

Final Project

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Introduction

This paper will analyze the data set, “Cities with the Best Work-Life Balance 2022” from Kisi. This data set from Kisi ranks various cities around the world by comparing the data gathered on work intensity, institutional support, and city liveability.

With data collected from 2022 and 2021, during a very difficult time for people around the world experiencing hardships, including the Covid pandemic and the Ukrainian vs. Russia war. This data set is intended to provide insight into how to improve mental well-being for citizens around the world.

This paper is focused on analyzing variables in the data set such as “Access to Mental Healthcare”, “Healthcare”, and “Total Score” will give us insight to how a city’s investment in public healthcare impacts their overall work-life balance score.

Theory and hypotheses

Research Question: What is the relationship between a city’s investment in public healthcare correlate with its overall work-life balance score?

I hypothesize that there will be a **positive** correlation between a city’s investment in public healthcare and it’s overall work-life balance score. (*Healthcare* \rightarrow *Total.Score*)

In this project, the causal assumption/mechanism (\rightarrow) is that higher scores of *Healthcare* and *Access to Mental Healthcare* (*X*) can improve a city’s work-life balance score. (*Y*). This suggests that cities who provide better healthcare to their citizens reflect a better work-life balance score. We expect a **positive relationship** between providing more accessible healthcare for citizens and work-life balance.

Based on this causal assumption, two hypotheses are considered:

- H_0 : **High healthcare** scores of cities do not increase a city’s work-life balance score. ($\beta_{treatment} = 0$)

- H_1 : **High healthcare** scores of cities do increase a city’s work-life balance score.
($\beta_{treatment} < 0$)

Data and visual analysis

Data

This is an observational study. The data for this study were sourced from international organisations, NGO reports, open access datasets, public surveys and crowdsourcing platforms. For our variables that we will focus on in this paper, the “Healthcare” score is given to a city based on the accessibility, quality of care, and satisfaction. As for the “Access to Mental Healthcare” score, this score is to reflect the accessibility and effectiveness of governments’ implementation of mental health policies catering for individuals with mental health illnesses. These two variables are only two out of nineteen variables that affect the **total score**. The total score is an accumulation based on the city’s ranking from each of the nineteen variables.

