

Pre-Pandemic State of Grocery Purchases Online: An Initiatory Review

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While the pandemic in 2020 changed shopping as we knew it, changes were already underway in the years earlier. Consumer experience with online shopping has led to more products being bought online and delivered to the home. But this phenomenon does not seem to have carried over to online grocery shopping, a laggard in the ecommerce space. There are several reasons for this oddity. Unlike the typical products bought online such as electronics or clothing, groceries shopping seems to take on additional dimensions. The need to adapt and innovate in this space seem critical. The paper explores this anomaly in this space and tries to offer plausible explanations. Finally, future directions in the marketplace are discussed.

Keywords: online shopping, grocery purchases, lagging demand, click and pickup, consumer behavior

INTRODUCTION

Unlike many products consumers use, food products are often regarded as ‘culture-bounded’ which means that food is part of an entire system of meanings and values (Kragh 1996; Hansen 2008). Therefore, shopping behavior in this category might not be comparable to other products bought online or to online shopping behaviors between various countries and cultures. Yet, grocery shopping has lagged other categories online. Presently, various competitors in the marketplace are trying to sort out the phenomenon. As a result, discussions and strategizing around online grocery shopping have bubbled up to the top of the agenda for all players. Experimentation abound since online shopping for groceries is in the innovation or in the introduction stage of its life cycle (Campo and Breugelmans 2015).

Grocery business had become highly competitive. The deep-pocketed Amazon and Walmart, as well as the traditional grocery stores such as Publix, Kroger and Safeway along with discounters such as Aldi, Food Lion and Lidl – are all vying to get out of the gate to stake out territory in the space. Consultants and experts have opined about what it takes to win the race. For instance, Nielsen Continuous Innovation report (2014) noted that convenience may be the “most creative and energetic example of retail innovation.”

The old grocery business models need to be reexamined. Pre-pandemic, traditional grocery stores are confronting various issues as consumers try various alternatives for buying, cooking, and consuming food. One such alternative, online grocery shopping, seem to be slow to take off. In various categories of products, a significant percentage of brands are bought online. About 30 percent of computer and electronic purchases and about 22 percent of apparel sales are carried out online (Semuels 2019). According to some reports, only 3 percent of groceries are bought online although there is little agreement amongst researchers and consultants on the percentages as explained later in the paper. On the other hand, in South Korea about 20 percent of groceries are bought online while it is about 10 percent both in United Kingdom and Japan. Sure,

these countries have few larger cities and so the delivery options might be less daunting. The United States, by comparison, has a mix of cities and rural areas with huge swaths of land between them making delivery coverage harder. This is evidenced by a raft of experimentation in bigger cities such as NYC, San Francisco, Atlanta, and so on but not in smaller or medium-sized ones. Secondly, consumers in South Korea and Japan are more advanced with their use of smartphones for shopping, banking, and the rest.

Online Grocery Shopping

The evolution of grocery stores as we know it goes way back to the 1800's. Beginning with the Great Atlantic and Pacific Tea Company in 1859 and other smaller and regional stores, grocery shopping became a special ritual for American consumers (Groceteria 2009). Stores were small and food retailers that were classified as grocers who sold dry goods, greengrocers that sold produce, butchers and so on. It wasn't until about 1916 that Clarence Saunders introduced self-service grocery shopping in his Piggly Wiggly stores. At about the same time, Alpha Beta stores in California and Loblaws in Toronto were also experimenting with self-service (Groceteria 2009). The turn of the century witnessed grocery stores became larger in size and the drive-through phenomenon was taking root in the country.

It is interesting to note that groceries were one first product categories that could be ordered online. The earliest instance of grocery shopping via the computer dates back to the late 1980s (Moranosky and Cude 2000). In 1989, Thomas Parkinson and his brother started Peapod and began accepting orders for groceries online, pre-WWW. This was the very first attempt at online ordering via the Internet. By today's standards, Peapod's ordering system was clunky, complicated, and product images blurry. The whole process was rudimentary – the owners visited Chicago area stores to pick up items customers ordered and delivered them. Although the evolution of grocery stores continued into the following century with supermarkets and mega stores, online grocery shopping had not evolved until the end of 1990s.

