Data Visualization - End assignment data sources   09/06/2020

Module 8: Data: From the Source to the Senses
Creative Technology
University of Twente, Enschede

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Main topic: Human trafficking

Subtopics: 1. Types of trafficking
             2. Region of operation
             3. Government intervention and measures
             4. Revenues and money flow
             5. Consequences on victims

The collected data were all visualized and animated using Adobe After Effects. A video was then rendered and uploaded to YouTube, which can be found on the following link: https://www.youtube.com/watch?v=dP4zXbsAEs0 .

This document holds screenshots taken from the rendered video, after which a list of datasets of the used datasets can be found, along with the pre-processing methods and other tools used. Timestamps of the visualizations are added next to their titles, for convenience. A Tableau visualization was made along the rendered video, as the interactivity could not be rendered in Adobe After Effects. The interactive visualization is described in figure 17, and a video of the interaction can be found in the .zip file. The Tableau file is attached in the .zip file as well.

1. **Number of victims in modern slavery** (00:17 - 00:18)
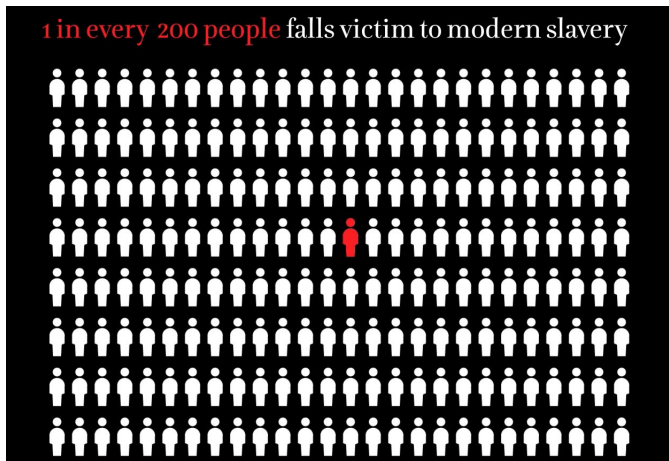
Data sources
Slavery affects more than 40 million people worldwide – more than at any other time in history
by Kate Hodal
https://www.theguardian.com/news/2019/feb/25/modern-slavery-trafficking-persons-one-in-200

Pre-processing methods
None used.

Tools used
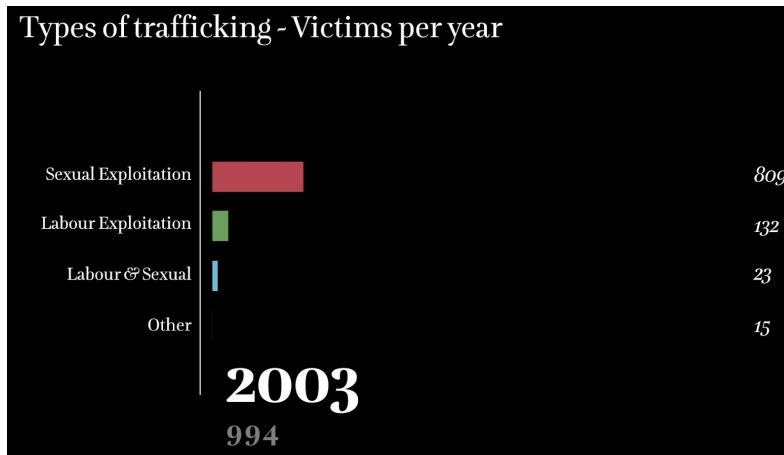Excel was used to neatly organize the data.

Description
A visualization of 200 humanoid icons, of which 1 is colored differently than the rest. The visualization indicates the amount of people affected by modern slavery.

Data acquired by
Jasper Häsler

2. Number of victims of human trafficking, categorized by trafficking type (00:20-00:38)

Types of trafficking - Victims per year

Sexual Exploitation	809
Labour Exploitation	132
Labour & Sexual	23
Other	15

2003
994

Data sources
Counter trafficking data collaborative
https://www.ctdatacollaborative.org/dataset/iom-data-dashboard/resource/49c96acc-0931-462d-ba94-22d67511c711

Pre-processing methods
None used.

