



**HAL**  
open science

## The impact of convenience in a click and collect retail setting: A consumer-based approach

Dany Vyt, Magali Jara, Olivier Mevel, Thierry Morvan, Nélida Morvan

### ► To cite this version:

Dany Vyt, Magali Jara, Olivier Mevel, Thierry Morvan, Nélida Morvan. The impact of convenience in a click and collect retail setting: A consumer-based approach. *International Journal of Production Economics*, 2022, 248, pp.108491. 10.1016/j.ijpe.2022.108491 . halshs-03624658

**HAL Id: halshs-03624658**

**<https://shs.hal.science/halshs-03624658>**

Submitted on 16 Oct 2023

**HAL** is a multi-disciplinary open access archive for the deposit and dissemination of scientific research documents, whether they are published or not. The documents may come from teaching and research institutions in France or abroad, or from public or private research centers.

L'archive ouverte pluridisciplinaire **HAL**, est destinée au dépôt et à la diffusion de documents scientifiques de niveau recherche, publiés ou non, émanant des établissements d'enseignement et de recherche français ou étrangers, des laboratoires publics ou privés.

# The impact of digital convenience in omni-channel retailing: a consumer-based approach

Dany VYT  
Univ Rennes,  
CNRS, CREM – UMR 6211  
11, rue Jean Macé  
35708 Rennes- France  
dany.vyt@univ-rennes1.fr

Magali JARA  
LEMNA EA 4272  
IUT Saint Nazaire – University of Nantes  
58, rue Michel Ange  
44600 Saint Nazaire - France  
magali.jara@univ-nantes.fr

Olivier MEVEL  
ICI EA 2652  
IUT BREST/MORLAIX, University of Bretagne-Loire  
Université Bretagne-Loire  
43 quai de Léon  
29600 Morlaix- France

Thierry MORVAN  
Univ Rennes,  
CNRS, CREM – UMR 6211  
Rue de la Croix Désilles- CS 51 713  
35417 Saint Malo Cédex- France

Nélida MORVAN  
Univ Rennes,  
Rue de la Croix Désilles- CS 51 713  
35417 Saint Malo Cédex- France

# The impact of convenience in a click and collect retail setting: A consumer-based approach

## ABSTRACT

While click and collect (C&C) is a growing omni-channel grocery shopping model spreading out in Europe and in the US, little attention has been paid to the design of convenience measure in this setting is under researched. In particular the role of the digital feature and its impact on consumer response. We explore the impact of C&C on consumer response through the customer's perception, from his digital to his physical trip. This paper studies customers' behaviors toward their usual retailer and their relationship with them toward the theory of services and more precisely the Service dominant logic (S-D-L). Consumers response is analyzed through the prism of convenience, especially by transposing usual measures: access, functional, process, relational to the C&C setting and providing a new one: digital convenience. The conceptual model has been tested empirically on a sample of 1078 consumers and responses are analyzed and decomposed by using Path-PLS structural equation modeling. Our evidence also suggests, that in a whole, each feature of convenience positively influence consumer response with different intensity levels. These findings provide specific recommendations for each C&C system. Thus, functional convenience has the strongest contribution of the model and explains 31.4% of customer response. Further segmented approaches of the causal model prove that fulfillment of C&C has a moderating effect on the relationship between convenience and consumer response. Access convenience remains a prerequisite for C&C in a whole, but somewhat surprisingly our results make evidence that it has a negative impact in a drive-in system. We show that digital convenience is clearly discriminant according the type of C&C.

*Keywords:* Click and collect, Convenience, Digital shopping, Omni-channel, Retailing, Structural Equation Modeling.

# 1. Introduction

With the introduction of the Internet into the customer buying process, retailers are evolving from a single brick and mortar strategy, based on a physical network of points of sales, to a click and mortar system. This complementarity of channels increases shopper satisfaction (Milioti et al., 2020; Gatta et al. 2021; Maltese et al., 2021), leading to loyalty to the brand and thus generating additional sales (Dinner et al., 2014; Gielsens et al., 2020).

Retailers now propose the option to buy online and pick up in store (BOPS) (Gao and Xuanming, 2017), also named drive (Mevel et al., 2021), click and pickup stores (Maltese et al., 2021; Pernot, 2021), click&pick (Marcucci et al., 2021), or still grocery pick up (Vyt et al., 2017). In line with Gielsens et al. (2020), we consider the global term “Click and Collect” (C&C) to define this online selling proposition. C&C is a natural continuation of the evolution of sales formats. It reduces the functional constraint of food consumption (Vyt et al., 2017; Gielsens et al., 2020; Mevel et al., 2021; Pernot, 2021) and is part of timesaving strategy (Mallapragada et al., 2016; Bjorgen et al., 2021; Pernot, 2021). By maximizing the speed and ease of shopping, C&C creates the basis for a lasting customer relationship, since consumers want to decrease shopping time (Seiders et al., 2000). C&C represents a key driver in a multichannel retailing strategy (Lewis et al., 2014).

C&C enables retailers to increase and develop their customer base, especially more valuable multi-channel shoppers (Dinner et al., 2014). Moreover, it positively impacts online spending at the retailer and total grocery spending through larger baskets and/or extra shopping trips (Gielsens et al., 2020). Over the last twenty years, this channel has continued to develop to such an extent that today more than 80% of the leading retailers globally offer C&C service.<sup>1</sup> The current pandemic has accelerated the development of C&C by traditional grocery retailers, especially for Sainsbury’s, Target or Kroger, and it has stimulated the implementation of C&C among small local merchants. This topic has drawn the interest of scholars in the field of decision sciences and operations research but little research has been led on the digital shopper trip in this omnichannel context (Vyt et al., 2017; Gielsens et al. 2020; Maltese et al., 2021; Mevel et al., 2021; Pernot 2021).

In C&C, maximizing the retailer's margin rate will depend directly on a customer service rate that is built, both in the front-office, on the relevance of a digital marketing mix and, in the back-office, on minimizing the system costs resulting from the management of the logistics mix. Consequently, the challenge of deploying an operational management of relevant C&C services is to understand the level of service demanded by the ubiquitous shopper and therefore to determine the variables that create C&C value and that are likely to predict the customer's

---

<sup>1</sup> Source: Ascentialedge; What’s next for click and collect? 8 Apr 2020.

recommendation behavior. Consequently, through our research, we studied, from both a physical and a digital point of view, the impact of this channel on consumer response.

While changeover costs are relatively low for the ubiquitous shopper, who can move from a channel or a retailer to another at different stages of the transaction, one question remains open: what are the most important factors explaining the positive response of consumers towards the C&C system? The existing literature mostly discusses the concept of convenience in the context of traditional retail channels (Seiders et al., 2000; Bergadaa and Del Bucchia, 2009; Labbé-Pinlon et al., 2016; Gahinet and Cliquet, 2018) and thus there is a need to bridge the gap for the online shopping and especially C&C. Little attention has been paid to the design of convenience measure in a C&C setting (Vyt et al., 2017; Gielsens et al., 2020; Mevel et al., 2021;) and in particular the role of the digital variables in convenience and its impact on the consumer response. Therefore, this study is based on the customer's view of the C&C channel in its entirety, from the placing of the order and the navigation on the website to the item pick up. Consumer response will be analyzed through the prism of convenience. Convenience means the capacity of the retailer to offer convenient shopping, i.e maximizing the speed and the ease of shopping (Seiders et al., 2000; Gielsens et al., 2020). We transpose usual convenience measures: access, functional, process, relational to the C&C setting and provide a new one: digital convenience. In other words, this research aims at defining convenience in a C&C retailing context and identifying which are the most important features. Based on a conceptual model and an operational survey model, we answer the two following research questions:

*Does convenience positively influence the consumer response towards the C&C system?  
What features of convenience are the most important for consumers?*

Previous researches focused on a review of convenience from consumer studies (Seiders et al., 2000; Pernot 2021), theoretical approach (Bergadaa and Del Bucchia, 2009) or an analysis using retailer data (Gielsens et al., 2020). They offered only a fragmented consideration of the features of convenience (Vyt et al., 2017; Mevel et al., 2021; Pernot, 2021), group all the attributes of convenience into a single theoretical concept (Yuen et al., 2019) or do not integrate the three types of C&C (Gielsens et al, 2020; Milioti et al., 2020; Marcucci et al., 2021; Pernot, 2021). A consumer-based approach of the three alternative fulfillment types is currently lacking and this paper intends to fill the gap. The study focuses on C&C from the consumer's point of view in order to ensure the differentiation of the retailers and to propose a unique value that satisfies needs other than functional ones.

To answer those research questions, a conceptual model has been empirically built (from a literature review and experts' interviews) and then tested on a sample of 1078 consumers. PLS structural equation modeling is used and provides specific recommendations. This quantitative research focuses on the grocery C&C consumers and their positive response towards the retailer. Using this unique data set covering the eight French largest grocery retailer's rollouts of the three C&C order fulfillment types in a large number of local markets, we found that C&C in a whole access, functional, process, relational and digital convenience positively influence

consumer response. Thus, functional convenience has the strongest contribution of the model and explains 31.4% of customer response. Further segmented approaches of the causal model prove that type of C&C has a moderating effect on the relationship between convenience and consumer response. We make evidence that digital convenience is clearly discriminant according the type of C&C, whereas access convenience does not always have a strong contribution and worse can be negative scored. These findings have significant implications for omnichannel retailers and provide specific recommendations for each C&C system.

## **2. Literature review**

Academic research is providing a growing body of literature on this topic. Thus, Cai and Lo (2020) propose a comprehensive state of the art in "omni-channel management". Based on *Citation Network Analysis*, their work reports on 192 papers published in the retailing literature. Those authors classify the papers into seven research domains. Given our research problem for the value chain in the omni-channel context, this study is part of what the authors call the omni-channel strategy.

### *2.1. C&C system: a new service to create value*

Mass retailing was built on cost leadership, and then developed through quality, deadlines, and innovation in its processes today, additional services appear as business activities likely to create more value. Online shopping represents a strategic tool for retailers since physical and virtual retail channels can be integrated to create value for multi-channel consumers (Oh and Teo, 2010). E-services provide additional value and the quality of e-service offerings improve consumer response, such as loyalty and purchase intentions (Yu et al., 2015; Foo et al., 2020; Olsson et al., 2021), can enhance online customer satisfaction (Chang and Wang, 2008; Rita et al., 2019; Ali and Naushad, 2021) and consumer trust (Rita et al., 2019). It positively impacts demand (Xu et al., 2017; Gatta et al., 2021; Milioti et al., 2021; Pernot et al., 2021) and enhances consumer experience (Hickman et al., 2020; Kalia and Paul, 2021; Maltese et al., 2021; Gasparin et al., 2022).

The C&C system is part of this new multi-channel offer of the networks and stems from the idea by "Buy online and pick up in-store" (BOPS). C&C means the provision of more or less automatic technical support for a consumer who recognizes a value of use (Jara et al., 2018), in particular the control of the management of his purchase time (Colla and Lapoule, 2012; Mallapragada et al., 2016; Jara et al., 2018; Gielsens et al., 2020; Mevel et al., 2021) while freeing himself from the tiresome purchases in the physical store. This system is composed of a two-step process. The consumer visits a retail website to browse, buy and pay for selected products and then he drives to the store or to any place where products can be picked up. C&C is a hybrid retail format, there is no complete dematerialization such as in home-delivery model since it requires the customer to travel to a pickup point (De Magalhães, 2021; Pernot, 2021). In spite of recent research that made evidence of the willingness to pay for

it (Maltese et al., 2021; Milioti et al., 2021; Pernot, 2021), in France C&C is a free service whatever the type of C&C fulfillment. Adopting free shipping increases the probability of choosing e-grocery (Gatta et al., 2021).

A pickup point can be either located close to a store or isolated from any store in the same chain. As mentioned previously, C&C concept consists of three different models (Table 1).