HomeGrocer.com, one of the first online grocers, was averaging about a \$1 million a day in online sales (Retail Leader 2012). It was a fast-growing dotcom gaining \$400 million in sales by 2000 but seemed to have failed after it merged with Webvan. In 2013, the U.S. grocery market had \$850 billion in revenue, but the online portion was about 1%. Unlike its contemporaries such as Webvan, Kozmo, HomeGrocer and ShopLink, Peapod is still in business today. It was acquired by Royal Ahold NV, the Dutch conglomerate and later became part of the parent company, Ahold Delhaize. Although, the technology behind online orders have become sophisticated, getting consumers to order groceries online still seems a challenging proposition.

Initially, estimating the size and growth in the online grocery space had been a challenge. Surveys of published reports have the numbers varying widely, some of which are presented here. Magana (2019) estimated the online grocery business in the U.S. was about \$26 billion and the overall market size was about \$632 billion as of 2018. Other estimates project online groceries to reach \$22 billion in 2019 and almost \$30 billion by 2021 (McGrath 2019). According to Nielsen USA, the online grocery business is likely to be \$100 billion market by 2022 (Rodgers 2018) or by 2025 (Dumont 2018) or about \$117 billion by 2023 (Magana 2019) or about \$200 to \$700 billion by 2026 (McKinsey 2017). While there is no consensus regarding the size and the future potential of the online grocery marketplace, one thing is clear - the share of online grocery in the U.S. has been relatively small. Estimated to be 1 percent, 2 percent, 3 percent or more (Keyes 2019). Deutsche Bank Securities puts the number at 3 percent (Semuels 2018). Brick Meets Click, a consulting company, has online grocery shopping accounting for 5.5 percent of total grocery spending (Dumont 2018). Thus, there is little consensus among research organizations regarding the proportion of the online grocery market either. Yet, all these estimates point to the lagging nature of online grocery shopping compared to online retail as a whole. Overall e-commerce in the US made up slightly over 10 percent of all retail sales in Q3 2018 (Keyes 2019) or estimated to be about 11 percent by the end of 2019 according to Statista.com.

Business Insider, citing NPD reports, figures the adoption rate for online grocery shopping is fairly low with only 10 percent of U.S. consumers saying that they regularly shop online for groceries (Magana 2019). Other studies have suggested that nearly 30 percent of U.S. households buy groceries online (Dumont 2018.) The average grocery order is about \$ 90.00 over a 12-month period (Skulocal, 2018). Click and

collect average order (basket size) was in the range of \$69 to \$71 which was higher than the in-store purchase of about \$55 (Dumont 2018). At the same time, 32 percent of shoppers bought groceries in-store 2-3 times per week in 2018 (Skulocal, 2018), while consumer ordered groceries online about 2.15 times a month in 2018 (Fisher 2018). Although 30 to 44-year-olds had the “biggest share of monthly order activity” in 2018, grocers are seeing higher growth in the 18-29 age category. (Fisher 2018). According to the study by Brick Meets Click, 80 percent of grocery shoppers use only one provider and not surprisingly Amazon is the single biggest shareholder with 54 percent of the shoppers. Researching the topic made one thing clear – data from various reports are confusing and sometimes contradictory.

Issues Facing Traditional Grocers

The discussion in this section will revolve around the changing landscape of grocery marketing and shopping and resultant challenges for grocers. Traditional grocers and chains seem to be facing insurmountable odds for growth and survival given the changing nature of the business models and the advent of technology powered consumers. It would be easy to look at some of their problems and make a strong case for increase in online selling and shopping. Yet, the reality is more nuanced as explained in the section preceding this.

Although, it is difficult to estimate given that grocery business is not an organized sector in many countries, the world-wide grocery market, currently, has been estimated as being a \$5.7 to \$ 8.77 trillion (MarketWatch 2018) and the industry is facing overwhelming odds that could re-define their success in the future. “Although it has grown about 4.5 percent annually over the past decade, that growth has been highly uneven – and has masked deeper problems (Kuijpers, Simmons, and van Wamelen 2018). While the landscape is changing gradually in less developed markets, grocers are faced with problems with growth, profitability, and survival in developed markets. This has been the result of higher costs, falling productivity, lower pricing, increasing competition, changing consumer habits, the advent of new technologies, etc.

