



JULY 23, 2021

# The Alpha Edison Perspective on The Post Pandemic Consumer

## PERSPECTIVES

AN AE SERIES

ISSUE 13

The Post Pandemic Consumer: How and what we eat today

From robot food delivery to homemade sourdough bread, the sequestering due to COVID19 has dramatically changed not only how people buy food but what they eat. [A 2020 survey from the International Food Information Council \(IFIC\)](#) found that 85% of Americans changed what and how they eat in light of the pandemic, with a heightened awareness of nutrition and its impact on overall health and wellbeing. This, combined with accelerating use of online ordering and delivery services as a replacement for visits to grocery stores and restaurants, has unlocked structural changes in the food market.

## Food Distribution A Year Later

One year ago we published [an article](#) outlining the models we commonly use at Alpha Edison to understand consumer behavior. Based on an integrated model leveraging our knowledge of behavioral mechanisms including habit formation, signaling, variety-seeking, risk preferences, network effects, and switching costs, we made predictions about the persistence of food-related consumption patterns observed during the pandemic.

Today, we can begin to measure the accuracy of our predictions by comparing rates of usage now, at the start of reopening, to those at the height of the pandemic quarantine. We do so by looking at browsing and ecommerce data from a representative sample of over 300,000 consumers in the US, provided by AE portfolio company [DISQO](#). We compare consumer spend and browsing activity in April and May of 2021 against the same months in a pre-COVID 2019. Since re-opening is slow and staged, we'll need to revisit the predictions again (e.g., 6 months) in order to have a true test of durability of these changes.

Category	Web Domains	Previous Prediction	April/May 2021 vs. 2019 growth	
<b>Prepared Food Delivery</b>	ubereats.com grubhub.com doordash.com postmates.com	high persistence of high consumption	137%	✓
<b>Online Grocery Shopping</b>	instacart.com kroger.com wholefoodmarket.com target.com costco.com	high persistence of high consumption	120%	✓
<b>Home Cooking</b>	allrecipes.com delish.com amazon.com/kitchen & dining wayfair.com/kitchen	medium persistence of high consumption	57%	✗
<b>Dining-in at restaurants</b>	opentable.com	low persistence of low consumption	134%	✓

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# Food Distribution A Year Later (cont.)

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## PREPARED FOOD DELIVERY

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The increased use of prepared food delivery persists, up 37% since pre-COVID. While this is slightly lower than the highest rates of delivery during the height of lockdown across the US, 90% of that growth was retained a year later.

The 10% decline from peak may be the result of exogenous factors, such as pricing changes in food delivery. We have seen [an increase in prices across the board](#) for food delivery services compared to 2019. The price hikes result from a combination of increasing prices of menu items and an increase in delivery fees. Prices on menu items have been substantially above the overall inflation rate for food ([i.e. 2.2%](#)); many chains (ex. Chipotle, Del Taco) have opted to increase menu prices on delivery apps by up to 20% over the last year. New regulations in certain geographies have also impacted delivery fees; for example, [in Philadelphia, DoorDash has added a \\$1.50 "regulatory response fee."](#)

The shortage of gig-workers that make up the service fleet of most delivery services has created a labor supply shortage. While demand for food delivery services has grown dramatically, [the number of gig-workers in the US has only increased 1% since 2019](#). A combination of new wage regulations and increased competition from wage hikes in competitors (e.g. warehouse labor) has driven this slowdown.

These factors have created higher incremental costs for major incumbent food delivery services. Competitive advantage may no longer be driven by consumer behavior but rather by supply chain resiliency—for example user design matters less if you are unable to deliver. This presents an opportunity for new models of food delivery with different supply curve dynamics to prosper where the incumbents fail. Startups that employ new modes of transportation (e.g., drones or ground-based robots) or vertically integrated pipelines (i.e. from raw material to food preparation to the customer's doorstep) can achieve drastically improved unit economics at scale.