**Table 1** -Alternative types of C&C offered by food retailers

<b>Characteristics</b>	<b>Drive-in</b>	<b>In-store picking</b>	<b>Drive-out</b>
Fulfillment order	Pick up station attached to the store  Warehouse independent of the physical store	Order grabbed in store  No warehouse dedicated to C&C	Solitary station acting as a collection point  Warehouse from 2.000 to 5.000 m <sup>2</sup> independent of the physical store and geographically remote
Assortment	8,000 to 10,000 SKUs	Depth and width of the physical store	8,000 to 10,000 SKUs

In the first system, named the drive-in (Jara et al., 2018) or the near-store type (Gielsens et al., 2020), customers use the Internet to order and pay for their products and drive to the store where the orders are picked up at least two hours after they've been ordered. Order picking operates from stores that have the products at hand. This means setting up a storage and order preparation warehouse close to an existing point of sale. Based on a digitized front office, this channel has the particularity of requiring the implementation of an omnichannel approach that is completely controlled and synchronized between the merchandising of the assortment and the availability of stock. The logistical dimension (availability of the product at the time of the order, the expected time to receive the order, etc.) of these service remains fundamental (Mac Carthy et al., 2019; Saha and Bhattacharya, 2021). The idea is to offer a C&C service from an existing store, that is why the number of Store Keeping Units (SKUs) is so important since the proposed assortment corresponds to that of the physical store. In the second case, named in-store picking, C&C is integrated within a hypermarket or a supermarket; orders are prepared within the store. This model represents the most important part of the C&C system development, because it is easy to implement but it constraints the store to maintain a base-stock level that is optimal (Saha and Bhattacharya, 2021). In terms of logistics, it belongs to a centralized distribution network with a click & collect option (Melkonyan et al. 2020). In France, in September 2021, 1721 hypermarkets and 2097 supermarkets have either one of these two models.<sup>2</sup> In the last case, called drive-out (Jara at al., 2018), stand-alone (Gielsens et al.,

<sup>2</sup> Source: LSA Expert, September 28th, 2021.

2020) or drive solos (Hubner et al., 2016; Mevel et al., 2021;), there is no physical store, but only warehouses often located near the main roads at the exit of the cities serving as collecting points. Regarding their concentration in the suburbs, drive-out mainly target car-owing peri-urban residents (Pernot, 2021).

With C&C e-retailers aim at creating, thanks to digital, a new interaction with the consumer, a different meeting point and service experience by allowing the choice and multiplication of product access points (Vyt et al., 2017; Jara et al., 2018). In the case of the proposed C&C service, the product/service couple is deeply intertwined and the customer, who rarely buys a product without considering the services that accompany it, now expects a set of key service functions from his retailer (Vyt et al., 2017; Jara et al., 2018; Gielsens et al., 2020; Maltese et al., 2021; Mevel et al., 2021; Pernot et al., 2021). The retailer is therefore led to develop more and more complementary services associated with the C&C while measuring its service rate as closely as possible in relation to its marketing promises and the expectations raised among its customers. The right mix of marketing and logistics depends on the final service rate recognized by the retailer's customers when they use the C&C channel.

## *2.2.C&C: last mile fulfillment is at stake*

Digitalization of food purchasing puts logistics at the heart of retailers' strategies (Bjorgen et al., 2021) and to take advantage of e-grocery opportunities, retailers should rethink logistics activities in a whole (De Magalhães, 2021; Lagorio and Pinto, 2021). But food retail sector is very complex in terms of supply chain and logistics management. Online everyday consumers goods raise many implications in terms of logistics on the one hand and mobility on the other (Pernot, 2021). Indeed, regarding fast-moving consumer goods (FMCG), logistics management must consider several specificities and characteristics of C&C that are not found in other sectors (furniture, publishing, textiles, etc.) (Hübner et al., 2016; Wollenburg et al., 2018, Pernot, 2021): the frequency and regularity of purchases, the number of products purchased, as well as their diversity (food products, cleaning products, hygiene products, etc.). Furthermore, regarding the perishable character of food items, spoilage is an important cost driver (Siawolit and Gaukler, 2021). Thus, management of an omnichannel grocery supply chain encounters many complex features by avoiding stock-outs, picking locations, specializing and warehouse locations (Melacini et al., 2018; Xu and Jackson, 2019; Huang and Jin, 2020; Bijmolta et al., 2021; De Magalhães, 2021). This business model underlines the importance given to the logistics dimension throughout the digital and physical consumer trip and the need for the retailer to manage a crucial interface, source of differentiation: the marketing/logistics interface. Through a Norwegian study, Bjorgen et al. (2021) made evidence that e-grocery and online shopping modify and reduce physical grocery trips, since most of the time, collection at C&C pick point is fitted into existing trips (Pernot, 2021). Through a survey among approximately 600 French households to study the impact of digitalization on shopping travel behaviors, Pernot (2021) proved that among the most C&C frequent customers, 47% spend more than 40% of the everyday consumers' goods budget in C&C. Given this new mobility, delivery patterns



and transportation planning in e-grocery retailing should be in a whole redefined in a more efficient way. Recent logistics literature examines all logistics subsystems of a retail chain and make evidence that, at a time of digitalization of grocery purchases, delivery pattern could be source of important cost savings (Hotzapfel et al., 2016; Olsson et al., 2019; Lagorio and Pinto, 2021).

In terms of logistics, one of the major innovations of C&C consists of relieving the customer of in-store picking activities while leaving him in charge of the last mile (Punakivi et al., 2001; Picot et al, 2009; Colla and Lapoule, 2012; Wollenburg et al., 2018; Vakulenko et al, 2019; Lim and Winkenbach, 2019; Gielens et al., 2020; Pernot 2021). Allowing the consumer to pick up the grocery makes e-retailers more competitive and sustainable (Bjorgen et al. 2021). C&C is then seen as an environmentally friendly distribution scheme (Miloti et al., 2021). Last mile logistics research represents an emerging and increasing area of research and concentrates three out four articles within the past five years (Olsson et al., 2019). In spite of a growing interest from scholars and practitioners, the logistical challenges of the C&C business model are under researched. This literature is still diversified and fragmented (Olsson et al., 2019; Lagorio and Pinto, 2021). Olsson et al. (2019) made an in-depth logistics literature review of 137 articles in order to propose a completed and detailed framework and provide a holistic overview. They have emphasized that last mile fulfillment is underrepresented in the literature and called for call for filling the gap by leading research to address customer requirements. As mentioned by Marcucci et al. (2021) supply chain planning needs understanding consumer's demand. Thus, our study contributes to current knowledge of consumers' attitudes and preferences towards three different C&C models from a logistics and marketing point of view.

### **3. Theoretical background and hypotheses development**

Traditional theories, especially in marketing, focused on physical products as the core of the exchange. In usual marketing assumptions, the retailer targets the consumer and the relationship between the two actors is centered on the product: this is the Good-Dominant Logic (GDL). Retailers are henceforth limited to the logistics function of distribution, which consists of merely making a product available. In this framework, only the retailer creates and produces value, while consumers are perceived as value destroyers.

Technological innovations and the development of information, combined with the emergence of omnichannel modes of consumer patterns lead to innovative retail channels (Chopra, 2016; Quach et al.,2020; Trenz et al. 2020; Gasparin et al. 2022). In these new exchange practices, the customer becomes a key player. The continuous digitalization of retailing leads to inter connected retailers and consumers. These technological advancements offer a new retailer consumer-interaction (Zhang et al., 2021) and drive the shift from GDL to Service-Dominant Logic (Hartwig et al., 2021). Grocery retailers must respond to the demands of today's ubiquitous consumers who want to decrease shopping time. They are enriching their value proposition and becoming service providers. Vargo and Lush (2004; 2006; 2008) first made

evidence that retailers have moved from a transactional approach to a relational approach with their customers. They have established the foundations of the S-D L theory (Vargo and Lush, 2004; 2006; 2008). This theory goes further than a product-centric approach to refocus on the service during the exchange between a retailer and its consumer. SDL theory overcomes the institutional frameworks to consider the service as the basis of the exchange (Wibowo et al., 2021). In the SDL theory, customers become an operant resource that is co-creator of value. This modern conceptualization of value co-creation it is widely used in the literature (Zhang and Berghall, 2021). Indeed, recent researches (Wibowo et al., 2021; Zhang and Berghall, 2021) have analyzed SDL in academic papers through the last two decades and support the development of co-creation of value between consumers and firms. SDL has an expanded influence on research streams. Through an in-depth literature analysis Wibowo et al. (2021) related the institutionalization of the SDL in the marketing scholar papers.

The SDL theory provides a relevant framework for assessing the impact of C&C in a retail setting since the consumer becomes a partner who co-produces with the retailer in order to increase the value of the exchange. So, SDL theory is used to study the process through which value is created and delivered to consumers (Zhang and Berghall, 2021). It empowers consumers and recognizes that value is created with and by the customer (Vargo and Lush, 2010) and that a service is a reciprocal relationship between customer and retailer (Vorre Hansens, 2019). This theory defines a service as a specific process, bringing a customer and a supplier face to face during a phase of ordering, production and consumption, qualified as a service relationship. During the interactions between the retailer's offer and the ubiquitous shopper, experiential value is developed. Service management is therefore encouraged to pay special attention to these interactions and to focus on customer and relationship-oriented service (Vargo and Lush, 2004).

The service relationship in the grocery C&C setting is then defined as the producing of a dual process, digital and physical, without autonomous existence, bringing a customer and a retailer face to face during a phase of solicitation, then simultaneous production and consumption of a food service by the customer. Value co-creation only exists if the consumer is involved throughout the value creation process. This is the very principle of C&C, which implies the co-production of a service, i.e a close temporal interweaving between the consumption and production of the service delivered at the same time. C&C reverses the usual codes of the relationship between the retailer and the consumer and rethinks the co-production of services.

This study analyzes the perceived value of the customer trip from the retailer's digital universe to the service at the collecting point in terms of the services offered. Indeed, the consumer expects to be offered a set of services throughout the online purchasing process (from the ease of use of the website to the control of the logistical dimensions by the retailer). Hence, the objective of this research is to study how whole access, functional, process, relational and digital convenience can influence consumer response.

### *3.1 Access convenience*

Marketing and economic theory recognize the role of geographic proximity in store visit frequentation. Since Reilly (1931), gravity models have been based on the idea that store attractiveness is an inverse proportion of the distance between the consumer and the store. In other words, the closer the consumer is geographically to the store, the shorter the distance to get there, the more he will frequent it.