Tools used
For this visualization, Tableau was used to create a general idea of the charts, which was then translated into Adobe Illustrator. Excel was also used to neatly organize the data.
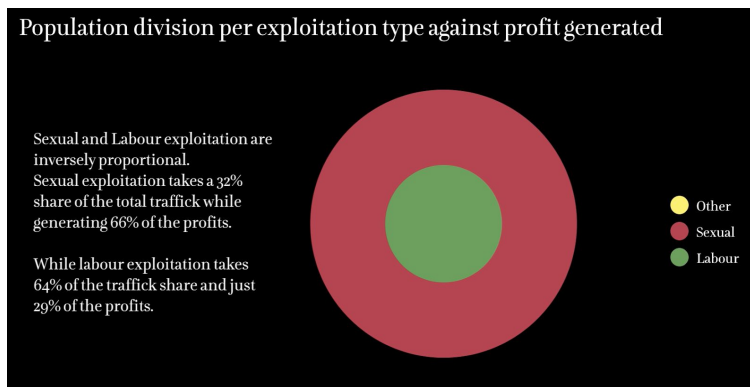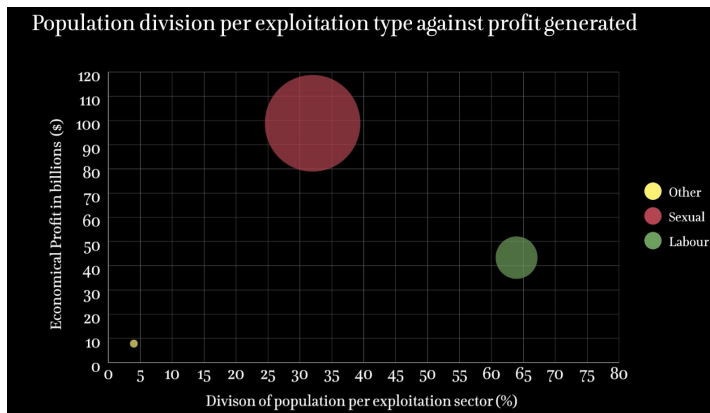
Description
Visualization of the amount of trafficking victims per year, categorized into types of trafficking. The bar charts show data from 2002 up until 2018.

Data acquired by
Jasper Häsler

3. Division of population per exploitation sector against generated profit (00:51-01:04)

Population division per exploitation type against profit generated

Population division per exploitation type against profit generated

Sexual and Labour exploitation are inversely proportional.
Sexual exploitation takes a 32% share of the total traffick while generating 66% of the profits.

While labour exploitation takes 64% of the traffick share and just 29% of the profits.

Other
Sexual
Labour

Data sources
Counter trafficking data collaborative
https://www.ctdatacollaborative.org/dataset/iom-data-dashboard/resource/822022e2-f51c-46cb-8291-dbd4ada37a98
Profits and poverty: The economics of forced labour by the International Labour Office
https://www.ilo.org/wcmsp5/groups/public/@ed_norm/@declaration/documents/publication/wcms_243027.pdf

Pre-processing methods
The two different datasets were combined and organized into new sets of rows and columns.

Tools used
For this visualization, Tableau was used to create a general idea of the charts, which was then translated into Adobe Illustrator. Excel was also used to neatly organize the data.
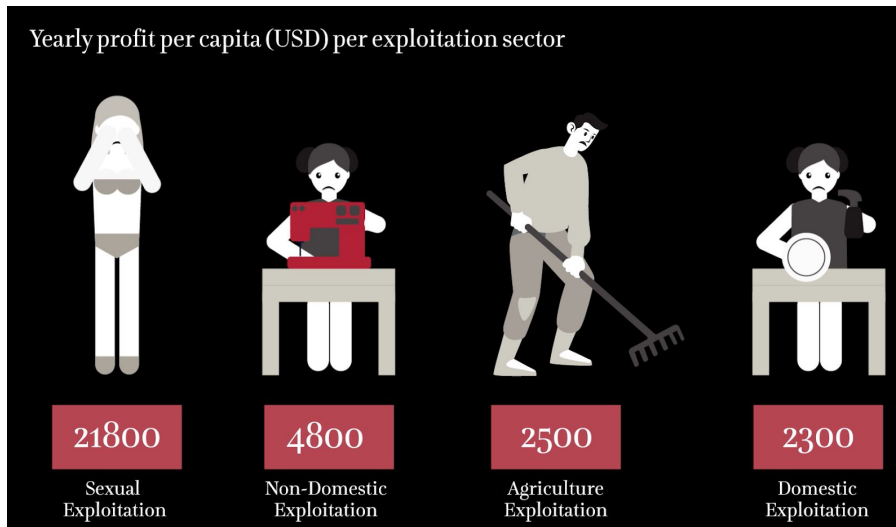
Description
Visualization of the amount of the profits generated per exploitation type. The profit is emphasized by the bubble sizes.