With online-only grocery experiments faltering due to unsustainable investments in warehouses, transportation and marketing, the traditional stores were stepping up to the plate and using their real estate as warehouses for online transactions (The New York Times, 2002). In doing so, grocers incur added costs to maintain Web sites, provide phone-based customer service, hire employees to pick, sort and pack orders. In some cases, third party companies, such as Instacart, are contracted to take care of the outgoing supply chain (Table 1). Given the economics of these operations, online grocery services are restricted to bigger metropolitan areas that are easily accessible and smaller distances.

TABLE 1
SAMPLING OF GROCERY DELIVERY OPTIONS

Grocer	Delivery Partner
Giant, Stop & Shop	Peapod
Walmart	Parcel
Target	Shipt
Amazon	Amazon Fresh
Kroger	Instacart (current) /Ocado (future)
Whole Foods	Postmates, Prime Now
ALDI, BJs Costco, Earth Fare Food Lion, Publix, Sprouts, Wegmans, etc.	Instacart

In the section below, we will provide an overview of the three most contentious issues facing traditional grocers including changing consumer behaviors, increase in competition and resulting deployment of newer business models and the how the advent of new technologies is shaping the grocery scent.

Changing Consumer Behaviors

Although, the attitude is generally attributed to Gen Y and Z, it is safe to say that many consumers want to buy products anywhere and anytime. Beyond the price and availability, they are interested in the sourcing of the produce, how items are made and whether the company has CSR goals including sustainability strategies, etc. One generation up, the baby boomers, are concerned about health and wellness, value in-store experiences and customer service, comfort level with technology and so on. No matter their age, customers want it all at a lower price.

With many U.S. millennials less inclined to prepare meals at home and willing to buy ready-made or ready-to-cook meals, grocery stores are likely to be affected. In the U.S. and Europe food service is growing faster than food-at-home consumption (Kuijpers, Simmons, and van Wamelen 2018). This has resulted in all types of restaurants, fine dining, casual dining, fast casual and fast food, etc. delivering food.

From a customer point of view, the competition along with an array of choices with respect to delivery and pick-up are a boon and might fit nicely into their changing and busy lifestyles. Yet, as is true in the entertainment industry, changes in the grocery marketplace is resulting in high fragmentation of shoppers that could result in a major shakeup in the industry.

Marketers observed another interesting phenomenon in that while there are high levels of food-related digital engagement - whether it is watching cooking shows or competitions, or sampling how-to videos on YouTube or sharing recipes online – fewer consumers seem to enjoy the act of grocery shopping. For instance, only 15 percent of UK shopper say that they actually enjoy food shopping (McKinsey 2017). This poses a dilemma for physical stores since online shopping is not ideal for food discovery (McKinsey 2017) or sampling and the delights of sensory stimulations.

Competition and Newer Business Models

Compared to many others, it is not easy to be in the grocery business. The fixed costs are higher, and the margins are slim. When online options are added, there are high delivery costs and other last-mile issues, all of which make online grocery strategy a major challenge to traditional players. Additionally, given the assortment of products, the handling requirements are varied such as for perishable goods. Similarly, the temperature requirements are also different for meat, dairy, and drinks. And then there is the real-estate portfolio problem that many physical stores face. Some, such as Kohl's, are experimenting with creative solutions such as sub-leasing to Aldi and Planet Fitness (Shoot 2019).

Few of the traditional grocery chains have been slow to respond to the changing marketplace requirements and thereby allowing competition to get a foothold. One example is the entry of discount German brands such as Aldi and Lidl. Beyond these are convenience stores, dollar stores, warehouse clubs, online-only grocers, etc. all aggressive in trying to steal market share away from traditional stores. For instance, Dollar General, has been muscling their way into the grocery scene with fresh produce and other items such as milk, eggs, bread, cereals, etc. While they don't have any ecommerce presence, they are trying to be a force to reckon with in smaller towns not reached by the big box grocers (Wahba, 2019). In June 2019, Dollar General announced a partnership with FedEx OnSite Program to have customers pick up and drop off packages at their local stores. This service initially will be available at over 1,500 stores by end of summer 2019 and at over 8,000 stores by the end of 2020 (Berthiaume 2019). Some analysts see this program as Dollar General first foray into ecommerce space.

