Fatal Journeys:

Analyzing Human Migration Risks of Refugees and Asylum Seekers

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**Analysis Report**

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There are twelve graphs displaying different sorts of analysis for dead or missing migrants. These migrants, whether they are refugees or asylum seekers, try to relocate to different parts of the world but sometimes never reach their destination. Four bar graphs describe the number of dead migrants, the number that survived, the number of missing, and the total dead and missing. Three other single-bar graphs describe the number of dead migrants sorted by how they died, where they died, and on what route did they die. Another triple-bar graph describes the number of deaths sorted among males, females, and children. Three word clouds describe the major causes of death, the major regions of incident, and the major migration routes migrants take. Lastly, there is a map describing every migrant incident throughout the world, made using basemap.

The graph with the numbers of dead migrants per year analyzes the bar trend as years progress since 2014. Between 2014 and 2015 the number of dead migrants increased tremendously, from 1726 to 4045. Between 2015 to 2016, there wasn’t much change, 4045 to 4059. However, from there, the trend starts decreasing from 4059 to 3734 in 2017 to 3234 in 2018. In 2019 the number of dead decreased to 2209. The International Organization for Migration, IOM, has been trying their best to allow safe passage for migrants, and provided the dataset for this project. The initiative started in 2013 with two shipwrecks where at least 368 people died in Lampedusa, an Italian island. The best hope is that the number of dead continues to decrease. If the numbers continue to pile up over the years, then the numbers of dead will pile up. The media still doesn’t realize the growing problem of the growing number of dead migrants. The current numbers displayed in the graph add up to 16,905 dead migrants over time. These migrants’ families live lives too, and most of the time, don’t get their views exposed. If people don’t realize the imminent problem of the numbers of dead migrants over time, not even the help of the IOM could stop this growth.

The numbers of survivors are also an important part of understanding human migration, for the survivor count additionally helps to understand the population of humans that is migrating. In 2014 the number of survivors was 5553. In 2015 the number grew to 8115. In 2016 the number more than doubled to 17407. However, in 2017, the number more than halved to 6424. In 2018, the number grew to 9273. The number of survivors for 2019 was 4691. This illustrates that the trend of the number of survivors has decreased by around 4500 survivors from 2014 to 2019. However, the values clearly show that from 2016 to 2019, the number of survivors’ ratio is about 3.7:1. Thus, so far, the number of survivors has been far greater than the number dead for each incident, but the ratio has been decreasing overall and will continue to decrease if the migrants don’t have proper transportation and basic resources to reach their destination and survive.

The numbers of missing migrants have to be counted in order to keep track of most, if not all, migrants. The number of missing migrants has been decreasing since 2016. In 2014 3563 migrants went missing. In 2015 the number of missing decreased by about 1000 to 2539. In 2016 the number of missing accelerated to 4011. In 2017 the number of missing migrants started to drop to 2545. The year 2018 produced 1703 missing. By the end of 2019 the number of missing migrants was 1103. One initiative started by the Argentine Forensic Anthropology Team, also known as EAAF, is the Border Project. Their aim is to exchange forensic information on missing migrants and unknown remains in Central America, Mexico, and the U.S. They are a key contributor in creating forensic databases to collect data. The Border Project’s goal is to considerably improve service to the families of missing migrants to resolve their right to truth and justice. For this the EAAF has established a program. The creation of forensic databanks on missing migrants attempts to improve the quantity and quality of data on missing migrants. The EAAF team is a major supporter for gathering data on missing migrants to investigate what problems they may have faced on their journey.

The last yearly single-bar graph is accounting for the total dead and the total missing combined into one number. The number of total dead and missing migrants has almost formed the trend of an upside-down *V*. In 2014 the total dead and missing was 5289. It jumped to 6584 in 2015, and reached a high of 8070. In 2017 the number was 6279 and lowered to 4937 in 2018. In 2019 the total dead and missing decreased by about 1500 to 3312. This is also a sign of the working efforts of the IOM to grant migrants safer journeys. The total dead and missing migrants is the representation of the minimum number of migrants that don’t reach their respective migration destinations. This column also helps group the two columns of dead and missing. It would be great hope to all the migrants’ families if we could help as volunteers, and they could know that we care about them. We could also double our efforts to help the IOM in their own efforts to grant safe passage to migrants on their journey to their destination. The challenges migrants face cause them to go missing or even die along their treacherous journeys, ones we sometimes can’t even imagine. However, to fully understand their journeys, an analysis needs to be done on how they died or went missing, where they were migrating to in the first place, and where they died or went missing.