Data acquired by
Xian Bodelon Ruibal

4. Yearly profit per capita per exploitation sector, in USD (01:14-01:19)

Yearly profit per capita (USD) per exploitation sector

| 21800 | 4800 | 2500 | 2300 |
| Sexual Exploitation | Non-Domestic Exploitation | Agriculture Exploitation | Domestic Exploitation |

Data sources
Statista
https://www.statista.com/statistics/307432/annual-per-victim-profit-from-forced-labour-by-sector-of-exploitation/

Pre-processing methods
The dataset was acquired and then reorganized into new rows and columns.

Tools used
Excel was used to neatly organize the data.

Description
Visualization of the profits earned by the victims of trafficking, categorized into exploitation type.

Data acquired by
Xian Bodelon Ruibal

5. Percentage of victims of forced labor who are held in debt bondage (01:27-01:32)

Victims of forced labour who are held in debt bondage (%)
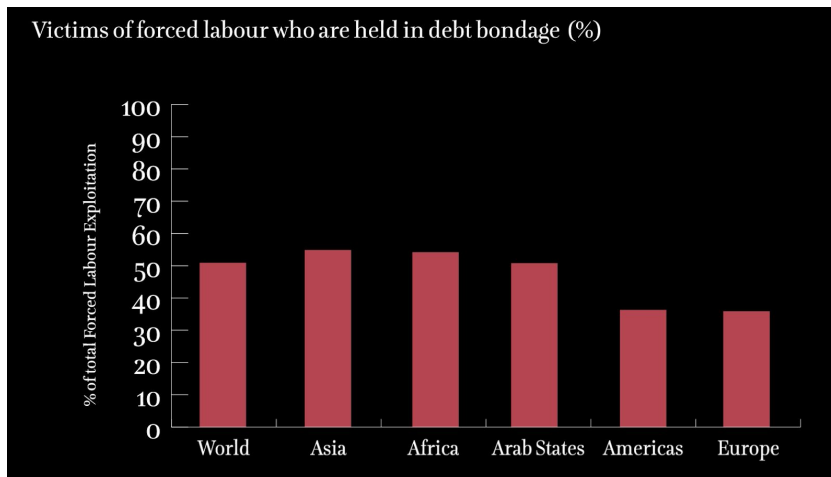
Data sources
Global Estimates of Modern Slavery: Forced labor and forced marriage by the International Labor Office. Geneva, 2017.
https://www.ilo.org/wcmsp5/groups/public/---dgreports/---dcomm/documents/publication/wcms_575479.pdf

Pre-processing methods
The dataset was acquired and then reorganized into new rows and columns.
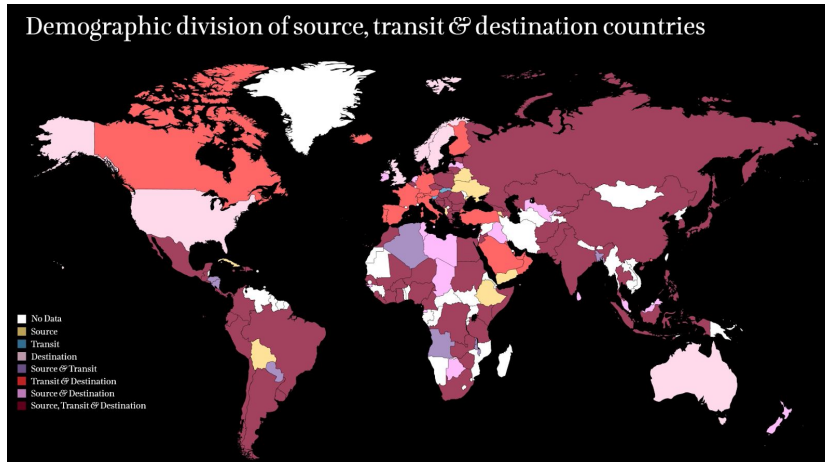
Tools used
Excel was used to neatly organize the data.

Description
Visualization of the percentage of victims who were forced into trafficking because of a debt bondage.

Data acquired by
Xian Bodelon Ruibal

6. Demographic division of source, transit, and destination countries (01:39-01:43)

Demographic division of source, transit & destination countries

Data sources

Estimating human trafficking into the united states: developement of a methodology.
https://www.ncjrs.gov/pdffiles1/nij/grants/221035.pdf
EMpower
https://empowerweb.org/global-reach
Refworld Country Reports
https://www.refworld.org/type,COUNTRYREP,,,,,0.html

Pre-processing methods
Different datasets were acquired from the sources, which were then combined into a single
dataset and coupled to the countries involved.

