

A Nation of Open Arms

A Spatial Analysis of Immigration Rates in Sweden
By: Kristen Weller | Fundamentals of GIS | Spring 2017

Introduction

Scandinavian countries consistently top global rankings in terms of living standards, equality, and tolerance. Of these countries, which generally include Denmark, Finland, and Norway, Sweden has time and time again beat out its liberal neighbors in its reception of immigrants and in humanitarian assistance to refugees. Sweden has been called a “nation of open arms”, welcoming more asylum seekers than any other EU member state in 2015. According to the Swedish Institute, 2015 also saw the population of Sweden grow by more than 140,000 people, in large part to immigration.

Immigration policy has evolved significantly in recent years. In 1998, the Swedish Integration Board was created, which promoted immigrant integration to a larger capacity than ever before. Focusing on equality and responsibilities to individuals regardless of their ethnic background, this board supported introduction programs and migrant associations. In 2010, the center-right government introduced new labor market reform, which aimed to better integrate immigrants on an economic level. In 2013, Sweden began to offer permanent residence to all Syrian asylum seekers who entered their country.

However, in light of the recent refugee crisis and growing tensions surrounding this influx of immigrants and refugees, Sweden’s liberal policies have been challenged. Migration has become a top concern of Swedes, who increasingly fear the economic, political, and cultural effects from such a drastic population influx. A rise in nationalist sentiment by the Swedish democratic party, as well as media reports proclaiming increased crime rates, have contributed to negative public opinion and xenophobia. As a result, the nation has begun to tighten its borders and decrease asylum benefits. As of 2016, Sweden has passed a proposal allowing asylum seekers three-year temporary residence and is now considering a proposal that would restrict family reunification efforts. In addition, regional constraints have been enforced, for example, in Malmö, when the government used ID checks at Oresund Bridge to limit immigration through Denmark.

The purpose of this analysis is to investigate the rate of immigration to Sweden over time and determine if there is any correlation between immigration policy and the distribution of immigrants by county. Cur-



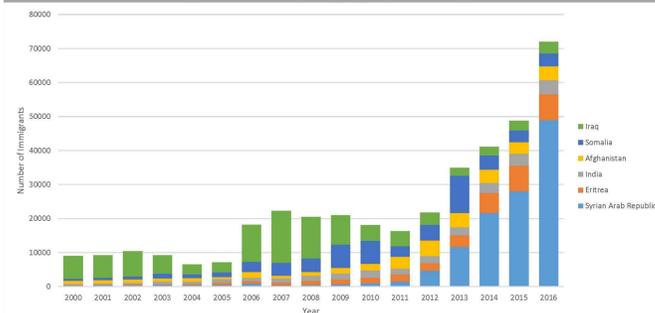
rently, the Swedish Migration Agency resides in Malmö, a city in the Southern part of Sweden that connects to Denmark by the Oresund Bridge. Here, thousands of refugees, largely from Syria, Eritrea, India, Afghanistan, Somalia, and Iraq, are processed, as it is the first city reached by anyone arriving in Sweden by car or train from Denmark. In addition to Malmö, many immigrants arrive in the Swedish capital of Stockholm, where they are likely to remain and find employment and benefits. Understanding the impact of policy on the distribution of immigrants in Sweden could provide valuable information on the future trends of immigration and how resources will need to be properly distributed.

Methodology

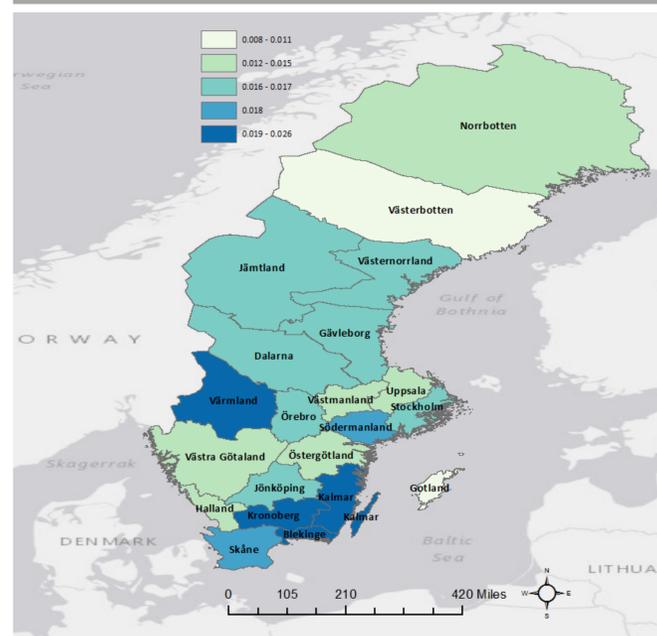
For this project, I used data that is available on Statistiska centralbyrån, also known as Statistics Sweden. Their subject areas include Population statistics, where I found datasets on both immigration by age, region, and sex from 1997-2016, and population by region, marital status, age, and sex from 1968-2016. Using this data, I created a map which shows the population density of immigrants by county from 1997-2016. In addition, I created a series of maps using cluster and outlier analysis to see how the clustering of immigrants to Sweden has evolved over time. I also used data from the Migration Policy Institute, Oresunds Institutet, and Statistiska centralbyrån for data visualization, as well as several news sources for immigration policy data.