## ONLINE GROCERY SHOPPING

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It is not surprising that online grocery shopping and delivery saw dramatic growth during the heart of the pandemic. However, as stores reopened, most people returned to buy their groceries, with 20% of that growth from pre-pandemic times persisting. While this is still substantial, it's important to note that market projections for online grocery delivery expected [20-30% growth in the US online grocery market](#) between 2019 and 2021 as a baseline. While pandemic habits have not accelerated the long

term penetration of the online grocery market, it has managed to shield that rapid growth rate even during challenging economic times. We also note that similar to online prepared food delivery, online grocery shopping (e.g. Instacart, or direct delivery from supermarkets like Wholefoods) also face labor supply challenges that may be limiting use.

The penetration of online grocers has not been ubiquitous across social demographics. [While the majority of online grocery shoppers show a slight preference to curbside delivery to in-store pickup, black Americans instead prefer in-store pickup to delivery by almost 30%. Similarly, LatinX Americans prefer in-store pickup to delivery by 11%.](#) With 24% of Black and LatinX shoppers trying online grocery delivery for the first time during COVID, business opportunities have emerged for online groceries that can cater to the needs of different ethnic groups in America. Startups such as [Wee](#) and [AmigoFoods](#) are now providing online grocery delivery for Asian and Hispanic cuisines, respectively. At AlphaEdison, we have long been pursuing research to understand identity (including cultural identity) driven businesses and the latent demand they access.

New companies like [Shelf](#) sit at the intersection of these two trends. They change the unit economics and supply chain of food preparation by opening up the market to individual home cooks operating out of their own kitchens. They also enable consumers the ability to access niche ethnic cuisines specialized by these home cooks.

## RESTAURANT CONSUMPTION

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We accurately predicted that restaurant consumption would bounce back to pre-Covid levels. Today, not only do we see a rebound in dining out, but people are even more likely than before to use services like OpenTable to plan reservations (growing 30% since 2019 in our dataset). Reservations were necessary during the pandemic due to local regulations around limited seating, and habit formation may play a role in the persistence of the use of online reservations system. In addition, there is also a persistent element of health/safety consciousness today where consumers still want to limit interaction with wait staff and other diners, and so being seated right away marginally helps reduce these health/safety risks.

# Food Distribution A Year Later (cont.)

## HOME COOKING

Home cooking behavior however did not see persistence of higher consumption in the near term; in fact in recent months sales of kitchen and dining appliances and visitation to cooking websites is lower than in pre pandemic times. Firstly, the sales of kitchen appliances, which are durable goods, may have declined simply because consumers stocked up earlier during the pandemic. However, there are also indications of "[cooking burnout](#)" and "[cooking fatigue](#)." Grocery delivery service Sunbasket did a survey of 2000 home cooks and found 55% of the 2,000 people surveyed are feeling cooking fatigue because of the pandemic. Our initial behavioral models were mixed leading to an approximation of only medium persistence for home cooking, which gave us some early warnings that it might struggle once the pandemic subsides.

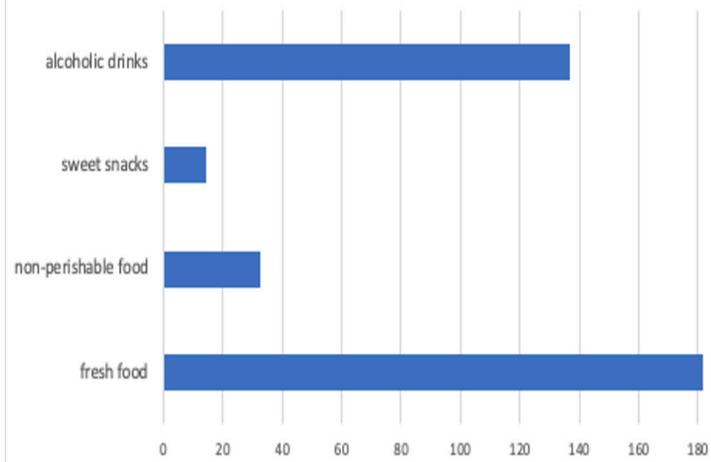
The three mechanisms which can drive variety-seeking behavior are: (1) satiation, (2) boredom/sadness/need for change, (3) hedging. Satiation (e.g., on the same set of meals people know how to cook) and boredom (e.g., of their dining area) may explain this burnout and less persistence of home cooking than we expected. Yet these forces should be temporary in nature; we may be in the trough of cooking burnout temporarily. We predict that cooking will rebound in the near future as these effects fade.