Tools used
Excel was used to neatly organize the data.

Description
A world map with colour indications for each country indicating whether it is known as a
trafficking source, transit or destination country or combination thereof.
Certain countries are left blank due to a lack of conclusive data.

Data acquired by
Wannes Vanwinsen

7. Most trafficked routes with European countries as destination (01:45-01:58)

Most trafficked routes with European countries as destination
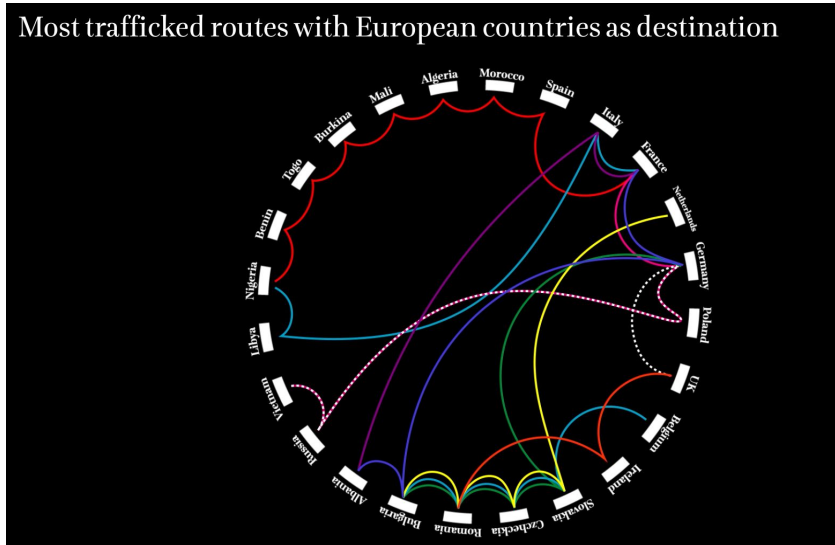
Data sources
Freedom collaborative
https://www.freedomcollaborative.org/victimjourneys

Pre-processing methods
The data source was reduced to only show West-European countries as destinations. From there, the five most frequented routes were taken and visualized.
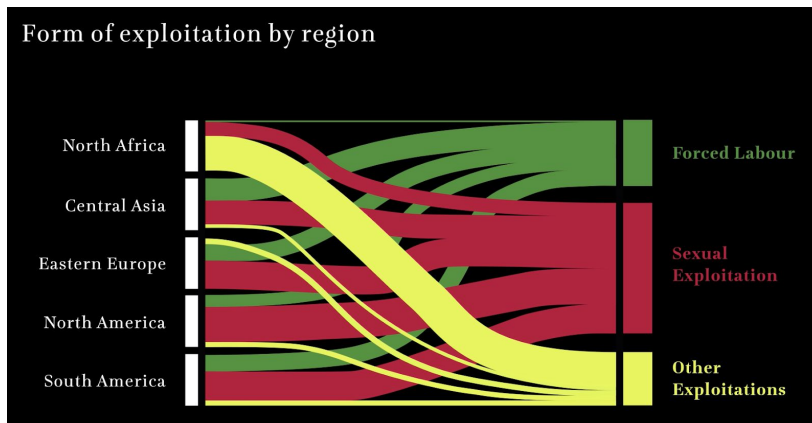
Tools used
Excel was used to neatly organize the data.

Description
This visualisation shows source, transit and destination countries as nodes in a circle. The branches represent the trafficking routes taken from a source to a destination. The routes were given different colors to make them easily distinguishable.