In a retail context, the geographical proximity between the retailer and the consumer is a prerequisite in the relationship of loyalty to a store (Seiders et al., 2000; Bergadaa and Del Bucchia, 2009; Labbé Pinlon et al., 2016, Vyt et al., 2017; Gahinet and Cliquet, 2018). It describes the speed and ease for customers to reach a retailer (Seiders et al., 2000, Bergadaa and Del Bucchia, 2009) or still the time to, at and from a pickup station in a C&C context (Vyt et al., 2017; Gielsens et al., 2020). Since consumers consolidate tasks to minimize shopping trips, a store's geographical proximity is one condition of the access convenience whatever the place of departure (home or office). The C&C pickup point is embedded in the existing patterns (Pernot, 2021), and is not a dedicated trip. It overcomes the attribute “time travel” which measures the time a consumer spends for a round-trip from home to pick up point (Marucci et al., 2021). Access convenience is more global than geographical proximity. It measures a retailer's ability to be present in the consumer's living environment (Seiders et al., 2000; Bergadaa and Del Bucchia, 2009) and in high traffic areas (Capo and Chanut, 2013). Access convenience is all the more important since this study is in a multi-channel context and that the very essence of C&C is to capture a flow of customers and to meet the new consumer mobility requirements (Pernot, 2021). It gathers the ease of road access and the geographical proximity. Therefore, the following hypothesis is proposed:

**H1.** *Access convenience positively influences the consumer's response in a C&C context*

### *3.2 Functional convenience*

In a C&C context, functional convenience represents a search for efficiency and time saving for consumers (Bergadaa and Del Bucchia, 2009). It has a utilitarian value and encompasses all the dimensions that allow consumers to save shopping time. It includes search convenience (ease and speed for a customer to identify and select products), as well as possession convenience (ease and speed for a customer to obtain desired products) emphasized by Seiders et al. (2000). In other words, it represents the possibility for the consumer to have a large choice of products so that he does not need to visit other stores (Seiders, 2000) and do all the daily shopping (Labbé-Pinlon et al., 2016). The choice of the product range is so important that Maltese et al. (2021) have demonstrated in an Italian context the C&C consumers' willingness to pay to benefit for a wider range of product. One of the complex and fundamental issues in online shopping concerns the balance between the broad assortment presented by digital shopping models and the additional logistical costs generated by the depth of the assortment (Cho, 2015; Nguyen et al, 2018; Sousa and Amorin, 2018; Bijmolt et al., 2021). Such a compromise is all the more complex to achieve since, in C&C context, the objective is to seek similarity in the assortments offered, regardless of the channel used, while allowing consumers to easily navigate between the different existing touch points (Verhoef et al, 2007; Wollenburg

et al., 2018). Width and depth of assortment are, therefore, important dimensions of this convenience (Capo and Chanut, 2013) as well as efficient checkouts, internal layout, ease for the consumer to find the desired product and promotions with a minimal amount of effort (Bergadaa and Del Bucchia, 2009; Gahinet and Cliquet, 2018) and the facilities offered, such as the time range (Capo and Chanut, 2013) or lead time: i.e time elapsing between order placement and order delivery (Gatta et al., 2021; Maltese et al., 2021; Marcucci et al., 2021). With regard to these criteria, it is imperative that the management of the logistics mix considers the level of service required by the end customer in terms of product availability at the time of the order (Seiders et al., 2000) but also the time it takes to receive the digital order within an acceptable time frame. Ultimately, logistics performance must be an integral part of the transaction in the case of online sales (Seiders et al., 2000; Maltese et al., 2021; Pernot, 2021; Rupinder et al., 2021).

Ease of identifying products online is defined by Gielsens et al. (2020) as search convenience. These authors state that whatever fulfillment order retailers are put in place, C&C must deliver this type of convenience. C&Cs should, therefore, offer a complete assortment to satisfy functional benefits and to ensure repeat purchases (Fernie et al., 2010). This purchase convenience includes assortment (Rupinder et al., 2021). Functional convenience is all the more important since in a leisure society, e-shoppers want to decrease shopping time. They prefer online shopping due to convenience and timesaving (Mallapragada et al. 2016). Thus, the most important motivation for using food e-grocery is to save time (Bjorgen et al., 2021), henceforth, C&C is part of time-saving strategy (Pernot, 2021). This is specially verified for especially increasingly task oriented consumers and dual-career households, constrained by work and children (Pernot, 2021) who represent a large part of the C&C users. Therefore, the following hypothesis is proposed:

**H2.** *Functional convenience positively influences the consumer's response in a C&C context*

### *3.3 Relational convenience*

In the online shopping era, the absence of sensorial information, especially for purchasing fresh produce (e.g. fruit, vegetables, meat or fish) explains the lower growth of e-commerce in grocery compared to intangible goods such as tourism for example (Pernot, 2021). The absence of physical contact with items is identified by Gatta et al. (2021) as one of the most important disadvantages of purchasing grocery online. So, the real challenge for omni-channel retailers consists in compensating for the absence of a point of sale and responding to the need for touch (Duarte and Silva, 2020) by allowing an exchange with the staff in contact and availability of assistance through telephone or online representatives (Kalia and Paul, 2021). In line with Service-Dominant-Logic theory, on which the theoretical background of this research is based, employees are considered as operant resources and participate to the value co-creation process (Vargo and Lush, 2006). In the same vein, consumers permit retailers to emphasize relationality (Vargo and Lush, 2004; Hartwig et al, 2021). Staff in contact represents an important source of

information often only available in brick and mortar stores (Lee, 2017; Aw et al., 2021). In the C&C setting, relational convenience describes the direct relationship between the e-shopper and the personnel in contact at the point of sale or the pick-up station (Bergadaa and Del Bucchia, 2009). It reflects the feeling of trust and attachment between the brand and the consumers via the staff (Capo and Chanut, 2013). Retailers are aware that the reception of the customer by the staff on the pickup station is an essential variable (Vyt et al., 2017; Henriquez et al., 2018) and, therefore, develop new customization tools in the pickup station. Relational convenience defines the exchange, the focus on advice, the friendly link between the shoppers and the staff and that can influence the building of trust and can be evaluated through variables such as the friendly ambiance of the store (Labbé-Pinlon et al., 2016), staff availability (Labbé-Pinlon et al., 2016; Gahinet and Cliquet, 2018). Relational convenience brings an immaterial dimension to the concept of convenience. Uncertainty about outcomes in online shopping expands the additional need for physical contact with salesperson (Aw et al., 2021). Hence, we offer the following hypothesis:

**H3.** *Relational convenience positively influences the consumer's response in a C&C context*

#### *3.4 Process convenience*

In the case of e-commerce, the retailer must compensate for the absence of in-store visits by allowing the consumer to appropriate the act of purchase as much as possible (Aw et al., 2021), a fortiori for fast-moving consumer goods purchases. They should develop product range; i.e a product selection with respect to offline- grocery options (Maltese et al., 2021). Online shoppers must receive what they ordered based on the display and description provided on the website and the status of products ordered should be respected (Blut et al., 2015; Blut, 2016). These are conditions for an efficient and effective online shopping (Zeithaml et al., 2002; Blut 2016; Rita et al., 2019; Gatta et al., 2021; Maltese et al., 2021). It represents one dimension of e-quality, namely fulfillment. In the online context, the link between fulfillment and customer e-loyalty has been demonstrated in previous literature. Process convenience adopts dimensions of fulfillment as defined by e-service quality theory, namely: timelessness of delivery, order accuracy and delivery conditions (Zeithaml et al., 2002; Blut, 2016; Kaya et al., 2019; Kalia et al., 2021); time window i.e expected time of arrival range (Gatta et al., 2021; Marcucci et al., 2021; Maltese et al., 2021; Milioti et al., 2021). Value consistency of delivery time is an important delivery characteristic that positively impacts the intention to use C&C (Milioti et al., 2021). It represents the extent to which retailers 'promises about item availability is fulfilled. It is a critical dimension that e-retailers must beef-up to enhance customer satisfaction and re-purchases (Kaya et al., 2019; Kalia et al., 2021). In line with these arguments, we formulate the following hypothesis:

**H4.** *Process convenience positively influences the consumer's response in a C&C context*

#### *3.5 Digital convenience*

The features of usual convenience should be redefined in order to incorporate characteristics of electronic retailing to existing definitions and should include a digital dimension. Due to the digitalization of shopping, the ubiquitous consumer can feel close to the retailer without being close in a physical space (Craig et al., 2017), and online shopping features often merge with offline characteristics. Therefore, the ubiquitous shoppers associate the design of online shops to the quality of the store and the products (Aquila-Natale and Iglesias-Pradas, 2020). The retailer's website is intended as a service element and compensates for the absence of a physical store and should require usual e-service quality features, a fortiori since there is no intense service relationship with the contact staff in this new channel (Aw et al., 2021).

Most recent studies confirm that website quality has a positive effect on the flow experience (Mohammadi and Dickson, 2021) and represents a strong competitive advantage (Kalia and Paul, 2021). Thus, in a multichannel setting, retailers should pay attention to user-friendliness of web-portal (Agnihotri, 2015) and facilitate efficiency i.e ease and speed of navigation (Verhoef et al., 2007; Kalia and Paul, 2021) to increase online search convenience (Aw et al., 2021). Information quality and service conveniences are drivers of consumer value in a hybrid commerce service-delivery system (Oh and Teo, 2010). That's why C&C must meet the needs and requirements of the consumer in terms of ease of use offered by the website (design, quality of information, ergonomics, augmented reality, etc.) (Jara et al., 2018; Gielsen et al., 2020; Mevel et al., 2021). E-retailing is a technology-driven business (Kalia and Paul, 2021), henceforth the design and the ergonomics of the website must have a high level of quality to play a key role in the click and collect's success (Vyt et al., 2017). The customer, therefore, wants a permanent and quality digital exchange during the time of his order from the point of entry into the distributor's network to the final delivery point (Gieslens et al., 2020). Digital convenience meets the convenience possession and information on stock described by Gielsens et al. (2020), the possibility to check the use-by date to ensure freshness (Pernot, 2021). It includes all elements of the C&C consumer's experience on the website including speed and ease of navigation, product description or still merchandise availability, site aesthetics, personalization through histories and ways of shopping (Zeithaml et al., 2002).

Thus, we hypothesize:

**H5.** *Digital convenience positively influences the consumer's response in a C&C context*

## **4. Research design**

### *4.1 Data collection and sample*

The field of the study is in France, the birth nation of C&C. This new channel continues to develop and by 2020 represented a market of more than 9.9 billion in France<sup>3</sup>. A literature review about convenience in C&C is used to develop the survey instrument revealing each

---

<sup>3</sup> Editions Dauvers, A3Distrib, Nielsen, October 2020.

latent variable in this study. Given the new features of this channel and the parsimony of the existing literature, we wanted to complete the state of the art with an exploratory approach. To do so, the research process was led in two times mixing two methodological approaches: the first time is related to a qualitative research consisting in interviewing French grocery pickup managers and clicks and collect network managers. The objective of those experts' interviews was to specify more the framework of our research (given by the literature review at first) and to reveal specific dimensions that we will call: latent variables. Hence, in a second time, contents from previous interviews have been added to literature review. This two-steps methodology allowed to adapt the five latent variables to the new channel C&C and build a new information collecting tool. The finalized survey questionnaire included five sections of questions associated with the corresponding five latent variables in this study. These sections focused on access, functional, process, relational and digital convenience.

The questionnaire was administrated face-to-face with 1,078 consumers at the exit of hypermarkets, supermarkets and convenience stores in order to capture the largest possible sample. Among this data base, we counted 444 non-users of click and collect. Among the 634 click and collect users, there were 628 usable responses: 70% were female versus 30% male. In addition, the database was composed mainly of families, since 69.90% of the households surveyed are composed of more than three people (see Table 2).

**Table 2 - Demographic characteristics of respondents.**

Variable	Response	All respondents Percentage	C.C users Percentage
Gender	Female	62.89	70
	Male	37.11	30
Age	18-29	28.24	22.22
	30-44	40.58	50.72
	45-59	25.89	24.15
	60-74	5.17	2.73
	75 and older	0.09	0.16
	Number of pers. in household	1	14.40
	2	24.76	19.55
	3	19.30	21.79
	4	24.10	28.84
	5	17.41	20.99

Our sample is composed of eight major grocery retailers and covers rollout of the three C&C order fulfillment types: drive-in, drive-out and in-store picking (see Table3). Casino and Cora retailers only develop one type of C&C, in this case in-store picking. Chronodrive proposes only drive-out with 55 solitary stations all over France.

**Table 3 - Characteristics of C&C sample.**

Retailer	Customers	Click and Collect type			Total
		Drive-out	Drive-in	In-store picking	
Auchan Drive	2.37%	33%	60%	7%	100%
Carrefour Drive	10.88%	14%	59%	27%	100%
Casino	0.95%	0	100%	0	100%
ChronoDrive	1.58%	100%	0	0	100%
Cora Drive	0.95%	0	100%	0	100%
Courses U	13.41%	13%	58%	29%	100%
Le Drive Intermarché	13.72%	11%	59%	30%	100%
Leclerc Drive	56.15%	55%	35%	9%	100%
	100%				

The distribution of retailers within the sample reflects the heterogeneity of French retailers in the C&C market. In France, Leclerc Drive dominates the C&C market with a market share of 48% in 2020,<sup>4</sup> that is why this retailer is over-represented in our database and accounts for 56.15% of the respondents.

