

Neighborhood Patterns+

Advan's Neighborhood Patterns+ dataset contains footfall data aggregated by census block group (CBG) in the U.S. and dissemination area (DA) in Canada. Learn which day of the week a CBG or DA is busiest, what time of the day a CBG or DA is busiest, where devices that stop during breakfast, lunch, and dinner travel from, and how weekday and weekend demographics compare. This data is ideal for site-selection use cases and other use cases where you need to understand how busy an area is, when it is busy and the demographics of the visitors.

Neighborhood patterns+ normalizes the observed data to estimate the actual counts across the actual adult population, as opposed to Neighborhood patterns, which is measuring only devices in our panel.

Neighborhood patterns+ are available starting from January 1st, 2019.

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Neighborhood Patterns Schema

File Names: [neighborhood_patterns_plus*.csv.gz]

Column Name	Description	Type	Example
area	The designation of the area being described. Canadian DAs have a "CA:" prefix to differentiate from US CBGs.	String	131000000000
area_type	The type of area specified in the area column. Canadian DAs will have 'Census Block Group' here.	String	Census Block Group
origin_area_type	The type of area used in the device home areas and dev	String	Census Block Group

	ice_daytime_areas columns. Canadian DAs have 'Census Block Group' here but both CBGs and DAs will appear in these columns.		
date_range_start	Start time for measurement period in ISO 8601 format of YYYY-MM-DDTHH:mm:ss±hh:mm (local time with offset from GMT).	String	2020-03-01T00:00:00-06:00
date_range_end	End time for measurement period in ISO 8601 format of YYYY-MM-DDTHH:mm:ss±hh:mm (local time with offset from GMT). The end time will be the last day of the month at 12 a.m. local time.	String	2020-04-01T00:00:00-06:00
day_counts	The frequency of each day of the week that occurred in the date range in local time.	JSON {String: Integer}	{"Monday": 4, "Tuesday": 5, "Wednesday": 4, "Thursday": 4, "Friday": 4, "Saturday": 4, "Sunday": 4 }
stop_counts	Number of estimated stops of the adult population to this area during the date range. A stop must have a minimum duration of 1 minute to be included. The count includes stops by devices whose home area is the same as this area.	Integer	428840
device_counts	Number of unique devices in the adult population that stopped in this area during the date range. This includes devices whose home area is the same as this area.	Integer	109161
stops_by_day	The number of stops in this area each day (local time) over the covered time period.	JSON [Integer]	[33, 22, 33, 22, 33, 22, 22, 21, 23, 33, 22, 11, 44, 22, 22, 44, 11, 33, 44, 44, 44, 33, 34, 44, 22, 33, 44, 44, 34, 43, 43]

 device_home_areas	The number of devices of the adult population that stopped in this area by home origin area. The area itself is included as a potential key. See Determining Home Location and Privacy is applied to this column.	JSON {String: Integer}	{"360610112021": 603, "460610112021": 243, "560610112021": 106, "660610112021": 87, "CA:24110035": 51}
 weekday_device_home_areas	This column is the same as device_home_areas except it only includes those devices that stopped in the area Monday through Friday local time.	JSON {String: Integer}	{"130890212162": 91, "131210101101": 22, "CA:24110035": 20}
 weekend_device_home_areas	This column is the same as device_home_areas except it only includes those visitors that visited on Saturday or Sunday local time.	JSON {String: Integer}	{"130890212162": 91, "131210101101": 22, "CA:24110035": 20}
 breakfast_device_home_areas	This column is the same as the device_home_areas except it only includes those devices that stopped in the area between 6 am and 10:59 am local time.	JSON {String: Integer}	{"130890212162": 91, "131210101101": 22, "CA:24110035": 20}
 lunch_device_home_areas	This column is the same as device_home_areas except it only includes those devices that stopped in the area between 11 am and 2:59 pm local time.	JSON {String: Integer}	{"130890212162": 91, "131210101101": 22, "CA:24110035": 80}
 afternoon_tea_device_home_areas	This column is the same as device_home_areas except it only includes those devices that stopped in the area between 3 pm and 4:59 pm local time.	JSON {String: Integer}	{"130890212162": 91, "131210101101": 82, "CA:24110035": 25}
 dinner_device_home_areas	This column is the same as device_home_areas except it only includes those devices that stopped in the area between 5 pm and 8:59 pm local time.	JSON {String: Integer}	{"130890212162": 91, "131210101101": 82, "CA:24110035": 25}
 nightlife_device_home_areas	This column is the same as device_home_areas except it only includes those devices that	JSON {String: Integer}	{"130890212162": 91, "131210101101": 82, "CA:24110035": 25}