## What We Now Eat

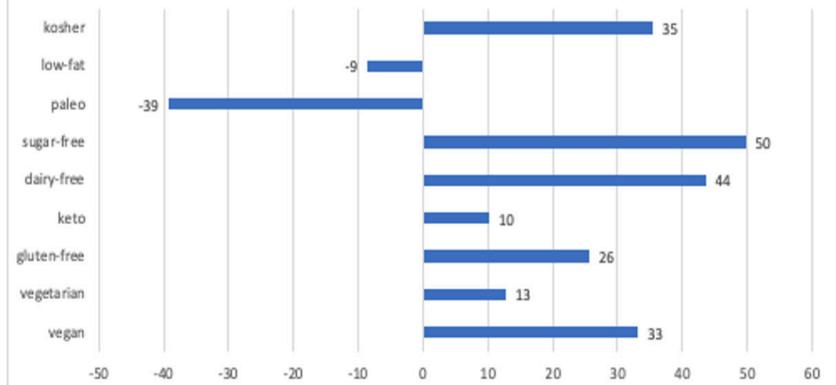
Dramatic double digit percentage shifts are occurring in the market share of the different food distribution channels. Naturally, the changes in how we eat also affect what we eat. By diving deeper into the previously mentioned data set, we are able to look at how the composition of grocery baskets has shifted. In general there seems to have been a shift towards healthier eating, with the exception of a massive growth in alcohol consumption. In general people are increasingly ordering more fresh foods than snacks or non-perishables online, and most healthy food trends (e.g. vegan, sugar free, dairy free) have seen double digit growth over the last 18 months.

There are a few hypotheses of why this may be happening. Brick and mortar supermarkets design stores towards increasing impulse buying-- consider the candy that is strategically placed at the end of the aisles and at the register in-store. Consumers have to seek out those items a bit more deliberately online, or conversely, can more easily avoid temptation. It's also less tempting if it's not physically right in front of the buyer. The majority of shoppers are finding this form of new product discovery difficult online, which drives down impulse shopping. [Sixty-two percent of consumers](#) say they miss discovering items not on their list when shopping online.

Growth Rate of General Food Consumption Frequency (2021 vs 2019)



Percentage Growth Rate of Healthy Food Consumption Ratio (2021 vs 2019)



## What We Now Eat (cont.)

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First we examine the consumer spend on different categories of healthy food as a proportion of total food spend, and how that has grown during COVID. The highest growth rate was for sugar-free foods, growing 50% in the last year. This jump in consumption of sugar-free foods may be directly correlated to the skyrocketing cases of diabetes during COVID. Over 10% of Americans have diabetes. Diabetes deaths rose to 24.6 per 100,000 last year, from 21.6 in 2019. [The 14 percent increase was the largest rise in the diabetes death rate in decades.](#)

Difficulties managing diabetes in America had already been increasing in the years leading up to the pandemic; the New England Journal of Medicine reports that the rate at which adults with diabetes are achieving glycemic control (i.e. blood sugar) has shown a recent decline following more than a decade of progress seen between 1999 and 2010.

As people with diabetes are more likely to have [serious complications from COVID-19](#), this long chronic disease becomes acute and immediately life-threatening in the face of this comorbidity. Our data shows a strong growth likely partially driven by diabetics trying to find new ways to manage their disease through nutrition. Startups like AE portfolio company UR Labs, whose [Muniq](#) shakes use proven science of gut health to create life-changing results for diabetics, are offering consumers innovative foods that help control glycemic levels. Such innovative new products and services that support diabetic patients will open business opportunities and, hopefully, improve the lives of a large swath of Americans.