#### 4.2 Measurements

Whatever the C&C model used, the perceived value of the service relationship will depend on all the interactions that the consumer encounters, from his search for a C&C and his connection to the retailer's website to the service at the pickup point. Thus, the consumer expects to be offered a set of services throughout his online shopping process: from the ease of use of the website to the mastery of the logistic dimensions.) This is why our items concern each of the main steps during which the interactions between the retailer and the consumer are strong: a pre-transaction step (the pre-experience of online shopping), a transaction step and a post-transaction step (the post-experience of online shopping) (De Magalhães, 2021 ). Then, based on our experts' interviews (grocery pickup managers and network managers) and previous literature in retailing and omnichannel, we build a questionnaire which measures access, functional, relational, process and digital dimensions. Table 4 presents all measures included in this research.

**Table 4 - Measurement**

Variables	Items	Items (measured by satisfaction levels from 1 to 10)	Sources
Access convenience	ACC1 ACC2	Ease of road access Geographical proximity	Seiders et al. (2000) Bergadaa and Del Bucchia (2009) Vyt et al. (2017) Gahinet and Cliquet (2018) Gielens et al. (2020) Marucci et al. (2021) Mevel et al. (2021)

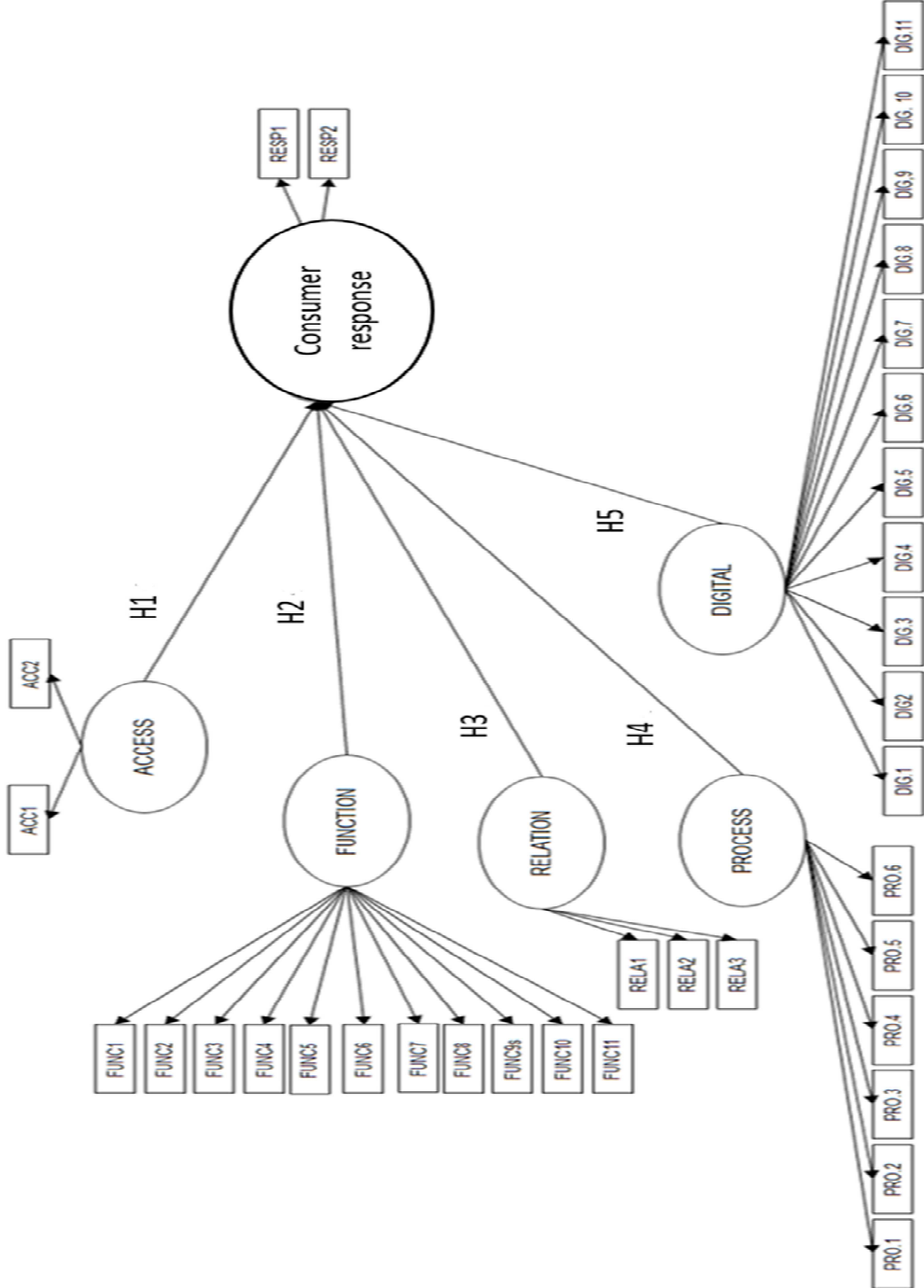
<sup>4</sup> Source: Editions Dauvers, A3Distrib, Nielsen, October 2020.



<b>Functional convenience</b>	FUNC1 FUNC2 FUNC3 FUNC4 FUNC5 FUNC6 FUNC7 FUNC8 FUNC9 FUNC10 FUNC11	Assortment width Assortment depth Promotional offers Access to promotions Possibility to order a product at the last minute Waiting time at the pick-up station Ease of authentication at the pick-up station Time range Sessions times proposed Key word search Lead time	Seiders et al. (2000) Bergadaa and Del Bucchia (2009) Beauchamp and Ponder (2010) Vyt et al. (2017) Gahinet and Cliquet (2018) Gatta et al. (2021) Marucci et al. (2021) Maltese et al. (2021) Mevel et al. (2021) Milioti et al. (2021)
<b>Relational convenience</b>	RELA1 RELA2 RELA3	Relationship with staff Tips for use Information from staff	Vyt et al. (2017) Gahinet and Cliquet (2018) Henriquez et al. (2018) Mevel et al. (2021)
<b>Process convenience</b>	PRO1 PRO2 PRO3 PRO4 PRO5 PRO6	Choice of several weights for fresh products Suitable packaging Delivery conditions Adequate choice of replacement in case of stock-out Payment method Order accuracy	Bergadaa and Del Bucchia. (2009) Labbé Pinlon and al. (2016) Blut (2016) Rita et al. (2019) Gatta et al., 2021 Maltese et al. (2021) Aw et al. (2021)
<b>Digital convenience</b>	DIG 1 DIG 2 DIG 3 DIG 4 DIG 5 DIG 6 DIG 7 DIG 8 DIG 9 DIG 10	Order confirmation by e-mail Shopping lists List of favorite products Product replacement proposal Merchandise availability Image quality Product description Speed of navigation Ease of navigation Expense tracking	Parasuraman et al. (2005) Verhoef et al. (2007) Agnihotri (2015) Blut et al. (2015) Gielens et al. (2020) Aw et al. (2021)
<b>Consumer Response</b>	RESPON1 RESPON2	Recommendations to others Patronize the C&C of the frequent store	Zeithaml et al. (1996) Chen and Quester (2009) Gahinet and Cliquet (2018)

C&C is a complement to shopping in physical stores (Hotzapfel et al., 2016; Pernot, 2021). In the case of multi-frequentation of points of sale, behavioral loyalty is not sufficient to explain consumer response (Jacoby and Chestnut, 1978). C&C as a purchase channel is, therefore, more captive than traditional channels (Vyt et al., 2017) for which customers multiply the alternatives between a main store and occasional ones. For this reason, consumer response items combine behavioral measures, that are frequency and intention measures. The scale for future behavioral intentions and frequency were developed following the existing theoretical conceptualizations and empirical studies. The respondent was surveyed about his future behavioral intentions through one of the four items in Zeithaml et al. (1996): the recommendation of the C&C. The conceptual model tested, after the purification procedure is presented in Figure 1.

Figure 1 – Conceptual model



4.3 Data analysis

It could be interesting to deepen more specific relations within the model to understand better consumer response and provide precise managerial recommendations. As such, we posed

the questions as follows: Within each convenience dimension, which variable positively influences consumer response? Which variable has the most important impact on consumer response? The first steps consist in testing the validation of variables of the causal model. More specifically, their reliability and the convergent validity are tested. Note that all variables within the model are reflective. Regarding reflective constructs (latent variables), the adopted procedure followed the one that was proposed concerning the reliability and convergent validity of the latent constructs (Churchill, 1979). Confirmatory analyses were led through XLstat PLS-PM software based on the PLEASURE technology (partial least squares structural relationship estimation) supporting the PLS path modeling. Reflective variables (related to logistics and marketing dimensions) are assessed through different statements. The questionnaire was operationalized through a metric scale (ten-point satisfaction scale) required for future statistical treatments (Churchill and Iacobucci, 2005).

## **5–Results**

### *5.1 Measurement model*

This concerns the validation of reflective variables of the causal model. More specifically, their reliability and convergent are tested. Figure 1 presents the model.

#### *Reliability, convergent validity of reflective variables*

The reliability of reflective construct measures is usually assessed by Cronbach's alpha, which measures the internal consistency between different measurement items. The more strongly the measurement items are correlated with each other, the higher the Cronbach's alpha leading to the demonstration of the reliability of the measurement scale. Since the correlation between the measurement items is sought to validate the construct, the latter must obviously be reflective and unidimensional. Another indicator, Jöreskog's  $R^2$ , is often used in addition. The interest of this indicator is to integrate the error term into the calculation of internal consistency (Jöreskog, 1970).

The reliability tests of the measurement scale reveal that it is unidimensional when only the first eigenvalue of the block is greater than 1 and when Cronbach's alpha and Dillon-Goldstein's  $R^2$  are greater than 0.7 (Tenenhaus et al., 2005); Table 5 presents those tests.

**Table 5 – Reliability: Cronbach’s alpha and Jöreskog's Rhô tests**

Latent variables	Cronbach’s alpha	Jöreskog's Rhô	Eigenvalues
<b>Access convenience</b>	0.755	0.891	1.607
			0.393
<b>Functional convenience</b>	0.914	0.928	5.995
			1.144
			0.806
			0.659
			0.564
			0.480
			0.383
			0.301
			0.244
			0.214
			0.211
<b>Relational convenience</b>	0.671	0.822	1.831
			0.824
			0.345
<b>Digital convenience</b>	0.877	0.903	5.305
			1.240
			0.991
			0.743
			0.595
			0.523
			0.514
			0.434
			0.296
			0.195
<b>Process convenience</b>	0.812	0.866	3.131
			0.999
			0.635
			0.579
			0.389
			0.267
<b>Consumer Response</b>	0.764	0.894	1.618
			0.382

The test of convergent validity is assessed in two stages: first, by examining the communalities of each manifest variable with its latent variable (intra communality) and secondly, by examining the AVE (Average Variance Extracted) calculated on the latent variable. Systematically a bootstrap procedure (of 500 resamples) is carried out in order to verify that each of the each of the communalities (intra) is significantly different from the value 0 and greater than 0.5 (Tenenhaus et al., 2005). The bootstrap provides 95% confidence intervals for each of the communities (confidence intervals set at 95%). As soon as the value 0 does not belong to the proposed interval and the lower bound of the interval proposes a value greater than 0.5, the (intra) communality can be considered as acceptable. The value of 0.5 is

the minimum recommended threshold for accepting both the communality of the manifest variable and the AVE of the latent variable (Fornell and Larcker, 1981). Table 6 presents those statistical indicators.