Amazon's purchase of Whole Foods Market was a game changer in this regard (Kuijpers, Simmons, and van Wamelen 2018). Amazon has already lowered prices at Whole Foods couple of times, the latest in April 2019 (Picchi, 2019). Add to this mix of options a bevy of food vendors – GrubHub, Uber eats, food trucks that are targeting lunches and dinners. Analysts from McKinsey suggest that “by 2026, between \$200 billion and \$700 billion in revenues” would shift to newer grocery formats and channels from the traditional grocery chains (Kuijpers, Simmons, and van Wamelen 2018). This can lead to lower sales and overcapacity in many physical stores.

Advent of New Technologies

With Amazon and others implementing online strategies, lower prices and price transparency seems to be paramount no matter the cost of products. According to Kuijpers, Simmons, and van Wamelen (2018), many of the traditional grocers have not utilized analytics, AI/machine learning, robotic assets and the like. Online vendors are able to deploy review-based recommendation schemes, robotics in the warehouses and quicker ordering strategies. Recently, Walmart has been experimenting with robots to replace human tasks such as cleaning floors and scanning inventory (Nassauer and Cutter 2019). According to Melendez (2018), a grocery distribution center in California is opening in 2020 with technology to shuttle perishables around the warehouse without damaging them. At another location in New Hampshire, automated cards will be shuttling items from online grocery orders to an attached warehouse for packaging by humans. (Melendez 2018).

In another instance, Kroger, in partnership with the UK company, Ocado, has also announced building an automated warehouse with digital and robotic capabilities in Cincinnati. Amazon has been using robots in their fulfillment centers for a while. Beyond the back-office operations, technology is enhancing grocery shopping in other ways. Amazon Go stores that offers convenience to time crunched shoppers could be a good example of game changing tech-enabled store concept. Once the kinks are ironed out, these stores will be run with few employees visible to customers. It could be an illustration of extreme self-service. Clarence Saunders of Piggly Wiggly, the original developer of the self-service model may not have envisioned how far his idea would go. If successful, Amazon Go stores might be a threat to convenience stores and traditional grocery stores (Redman, 2019).

Uniqueness of Groceries

It is not a stretch to state that groceries are a special category of products for both consumers and marketers. Both shopping and cooking were essential part of consumers' lifestyles. Not many businesses can claim to be highly embedded into consumers' weekly routine as food suppliers. There are several reasons why transitioning grocery transactions to an online system requires a shift in the paradigm and creates unique challenges. In this section, the uniqueness of grocery products and shopping are discussed.

A big hassle fresh groceries is their perishability and the varying conditions under which they have to be stored, handled, and delivered. A peek into the refrigerator and pantry can explain some of the complexities. Vegetables have to be in the cooler, meats have to be separated, ice creams in the freezer and the cereal boxes and chips packages cannot be crushed but kept at room temperatures. This leads to having a delivery mechanism that need to accommodate many conditions to keep them as they would be in the store. Non-grocery items such as electronics, computers, shoes, etc. are simpler to pack and deliver since they can be stored for days or weeks in the warehouse. For instance, Amazon maintains warehouses around the country that is stacked with non-grocery items for days before packing and sending through USPS, UPS or FedEx. Similarly, a typical delivery truck with clothing, laptops, and similar products can be pick them up at a distribution center in the morning and deliver them around town until late in the evening. This might not be possible with perishables and produce in a truck that has to make several stops and deliveries.

The nature of the various grocery items also dictates they be managed differently in the ordering, picking, shipping and delivery processes. The process is labor-intensive given the series of tasks such as temperature monitoring, checking for breakage and for missing items, etc. Some of these tasks could potentially be performed by robots as Ahold Delhaize, Peapod's parent company is trying to determine. Also, grocery items cannot be left out on the customers' porches to be picked up after they return. Given the nature of the items, the customer has to be home to accept deliveries. This process adds time and effort to each delivery. Delivery persons for Peapod, for instance, waits for the customer to open the door, takes the tote boxes full of items into their kitchens and unpacks them. This adds considerable amount of time to each interaction. Another option, announced by Walmart in June 2019, is the delivery to the customers' refrigerators. The service called 'InHome' will allow a local Walmart employee to get into the home, place the items in the refrigerator and leave. The customer selects delivery times and system enables a one-time access code and the employee will be equipped with wearable cameras (Weinberg 2019).

