



REPORT

Using Location Data in CPG Shopper Insights



A network diagram composed of nine shopping cart icons arranged in a circle, connected by a dense web of blue arrows pointing in various directions, symbolizing the interconnectedness and complexity of consumer shopping patterns.

Why analytics professionals in CPG
are turning to spatial analysis to navigate
the new normal of consumer behavior.

2020 has triggered enormous shifts in the way Consumer Packaged Goods (CPG) firms need to market and distribute their products. The take home grocery market is now growing 12% YoY, in spite of a 10% drop in the frequency of visits to grocery stores [↗]. During the peak of lockdown, pandemic spending behavior also changed very significantly, both in terms of what consumers were purchasing and how. For example 56% of consumers were buying bulk goods or expecting to buy in bulk [↗].

All of these consumer trends are rapidly accelerating the share of CPG products sold online, even if companies (such as Procter & Gamble) still only see 7% of their sales take place online [↗]. However, despite the rise of online and the impact of the COVID-19 pandemic **90% of worldwide purchases are predicted to take place in-store** versus online in 2025 [↗].

Understanding offline, real-world behavior of consumers and how this fluctuates in relation to social distancing measures, lockdown restrictions, curfews, commuting changes, workplace shifts, and everything else that comes with COVID-19 is crucial for CPG brands to pivot their

strategies, with many shifting more budget than ever from marketing to Advanced Analytics and Data Science initiatives that take shopper insights to a far superior quality and granularity.

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Analytics professionals in CPG are being pushed to move beyond traditional small-scale data sources and use new Big Data sets and location data to focus upon in-store and near-store behavior to ensure the right product gets to the right store, at the right time.

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Key Challenges

Upskilling analysts to use new Data Science methodologies and larger datasets

For a long time, analytics professionals in CPG have worked with smaller scale datasets - which for many years have provided sufficient insights to departments such as marketing, supply chain, operations, and sales. However, a new era of

analytics professionals are looking to new data streams to gain a competitive edge and identify trends that aren't necessarily reflected in datasets from traditional providers.

This can include credit card transaction data, human mobility (or GPS) data, road traffic, weather, or social media insights.

As well as using new types of data, **professionals who have typically worked with Business Intelligence tools (such as Excel, Tableau, Looker, Spotfire, and others) are looking to upskill and learn how to create more sophisticated models with Python and R**, in order to draw from larger datasets. Furthermore, learning about the challenges of working with spatial data to ensure they gain a better understanding of location-factors has become a top priority.

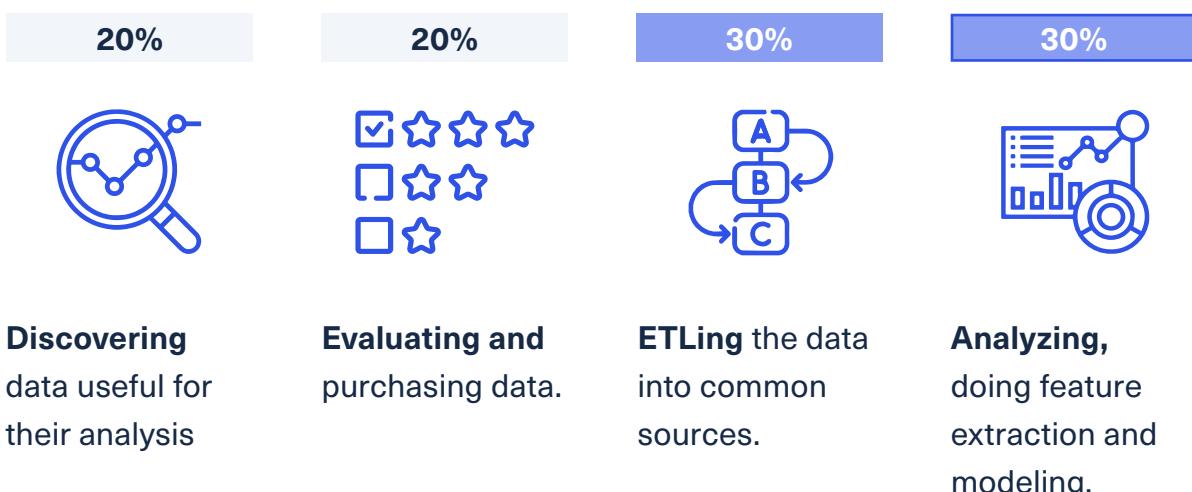


Absence of quality data or data silos between different countries, teams, and categories

Many professionals leading data and analytics teams in CPG are familiar with the immense challenges of data governance in multinational organizations. As a result, **CPG firms are now focusing on setting up global “Centers of Excellence” for**

Data Science, enabling them to build centralized data lakes and analytics capabilities that can serve all of the different countries, brands, and departments that need their expertise. This allows them to work towards global agreements with data and software vendors as well as replicating successful projects and methodologies across multiple territories, always with the local input required for insights to be relevant to the local business. In turn, they can avoid having multiple agreements with vendors in different countries, reducing silos and knowledge gaps between different teams.