Data acquired by
Wannes Vanwinsen

8. Form of exploitation by region (02:01-02:09)

Pre-processing methods
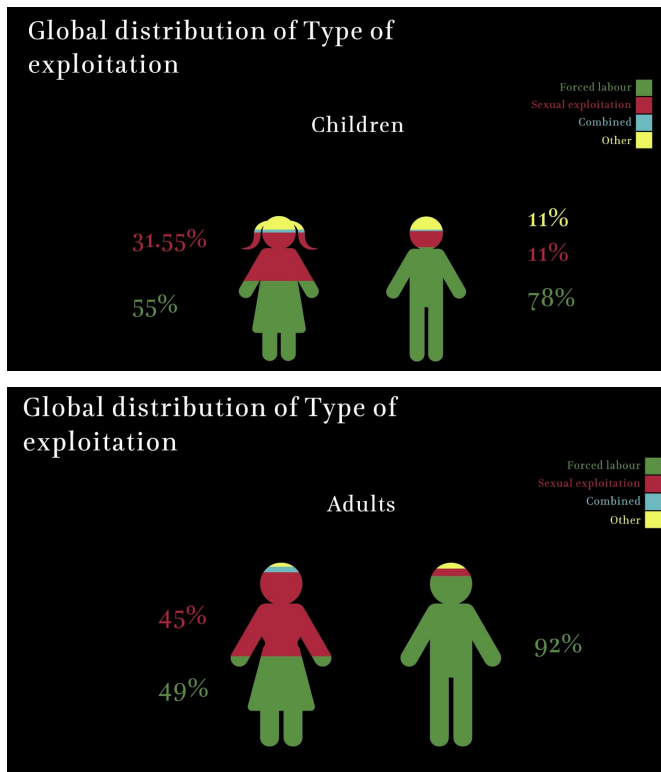None used.

Tools used
Excel was used to neatly organize the data.

Description
A Sankey diagram with world regions on the left Y-axis, and the exploitation types on the right Y-axis. Both Y-axes are connected with branches, of which the width represents the percentage of type of exploitation relative to the total amount of trafficking in that region.

Data acquired by
Wannes Vanwinsen

9. Global distribution of type of exploitation (02:13-02:25)

Data sources
COUNTER TRAFFICKING DATA COLLABORATIVE
https://www.ctdatacollaborative.org/dataset/iom-data-dashboard/resource/c84a8813-ff95-4932-84d4-df33a9995e02
https://www.ctdatacollaborative.org/dataset/iom-data-dashboard/resource/503efd90-e1d5-41a7-9cda-2b503f5429f2
https://www.ctdatacollaborative.org/dataset/iom-data-dashboard/resource/a5970932-a467-45d5-a9b0-9732b41a0281
https://www.ctdatacollaborative.org/dataset/iom-data-dashboard/resource/51c59298-89d8-48fd-9988-1b669220616c

Pre-processing methods
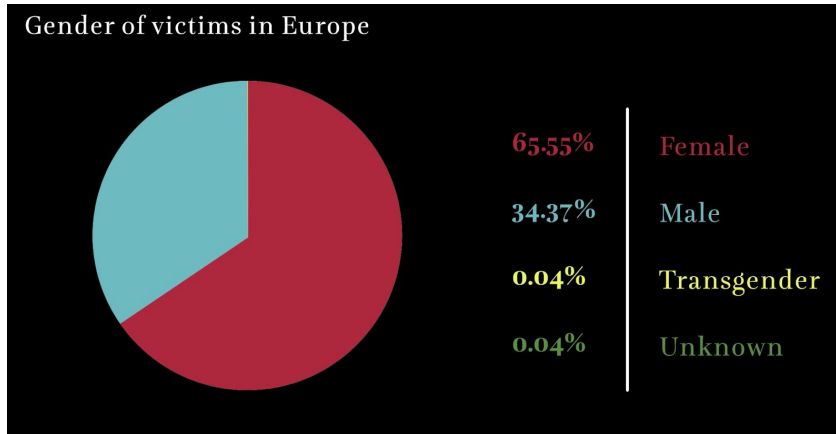Different data sets were acquired and put into new rows and columns.

Tools used
Excel was used to neatly organize the data.

Description
A stacked picto bar chart visualizing the percentage of how different genders and age categories are most prevalent in each exploitation type.

10. **Gender of victims in Europe** (02:26-02:32)

Data sources
Counter Trafficking Data Collaborative
https://www.ctdatacollaborative.org/dataset/victims-europe-dataset/resource/596be2a6-32b9-46a2-9e81-4bae79f1c4e2#

Pre-processing methods
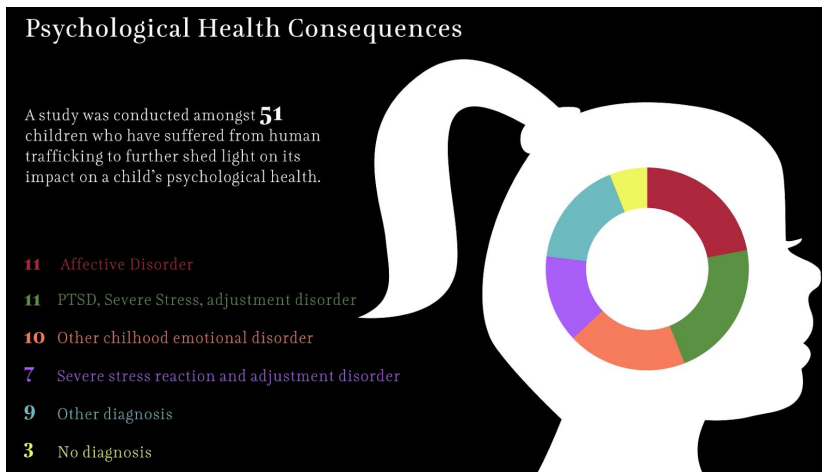None used.

