

Using FOSS mapping and charting tools to visualize refugee and immigrant integration data

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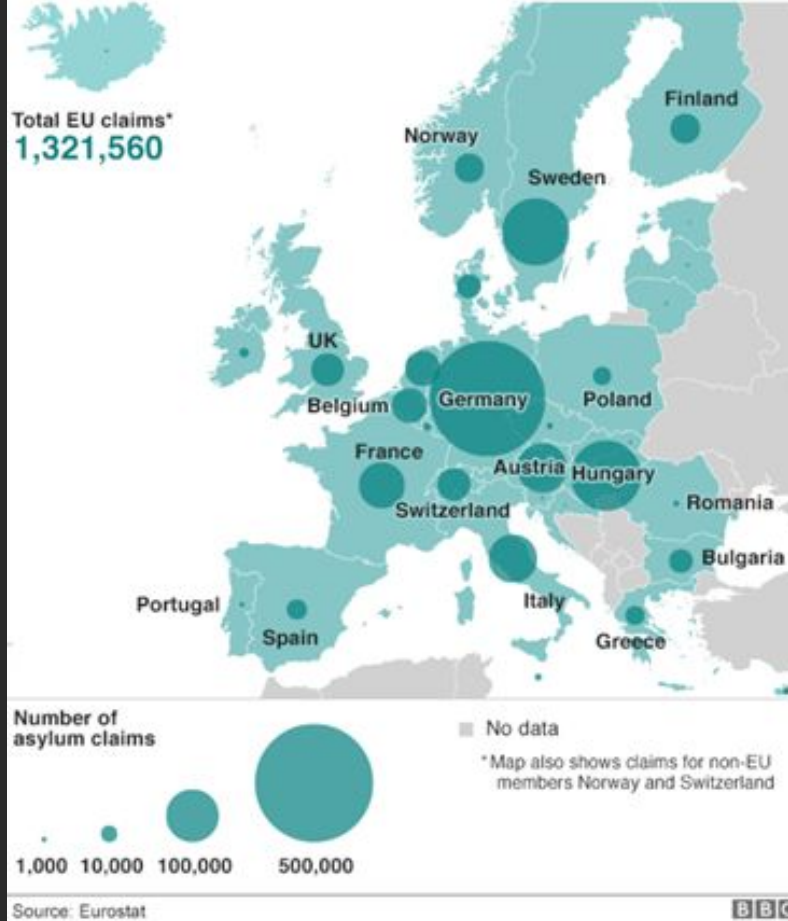
Why?

What?

How?

Agenda

Asylum claims in Europe, 2015



Source: Eurostat



What happened?



UNHCR



UNHCR



The Independent Online

Why does it matter?