The greatest limitation to this data was not having a plethora of statistics available on the country of Sweden. This data focuses primarily on immigration changes and it is difficult to make any conclusive causal arguments from these maps without more data. My arguments about the effects of immigration policy on immigration rates rely on news sources, which can carry bias, and which don’t take into account other factors which could contribute to migrant patterns.

Number of Immigrants, by six largest groups of citizenship



Immigrant Population Density, by county, in 2016



Clustering and Outlier Analysis Results

Year	Z-value	P-value
1998		
Stockholm	4.68	0.000003
Uppsala	2.39	0.017
Jämtland	2.15	0.031
2002		
Stockholm	2.50	0.012
2006		
Skåne	2.85	0.004
2008		
Blekinge	2.36	0.018
Skåne	2.93	0.003
2014		
Kronoberg	2.45	0.014
2016		
Blekinge	3.70	0.0002
Kalmar	2.61	0.009
Kronoberg	2.46	0.014

The cluster maps show counties from 1998-2016 with HH and LL values, meaning that there are clusters of high values and low values around those counties. Each of these counties had high z-values and low p-values, showing their statistical significance. We can see a slight movement in clustering over time. While 1998-2002 shows clustering around the counties of Stockholm and Uppsala, 2006-2008 shows clustering around Skåne. Finally, 2009-2016 shows clustering migrating upwards, closer to the Blekinge, Kalmar, and Kronoberg counties.

Results

Spatial Patterns: GIS analysis reveal little spatial pattern over time. There seems to be slight movement in clustering between 1998 and 2016 based on the cluster and outlier analysis results, but this data is inconclusive with regard to a causal relationship between immigration policy and migration patterns.

Further Research: Research suggests that immigration to Sweden will decrease over time in line with Sweden stricter immigration policies. Restrictions to permanent residency may have an impact on the numbers of immigrants residing in large cities such as Malmö (Skåne county) and Stockholm (Stockholm county) Perhaps this is shown in the slight movement of immigrants north from Skåne and away from Stockholm. In addition, the recent restrictions on borders, for example most recently with the ID checks enforced at the Øresund Bridge connecting Denmark and Sweden through Malmö, could impact the amount of immigrants in that area. The traffic statistics below show the significance of this pathway to Sweden.

Traffic Statistics over Øresund Bridge in 2015

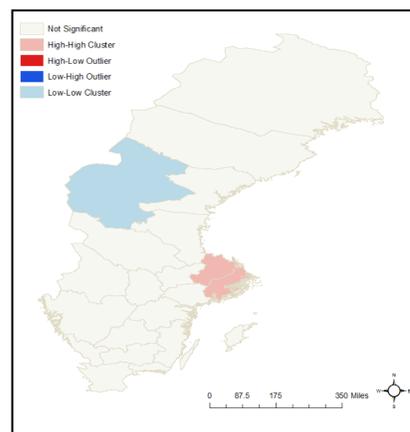
People travelling over the bridge per average day:	75000
Vehicles travelling over bridge per average day:	19300
Private Cars	17400
Lorries/trucks	1230
Busses	128



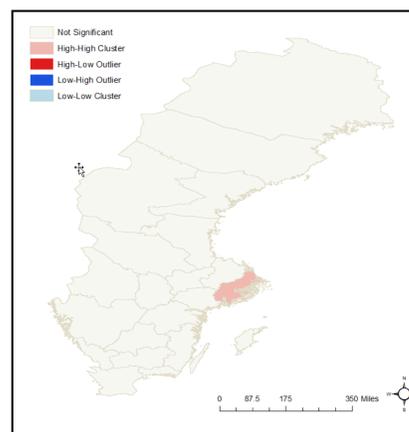
Sources:

Class: GIS 101
Map projection: WGS_1984_33N, Transverse Mercator
Date produced: 9 May 2017
Data Sources: Statistiska centralbyrån, Migration Policy Institute, Oresunds Institutet
Image Sources: *The Independent*, *UrbanLifeCopenhagen*, *The Daily Mail*
References:
Morrison, Caroline. "Refugee crisis: Sweden imposes border controls on bridge connecting Malmö and Copenhagen in Denmark to restrict migrants." *The Independent*. 4 Jan. 2016. www.independent.co.uk/news/world/europe/refugee-crisis-sweden-imposes-border-controls-on-bridge-connecting-malmo-and-copenhagen-to-reduce-asylum-seekers-106795251.html
Riniolo, Veronica. "Sweden: a Country of Opportunities and Constraints for Migrant Integration." ISMU, June 2016.
Sorensen, Martin Selsoe. "Sweden, Nation of Open Arms, Debates Implications of Immigration." *The New York Times*, 24 Feb. 2017. www.nytimes.com/2017/02/24/world/europe/sweden-nation-of-open-arms-debates-implications-of-immigration.html
"Statistics." *Migrationverket*. www.migrationsverket.se/English/About-the-Migration-Agency/Facts-and-statistics/Statistics.html
"Sweden and Migration." *The Swedish Institute*, 2013-2017. sweden.se/migration/#2013
Traub, James. "The Death of the Most Generous Nation on Earth." *Foreign Policy*, 10 Feb. 2016. foreignpolicy.com/2016/02/10/the-death-of-the-most-generous-nation-on-earth-sweden-syria-refugee-europe/

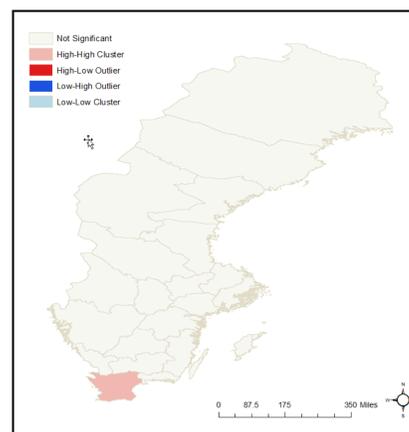
Cluster and Outlier Analysis



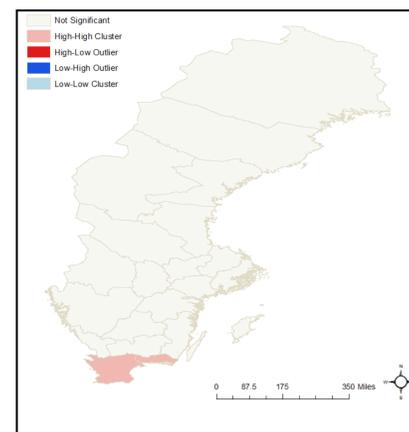
1998



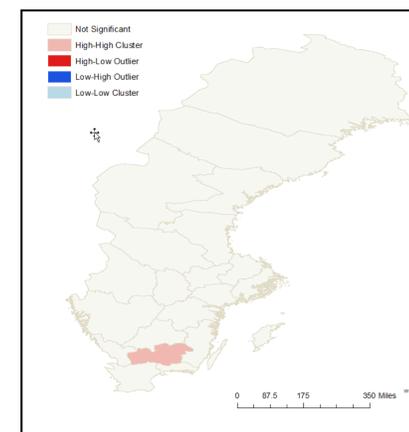
2002



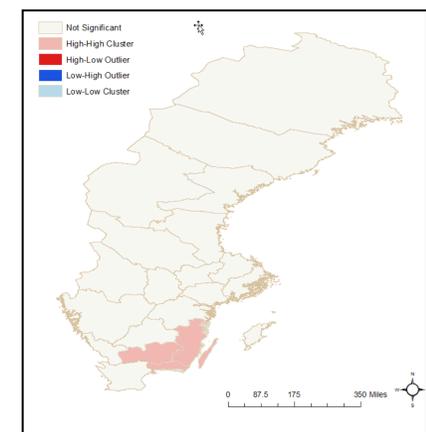
2006



2008



2014



2016