Tools used
Excel was used to neatly organize the data.

Description
A pie chart containing percentages of gender of victims identified in Europe. The pie slices correspond to the percentages.

Data acquired by
Jasper-Sebastian Häsler

11. Psychological health consequences (02:42-02:54)

Data sources
Psychological consequences of child trafficking: A historical cohort study of trafficked children in contact with secondary mental health services
https://www.ncbi.nlm.nih.gov/pmc/articles/PMC5843209/

Pre-processing methods
Rewrite of data acquired, the rewrite was then put into a data table.

Tools used
Excel was used to neatly organize the data.

Description
A donut chart with the actual numbers of the study, instead of percentages, corresponding to the slices in the donut.

Data acquired by
Rayhan Aryoseno Bayuaji

12. Most recurring words in interviews on stigma (02:55-03:00)

Reoccuring words in interviews on strigma of survivors of sexual trafficking

Family stigma trafficking people will shame daughter families society also community opinions others participant feel home

Data sources

Unlocking the Roots of Stigma Towards Victims of Trafficking in Albania
https://digitalcollections.sit.edu/cgi/viewcontent.cgi?article=3522&context=capstones
'We are looked down upon and rejected socially': a qualitative study on the experiences of trafficking survivors in Nepal
https://www.ncbi.nlm.nih.gov/pmc/articles/PMC4653321/pdf/GHA-8-29267.pdf

Pre-processing methods

Reports were put into Atlas.ti and coded according to phrases that correlate to stigma around the victims of human trafficking. The codes were then put into a typewriter word cloud, available in Atlas.ti. Connectives were then removed to ensure the sentence makes sense.

Tools used

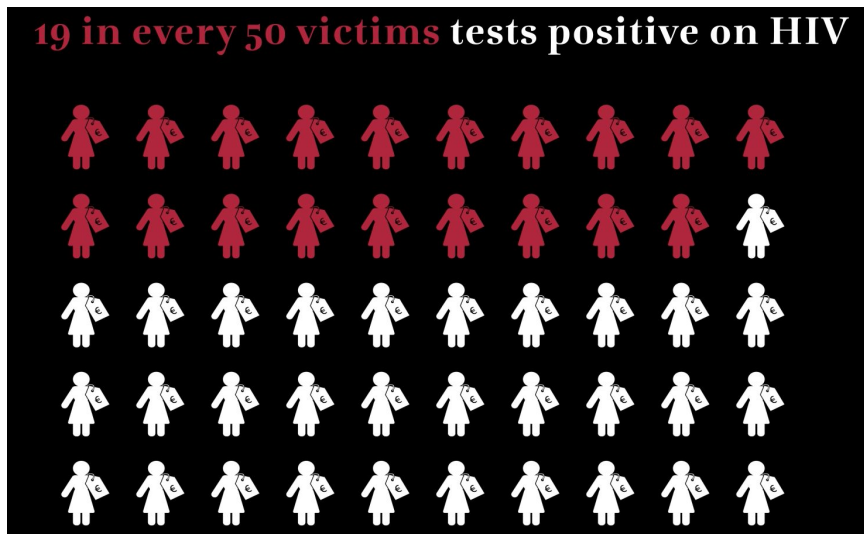Atlas.ti was used to analyze, code, and make the word cloud.

Description

A typewriter word cloud of the most frequent recurring words in the interview documents. It is interesting to note that the word cloud formed a phrase right as the "word cloud" option was selected.

Data acquired by

Rayhan Aryoseno Bayuaji

13. Number of victims who tested positive for HIV (03:12-03:19)

Data sources
HIV: The hidden face of Human Trafficking
https://docs.google.com/spreadsheets/d/1U3_oC-unelxLwmD02yU6wMEjLXc1hHlJKfLdO8Jv0 mk/edit#gid=0
HIV Pervalence and Predictors of infections in sex trafficked nepalese girls and women
https://jamanetwork.com/journals/jama/fullarticle/208242