United Nations High Commissioner for Refugees.
UNHCR



2017 Regional Refugee and Migrant Response Plan for Europe
UNHCR

UNHCR



Status of Refugee

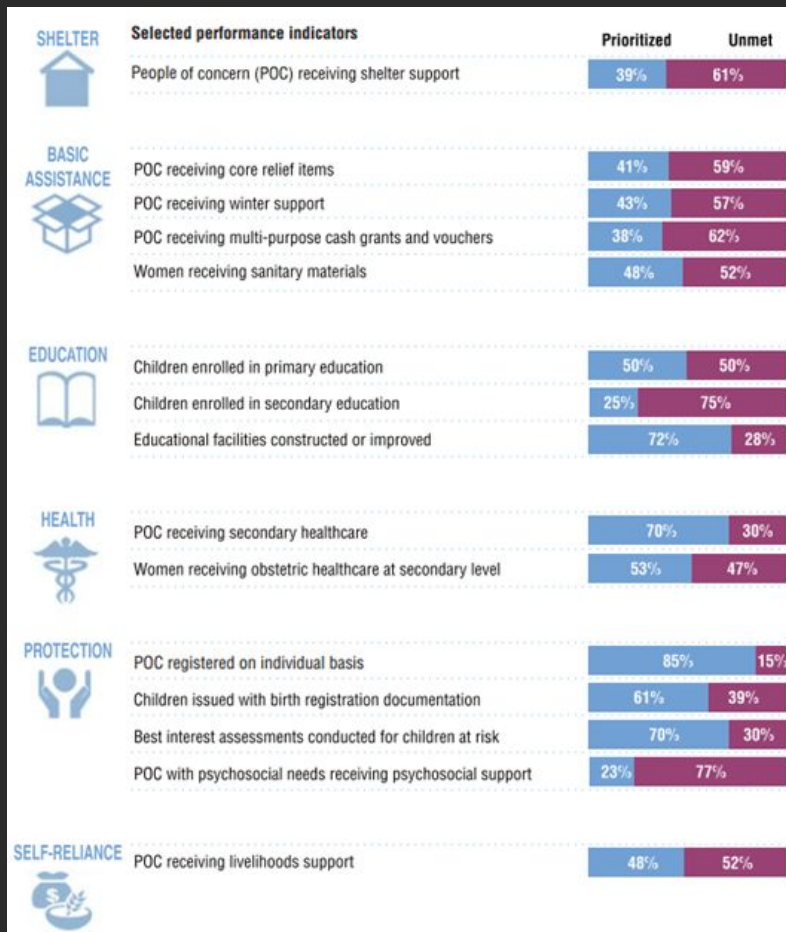


Syrian asylum seekers sleep inside a temporary camp.
Fortune Insiders



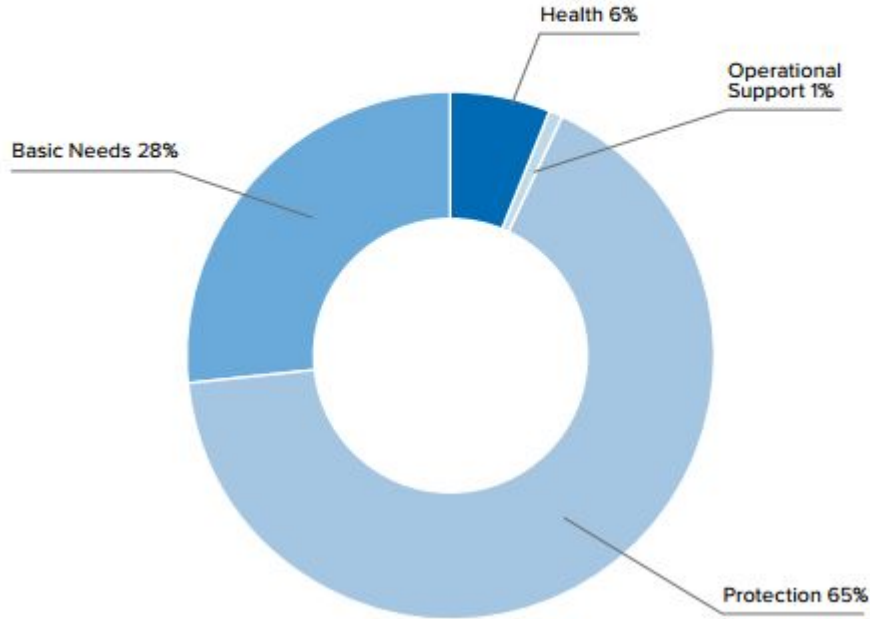
Temporary migrant camp in the northern Greek border.
DipNote

Status of Asylum Seeker



Needs
Exceed
Resources

Financial Requirements 34,485,668 US Dollars



Turkey Response Plan 2017

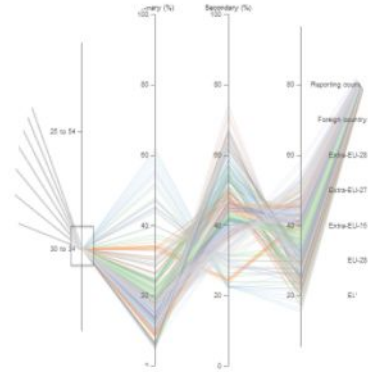
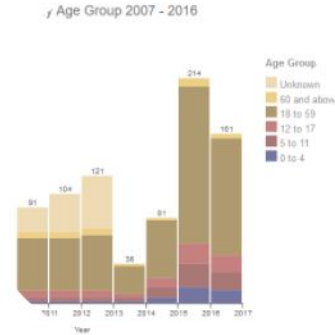


Aleppo Media Center via AP

We need a
sustainable
solution

Refugee and Immigrant Integration Dashboard

A web-based mapping and charting tool to explore the refugee and immigrant integration data, make sustainability a priority.