	stopped in the area between 9 pm and midnight local time.		
 work_hours_device_home_areas	This column is the same as device_home_areas except it only includes those devices that stopped in the area between 7:30 am and 5:30 pm Monday through Friday local time.	JSON {String: Integer}	{"130890212162":91, "131210101101":22, "CA:24110035":80}
 work_behavior_device_home_areas	This column is the same as work_hours_device_home_areas but only includes devices that dwelled for at least 6 hours and excludes devices whose visit is in the same gh7 as their home location.	JSON {String: Integer}	{"130890212162":42, "131210101101":11, "CA:24110035":68}
 device_daytime_areas	The number of devices of the adult population that stopped in this area by that device's primary daytime origin area. See Determining Home Location and Privacy is applied to this column	JSON {String: Integer}	{"131210101101":987, "131210119002":450, "CA:24110035":447, "130890212163":396, "131210116211":300, "130670302292":282, "130590004023":278, "131350503103":261, ..., ..., "131350502131":50}
distance_from_home	Median distance from home travelled by devices (of devices whose home we have identified) in meters.	Integer	29385
distance_from_primary_daytime_location	Median distance, in meters, traveled to the stopping point(s) within the area by devices from their device_daytime_area (of devices whose device_daytime_area we have identified). We determine device_daytime_area within 100 meters and find the median distance per device (if more than one stop in the area for a device) to calculate the median for all devices.	Integer	29385
median_dwell	Median dwell time in minutes. Note that we are only including	Double	5

	stops that have a dwell of at least 1 minute.		
top_same_day_brand	Brands that the devices of the adult population that stopped in this area visited in the same day as the stop in this area. Limited to top 20. The value shown for each brand is a percentage representing: devices going to both the brand and the area / total devices stopping in the area.	JSON {String: Integer}	{"mcdonalds": 7, "amc": 5, "target": 3}
top_same_month_brand	Brands that the devices of the adult population that stopped in this area visited in the same month as the stop in this area. Limited to top 20. The value shown for each brand is a percentage representing: devices going to both the brand and the area / total devices stopping in the area.	JSON {String: Integer}	{"mcdonalds": 7, "amc": 5, "target": 3}
popularity_by_each_hour	The number of stops of the adult population in this area each hour (local time) over the covered time period, regardless of when the stop started. This is a complementary column to stops_by_each_hour.	Array	[33, 22, 33, 22, 33, 22, 22, 21, 23, 33, 22, 11, 44, 22, 22, 44, 11, 33, 44, 44, 44, 33, 34, 44, 22, 33, 44, 44, 34, 43, 43....]
popularity_by_hour_monday	A 24-element array with one value for each hour of the day (hour 0 to hour 23) representing the number of stops of the adult population that occurred for that hour on any Monday in the time range.	Array	[9877, 8233, 7520, 7512, 7992, 11259, 19885, 29153, 31278, 34235, 36753, 41983, 48438, 48909, 47167, 48258, 48485, 47134, 43544, 37033, 29193, 22308, 16456, 12628]
popularity_by_hour_tuesday	A 24-element array with one value for each hour of the day (hour 0 to hour 23) representing the number of stops of the adult population that occurred	Array	[9877, 8233, 7520, 7512, 7992, 11259, 19885, 29153, 31278, 34235, 36753, 41983, 48438, 48909, 47167, 48258, 48485, 47134, 43544, 37033, 2]

	for that hour on any Tuesday in the time range.		[9193,22308,16456,12628]
 popularity_by_hour_tuesday	A 24-element array with one value for each hour of the day (hour 0 to hour 23) representing the number of stops of the adult population that occurred for that hour on any Tuesday in the time range.	Array	[9877,8233,7520,7512,7992,11259,19885,29153,31278,34235,36753,41983,48438,48909,47167,48258,48485,47134,43544,37033,29193,22308,16456,12628]
 popularity_by_hour_wednesday	A 24-element array with one value for each hour of the day (hour 0 to hour 23) representing the number of stops of the adult population that occurred for that hour on any Wednesday in the time range.	Array	[9877,8233,7520,7512,7992,11259,19885,29153,31278,34235,36753,41983,48438,48909,47167,48258,48485,47134,43544,37033,29193,22308,16456,12628]
 popularity_by_hour_thursday	A 24-element array with one value for each hour of the day (hour 0 to hour 23) representing the number of stops of the adult population that occurred for that hour on any Thursday in the time range.	Array	[9877,8233,7520,7512,7992,11259,19885,29153,31278,34235,36753,41983,48438,48909,47167,48258,48485,47134,43544,37033,29193,22308,16456,12628]
 popularity_by_hour_friday	A 24-element array with one value for each hour of the day (hour 0 to hour 23) representing the number of stops of the adult population that occurred for that hour on any Friday in the time range.	Array	[9877,8233,7520,7512,7992,11259,19885,29153,31278,34235,36753,41983,48438,48909,47167,48258,48485,47134,43544,37033,29193,22308,16456,12628]
 popularity_by_hour_saturday	A 24-element array with one value for each hour of the day (hour 0 to hour 23) representing the number of stops of the adult population that occurred for that hour on any Saturday in the time range.	Array	[9877,8233,7520,7512,7992,11259,19885,29153,31278,34235,36753,41983,48438,48909,47167,48258,48485,47134,43544,37033,29193,22308,16456,12628]
 popularity_by_hour_sunday	A 24-element array with one value for each hour of the day (hour 0 to hour 23) representing the number of stops of the	Array	[9877,8233,7520,7512,7992,11259,19885,29153,31278,34235,36753,41983,48438,48909,47167,48258,48485,

