can more easily understand the meaning behind these images.

3. We appreciate your feedback regarding the comparison of our results to the presented works. Due to the limitations of space in the report, we were unable to provide a comprehensive comparison. However, we will make an effort to conduct a more extensive experiment and compare our findings to the presented studies in our future work.

## SHIHUA Mingzhi

1.For the first few figures, cities are labeled instead of the crime types. In my opinion, it would be more interesting to study that for a particular crime type, which factors are more important.

2.Some latex functions are not properly used, like “” and ‘’.

Thank you for your valuable feedback. We agree that studying different types of crimes separately could yield interesting insights. We will incorporate this suggestion into our future work. Additionally, we appreciate your pointing out the issue with our use of quotation marks, and we will ensure proper use of double and single quotation marks in the revised version of our report.

## XIA Wencan

The data visualization is not well performed. Some table would be more informatic if they are visualized.

Thank you for your valuable suggestions. We agree that visualizing the results in table format could help present the information more clearly. We will incorporate this feedback into our future work and ensure that the results are presented in a visually appealing and easy-to-understand manner.