Such initiatives also allow data leaders to ensure that their Data Scientists (a highly coveted and expensive resource) have the resources (e.g., data engineers) and support they need to spend time on analysis, rather than data admin. A common challenge that often leaves them with only 30% of their remaining to carry out analysis:



Data insights not real-time enough to bring value to business units

Another key challenge, not only in the CPG industry, but across any other industry during the COVID-19 pandemic is sourcing data that is real-time enough to reflect the weekly and daily changes that affect consumer

behavior. This means that by the time that data has been sourced, evaluated, ETL'd, analyzed, and processed into insights, it is often no longer valuable or relevant to the business stakeholder looking to make a commercial decision.

Furthermore, getting the right data from points of sale (e.g., grocery stores) has been a historical challenge for the entire CPG industry - making it difficult to understand frontline consumer behavior at the granularity and with the quality desired.

Limited experience working with spatial data

The location component of data has never been more important with such drastic changes to consumer work and home locations meaning that their interactions with physical points

of sale are also evolving rapidly. The spatial data relating to these locations must be a core part of any CPG analysis in order for a model to work effectively and currently, only 1 in 3 Data Scientists feel they have the expertise required in spatial analysis to bring value on such use cases [↗].

Retail brands, however, tend to have more spatial analysis expertise in-house, given the importance of location planning (otherwise known as GIS) to effectively manage brick and mortar sites. CPG may not have the same brick and mortar presence, but know that hiring such skill sets will be pivotal in their success across a wide range of use cases which we will discuss in the next section of this report.

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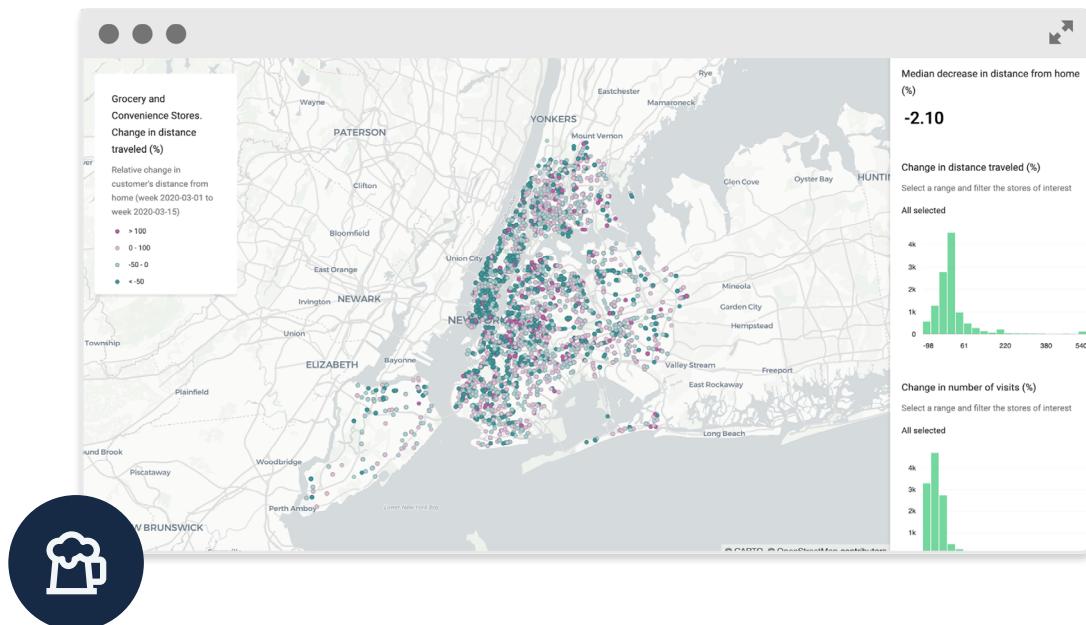
Key Applications of Location Analytics in CPG

So, specifically how are CPG companies using location analytics (sometimes known as Location Intelligence) to supercharge their shopper insights?

