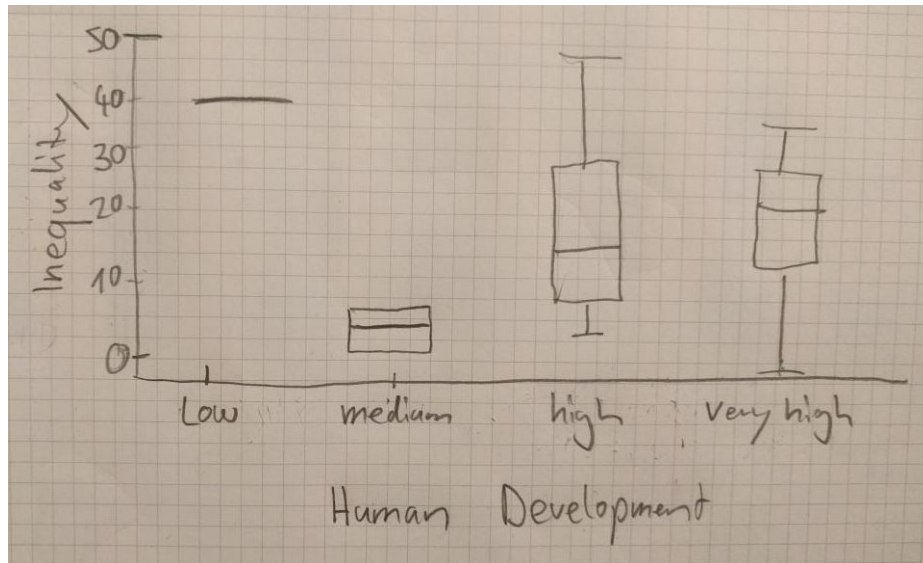


## Homework 4 - Design Creation

### Gender Inequality Index vs. Human Development (boxplots)



**Question:** Is there a relationship between the gender inequality and human development?

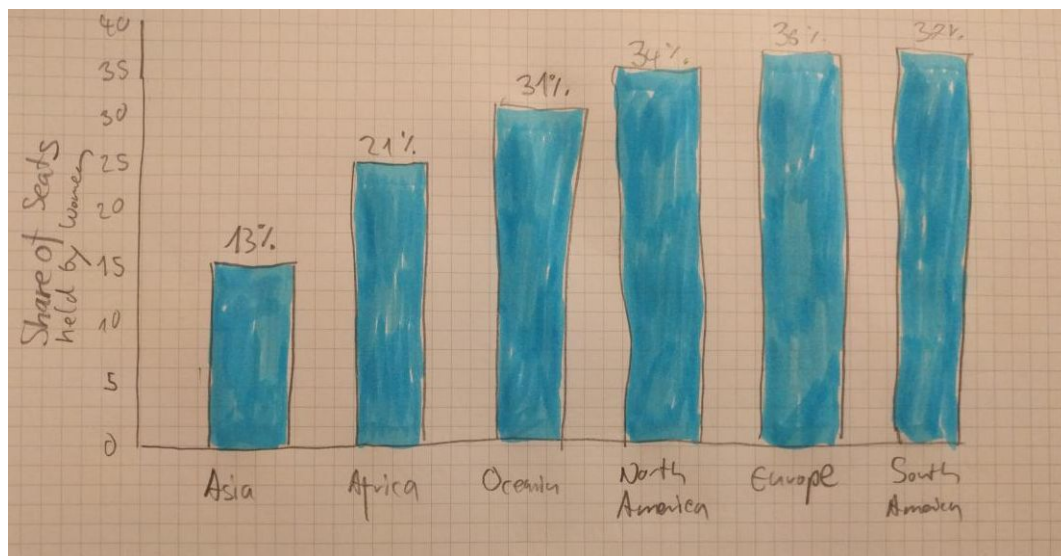
**Answer:** On the first glance, with the exception of the outlier at the "low" category, the answer is yes, there is a relationship.

**How does the chart answer the question:** The boxplot is grouping the categories with the same human development index together. It depicts the numerical inequality data through its quartiles. The spacings between the different parts of the box indicate the degree of dispersion (spread) and skewness in the data, and it shows outliers. It can be seen that the median rises from the medium to the very high category.

**Which visual channels are used for which dimension:** Only the numeric data (i.e., human development index) is visualized through channels. Position, Size, Orientation and shape are used. The bold line indicates the median, the area/shape indicates the spread/skewness.

**What are the Gestalt principles used:** Proximity is used in the boxplot

### Share of parliamentary seats of women over different continents (barchart)



**Question:** What is the continent with the highest share (group mean) of women in parliament?

**Answer:** South America appears to have the highest share, Asia the lowest.

**How does the chart answer the question:** The barplot is grouping the continents together. On the y-axis the share of women in parliament (aggregated group mean) is visualized. Furthermore, the graph is order by value. The highest value has the highest share the lowest value the smallest share. Through this it can be seen that Asia and Africa have the lowest share and Europe and South America the highest share.

**Which visual channels are used for which dimension:** Only the group mean of the numeric data (i.e., share of seats held by women) is visualized through channels. Here Position, Size, and Color (no indication for difference) are used.

**What is the Gestalt principles used:** Proximity is used in the barchart

All the data plotted on a world map (choropleth chart & pie charts)



**Question:** What is the difference between individual countries (e.g., USA vs. Sweden)?

**Answer:** Both countries are marked as very high on the human development index. However, Sweden has a higher Gender equality as well as more women are in parliament.

**How does the chart answer the question:** The chart maps the data geographically on a world map. Through this the individual countries can be easily identified. Furthermore, the area is colored (shaded) in proportion to the gender inequality index. This provides an easy way to visualize how a measurement varies across the world. The texture of the country border indicates what kind of human development a specific country has. Last but not least a individual pie chart in every country indicates the share of female parliamentarians.

**Which visual channels are used for which dimension:** The choropleth chart makes use of Position, Size, Texture, Color, Orientation and Shape. Position and Orientation is used to show where a country lies. The shape is used to show the country boundaries. Size is used to indicate the size of the country. Texture is used to indicate what kind of development index a country has. Color is used to show the gender inequality index (0=almost white, 1=darkgreen). In the pie chart area and color is used to give the proportion in relation to share of female parliamentarians.

**What is the Gestalt principles used:** Similarity is used in the choropleth.

## **Design Critique**

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