Pre-processing methods
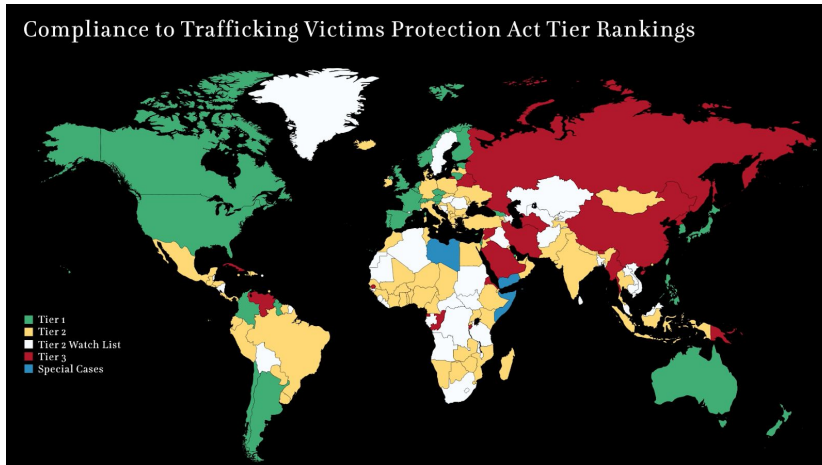None used.

Tools used
Excel was used to neatly organize the data.

Description
A set of pictograms indicating visualizing the number of victims who test positive on HIV.

Data acquired by
Rayhan Aryoseno Bayuaji

14. **Compliance to TVAP Tier rankings** (03:25-03:30)

Data sources
Trafficking in Persons 2019 Report
https://www.state.gov/wp-content/uploads/2019/06/2019-Trafficking-in-Persons-Report.pdf

Pre-processing methods
None used.

Tools used
Excel was used to neatly organize the data.

Description
A world map containing the tier rankings for the year of 2019. The tier rankings indicate how much effort a country's government puts into fighting human trafficking. Tier 1 indicates the most effort, while Tier 3 indicates little-to-no effort.

Data acquired by
Daffa Paramitha

15. WPS Index against Women and Children Protection Act (03:32-03:45)

Data sources

Trafficking in Persons 2019 Report

https://www.state.gov/wp-content/uploads/2019/06/2019-Trafficking-in-Persons-Report.pdf
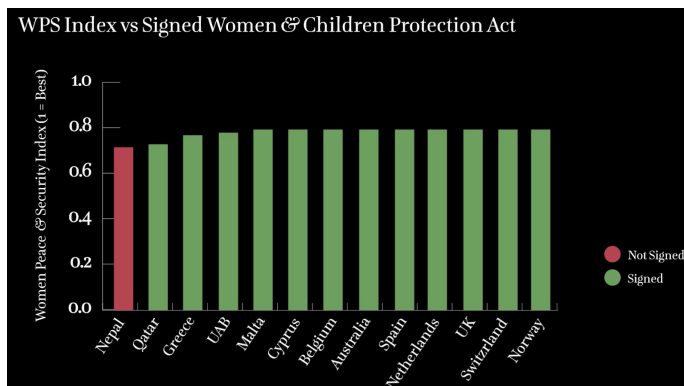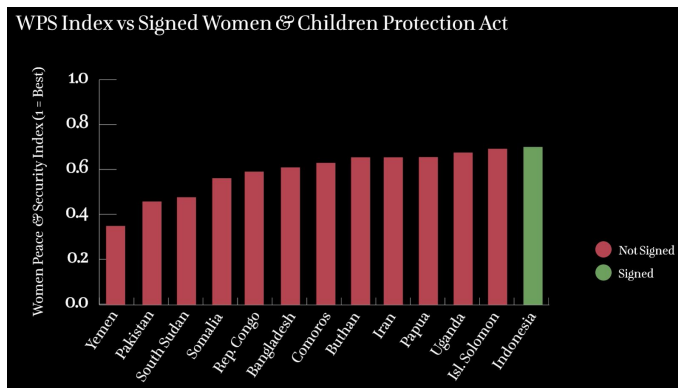
Women, Peace and Security Index 2019/2020 Report

https://giwps.georgetown.edu/wp-content/uploads/2019/12/WPS-Index-2019-20-Report.pdf

Pre-processing methods

The data on which countries did not sign the *Protocol to Prevent, Suppress and Punish Trafficking in Persons, Especially Women and Children* was retrieved from the *Trafficking in Persons 2019 Report*. The *Women, Peace and Security Index* of these countries were then taken and put in a bar graph. Countries that were not included in the *Women, Peace and Security Index* (WPS) report were then omitted.

Tools used

Excel was used to neatly organize the data.