We interviewed a wide range of CPG analytics professionals to identify key use cases that they are focused on to navigate the new normal of consumer behavior.



Understanding Alcohol Consumption Habits with Human Mobility Data



Over the past year, alcohol sales have seen a 22% YoY growth [↗]. This is likely attributed to the fact that people are enjoying their adult beverages at home versus venturing out to a bar.

These changes in consumer behavior have created significant category shifts in the alcohol industry. As bars and restaurants continue operating at much lower capacities, alcohol brands have turned their attention to local stores and supermarkets.

Additionally, the industry has seen changes in purchase behavior. More time at home has created an unprecedented demand for buying in larger pack sizes and quantities [↗].

For example, someone who may have previously picked up a 6-pack of beer for a night out with friends pre-COVID,

now invests in an 18-pack to consume at home and avoid frequent trips to the store.

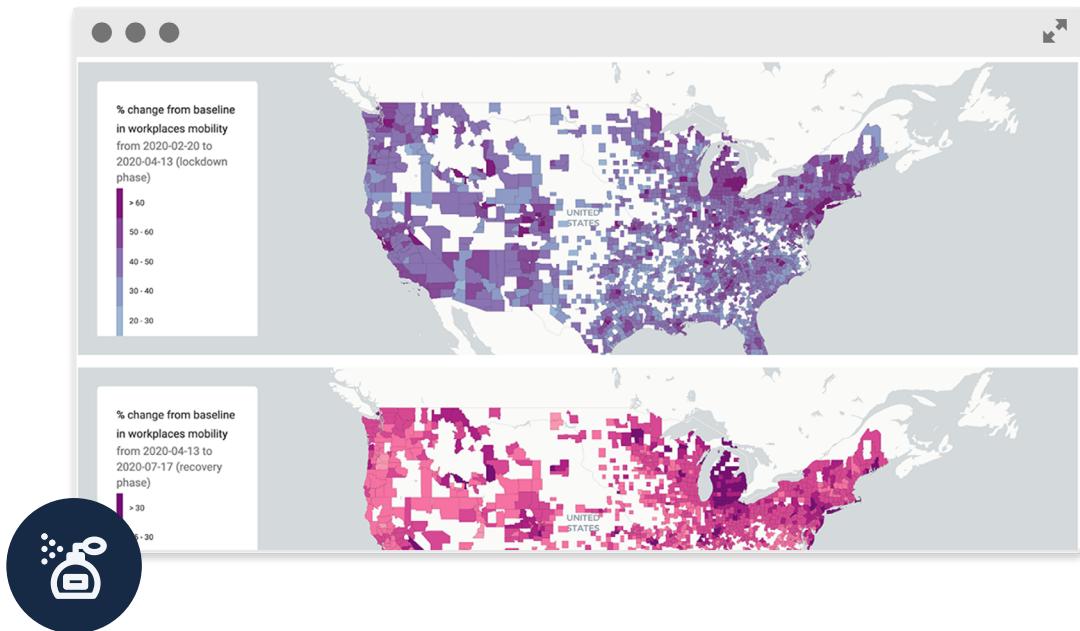
When considering these unprecedented changes, it's more important than ever that alcohol brands understand where and how customers are living in lockdown. Using mobile phone and GPS data, brands can visualize human movement patterns to identify where people live, what types of stores they are visiting, when, and with what frequency.

With human mobility insights, companies can make adjustments to their distribution and POS strategies so that they meet demand and maximize sales in the right locations.

Human mobility data layers

- Brand
- Median dwell time
- Number of visits
- Bucketed dwell times
- Number of visitors
- Brands visited same day
- Visits by day
- Brands visited same month
- Visitor home cbg
- Popularity by hour
- Visitor work cbg
- Popularity by day
- Visitor country of origin
- Device time
- Distance from home
- Visitor daytime cbg

Monitoring Personal Care Patterns with COVID-19 Data



As many people continue to work and stay at home in the new normal, personal care routines have experienced significant shifts. For example, those who once left the house each day in work attire with makeup on and their hair freshly done are opting for leggings and a more natural look these days. This has resulted in lower demand for makeup and other personal care products



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In order to combat this shift, personal care brands need to understand where people are starting to return to the office and how they can market themselves accordingly. Using COVID-19 spatial data, brands can visualize locations where people are starting to return to work and are

likely adopting pre-COVID personal care routines.