What is R2i ?

The UN Refugee Agency (UNHCR) Population Statistics

asylum seekers, refugees and persons of concern data

<http://popstats.unhcr.org/en/overview>

EuroStat immigrant integration data

http://ec.europa.eu/eurostat/statistics-explained/index.php/Migrant_integration_statistics

GitHub country boundaries

<https://github.com/johan/world.geo.json/tree/master/countries>

Using EU Indicators of Immigrant Integration

how to use immigrant integration indicators

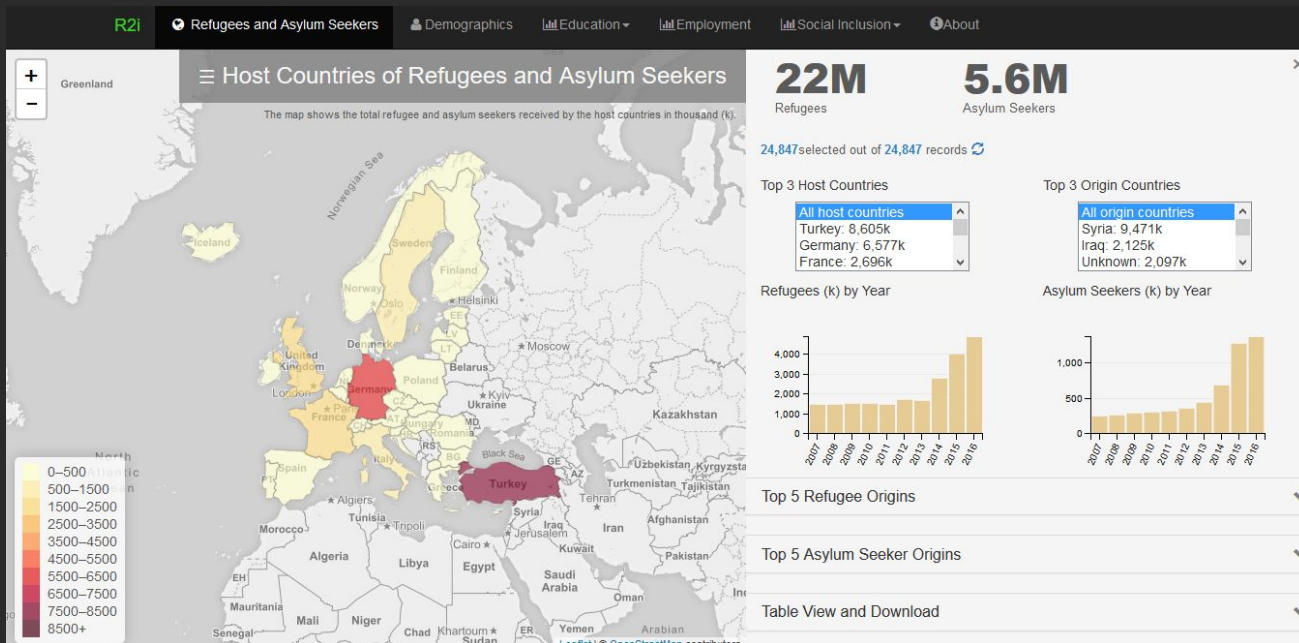
<https://ec.europa.eu/migrant-integration/index.cfm?action=media.download&uuid=FC375682-95DF-1B86-CF670D84CA41C2D6>

How?