### 5.2 Structural model

The model is validated because statistical indicators exceed the recommended threshold (Fornell and Larcker. 1981; Chin. 1998; Tenenhaus et al., 2005) presented in Table 6.

**Table 6 - Statistical indicators of structural model**

GoF	GoF (Bootstrap)	R <sup>2</sup> - F (194.019) Pr > F : 0.000	AVE
Absolute = 0.630	0.542	0.607 (bootstrap)	0.528
Relative = 0.980	0.928		
External model = 0.999	0.973		
Internal model = 0.981	0.952		

XLSTAT PLSPM Software

Bootstrap – 500 re-sampling; GoF (Goodness of Fit). AVE (Average of Variance Extracted)

### 5.3 Variations in type of C&C

It seems to be relevant to deepen previous results by identifying precisely which C&C system could maximize the value and those that dilute it (Table 7).

**Table 7 - Validation of structural models**

Drive-out system	GoF Absolute = 0.	0.479	R <sup>2</sup> - F (52.176) Pr > F : 0.000 0.565 (bootstrap)
	Gof Relative = 0.	0.911	
	Gof External model = 0.	0.988	
	Gof Internal model = 0.	0.922	
Drive-in system	GoF Absolute = 0.	0.436	R <sup>2</sup> - F (46.617) Pr > F : 0.000 0.501 (bootstrap)
	Gof Relative = 0.	0.890	
	Gof External model = 0.	0.983	
	Gof Internal model = 0.	0.906	
In-store picking system	GoF Absolute = 0.	0.447	R <sup>2</sup> - F (16.084) Pr > F : 0.000 0.519 (bootstrap)
	Gof Relative = 0.	0.806	
	Gof External model = 0.	0.976	
	Gof Internal model = 0.	0.825	

XLSTAT PLSPM Software

## 6. Discussion

### 6.1 The impact of convenience on consumer response

The results from our structural equation model support hypotheses 1 to 5. The causal model is expressed as follow:

$$\text{Consumer's response} = 31.4\% \text{ functional convenience} + 25.1\% \text{ process convenience} + 17.3\% \text{ relational convenience} + 9.4\% \text{ access convenience} + 2.5\% \text{ digital convenience.}$$

This model allows us to determine the value-creating variables and their respective weights: we note that two variables stand out as significant explanations for C&C recommendation behavior (56.5% for these two variables): functional convenience and process convenience.

Functional convenience has the strongest contribution of the model. It explains 31.4% of customer response. This result reinforces the idea that C&C consumers use this channel primarily for its functionality, efficiency and time saving as hypothesized by previous researches (Colla and Lapoule, 2012; Mallapragada et al., 2016; Jara et al., 2018; Gielsens et al., 2020; Bjorgen et al., 2021; Pernot 2021). Furthermore, the preponderant role of functional convenience in the consumers' response confirms the importance of the C&C product range (Gatta et al., 2021; Maltese et al., 2021), lead time i.e duration between the order and its availability (Gatta et al., 2021). These results are in line with previous literature and confirm that C&C is part of a time-saving strategy (Pernot, 2021) and value consistency time is an important delivery characteristic (Miloti et al., 2021).

Process convenience is the second largest factor explaining 21.5% of the customer response. This strengthens the argument that consumers are particularly sensitive to variables such as choice of several weights for fresh products, suitable packaging, status of products ordered and adequate choice of replacement in case of stock-out. Last mile logistics is therefore critical because it is responsible for the supply of goods to the customers. Furthermore, this result confirms those of previous research since collecting the product at a convenient time window positively impacts the intention to use C&C (Maltese et al., 2021; Miloti et al., 2021).

The role of relational convenience (17.3%) makes evident that this immaterial dimension which describes the relationship between the shopper and the staff in contact is particularly important in this dematerialized channel. Relational convenience refers to the participation of the staff in the production of the company's value. The role of relational convenience confirms the shift from Goods-dominant logic to service-dominant logic (Hartwig et al., 2021) and the role of personal in contact in the value creation for the retailer (Wibowo et al., 2021).

Somewhat surprisingly our results confirm the positive impact of access convenience on consumer response but with a relatively small contribution of 9.4%. This result moderates the impact of geographical proximity, i.e the speed and ease for customers to reach the C&C on the other. While access convenience is a prerequisite for the success of traditional retailers (Cliquet, 1988); C&C users finally pay little attention to it. This result is all the more surprising since C&C targets a flow-through clientele, and is fitted into existing trips (Marucci et al., 2021; Pernot et al., 2021).

Digital convenience represents the obligation by the retailer to propose a very functional website. It explains 2.5% of consumer response. The retailer's website is intended as a service element and compensates for the absence of a physical store; however, it explains 2.5% of consumer response.

These results include C&C as a distribution channel as a whole and confirm that e-grocery should implement an appropriate selling proposition in line with customers' preferences (Gatta et al., 2021). They reinforce the idea that e-service quality positively impacts customer response, in particular satisfaction and repurchase intentions (Blut et al., 2015). However, the different C&C fulfillment are very different; hence, it may be interesting to deepen it by testing more detailed hypotheses.

## *6.2 The role of convenience depending on the C&C fulfillment order*

Gielsens et al. (2020) made evidence that alternative C&C type influences shopper convenience needs. We also test if customer response varies according to the C&C system. Results reveal differences between the three C&C systems (see appendix 1).

### *Drive-out system*

Consumer' response in drive out = 33.5% process convenience + 29.9% functional convenience + 17% relational convenience + 14.1% access convenience – 8.7% digital convenience.

Drive-out users are particularly sensitive to convenience processes (33.5% of consumer response), i.e choice of several weights for fresh products, suitable packaging and status of products ordered, among other things. They also have a very pragmatic approach to this channel since functional convenience explains 29.9% of consumer response. More precisely, the weight of the convenience function emphasizes in particular that retailers should guarantee the availability of the product, in the right place (the importance of location) and at the right time (the importance of time) because the consumer chooses this channel to reduce the number of non-value-added tasks (Seiders et al., 2000; Vyt et al., 2017, Giselsens et al., 2020, Maltese et al., 2021; Gatta et al., 2021; Mevel et al., 2021;).

Located at the exit of large urban areas, or close to industrial zones, on the home-work axis drive-out C&Cs represent transit businesses. They adapt to the increasing mobility of consumers to a clientele on the move, wishing to optimize their round- trips (Marucci et al., 2021; Pernot, 2021). Although access convenience remains an important selection tool, it was the last positive contribution to consumer response with a score of 14.1%. It strengthens grocery retail logistics and last mile issue between a distribution center and warehouse as a challenging area (Lagorio and Pinto, 2021). These results show that the implementation of a drive-out C&C system must respect one of the conditions of success of a traditional implementation, namely the principle of interception or how to appeal to customers.

Although C&C is driven by shopping digitalization (Maltese et al., 2021; Marucci et al., 2021), drive-out users are not attracted by the digital interface of retailers. Digital convenience plays a negative role in customer response (-8.7%). Our results make evidence that drive-out system does not fit into the previous literature which holds that e-retailing is a technology driven business and digital convenience positively influence C&C performance (Gieslens et al., 2020; Kalia et al, 2021. Services offered online (order confirmation by e-mail, shopping lists, list of favorite products), the description of the products as well as the quality, ease and speed of navigation score negatively in consumer's response. It means that drive-out users are particularly dissatisfied with the current selling proposition. Perhaps customers perceive this kind of system as an additional and free service – an extension of the selling proposition of the hypermarket.

#### *Drive-in system*

*Consumer' response in drive-in= 26.9% functional convenience + 21.6% digital convenience + 21.5% relational convenience + 15.1% process convenience – 5.9% access convenience.*

In the drive-in system, functional convenience explains 26.9% of consumer response and thus represents the largest contribution. Consumers are above all looking for a relevant assortment of products (in terms of width and depth) as well as the functional aspects at the collecting point. They have a utilitarian value of this channel and are looking for time saving. These results raise questions about the cannibalization phenomena between the drive-in and the brick-and-mortar store. Gielsens et al (2020) show that shoppers with high collection convenience needs spend less at the retailer's physical outlets.

Digital convenience and relational explains, respectively 21.6% and 21.5% of customer response. Contrary to the precedent type, drive-in system users are sensitive to retailers' websites, including variables such as image quality product description, speed of navigation or the ease of navigation. It is therefore not surprising to see that drive-in channel is essentially characterized by two fundamental elements: the design of the website as a creative interface for the front-office customer trip, and the software as the essential content for the mobilization and synchronization of customer databases, product availability, and the coordination of order management and preparation. Relationship with staff at the collecting point is particularly important for these users, and consequently the importance given to contact personnel in the service relationship. In this type of C&C, the pick-up station is attached to an existing store; it is probably for this reason that access convenience recorded a negative contribution. The negative influence of access convenience questions previous research that the geographical proximity is a prerequisite to a positive consumer response (Reilly, 1931; Seiders et al., 2000; Vyt et al., 2017; Gahinet and Cliquet, 2018; Pernot 2021). In terms of logistics, this result supports the idea that this drive-in C&C model has limited business opportunities despite a possible increase in customers (Melkonyan et al., 2020).

#### *In-store picking system*



*Consumer' response in picking system = 34.3% functional convenience + 29.2% relational convenience + 18.2% process convenience + 4.6% access convenience– 5.3% digital convenience.*

In this system, there is no warehouse dedicated to C&C and order is prepared in store from products on shelves. As in the drive-in system, within the in-store picking C&C functional convenience has a strong explicative power (34.3%). In line with previous research (Mével et al., 2021), results show that consumers are therefore sensitive to all the criteria that constitute functional convenience: with and depth of assortment, promotions. We also note that the important weight given to this variable reinforces the importance of the time factor: C&C must be accessible and be a source of time savings for activities considered as no added value (Seiders et al., 2000; Giselens et al., 2020). In-store picking users aim at decreasing shopping time; they are sensitive due to convenience and time-savings. Relational convenience explains 29.2% of consumer response. In other words, in an in-store picking C&C, consumers are waiting for contact and exchanges with the staff. They have a high need for interaction. Given their respective weight in the consumer response, access convenience and digital convenience are less important in the eyes of the shopper because they are not perceived as variables that are sources of differentiation. Therefore, they appear to be variables that any retailer must offer as a minimum (Seiders et al., 2000; Gielsens et al., 2020).

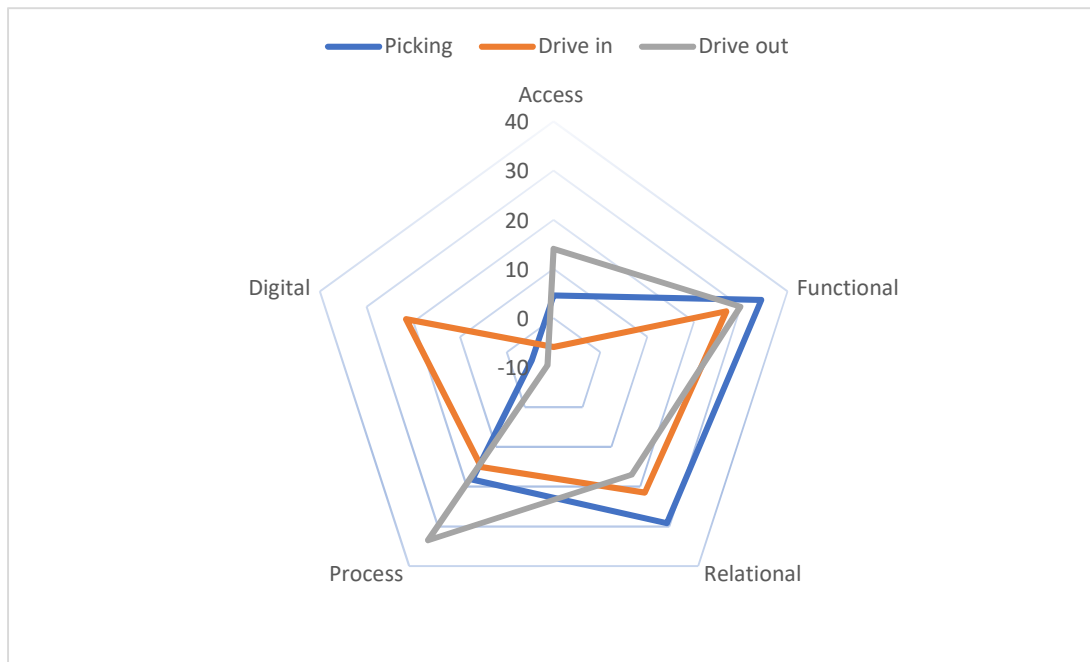
Convenience characteristics affect consumer response differently depending on the type of C&C (see Table 8). So, for example, access convenience which explains over 14% of consumer response in a drive-out C&C. has a negative impact in a drive-in C&C.