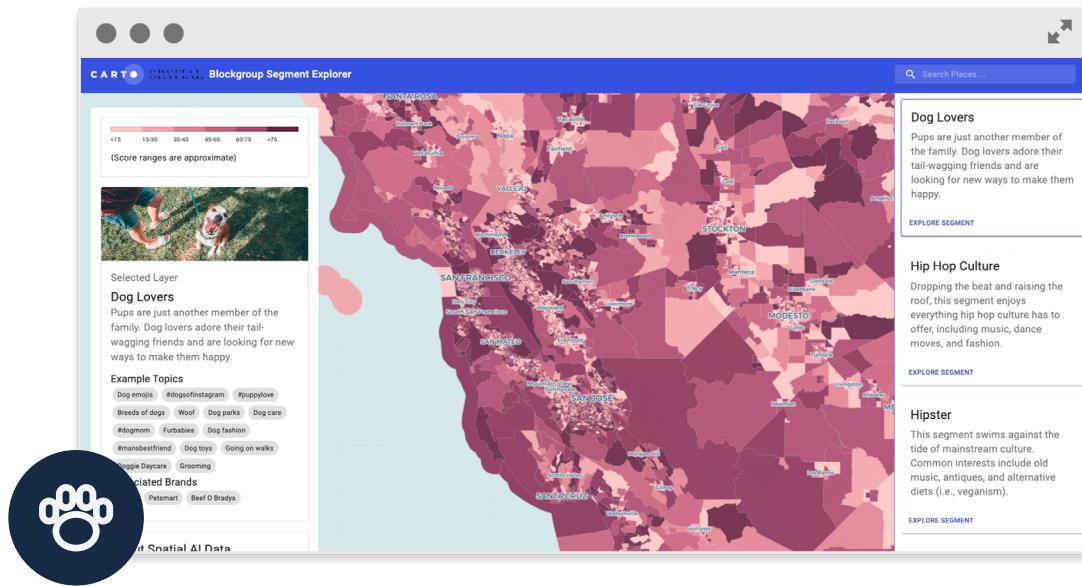
With these insights, brands can optimize their POS strategy to ensure their products are stocked in the right locations. Additionally, they can use the location data to geographically tailor their advertising campaigns to ensure they are eliminating wasteful spending and maximizing their return of investment.

COVID-19 data insights ↗

- Distance traveled from home
- Dwell times by distance from home
- Completely at home devices
- Dwell time at home
- Devices at home per hour
- Devices less than 6h at work
- Devices more than 6h at work
- Destination CBGs
- Non-home dwell time
- Median percentage of time at home



Identifying New Pet Owner Segments with Behavioral Data



The rise of COVID-19 has created a pet adoption boom in the US never seen before. Animal shelters across the US reported being completely empty and the rates of animal fostering has increased by 90% [↗].

In addition to the sharp increase in pet ownership, there's been a growing trend of people moving out of major cities in favor of suburban neighborhoods. These shifts likely have pet care brands wondering where their target audiences really are when making strategic retail decisions. By accessing real-time and spatially-based behavioral segments, such as dog lovers, animal advocates, farm culture, and more, companies can visualize where their in-market consumers live relative to where their products are sold.

With this data in-hand, pet care brands can efficiently adjust or expand their retail presence and POS strategy. This will ensure they are not only meeting demand in the right

locations for their existing customers, but are capturing new ones as well.