In the grocery business, the manufacturers of many products need intermediaries to reach the customer. This is an added predicament for most CPG (consumer packaged goods). At the same time produce marketers depend on physical store to sell since it is not feasible for them to deliver items directly to consumers. The physical store seems to be an embedded and critical entity in the supply chain for most grocery items. It has taken the most experienced online grocer, Peapod, about three decades to get it right.

Consumers' Perspective

Unlike purchases of other items, consumers have many concerns when it comes to online grocery shopping. In general, according to the Offers.com study, the top concerns for grocery delivery or pickup were: perceptions that substandard produce selected by a random employee; the delivery charges are likely to be high; forgetting to order some items; items being lost or stolen; and store not offering substitutions or accepting coupons (McGrath 2019). Morning Consult found that 67 percent of all grocery shoppers in the U.S. do not want to pay for delivery or would pay \$5 or less (Rogers 2018). The survey also found that those worried about freshness and cost of delivery are more likely to turn to Amazon for Prime membership reward only to find that "Amazon Fresh" is an add-on, the delivery fee is \$9.99 to \$14.99 per month and it is billed separately. Thus, perishables accounted for only 6 percent of Amazon's online foods sales according to data from Pyxis cited by Bain & Co. report (Caine and Paratore 2019).

For a grocery store manager and her/his point of view, it would it be better to have customers come by and pick up in the store, since the store provides accommodations for all kinds of grocery items. Secondly, the additional cost of order processing, picking, boxing, delivering cannot be compensated by increasing prices. A convenience fee can make up some but not all of the difference in costs. For instance, Peapod charges \$6.95 - \$9.95 per order. It not only seems steep for customers used to free shipping but "does not come close to covering the costs associated with bringing groceries to customers' doors" (Semuels 2018). In order to make this work, grocers have to serve densely populated areas such as Manhattan. Amazon Fresh for instance maintains delivery in New York, Chicago, and Boston while suspending them in area of New Jersey, Pennsylvania, and Maryland. While many customers might opt for delivery for the first time because it's free, they don't follow through to the second or third order. So, delivery costs are a barrier to entry in the space (Semuels 2018). Less than half of the first-time online grocery shopper think it saves time but those who place more orders find it convenient (Keyes 2019).

Walmart might to have the competitive advantage in some respects with its 'click & collect' option compared to the strictly online option that Amazon has. Their curbside grocery pickup, soon available at 3,100 stores by the end of 2019, is gaining acceptance. According to a report, between 11 percent and 13 percent of customers use the service and will account for 33 percent of the Walmart's digital sales by 2020 (Thakker 2019). Additionally, Walmart's same-day pick-up service might be a powerful weapon against Amazon's same day delivery for a fee. But a study by the National Grocers Association that found 76 percent of online shoppers use home delivery versus about 39 percent using the 'click & collect' option. This presents a problem for grocers since consumers seem to prefer the method that is more expensive for them (Rogers 2018).

For some customers, 'click & collect' might seem to be a better option compared to fee-based home deliveries, it might not satisfy customers who enjoy the act of picking their own fruits, vegetables, and meats. A survey by Morgan Stanley found that 84 percent of the people decided against online ordering "because they preferred to physically see and choose their groceries" (Griswold 2017). This might be so since there are variations among vegetable & fruits and customers might have peculiar preferences. For instance, some might like their bananas a bit green while others like them ripe-yellow. Watching customers pick their produce might reveal their finicky nature of selecting items that are not bruised or mis-shaped. In 2019, Kroger introduced the "ugly" produce line for slightly imperfect produce that customers ignore while shopping, even though they are acceptable for human consumption (Redman 2018). This aspect of picking 'perfect' produce seem important enough that Instacart produced a series of videos for professional shopper on how to pick items (Instacart Shopper Training #3 – Produce and Perishables). According to the Bain & Co. report, consumers may not trust a random person to pick their produce and secondly, they are concerned about freshness at the time of delivery (Caine and Paratore 2019). Others might be concerned

about food waste in the order delivery supply chain. According to an article in Quartz by Griswold (2017), Amazon is known to have wasted nearly one-third of its banana purchases since Amazon Fresh only sold them in bunches of five and so every other bunch were discarded by the workers.