**Table 8** - Synthesis results per C&C model

Convenience feature	Picking	Drive in	Drive out
Access	4.6	<b>-5.9</b>	14.1
Functional	<b>34.4</b>	26.9	29.9
Relational	29.2	21.5	17
Process	18.2	15.1	33.5
Digital	<b>-5.3</b>	21.6	<b>-8.7</b>

In other words, type of C&C has a moderating effect on the relationship between convenience and consumer response as shown in Figure 2.

**Figure 2** Visual synthesis results per C&C model



Based on Figure 2, digital convenience is clearly discriminant in the C&C system. Relational convenience plays an important and positive role in customer response for all of the three systems. In line with previous studies (Gielsens et al., 2020), all fulfillment order types do not respond in the same way to the access convenience. Drive-out C&C is an easy-to-reach location and makes it easy for shopper to travel to at and from a pick-up location. They represent substitute for urban locations.

## 7. Theoretical and managerial implications

### *7.1 Theoretical implications*

Our study has a major theoretical implication since it extends the theory of services through examining consumer response in a C&C retail setting. In doing so, we recognize that grocery C&C is a specific service to the retailer whose role is to produce the service at the time and place where a demand exists. Our results validate the work of Vargo and Lusch, (2004, 2006, 2008, 2010) on the theory of Service-Dominant Logic (SDL) which questions the product as the basis of exchange in favor of the services it provides. In doing so, we expand the S-D-L theory to the omnichannel setting. In short, in the case of C&C the product/service pair is deeply intertwined and the customer expects a set of key service functions from his retailer. Our results present an application of the SDL theory to retailing and more precisely to C&C. Our findings are consistent with classic theory service texts that places service at the heart of the exchange

between the retailer and the consumer. Although functional convenience shows a strong contribution to the consumer response and demonstrates the importance of the assortment and the product whatever the type of C&C, retailer can no longer be assimilated to a mere product seller. The reinforcement of services, in particular through the development of information on the product, or still on out of stock, shopping lists or expense tracking (digital convenience), the choice of several weights, suitable packaging or adequate choice of replacement in case of stock-out (process convenience), tips for use and relationship with staff (relational convenience) contribute to the enrichment of the relationship. We contribute by adding a new field of application and demonstrate that C&C reinforces the positioning of retailers as service providers.

This study also examines how C&C affects consumer response through the prism of convenience including a multidimensional approach of convenience. From an academic point of view, this study has primarily enabled the identification of five features of convenience in a C&C context: functional, process, relational, access and digital. It extends the scope of convenience from traditional grocery retailer to online environment. We find that during each stage of the purchase from the retailer website to the collecting point consumers are expecting services from retailers.

This paper contributes to building the necessary theoretical framework of the C&C channel. It enables one to understand how retailers can improve the value creation of their new service. Extant research has focused on a synthesis of international consumer studies (Seiders et al., 2000) theoretical approach of convenience (Bergadaa and Del Bucchia, 2009.); and traditional brick and mortar channels (Gahinet and Cliquet, 2018). Studies on the role of convenience in a C&C setting and do not integrate the three types of C&C (Gielsens et al, 2020) and use retailer data (Gielsens et al., 2020). Furthermore, they and offered only a fragmented consideration of the features of convenience (Vyt et al., 2017; Gielsens et al., 2020; Mevel et al., 2021). We contribute by demonstrating the need to understand each C&C system as an autonomous entity and not to aggregate the results of the C&C as a whole. Finally, this study is a unique study based on a consumer approach that analyses the influence of convenience in a C& C setting for each C&C fulfillment and consequently contributes to extant C&C behavioral studies.

The results of this study also confirm that the C&C selling proposition can be considered as a complementary service to the retailer. In line with previous research (Kalia and Paul, 2021) we make evidence that e-services are perceived as an extension of the retailer's brand and propose a better understanding of the phenomenon of brand extension by identifying the image transfers between the brand and the C&C. Thus, this study could construct an initial theoretical framework for the image of the C&C.

## *7.2 Managerial implications*

The proposed analysis offers meaningful managerial implications all the more that e-grocery market share can be further increased by taking customers' preference into consideration (Gatta et al., 2021). Our study focuses on five features of convenience in a C&C retail setting: access, functional, relational, process and digital. The most influential convenience features in terms of consumer responses are functional, process and relational convenience.

Customers attach great importance to the functional convenience that brings together material variables such as assortment width and depth promotional offers and access to promotions.

Furthermore, this functional convenience allows customers to better manage their time: possibility of ordering a product at the last-minute waiting time and ease of identification at the pick-up station, time range, session times proposed duration between the order and its availability. Gahinet and Cliquet (2018) describe this qualitative dimension of time as a Kairos dimension of time convenience which increases consumer response. The process convenience notably through the availability and the adequate choice of replacement in case of stock-out is also a key factor in the global evolution of any digital formula. The control of stock levels is therefore essential especially in the commercial C&C system. These logistics dimensions linked to functional and process convenience highlight the fact that the level of service is built both on the relevance of marketing mix and on the minimization of costs resulting from the logistics mix. Our results confirm the importance of the logistic dimension (availability of products, proposed assortments, opening hours, etc.) in e-commerce through the importance given to the functional convenience to explain the recommendation behavior of the C&C, whatever the retained model. Indeed, the logistics dimensions (possibility of ordering a product at the last minute, duration between the order and its availability, delivery characteristics, etc.) in the world of e-commerce appear to be fundamental in retaining the consumer in reassuring him in meeting his need for immediacy. This is also confirmed for C&C. Thus, the proposed assortment and the availability of products appear as important criteria in the perception of the quality of the logistic service in the framework of e-commerce. More precisely, the consumer using a C&C service proposed by a food retailer wants to be offered an assortment corresponding to his recurrent purchases of food products. The C&C assortment must be defined from the most purchased references even if the consumer also wishes to buy fewer regular products. However, the logistics requirements (stock management, order preparation, etc.) increase with the breadth and depth of the range offered generating additional costs for retailers. However, retailers cannot pass on these additional costs to the consumers of this service which is intrinsically free. The financial management of the C&C must thus be different according to the type of fulfillment order, the drive-in and the in-store picking generating consequently constraints and stronger logistic costs.

The value expected by the consumer is correlated to the fluidity of the purchase path, which becomes the key factor in the combination of the different digital and physical channels offered. Retailers have the obligation to propose a very functional and convenient website. Consumers want to find week after week the products corresponding to their daily purchases in order to optimize them hence the importance of shopping lists. Retailers should propose an organized, structured and coherent site content that meets the needs of consumers especially immediacy. A C&C website should facilitate the consumer's purchase and, in fact, present as many filters and menus as necessary (speed and ease of navigation) highlight lots of logistics information (product replacement proposal, information on out of stock, financial (expense tracking) and merchandising (image quality and product description)). However, although it is a positive impact, digital convenience has little effect on consumer response. This is undoubtedly an obvious prerequisite for consumers. A C&C is a service whose front office is digital and interactive involving a permanent exchange between the retailer's website and the customer during the ordering phase. The C&C's front office is complex because it requires a synchronization of the merchandising of the assortment with essentially the logistics in the back office whose objective is to deliver the order when it is picked up under conditions of accessibility; this synchronization must ensure the quality of service sought by the customer. More precisely, the service rate is built both in the front office on the relevance of a digital marketing mix (brand image, assortment, price) and on the minimization in the back office of the costs resulting from the management of the logistics mix.

Although they make the choice not to go to traditional stores, C&C users give great importance to human and lived dimensions since relational convenience explains 17.3% of consumer response. Relationship with the staff and information from the staff at the pick-up station which is to say immaterial features of convenience are important for consumers in a C&C model. Retailers must therefore be well aware that the reception of the customer by the person in charge of the delivery at the C&C is also an essential moment in the consolidation of the service relationship. This face-to-face meeting is likely to enrich the service relationship and offers the possibility to develop the brand capital of the brand.

The value perceived by the C&C consumer will focus on a few fundamental elements, namely the quality of the logistical responses envisaged by the various retailers. The information system appears to be the essential element for the mobilization and synchronization of customer databases, the availability of products and the coordination of the management and preparation of orders. The quality of the logistical responses envisaged (organization of the warehouse network, stock management, order preparation, location of deliveries, etc.) remains critical to retain the consumer, to reassure him, and to meet his need for immediacy, whatever the C&C used. It must be noted that, this customer trip is becoming more complex with the multiplication of transactional, but also relational and communicational touch points enabled by digital technologies; touch points defined as direct or indirect episodes of interactions of a more or less important duration and of a more or less intense nature.

## **8. Conclusions and future studies**

### *8.1 Conclusions*

In a deflationary context where retailers are currently fighting a price war multi-channel is on the rise and this is clearly driving the continued development of C&C. The development of home delivery is more important in the US and Anglo-Saxon retail sectors than here in France. Because our brands do not currently have the means to finance it and they want to make this new specific C&C asset profitable first. The theory of transaction costs seems to explain the phenomenon perfectly. The increase in the frequency of C&C purchases a specific asset that is being turned into an industrialized service and which is now becoming profitable combined with a decreasing degree of uncertainty in terms of the increase in high-margin orders but also in fixed costs linked to the costly presence of personnel. All of this is being accelerated by the dual influence of the pandemic and technological advances on the sites. Therefore, retailers are slowing down on home delivery because the integration of C&C is costly

C&C is growing year after year both in grocery and non-grocery retail field. In France, the number of online shoppers reached 11.74 million in 2020<sup>5</sup> an increase of more than a million in just one year. Grocery retailers are taking advantage of this growth and are developing C&C for pedestrians - thus conquering city centers. Via an empirical study we find that convenience in a specific retail format. C&C. includes five features. They all positively influence consumer response in general. Thus, the C&C service of retailers is backed by remarkable marketing and logistics properties that are relatively dissimilar from the first service formulas developed by

---

<sup>5</sup> Source: Kantar World Panel, May 2021.

retailers that were previously based entirely on the intensive exploitation of a commercial surface in a trade area. Consequently, the challenge of deploying a relevant operational management of services in the context of C&C is to understand the level of service required by the customer and, therefore, to determine the value-creating variables likely to predict the customer's recommendation behavior. In the end, in food retailing services are progressively becoming commercial activities that generate margins in a world where the food offer is now a way to generate additional margins in service. The relationship among convenience features was also analyzed. Our study provides an understanding of consumer perception toward C&C retail format and the most influential features of convenience for each type of C&C. We find that access convenience has a positive impact on a picking and a drive-out retail format but a negative effect on a drive-in system. While on a drive-in system, digital convenience has a great influence its impact is negative in the picking and drive-out model.