	adult population that occurred for that hour on any Sunday in the time range.		47134, 43544, 37033, 29193, 22308, 16456, 12628]
⚠️ device_type	The number of devices of the adult population that stopped in the area that are using Android vs. iOS.	JSON {String: Integer}	{"android": 6, "ios": 8}
iso_country_code	The 2 letter ISO 3166-1 alpha-2 country code of the area.	String	CA
region	When iso_country_code == US, then this is the USA state or territory. When iso_country_code == CA, then this is the Canadian Province or territory.	String	MD
y	The year of the measurement period (included for easier filtering)	Integer	2021
m	The month of the measurement period (included for easier filtering)	Integer	6

⚠️ Differential privacy is applied to these fields *before* adjusting the results to the adult population. A random number between 0 and 5 in the US, or 0 and 3 in Canada, is added or subtracted to the number of stops and census block group visitors. In addition, if there is only one device in the home and daytime areas it is not reported at all; if there are between 2 and 4 devices, they are reported as 4; and, starting January 2023 in the US, only the 65th percentile of areas are included.

Optional: Panel Overview Data

For conformity with legacy products, the Panel Overview Data is available upon request (see tables below). Since Patterns+ is already normalized for the panel, i.e., all the counts are adjusted to reflect the estimates of the whole adult population, the device home distributions in this table are neither necessary nor recommended for normalization purposes.

Home Location Distributions by State/Census Block Group

File Names: [home_panel_summary.csv]

Column Name	Description	Type	Example
date_range_start	Start time for measurement period in ISO 8601 format of YYYY-MM-DDTHH:MM:SS±hh:mm (local time with offset from GMT). The start time will be 12 a.m. Sunday in local time.	String	2020-03-01T00:00:00-06:00
date_range_end	End time for measurement period in ISO 8601 format of YYYY-MM-DDTHH:MM:SS±hh:mm (local time with offset from GMT). The end time will be the following Sunday at 12 a.m. local time.	String	2020-03-08T00:00:00-06:00
region	Lowercase abbreviation of U.S. state or territory, or the Canadian Province or territory, depending on iso_country_code	String	ny
iso_country_code	The 2 letter ISO 3166-1 alpha-2 country code.	String	us
census_block_group	US FIPS code for this Census block group , or the Canadian Dissemination area designation (Canadian units have CA: as a prefix)	String	530330080012
number_devices_residing	Number of distinct devices observed with a primary nighttime location in the specified census block group.	Integer	54481
number_devices_primary_daytime	Number of distinct devices observed with a primary daytime location in the specified census block group.	Integer	54482

File Names: [home_panel_summary.csv]

Column Name	Description	Type	Example
year	Calendar Year	Integer	2018
month	Calendar month starting from 1 as January	Integer	1
region	Lowercase abbreviation of U.S. state or territory, or the Canadian Province or territory, depending on <code>iso_country_code</code>	String	ny
iso_country_code	The 2 letter ISO 3166-1 alpha-2 country code.	String	us
census_block_group	US FIPS code for this Census block group	String	530330080012
number_devices_residing	Number of distinct devices observed with a primary nighttime location in the specified census block group.	Integer	54481
number_devices_primary_daytime	Number of distinct devices observed with a primary daytime location in the specified census block group.	Integer	54482

Key Concepts

- **Visit Attribution:** we compute the visits/visitors and other metrics inside a POI using the POI's geometry. We do not apply any dwell time or any concept of "stops"; we rely on the polygon for accuracy. We have tested our data on 1,500 publicly traded tickers versus (a) top line revenue as reported from the companies and (b) credit card transaction counts on physical locations, and we have determined consistently that in the vast majority of cases filtering for dwell time reduces the signal and makes the correlation/forecasting worse.
- **Determining Home Location:** we compute a device's home/work (night/day) location by computing the time a device spent in each building in the country; then taking the most frequented building.