Given the engagement with grocery shopping, consumer's entrenched shopping behavior is another unique challenge, although younger generations (millennials and GenZ) might not be quite affixed to their parents' behaviors. The touch and feel for produce might be important to the older generations while the younger generations might value convenience the most (Verhoef and Langerak 2001). Albeit age differences, the issue of multi-store shopping seems common amongst the young and old. An informal survey of about 40 grocery shoppers in a metropolitan area at outlets such as Publix, Walmart, Kroger, Aldi and the like, revealed that certain grocery shopping habits might be hard to break. Stephanie, a customer at Publix, summed up the general sentiments of many multi-store shoppers. According to her, these shoppers are selective about their product-store pairings. Their shopping routines are informed by experiences over time and they know which store is best for certain products. Thus, multi-store shoppers might pose a challenge for online grocers.

In addition, one has to consider behaviors of multi-channel shoppers. A significant majority of online grocery shoppers are multi-channel shoppers who visit both the stores and online sites in order to combine the convenience of online with service/sensory aspects of the physical store (Chu, Arce-Urriza, Cebollada-Calvo and Chintagunta 2010; Konus, Verhoef and Neslin 2008). Multi-channel shopping varies across product categories and do not always fall under neat classifications. They tend to vary in terms of the categories of items they buy through each channel and how they respond to marketing offers (Campo and Breugelmans 2015). Researchers have noted that items with sensory properties tend to be bought in-store (Degaratu, Rangaswamy and Jianan 2000) while bulky and heavier items (ex. dog food) tend to be bought online (Chintagunta, Chu and Cebollada 2012). There is also some evidence that multi-channel shopper households tend to be less price sensitive in the online channel than their offline counterparts (Chu, Arce-Urriza, Cebollada-Calvo and Chintagunta 2010). Campo and Breugelmans (2015) posit that multi-channel shopper make category allocation decisions based on acquisition utility when acquiring the item and transaction utility when considering bringing the items home from the outlet. In order to cater to the multi-channel shoppers, retailers need to create value along two dimensions – improving convenience by allowing consumers to accomplish a number of actions/tasks during a single visit and/or by reducing the amount of time needed to complete the shopping task (Kinsey and Senauer 1996). The first dimension is exemplified by adding other services such as nail salons, money transfer/banking, etc. within the store and the second aspect is fulfilled by allowing easier accessibility to items and faster self-checkout kiosks in the store. Some of these

Rogers (2018) opined that there are also other common-sense reasons why there will be firm limits on the online penetration of the U.S. grocery market, and a continued interest in retaining a multi-channel presence. The need for social interaction; strong preferences to see, feel and assess quality-sensitive fresh products; and the continued growth in the proportion of the population that is income-stressed and/or prefers to save money on food expenditure while allocating more dollars to non-food services and products. This group will be unwilling to pay higher online prices, relative to those in-store at Aldi, Lidl, and other discounters, and will remain "allergic" to paying delivery fees for the "last mile" (Rogers 2018). There are other reasons for not shopping online. Many find grocery shopping in store a pleasant experience and discover newer items that spark new culinary ideas. These store-oriented shoppers are likely to be driven by attributes such as immediate possession and social interactions, etc. (Rohm and Swaminathan 2004). Others might not plan their meals in advance to order required items in ahead of time to contemplate online ordering on a routine basis. Yet there are those who are not emotionally vested in grocery shopping process that gravitate toward online shopping and delivery.

A Possible Framework to Explore Online Grocery Shopping Behaviors

Various frameworks/models to explain the online grocery shopping behavior or lack thereof have been proposed in the past. In an early investigation that classified respondents into two groups – hi-tech baby boomers and elderly/physically challenged consumers – the authors found that hi-tech consumers were

interested in home shopping for convenience and novelty while physical difficulties in going to the store were the main driver for the older consumers (Park, Perosio, German and McLaughlin 1998). Other early studies indicate that consumers select products on the basis of certain search attributes are most likely to be bought online (Peterson, Balasubramanian and Rosenberg 1997). Yet, other surveys suggest that lower perceived search costs influence product purchases online (Klien 1998). Verhoef and Langerak (2001) tried to explain online grocery shopping using the diffusion of innovations model.