Like sugar-free foods, vegan and dairy-free food products also showed substantial growth since pre-COVID times. Growth in demand for dairy-free foods is primarily the result of millennials adopting vegetarianism and flexitarian diets (i.e. predominantly vegan with some meats) as the percentage of people with lactose intolerance has remained relatively stable. In 2019, only 11% of Americans were vegetarian and 4% were vegan. During the initial waves of the pandemic, as families stocked up and held inventories of food supplies, [Nielsen data](#) showed that vegan products saw a 53% increase in sales versus 34% for meat.

In the early days of the pandemic, consumers may have tried vegan products due to meat shortages. However, the growth in vegan foods has persisted well past the spring of 2020. Dan Curtin, owner of the major vegan brands LightLife and Greenleaf said "We saw significant growth pre-pandemic, but we're seeing explosive growth post-pandemic." Rapid growth for Oatly led to a successful IPO this year. This change in food consumption is not limited to the United States; [one in five Brits](#) stated that they reduced their meat consumption during the pandemic. As many communicable diseases start from zoonotic transfer in the supply chain, many adopted veganism as a way to [reduce the risk of the next pandemic](#). Product innovations like the Impossible Burger and Beyond Meat have allowed new flexitarians to discover palatable alternatives and replacements for meat in their diets. New technologies are on the horizon for producing vegan eggs, fermented proteins (i.e. cheese), pork, and fish.

## Heterogeneous Growth in Different Demographics

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Our dataset allows us not only to track changes in online food consumption, but also to analyze how differentiated that consumer behavior is by demography. The dramatic shifts we previously mentioned, while true for the US population as a whole, obscures some of the nuances in how COVID has affected different parts of the consumer base. Therefore AE has built a set of models that investigate the impact of a wide number of demographic characteristics (ranging from age and ethnicity, to income and educational level, to urbanization geography and home ownership, among others).

We find that geography has a significant impact on the consumption of fresh foods vs sweet snacks and non-perishables. Living in an urban environment makes consumers much more likely to have increased their consumption of fresh foods and decreased their consumption of non-perishables during the COVID crisis. On the other hand, consumers living in rural America were more likely to

have increased sweets consumption during the same period. Rural vs urban geography strongly impacts unit economics, especially with last mile delivery of food products. While it may be more expensive to deliver to rural areas, rural Americans also have to expend greater effort to travel to brick and mortar supermarkets, making them a prime segment for online grocery shopping. These highly differentiated needs for distribution method and product indicates a new market opportunity for a rural targeted online grocery delivery.

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[These highly differentiated needs for distribution method and product indicates a new market opportunity for a rural targeted online grocery delivery.](#)

## Heterogeneous Growth in Different Demographics (cont.)

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We also find that the recent surge in vegan and vegetarian consumption is more attributable to men than women. This is a surprising outcome given [80% of vegans in America are women](#). There have long been cultural connections between perceived masculinity and the consumption of meat. Our data indicates that men might be increasingly warming to the idea of veganism. Perhaps it is because our personal food consumption has become less conspicuous during social distancing, allowing men to experiment away from judging eyes. Perhaps there is simply more growth due to the low penetration of veganism before COVID. There appears to be an ample opportunity for new vegan brands to create products catered to not just women, but also this newly growing segment of vegan men.

## Conclusion

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Food is the largest consumer goods market in the world, generating \$7.7T in revenues worldwide every year. Though a necessity existing on the most foundational level of Maslow's pyramid, food is also a nexus for social interaction, holds cultural significance, and is an integral part of our identity. Long limited to a niche category in eCommerce due to logistical constraints, the COVID crisis has pushed food businesses and consumers to find new solutions to fulfill their market needs, creating or accelerating major shifts in our consumption patterns. From veganism to diabetes, online delivery to home cooking, these shifts create new addressable markets within this massive consumer market.