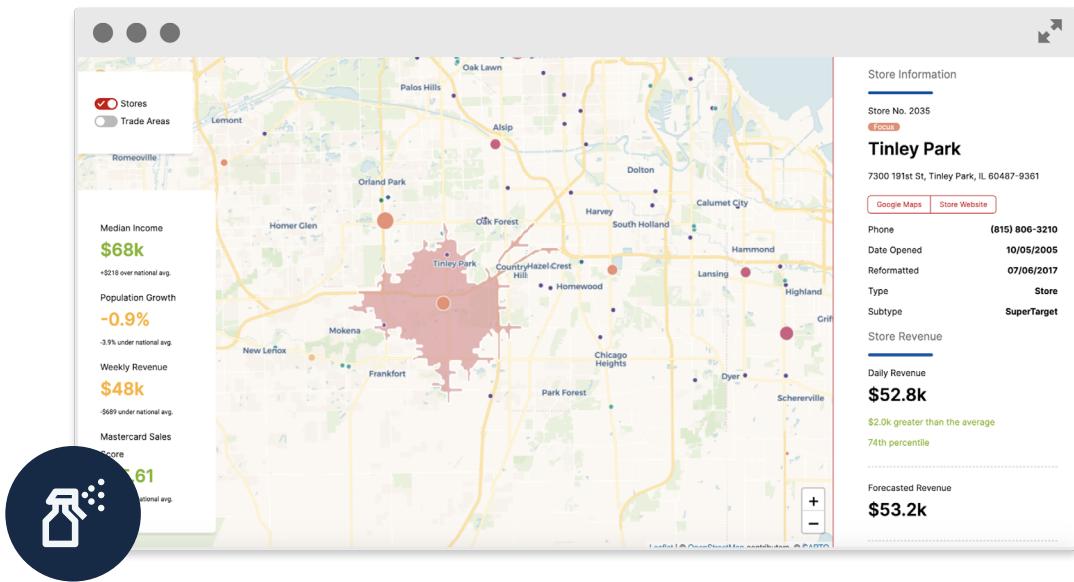
Behavioral data

Our “Dog Lovers” Geosocial Segment, measured as a percentile ranked against all blockgroups in the comparison level. Segment description: Pups are just another member of the family. Dog lovers adore their tail-wagging friends and are looking for new ways to make them happy.

Our “Animal Advocates” Geosocial Segment, measured as a percentile ranked against all blockgroups in the comparison level. Segment Description: Passionate about animal welfare, this segment wants to know how best to care for their own pets (with toys and training) and help other animals find their fur-ever home.



Evaluating Household Product Distribution with POI Data



As toilet paper, soap, and cleaning products started flying off the shelves due to COVID-19, it was clear that brands were struggling to meet this unexpected demand. In fact, liquid soap sales have grown at a rapid pace, up 126% YoY, +58% ahead of 2019's total annual sales [↗](#).

The demand is only increasing as people continue to work from home and use household products on a regular basis. And as more people stay home, B2B office sales for soap and cleaning solutions have become less prevalent. This means that brands need to shift their focus to a predominantly B2C strategy.

As they focus on B2C, it's crucial that they keep up with consumer needs and understand where the demand is. To do this, companies can use point of interest data to identify and visualize where their retail partners are located and evaluate sales volume per location. They can also overlay

human mobility data to understand which locations are seeing the highest foot traffic.

Based on these factors, they can predict what retailers and which locations will see the greatest demand. As a result, brands can update their POS and distribution management strategies to ensure they stay in stock in the right locations and continue driving profits.

Points of interest data layers

- Brand
- Trade name
- Franchise name
- Address and telephone number
- Confidence score
- Type of Business
- Number of employees
- Year start
- Sales volume
- Legal status
- Parent company



Identifying Geomarketing Strategies with Demographic Data



A recent study found that 54% of Americans are cooking more than they were before the pandemic, and 35% say they “enjoy cooking more now than ever.” [↗](#)

The increase in at-home cooking has been particularly beneficial for recipe box companies. Brands like Freshly (who were acquired by Nestle for \$950M) and Gousto (who recently received a \$1B valuation) are signaling that the home meal-kit trend is only just getting started.

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As the industry continues to grow, effective marketing strategies will be what sets these companies apart. Being able to pinpoint where target demographics are located is an important piece of the puzzle. For example, adults 25 to 44 are twice as likely to be subscribed to a

meal service than other demographics [↗](#).

Using demographic data, brands can visualize where those aged 25-44 are most densely populated. They can also take their analysis a step further by overlaying behavioral segments like foodies or trendy eaters. Based on the results, companies can geo segment their advertising campaigns to make sure they are engaging with audiences that are most likely to convert.

Demographic data layers [↗](#)

- Total Population
- Number of households
- Population by gender
- Median Age
- Population by age and gender
- Population by race
- Population by age
- Median Income
- Income per capita
- Households by income
- Housing units
- Housing units by type of occupancy
- Dwellings by type
- Housing units by construction year
- Households by family type
- Median rent
- Housing units by rent burden
- Families by type
- Commuting patterns
- Population by education level
- Employment
- Unemployment
- Occupations