Both the Theory of Reasoned Action (TRA) and the Theory of Planned Behavior (TPB) were compared in the context of consumer online grocery buying intentions (Hansen, Jensen and Solgaard 2004). The TRA posits that consumer behavior is determined by her/his behavior intentions and the latter is influenced by positive or negative attitudes toward the behavior and how others perceive the behavior (Chang 1998). So, in this instance, online buying of grocery items might be influenced by how the customer views the act of buying online along with how others will perceive it. The TPB, on the other hand, can be viewed as an extension of TRA in that the latter adds perceived behavior control as an additional determinant of behavioral intentions (Posthuma and Dworkin 2000). Hansen, Jensen and Solgaard (2000) concluded that both TRA and TPB are capable of explaining about fifty-five percent of variation in future grocery buying intention. Unfortunately, the study was only able to explain slightly more than chance with respect to buying intention and secondly, actual future behaviors might be vastly different.

Childers, Carr, Peck, and Carson (2001) found that in online grocery shopping behaviors, both hedonic and utilitarian motives play important roles. Use or acceptance of technological tools to enable the behavior, thus, might have both functional (ex. problem solving) or experiential (ex. fun, social) elements to them (Childers, Carr, Peck, and Carson 2001). Studies suggest that 'roaming the malls' is an organic experience to many and they enjoy the act of discovery with their families (Liao and Cheung 2001). Understanding the behavior as a dichotomy or as a 'continuum' of motivations, is instrumental to understanding the consumer behaviors in a retail environment (Babin, Darden, and Griffin 1994). From a functional perspective, shoppers are interested in an efficient process of shopping with minimum aggravation. This view might be expressed as, "I want to go in the store, find all the items in the store, and check out fast." On the other hand, in the experiential perspective, grocery shopping might be a fun, social and discovery-oriented activity. This sentiment might be expressed as, "I enjoy browsing the store and looking for newer items and interacting with people."

Considering that grocery shoppers as having dual motivations is appropriate in the context of online shopping with delivery/store pick up and traditional in-store shopping. Previous efforts tried to also study the phenomenon by drawing upon the Technology Acceptance Model (TAM) (Childers, Carr, Peck, and Carson 2001). As adopted in the marketing literature, researchers have reviewed determinants that influence a person's use of new technologies along with determinants such as usefulness and the ease of use. Usefulness refers to how technology can improve the process of shopping, while ease refers to the use of technology that leads to the final outcome. In the context of online shopping for groceries, usefulness might refer to the functional or utilitarian aspect while ease might refer to the actual process of online ordering and delivery – possibly the experiential aspect. The TAM idea was later modified to include the enjoyment of the use of technology construct, albeit in the work environment. But it might have, yet to be explored, implications for online grocery shopping. In essence, it is conceivable to use the TAM framework in online shopping (Babin, Darden, and Griffin 1994). The utilitarian and hedonic factors such as usefulness, ease of use, and potential enjoyment in the use of technology can all ultimately influence shoppers' attitudes toward online shopping in the grocery environment.

Discussions and Future Directions

To some extent, not all traditional grocery chains might be prepping for online shopping/delivery in a serious manner. Case in point is Wegmans, the privately held, family-run chain based in Rochester, New York. It has about 98 stores across six eastern states. It has ranked as the nation's favorite grocery store for the past three years in surveys by Market Force Information and Consumer Reports. While it also uses Instacart for some click & collect deliveries, Wegmans is close to what some call the 'retail nirvana' – great physical shopping experience backed by exclusive offerings, comparable prices, a loyal, productive and

enthusiastic employee base who feel like family at the store (Boyle 2019). Struggling traditional grocers trying their hand at online deliveries might look to Wegmans for inspiration and strategy. As mentioned earlier in the paper, McKinsey (2017) suggests innovation as a possible solution to online grocery shopping conundrum. Since the online grocery service is in its introductory stage of the lifecycle, there are ample opportunities to innovate. Employing robots to scan and pick items to autonomous delivery vehicles to Walmart trying to deliver to the refrigerator are examples of innovations in this space. While only some of them might survive the cost & service efficiencies in the long run, this space offers fertile ground for modernization and advancements.