## 8.2 Future studies

This study has several limitations. First, scales were specified for the C&C format. It could be relevant to further research and create an index of convenience and especially digital convenience to each retail format whether physical or digital. Second, our study only examined food-retailer C&Cs. Future studies can cast a broader business line to collect data on non-food retailers such as sporting goods stores, clothing stores or even household appliance stores that are developing C&C more and more especially since the Covid-19 crisis. Third, our study only targets respondents from France. The exploration of customers from other countries that are developing C&C in the food and non-food retail could be interesting. This study should be conducted in other countries, especially in the US with the development of Walmart grocery pick-up. Fourth, the exploration of the impact of respondent characteristics (e.g. age of respondents, type of households) on consumer response in a C&C context can be worthwhile. At last, future studies can extend our study by comparing the different consumer responses for each channel of the same retailer to study the influence of a channel on convenience.

## References

- Aquila-Natale, E. Iglesias-Pradas, S., 2020. How to measure quality in multichannel retailing and not die trying. *Journal of Business Research*, 109, 38-48.
- Agnihotri, A., 2015. Can brick and mortar retailers successfully become multichannel retailers. *Journal of Marketing Channels*. 22(1), 62-73.
- Ali, I., and Naushad, M. (2021). Determinants of customer satisfaction in online grocery shopping. *International Journal of Data and Network Science*, 5(3), 383-390.
- Aw, E.C., Basha, N.K., Ho, J.A., 2021. Searching online and buying offline: Understanding the role of channel, consumer, and product related factors in determining webrooming intention. *Journal of Retailing and Consumer Services*. 58, 102328.
- Beauchamp, M., Ponder, N., 2010. Perceptions of retail convenience for in-store and online shoppers. *The Marketing Management Journal*. 20(1), 49-65.
- Bergadaà, M., Del Bucchia, C., 2009. La recherche de proximité par le client dans le secteur de la grande consommation alimentaire. *Revue Management & Avenir*. 21, 121-135.
- Bijmola, T.H.A, Broekhuis, M., De Leeuw, S., Hirche, C., Rooderkerk, R.P., Sousa, R., Zhu, S.X., 2021. Challenges at the marketing–operations interface in omni-channel retail environments. *Journal of Business Research*. 122, 864-874.
- Bjorgen A., Bjerkan, K.Y., Hjelkrem, O.A. 2021. E-groceries: sustainable last mile distribution in city planning. *Research in Transportation Economics*, 87, 100805.

- Blut, M., Chowdry N., Mittal V., Borck C. 2015. E-service quality: a meta-analytic review. *Journal of Retailing*. 91(4), 679-700.
- Blut, M., 2016. Es-service quality: development of a hierarchical model. *Journal of Retailing*. 92(4), 500-517.
- Capo, C., Chanut, O., 2013. Le concept de proximité comme source de différenciation : proposition d'une grille de lecture des positionnements voulus des distributeurs français. *Logistique et Management*. 21(1), 7-19.
- Cai, Y., Lo, C.K.L., 2020. Omni-channel management in the new retailing era: A systematic review and future research agenda. *International Journal of Production Economics*. 229, 107-129.
- Chang, H.H., Wang, H.W., 2008. The relationship among e-service quality, value, satisfaction and loyalty in online shopping. *European Advances Consumer Response*. 8(1), 10-14.
- Chen, S.C., Quester, P.G., 2009. A value-based perspective of market orientation and customer service. *Journal of Retail and Consumer Services*. 16(3), 197-206.
- Chin, W. W., 1998. Issue and opinion on structural equation. *MIS Quarterly*, 7-16.
- Cho, Y.K., 2015. Creating customer repurchase intention in Internet retailing: the effects of multiple service events and product type. *Journal of Retailing and Consumer Services*. (22), 213–222.
- Chopra, S. (2016). How omni-channel can be the future of retailing. *Decision*, 43(2), 135-144.
- Churchill, G.A., 1979. A paradigm for developing better measures of marketing constructs. *Journal of Marketing Research*. 16, 64-73.
- Churchill, G., Iacobu, C., Ci, D., 2005. *Marketing research: Methodological foundations*. Mason. OH: Thomson South-Western.
- Cliquet, G., 1988. Les modèles gravitaires et leur évolution. *Recherche et Applications en Marketing*. 3(3) 1-18.
- Colla, E., Lapoule, P., 2012. E-commerce: Exploring the critical success factors. *International Journal of Retail & Distribution Management*. 40(11), 842-864.
- Craig S.G., Hoang. E.C, Kohlhase J.E. 2017. Does closeness in virtual space complement urban space?. *Socio-Economic Planning Sciences*. 58, 22-29.
- De Magalhães, D. J. A. V., 2021. Analysis of critical factors affecting the final decision-making for online grocery shopping. *Research in Transportation Economics*, 101088.
- Dinner, I.M., Van Heerde, H.J., Neslin, S.A., 2014. Driving online and offline sales: The cross-channel effects of traditional, online display, and paid search advertising. *Journal of Marketing Research*. 51, 527-545.
- Duarte, P., Silva S.C., 2020. Need-for-touch and online purchase propensity: A comparative study of Portuguese and Chinese consumers. *Journal of Retailing and Consumer Services*. 55, 102-122.
- Fernie, J., Sparks, L., McKinnon, A.C., 2010. Retail logistics in the UK: Past, present and future. *International Journal of Retail and Distribution and Management*. 38(11/12), 894–914.
- Foo, J., A-Jalil, M., Salmuni, W., Mustaffa, W., 2020. What's Up Omni? The Relationship between omni-channel supply Chain and logistics service quality influencing online purchasing behaviour. *International Journal of Supply Chain Management*; 9(4), 643-650.
- Fornell, C., Larcker, D.F., 1981. Structural equation models with unobservable variables and measurement error. *Journal of Marketing Research*. 18(1), 39-50.
- Gahinet, M.C, Cliquet G., 2018. Proximity and time in convenience store patronage: Kairos more than chronos. *Journal of Retailing and Consumer Service*. 43, 1-9.
- Gao, F., Xuanming, S., 2017. Omnichannel retail Operations with Buy Online and Pick-up in Store. *eBusiness & ecommerce Journal*. 63(8), 2478-2492.

- Gasparin, I., Panina, E., Becker, L., Yrjölä, M., Jaakkola, E., Pizzutti, C. (2022). Challenging the "integration imperative": A customer perspective on omnichannel journeys. *Journal of Retailing and Consumer Services*, 64, 102829.
- Gatta, V., Marucci, E., Maltese, I., Iannaccone, G., Fan, J. 2021. E-groceries: a channel choice analysis in shangai. *Sustainability*. 13, 3625.
- Gielsens, K., Gijbrecchts, E., Geyskens, I., 2020. Navigation the last mile: The demand effects of click-and-collect order fulfillment. *Journal of Marketing*. 85(4), 158-178.
- Hartwig, K., Von Saldern, L., Jacob, F., 2021. The journey from goods-dominant logic to service-dominant logic: a case study with a global technology manufacturer. *Industrial Marketing Management*, 95, 85-98.
- Henriquez, T., Frisou, J., Filser, M. 2018. L'adoption d'un Drive par le client : une approche interactionniste par la socialisation organisationnelle et le rôle du personnel en contact. *Décisions Marketing* (4), 11-29.
- Hickman, E., Kharouf, H., Sekhon, H. (2020). An omnichannel approach to retailing: demystifying and identifying the factors influencing an omnichannel experience. *The International Review of Retail, Distribution and Consumer Research*, 30(3), 266-288.
- Holzapfel, A., Hübner, A., Kuhn, H., Sternbeck, M.G., 2016. Delivery pattern and transportation planning in grocery retailing. *European Journal of Operational Research*. 252, 54-68.
- Huang, M., Jin, D., 2020. Impact of buy-online-and-return-in-store service on omnichannel retailing: A supply chain competitive perspective. *Electronic Commerce Research and Applications*. 41, 1-20.
- Hübner, A., Kühn, H., Wollenburg, J., 2016. Last mile fulfilment and distribution in omni-channel grocery retailing: A strategic planning framework? *International Journal of Retail and Distribution Management*. 44(3), 228-247.
- Jacoby, J., Chestnut R.W., 1978. *Brand Loyalty Measurement and Management*. New York, Wiley.
- Jara, M., Vyt, D., Mevel, O., Morvan, T., Morvan, N., 2018. Measuring customers benefits of click and collect. *Journal of Services Marketing* 32(4), 430-442.
- Jöreskog K.G., 1970. A general method for analysis of covariance structure, *Biometrika*, 57, 239-251.
- Kalia, P., Paul, J., 2021. E-service quality and e-retailers: attribute-based multi-dimensional scaling. *Computers in Human Behavior*. 115, 106608.
- Kaya, B., Behraves, E., Abudakar, A.M., Kay, O.M., Orus, C., 2019. The moderating role of website familiarity in the relationship between e-service quality, e-satisfaction and e-loyalty. *Journal of Internet Commerce*. 18(4), 369-394.
- Labbé-Pinlon, B., Lombart, C., Louis, D., 2016. Impact de la proximité d'un magasin sur la fidélité des clients : Le cas des magasins d'enseignes alimentaires de proximité. *Revue Management & Avenir*. 84, 73-94.
- Lagorio, A., Pinto., R. 2021. Food and grocery retail logistics issues: a systematic literature review. *Research in Transportation Economics*. 87, 100841.
- Lee, H.J., 2017. Personality determinants of need for interaction with a retail employee and its impact on self-service technology (SST) usage intentions. *J. Res. Indian Med*. 11(3) 214-231.
- Lewis, J., Whysall, P., Fosetr, C., 2014. Drivers and technology-related obstacles in moving to multichannel retailing. *International Journal of Electronic Commerce*. 18(4), 43-67.
- Lim, S.F., Winkenbach, M., 2019. Configuring last-mile in business-to-consumer E-retailing. *California Management Review*. 61(2), 132-154.
- Mac Carthy, B.L, Zhang, L, Magldermans, L., 2019. Best performance frontiers for buy online pickup in store order fulfillment. *International Journal of Production Economics*. 211, 251-264.