Data Sources & Reference

bootstrap.js

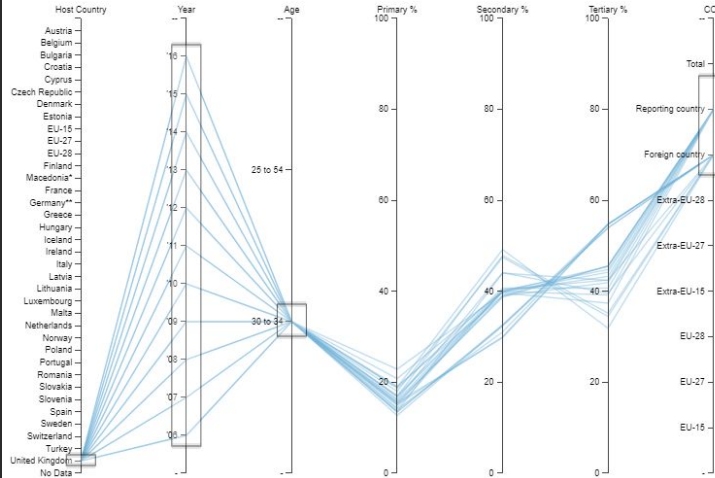
jQuery.js



How?
Methodologies

leaflet.js dc-leaflet.js

d3.js dc.js crossfilter.js
FileSaver.js



COB Country of Birth
 Macedonia* Former Yugoslav Republic of Macedonia
 Germany** Germany (until 1990 former territory of the FRG)
 0% Data is not available

Highest Educational Attainment 2006-2016

Europe 2020 Education Headline Target

At least 40% of 30 to 34-year-olds should have completed tertiary education or the equivalent.

↓ Mouse over table to view the corresponding record highlighted on the plot.

Table view maximum records: 100

Host Country	Year	Age	Primary %	Secondary %	Tertiary %	COB
United Kingdom	'06	30 to 34	18.9	49.2	31.9	Foreign country
United Kingdom	'06	30 to 34	22.9	39.7	37.4	Reporting count
United Kingdom	'07	30 to 34	18	47.5	34.5	Foreign country
United Kingdom	'07	30 to 34	20.8	40	39.2	Reporting count
United Kingdom	'08	30 to 34	16.9	47.9	35.2	Foreign country
United Kingdom	'08	30 to 34	18.7	40.7	40.7	Reporting count
United Kingdom	'09	30 to 34	16.3	44.1	39.6	Foreign country
United Kingdom	'09	30 to 34	19.1	39	41.9	Reporting count
United Kingdom	'10	30 to 34	13.6	44	42.4	Foreign country
United Kingdom	'10	30 to 34	16.8	39.9	43.3	Reporting count
United Kingdom	'11	30 to 34	15.5	29.8	54.7	Foreign country
United Kingdom	'11	30 to 34	17.1	40.4	42.5	Reporting count
United Kingdom	'12	30 to 34	14.1	31.1	54.8	Foreign country
United Kingdom	'12	30 to 34	16	39.9	44.2	Reporting count
United Kingdom	'13	30 to 34	15.1	30	54.8	Foreign country
United Kingdom	'13	30 to 34	15	40.2	44.8	Reporting count
United Kingdom	'14	30 to 34	13.4	32.7	53.9	Foreign country
United Kingdom	'14	30 to 34	14.4	40	45.5	Reporting count
United Kingdom	'15	30 to 34	13.6	32.4	54	Foreign country

How?

Methodologies

d3.parcoords.js
 d3.js

divgrid.js


```
<script id="brushing">// quantitative colour scale
var color20c = d3.scale.category20c();
var color = function(d) { return color20c(d['Host Country']); };
var parcoords = d3.parcoords("#example")
  .color(color)
  .alpha(0.4);
```

Define color

```
// load csv file and create the chart
d3.csv('./data/tbl_edu_att_COB.csv', function(data) {
  // create parallel coordinates
  parcoords
    .data(data)
    .margin({ top: 20, left: 30, bottom: 12, right: 20 })
    .render()
    .reorderable()
    .mode("queue")
    .brushMode("1D-axes");// enable brushing
```

Load .csv file

Create the chart

```
// create data table, row hover highlighting
var grid = d3.divgrid();
d3.select("#grid")
  .datum(data.slice(0,100))
  .call(grid)
  .selectAll(".row")
  .on({
    "mouseover": function(d) { parcoords.highlight([d]) },
    "mouseout": parcoords.unhighlight
  });
```