In their report, Kuijpers, Simmons, and van Wamelen (2018) suggests six imperatives for profitable growth in this sector:

1. *Define a distinctive value proposition:* In this case convenience is the key with locations and shopping experiences that fit neatly into customers' lives. Just like Wegmans, grocers can provide inspiration by helping customers discover new items and enhancing their shopping experience. But they would have to do so while providing a good value for the money.
2. *Shape the ecosystem:* In order to win and compete in the new ecosystems being developed, grocers must invest in areas that might not have immediate ROI, but they may not have a choice at this moment. Either they can try to shape the environment or be crushed by it. In some case, partnerships/investments (ex. Instacart, Ocado, Shipt, etc.) and help with the last-mile problem might be the keys to success.
3. *Put technology to work in every part of the value chain:* Personalization of offerings through the use of advance analytics in order to increase customer engagement and retention along with streamlining in-store, warehouse, and delivery operations will go a long way in ensuring that online efforts pay off. Walmart employing robots to scan/stock shelves or to answer basic customer queries are good examples of channeling tech to gain first mover advantage.
4. *Win back lunch and dinner:* Bringing back customers for lunch and dinners (dine-in or pick up) with restaurants, food halls, delivery to offices/homes, etc. might go a long way in fighting the food trucks, quick service restaurants, and other competitive forces.
5. *Rethink the real estate:* If overcapacity is the problem, then retailers have many options such as shrinking, repurposing, renting out or other options. Grocers have to be future oriented in terms of their real estate portfolios and therefore their liabilities. As mentioned earlier, some overbuilt stores such as Kohl's, are experimenting with creative solutions such as sub-leasing to Aldi and Planet Fitness (Shoot 2019).
6. *Innovate ten times faster:* Agility is the key to surviving a competitive marketplace. Retailers should be testing promising ideas & initiatives constantly with hope of something sticking. Since the industry is transitioning fast, bold and innovative moves should be on the menu for market share, growth, and survival. Amazon watchers know the various strategies the company is deploying to win the race – physical stores and pick up points (Whole Foods, Amazon Go), one- and two-day deliveries, voice-activated ordering through Alexa, customized meal kits, Amazon Key – their door locking and home entry technology, AI enabled ordering service, self-driving grocery delivery vehicles, etc.

There are indications that in the future the growth of online grocery will be strongly segmented by (a) product category, (b) consumer demographics and (c) geography (witness the recent scaling back of Amazon Fresh service) according to Rogers (2018). Retailers need to thoughtfully consider all three of these segmentation characteristics as they plan their e-commerce activities and investments. If not, they are in real danger of wasting considerable time and money that could have been invested more profitably in brick and mortar. Others feel that stores can seize the opportunity by addressing three imperatives: (a) bridge the convenience gap between in-store and online shopping - in this case, one has to reimagine each step of the shopping journey to remove friction in the online experience, then encourage repeat use to make it even easier; (b) capitalize on the incumbent advantage now - build on the preferences consumers have for their "home store" and create a loyal customer before competitors do; (c) invest to make digital a

competitive edge - use digital tools and touchpoints to influence and assist shoppers during online transactions and in-store trips (Caine and Paratore 2019).

The frameworks discussed in the paper namely TRA, TPB, and TAM have yet to be explored in the context of recent developments in the online grocery landscape. For instance, since the TRA assumes that humans behave in a sensible manner while taking into account the available information and implications of their behavior. So, intention to adopt online grocery ordering and delivery is a determinant of the actual behavior. This supposes that consumers are knowledgeable about the factors that affect the actual behavior and their implications. Currently, the online grocery marketplace is in a state of flux and evolution. Thus, the consumer might not be in a position to rationally evaluate the consequences of her or his actions in order to make a determination.

The phenomena of multi-store and multi-channel shoppers might be another potential area of interest for researchers. With entrenched behaviors, these shoppers might be resistant to transition to an online-only environment for their grocery items. A combination of online, click & collect and in-store might appeal to multi-channel shoppers but targeting multi-store shoppers might be more challenging. Convincing them to abandon what might be their usual shopping patterns might be tough.

Technology might come to the rescue in certain situations. The use of machine learning and artificial intelligence might be fascinating to explore in this context. Systems that can learn from repetitive human behaviors in order to maximize performance would yield cost savings and efficiencies. For instance, upon learning the frequency of orders for certain items such as bread and milk, the system will be able to populate the cart automatically or be set up to order items without much human input. An AI system in the grocery context might be able to aid customers in the discovery process and providing suggestions for recipes given the combination of items being ordered. Grocers might also take advantage of higher levels of digital engagement in the food space and provide consumers various options and platforms through their social media properties to help the discovery process.

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