Table 1: Descriptive statistics

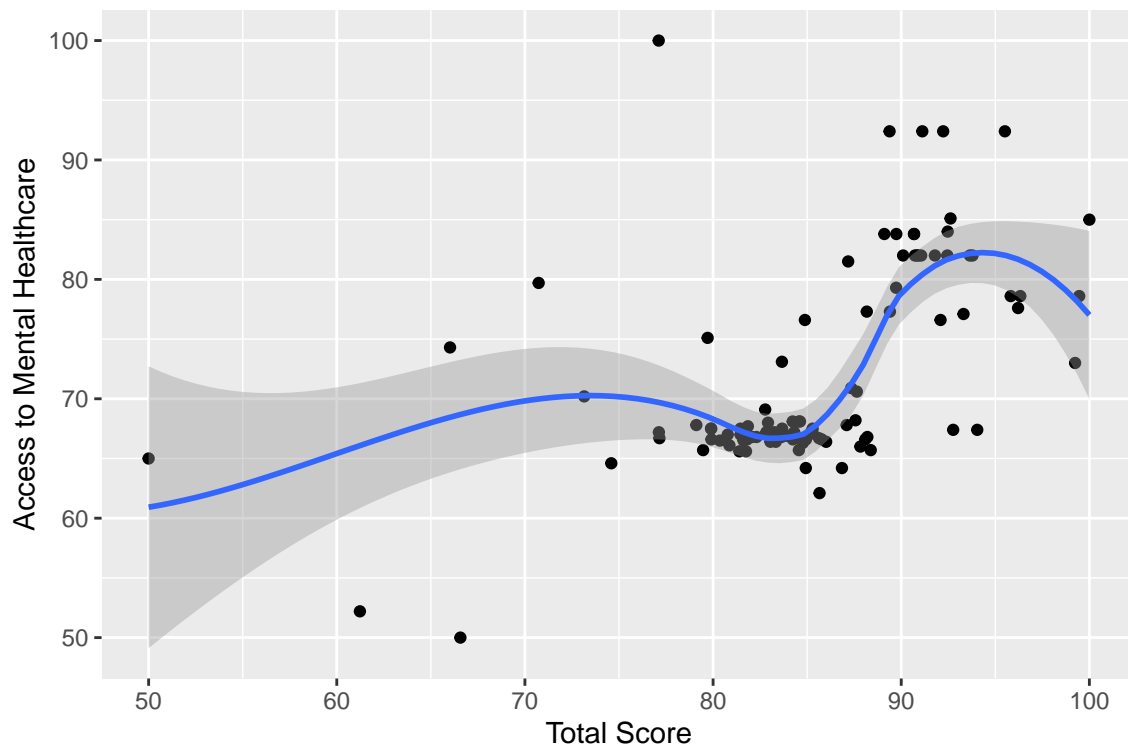
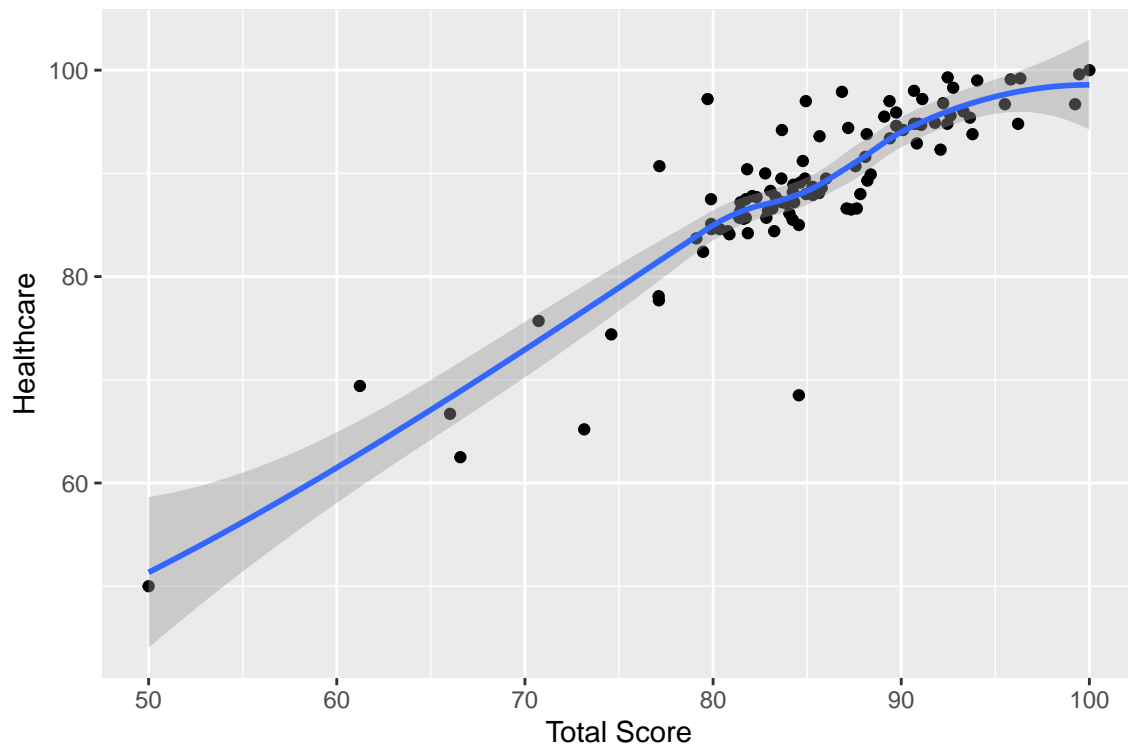
Statistic	Mean	St. Dev.	Min	Median	Max
Access.to.Mental.Healthcare	72.14	8.69	50.00	67.50	100.00
Healthcare	88.75	8.48	50.00	89.00	100.00
TOTAL.SCORE	85.17	7.62	50.00	84.90	100.00

