SLIDE 5

To compare the cost of living between different countries we calculated the Cost of Living Index, or COLI.

The COLI is a weighted average designed to compare the overall expenses required to maintain a certain standard of living.

It takes into account various factors as shown in the table: meal, restaurant, market, transportation, monthly rent and salary.

Since our stakeholder asked us to focus only on the main factors, we assign higher weight to categories like meal, market and monthly rent.

SLIDE 6

To see how COLI is related to each factor, we started by making a simple linear regression between coli and restaurant and we found out that there is a positive correlation between the regressor and the outcome variable.

This means that countries with a higher COLI tend to have higher restaurant costs.

As we can see from the charts there are some outliers, which basically are the countries with restaurant costs higher or lower than expected based on their COLI.

SLIDE 7

Even though cost of restaurants might be a good predictor of a country's overall COLI (r-squared equals to 0.65) there may be other economic factors that drive up living expenses and, in this slide, we can see how COLI relates with different factors.

As we can see, all the charts show a positive correlation with a coefficient close to 1. So, as expected, countries with high cost of restaurant, meal, market and monthly rent tend to have high cost of living index.

Even in this case, we can see from the charts that there are some outliers in our models, which is totally normal.

For example countries that locally produce goods, such as coffee, tend to have lower price compared to their COLI.

SLIDE 8

As all the previous regressions explain just the 60% of the model, we decided to run a multiple linear regression to see if changes in COLI are affected by many factors.

By including additional predictors, we have been able to increase the R-squared up to 0.99, meaning that this model explains almost the whole amount of the variation in our target variable.

Moreover, all independent variables show statistical significance, with a p-value less than 0.05, confirming that they (the regressors) strongly affect the dependent variable.

The charts are just a graphically representation of what I just said.

The QQ Plot shows that the residuals are approximately/roughly normally distributed, with most of the points close to the diagonal line. This is a good sign, as it suggests that the assumptions of our model are met.

(However, there are a few deviations from the ideal straight line: the tails and the top of the distribution seem to be slightly different than normal, which could indicate the presence of outliers in our data)

The other chart, which is the residuals vs. the fitted values plot, says that the condition of linearity is satisfy, as most of the residuals are scattered randomly around zero.

SLIDE 9

In conclusion, the factors that most affect cost of living index across countries are restaurant, market goods, rent per month and salary. So, if there are any changes in these factors, COLI will be highly impacted.

For example, by addressing these factors countries with low-COLI (e.g. Syria or Sri Lanka) would immediately improve their economic growth and quality of life.