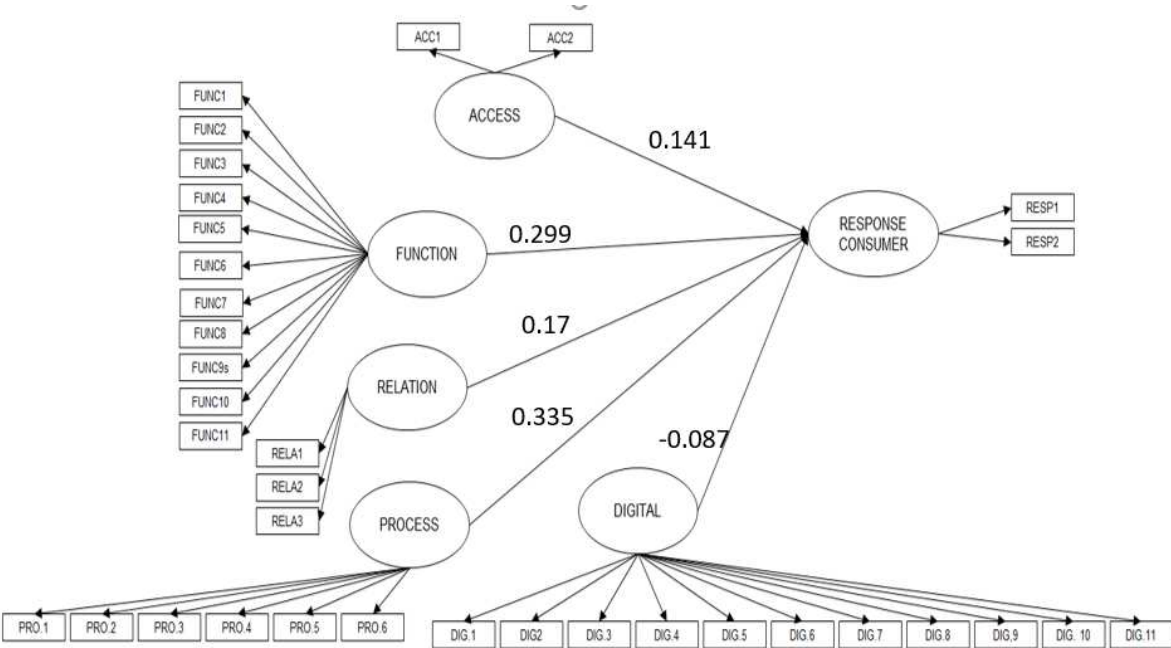


- Mallapragada, G., Chandukala, S.R., Liu, Q., 2016. Exploring the effects of “what (product) and “where” (website) characteristics on online shopping behavior. *Journal of Marketing*. 80(2), 21-38.
- Maltese, I., Le Pira, M., Marcucci, E., Gatta, V., Evanelinos, C., 2021. Grocery or @grocery: a stated preference investigation in Rome and Milan, *Research in Transportation Economics*, 87(2), 101096.
- Marcucci, E., Gatta, V., Le Pira, M., Chao, T., Li, S., 2021. Bricks or clicks? Consumer channel choice and its transport and environmental implications for the grocery market in Norway. *Cities*. 110, 103046.
- Melkonyan, A., Gruckmann, T., Lohmar, F., Kmath V., Spinler S., 2020. Sustainability assessment of last-mile logistics and distribution strategies: the case of local food networks, *International Journal of Production Economics*, 228, 107746.
- Melacini, M., Perotti, S., Rasini, M., Tappia, E., 2018. E-fulfilment and distribution in omnichannel retailing: a systematic literature review. *International Journal of Physical Distribution & Logistics Management*. 48(4), 391-414.
- Mevel, O., Morvan, T., Morvan, N., 2021. New societal expectations and services relationships in food supermarket: the case of drive-in and home delivery. *Logistique & Management*. 29(4), 252-266.
- Milioti C., Pramatarı, K., Kelepouri, I., 2020. Modelling consumers ‘acceptance for the click and collect service. *Journal of Retailing and Consumer Services*, 56(1), 102149.
- Mohammadi, S., Dickson G., 2021. Online Shopping for Sporting Goods: The Role of Flow, E-Satisfaction, and E-Loyalty. *Global Business Review*. DOI:10.1177/09721509211019516.
- Nguyen, D.H., de Leeuw, S., et Dullaert., W.E.H., 2018. Consumer behavior and order fulfilment in online retailing: a systematic review. *International Journal of Management Review*. 20, 255-276.
- Oh, L.B., Teo, H.H., 2010. Consumer value co-creation in a hybrid commerce service delivery system. *International Journal of Electronic Commerce*. 14(3), 35-62.
- Olsson, J., Hellström, D., Palsson H., 2019. Framework of last mile logistics research: a systematic review of the literature. *Sustainability*. 11, 73131.
- Olsson, J., Osman, M. C., Hellström, D., Vakulenko, Y. (2021). Customer expectations of unattended grocery delivery services: mapping forms and determinants. *International Journal of Retail & Distribution Management*, 0959-0552.
- Parasuraman, A., Zeithaml V.A and Arvind Malhotra A., 2005. E-S-QUAL: A Multiple-Item Scale for Assessing Electronic Service Quality. *Journal of Service Research*. 7(3), 213–33.
- Pernot, D., 2021. Internet shopping for everyday consumer goods: an examination of the purchasing and travel practices of click and pickup outlet customers. *Research in Transportation Economics*. 87, 100817.
- Picot-Coupey, K., Huré, E., Cliquet, G., Petr, C., 2009. Grocery shopping and Internet: Exploring French consumers’ perceptions of the “hypermarket” and “cybermarket” formats. *The International Review of Retail, Distribution and Consumer Research*. 19(4), 437-455.
- Punakivi, M., Yrjöla, H., Holmstrom, J., 2001. Solving the last mile issue: Reception box and delivery box. *International Journal of Physical Distribution and Logistics Management*. 31(6), 427-439.
- Quach, S., Barari, M., Moudrý, D. V., Quach, K. (2020). Service integration in omnichannel retailing and its impact on customer experience. *Journal of Retailing and Consumer Services*, 102267.
- Reilly, W.J., 1931. *The law of retail gravitation*, Reilly edition, New York.
- Rita, P., Oliveira T., Farisa, A., 2019. The impact of e-service quality and customer satisfaction on customer behavior in online shopping. *Heliyon*. 5(10), 02619.

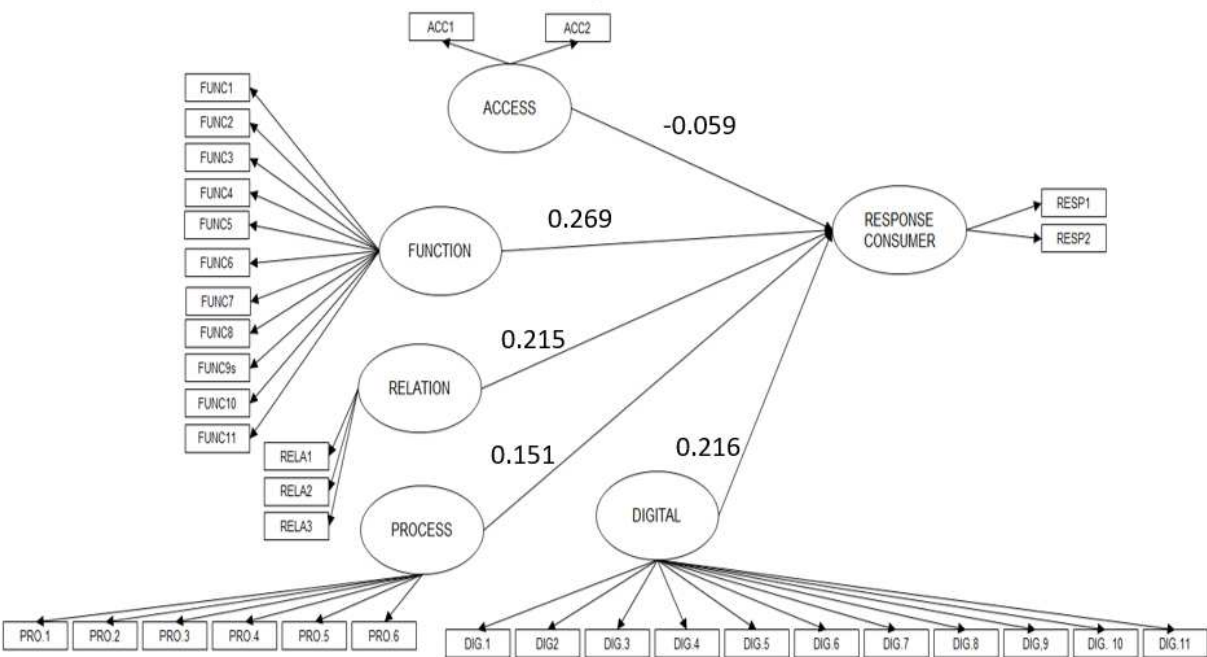
- Rupinder, P.J., Dinesh K.G., Wanyu L., Yu, M., 2021. Omnichannel battle between Amazon and Walmart: is the focus on delivery the best strategy?. *Journal of Business Research*. 122, 270-280.
- Saha, K., Bhattacharya, S., 2021. Buy online and pick up in-store: Implications for the store inventory. *European Journal of Operational Research*. 294 (3), 906-921.
- Siawsoolit, C., Gaukler, G., M., 2021. Offsetting omnichannel grocery fulfillment cost through advance ordering of perishables, *International Journal of Production Economics*. 239(5), 108192.
- Seiders, K., Berry, L.L., Gresham, L.G., 2000. Attention, retailers! How convenient is your convenience strategy? *Sloan Management Review*. 41, 79-89.
- Sousa, R. Amorim, M., 2018. Architectures for multichannel front-office service delivery models. *International Journal of Operations & Production Management*. 38(3), 828-85.
- Tenenhaus, M., Vinzi, V.E., Chatelin, Y.-M., Lauro, C., 2005. PLS path modelling. *Computational Statistics and Data Analysis*. 48(1), 159-205.
- Trenz, M., Veit, D. J., Tan, C. W. (2020). Disentangling the impact of omni channel integration on consumer behavior in integrated sales channels. *MIS Quarterly*, 44(3), 1207-1258
- Vakulenko, Y., Shams, P., Hellström, D., Hjort, K., 2019. Service innovation in e-commerce last mile delivery: mapping the e-customer journey. *Journal of Business Research*. 101, 461-468.
- Vargo, S.L., Lusch, R.F., 2004. Evolving for a new dominant logic for marketing. *Journal of Marketing*. 68, 1-17.
- Vargo, S.L., Lusch, R.F., 2006. Service-dominant logic: Reactions, reflections and refinements. *Marketing Theory*. 6(3), 281-288.
- Vargo, S.L., Lusch, R.F., 2008. Why service? *Journal of the Academy of Marketing Science*. 36, 25-38.
- Vargo, S.L., Lusch, R.F., 2010. Relationship in transition: An introduction to the special issue on relationship and service-dominant logic. *Journal of Business Marketing Management*. 4, 167-168.
- Vargo, S. L., Lusch, R. F., 2017. Service-dominant logic 2025. *International Journal of Research in Marketing*. 34(1), 46-67.
- Verhoef, P. C., Neslin, S.A., Vroomen, B., 2007. Multichannel customer management: understanding the research-shopper phenomenon. *International Journal of Research in Marketing*. 24(2), 129-148.
- Vorre Hansens, A., 2019. Value co-creation in service marketing: A critical (re)view, *International Journal of Innovation Studies*. 3, 73-83.
- Vyt, D., Jara, M., Cliquet, G., 2017. Grocery pickup creation of value: Customers' benefits vs. spatial dimension. *Journal of Retailing and Consumer Services*. 39, 145-153.
- Wibowo, A., J., I., Sumarwan, U., Suharjo, B., Simanjuntak M., 2021. 17 years of service-dominant logic: Vargo and Lusch's contributions. *Business: Theory and Practice*. 22 (2), 482-492.
- Wollenburg, J., Hübner, A., Kuhn, H., Trautrim, A., 2018. From bricks-and-mortar to bricks-and-clicks: Logistics networks in omni-channel grocery retailing. *International Journal of Physical Distribution & Logistics Management*. 48(4), 415-438.
- Xu, X., Munson, C. L., Zeng, S., 2017. The impact of e-service offerings on the demand of online customers. *International Journal of Production Economics*. 184, 231-244.
- Xu, X., Jackson J.E., 2019. Examining customer channel selection intention in the omni-channel retail environment. *International Journal of Production Economics*. 208, 434-445.
- Yu, J., Subramanian, N., Ning, K., Edwards, D., 2015. Product delivery service provider selection and customer satisfaction in the era of internet of things: A Chinese e-retailer's perspective. *International Journal of Production Economics*. 159, 104-116.

- Yuen, K.F., Wang, X., Ma, F., Wong, Y.D., 2019. The determinants of customers' intention to use smart lockers for last-mile deliveries. *Journal of Retailing and Consumer Services*. 49, 316-326.
- Zhang, M, Berghall S, 2021. E-commerce in agri-food sector: a systematic literature review based on service-dominant logic. *Journal of Theoretical and Applied Electronic Commerce Research*. 16, 3356-3374.
- Zeithaml, V.A., Berry, L.L, Parasuraman, A., 1996. The behavioral consequences of service quality. *Journal of Marketing*. 60(2), 31-46.
- Zeithaml, V.A., Parasuraman, A., Malhotra, A., 2002. Service quality delivery through websites: a critical review of extant knowledge. *Journal of the Academy of Marketing Science*. 30(4), 362-375.

**Appendix 1 – Drive out model**



**Appendix 2 – Drive in model**



**Appendix 3 – In-store picking model**