The fifth and sixth graphs are the analysis of the major causes of death. The major cause of death was drowning, resulting in 1155 deaths overall. The second major cause of death was sickness and lack of access to medicines resulted in 849 deaths overall. However, the shocking fact is that the third major cause of death is unknown with 633 deaths. That means with all the effort 633 deaths so far have unknown causes. The fourth one is vehicle accident with 540 deaths. However, the fifth major cause of death is unknown, with the only knowledge being skeletal remains. This adds up to about 1400 deaths resulting out of unknown causes, about 145 deaths greater than the number of deaths due to drowning. However, this column refers to only the deaths, not the number of missing. If we are to save more migrants, the next steps would be to rely on more accurate descriptions than those of witnesses. This would allow the IOM to track the causes of deaths more closely and have more information about migrants. The bar labeled “Other” listed at the end of the graph contains all of the causes of death that have caused less than or equal to 40 deaths. These include hit by a vehicle, murder, and excessive physical abuse among others. A word cloud was also made in order to analyze the major causes of death. Word clouds in general show the prominent texts that show up in a certain dataset. This analysis covers one particular column to pinpoint the major causes of death in order of importance by changing the font. All the word clouds made have white backgrounds. The word cloud recognizes the most recurring cause of death is sickness and lack of access to medicines. This is partly because of the long length of the text string and the great number of deaths that have been caused by it. The second biggest is vehicle accident, and the third is skeletal remains. The phrase in fourth biggest font is unknown skeletal. This matches the two reasons of how word cloud determines the order of fonts to use on a series of phrases. These three are all the same length while vehicle accident has caused more deaths, so therefore, gets priority. After vehicle accident comes skeletal remains and then unknown skeletal, two phrases pretty similar for the same cause of death, unknown (skeletal remains), which comes after vehicle accident in the amount of deaths they have caused but relatively not by many deaths. These two graphs help show that drowning and sickness and lack of access to medicines are the top two major causes of death that the IOM needs to focus on to resolve.

The seventh and eighth graphs are the analysis of the major regions of incident. The region of incident causing the most deaths is the US-Mexico Border with 1596 incidents. The US-Mexico Border has been a matter of great debate for some time because of federal policies. The sad part is that this region will most likely remain the place of highest number of deaths because the IOM cannot directly act against federal policies and the military troops stationed at the border. These refugees and asylum seekers are only looking for a better living space, not trying to start a war for the country they are fleeing from. The region with the second most deaths is North Africa with 1393 incidents. The Mediterranean had 1084 incidents. Sub-Saharan Africa witnessed 623 incidents while Central America encountered 364 incidents. The word cloud for the major regions of incident also emphasizes what the graph shows as “US-Mexico” and “Mexico border” are the major regions of incident. This is the prominent region where migrants look for new opportunities yet are trapped in Mexico with unfulfilled hopes.

The ninth and tenth graphs describe the migration routes refugees and asylum seekers take. The major migration route happens to be unknown. Three thousand two hundred twelve deaths have unknown migration routes. Investigators do not know where the migrants were going but do know that they died on their way. The route causing the second-most incidents is Central America to the U.S with 1732 incidents. The word cloud also has this route as the second-most common route with unknown as the most migration route causing the most deaths. The route causing the third-most deaths is the Central Mediterranean. The route causing the fourth-most incidents is Western Mediterranean with 311 deaths, and the fifth-most is Eastern Mediterranean with 246 deaths. The Mediterranean has been notorious for its deaths in the past, and this is further proof that the Mediterranean Sea is still a route for migrants that may cause migrants to go dead or missing.

The eleventh graph is the triple-bar graph based by age and sex, children, males, and females. This graph displays the number of dead from 2014 to 2019 for children, males, and females. In 2014 the number of males, females, and children were relatively low compared to the following years. However, towards 2018, the numbers continued to increase. In 2014 the number of children was the highest, but in 2015 the number of males grew much higher than the number of children and females as the number of children remained about the same while the number of dead females increased a little. In 2016 the number of dead females rose above the number of dead children. In 2017 and 2018 the number of dead males shot up over 1500 deaths each year, and in 2018, the number of dead males was over 1750. However, in 2019, with the efforts of the IOM, the number of dead males, females, and children decreased with a record low of the number of deaths of children in 2019. In 2019 the number of dead males decreased to less than 1000 deaths.

The last graph is the map of incidents across the world. The most concentration of incidents is in the Mediterranean, Mexico, and Africa. This makes sense as these regions have encountered the greatest number of incidents of dead and missing refugees and asylum seekers. This graph was made using the tool basemap after being imported from matplotlib toolkits. The red points on the graph refer to incidents around the world. This graph is a Mercator projection and uses the location coordinates provided in the dataset to plot the points on the map. This map will allow people around the world to pinpoint the locations of the most incidents and focus on those regions. This may also allow for set migration routes to ensure safer travel for refugees and asylum seekers who only wish for a better living from the harsh ones they are used to.