

Column Name	Description	Formula
<i>NAME_1</i>	Name of Oblast as given in GADM shapefile	
<i>NAME_2</i>	Name of Raion as given in GADM shapefile	
<i>month</i>	Month in integer format	
<i>day</i>	Day in integer format	
<i>total_count</i>	Total number of devices detected in an area on a particular day	
<i>mean_pop</i>	Mean number of devices detected in an area before the invasion i.e. between 1st January 2022 to 24th February 2022	
<i>median_pop</i>	Median number of devices detected in an area before the invasion i.e. between 1st January 2022 to 24th February 2022	
<i>total_baseline_raion_population</i>	Population of a raion based on 2020 UN unconstrained WorldPop data i.e. population before the invasion	
<i>baseline_penetration_rate</i>	Baseline smartphone penetration rate	$median_pop / total_baseline_raion_population$
<i>current_pop_size</i>	The population of a particular area on a particular day after the invasion based on the baseline smartphone penetration rate	$total_count / baseline_penetration_rate$
<i>total_baseline_pop</i>	Total 2020 UN unconstrained WorldPop population of Ukraine i.e. population before invasion	
<i>net_outflow</i>	The net number of people leaving Ukraine on a particular day after the invasion	
<i>total_current_pop_by_month_and_day</i>	Total population on a particular day after the invasion	Summing <i>current_pop_size</i> for each day after the invasion
<i>scaling_factor</i>	A metric that accounts for net refugees leaving Ukraine on a particular day after the invasion	$(total_baseline_pop - net_outflow) / total_current_pop_by_month_and_day$
<i>adjusted_pop_size</i>	Updated population for an area on a particular day after the invasion after accounting for net outflows of refugees	$scaling_factor \times current_pop_size$

<i>net_pop_change</i>	Population displacement of a particular area as of a specific day after the invasion	<i>adjusted_pop_size - total_baseline_raion_population</i>
<i>proportional_net_change</i>	The proportion of displaced population (relative to before invasion) of a particular area as of a specific date after the invasion	<i>net_pop_change / total_baseline_raion_population</i>
<i>date</i>	Date	
<i>week</i>	Calendar week	
<i>week_adjusted</i>	The week since the start of the invasion	