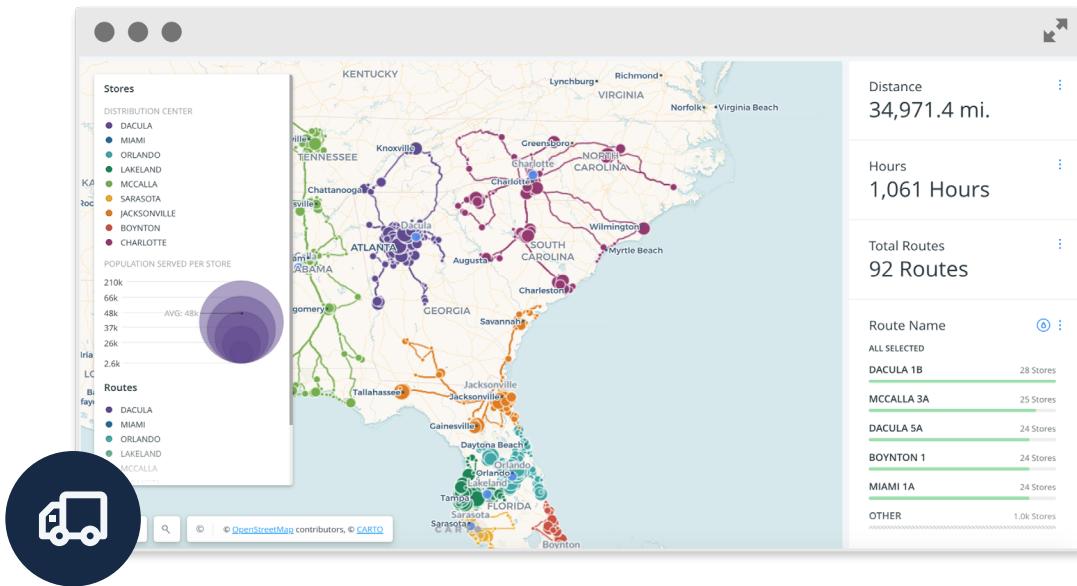
Behavioral data

Foodie: This index indicates an area's affinity for foodie behaviors and establishments. It is calculated by taking average of Trendy Eats, Wine Lovers, Handcrafted, Girl Squad, and Ingredient Attentive.

Our “Trendy Eats” Geosocial Segment, measured as a percentile ranked against all blockgroups in the comparison level. Segment Description: Meals are a social experience, and these foodies take it to the next level. This segment can't wait to snap a pic of their plate and share it before chowing down.



Updating Supply Chains with Routing Optimization



Recently, grocery shopping trends have shifted significantly. We've seen a 10% drop in the frequency of visits to supermarkets, and at the same time, a 24% increase in spending per trip. Overall, grocery stores have seen a 13% growth this year, a market which never normally has double digit growth. [↗](#)

This is undoubtedly a result of the pandemic, as people are staying home now more than ever. In order to keep up with growing demand, brands need to evaluate their current supply chain strategy to ensure they are consistently stocked at their retail partners.

Using routing software, CPG brands can visualize their distribution centers and identify any gaps in their current strategy. They can also use insights like road traffic data to understand the most efficient routes. Through spatial analysis, brands can ensure they are set up to meet the growing demand for groceries in the new normal.

See how routing software works. [↗](#)

03

Conclusion

Given the high percentage of purchases still taking place in-store and the rapidly changing behaviors of consumers, it is clear that analytics professionals within CPG can use spatial analysis to help navigate the new normal and beyond.

Leveraging location data and analytics in examples such as outlined in this report allows CPG firms to **improve the quality of shopper, category, and POS insights** - enabling sales and marketing teams to accelerate revenues, lift campaign ROI, and reduce costs in the field. How?



Faster access to relevant, high quality, and near real-time location data. Save up to 75% time on data discovery and reduce costs by finding all the relevant spatial data through spatial data catalogs, including population, demographics, purchasing power, credit card transactions, points of interest, climate, road traffic, and much more.



Advanced analytics capabilities. A Location Intelligence platform can provide all the tools required for your operations, market research, and data science teams to leverage spatial data and uncover insights to support better decision-

making: optimizing distribution management, improving trade marketing campaigns targeting, and increasing efficiency in your sales execution strategies.



Upskilling analytics professionals who have typically worked with Business Intelligence tools to create more sophisticated models with Python and R in order to draw from larger first or third party location datasets.



[Spatial Data Catalog](#) ↗

Browse our Spatial Data Catalog to discover thousands of public & premium datasets to enrich your CPG data.

[Data Observatory](#) ↗

Discover how the Data Observatory enables Data Scientists, Analysts, & Developers in CPG to save time on gathering & cleaning data.

[Becoming a Spatial Data Scientist Ebook](#) ↗

With the rapid emergence of modern location data streams this ebook contains everything you need to know to start turning you and your Data Science team into spatial experts.

[State of Spatial Data Science in Enterprise 2020](#) ↗

Find out how your organization fares against others who are starting their SDS journey.