Description

A bar graph showing the WPS index for countries who did not sign the protocol against the countries who did sign the protocol. It is interesting to note that the countries who have not signed the protocol scored significantly lower in the WPS index than countries who did sign the protocol.

16. Gender Inequality Index against Women and Children Protection Act (03:47-03:59)
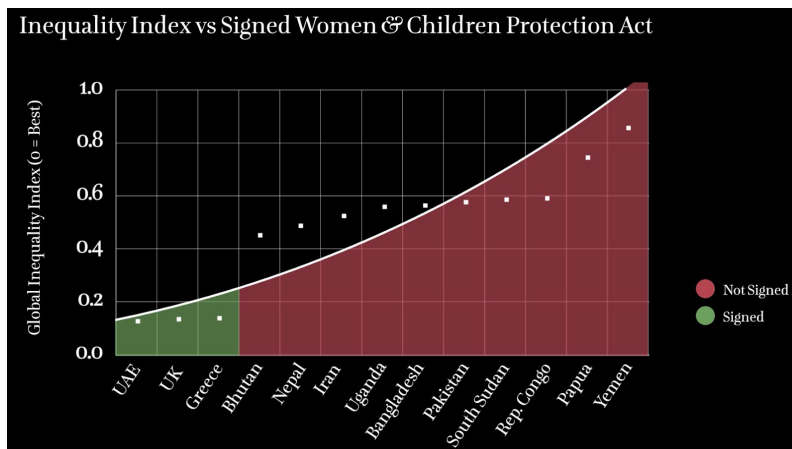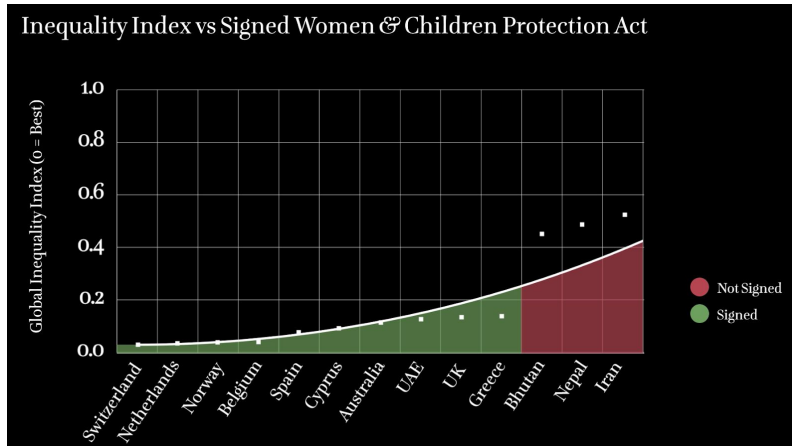
Data sources
Trafficking in Persons 2019 Report
https://www.state.gov/wp-content/uploads/2019/06/2019-Trafficking-in-Persons-Report.pdf
UNDP Human Development Reports on Gender Inequality Index
http://hdr.undp.org/en/content/gender-inequality-index-gii

Pre-processing methods
The data on which countries did not sign the *Protocol to Prevent, Suppress and Punish Trafficking in Persons, Especially Women and Children* was retrieved from the *Trafficking in Persons 2019 Report*. The *Gender Inequality Index* (GII) of these countries were then taken and put in a bar graph. Countries that were not included in the GII were then omitted.

Tools used
Excel was used to neatly organize the data.

A line graph showing the GII for countries who did not sign the protocol against the countries who did sign the protocol. It is interesting to note that the countries who have not signed the protocol scored significantly higher in the GII than countries who did sign the protocol. The relation seems almost exponential, which is very interesting to see.

Data acquired by
Daffa Paramitha

17. Interactive visualization in Tableau

Data sources
Counter Trafficking Data Collaborative
https://www.ctdatacollaborative.org/dataset/iom-data-dashboard/resource/49c96acc-0931-462d-ba94-22d67511c711
https://www.ctdatacollaborative.org/dataset/victims-europe-dataset/resource/596be2a6-32b9-46a2-9e81-4bae79f1c4e2#

Pre-processing methods
The different datasets were combined and reorganized into new rows and columns.

Tools used
Excel was used to neatly organize the data.

Description
On the top is a line graph visualizing the percentage of the type of exploitation relative to the total trafficking cases. The bottom is a bar graph indicating the gender of the victims of trafficking. Both visualizations span over the years 2002-2018. The slider bar can be used to narrow the timespan of the data, which would affect both the line and bar graphs accordingly.

Data acquired by
Jasper-Sebastian Häsler