Create table view

```
// update data table on brush event
parcoords.on("brush", function(d) {
  d3.select("#grid")
    .datum(d.slice(0,100))
    .call(grid)
    .selectAll(".row")
    .on({
      "mouseover": function(d) { parcoords.highlight([d]) },
      "mouseout": parcoords.unhighlight
    });
});
});
</script>
```

Update table on brush event

How?
Methodologies

Refugee and Immigrant Integration Dashboard (R2i)

Usability Evaluation

Dear friends,

Thanks for participating in this usability evaluation. The purpose of this exercise is to test if the web interface design is intuitive enough for users to browse around with no prior training.

Please answer the following questions and ✉ to me.

🔗 Open R2i

Group 1

- In 2015, which **host** country had the highest total number of asylum seekers and refugees?
- In this highest host country, which were the **top 3** asylum seeker origin countries?

Group 2

- In 2015, which **origin** countries had the highest total number of asylum seekers and refugees?
- From this highest origin country, which were the **top 3** host countries they fled to?
- Were you able to download the selected three records as a table?

Group 3

- In the **demographics** page, which country had the highest number of persons of concern in **0-4 age group** in year 2015?
- What were the percentages of men and women?

How?

User Evaluation

Why?

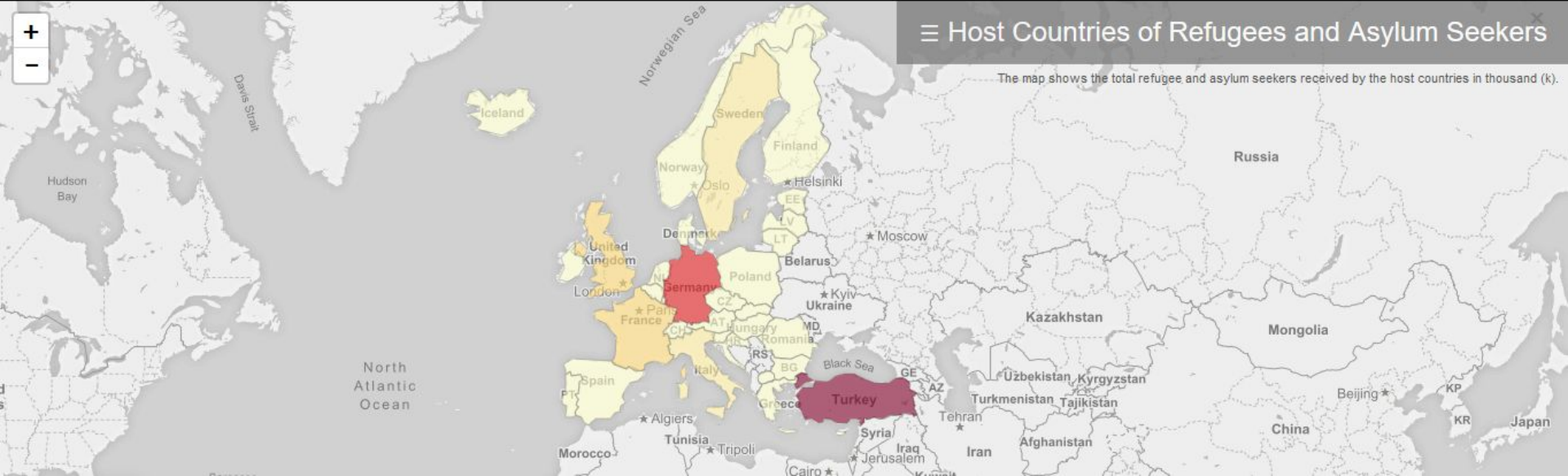
Make sustainability a priority

What? R2i

Dashboard

How? [http://personal.psu.edu/wxw5193/webserver/
R2iDashboard.html](http://personal.psu.edu/wxw5193/webserver/R2iDashboard.html)

Conclusion



R2i Dashboard

Make sustainability a priority

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<http://personal.psu.edu/wxx5193/webserver/R2iDashboard.html>