Table 2: Correlation matrix

	Access.to.Mental.Healthcare	Healthcare	TOTAL.SCORE
Access.to.Mental.Healthcare	1	0.48	0.53
Healthcare	0.48	1	0.88
TOTAL.SCORE	0.53	0.88	1

The treatment variable **Healthcare** exhibits a positive correlation of 0.88 with the outcome **TOTAL.SCORE**. Additionally, **Access.to.Mental.Healthcare** demonstrates a positive correlation of 0.53 with **TOTAL.SCORE**.

Exploratory data analysis



The provided scatterplot for “Healthcare” illustrates a **linear relationship** between Health-

care and Total.Score. We can visualize that the healthcare scores correlates positively with the total work-life balance score. As for the scatterplot for “Access to Mental Healthcare”, we can see there is a trend that is positive between the two but it is slightly non-linear suggesting that the correlation between “Access to Mental Healthcare” and “Total.Score” may not be as strong.

Statistical analysis

Linear regression analysis

Table 3: Regression analysis of Healthcare on Work-Life Balance Score

	TOTAL.SCORE	
	Model 1	Model 2
Healthcare	0.794*** (0.042)	0.736*** (0.047)
Access.to.Mental.Healthcare		0.116** (0.046)
Constant	14.737*** (3.787)	11.487*** (3.910)
N	100	100
R-squared	0.781	0.794
Adj. R-squared	0.779	0.790

***p < .01; **p < .05; *p < .1

Results discussion

- Does the evidence support rejecting the **null hypothesis** (H_0) in favor of the **alternative hypothesis** (H_1)?

After conducting the research on the healthcare variables relationship with a city’s total score, we can say that yes, the evidence strongly supports rejecting the null hypothesis in favor of the alternative hypothesis. We can see that from Model 1 and Model 2 in the regression analysis, the coefficients for **Healthcare** and **Access to Mental Healthcare** were statistically significant. This significance indicates that the observed relationships are unlikely to have occurred by chance, providing strong evidence against the null hypothesis of no relationship.

- Is this evidence **consistent** across different model specifications and **significance levels**?

The evidence we see is largely consistent across different model specifications and significance levels. From both models, the **Healthcare** variable was highly significant ($p < 0.01$). The **Access to Mental Healthcare** variable was significant at $p < 0.05$, when also controlling for **Healthcare**. The visualizations provided also support that there is a positive relationship between both healthcare variables and the total score. The r-squared values were high and relatively similar across the models which indicate a consistent explanatory power.

- What **future research** suggestions can enhance our understanding of these findings and further investigate the research question in your project?

Some future research suggestions that could enhance our understanding of these findings are exploring other potential confounding variables that might possibly affect both the **healthcare** variables and the **total score**. Potential confounders could be economic factors such as the GDP per capita and income inequality or cultural factors such as the work culture and social support. It could also be useful to break healthcare down into more specific components such as hospital quality, preventative care, etc. in order to see which of the components have the strongest impact. We could also supplement our quantitative data with qualitative data to gain a deeper understanding of people's experiences with healthcare and work-life balance.

Conclusion

This study aimed to investigate the impact of **healthcare** and **access to mental healthcare** on the overall work-life balance ranking of cities. We hypothesized that cities with higher healthcare & access to mental healthcare scores would exhibit higher work-life balance scores. Utilizing the dataset from **Kisi**, we conducted a regression analysis to assess the relationships between these factors.

The results strongly support our initial hypotheses. Both **healthcare** and **access to mental healthcare** were found to have a statistically significant positive impact on work-life balance scores. The regression analysis revealed that higher scores of **healthcare** and better **access to mental healthcare** are associated with higher overall work-life balance scores. These findings highlight the importance of healthcare systems in providing a positive work-life balance.